retrofit

january-february 2025 // retrofitmagazine.com

One of a Kind:

Design, Community and Nature Converge in Former Warehouses Turned Architecture Offices

+ More Office & Warehouse Projects

TREND ALERT:
Women in AEC

Architectural Products
PIA'23
product innovation award

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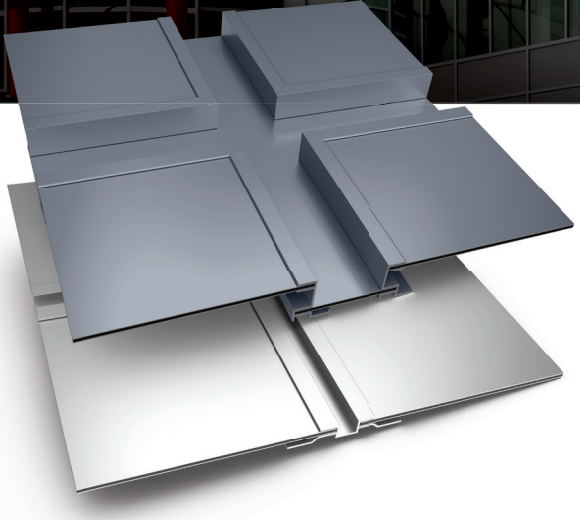
Aids in carbon reduction

INTRODUCING

PAC-4000

ACM / MCM COMPOSITE WALL SYSTEMS



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Elevate your building's exterior with PAC-4000: durable, stylish 4mm aluminum composite panels designed for walls, canopies and accents. Ideal for hospitals, offices, retail and more. Thermal stability, sleek finishes and easy installation ensure lasting beauty and performance. PAC-4000—where design meets innovation.

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See us at the IRE Booth 15095 and at the IBS Booth C8732

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Design, community and nature converge in warehouses turned architecture offices for Skylab Architecture in Portland, Ore.

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- Office Building, Warren, N.J.
- Glenn County Courthouse, Willows, Calif.
- IBM Bromont, Bromont, Quebec, Canada
- Excel Dryer, East Longmeadow, Mass.
- Raleigh Iron Works, Raleigh, N.C.
- Building 5 Wash Bay, Kansas City, Kan.

COVER PHOTO:
Eric Fortier

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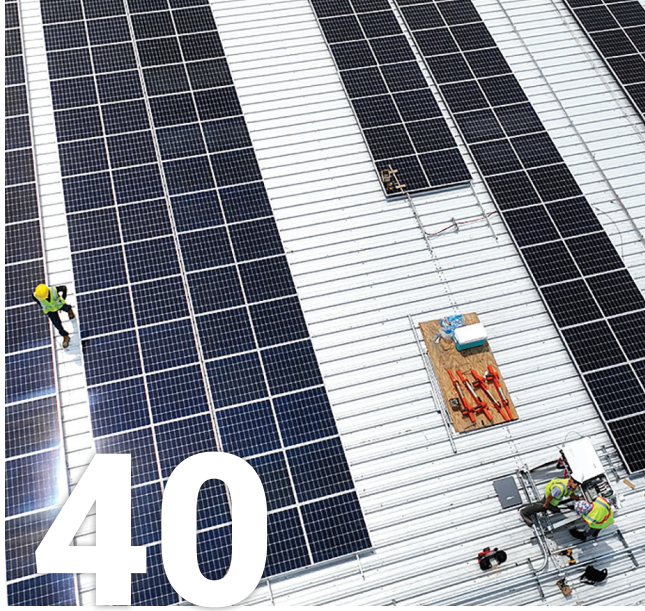
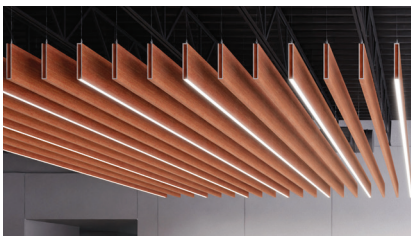


SPECIAL REPORT

16 Top 25 of 2024

These products posted on ***retrofit***'s website from September 2023 to October 2024 received the most clicks from readers.



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Recycled cables celebrate and honor the historic former Bell Labs building in Holmdel, N.J.

DON'T LET CALLBACKS GET IN THE WAY OF YOUR NEXT JOB

Ray needs another repair 715-423-1766

URGENT FIX!!

...unds kinda Angry? 745-3217

Something is leaking? 555-5986

second time today 555-111-6513

Can't move out the mall job again

Jake and ryan both out until next week

Kevin needs you to take a look at 44 johnson drive

Small patch job for 1700 michigan

Lake shore job is running behind. Call Jim

Roof warping at hospital. Call Paul today

Ray called... Again....

Can I move out the mall job again

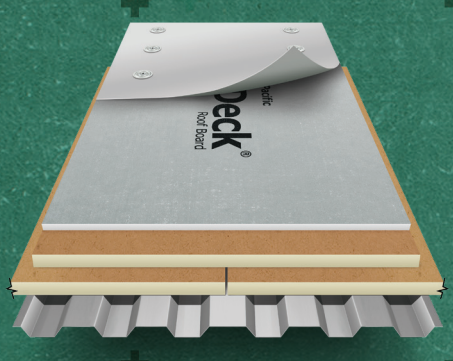
Says the roof is making a noise. 345-1212

Fred is hop...s you can stop by to take a look at a tear

Matt says The hole is getting bigger

John needs directions for tomorrow?

The crack is a bit bigger than expected -Jason



Imagine if you had to delay the start of a new commercial roof job because you're handling damage on a job you just completed. Install DensDeck® Roof Boards and spend your time working where the money is.

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LET'S TALK AT IRE AT BOOTH

#17089

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Belimo Butterfly Valves

Smooth operation, precise control, and maximum energy efficiency

Whether it's hospitals, data centers or pharmaceutical companies, seamless, energy-efficient and cost-optimized heating and cooling systems are crucial for operations. Belimo's new butterfly valves feature NFC for fast commissioning, programing and diagnostics, plus accurate control to ensure efficient operation. Available in nominal sizes of 4", 5" and 6".

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Discover the advantages
www.belimo.com

BELIMO

My Experience in the Design and Construction Industry

When I graduated from college, I wanted to write but wasn't sure about what. I sent my résumé for a few entry-level writing positions located in the Chicago area. It was the National Roofing Contractors Association that gave me my first job as an editorial assistant for its *Professional Roofing* magazine. At the time, I considered the job a steppingstone toward the experience I needed to get a writing job more aligned with my personal interests. However, I really enjoyed writing about roofing, a complex and often-overlooked but extremely valuable part of a building.

The positive experience led me to my second editorial job, writing for and eventually becoming editor-in-chief of *eco-structure* magazine, one of the first green-building magazines. This was 2003, so I had the privilege to learn along with the industry about all things sustainable. I met incredibly inspirational people while working for *eco-structure*. Their willingness to teach and share experiences is the reason *eco-structure* was a success. The people, the subject matter and the feeling that I was helping in a small way to make the world greener solidified my love for design and construction—and made me a lifer.

In December 2024, I celebrated 24 years of writing for this industry—something I could not have predicted in December 2000. My experience is different from the women who are redefining roles in the AEC community, whom Contributing Editor Jim Schneider interviewed for "Trend Alert", page 60. I'm an outsider looking in, sharing the work these ladies and their male counterparts have achieved.

However, the aspect of design and construction that made me a lifer is what draws a lot of women to their AEC careers, as noted in "Trend Alert". "Women are represented in the movement to decarbonize buildings in greater numbers than men," says Patti Mason, climate action strategist at DLR Group in Denver, in the article. "I think that sustainability has absolutely made it feel like women can find a home in this industry … have a great career that aligns with some of the values that we have. … "

The ladies who were interviewed indicate there needs to be more women and people of color in leadership roles; I can confirm this is improving. In the past two or three years, I have received so many more press releases about women and people of color being promoted to leadership positions within AEC firms and the manufacturing companies and associations that serve the industry.

I hope that as more women head up AEC firms, manufacturers and associations, more girls embrace the idea of a career in design and construction. I've been talking to my seven-year-old daughter Clare about the possibility of it for years. Last month, Clare said she wanted to be a builder (and a teacher, dentist and pet doctor!). If she ends up in this industry someday, I will be very proud to watch her continue the legacy of moving design and construction forward in her own way.

CHRISTINA KOCH
Associate Publisher/Editorial Director
retrofit

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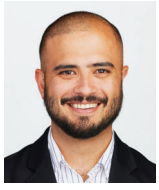
CONTRIBUTING WRITERS

Jennifer Dillan is business development director with Skylab Architecture, which recently moved into its new office space in Portland, Ore. The 10,000-square-foot complex, about which Dillan writes in our "Cover Story", page 24, comprises a semi-cylindrical Quonset building and two warehouse structures that have been transformed to reflect the firm's design ethos.



Dr. Alex Azan, M.D., MSc, is a clinical assistant professor in the Department of Population Health and the Family Health Centers at the New York University Grossman School of Medicine. Grounded in tenets of environmental justice, his research focuses on the impacts of climate-driven extreme weather on urban health. As such, he writes in "Component", page 38, about a new study to determine whether cool roofs can protect the health of urban children.

Amy Bramwell, AIA, RID, is principal of Studio Steinbomer. Her repertoire includes extensive work on local media production studios, including the recently completed new home of Austin PBS, which she writes about in "Transformation", page 42. Built within a former Dillard's store, the facility is the first 12-gig digital broadcast network facility for public television in the U.S.

Sarah Keithly, RID, IIDA, is a project interior designer with Cooper Carry. She is passionate about designing for workplace diversity and seeks to provide variety in the office environment, as shown in "Transformation", page 48. Keithly writes about the 60,000-square-foot Werthan Mill Warehouse, Nashville, Tenn., which she helped transform into nine creative office suites.

Amanda Viale works at Studio GWA, where she combines her love for preservation with her knack for putting her colleagues' work into words. In "Historic", page 54, Viale shares the story of the Old Courthouse Center, Woodstock, Ill., an 1857 historic gem for which city leaders rallied to revitalize and make an active part of the community.

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AHR Orlando // FEB 10-12, 2025

The next level of comfort in forced-air heating

NEW NPF Hydro-furnace

The NPF Advantage: The NPF heats water by burning the gas in a sealed combustion heat exchanger, completely isolated from the airstream. The heated water is then pumped through a hydronic heat exchanger that gently transfers the heat into the air. The fully enclosed Ultra-Low NOx premix burner provides extremely quiet operation, high efficiency of 97% AFUE, and allows for an industry-leading variable capacity that can modulate down to 15% for a next-level comfort experience.

Explore the new NPF at Navieninc.com.

NPF Horizontal

NPF Upflow

Navien

Products are an integral part of any trade publication. As such, ***retrofit*** is celebrating the 25 products that received the most reader clicks on our website from September 2023 through October 2024. During that time, ***retrofit***'s staff posted approximately 700 products to the magazine's website, so the Top 25 are standouts.

"We consider ***retrofit*** a source 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*** and on our website."

Enjoy ***retrofit***'s 12th-annual Top 25 Products!

retrofit TOP 25 PRODUCTS

Fastener Boasts Five-times Faster Connections

FastenMaster has introduced the FrameFAST fastener, now featuring the patented TORX ttap Drive system. This new design empowers pros with the choice of using a standard impact driver or the award-winning FrameFAST tool. FrameFAST replaces many commonly used hurricane ties, installing five-times faster without the need for compressors, nailers and hoses. The new 50-piece box and 250-piece bucket includes a free alignment guide, ensuring a code-compliant connection, and TORX ttap driver bits that deliver a wobble-free drive.

www.fastenmaster.com

Dock Solutions Maintain Safety

Overhead Door Brand has launched innovative dock equipment—a Mechanical Pit Leveler; an Edge of Dock; and a comprehensive line of seals, shelters and accessories. The Mechanical Pit Leveler and Edge of Dock designs deliver durability specifications outlined in ANSI MH 30.1. The Mechanical Pit Leveler also creates an easy-to-install solution with adjuster feet that help to quickly position the dock to floor height, so the installer never needs to be under the leveler. A textured, proprietary powder coat offers traction and slip resistance, even when wet. This EPA-recommended powder coat enhances safety, durability and corrosion resistance. Complementing these products are the seals and shelters, fabricated from premium-grade, fire-retardant foam and bolstered by UV-resistant fabrics. In addition, the company's accessories, from lighting and track guards to multi-bumper options and chocks, round out the one-stop-shop of dock and door solutions.

www.overheaddoor.com

Purify Air with Ozone

The CerroZone air purifier safely harnesses ozone to kill 99.9 percent of viruses, bacteria, mold and other airborne pathogens immediately. Its patented technology draws air into the unit through a series of fans and proprietary filters. Internal UV-C lamps generate ozone within the sealed mixing chamber and then kill all microorganisms, including VOCs, within the sealed chamber. Finally, the air within the chamber passes through a catalyst that restructures the ozone back into clean, breathable air prior to returning to the room. In independent laboratory testing, CerroZone recorded a 99.99-plus percent reduction of COVID-19 virus in a single-pass in 1.2 seconds. The CerroZone mobile unit is certified by the FDA as a 510(k) Class II medical device. CerroZone complies with ASHRAE Standard 241. CerroZone is a Net Negative Ozone Device that complies with UL 2998 and has Intertek's Zero Ozone Certification, meaning no significant amount of ozone ever leaves the unit.

ihcsolutionsusa.com/cerrozone

Overhead Infrared Heaters Now Can Be Recessed into Ceilings

Marley Engineered Products has launched the Agency Listed Recessed Trim Kit, which enables the company's infrared heaters to be recessed completely into a ceiling to reduce the intrusive nature of overhead heating units and improve the aesthetics of any space. The accessory allows infrared heat to be used without the consequence of wind or inclement weather adversely affecting the heaters' ability to provide hidden, comfortable heating. Suited for indoor/outdoor, total or spot-heating use, Marley Engineered Products offers radiant heaters with two-element or three-element designs for flexible sizing and concentrated heat in a single infrared unit. The heaters optimize short-wave infrared heat, which heats objects instead of the air around the heater, through heavy-gauge gold anodized reflectors. These reflectors allow for more than 60 percent of heat to be generated while the heating element itself accounts for the other 40 percent, meaning high-performance heating is matched by energy efficiency.

www.marleymep.com

Spray Foam Roof System Conforms to Any Roof Architecture

Huntsman Building Solutions (HBS) has unveiled Ultralok, its all-new spray foam roof system. Ultralok closed-cell spray polyurethane foam roofing is a 2.8-pound solution specifically designed to deliver a high-performance, fully adhered roof system that insulates, waterproofs and protects over a variety of roof deck substrates in one easy step. Ultralok creates a monolithic membrane, eliminating the need for mechanical fasteners, and is suited for low-slope roofing applications in new and retrofit construction. The product conforms to any roof architecture and provides wind resistance. Ultralok also is manufactured using recycled plastic water bottle waste and boasts a low Global Warming Potential value of 1.

huntsmanbuildingsolutions.com/en-US

Wireless Air Quality Monitor Meets WELL Certification Requirements

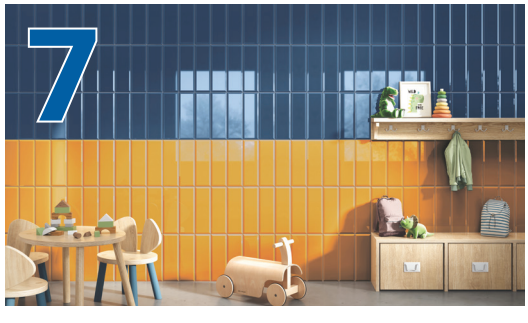
Kaiterra has launched the Sensedge Go, a wireless, battery-powered air quality monitor that offers effortless peel-and-stick installation in just a few seconds. Setting a new industry standard, the Sensedge Go includes up to eight years of battery life using the company's patent-pending Adaptive Sampling technology, significantly reducing maintenance efforts and ensuring consistent, reliable measurements. The Sensedge Go monitors up to 14 IAQ and environmental parameters, providing comprehensive insight into all aspects of the built environment. The device tracks particulate matter, volatile organic compounds, carbon dioxide, nitrogen dioxide, temperature, relative humidity, lux, light spectrum, atmospheric pressure and occupancy by default with the option to expand to cover ozone and carbon monoxide.

www.kaiterra.com

Wall Tile Collection Ranges from Neutral to Bold Colors

The Crossville Color Perspectives wall tile collection is all about color—whether naturally neutral to pretty in pastels to bold and bright. This calibrated ceramic wall tile collection isn't just about hues and chromas; the nine tile offerings cover the spectrum with Coin, Light, Marine, Pollen, Tea, Topaz, Vanilla, Viola and Water. The collection offers a new perspective on traditional subway tile by providing large 4- by 12-inch tiles that make a bold statement. Additionally, the upscale bevel highlights the grandiose shape, adding dimension to any room. All hues are offered in the high-gloss option.

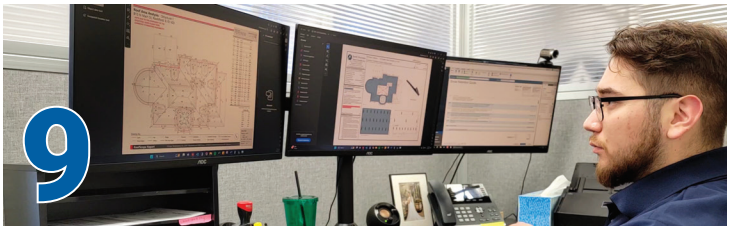
www.crossvilleinc.com



8 Replace Fluorescent Lighting with LED Kits

Lutron Electronics has released its Lutron ballast retrofit kit by C-Flex. As the lighting market sunsets fluorescent technology to embrace the advantages of LEDs and legislation restricts the sale of fluorescent lamps, Lutron offers fast, simple, off-the-shelf retrofit kits. Lutron ballast retrofit kits provide a solution for 1:1 fluorescent-to-LED upgrades that can be implemented immediately or over time to meet budget demands, scheduling and new regulations. Kits are in stock and typically ship to the job in less than four weeks. Each UL-listed and pretested Lutron ballast retrofit kit by C-Flex includes the Lutron drivers (3-wire or EcoSystem) and C-Flex LED lamps by Light Efficient Design. Everything needed, including connectors, instructions and fixture labels, is in the kit. The lamps drop right in, and drivers have the identical form factor/wiring locations as existing ballasts.

www.lutron.com/newledkits



9 Aerial Roof Reports Ease Design of Snow-retention Systems

Roofers investing in satellite aerial reports get more than just precise roof measurements for their projects. They also have a tool that can quickly result in a free snow retention plan for that same roofing project when sharing the report with Rocky Mountain Snow Guards. Known for speed and accuracy, Rocky Mountain Snow Guards typically creates 30 full snow retention system designs and layouts each day for residential and commercial projects. Rocky Mountain Snow Guards calculates and offers a design on the drawing of the roof to show where the most effective snow retention system is needed. The company includes the layout for installation along with any pertinent details about the product. Installation instructions are included, as well as a list of the products required to get the job done and an estimate.

www.rockymountainsnowguards.com/forms/snow-guard-layout-and-design

10 Carbon Steel Fittings Offer More Press Options

NIBCO INC. has expanded its line of carbon steel fittings to bring more press options for plumbing and mechanical carbon steel pipe applications, as well as fuel and gas carbon steel pipe applications. The BenchPress and BenchPressG fittings are designed for efficiency with easy, clean and fast installation for a wider range of applications. The line features a patented fitting design that creates consistent joints, is flame free and environmentally friendly. Available in 1/2- to 2-inch sizes, the BenchPress and BenchPressG fittings can be installed within seconds and require no threading equipment and lubricants while maintaining joint integrity and professional appearance.

www.nibco.com/benchpress

11 Custom Live-edge Wood Designs Are Made to Order

Carlberg Design specializes in creating unique and organic live-edge wood decor and wall art for interior spaces. All products are made in the U.S. with food- and family-safe materials. Live-edge wood tables, headboards, wood and epoxy sliding doors, resin river tables, custom coffee tables, wood wall art and more are made to order. Carlberg Design has an extensive online portfolio for ideas and inspiration. The company crates and ships nationwide.

www.rustictrip.com

Simplify Access Controls in the Multifamily Market

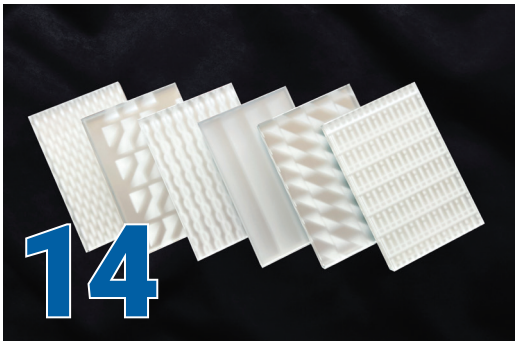
Allegion US has introduced the Schlage XE360 Series Wireless Locks, a new electronic lock portfolio designed with multifamily market needs—like style and technology—in mind at an attractive price point. The Schlage XE360 boasts next-level design that provides property owners with a seamless aesthetic across all openings, regardless of the type of door and required lock installation. Thoughtfully engineered, the uniquely concealed key override maintains the sleek look of the lock on the door. The XE360 Series operates in an offline or No-Tour environment, which eliminates the need for property managers to visit the lock as credentials update the access rights.

us.allegion.com

Thermally Modified Wood Cladding Now Is Offered in Translucent Finishes

Thermory USA has launched a new line of translucent finishes, Vivid by Thermory, that can be put on any of its thermally modified cladding species. From rustic to modern, Vivid by Thermory offers a range of colors that personalize any design. The six factory-finished options—Black, Coastal White, Exotic Brown, Golden Brown, Silver and White Oak—feature a translucent finish that showcases the wood's natural grain and texture. In addition to these six finishes, Thermory provides the option for custom colors with opaque colors and other bold solutions currently in production.

thermoryusa.com



Reimagine Walls and Ceilings with Glowing Glass

Bendheim has introduced the Lunar Series to its Titanium architectural etched glass line. The mix of subdued to dazzling designs create distinctive glass surfaces allowing building planners to reimagine walls and ceilings with gently glowing glass surfaces enlivened by ambient light. The company's Titanium Lunar Collection delivers a delicate reflective glass that interplays with available light adding luminosity and a soft energy. The decorative collection features an eclectic mix of luminous patterns, each designed to play with light in a unique way. The durable, maintenance-friendly material is fingerprint-resistant and well-suited for wall-cladding applications in high-traffic areas.

bendheim.com

Wall Protection Now Includes Recycled Content

Construction Specialties (CS) has evolved its Acrovyn Wall Protection product line to include post-consumer recycled content. Testing confirms that this iteration of Acrovyn possesses the same characteristics as the current offering yet consists of up to 50 percent post-consumer recycled content. CS currently works with resin producer SK Chemicals to manufacture Acrovyn with post-consumer recycled content. SK Chemicals bought a chemical recycling plant to recycle used bottles into sustainable resin. Acrovyn with post-consumer recycled content is available on select woodgrains; brushed metals; and sheet-based products, such as wall panels and doors.

www.c-sgroup.com

Acoustic Paneling Integrated with Lighting Now Is Available in Wood Textures

LightArt has launched its Acoustic Collection Wood Textures, encompassing the first patterns available across the company's robust collection of acoustic fixtures. Inspired by biophilic design, the release captures the natural elegance of wood in four patterns: Carmel Oak, Iron Oak, Rich Bamboo and Walnut. The wood patterns are printed on the Sola Felt material available across LightArt's acoustic offerings, utilizing water-based ink and a high-resolution printer to achieve remarkable detail. Three of LightArt's 22 standard Sola Felt colors—Driftwood, Dune and Nickel—serve as bases for the patterns, offering a range of wood tonalities. Designers can specify the new patterns across LightArt's entire Acoustic Collection.

lightart.com

HVAC Load Reduction Module Serves One or More Zones

enVerid Systems, a provider of solutions to reduce the cost and carbon emissions of heating, ventilating, and air conditioning buildings, has released the HLR 100Z, the newest addition to enVerid's family of HVAC Load Reduction (HLR) modules, extending the reach of enVerid's products to the individual building zone. Similar in size and sound to VRF terminal units, the HLR 100Z easily fits inside most plenums and mechanical spaces, serving one or more zones. The HLR 100Z works with most commercial building HVAC systems and is suited for those served by VRF, active chilled beams, water-source heat pumps, and other decoupled heating and cooling systems. The HLR 100Z may be used to reduce outside airflow, heating and cooling load, electrical load, refrigerant charge, and system weight and cost, resulting in savings on equipment and energy use, as well as lower carbon emissions.

enverid.com

Improve Educational Facilities' IAQ with Air Purification Solutions

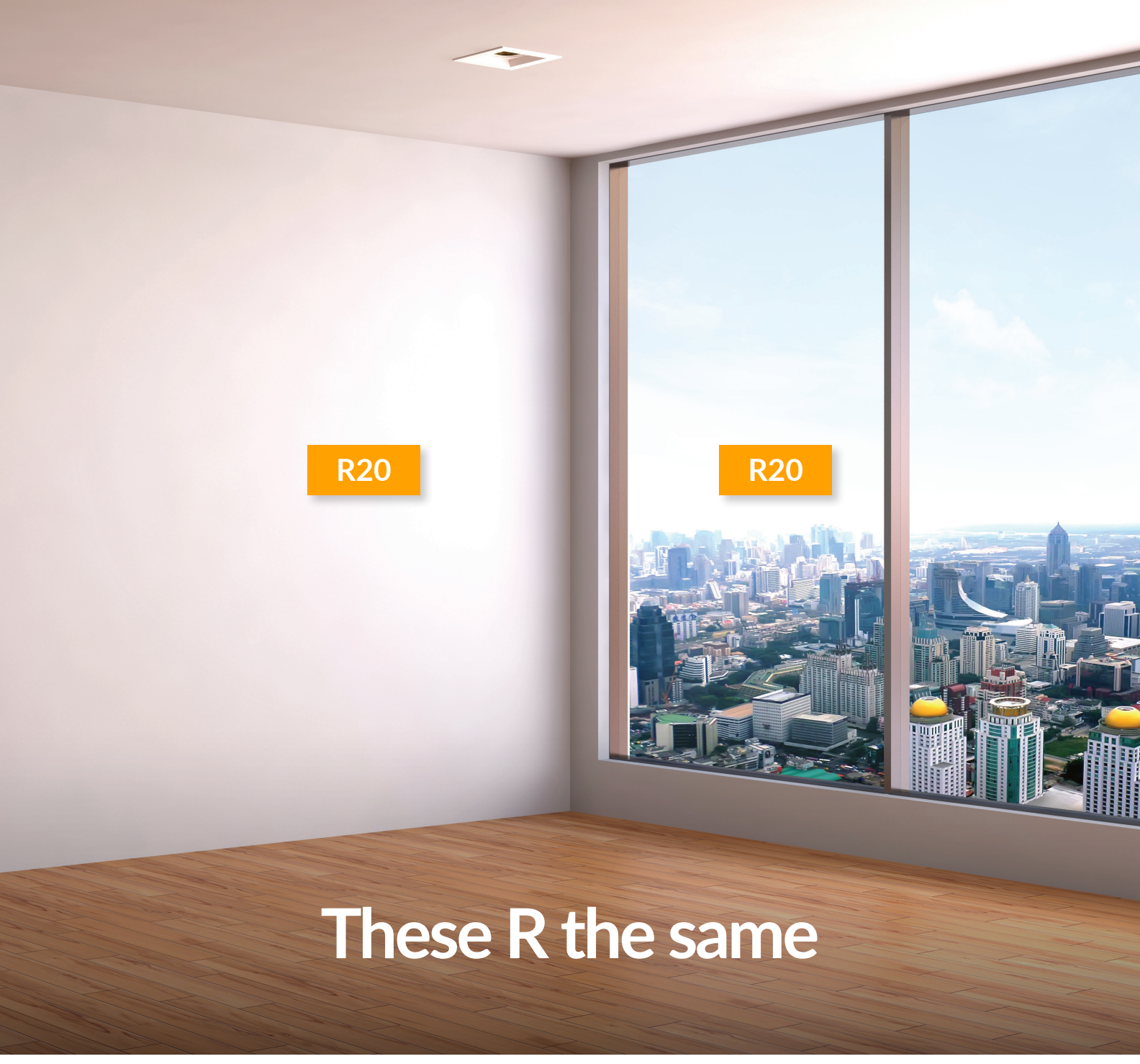
Fellowes emphasizes the critical importance of IAQ for K-12 classrooms and shared spaces. Fellowes Aeramax Pro is designed specifically for educational environments. AeraMax Pro works alongside existing HVAC systems to easily improve air changes per hour. In a classroom setting, AeraMax Pro provides maximum protection with H13 True HEPA filtration. Beyond this purification standard, AeraMax Pro units are made with commercial-grade durable materials to withstand wear and tear in high-traffic areas. They feature a tamper-proof lock to keep settings in place and prevent filters from being displaced. Standalone units can be moved to target areas of high contamination.

www.fellowes.com

Laminate Line Expands Metal Patterns

Formica Corporation has added to its DecoMetal Laminates line with five new designs, including the all-new Metallic series and new additions to the Rubbed series. The designs expand the possibilities for metal looks on vertical surfaces. In the Metallic series, print technology brings the art of decorating metal to the forefront. This series—featuring Metallic Black, Metallic Gilt and Metallic Gray—is artistically aged with patinated cross-brushing, creating a distressed metallic effect suitable for modern to traditional aesthetics. With an age-old finishing technique for a glamorous yet subdued effect, the Rubbed series—which now includes Oil Rubbed Brass and Wax Rubbed Brass—delivers real brass foil that is hand-rubbed and softly burnished in a linear fashion.

www.formica.com



Get wall-like R-values — with the aesthetic and daylighting benefits of glass.
With *VacuMax*™ vacuum insulating glass (VIG) by Vitro Architectural Glass, it's possible to achieve R-values as high as R20 in a nominal 1-inch insulating glass unit. *VacuMax*™ VIG — the ultimate thermal insulation in a window.

Learn more at **VacuMaxVIG.com**

VacuMax™
Vacuum Insulating Glass

Vitro®
Architectural Glass

Hollow Column Is Less Likely to Twist, Crack

20

Culpeper Wood Preservers, a manufacturer of pressure-treated lumber, has launched Culpeper Column PLUS, a hollow 6 by 6 laminated column made from high-grade southern yellow pine. It is kiln-dried after treatment and then formed with glue, which makes it less likely to move when properly installed. The lightweight column, which is less likely to twist and crack compared to traditional solid-wood columns, is designed for porch columns, decking and load-bearing roofs. Column PLUS can be painted, stained, or customized to achieve a variety of looks and serves as a real-wood alternative to PVC, fiberglass or aluminum columns. A key design feature of Column PLUS is its hollow construction that allows users to run wiring through the interior for junction boxes, outdoor lights, speakers and more.

www.culpeperwood.com

22

Universal Changing Table Ushers Inclusion into Public Restrooms

Foundations Worldwide Inc. has introduced the Ascent Universal Changing Table for adult diaper changes in public places. The changing table mounts to most existing walls, including concrete, concrete block, wood studs and metal studs for quick setup with no special teams, materials or costly major construction. An innovative automatic retracting feature stops operation and reverses direction when obstructions (such as wheelchairs) are detected while a battery backup ensures safe use in power outages. There are no fasteners on the bacteria-resistant changing surface, which eliminates cracks and crevices that can accumulate dirt and germs. Ascent also is one of the few changing tables with an IPX6 water-ingress protection rating.

ascentchangingtable.com

21

Noise-control Door Features Concealed Hinge

Noise Barriers, a Catalyst Acoustics Group company and brand of noise control products serving the industrial and architectural markets, presents the QuietSwing Alexis Door, which features a patented concealed hinge design to maintain a clean aesthetic in any space. Suited for environments requiring sound control without compromising design integrity, such as classrooms, performance halls and conference rooms, the Alexis Door's lightweight construction and level-swing mechanism ensure effortless operation. Factory-installed hardware, seals and hinges, along with factory glazing for doors with vision panels, streamline installation. Its split-frame assembly facilitates retrofitting into existing openings, offering flexibility and convenience. Optional features, like a wood veneer finish, impact-resistant coating or an offset metal frame concealed by millwork, further enhance customization possibilities.

www.noisebarriers.com/alexis

23

Safety Helmet Allows for Use of Multiple Accessories

Milwaukee Tool delivers advanced slip, trip and fall protection on the job site with the new BOLT Safety Helmets with IMPACT ARMOR Liner. Designed with RHEON technology, the IMPACT ARMOR Liner delivers oblique impact protection. The safety helmet is a part of the BOLT system, allowing users to secure accessories simultaneously for efficiency on the job site. The construction safety helmets include a Milwaukee BOLT Headlamp Mount that works with most headlamps for easy, secure attachment and a BOLT Marker Clip that allows for easy access to pens and markers. The BOLT Safety Helmets with IMPACT ARMOR Liner have a comfortable padded suspension that includes an adjustable swinging ratchet for better comfort.

www.milwaukeetool.com

Steel Concealed Beam Hanger Is Developed for Mass Timber Construction

Simpson Strong-Tie continues to grow its lineup of mass timber hardware with the addition of the SCBH steel concealed beam hanger suitable for high-drift, high-capacity seismic applications. The new beam hanger provides a concealed connection to preserve a wood-only look while offering an allowable design load of approximately 20 kips (equivalent to 20,000 pounds of force) and a one- or two-hour fire-resistance rating per ASTM E119 for a wood-to-wood connection. The new steel beam hanger matches the beam-to-column load of the company's ACBH aluminum concealed beam hanger while increasing the ability to deform when subjected to joint rotation caused by seismic forces and inter-story drift. This combination makes the SCBH suitable for use at glulam beam-to-column connections in high-seismic regions.

www.strongtie.com

Carved Wall Panel Is Available in Five Wood Species

For decades, Erwin Hauer devoted his career to perfecting sculptures and architectural screens that celebrate the infinite continuous surface—or Modular Constructivism. Hauer was fascinated by 3D shapes that combine concave and convex curves that repeat indefinitely. In 2020, Spinneybeck | FilzFelt worked with Erwin Hauer Studios to reimagine his iconic designs through a series of inspired hanging panels. With an ongoing effort to revitalize his work, Spinneybeck continues to celebrate the late designer's work with a new take on a familiar favorite—Design 406. Always with an effort to bring natural materials to the forefront, Design 406 is now available as a carved wall panel in five wood species with the option to add color with paint or any Spinneybeck upholstery leather. This clever modular system is comprised of individual planks that come together to form an uninterrupted composition that celebrates the continuous curves of Erwin Hauer.

www.spinneybeck.com/design-406

Vibrant Hub

PHOTO: Stephen Miller

Design, Community and Nature Converge in Former Warehouses Turned Architecture Offices

By Jennifer Dillan

Skylab Architecture, a multidisciplinary design firm, had long occupied a historic building in downtown Portland, Ore. However, the office space had become increasingly inadequate, no longer meeting the needs of a growing and evolving practice.

The search for a new location began with a series of critical questions: "How can the studio evolve from a dedicated workspace into a vibrant hub for the art and design community? Where can the firm find a space that accommodates gardens, an event venue, a fabrication shop and the studio all in one?"

After a three-year search, the firm discovered the ideal building on a triangular corner lot in Portland's Northwest Industrial neighborhood. Constructed in the mid-1940s for the Titan Metal Products Corporation, the 10,000-square-foot complex comprises a semi-cylindrical Quonset building and two warehouse structures with distinctive double-arched roofs. The eastern warehouse is connected to the Quonset by an enclosed walkway.

The transformation of the buildings and surrounding outdoor space reflects Skylab Architecture's design ethos, which emphasizes experimentation, collaboration and community. The new space also creates a unique opportunity for the firm to collaborate with PDX Contemporary Art, one of Portland's most respected galleries, sharing the space to foster creative and cultural exchange.

In the Quonset, a reflective scrim was installed over the new spray foam insulation, not only improving acoustics but also enhancing the overall comfort of the space.

BEFORE, DURING PHOTOS: courtesy Skylab Architecture

Natural elements were introduced through the use of cross-laminated timber in the construction of conference rooms, along with wood cabinetry, in the expansive open work area.

PHOTOS: Eric Fortier unless otherwise noted

The design enhances visual and physical connections to the surrounding landscape and urban environment.

Quonset Quandaries

The City of Portland presented significant permitting challenges because of the Quonset's unconventional structure, which did not conform to current building-code standards. Reviewers were unfamiliar with its structural design, requiring Skylab Architecture's building engineer to provide detailed clarifications throughout the permitting process.

Constructed as a storage facility, the Quonset underwent extensive modifications to transform it into Skylab Architecture's office and studio space.

Constructed as a storage facility, the Quonset underwent extensive modifications to transform it into Skylab Architecture's office and studio space. To address the existing roof's screw holes and provide an effective thermal barrier, spray-foam insulation was applied to the interior. The original

skylight was removed and replaced with a new, taller version, which allowed for the addition of a second layer of metal roofing to properly waterproof the structure.

During the renovation, water damage was discovered at the base of some of the Quonset's steel ribs, particularly on the southwest side, where soil had been left against the building's exterior. This damage needed to be addressed before proceeding with further renovations.

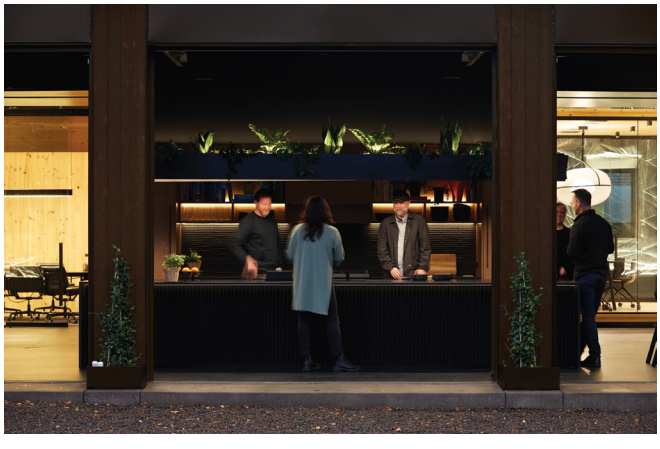
While much of the Quonset's original structure was preserved, the interior walls and dropped ceilings were entirely removed, leaving only the concrete slab, steel rib framework and metal roof. This created an open canvas for the new studio layout. Additionally, new north and south façades were added, including a glass pop-out for the main conference room on the south side.

The design enhances visual and physical connections to the surrounding landscape and urban environment, incorporating expansive new glazing on the Quonset's north and south façades. Three large operable window walls, each 10 by 10 feet, also were added along the eastern side, further opening the space to the outdoors.

PHOTO: Stephen Miller

The interior design of all the buildings embraces an industrial aesthetic, featuring exposed concrete floors, aluminum windows and an exposed steel roof structure.

PHOTO: Stephen Miller



The surrounding grounds include a diverse array of garden spaces, where designers, artists and the broader community can come together for events, performances and meaningful dialogue.

The Wow Factor

The two warehouse buildings house a variety of functional spaces, including workstations, a full kitchen and dining room, listening lounge, 3D print area and upgraded meeting rooms. To bring more natural light into the easternmost warehouse, a 40-foot-long skylight that runs along the central ridge was extended to 60 feet.

The interior design of all the buildings embraces an industrial aesthetic, featuring exposed concrete floors, aluminum windows (new in the Quonset and eastern warehouse and original in the western warehouse) and an exposed steel roof structure. In the Quonset, a reflective scrim was installed over the new spray foam insulation, not only improving acoustics but also enhancing the overall comfort of the space. Natural elements were introduced through the use of cross-laminated timber (CLT) in the construction of conference rooms, along with wood cabinetry and the inclusion of four 15-foot-tall trees in the expansive open work area of the Quonset. Accessibility and energy-efficient systems also were integral to the design.

The surrounding grounds include a diverse array of garden spaces, featuring outdoor meeting and lounge areas,

a 300-person performance and event space; an outdoor cooking area; a firepit; and sport court area for pickleball, table tennis and basketball. Skylab Architecture's vision for the site is to create an environment where designers, artists and the broader community can come together for events, performances and meaningful dialogue.

PHOTO: Stephen Miller

The City of Portland presented significant permitting challenges because of the Quonset's unconventional structure, which did not conform to current building-code standards.

Welcoming Space

Although design work began in early 2021, the permitting process extended over a year and construction was not completed until the end of 2023. The timeline was longer than anticipated because of a combination of permitting challenges, including navigating the complexities of permitting during the pandemic, supply-chain disruptions and the inevitable delays that often accompany large construction projects.

Despite these setbacks, Skylab Architecture's team fondly recalls several memorable moments, including the assembly of the CLT conference rooms and the extension of the skylight. Today, the full-time, onsite 55-person studio team relishes the new office space with particular appreciation for the kitchen and dining area, as well as the exterior courtyard. The new studio provides the opportunity to work in a unique space while being immersed in nature, creating a balance between urban life and the tranquility of the surrounding landscape.

Retrofit Team

Architect and Interior Designer: Skylab Architecture, skylabarchitecture.com

- **Jeff Kovel, principal, design architect**
- **Brent Grubb, principal-in-charge**
- **Jennifer Martin, project architect**
- **Nita Posada, principal, interior design**
- **Amy DeVall, interior design**

Landscape Architect: 2.ink Studio, 2inkstudio.com

Civil Engineer: Humber Design Group Inc., hdgpdx.com

Structural Engineer: Valar Consulting Engineering, valarengineering.com

Mechanical Design-build: Jacobs Heating, www.jacobsheating.com

Materials

Cross-laminated Timber: SmartLam North America, www.smartlam.com

Custom-color Concrete Counters (Kitchen, Bar, Black Bathroom Sink): Cement Elegance, www.cementelegance.com

Glass Bifold Doors (Kitchen, Office): E+ Energy-efficient Aluminum System from Lanai Doors, www.lanaidoors.com/folding_glass_doors.asp

Fabric Duct: Combi from FabricAir, www.fabricair.com

Metal Roof: Nu-Wave Corrugated Metal from AEP Span, www.aepspan.com

Exterior Courtyard Lighting: Nebula from NERI, www.neri.biz/us/collections/nebula

Refrigerator, Freezer and Range: Bosch, www.bosch-home.com

Fireplace: Stuv America, stuvamerica.com

PHOTOS: Andrea Calo unless otherwise noted

BEFORE PHOTO: courtesy Mark Odom Studio

4000 Medical Parkway

Austin, Texas

Retrofit Team

Architect: Mark Odom Studio, markodomstudio.com

Civil Engineer: Wuest Group Engineering & Surveying, wuestgrouptx.com

Landscape Installer: Spencer Landscape Company, www.spencerlandscapeco.com

Structural Engineer: Way Consulting Engineers Inc., wayengineering.com

Accessibility Consultant: Contour Collective, www.contour-collective.com

General Contractor: Citadel Development Services LLC, www.citadeldevgroup.com

Materials

The following is a sampling of materials used in the project:
Thermo-spruce Façade: Thermory, thermoryusa.com
Skylights: Velux, www.veluxusa.com
Windows: Marvin, www.marvin.com

The Retrofit

The 2-story, 10,000-square-foot office building is an adaptive reuse of a 54-year-old commercial building, offering more accessibility without taking away the leasable square footage. The original structure has been completely reimagined into a modern creative office building, featuring ample parking, Class A finishes, an outdoor amenity garden and more.

Built in 1970 and situated on a 1/2-acre lot, the building had a distinctive, unusual triangle shape. The Mark Odom Studio team considered the odd configuration a design advantage and kept the original footprint and some framing.

"Removing the exterior limestone and turrets that were at each point of the triangle allowed us to see the floor plan and design in its truest form. This also made possible for a large 12-foot window wall, accommodating conference rooms on both floors," says Erin Nies, principal, Mark Odom Studio.

The design team reconfigured the building specifically to accommodate a creative industry user. Windows and skylights were added, and the restrooms were placed on the south side allowing natural light to hit all three sides of the building while offering see-through views.

The addition of an exterior elevator connected by a skybridge provides second-floor access while not interrupting the triangular floor plan. The design team reused and salvaged the primary components of the building—slab, wall and roof frame—while being conscious of improving the building envelope and adding natural light, modifying the dated building with quality, aesthetics and function. The exterior was updated with a thermo-spruce façade.

By taking a Class C office building and turning it into Class A, while maintaining the original footprint, the architecture firm has ensured the building gets a second life. In fact, Mark Odom Studio now occupies the top floor. Beaux Med Spa occupies the first floor, encompassing 5,000 square feet.

PHOTOS: Construction Specialties

Office Building

Warren, N.J.

Retrofit Team

Architect: HLW, hlw.com

Materials

During a renovation to enhance the campus, the owner had an idea to put a glass curtainwall between the two main buildings to connect them. Inspired by a recent trip West, he envisioned a giant mountain-like landscape layered over top of the glass curtainwall, which would stand out as an architectural feature and provide shade to the interior.

To achieve the creative vision and functional demands this project required, Construction Specialties' (CS') high-performance linear sunshades were installed along the entire width and length of the glass curtainwall. To properly create the 3D effect of the mountains and sunset on the exterior façade, CS' sales and engineering teams worked together to appoint different-sized rectangular tubes that snap onto the sunshades at specific sections. The rectangular tubes were powder coated with a custom dark bronze and baked clay colors that lift the design to give it dimension and create shadow effects. Moreover, the utilization of the rectangular tubes allowed CS to ship most of the system in assembled sections, making installation easier without compromising the desired look.

The sunshades not only fulfilled the aesthetic goal the owner had in mind, but they also help reduce solar heat gain and glare, providing thermal comfort to the occupants.

Linear Sunshades: Construction Specialties, www.c-sgroup.com/product/facade-solutions/linear-sunshades

Glenn County Courthouse

Willows, Calif.

Retrofit Team

Architect: Page & Turnbull, www.page-turnbull.com

Client: Judicial Branch of California, courts.ca.gov/policy-administration/judicial-council

Structural Engineer: Rutherford & Chekene, www.ruthchek.com

MEP Engineer and Sustainability: WSP, www.wsp.com

Civil Engineer: BKF Engineers, www.bkf.com

Court Programmer: Ross Drulis Cusenbery Architecture, www.rdcarchitecture.com

Geotechnical: Langan, www.langan.com

Fire and Life Safety: The Fire Consultants Inc., thefireconsultants.com

Lighting Designer: HLB Lighting, hlblighting.com

Landscape: PGAdesign, pgadesign.com

LEED: Thornton Tomasetti, www.thorntontomasetti.com

The Retrofit

Led by Page & Turnbull, the transformation of the 1894 one-courtroom historic Glenn County Courthouse revitalized and expanded the 15,798-square-foot historic landmark into a modern, structurally sound courthouse building.

In accordance with the U.S. Secretary of the Interior's Standards for the Treatment of Historic Properties, the three single-story structures that were added to the building in 1940 were demolished, returning the courthouse to its original form.

By enlarging the building with a 26,000-square-foot addition along the south side of the existing courthouse, the design team incorporated two courtrooms, judges' chambers, clerical spaces, jury assembly areas and other relevant public spaces. In addition, the building was modernized with critical seismic upgrades and new mechanical, electrical and plumbing systems.

As noted by the California Courts Judicial Branch of California, "The project has improved security and functionality and increased operational efficiency, as well as enhanced the court's ability to serve the public by consolidating court operations and services from the three facilities into the renovated and expanded historic courthouse in downtown Willows."

The courthouse is LEED Gold certified.

BEFORE PHOTOS: courtesy Page & Turnbull

PHOTOS: Drew Kelly, courtesy Page & Turnbull unless otherwise noted

IBM Bromont

Bromont, Quebec, Canada

Retrofit Team

Supplier, Engineer and Designer: Trigo Energies, www.trigoenergies.com

Decarbonization Specialist Contractor: Ecosystem, ecosystem-energy.com

Materials

The IBM Bromont plant opened in 1972. It is a 24-hour, 365-day facility where more than 100,000 microelectronic modules are manufactured each week.

The plant also is a role model in environmental leadership. Its greenhouse gas emissions in 2021 were 63 percent lower than in 2005, and nearly 100 percent of the electricity consumed by the site comes from hydroelectricity.

With several energy-efficiency projects in planning, IBM called on an energy service company (ESCO) to support its ongoing implementation program in energy conservation and efficiency, including heating, lighting and fuel switching, which make environmental and business sense. ESCO projects, to be implemented over multiple years, are anticipated to save more than 43,000 gigajoules of energy while avoiding associated greenhouse gas emissions.

In 2015, IBM Bromont installed 3,000 square feet of InSpire solar air heating metal wall panels to preheat the combustion air of its central boilers, responsible for steam production and heat for the entire industrial complex. Based on its positive experience, and given the improvements made on the InSpire solar air heating system, namely the introduction of ATAS' InSpire HP (high performance) surfaces, IBM wanted the InSpire wall to be part of the new energy-saving opportunities. The new 2,000-square-foot InSpire wall, installed in October 2023, preheats 6,000 cfm of outside air feeding the plant while reducing its carbon footprint by 12.3 tons of CO_2, year after year, for the next 25 years.

The InSpire wall system will remain in place, with no moving parts and virtually no maintenance, and provide monitored natural gas savings for decades. InSpire's HP finish in Select Black was chosen, not only because it supplies 35 percent more energy than any traditional PVDF paint finish, but also for its aesthetically pleasing look.

Solar Air Heating Metal Wall Panels: InSpire HP from ATAS International Inc., www.inspirewall.com

PHOTOS: ATAS International Inc.

PHOTOS: Excel Dryer

Excel Dryer

East Longmeadow, Mass.

Retrofit Team

Architect: Fennick McCredie Architecture, www.fmarchitecture.com

Materials

Excel Dryer recently unveiled a comprehensive office expansion and renovation to its headquarters. This initiative, rooted in the company's mission to lead through innovation, aimed to merge beauty, health, wellness and sustainability into the company's workplace.

Guided by the WELL Building Standard as a principal framework, the renovation aims to inspire and educate not just architects, designers and the construction community, but also owners and facility managers, offering insight into the practical application of sustainability and health-focused principles in commercial interiors and demonstrating Excel Dryer's leading role in the movement toward more responsible workplace design.

Katherine Brekka, senior associate/sustainability practice leader at Fennick McCredie Architecture, praised the initiative: "Being a part of this groundbreaking project was an extraordinary experience. The innovative blend of space, beauty and wellness achieved is something I'm incredibly proud of. It represents a forward-thinking approach to workplace design that I was thrilled to contribute to and see come to life."

Multiple innovative products were used to achieve WELL and LEED certification, including the DI13 Sink System featuring the XLERATORsync Hand Dryer.

Hand Dryers: XLERATORsync Hand Dryer from Excel Dryer, www.exceldryer.com

PHOTO: hortonphotoinc.com

Raleigh Iron Works

Raleigh, N.C.

Retrofit Team

Developer: Grubb & Ellis, now BGC, www.bgcg.com

Architects: LS3P, www.ls3p.com, and S9Architecture, s9architecture.com

Metal Installer: Hamlin Companies, www.hamlincos.com

Materials

Metal plays a prominent role in the designers' plans, hearkening back to the site's long history as an iron and steel producer. Both buildings feature standing-seam metal roofs; the Bowtruss Building also features architectural metal wall cladding. The architects, along with installers from Hamlin Companies, specified products from Petersen for the project. Today, 40,000 square feet of Petersen's Tite-Loc Plus roofing panels in a Zinc finish top the two structures while the Bowtruss Building's walls feature an additional 30,000 square feet of M-36 Corrugated wall panels.

Metal Roofs and Wall Panels: Tite-Loc Plus Roofing Panels and M-36 Corrugated Wall Panels from Petersen, a Carlisle company, pac-clad.com

The Retrofit

The region called the Research Triangle, incorporating the North Carolina cities of Raleigh, Durham and Chapel Hill, is known as a high-tech magnet, thanks to the advances that have come out of its namesake Research Triangle Park, which is, essentially, a massive, mixed-use office park focused on technology and life sciences research companies.

One of its most recent draws is capitalizing on architecture from the area's history. Raleigh Iron Works is a remake of an old iron foundry district. It opened in 2023 to resounding success. Its design, not surprisingly, leans heavily on its past, making ample use of architectural metal roof and wall panels to emphasize its industrial history.

The centerpieces of the new development are two former foundry structures, each named for their distinctive rooflines. The Bowtruss Building, with its eyebrow roof, dates to the 1800s, when it was located in downtown Raleigh. In the 1950s (just a few years before ribbons were cut at Research Triangle Park), local manufacturer Peden Steel bought the structure and moved it to its current location for use as a welding shop. The company then erected the adjacent Double Gable Building to house steel-fabrication facilities. However, plant operations ceased in 1984, and the site was used for several functions, including a waste-management facility before being mostly abandoned by the early 2010s.

Now, the formerly derelict structures are home to a range of retail, restaurants and offices, bringing new life to an increasingly vibrant area of Raleigh.

Building 5 Wash Bay

Kansas City, Kan.

Retrofit Team

Architect: TKDA, www.tkda.com

General Contractor and Window Installer: George Allen Construction, www.georgeallenconstruction.com

Materials

Covering 780 acres, the BNSF Railway Company's Argentine Yard is one of the largest and busiest railyards in the U.S. For the renovation of the Building 5 Wash Bay, EXTECH worked with the designer and contractor to improve ventilation, natural lighting and overall energy performance. As a result, EXTECH's innovative TECHVENT 5300 Top-Hinged Industrial Window System was installed.

Completed in two phases, Phase 1 included eight 20-foot-wide by 3-foot-high TECHVENT 5300 windows installed on the south elevation and 12 on the north elevation, totaling 1,200 square feet of glazing. Phase 2 mirrored the specifications of Phase 1 but expanded to include 22 additional openings, totaling 1,320 square feet. The translucent polycarbonate window systems were chosen for their durability, energy efficiency and ability to withstand demanding industrial conditions. The patented windows can remain open during rainfall, keeping the interior dry while maintaining natural ventilation and daylighting.

The extensive two-year project has significantly improved the wash bay's functionality, comfort and sustainability, aligning with BNSF Railway's commitment to operational efficiency and environmental responsibility.

Translucent Polycarbonate Windows: TECHVENT 5300 Top-Hinged Industrial Window System from EXTECH, extechinc.com/techvent-5300-industrial-polycarbonate-windows

PHOTOS: Wayne Cable Photography, courtesy EXTECH

Cool Roofs' Health Impacts

A Study Seeks to Determine whether Cool Roofs Can Protect the Health of Urban Children

By Dr. Alex Azan, M.D., MSc

In the U.S., mortality rates attributed to heat waves have increased since the 1990s. In fact, a steady increase of 16.8 percent per year in heat-related deaths was observed from 2016 to 2023. (Learn more at bit.ly/4g19pCs.)

Growing evidence from the fields of epidemiology and thermophysiology have identified population subgroups that are uniquely vulnerable to experiencing poor health outcomes during heat waves. For example, adults 65 years and older cannot sweat as quickly as younger adults, impairing their ability to cool through sweat evaporation during hot summer days (see bit.ly/4igRHME). Older adults also may have physical and cognitive limitations that prevent their ability to use home air-conditioning units properly or move to a cooling center if they cannot afford home air conditioning on days with extreme heat (bit.ly/3VjDKU8). Young children also are uniquely vulnerable to heat health risks because they have a higher predilection to outdoor play and are dependent on caregivers to guide their protective behaviors on hot days (bit.ly/3OFWjhP).

Urban Heat Island Effect

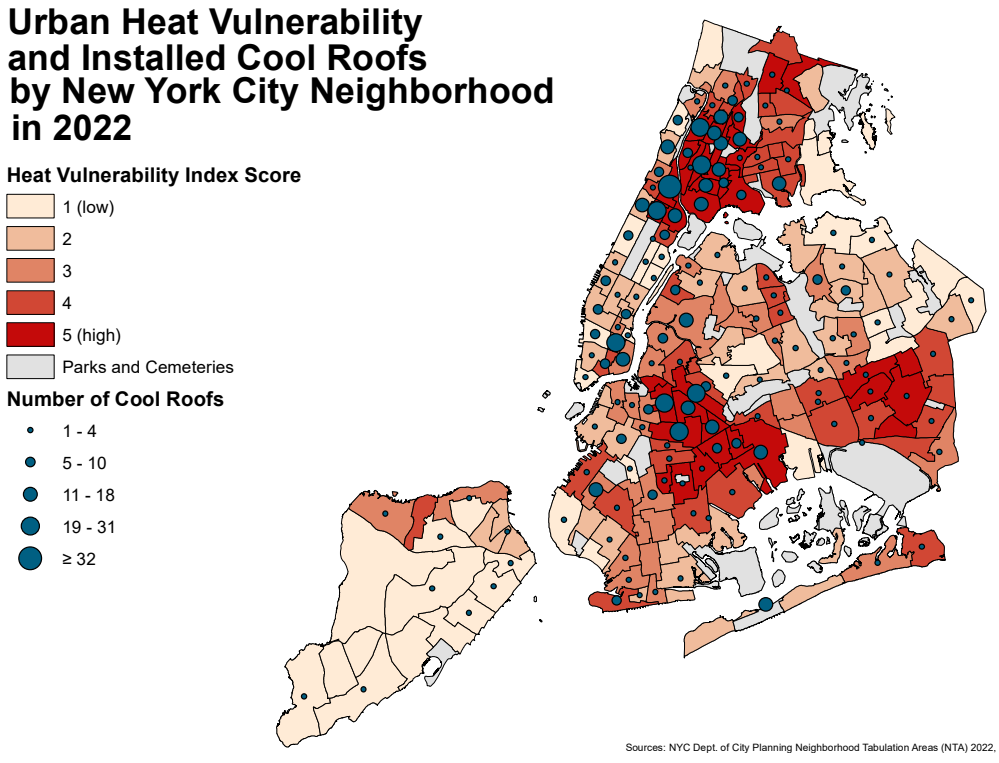
During heat waves, urban residents are exposed to higher temperatures than residents in suburban and rural communities (bit.ly/4fV5SFC). This is because of a phenomenon called the urban heat island effect, which is driven by cities having fewer natural landscapes and a higher density of structures with a low albedo (bit.ly/3ZlMryN). Low-albedo surfaces (asphalt roads, dark-colored buildings) absorb and re-emit the sun's energy as heat compared to natural and lighter-colored, high-albedo surfaces that reflect the sun's energy away as a mechanism of cooling (bit.ly/3BjulVS).

Within U.S. cities, neighborhoods predominantly occupied by racial or ethnic minority residents or low-income households experience worse urban heat island effect impacts during heat waves. These communities, often termed environmental justice (EJ) communities, have fewer parks and trees as a result of structural disinvestment from historical policies, such as redlining. Consequently, the highest hospitalization rates for heat-related illnesses, such as heat stroke, during heat waves are observed in EJ communities in U.S. cities (bit.ly/4giNkia). In response, U.S. municipalities are developing Heat Action Plans to identify and implement feasible solutions to mitigate the urban heat island effect, especially in EJ communities.

The highest hospitalization rates for heat-related illnesses, such as heat stroke, during heat waves are observed in environmental justice communities in U.S. cities.

In multiple U.S. cities, roofing interventions are prioritized policies to reduce the urban heat island effect. In dense urban centers, like New York City, building rooftops comprise 20 percent of the land surface. Therefore, the three most common roofing interventions used to reduce urban heat in New York City are solar roofs, green roofs and cool roofs. Cool roofs are lighter, higher-albedo roof surface materials. Common materials include ethylene propylene diene terpolymer (EPDM) membranes, thermoplastic polyolefin (TPO) membranes and asphaltic multi-ply built-up membranes coated with white elastomeric acrylic coatings.

In New York City, cool roofs are the most widely implemented heat-reduction roofing intervention installed in EJ communities because of the lower cost of their installation and maintenance compared to green roofs. Cool roofs are installed through a community-partnered organization called NYC CoolRoofs, which uses a heat vulnerability index tool to identify heat-vulnerable EJ communities and offer low- or no-cost cool roof installation (climate.cityofnewyork.us/initiatives/nyc-cool-roofs).



A GIS map of the NYC CoolRoofs program shows how well the program has targeted heat-vulnerable environmental justice communities based on their heat vulnerability index score. The strength of the NYC CoolRoofs figure is enhanced when compared to the green roofs map of NYC shared in a recent article from The Nature Conservancy (see bit.ly/4eV2J7v).

Health Outcomes

Previous studies have shown that cool roofs can lower indoor temperatures by up to 5.9 degrees Fahrenheit during summer months (www.epa.gov/heatislands/using-cool-roofs-reduce-heat-islands), decrease the ambient temperature around buildings by up to 2.2 degrees Fahrenheit (bit.ly/41gTxqF), reduce energy use and costs for air conditioning, and extend the lifespan of roofing materials and HVAC systems. Notably, evidence regarding the potential for cool roofs to increase cold-related mortality during winter months remains inconclusive. Prior studies examining the potential heat-health benefits of cool roofs are limited. These studies solely focus on modeled reductions in heat-related mortality counts aggregated to the city-level, based on estimated reductions in the urban heat island effect with cool roof installation.

Data from municipal programs, such as NYC CoolRoofs, provide an opportunity to examine the potential impact of cool roofs on heat-related health outcomes in vulnerable populations by leveraging observational health data in natural experiments. Natural experiments are study designs that are used to evaluate the health impacts of an intervention that is not under the control of the researcher. These designs are useful tools that improve the rigor of observational studies in ways that enhance one's ability to infer a causal relationship may be present between an intervention and health outcome.

Data-driven approaches to centering health and health equity in climate resiliency policy have numerous benefits. Working with municipal and community partners, a natural experiment study will be performed, examining the potential heat-health benefits of cool roof installation in New York City in children living in EJ communities.

The research is funded by two translational research grants from the New York University Collaborative Center in Children's Environmental Health Research and Translation Program, which is a National Institutes of Health-funded program. A translation partner is the Smart Surfaces Coalition (smartsurfacescoalition.org), which is overseen by Greg Kats (formerly of the U.S. Department of Energy). The study design is retrospective, studying 2016-22, and results should be published by the end of this academic year.

Because of their feasibility, cool roofs are an urban heat mitigation and adaptation intervention that is scalable to global cities across diverse economic and climatic contexts. The study's goal is to generate evidence that highlights the importance of centering health and health equity in shaping municipal heat-reduction policies based in built environment interventions.

PHOTOS: Thermal-Tec

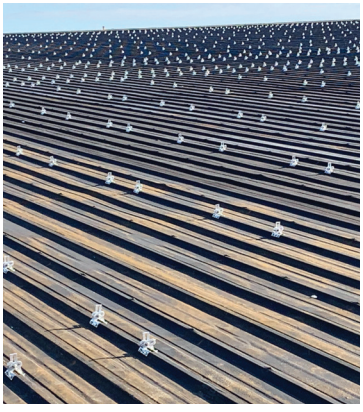
Monolithic Wrap

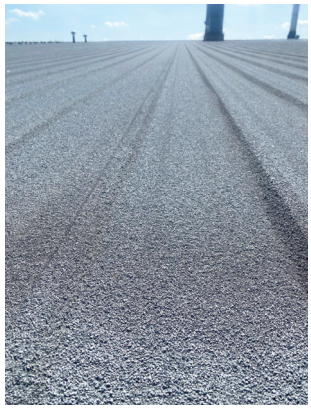
A Manufacturing Plant's Leaking Roof Is Coated with an Asphalt-based System Concurrent with Photovoltaic Installation

This Midwestern pre-engineered steel building featured 10 building additions, resulting in differing metal sections moving independently from each other. The movement creates recurring friction at multiple connection points, ultimately leading to the leaks the client was experiencing.

The asphalt-based MR Multi-Ply Roof System by Thermal-Tec was chosen not only for its waterproofing protection but also because just 12 to 14 ounces of asphalt would be applied per square foot. The system can be reapplied as needed, many times over, while adding minimal weight. The plant already had significant weight on its roof from an extensive exhaust system necessary for manufacturing. A considerable amount of additional weight would be added by a photovoltaic array that would be installed while the MR Multi-Ply Roof System was applied.

Each of the 10 building sections was addressed by Thermal-Tec separately because of the differences in roof-to-wall junctions and transitions from one building to the





next. Thermal-Tec crews worked around the exhaust system, spanning nearly 14 acres of the roof. Many of the exhaust and stack connection points showed signs of accelerated metal degradation, and panels were replaced.

The installation process effectively laminates the new roof system to the existing collection of metal panels while adding 80,000 to 100,000 pounds of tensile strength (per square foot) to the roof. The system begins with a primary layer of specially formulated asphalt that is sprayed directly onto the metal panels, followed by a polyester membrane applied to the wet asphalt.

Crew members then "broom down" the membrane so it adheres directly to the panels. The sprayer then returns to apply another thick layer of specially formulated asphalt to seal the membrane and blend the joints to create a monolithic covering.

The asphalt is then left to cure for four to six weeks. During this time, the building goes through its everyday movement allowing the system to acclimate and tighten as it cures.

Traditionally, once this first phase of installation is cured, the crew returns to apply a fresh layer of the asphalt followed by an off-white ceramic roofing granule.

However, for this unique project, the photovoltaic company installed its mounting system at this point. Once placed, Thermal-Tec crews returned to perform the final phase of the roof system installation. The crew waterproofed approximately 14,000 solar brackets. The final phase was installed/adapted within the precise grid, having a plus or minus of less than 3/16 of an inch (long/latitudinal) and spanned more than 12 acres of roof. A white granule then was applied for an attractive aesthetic contrast to the black solar array.

The entire system, including materials and labor, is warranted and will be serviced by Thermal-Tec crews for the duration.

Asphalt-based Roof System Manufacturer and Installer:
MR Multi-Ply Roof System from Thermal-Tec,
www.thermal-tec.com

PHOTOS: Andrea Calo unless otherwise noted

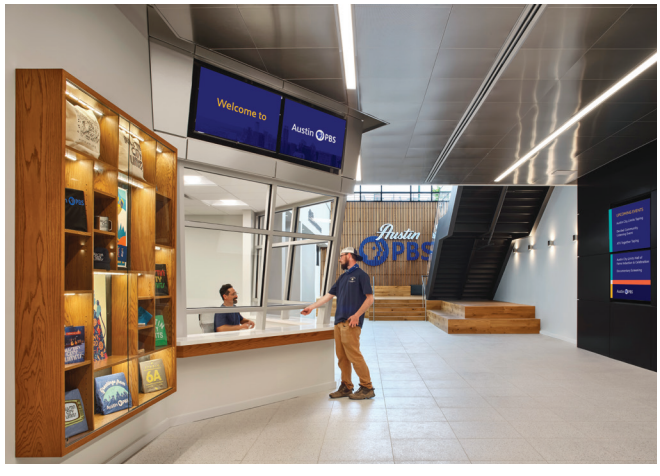
State-of-the-art Public Broadcasting

Austin PBS Boasts Some of the Most Advanced Design and Television Technology in the Country

By Amy Bramwell, AIA, RID

The design and planning for a state-of-the-art facility for Austin PBS began in 2017. Austin PBS had been ensconced in the communications building on the University of Texas (UT) campus since the 1970s but had long outgrown that set-up. With staff spread throughout the building, collaboration was difficult and even the fabled Studio 6A—the birthplace of the Austin City Limits TV show—had reached, well, its limits. Lack of storage, flexibility, and significant egress issues hampered its functionality and accessibility. The on-campus location also meant inconvenient parking for visitors and lack of a public-facing presence.

Given the choice to become absorbed fully into UT or join the Austin Community College (ACC) communications department, Austin PBS opted to move to the ACC facility at Highland, where it would have almost 40,000 square feet of office space in the entire bottom floor of the former Highland Mall Dillard's department store.



Onsite community outreach was a major priority for the station, so the double-height lobby with its ample natural light (left) doubles as pre-function space.

A Challenging Start

Highland Mall, built in the early 1970s and closed in 2014, was purchased by ACC to be redeveloped into its flagship Austin Campus. The former Dillard's was slated to be the headquarters for a tech company, and demolition of the building's exterior skin had been completed before the project was canceled in 2017, leaving the steel structure of the building exposed.

The 4-story steel skeleton was a clean slate for the new PBS headquarters to be planted on the partially subterranean first floor. ACC's consulting structural engineer determined the existing steel shell structure was sound and could remain with proper care. The steel was carefully cleaned of rust and protected from further deterioration. The concrete slab was leveled and infilled where needed. An existing loading dock with multiple overhead doors for the department store was removed and became the point where the existing building

BEFORE PHOTO: courtesy Studio Steinbomer

A community room that can be used for classes and meetings is available for rent, and technology used throughout the public spaces communicates the facility's role in fostering dialogue.

would meet the addition that includes three new TV studios and their respective control rooms.

With the studio and office interiors in the hands of Austin architecture firm Studio Steinbomer by the summer of 2019, the building was under construction, but progress was delayed by COVID. Then, in February 2021, mere weeks before opening, the great Texas freeze caused a pipe to burst, flooding the entire interior and forcing the team to nearly begin again. Most wall and floor finishes had to be removed to dry out and mitigate moisture issues. Damaged furniture and electronic equipment were replaced. And any building component that could have been compromised by moisture was examined for defects. Moving through this process and putting everything back together added almost another year to the process.

State-of-the-art Tech

The facility's three TV studios allow Austin PBS to increase its live music tapings and produce other existing and future shows through a more flexible and efficient setup. One TV studio replaces Studio 6A as a live audience and community outreach venue. The 6,500-square-foot space has retractable

Interior finishes are a mix of bright colors, natural warm-wood tones and touches of biophilia simulating the colors of nature.

seats and rigging that drops to the ground to ease changes in configuration from live music to town halls and other productions. The other two studios accommodate non-audience programming, such as "Central Texas Gardener".

With the three TV studios sharing walls with workspaces, acoustics and sound deadening were of primary importance. To that end, the facility includes some of the most advanced technology in the country. Studio 6A has a floating slab, a silent air conditioner and highly absorptive materials as required for live recordings. Essentially a shell within a shell, a meeting in the adjacent conference room will not be disturbed from a live music performance on the other side of the wall.

With the three TV studios sharing walls with workspaces, acoustics and sound deadening were of primary importance. To that end, the facility includes some of the most advanced technology in the country.

The facility also is the first 12-gig digital broadcast network facility for public television in the U.S. To highlight this state-of-the art technology, the architects opted to put the building's complex nervous system—300 miles of cable—on display by housing it in customized channels.

An Inspiring and Inspired Workplace

The awkward workspace configurations over several floors in the old facility often meant employees were physically separated from each other. The new space provided the opportunity to create a new way for the Austin PBS team to work together. Studio Steinbomer studied the interactions between team members and provided test-fits of office interiors to ensure the designs aligned with staff needs and visions for collaboration. For example, departments that worked together but had previously been separated by multiple floors were placed in close proximity, allowing for more efficient workflow. In addition, ample conference spaces allow for easy internal collaboration, as well as the ability to host community events.

The staff of 60 shares the first floor of the 4-story building with the ACC communications department, which creates a

One 6,500-square-foot live audience TV studio has retractable seats and rigging that drops to the ground to ease changes in configuration from live music to town halls and other productions.

The architects employed whimsical and industry-specific details, such as On Air lights indicating occupied bathrooms.

To highlight that this is the first 12-gig digital broadcast network facility for public television in the U.S., the architects put the building's complex nervous system—300 miles of cable—on display.

symbiotic relationship and can easily and seamlessly provide internship and work experience programs for ACC students on campus.

Stewardship of the budget was a priority for the non-profit and, by necessity, a large portion of the budget was allocated to the complex technological needs. However, with a significant portion of the workspaces partially subgrade, the lighting scheme became a critical design aspect. To mitigate the feeling of being underground, the quality of light mimics skylights and the movement of the sun, creating circadian rhythms that allow people to sense the time of day via the lighting.

Interior finishes are a mix of bright colors, natural warm-wood tones and touches of biophilia simulating the colors of nature. To enliven the offices, staff spaces and public areas, the architects employed whimsical and industry-specific details, such as test pattern-inspired stripes on walls and On Air lights indicating occupied bathrooms.

Public Outreach and Education

Onsite community outreach was a major priority for the station, so the double-height lobby with its ample natural light doubles as pre-function space. A community room that can be used for classes and meetings is available for rent, and technology used throughout the public spaces communicates the facility's capabilities and role in fostering dialogue and connection.

In addition, ACC's presence in 11 central Texas counties aligns with Austin PBS's regional coverage area, which rekindles PBS's focus on education and carries the station's legacy forward as it begins a new episode in its story.

Retrofit Team

Architect of Record, Design Architect (Level One and Addition Interiors): Studio Steinbomer, www.steinbomer.com

- Amy Bramwell, AIA, RID
- Abby Hirons, AIA
- Ben Johnson
- Mai Gutierrez

Owner: Austin Community College, www.austincc.edu

Developer: RedLeaf Properties, www.redleaf-properties.com/highland.html

MEP Engineer: Bay & Associates Inc., baymep.com

Structural Engineers: Cardno, now IMEG, imegcorp.com, and Tsen Engineering, www.tseneng.com

General Contractor: Rogers-O'Brien Construction, www.r-o.com

Construction Manager: PMA, www.pmainc.com

Acoustical Designer: Steven Durr Designs, www.stevendurr.com

Theater, Stage Consultant: Schuler Shook, schulershook.com

Materials

Acoustical Metal Ceiling: Armstrong World Industries, www.armstrongceilings.com

Linear Panel Ceiling System: Barz, Ceilings Plus from USG, www.usg.com

Sound-control Doors: IAC Acoustics, www.iacacoustics.com

Ceiling and Wall Vibration Control: Kinetics Noise Control, kineticsnoise.com

Sound-absorbing Wall Units: ECOSE from Knauf, www.knaufnorthamerica.com; Guilford of Maine, www.guilfordofmaine.com; and Carnegie, carnegiefabrics.com

Aluminum-framed Entrances, Storefronts: Tubelite, tubeliteusa.com

Linoleum Flooring: Forbo, www.forbo.com

Surfaces: Cambria, www.cambriausa.com, and Silestone, www.cosentino.com/usa/silestone

Theater Lighting Controls: ETC Inc., www.etcconnect.com

Epoxy Floor Coating: Sika Corp., usa.sika.com

Retractable Seating: Seda, sedasport.com

Old Bones, New Vision

A 100-year-old Warehouse Is Converted into Creative Offices

By Sarah Keithly, RID, IIDA

PHOTOS: Gabe Ford unless otherwise noted

Cooper Carry's interior design pays homage to the building's rich history of producing paper and burlap bags, including dog- and cat-food bags.

BEFORE PHOTO: Cooper Carry

In the 1900s, the Werthan Mill Warehouse in the historic Germantown neighborhood of Nashville, Tenn., was a bustling manufacturing plant, producing paper and burlap bags. Originally home to the Tennessee Manufacturing Company, Werthan Mill Warehouse was once the largest of three cotton mills in Nashville. More recently, the 60,000-square-foot warehouse produced cat- and dog-food bags for prominent brands. Now, the century-old warehouse has a new purpose, serving as creative office space for like-minded companies.

In 2021, META Real Estate Partners acquired the warehouse, intending to convert it into office space for one user. After a rigorous conversion process, the large open space posed leasing challenges, especially as many employers transitioned to smaller-format office spaces and hybrid work schedules. National design firm Cooper Carry was then brought in to transform the aged warehouse into nine Class A creative office suites ready for immediate occupancy. The interior fit-out of the adaptive-reuse building proved challenging but ultimately successful with interest from several office tenants.

Diving into the Design

In 2021, a local firm led the architecture for the repositioning of the warehouse. The firm preserved the original bow-truss

Full-sized windows maximize natural light, which reduces the need for overhead lighting and boosts worker morale. Garage doors open to the outside, bringing in fresh air and sunlight.

roof and added a soaring 2-story atrium lobby. The rehabilitated exterior features numerous doors. Several existing artifacts from the heyday of the warehouse were thoughtfully repurposed as sculptural, graphic and furniture elements throughout the interior and exterior of the building.

In 2024, Cooper Carry completed the interior fit-out for Werthan Mill Warehouse. The firm's interior design pays homage to the building's rich history of producing materials, such as paper and burlap bags, as well as printed Meow Mix and Puppy Chow bags. This history served as inspiration for the color palette and organic textures and materials incorporated throughout, such as wood, leather and burlap-like wallcoverings. Ink stains and warehouse indicators were exposed, and upcycled magazines act as wallcoverings, a nod to the warehouse's printing history.

Historic features, including the concrete floors, numbered columns and fire standpipe, were preserved, serving as another subtle tribute to the building's past. Strategic lighting was implemented to accentuate the original brick and exposed ceilings.

META Real Estate Partners enlisted local artist Tess Davies for interior murals. Gracing the hallways, the abstract shapes and lines of the murals foster creativity and inspiration. The color palette of rich greens, yellows and browns is emblematic of the history of the building. On the exterior of the former warehouse, muralist group Eastside Murals completed a reenactment of on-the-job warehouse workers. The thoughtful art brings life and warmth to the weathered building.

Werthan Mill Warehouse stands as a testament to the value of embracing history as a foundation for future development.

Because of the building's layout, the Cooper Carry team encountered some unleasable space off the main corridor. The area was internal, narrow, backed up to the mechanical equipment and had a grade change. The team transformed the lower portion (with the taller ceiling) into a training room that could be utilized by any tenant. The upper portion now is a cozy co-working space with faux plants, leather-upholstered booths along the window, a TV, fireplace and nano-market. The nano-market, which is tucked away behind the fireplace, is an open-concept mini store stocked with fresh food and drinks. The interior wall in the common lounge features a burlap-look wallcovering with warm industrial sconces. These shared amenities provide cost efficiencies for office tenants and help boost productivity by providing more flexible places to work, a feature that is paramount in today's office landscape.

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Shared amenities provide cost efficiencies for office tenants and help boost productivity by providing more flexible places to work, a feature that is paramount in today's office landscape.

Werthan Mill Warehouse is located within Nashville's historic Germantown neighborhood, which is known for its industrial heritage and blend of old and new.

Sustainability also was a key factor in the redesign. In addition to the inherent sustainable benefits of an adaptive-reuse project, measures were taken to promote health and wellness. The full-sized windows maximize natural light, which not only reduces the need for overhead lighting but also boosts worker morale. Garage doors open to the outside, bringing in fresh air and sunlight. The biophilic design incorporates lush planters throughout, bringing more life to the former industrial hub.

Historic Neighborhood

Werthan Mill Warehouse is located within Nashville's historic Germantown neighborhood, which is known for its industrial heritage and blend of old and new, where Victorian homes stand alongside contemporary restaurants and retailers.

Set within the mixed-use Taylor Place master development, the creative office building is surrounded by new construction and historic preservation. For example, the new 602 Taylor Place is a 2-story commercial building, offering 18,700 square feet of office and retail space. The development also includes two new multifamily buildings and a parking garage. The first residential building, The Hamilton, provides 85 apartment units; the second, Hume House, includes 245 units. The natural pedestrian extension of 6th Avenue connects residential and commercial uses across the site.

Werthan Mill Warehouse is currently available for lease with Colliers International representing ownership. Thrive AP, an advanced practice continuing education services provider, has established its headquarters and educational training facility at the building, leasing 4,450 square feet. Office users are attracted to the flexibility, historical relevance and walkability of the project.

The Significance of Adaptive Reuse

The story of Werthan Mill Warehouse underscores the benefits of adaptive reuse in urban development. By repurposing

Gracing the hallways, murals' abstract shapes and lines foster creativity and inspiration.

existing structures, adaptive reuse conserves resources and reduces construction waste, aligning with sustainability goals while preserving architectural heritage.

As Germantown continues to grow, Werthan Mill Warehouse stands as a testament to the value of embracing history as a foundation for future development. This adaptive-reuse project not only revitalized a significant landmark, but also reinforced the character and identity of Germantown, highlighting how old buildings can gain new life and purpose in a changing urban landscape.

As the office model shifts to creative workspaces, adaptive reuse becomes a frontrunner for workplace decision-makers. Although nearly a century old, the reimagined Werthan Mill Warehouse is at the forefront of the new era of the modern office workplace, offering Class A office space while being another chapter in the neighborhood's long history.

Retrofit Team

Interior Designer: Cooper Carry, www.coopercarry.com

- Scott Flemming, RA, principal-in-charge
- Craig Clark, project architect
- Sarah Keithly, RID, IIDA, project interior designer
- Harrison Novak, support designer II

General Contractor: R.C. Mathews Contractor, www.rcmathews.com

MEP, Structural Engineer: Genesis Engineering Group, geneng.net

Materials

Interior Architectural Glazing: DIRTT, www.dirtt.com

Carpet Tile: Bentley, www.bentleymills.com

Acoustic Wallcovering: FilzFelt, www.filzfelt.com

Training Room Wallcovering: Weitzner, www.weitznerlimited.com

Engineered Wood Flooring: Havwoods, www.havwoods.com

Acoustic Wood Ceiling Panels: Akuwoodpanel, akuwoodpanel.com

Decorative Metal Mesh: McNichols, www.mcnichols.com

Acoustic Ceiling Tile: Armstrong World Industries, www.armstrongceilings.com

Plumbing Fixtures: Kohler, www.kohler.com

General Linear Lighting: Lux Illuminaire, www.luxilluminaire.com

PHOTOS: Nels Akerlund Photography unless otherwise noted

Preserving Heritage, Inspiring Community

Woodstock, Ill., Leadership Rallies around the Old Courthouse Center for a Healthy Downtown

By Amanda Viale

The Woodstock Historic District in Woodstock, Ill., serves as the charming, community-centered backdrop to vibrant festivals and weddings. It even was the set of the movie "Groundhog Day". Upon entering Woodstock's main square, visitors are greeted by a central lawn surrounded by a variety of local businesses and the iconic Old Courthouse Center. Built in 1857 as the McHenry County Courthouse and Sheriff's House and Jail, the Old Courthouse Center was designed by Chicago's first architect, John Mills Van Osdel, and stands as one of his few preserved designs.

The Old Courthouse Center's history is filled with stories as colorful as the characters who once passed through its doors, including bootleggers, bank robbers and Chicago gangsters. The building itself also has had a remarkable journey. By 1972, the county had outgrown the courthouse, and it was put up for auction. A quick-thinking group of local investors intervened, adding it to the National Register of Historic Places and sparing it from demolition. During the next four decades, the Old Courthouse Center housed retail shops, art galleries and restaurants. However, by 2012, City of Woodstock leadership noticed the landmark was falling into disrepair and began searching for a solution to breathe life back into the building—and the community.

A Replicable Financing Model

Woodstock's leaders understood the Old Courthouse Center was too important to the fabric of the Woodstock Historic District and the identity of the community to allow its ongoing deterioration. Throughout 2016 and 2017, after the city of Woodstock took possession of the building, the city engaged Studio GWA, an architecture firm based out of Rockford, Ill., on the first phase of construction. This phase focused on stabilization: repair of the roof and subsequent damage caused by leaking, window repair and step restoration.

Once the building had been stabilized, city leaders explored options for development. Over three years, multiple scenarios were evaluated by a public-led commission and the city council,

During an exploration to understand the courtroom's original paintwork, the design team uncovered intricate stenciling hidden beneath a layer of canvas. The stenciling painstakingly was recreated layer by layer, entirely by hand.

BEFORE PHOTOS: Studio GWA

including options to divide the building and sell to qualified developers. Understanding that a vibrant courthouse was integral to maintaining a healthy downtown, the city ultimately decided that it should take ownership to better control the future of this public asset. Although it was still unclear what uses were appropriate for the building and how to pay for the rehabilitation, the city carried a vision that only those with intimate community awareness and pride could have.

Guidance on cost estimation and financial feasibility came from Studio GWA, which helped assess and structure a viable plan. Collaborating with financial and legal experts, the city established its own development entity, allowing it to lease space to private businesses while retaining the building as a public asset. This structure enabled the city to take advantage of $5 million in state and federal historic tax credits. Consequently, the City of Woodstock received the 2024 Excellence in Economic Development Gold Award and Best in Show from the International Economic Development Council for its innovative financing solution.

The financing approach required careful planning, leadership and due diligence, ultimately creating a replicable model for other public entities looking to preserve landmark buildings. By directly engaging in redevelopment, public entities can play a more active role in the preservation and revitalization of their civic assets.

Modern Modifications

In 2020, as restoration plans for the Old Courthouse Center progressed, it became clear that unique challenges lay ahead. Because the building is situated on a small lot and was not designed for modern energy systems, the courthouse required an innovative approach to meet current standards. Behind its 165-year-old walls, the building now operates with modern efficiency, powered by a state-of-the-art geothermal system.

The geothermal system's 41 in-ground wells absorb the ground temperature, staying stable at approximately 55 degrees. In turn, this energy transfers to the building's mechanical systems. The system is carbon-free and uses approximately 50 percent less energy than a conventional HVAC system and boasts a 50 percent longer life expectancy than conventional rooftop units. The City of Woodstock utilized a nearby parking lot to install the geothermal wells. This solution was twofold: It minimized the space needed for energy systems within the courthouse itself and transformed the historic structure into an energy-efficient asset.

Accessibility presented another unique design challenge. The Old Courthouse Center contains six distinct levels within its three stories, each featuring significant historical elements. To provide accessibility to all floors, the design team utilized a space between the main courthouse and jail, adding an elevator and stairwell while preserving sightlines

A walk-up cocktail bar features historic jail cells, which have been preserved in-place and repurposed for lounge seating.

to the courthouse's original features. When traveling through the stairs, visitors can stand eye-to-eye with the courthouse's second-level exterior brickwork and windows, a perspective previously impossible to gain.

Behind its 165-year-old walls, the building now operates with modern efficiency, powered by a state-of-the-art geothermal system.

Embracing History

On the second floor, an unexpected discovery brought new excitement to the hallway and events space. During an exploration to understand the courtroom's original paintwork, the design team uncovered intricate stenciling hidden beneath a layer of canvas—a stunning detail lost to time. A paint analysis consultant was brought in to reveal the era-specific colors and patterns, providing a glimpse into the courthouse's history. Although the original colors couldn't be replicated, the design team chose a color palette that harmonized with the building's preserved historical elements. Every inch of the stenciling was drafted to scale, then painstakingly recreated layer by layer, entirely by hand. The result is a breathtaking homage to the past that now adds artistry and authenticity to the courthouse's newly restored spaces.

Visitors can explore preserved details along with other connections to the past, including the hand-painted safe doors, judge's bench with witness stand and 1887 jail cells now outfitted for lounge seating. Outside, ornate end-gables and corbel-lined soffits provide a welcoming and beautiful exterior, further enhanced by the more than 50 new 9-foot-tall windows, new limestone stairs and new copper roof.

The City of Woodstock could have chosen to preserve the Old Courthouse Center as a museum with limited public engagement. Instead, leaders reimagined it as a vibrant centerpiece, anchoring the west end of the square with new energy, increasing foot traffic and bolstering local tax revenue. Today, the Old Courthouse Center is home to a lively array of community-oriented businesses, including a restaurant, the Woodstock Chamber of Commerce and Visitor's Center, two micro-retail incubator spaces nurturing local entrepreneurs, a crafting studio, Milwaukee-based brewpub with a production area and two taprooms, an incubator kitchen providing aspiring bakers with commercial resources, and a spacious 7,000-square-foot venue for weddings and events.

The City of Woodstock could have chosen to preserve the Old Courthouse as a museum with limited public engagement. Instead, leaders reimagined it as a vibrant centerpiece, anchoring the west end of the square with new energy, increasing foot traffic and bolstering local tax revenue.

The newly rehabilitated Old Courthouse Center owes its success to Woodstock's perseverance and dedication to

A room full of rock was discovered during the demolition phase. Dubbed the "Rubble Room", it now is a men's bathroom with rubble incorporated into the final design of the space.

the idea that the building is an integral part of the historic square, which embodies the city's spirit and belongs to the people. It is a place for the public to gather, celebrate and interact with their neighbors. "It is a building that reflects no small degree of credit on those who were employed in its consideration, and it presents, to those who approach this town, a most prominent and pleasing object." So announced the *Woodstock Sentinel* newspaper on Feb. 3, 1858, to the people of McHenry County, Illinois, when construction of the "Court House" was completed. Those words, spoken more than 165 years ago, hold true again after the completion of a $22 million rehabilitation of the pre-Civil War courthouse and its attached Sheriff's House and Jail.

Retrofit Team

Architect: Studio GWA, studiogwa.com

- Aaron Holverson, architect
- Erin O'Keefe, architect
- Gary Anderson, architect
- Emily Panzani, interior designer
- Ashley Sarver, historic tax credit consultant

MEP Engineer: Element Energy Consulting, www.element-co.com

Structural Engineer: Hutter Trankina Engineering, htedesign.com

Civil Engineer: Fehr Graham, www.fehrgraham.com

General Contractor: Bulley & Andrews, www.bulley.com

Owner: The City of Woodstock, Ill., www.woodstockil.gov

Materials

Paint: Benjamin Moore, www.benjaminmoore.com

Ceilings: Armstrong World Industries, www.armstrongceilings.com

Ceramic Tile: Daltile, www.daltile.com; Crossville, www.crossvilleinc.com; and Atlas Concorde USA, www.atlasconcordeusa.com

VCT Floor Tile: Armstrong Flooring, www.armstrongflooring.com

Vinyl Wall Base, Rubber Stair Treads: Roppe, roppe.com

Epoxy Flooring: Dur-A-Flex, www.dur-a-flex.com

Restroom Plumbing Fixtures: Sloan, www.sloan.com; American Standard, www.americanstandard-us.com; Elkay, www.elkay.com; Moen, www.moen.com; and Toto, www.totousa.com

Changing Tables: Koala Kare, www.koalabear.com

Restroom Accessories: WingIts, www.wingits.com; Bradley, www.bradleycorp.com; and Bobrick, www.bobrick.com

Toilet Partitions: Scranton Products, www.scrantonproducts.com

Engineered Surface: Wilsonart, www.wilsonart.com

Quartz: Corian, www.corianquartz.com, and Cambria, www.cambriausa.com

Brick: Glen-Gery, www.glengery.com

Air Barrier: Henry, henry.com

Exterior Paving: Belgard, www.belgard.com

Glass Guardrail: C.R. Laurence Co., www.crlaurence.com

Soffit Panel and Sheet-metal Roof Trim: Petersen, www.pac-clad.com

Roofing: Carlisle Syntec Systems, www.carlislesyntec.com

Foundation Waterproofing: W.R. Meadows, www.wrmeadows.com

Glazing: Viracon, www.viracon.com

Fire-rated Window and Doors: TGP, www.fireglass.com

Energy Recovery Ventilator: RenewAire, renewaire.com

Boiler: Lochnivar, lochinvar.com

Hydronic Systems: Taco Comfort Solutions, www.tacocomfort.com

VRV Systems: Daikin, www.northamerica-daikin.com

Snow-melt System: Watts, www.watts.com

Fire Sprinklers: Victaulic, www.victaulic.com

Fasteners: Simpson Strong-Tie, www.strongtie.com

Gypsum Board and Interior Insulation: CertainTeed, www.certainteed.com

Gypsum Board: Georgia-Pacific, www.gp.com

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She Persists

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Women Are Redefining Roles in the AEC Community

By Jim Schneider

It's no secret that construction is an industry that has long been identified with men. Much of the current built environment has been designed and built by white men, and that lack of diverse perspective in many ways defines cities and communities everywhere. Slowly but surely, that is changing. More women are entering the field and rising to positions of leadership in the AEC community.

The pace of change varies, depending on specialty. In the realm of architecture, women are quickly gaining ground. According to data (bit.ly/3D8Frxt) from the American Institute of Architects, the percentage of women in the architecture profession has increased from 16.1 percent in 2013 to 25.7 percent in 2023. In addition, the National Council of Architectural Registration Boards reported in 2023 that there is near gender parity at the entry point to the field with women representing two out of five new architects (www.ncarb.org/nbtn2023/demographics#:).

On the construction side, a shift is happening though perhaps not as quickly. The Office of the Under Secretary for Economic Affairs within the U.S. Department of Commerce reports the percentage of women across all roles in the construction industry has risen from 12.5 percent in 2016 to 14.3 percent in 2024. (Read the report at www.commerce.gov/bureaus-and-offices/ousea/spotlight-women-construction-industry.) When looking solely at construction employees with less than a bachelor's degree, the percentage of women drops to 9 percent. In raw numbers, the construction industry grew by 133,000 jobs between February and November 2024, but only one in seven of those jobs went to women.

> **"At Mortenson, we're all treated equally, and that's one of the things I appreciate. We try to take the approach of removing gender and focusing on how we do the job."**
>
> **— Kathy Freeman, safety director, Denver Operating Group, Mortenson**

Gender Gap

"Offices, teams and systems were designed for white men for many generations because it was this demographic who occupied these spaces. Slowly this is changing, and we are gradually accommodating other groups," says Mónika Serrano, resilience program manager at Turner Construction Co. and a 20-year construction industry veteran. "Construction is more gender diverse than it was decades ago, but it's not happening fast enough for my children to see a gender-equal real-estate sector by the time they are my age. You may see one or two women in a leadership team or a dozen. All companies are unique and there are some taking a stand and making major efforts."

Many initiatives now exist throughout the industry to open the doors to careers and leadership for women. One such example is the Department of Commerce's Million Women in Construction Initiative (www.commerce.gov/issues/million-women-construction-initiative), which seeks to double the number of women in construction in the next decade. Individual companies also are stepping up recruitment as part of a larger diversity, equity and inclusion effort.

"In some areas, progress has been made in terms of legislation and policies aimed at promoting diversity and reducing discrimination," says Tiffany D. Brown, M. Arch, MBA, NOMA, Assoc. AIA, executive director of the National Organization of Minority Architects. "There has been growing recognition of the importance of representation in various fields; however, it's also important to acknowledge there is still much work to be done. While progress has been made, systemic inequalities and discrimination persist in many areas, and some groups continue to face barriers and underrepresentation. The pace of change can vary significantly and progress may not be uniform across all sectors and industries."

There are many positive indicators that while the pace of change may not be happening as quickly as it could, it is happening. More companies large and small are taking action and demonstrating commitment to diversified workforces and leadership.

"At our firm, nearly half of the executive team are women," says Patti Mason, climate action strategist at DLR Group in Denver. "That reflects some of the progress we're making, but there is a lot of work to be done. Women are graduating at higher rates and entering the AEC industry in greater numbers than ever before, but I'd like to see even greater representation of women and people of color in all types of leadership roles."

"We have a lot of women in leadership roles, including our senior vice president," adds Kathy Freeman, Denver Operating Group safety director with general contractor Mortenson. "We have a Women's Leadership Group, where women who are directors and above get together once a year and discuss how can we continue to better the group and support each other."

GIRL Power

To effectively diversify any industry or workforce, barriers to entry need to be minimized and recruiting efforts broadened. Perhaps the first step is creating awareness among diverse groups that rewarding careers are indeed available to individuals who are not white males. That work starts early, which is an area where Colorado non-profit Transportation and Construction GIRL has taken bold action.

Dedicated to helping girls learn about financially sustainable careers in transportation and construction, the group is involved in numerous programs to promote construction careers to girls in high school, middle school and even elementary school. Each year, the organization hosts Transportation and Construction GIRL Day, which attracts construction companies and students from all around the state. The event features approximately 70 interactive exhibits by contractors and other construction industry companies, providing attendees a hands-on glimpse into real-life industry careers. (Learn more at constructiongirl.org.)

"The industry has been increasingly acknowledging the importance of diversity, equity and inclusion," says Keller Hayes, founder and director of Transportation and Construction GIRL. "There is growing recognition that embracing DEI is not just a social or ethical imperative, but also a business strategy that can lead to improved outcomes in terms of innovation, productivity and workforce retention. We still have some long-held stereotypes about only men work in this industry. In our programs, we continually hear girls say, 'I could do this?' Girls need to know it is a possibility to pursue this as a career."

> "There is growing recognition that embracing DEI is not just a social or ethical imperative, but also a business strategy that can lead to improved outcomes in terms of innovation, productivity and workforce retention."
>
> —Keller Hayes, founder and director, Transportation and Construction GIRL

Strength in Diversity

Although more women are being drawn to the AEC industry, true change and gender parity will take attention and effort at all levels. The women working today and in the previous decade have built a strong foundation for those still to come.

"The future of diversity in the profession rests with leadership in firms themselves, which we know is not historically diverse," Brown says. "Those who are currently in leadership

PHOTOS: Transportation and Construction GIRL

Dedicated to helping girls learn about financially sustainable careers in transportation and construction, Transportation and Construction GIRL promotes construction careers to Colorado girls from elementary to high school.

roles should use their positions to promote diversity by seeking out and employing a diverse workforce. Together, as individuals, let's begin to explore and dismantle the barriers set in place so long ago. Let's commit to rebuilding equitable structures at all levels. By pairing diversity in leadership with the removal of systemic barriers, the industry can take the necessary steps forward."

"There are great careers in construction and women are showing up to help transform the industry and the way we design, build and operate buildings," Mason says. "Women are represented in the movement to decarbonize buildings in greater numbers than men. I see that so strongly in our engineering and smart-buildings teams. Our team exploring data and analytics for high-performance buildings is predominantly women. I think that sustainability has absolutely made it feel like women can find a home in this industry … have a great career that aligns with some of the values that we have. Where the work must happen is keeping women in these firms and getting them to the next level of leadership, including opportunities beyond sustainability."

"Increased profitability is tied to enhanced diversity, but there are also other unexpected benefits," Hayes explains. "One female electrician was promoted quickly because she had better soft skills. Another got to be on more jobs because she was smaller and could fit in places her male coworkers struggled with. I also believe that more women in the industry pushed the discussion of work-life balance, which benefits men, as well. Bringing different perspectives to problem-solving can only improve solutions."

"It's amazing to see all the women who are up and coming in the industry," Freeman remarks. "It means everyone being an advocate for each other. Not just women to women, but men to women, as well. At Mortenson, we're all treated equally, and that's one of the things I appreciate. We try to take the approach of removing gender and focusing on how we do the job."

What needs to be done in the AEC industry to foster greater equity reflects society at large. Progress starts with individuals and grows throughout societies, systems and cultures.

"Creating a more open and diverse profession is about cultural changes and those are possible but hard," Serrano notes. "Cultural changes challenge the very essence of who we are, our values, stuff we learn when we were children, the roles we were taught men and women play in society. It takes conscious willingness to change all the way from firms' leadership and establishing commitments to implementation and speaking up when something unacceptable happens on a construction site or in a conference room. The more diverse a group is, the stronger it is. Diversity of gender, backgrounds, age, race, abilities, etc., produces better results, manages risks and represents our society better, producing a built environment that benefits everyone."

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PHOTO: Offbeat Productions

‘The Fabric of Bell’

Recycled Cables Celebrate a Building’s Rich History

Bell Works is the reimagination of the historic former Bell Labs building in Holmdel, N.J. Today, the building is a one-of-a kind destination for business and culture, complete with a blossoming ecosystem of technology, traditional offices, retail, dining, hospitality and much more.

Paola Zamudio of npz studio+ wanted to celebrate and honor the building’s rich history of innovation through art. As the lead designer and creative director of Bell Works, she brought in friend and New York-based artist Sebastien Courty for an unforgettable project, “The Fabric of Bell”.

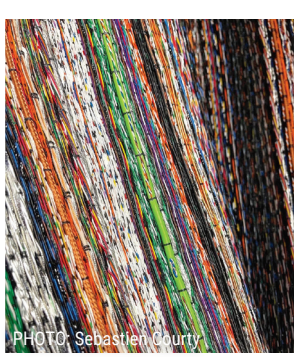

PHOTO: Sebastien Courty

Inspired by and commemorating the historic Bell Labs, which was awarded eight Nobel Prizes during its tenure, “The Fabric of Bell” is an innate expression and tribute to Eero Saarinen, the architect of the lavish building.

“The Fabric of Bell” is centrally located in the building’s atrium. It is composed of 95 percent recycled cables from the original Bell Labs. Thick copper cables and thicker aluminum cables, varying in widths and bursts of bright colors were used to create a dynamic visual effect. The cables were cut and split into smaller yarns, then handwoven inter alia on separate panels using a 36-inch floor loom. They then were stretched onto eight wooden boards. To permanently protect the pieces, each panel surface was coated with a clear crystal resin layer.

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