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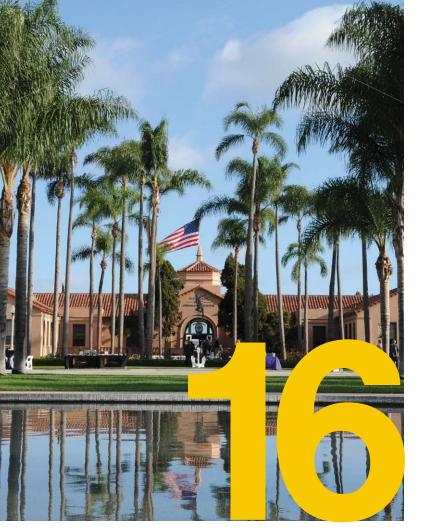


Explore the new NPF at Navieninc.com.









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→ feature projects

THE ANCHOR OF SAN DIEGO

A former Naval Training Center now is a dynamic blend of commerce, art and history.









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PERUSE RETAIL FACILITIES FROM ACROSS NORTH AMERICA:

- Birch & Broad, Falls Church, Va.
- Tower Shops at Mountain Mile, Pigeon Forge, Tenn.
- Grace in the Kitchen, Kanata, Ontario, Canada
- Panda Express, Philadelphia



+ cover

COVER PHOTO: COURTESY LIBERTY STATION

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Special Report

UP. UP AND AWAY

In 2021, Congress passed the Bipartisan Infrastructure Deal, promising to repair and expand transportation options for Americans (among other things). Three disparate transportation facilities showcase innovative upgrades already occurring across the nation.

Component

EMBRACE THE QUIRKS

Simple acoustic treatments were all that was needed to transform a former fermentation plant into a contemporary art space in Bentonville, Ark.



Transformation

CHARMING AND SWEET

A beloved bakery is reimagined within prominent downtown commercial buildings as part of a Michigan village's master plan.



Transformation

POWERFUL EXPRESSION

An abandoned Brooklyn power station serves as fabrication space for artists while honoring the building's history.

Historic

LEGAL PRECEDENT

A dedicated team respectfully renovates and expands a historic federal building and courthouse in Charlotte, N.C.

Trend Alert

IT'S ELECTRIC!

Decarbonization depends on renewable energy and electrified buildings.



COLUMN

POINT OF VIEW // The retail landscape has changed and offers more than ever before.

DEPARTMENTS

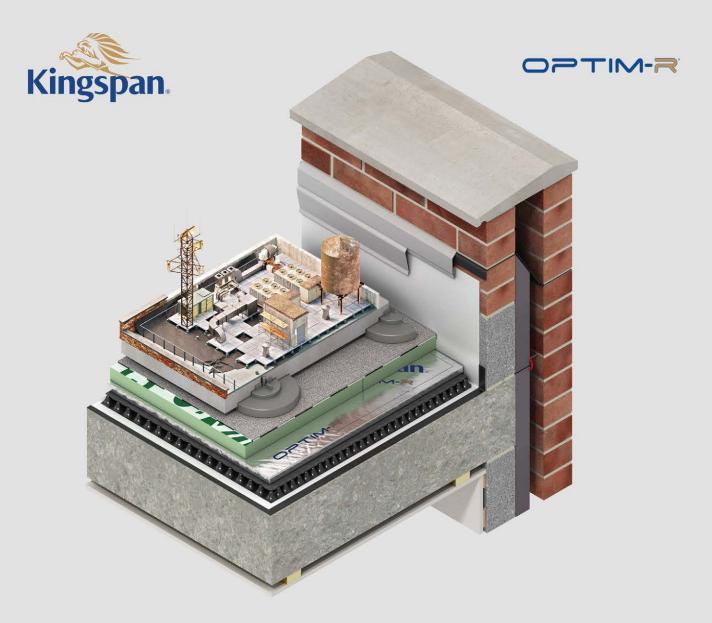
PRODUCTS // View a roundup of the latest materials and systems for the industry.

INSPIRATION // Chicago's longest-operating food pantry incorporates trauma-informed principles into its highly visible location.



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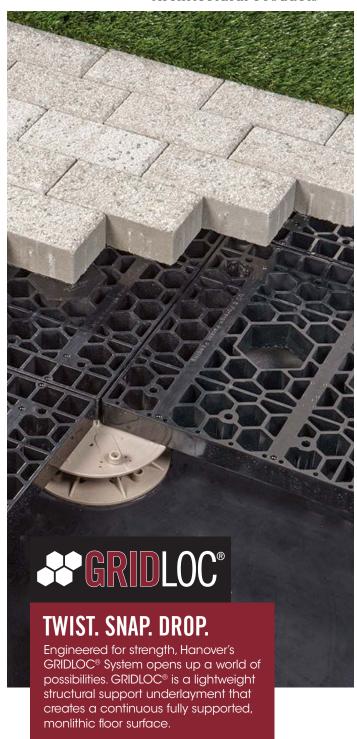


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ontoview



RETAIL ATTRACTION

As part of my family's move to Omaha, Neb., I joined several local Facebook groups (like restaurant reviews and moms in the know) and my NextDoor neighborhood group to ensure I'm aware of the happenings in my new community.

Not long after we moved, my daughter Clare's new dance studio shared a post on Facebook from its neighbor, a baker who had gone from baking in her home to a brick-and-mortar store and was struggling to keep the store operating. The baker's heartfelt message, asking for business to support her dream, won me over-along

with the positive review from our dance studio about the baker's sweet treats. For Clare's sixth birthday, I ordered threedozen cupcakes in four flavors from this bakery-without having ever tasted anything made there. I just wanted to support this woman's dream. The Omaha moms' group I follow also shared the baker's post and soon her shop was overrun with business—to the point the baker almost couldn't keep up with the orders! That's one positive for the power of social media—and another indicator that the days of brick-and-mortar shopping are not behind us, though they are different.

In this issue of retrofit, we underscore retail's changing landscape with some enticing retail facilities that are destinations themselves or part of a larger draw for their communities. For example, Mackenzies Bakery in the small Michigan village of Vicksburg captured my attention, not only because of its charming artifact-centric design within an existing storefront on a main thoroughfare, but also because its visionary created the bakery to pair with The Mill at Vicksburg, a former paper mill currently undergoing a \$100-million-plus retrofit to become a mixed-use attraction. The goal is for the mill, once it opens, to send business to the bakery, which is profiled in "Transformation", page 40, and to other businesses in town.

Our "Cover Story", page 16, showcases Liberty Station, which is a destination unto itself. The 550-acre site began as San Diego's Naval Training Center in the 1920s. Officially closed in the 1990s, the city initiated the transformation into Liberty Station, which features more than 1.5 million square feet of shops and restaurants and more than 100 acres of open space and promenades. Not only can you dine and shop at Liberty Station, but you can also take historic tours and explore the Arts District, which features local artists' sculptures, murals and more.

These retail attractions, along with the others in this issue, have inspired me to get out there and explore my own city's retail destinations, as well as take a family trip: I've been wanting to visit the Great Smoky Mountains with my family for some time; The Tower Shops at Mountain Mile would be another great way to spend a day in the area! See page 26.

Don't get me wrong: I still do a large part of my shopping online because of the sheer convenience of it. When you're working; managing a household; and running a kiddo to swim lessons, dance and school events, it's just easier to put items in an Amazon cart and expect them on your doorstep in a day or two. But I've learned there are instances when I need the tactile experience of shopping in a brick-and-mortar store and if that store offers other amenities to entertain my husband and kiddo while I make my purchasing decisions, it's a win for all of us!

CHRISTINA KOCH

Associate Publisher/Editorial Director retrofit











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CONTRIBUTING WRITERS



Laurie Albrecht is director of Liberty Station, San Diego's former Naval Training Center that has been transforming into a dynamic blend of commerce, art and history since 2000. Now near completion, Liberty Station is a testament to adaptive rehabilitation with more than

365 acres of carefully curated spaces. Read about it in our "Cover Story", page 16.



Founding Partner of Threshold Acoustics LLC, Carl P. **Giegold**, FAIA, has learned that sometimes working with a building, rather than attempting to cancel or overcome its acoustic character, best addresses the needs of its community. This was the case for The Momentary, a contemporary art space in Bentonville, Ark. Learn about the simple acoustic treatments used within this

former fermentation plant in "Component", page 36.



Rebecca Luong is the director of design for Paper City Development in Vicksburg, Mich., where she is participating in several adaptive-reuse projects designed to make Vicksburg a destination. One such project, appearing in "Transformation", page 40, is Mackenzies Bakery, the reimagining of a beloved but shuttered bakery within existing storefronts on a main thoroughfare.



As an architect in New York City for more than 30 years. **James Seger**, AIA, has an appreciation for the city as an ever-evolving organism, full of opportunity but in need of caretaking. His passion is showcased in Powerhouse Arts, a former Brooklyn Rapid Transit Power Station turned fabrication space for artists. Seger's team updated the facility while embracing its

history, including its time as an outlet for underground society. Read the story in "Transformation", page 44.





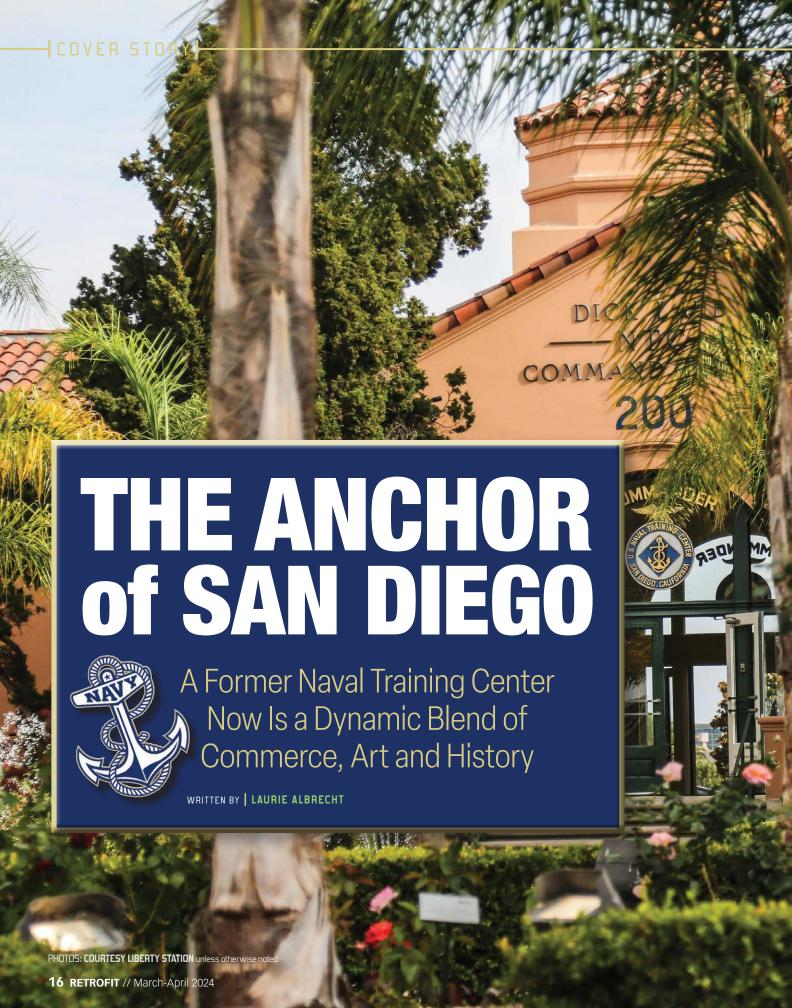
Grant F. Marani (left), AIA, LFRAIA, and **Kevin J.** Kelly, AIA, are partners with Robert A.M. Stern Architects. Marani was the partner in charge of the preservation and expansion of the historic

Charles R. Jonas Federal Building and Courthouse in Charlotte, N.C., while Kelly helped lead the project. The pair share their experiences in "Historic", page 50, explaining how the team more than doubled the size of the existing courthouse and added important security measures while respecting its storied past.

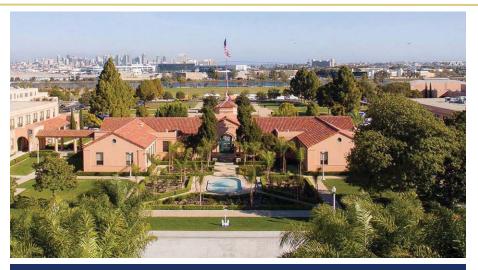
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an Diego's Liberty Station is a living testament to the city's history, offering a portal to the past, an immersive experience in the present and a promise for the future. The transformation of Liberty Station, formerly San Diego's Naval Training Center (NTC), marks a significant chapter in the city's narrative, and its restoration process provides a meaningful glimpse of a destination's revitalization and celebration of history.

Liberty Station's roots extend deep into military tradition, tracing its origins to 1923 when it welcomed its first Navy recruits. Under President Franklin D. Roosevelt, the property saw substantial growth with new buildings added, tripling the center's size during World War II, making it a pivotal military resource for national defense. The NTC marked another milestone in May 1943 when it welcomed its first female recruits, contributing to its rich history.

The architecture of Liberty Station, crafted in the Spanish Colonial Revival

style with a scaled-down approach, provides a captivating glimpse into the past and solidifies Liberty Station's status as a centerpiece of historic San Diego, preserving its heritage for future generations. Thanks to the influence of Architect Bertham G. Goodhue's work, the buildings at Liberty Station connect to landmarks across San Diego and Southern California, such as Balboa Park.

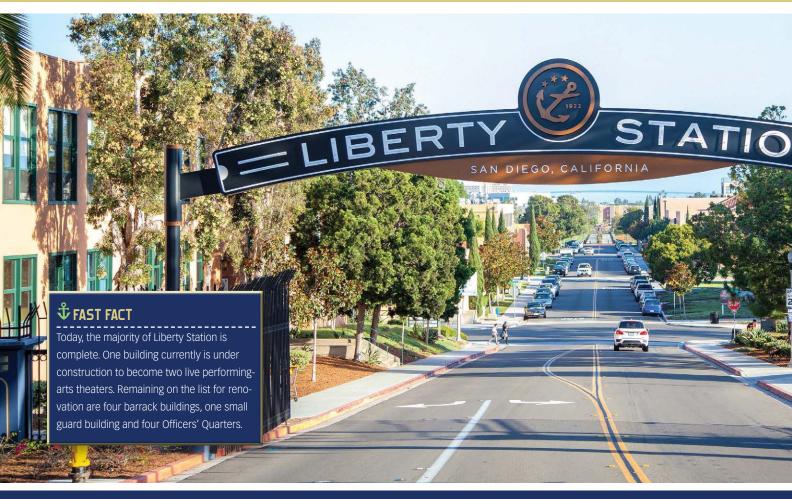
The base, initially spanning 235 acres, expanded to 550 acres, featuring 300 buildings and approximately 3 million square feet of space. Over the years, more than 1.75 million recruits and 1 million A and C school sailors graduated from the NTC. As the Cold War concluded, the Navy gradually scaled down its activities at NTC, leading to its official closure in 1997. The City of San Diego took ownership of the property in 2000, initiating the transformative process that would birth the current community hub that is Liberty Station.

LIBERTY STATION'S ARCHITECTURE.

crafted in the Spanish Colonial Revival style with a scaled-down approach, provides a captivating glimpse into the past and solidifies Liberty Station's status as a centerpiece of historic San Diego.

▼FAST FACT

During the renovation, the team unexpectedly uncovered a full-size swimming pool under an administrative building. The pool was covered again and now is under a Fitness Studio. The original plans for the administrative building next to the Command Center showed a pool area for commanders. However, plans likely changed after Pearl Harbor to accommodate more office space.







REPURPOSED FOR SIMILAR ACTIVITIES

Following its closure, the National Park Service recognized the historic portion of NTC San Diego, listing it on the National Register of Historic Places. This designation preserved 49 buildings, constructed between 1921 and 1949, ensuring that the property's historical significance was acknowledged.

Today in the property's 101st year, Liberty Station is a dynamic blend of commerce, history and arts—a space that invites people to create memories, savor history and embrace life. The present-day Liberty Station is a testament to adaptive rehabilitation with more than 365 acres of carefully curated spaces. The community enjoys more than 1.5 million square feet of shops and restaurants, 350 single-family homes, and more than 100 acres of open space and promenades.

The majority of the current buildings at Liberty Station are original to the NTC and repurposed into similar activities. For

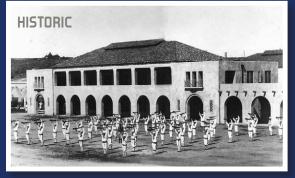
example, the Luce Auditorium that opened in 1942 and was an entertainment space for recruits is now The LOT movie theater. Additionally, the former NTC mess hall is now Liberty Public Market—San Diego's first open-concept food hall, boasting more than 25 fun restaurants.

Liberty Station serves as a vibrant community hub with a diverse array of facilities and businesses, including 51 locally owned restaurants, more than 30 retail shops and 30 resident artists. Additionally,











the space hosts four hotels, five schools, The Rock Church and 27 holes of golf (including miniature golf). The community has become a thriving economic center, fostering local businesses and creating job opportunities.

A SENSE OF PLACE

Liberty Station has championed, supported and encouraged public art since the first renovated buildings were opened at the former NTC. The site's public art

is designed to attract visitors and create a sense of place. Acknowledging the beauty and uniqueness of the Arts District (libertystation.com/directory/arts-district), the Liberty Station Community Association and NTC Foundation have partnered with local art galleries, artists, and community organizations to showcase sculptures, murals and more.

Looking ahead, Liberty Station envisions a future that is enriching and communityfocused. With a commitment to quality,

IN ADDITION to sophisticated boutiques and engaging entertainment, Liberty Station offers A Walk Back Through Time walking tour, which includes 17 historic stops, like the USS Recruit, a former naval training ship.





the space is curated to offer a diverse range of shops, events and experiences. From sophisticated boutiques to engaging entertainment, Liberty Station is thoughtfully planning ways for individuals to spend their days in this historic district.

Guests can experience the USS Recruit (libertystation.com/events/centennial/ uss-recruit), a former naval training ship that is now an immersive exhibit demonstrating what it was like to be a Naval recruit. At the height of the NTC, more than 50,000 recruits per year learned basic naval procedures on this ship from 1949-89. The Recruit, which never sailed, was outfitted with standard naval rigging and even had a 3-inch gun for training



purposes. It was the first of three training structures built by the Navy after World War II, and it is the only one that remains.

Additionally, A Walk Back Through Time (libertystation.com/events/centennial/a-walk-back-through-time) walking tour allows guests to visit monumental locations on Liberty Station's property and listen to details about what makes the site unique. There are 17 historic locations in total, including the commissary and mess hall, enlisted club, gymnasium and more.

AN ENDURING LEGACY

Liberty Station aspires to be more than a historical site; it envisions becoming

The Anchor of San Diego—a place deeply rooted in history yet timeless in its appeal. The commitment to inspiring community is evident, inviting individuals to participate in the cultural center actively. Together, residents and visitors can forge connections, create experiences and contribute to the vibrant culture of this historic destination.

As Liberty Station continues to evolve, the property stands as a beacon, inviting the community to engage; create; and build a stronger, more connected San Diego. The remarkable journey from the NTC to a thriving community hub exemplifies the spirit of adaptation and the enduring legacy of San Diego's Liberty Station.

& RETROFIT TEAM

The Liberty Station Redevelopment Master Plan was overseen by the following:

ARCHITECT OF RECORD // OBR Architecture, obrarchitecture.com

GENERAL CONTRACTORS // Dempsey Construction, www.dempseyconstruction. com, and Bycor Construction, www.bycor.com

STRUCTURAL ENGINEERS // BWE, bwesd.com, and GSSI/Miyamoto, miyamotointernational.com

MEP ENGINEERS // Syska Hennessy Group, syska.com; Engineering Partners Inc., engineeringpartners.com; and Bender Dean Engineering, benderdean.com

#MATERIALS

VINYL COMPOSITION FLOOR TILE // Armstrong Flooring, www.armstrong flooring.com, and Mannington, www.manningtoncommercial.com

TOILET FLOOR CERAMIC TILE // Daltile, www.daltile.com

TOILET GROUT // Mapei, www.mapei.com

TOILET PARTITIONS // Scranton Products, www.scrantonproducts.com

CARPET TILE // Mohawk Industries Inc., mohawkind.com

COUNTERTOP LAMINATE // Wilsonart, www.wilsonart.com

WINDOW COVERINGS // ThermoVeil 1300 Series from Mecho, www.mechoshade.com

NEOPRENE COMPOSITION ROOF DECK SURFACING // Weatherwear from Dex-O-Tex. dex-o-tex.com

TOILETS AND ACCESSORIES // American Standard, www.americanstandard-us.com

WALL PAINT // Sherwin Williams, www.sherwin-williams.com, and Dunn Edwards, www.dunnedwards.com LINEAR INDIRECT PENDANT LIGHTING // Peerless,

peerlesslighting.acuitybrands.com

RECESSED DOWNLIGHTS // Lightolier, www.signify.com/en-us/brands/lightolier

EXIT SIGNAGE // Lithonia Lighting, lithonia.acuitybrands.com

PENDANT LIGHTING // Columbia Lighting, www.currentlighting.com/columbialighting

SCONCES // Hinkley, www.hinkley.com

Retrofit Pump Kit Ensures Hassle-free Replacement of Faulty Sewage Pumps

SFA Saniflo, a division of Group SFA, a worldwide provider of above-the-floor macerating, grinder, drain pumps and lifting stations, has launched its innovative **Sanipit 24GR retrofit pump kit**.

Faulty sewage pumps continue to pose persistent challenges for plumbing contractors and homeowners, such as high maintenance costs, float issues and messy repairs. With the launch of the Sanipit 24GR retrofit pump kit, SFA Saniflo provides the most reliable and hassle-free sewage pump replacement solution on the market.

This new retrofit pump kit offers a built-in 1-horsepower grinder motor and air pressure mechanism that fits most 24-inch basins. With the ability to retrofit into 24-inch basins from Liberty Pumps, Zoeller and Myers, the pump kit offers versatility and compatibility with existing pump systems. The current basin stays in place while the Sanipit 24GR's retrofit cover easily adapts to it.

"As sewage pumps have been a largely unchanged and problematic part of the plumbing industry for over 50 years, this solution is poised to disrupt the North American market by offering a hassle-free and high-performance option for replacing

faulty sewage pumps," says Regis Saragosti, CEO of SFA Saniflo North America. "The U.S. retrofit pump market, particularly the cast iron pump segment, has lacked reliable options for installers. SFA Saniflo identified this opportunity and leveraged our innovative design team, extensive research and development capabilities, and vertical integration as a manufacturer to create a game-changing solution. The result is a complete pre-assembled pump design that delivers the same high level of reliability and performance as our macerator and grinder pumps."

Thermo-magnetic Motors

Key to SFA Saniflo's solution is the utilization of short cycling, thermo-magnetic type motors, a feature incorporated into existing Saniflo pumps. This design caters to the specific needs of installers while a complete package system meets the requirements of engineers and other specifiers, providing superior reliability, redundancy and a wastewater detection system.

While SFA Saniflo offers a heavy-duty, above-ground pump called the Sanicubic 1, it is not meant to be installed in existing sewage pump systems. By leveraging the benefits and features of the Sanicubic and incorporating them into the new retrofit pump, SFA Saniflo has created the solution that truly meets the needs of installers seeking a "white glove service"—an easily maintainable and replaceable solution without the mess associated with sewage and waste.

Mess-free Replacement

One of the key differentiators of the Sanipit 24GR is its ability to create a dry cavity within the pit. Unlike other pumping systems that sit directly in sewage, SFA Saniflo's design keeps the components and the motor separate, ensuring a hassle-free and messfree experience for plumbing installers and service technicians.

The Sanipit 24GR boasts a range of top-of-the-line features, including a 2-inch discharge rubber adapter with a built-in check valve and a 2-inch vent rubber connection, direct access points for motor and air pressure switch inspection and replacement, as well as inspection and cleaning of pressure dip tubes.

Its failproof wastewater sensing mechanism with triple redundancy provides added reliability. A gasket that protects against odor and sewer gas ensures a sanitary and worry-free operation.



The new **Sanipit 24GR retrofit pump kit** provides the most reliable and hassle-free sewage pump replacement solution on the market. The highly versatile unit is engineered to retrofit into 24-inch basins from Liberty Pumps, Zoeller, Myers and other sewage pump manufacturers in Canada and the U.S.



A cutaway of the **new Sanipit 24GR retrofit pump kit** shows its interior components, including (on the left) the grinder pump with a powerful 1-horsepower motor and stainless-steel grinder blade and a fail-proof, air-pressure switch system (right) with triple redundancy.



The tight-seal, odor-eliminating, 24-inch lid attaches with bolts into an interlocking channel. Capable of fitting easily onto all existing 24-inch sewage basins, the lid also delivers ready access for maintaining all major internal components, including motor, grinder blade and pressure switches.



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Saniflo SFA











>> RETROFIT TEAM

ARCHITECT: Cooper Carry, www.coopercarry.com
OWNER: Federal Realty Investment Trust,
www.federalrealty.com
LANDSCAPE ARCHITECT: Studio39, www.studio39.com

STRUCTURAL ENGINEER: WRA, wrallp.com
ELECTRICAL ENGINEER: SSA, www.ssaeng.com
CIVIL ENGINEER: Walter L. Phillips, www.wlpinc.com

MATERIALS

The following is a sampling of materials used in the project: WALL PANELS: Meteon Panels in Anthracite Grey and Pura Panel System in Classic Oak and Siberian Larch from Trespa, www.trespa.com

METAL STANDING-SEAM ROOF, CANOPIES: Petersen, www.pac-clad.com

ARCHITECTURAL PANELS: Stonewood Architectural Panels, stonewoodpanels.com

COMPOSITE SHINGLE ROOF: DaVinci Roofscapes, www.davinciroofscapes.com

STACKED STONE: Nantucket from Eldorado Stone, www.eldoradostone.com/products/stacked-stone/#nantucket CLAY PAVERS: Manganese Ironspot from Endicott, endicott.com

>> THE RETROFIT

Last renovated more than 30 years ago, Falls Plaza, an 11-acre local shopping center, has been transformed into Birch & Broad (named for historical crossroads in Falls Church), a walkable, modern retail district designed in a Falls Church community context. The owner aimed to transform the stop-and-shop center into a comfortable community space, where visitors would want to make multiple visits, as well as linger and connect with neighbors.

The renovation focused on expanding sidewalks to enhance outdoor dining experiences, elevating the existing retail alley and refreshing the tired façades to create a modern farmhouse design. The design features white-washed brick, contrasting metal roofs and metal accents. Landscape upgrades include new paving, site railings, lighting, planters, public art, bike racks, a central fireplace and furniture.

Because tenants often come and go, the team needed to address ever-changing signage. Trespa and Stonewood Architectural Panels were chosen because individual panels can be switched out without putting the rest of the system at risk.

An emphasis was placed on pedestrian and bike access, given its adjacency to the Washington and Old Dominion Trail and the city's goals to increase walkability throughout the west end. The addition of curbside parking responds to post-pandemic shopping patterns. The design promotes public art; development-branded murals by local artist BroCoLoCo are at the west end and new east dining area.

Native plants were selected for their adaptive characteristics; other environmentally friendly features and practices include LED lighting, bike parking, green cleaning products, EV stations and tenant sustainability guidelines for fitting-out spaces.

The project reopened in late December 2021 and was fully leased in March 2022. Since the renovation, Birch & Broad remains 100 percent leased.



>> RETROFIT TEAM

ARCHITECT: Johnson Architecture Inc., www.jainc.com GENERAL CONTRACTOR: JA Fielden,

www.jafielden.com

CIVIL ENGINEER: Will Robinson & Associates,

www.wracivil.com

STRUCTURAL ENGINEER: Haines Structural Group, www.haines-sg.com

MEP/FP ENGINEER: Engineering Services Group Inc., www.esg1989.com

LIGHTING DESIGNER: Lighting Trends,

www.ltgtrends.com

DECORATIVE CORTEN STEEL, LOUVERS and SIDING: Baird and Wilson, www.bairdandwilson.com DECORATIVE AWNINGS: Camel Custom Canvas Shop, www.camelcanvas.com

MATERIALS

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

PLAYGROUND EQUIPMENT: Columbia Cascade Co., www.columbia-cascade.com

CONCRETE TROUGH SINKS: Trueform Concrete, www.trueformconcrete.com
DECORATIVE TRENCH DRAINS: ACO, www.acousa.com
THIN BRICK and BLOCK: Concret Shelp

THIN BRICK and BLOCK: General Shale, www.generalshale.com

>> THE RETROFIT

A shopping mall that was past its prime had the benefit of its location. With a mile of heavily traveled road frontage in Pigeon Forge—a town that boasts more than 10 million visitors each year and is in close proximity to the Great Smoky Mountains National Park—there was plenty of opportunity to make a grand destination.

Daryl Johnson, president, principal architect and director of design for Johnson Architecture Inc. (JAI) and members of the JAI team worked with the new owners to scrap all preconceived notions of a "tourist town outlet mall."

First, the JAI-led master plan called for the center of the 224,000-square-foot indoor mall to be

demolished and new spaces designed and themed around a Mountain Monster tower ride, the first of its kind that offers three types of thrill rides with panoramic views of the town and Smoky Mountains beyond.

Vast lawns with water features, play areas, benches, lawn games and abundant landscaping blend cohesively with the building materials and textures that were sourced to create the character of an old mining town with a nod to industrial—but historical—design. The 140,000 square feet of existing shops that line the back and sides of the property are clad with brick veneer, cedar and reclaimed barnwood siding, alongside industrial materials, such as Corten steel panels and aluminum siding.

"This region attracts all types of visitors, especially families who are often traveling with multiple generations," Johnson says. "The Tower Shops at Mountain Mile truly accommodate the entire family with safe spaces for kids to run, shaded spots for parents and grandparents to rest, and shops and food that cater to all."



GRACE IN THE KITCHEN | Kanata, Ontario, Canada



▶ RETROFIT TEAM

INTERIOR DESIGNER/LIGHTING SPECIFIER: Parallel 45 Design Group Ltd., parallel45.ca LIGHTING MANUFACTURER REPRESENTATIVE: WSA, wsa.ca

MATERIALS

Grace in the Kitchen is a specialty food store focused on gourmet cheeses and meats, high-end kitchenware, gifts and unique food items. When the business outgrew its downtown Ottawa location, owners found a new space—a warehouse three times the size—in the nearby suburb of Kanata.

Parallel 45 Design Group Ltd. was hired to create a neutral space that did not overshadow the merchandise itself. Designers selected Eureka Lighting's Henri pendant for general illumination across the store's breadth. With 20-foot industrial ceilings, the luminaires are strategically dropped to 16 feet. The Henri luminaire helps create the illusion of a false ceiling, which generates the more intimate feel of an enclosed space to enhance the shopping experience.

"Henri adds a wonderfully sleek look in the space, but it also has high output and gives off great light," says Delaney

Leefe, intern interior designer at Parallel 45 Design Group. "As a result, the luminaires were ideal as general store lighting. The owner was able to set up his merchandise shelves however he wished and was not beholden to the placement of the pendants above."

Eureka Lighting's Mill acoustic pendants are suspended above the front cash desk and the gourmet food counter at the back of the store. A collection of Mill luminaires with 14- and 25-inch depths are installed at staggered heights with a playful effect. Leefe selected a bright red felt color to tie into the store's branding. The Mill pendants over the cash desk are visible through the front windows and prompt a striking first impression for visitors. They also serve as wayfinding.

While providing evenly diffused downlight, the Mill pendants also contribute to sound absorption. Grace in the Kitchen's cash area and food counters can be busy, and there was the potential for echoes as staff interacted with customers. Fifteen felt panels in each Mill shade create a cylindrical shape that traps and absorbs sound within the luminaire's hollow column.

PENDANT LIGHTING: Eureka Lighting, www.eurekalighting.com











▶ RETROFIT TEAM

METAL PANEL INSTALLER: J&G Building Group, (302) 275-8824

MATERIALS

The former Mallas Building, constructed in the 19th century, has experienced many new tenants. As Panda Express prepared to move into the building, a facelift was needed to distinguish it from past tenants. The installation of Dri-Design with Perforated Imaging panels, which can be created from any digital picture or pattern, brings a sense of art and style to the bustling Philadelphia corner.

J&G Building Group installed 2,000 square feet

of copper anodized Perforated Imaging panels. For the install, metal Z-furring was attached to the masonry walls of the building, followed by a layer of 3/4-inch plywood. The plywood was painted for weather protection. The crew then installed another layer of Z-furring to the plywood and attached the metal panels.

Dri-Design with Perforated Imaging uses advanced computer-based manufacturing to create complex images with perforations. By varying the size, location and density of the perforations, areas of light, dark and shadows in between are created to form an image or pattern. These perforations also allow the panel to provide airflow and/or shade

to a structure.

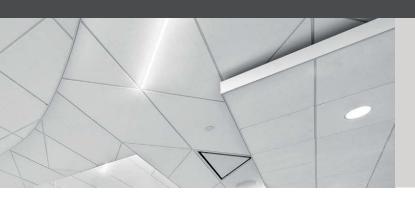
Working on an older building always comes with challenges. "We assessed the existing conditions before construction began," says Alexis King, project manager/estimator with J&G Building Group. "There were many inconsistencies in the existing masonry, which led to a fair amount of shimming of the Z-furrings to achieve a flat and straight substrate."

Panda Express' design team provided three patterns that are repeated throughout the perforated panels, creating a unique façade.

PERFORATED METAL PANELS: Dri-Design, www.dri-design.com



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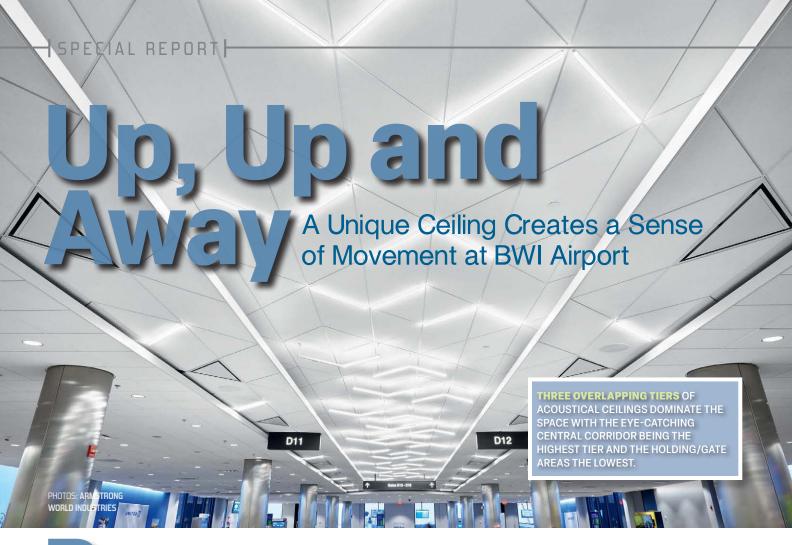


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altimore Washington International (BWI) Thurgood Marshall Airport recently underwent a substantial upgrade to the HVAC system in Concourse D. As part of the project, a decades-old ceiling was removed. According to Design Associate Jennifer Hensel of JMT Architecture: "Airport management desired a new ceiling and lighting system in the central corridors that would help create the illusion of higher ceilings and really stand out. They wanted it to be unique and dynamic while imparting a sense of movement."

To meet the design objective, Hensel chose Calla Shapes for DesignFlex, a ceiling system that provides the opportunity to mix and match different shapes, sizes, colors and materials to create a signature ceiling. Three different panel shapes were used in the corridor ceiling: 45-degree left parallelograms, 45-degree right parallelograms and 45-degree triangles.

T-BAR LIGHT FIXTURES REPLACE GRID

In addition, many of the cross members

in the suspended ceiling grid system were replaced with T-Bar Flex lights specifically designed to integrate with the ceilings. "We were looking to create a sense of movement throughout the central corridor similar to birds in flight," Hensel notes. Triangular air diffusers, also designed to integrate with the ceilings, were installed in a tier of panels below the main corridor ceiling.

ProjectWorks, the ceiling manufacturer's complimentary design and pre-construction service, assisted in the project. "They were a huge help," Hensel states. "Once we had our design, Project-Works provided a comprehensive drawing package. This helped simplify installation because different colors represented different panels and the layouts displayed how the different panel shapes are installed throughout the space."

CHALLENGES ABOUND

When it came to installation, Project Manager Karl Owens of Northern Contracting Co. reports his crews had never installed a DesignFlex ceiling before. "However, the

panel, grid, and hub layouts provided by ProjectWorks were a big help and everything went well," he says. "The real challenge was the concourse was fully operational during the project, so we could only work at night when far fewer passengers were around."

In addition, the crews could only open 2,500 square feet at a time because of fire codes. "We needed enough material to cover a section each night," Owens states. "But there was no place to store materials, so staging was a logistical nightmare and required a lot of coordination."

The sheer size of the project also provided challenges with alignment throughout the long, straight corridor. "We couldn't use a laser when passengers were present," Owens recalls, "so we often had to use a string line."

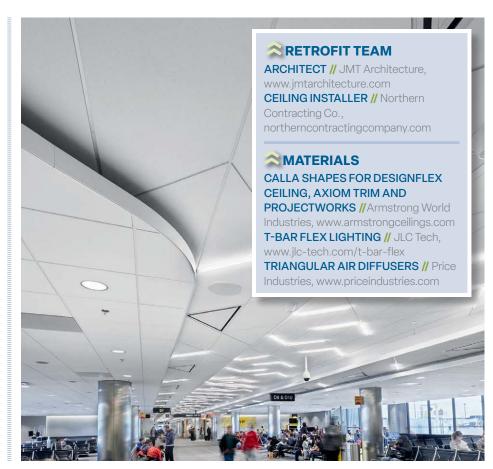
The corridors totaled more than 26,000 square feet, requiring the installers to accurately locate, position, and install over 6,000 brackets and field connect to nearly 2,000 perimeter connection clips. The project also required the integration of nearly

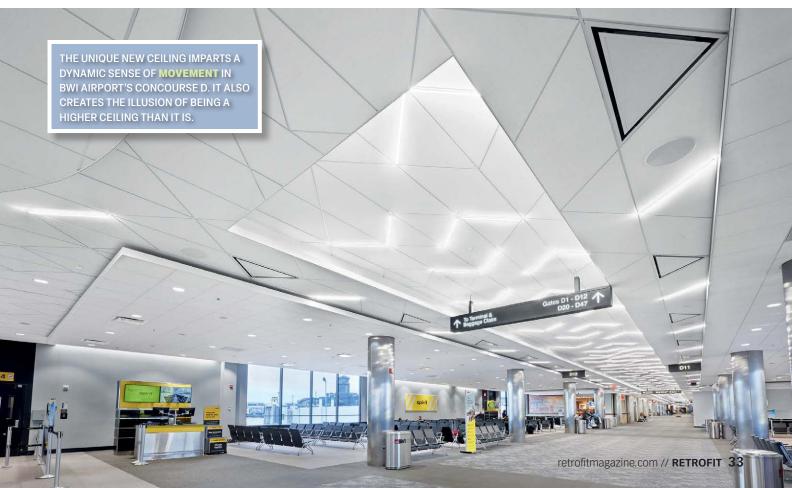
850 light fixtures and the installation of nearly 10,000 feet of Axiom trim. The variety of trim installed throughout the concourse included straight and curved, as well as moldings and column rings.

SAME FINISH ABOVE GATE AREAS

In addition to the central corridors, the project also included the installation of 45,000 square feet of 2- by 2-foot Calla ceiling panels above the holding/gate areas. Hensel reports Calla ceilings were chosen for three reasons. "The first was visual," she says. "We wanted to match the same smooth finish as the ceiling in the corridor. We did not want a real fissured panel. Second, we wanted more light reflection because the existing ceiling was very dark. Calla panels have a light reflectance value of 0.85. And third, better acoustical performance." Calla panels absorb sound (NRC = 0.85) and block sound (CAC = 35) in the same panel.

The result is three overlapping tiers of ceilings that dominate the space with the eye-catching central corridor being the highest tier and the holding/gate areas the lowest.







>> RETROFIT TEAM

ARCHITECTS: AECOM, aecom.com, and Luis Vidal + Architects, luisvidal.com FABRICATOR/INSTALLER: LYMO Construction Co., lymoconstruction.com

MATERIALS

The goal of the Logan Airport Terminal E modernization was to "create a sustainable, high-performance, resilient and resource-efficient building that is a comfortable and healthy environment for passengers and workers alike."

To meet these goals the installation of aluminum composite material (ACM) took more than four years. Modernizing the facilities included the addition of four new gates, including three approved in 1995 but never built.

"The project required 400,000 square feet of 4-millimeter FR Core larson by Alucoil, which we fabricated into a rainscreen system," says Dan Nadeau, vice president, preconstruction, at LYMO Construction. "The design criteria were very specific on all aspects of the ACM's performance, color, finish, paint application and fabrication tolerances. The specification called for a prismatic [color shifting] paint system with multiple gloss levels to achieve the iconic design."

Nadeau says each component of the wall assembly-metal studs, thermally broken cladding supports and rainscreen system—needed to be installed in the exact X, Y, Z position to maintain the surface geometry. That requires a fulltime team of onsite surveyors and engineers to support the installation crews.

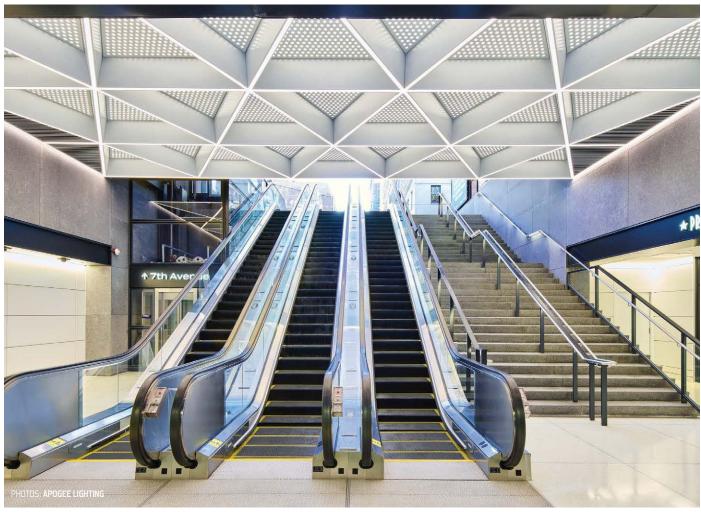
"The design team's vision to create an 'orb' using an architectural metal was the biggest challenge," Nadeau says. "Maintaining a surface with a geometry this complex required a year of collaboration and innovation. Rather than engineering rainscreen panels for fabrication, using traditional methods, innovative software, like Rhino and Grasshopper, were used to 'script' the final panel layout to ensure the final orb surface geometry was achieved. Each component of the wall assembly was embedded with X, Y, Z coordinates tied into the project's site control."

"The finished product absolutely achieved the goal of being the new icon at Logan International," Nadeau remarks. "The surface geometry, color, gloss and design all make a dramatic statement. We couldn't be happier with the outcome. It could not have been done without commitment, collaboration and new innovations."

ALUMINUM COMPOSITE MATERIAL: FR Core larson by Alucoil, www.alucoildesign.com







PENN STATION New York

>> RETROFIT TEAM

LIGHTING DESIGNER: HLB, hlblighting.com OWNERS: AMTRAK, www.amtrak.com, with MTA, new.mta.info GENERAL CONTRACTOR: Forte Construction, www.fortecc.com

ELECTRICAL CONTRACTOR: Dagnachew & Associates Inc., (516) 442-1810 CONSTRUCTION MANAGER: AECOM Tishman, aecom.com/aecom-tishman

MATERIALS

Out of the 20 entrances into Penn Station, none are busier or more important than what is considered the main entrance at the corner of 32nd Street and 7th Avenue. As people enter the interior and descend by way of the extra-long escalators they will see an incredible lighting achievement, made possible by a team of consummate lighting professionals.

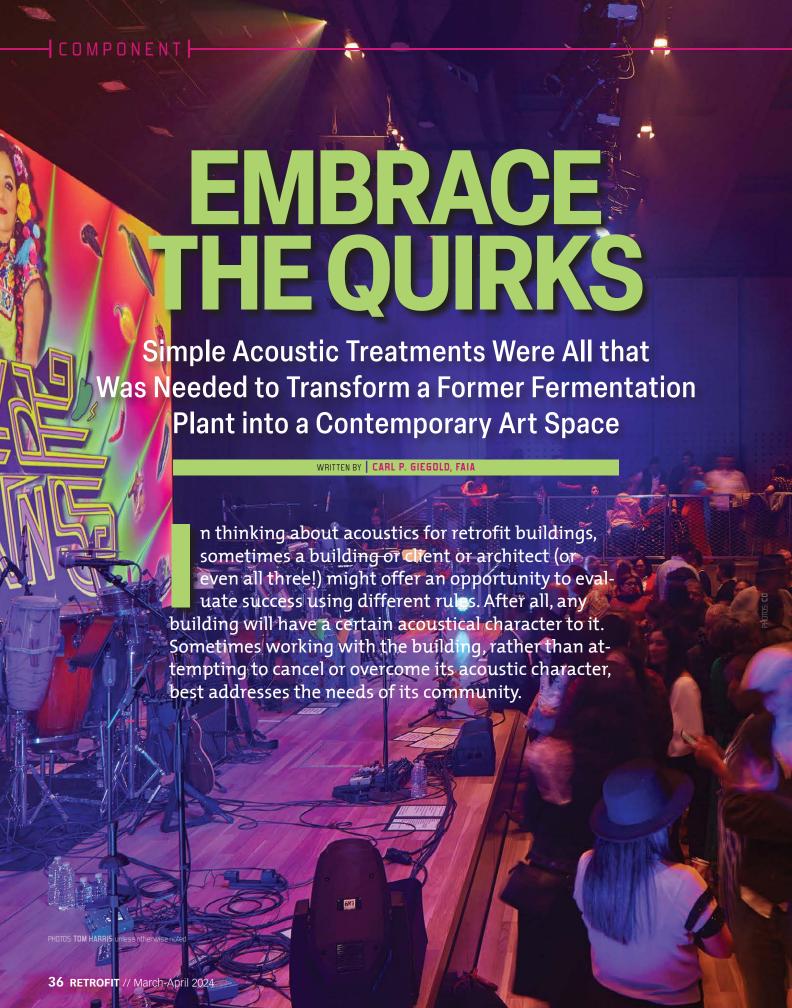
The triangular array hanging from the ceiling is custom architectural metalwork to HLB's specifications. The array contains individual IP65rated Lightscape Diffused Membrane Fixtures powered by Pixel Luminous Ceiling LED Panels and diffused via a custom polycarbonate lens. These were accented by custom IP65-rated linear fixtures. Securing the array in its configuration and ensuring it was hung at the proper height and angle was facilitated by Apogee Lighting, which also fabricated and engineered the custom metal superstructure and custom hanging points. Finally, the initial layer that the eye sees of the circle patterns within the triangular fixture was fabricated by Apogee Lighting, based again on HLB's vision.

The official opening of the entryway to Penn Station was a point of pride for the team because this was truly a collaborative effort to bring the lighting designer's vision to life in a rugged transit environment within one of the busiest commuter hubs in the world.

LED PANELS AND FIXTURES: Apogee Lighting. www.apogeelighting.com









THE MOMENTARY

For example, in 2012, Crystal Bridges Museum of American Art opened in Bentonville, Ark. A year later, the Kraft Co. fermentation plant closed for good. In a way, it signaled a changing of the guard for the area: fewer dairy farmers, many more employees to a knowledge-based economy. Current estimates place the inflow of new residents at 36 people per day, drawn by the robust headquarters of Walmart and, nearby, Tyson and JB Hunt. Concurrently, the Walton family—backers of the majority of projects happening in the area—wanted amenities that could compete with either coast: parks, museums, performance spaces.

As Bentonville and greater northwest Arkansas (NWA) grew, so did the need for additional cultural spaces. Even the iconic Crystal Bridges campus quickly ran out of space for traveling and temporary exhibits. Hence, The Momentary: a museum dedicated to temporary exhibits, to more time-based art and performances, and experimental art. The Kraft property was soon considered for this new museum, as an extension of and sister building to Crystal Bridges. Many Bentonville natives, who had lived in NWA for generations, had family connections to the Kraft fermentation plant. Shuttered or not, it was a

beloved landmark for the town. Respecting that connection meant retaining as much of its industrial identity as possible.

Spaces in the building ranged from banal storage rooms with low ceilings to a soaring 60-foot volume that once held a towering, missile-shaped tank of cheese product (Velveeta, perhaps). Two rooms, the multi-bay truck wash and hall that housed fermentation tanks, were vaguely suggestive of performance spaces. Pipes for water, steam and ammonia (used for sanitizing) ran building-wide, elements that knit the hodgepodge into a loose whole. The Waltons made clear that this abandoned infrastructure was part of the building's identity and that only what was hopelessly in the way could be removed. The hulking original boiler was retained in full—an art piece unto itself.

ACOUSTIC INTERVENTIONS

In its original life, the RØDE House was the truck-washing station: Trucks drove in one end and were chemically sanitized on a sloped floor (which looked enticingly like a seating rake in a performance space) before driving out the other end. Today, the RØDE House is a multi-form concert and convening venue for audiences of up to 600. Its roof structure, which was just high

enough for a truck wash, is quite low for a concert venue, but the lighting, audio and video designs were developed accordingly.

Acoustic treatments on the ceiling took advantage of the spaces between the downturned legs of the concrete doubletees. In alternating bays, foam was applied directly to the underside of the roof slab or on perforated plywood spanning between the legs of the tees—in the latter case creating bass traps to control low-frequency amplified sound. Wall treatment consists of 1/2-inch wool felt hanging several inches from the concrete. The felt is perforated with a pattern taken from the floor plan of the building at different heights, so its effect is more diffusive in the lower volume of the room and more absorptive up high. The result is outstanding clarity and great intensity for the musicians and the crowd.

The Fermentation Hall is just what it sounds like: Tanks of milk were fermented there to become familiar Kraft products. During design, the Fermentation Hall was nicknamed the 7-Second Room because, once the tanks were removed, a single hand-clap would hang in the air seven seconds, or longer, in the empty concrete volume.

The Fermentation Hall, like the RØDE House with walls and roof built of concrete double-tees that one might see in a

« A crowd gathers for a concert in the RØDE House, which previously was a truck washing station in the former Kraft Co. fermentation plant.



The Momentary's past life as a Kraft factory still is legible.

RETROFIT TEAM

ACOUSTIC AND AV DESIGN //

Threshold Acoustics LLC, www.threshold acoustics.com

ARCHITECT // Wheeler Kearns Architects, wkarch.com

INTERIOR DESIGNER // FODA Design, fodadesign.com

LIGHTING CONSULTANT // Lux Populi,

THEATER DESIGNER // Schuler Shook, schulershook.com

GENERAL CONTRACTOR, CONSTRUCTION MANAGER //

Flintco, flintco.com

☆ MATERIALS

ACOUSTICAL CEILINGS //

MARS/MARS High-NRC Logix Acoustical Panels from USG, www.usg.com

SUSPENSION GRID // Fineline DXF from USG, www.usg.com

ACOUSTIC FOAM // WILLTEC Flat Sheet Panels from Pinta Acoustic,

www.pinta-acoustic.com

PERFORATED FELT // FilzFelt. www.filzfelt.com

AMBISONICS AUDIO SYSTEM //

d&b Soundscape from d&b Audiotecknik, www.dbaudio.com

ACOUSTIC BANNERS // Sound Control Banner System from iWeiss, www.iweiss.com

parking garage, could have been screechy and harsh, but sandblasting the glaze off the concrete let its natural porosity take care of that problem. Some simple black fiberglass absorption behind suitably industrial metal mesh on the back wall of the room and some canted medium density fiberboard reflectors between the leas of the tees were the only other fixed treatments required. Acoustic banners deploy on the three other walls to give the room an acoustic vocabulary stretching from cinema and dance parties at one end to Gregorian chant at the other. The room also is outfitted with a simple ambisonics audio system that, with a couple simple moves, transforms a room built to house rotting milk into a space with limitless potential for immersive sound sculptures.

Outside the two performance spaces, the project embraced the building's quirkiness. The Velveeta tank is gone, leaving a volume known as the Tower, which is a lot like a theater fly tower with platforms and perches at various heights that are great for performances and art installations that are more vertical in nature. Mid-sized rooms and cold lockers easily became smaller, more museum-like areas for artwork. Even the smaller, more banal rooms became a recording studio and artist-inresidence suite.

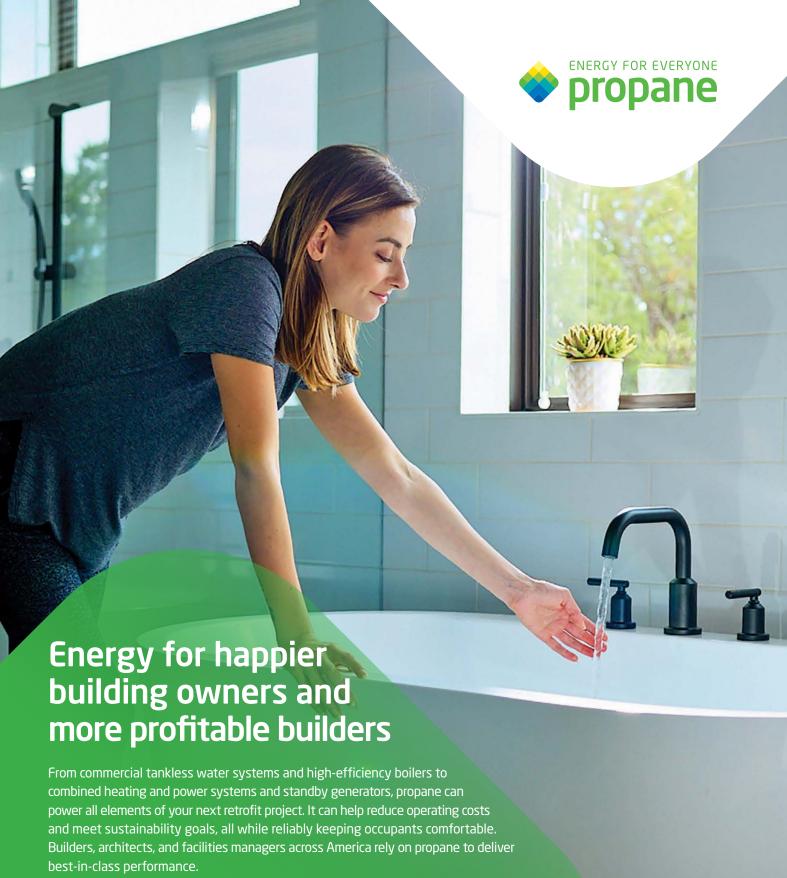
Acoustic treatments were mainly oriented to keeping the gallery spaces

comfortable for visitors and conducive to sound and video installations through simple felt and foam absorption discreetly placed on ceilings. Thus tamed, and with audio, video and data infrastructure threaded in the same manner as the original piping (and often following the same paths), the galleries are ready for anything.

BREAKING THE RULES

With client, architect and acoustician aligned in an ethos of lightly taming the building and embracing its quirks, normal—perhaps traditional—measures of success fell to the side, to the holistic benefit of the museum at large. In the RØDE House, the ceiling is too low; the Fermentation Hall is wildly reverberant; the Tower is too high and not fully enclosed. But nothing plays by the rules here. This is, after all, a building where skateboards and bikes are allowed indoors. Sound may bleed from a room and that acts as an invitation to others outside. Locals can relax and enjoy the building for what it is.

A neon sign across the exterior of the building loudly proclaims, "You Belong Here", and means it. One of the first installations was Nick Cave's Until, exploring race relations, gender policy and justice. The aesthetic of a postindustrial space whose industrial history is intertwined with art seems just alien enough for everyone to feel equal as they enter.



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A Beloved Bakery Is Reimagined within Prominent Downtown Commercial Buildings as Part of a Village's Master Plan

or native son, turned tech CEO, Chris Moore, the restoration and renovation of two landmark commercial buildings in downtown Vicksburg, Mich., began in 2018 when he shared his vision for bringing back the structures to their original 1880s elegance and prominence. The core and shell reconstruction of the buildings, located on a main thoroughfare in the nearly 4,000-person village in southwest Michigan, included the reconstruction of the existing storefronts to their original design using contemporary 1-inch-thick insulated glass, framed and trimmed in durable mahogany to withstand the four-season Michigan climate.

Once home to two iconic village businesses, including the Doris Lee Sweet Shop, the restored buildings, which are connected on the interior, were designated to become Mackenzies Bakery and Prairie Ronde Artist Residency Gallery, which provides event space for Moore's artist residency program. The bakery and gallery space opened in 2022.

For Moore, the downtown buildings' painstaking restoration efforts are part of a master plan of which the cornerstone project is the multiyear, \$100 million-plus renovation of a former paper mill on the village's west end into a mixed-use attraction: The Mill at Vicksburg. With The Mill at Vicksburg several years from completion, Moore has been pursuing smaller projects in Vicksburg, like Mackenzies Bakery and the gallery, which pair well with The Mill's destination goals.





THE ELEVATED SPACE offers a professional-grade production kitchen and retail storefront with a "historic sweet shop" aesthetic, paired with artisanal bakery motifs from the world's landmark cities.









Baking Memories

Mackenzies Bakery, which opened to great fanfare, is a charming storefront that offers artisanal breads, cookies, muffins, jam and coffee. The intent of the restoration of historic buildings and the relocation of a generations-old artisan bakery to the center of town was to bring more people to the historic downtown area with desirable products while demonstrating the revitalization of shuttered spaces into aesthetically pleasing businesses that will benefit generations of locals.

The design of the intimate 1,700-squarefoot retail space was centered around the custom display case, intended to delight customers the moment they arrive. The three-sided glass display was created in a custom shape to extend toward the front door and provide a visual for even the youngest guests.

"I fondly remember walking with grade-school classmates to downtown Vicksburg with a quarter in hand, excited to buy a turnover from Otto's Bakery," Moore recalled during the bakery's grand-opening event. "I hope that a visit to Mackenzies Bakery will create a new generation worth of memories for residents and visitors in our hometown."

The elevated space offers a professionalgrade production kitchen and retail storefront with a "historic sweet shop" aesthetic, paired with artisanal bakery motifs from the world's landmark cities. Custom millwork details line the space, giving depth and visual interest with clean and contemporary lines. The signature elements that nod to 19th century retail spaces include the custom mosaic entry tile with an artful expression of the Mackenzies Bakery logo and a more straightforward, classic, mosaicpatterned floor throughout the retail area.

Measured Ingredients

Moore hired two seasoned bakery professionals to lead the store. These bakers

THE INTENT of the historic buildings' restoration and relocation of a generationsold artisan bakery to the center of town was to bring more people to the historic area while demonstrating the revitalization of shuttered spaces that will benefit generations of locals.

THE SPACE WAS PAINSTAKINGLY

RENOVATED AND, WHERE POSSIBLE, **RESTORED TO ITS ORIGINAL AND** HISTORIC CHARM.

proved instrumental in directing the

layout of the open-kitchen concept and the front-of-house flow. The bakery's functionality was paramount in the design and layout of the spaces, as well as the selection of finishes. Although preserving the historic wood ceiling and a desire to minimize the visual impact of heating and cooling elements put pressure on the small footprint, the architectural team at Eckert Wordell worked on creating efficient solutions to maximize every inch of space.

The west wall of the bakery's retail space features a massive steel door in a coral color. The door was salvaged from The Mill at Vicksburg—one of many rolling steel fire doors demising sections of the 1904 industrial building. This door was deemed unique as the only non-red door and, because it aligned perfectly with the Mackenzies Bakery brand, it now visually separates the bakery from the gallery. During retail hours, guests of Mackenzies Bakery can use the gallery space as spillover café seating. (A true fire door is rolled above the shared opening on the gallery side.)

Also uniquely salvaged is the set of decorative pendants over the retail counter and display case. These milk-glass globe fixtures were discovered in a neighboring historic building, once home to a dance hall and social club. Electricians refurbished and rewired the fixtures and the glass globes to create an authentic visual of turn-of-the-century interior elements within the bakery.

While salvaged doors and pendant lights provide the jewelry for the space, the interior design was conceived hand-inhand with the rebranding of Mackenzies Bakery for this historic Vicksburg location. The branding elements took cues from the historic elements on the building's façade, such as florals and finials that also are used in the Mackenzies Bakery brand's logo and marketing materials.

The color palette of the interior space reflects a direct correlation to the historic sweet shop that once resided in the space. Examples include the cool, minty-green base color used throughout (though the color was tweaked slightly to contemporize its color value). Surfacing materials, like stained-wood shelves, accentuate the space's brand colors and overall ambience. The design team chose a solid-surface material that resembles an ice-cream flavor in its visual appearance. No detail was left unstudied throughout the restoration and visioning process and with the rebranding and operational course for the new Mackenzies Bakery.

Chef's Kiss

The reopening of Mackenzies Bakery in the historic Doris Lee Sweet Shop building is a point of pride for Moore and his Vicksburgbased project teams. The space was painstakingly renovated and, where possible, restored to its original and historic charm. The effort to restore the building is part of a larger community-based endeavor that resulted in the placing of Vicksburg on the National Register of Historic Places in 2022.

"To be on the National Register is not only a point of pride but a tool for economic and community development. This is a wonderful designation for Vicksburg and a great way to celebrate its local history," says Martha MacFarlane-Faes, deputy state historic preservation officer.

"We were very excited to open the doors to Mackenzies Bakery and show the community our commitment to restoring these wonderful downtown buildings while contributing to its vibrancy," Moore says. "I challenged Rebecca [Luong with Paper City Development], Frederick Construction, and our team to carefully design and build a space that would fit in Manhattan or Paris and stand the test of time."

Retrofit Team

OWNERS // Paper City Development LLC and Mackenzies Bakery, www.mackenziesbakery.com

DESIGN ARCHITECT. ENGINEER

AND INTERIOR DESIGNER // Eckert Wordell, eckert-wordell.com

- Curtis M. Penny, principal-in-charge
- Nic Gilchrist, architectural design lead
- Alexandra Farrell, interior design
- Michael O'Keefe, P.E., electrical
- Rob Flegal, P.E., senior mechanical engineer

HISTORIC ARCHITECT //

Hopkins Burns Design Studio, www.hopkinsburns.com

GENERAL CONTRACTOR //

Frederick Construction, www.frederickconstruction.com

HISTORIC CONSULTANT //

Firefly Preservation Consulting LLC, www.fireflypreservation.com

BRANDING, SIGNAGE AND

WAYFINDING // The Image Shoppe, theimageshoppe.com

MILLWORK CONTRACTOR //

Big C Lumber & Big C Custom Millwork, bigclumber.com

TILE INSTALLER // Migala Carpet One, www.migalacarpetone.com

Materials

DOOR HARDWARE // Emtek, www.emtek.com

VANITY MIRRORS // MDC Interior Solutions, www.mdcwall.com

INTERIOR FLOOR AND WALL TILE // Daltile, www.daltile.com

SOLID SURFACE COUNTERTOPS // Cambria, www.cambriausa.com

CUSTOM TILE MOSAIC AT ENTRY //

Artaic, artaic, com

ARCHITECTURAL LIGHTING //

Spectrum Lighting, www.speclight.com

CUSTOM NEON SIGN //

The Neon Connection,

www.neonconnectiongr.com

CAFÉ SEATING // Antiquities Warehouse of Grand Traverse, antiquitieswarehousetc.com

CAFÉ TABLES // West Elm,

Antiques, www.nobhillagain.com

www.westelm.com DISPLAY HUTCH // Nob Hill Again

Powerful Concentration of the Concentration of the

AN ABANDONED POWER STATION SERVES

AS FABRICATION SPACE FOR ARTISTS WHILE

HONORING THE BUILDING'S HISTORY

WRITTEN BY | JAMES SEGER, AIA

PHOTOS: PBDW ARCHITECTS
unless otherwise noted

he F and G lines of New York City's subway system traverse an elevated section of track overlooking Gowanus, a historically industrial section of Brooklyn, developed after the Gowanus Canal was dredged through swampland in the 19th century. From the elevated perspective, the canal can be seen snaking northward through low-lying warehouses and manufacturing shops, forming the foreground to views of Brooklyn's brownstone neighborhoods and the distant high-rises of downtown Brooklyn and Manhattan beyond. Commuters have watched the cityscape evolve from this unique vantage point for almost a century.

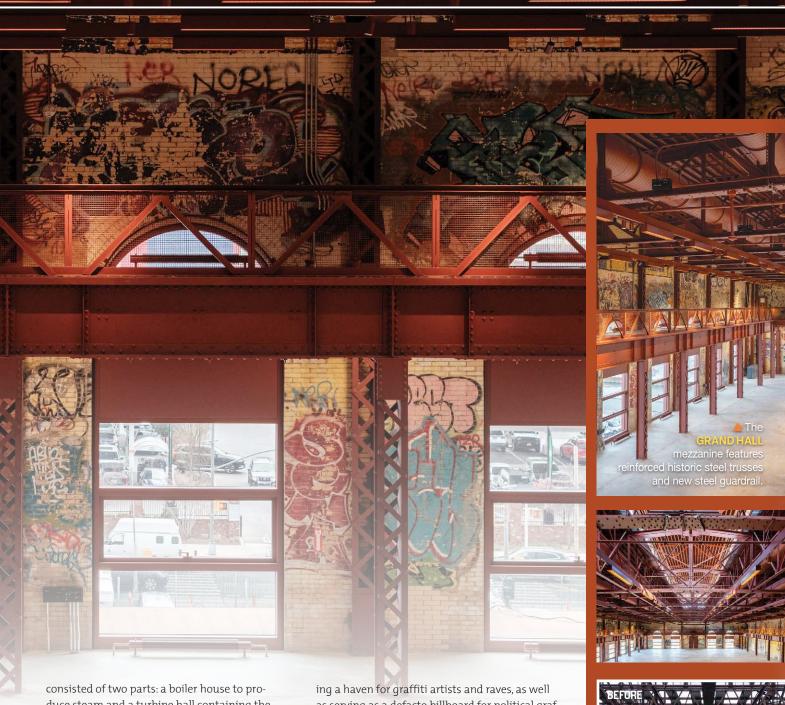
During the past five years, they've witnessed the transformation of a conspicuously forlorn industrial icon in that landscape—the former Brooklyn Rapid Transit (BRT) Power Station—foreshadowing the reinvention of its surrounding neighborhood by new residential development. In its new incarnation as Powerhouse Arts,

the power station stands as an important embodiment of the area's cultural heritage while retaining much-needed fabrication facilities for artists in New York City long into the future.

THE HISTORY

The BRT Power Station was constructed

in 1903 to provide power to BRT's local elevated train lines and streetcars. Typical of power stations of the era, its architecture was a reflection of its function with its massive Romanesque Revival arches expressing the might and promise of the new electrification age. Set back from a coal yard along the canal, the building



consisted of two parts: a boiler house to produce steam and a turbine hall containing the generators, transformers and electrical lines that fed BRT's rail facilities. Both parts were steel-framed structures with concrete floors and brick exteriors, supported on a 6-foot-thick concrete mat slab set atop a matrix of wood piles driven into the tidewater below. The boiler house was demolished in the 1950s, leaving the turbine hall to stand alone, functioning as a substation to another distant power station.

Following its abandonment in the late 1990s, a community of squatters took up residence and the building was nicknamed the "Bat Cave". It became an outlet for underground society, provid-

as serving as a defacto billboard for political graffiti on its prominent south façade. During this period, virtually every interior wall of the building was adorned with intricate graffiti works, a fact that was not lost on Powerhouse Arts' benefactor Joshua Rechnitz.

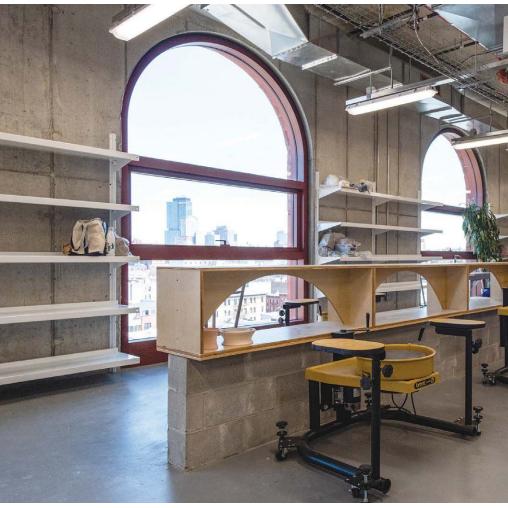
THE VISION

Rechnitz acquired the site in 2012 and recognized the historic value of the building and its importance to artists. The program for the building was originally conceived as studio space, but input from local artists revealed a predicament that changed Rechnitz's vision for the project. A



▲ The TURBINE HALL, which now is the Grand Hall, after removal of the roof.





long-pending rezoning of the Gowanus area meant that the industrial fabrication shops that had traditionally helped artists realize their works were moving out, leaving New York City artists with few options. Powerhouse Arts could help fill that void before the zoning change occurred. The non-profit Powerhouse Arts was formed to see Rechnitz's vision through.

Following several years of environmental remediation on the brownfield site, a design team was assembled, led by the Swiss architecture firm Herzog & de Meuron in collaboration with New Yorkbased PBDW Architects, serving as executive and preservation architect. Knowing the building's recent history, it was a given that the team needed to let the building tell its story. That meant retaining and showcasing the defining characteristics of the original building and letting the patina of past uses and modified original construction read through in the finished product. Because the program called for a

major expansion, it was also important to make sure the addition created a harmonious whole that embraced and honored the turbine hall.

THE DESIGN

The project called for fabrication shops, serving artists working in wood, metal, printmaking, textiles and ceramics, along with multi-use event and exhibition spaces. Considering vehicular circulation and environmental remediation concerns on the site, it made sense to model the addition on the original boiler house footprint, reusing its foundations and matching the parti of the original power plant complex.

The program was organized to optimize the functional requirements of the fabrication shops and to maximize exposure of the turbine hall's industrial architecture, as well as the graffiti adorning it, within the public spaces. Workshops handling the largest materials—metals and wood—were located on the first floor with easy

access for loading. The lowest level, which is partially below-grade, is reserved for parking and designed to withstand floods.

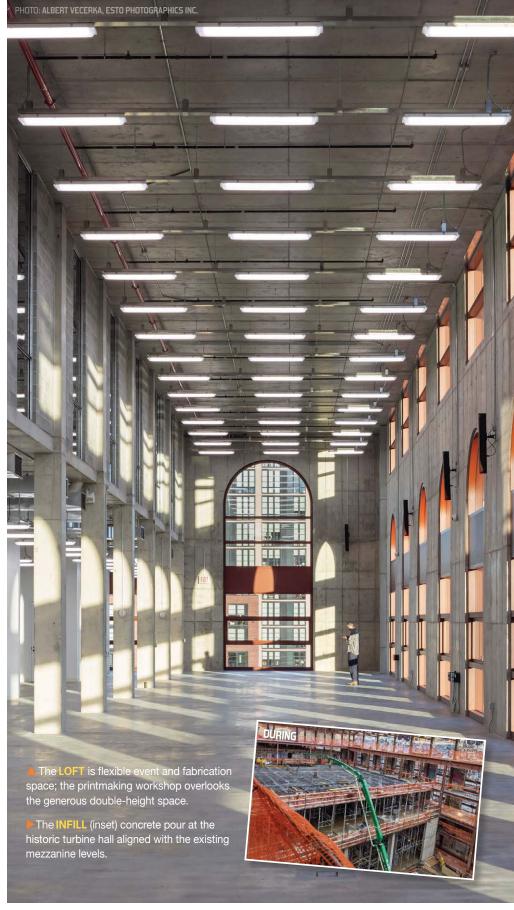
Originally an open volume, the turbine hall was fitted with new infill floors, matching the original perimeter mezzanine elevations. Its second floor houses offices and a small event space, leaving the top floor with ample height for the Grand Hall, an event and exhibition space that showcases the turbine hall's original steel columns, trusses, graffiti walls and other defining historic features.

Fabrication shops for small metals, printmaking, textiles and ceramics are located on higher floors within the new boiler house with ceramics located at the top, giving it direct access to the roof to satisfy its significant ventilation requirements. A modern, double-height exhibition space deemed "The Loft" was positioned in the boiler house, opposite the Grand Hall. The lobby and public spaces leading up to the Grand Hall occupy the east side of the



turbine hall, traversing vertically between the new infill structure and a series of mezzanines that originally housed transformers.

Throughout the project, the grit of original elements is juxtaposed against the industrial rigor of new elements, setting up a conversation and energy between them. Outside, the new boiler house is clad in washed red concrete, an economical material that is sympathetic to the brick of the turbine hall while remaining true to its modern expression. Inside, new structure is composed of carefully formed, smooth, gray cast-in-place concrete—a clear departure from the original, riveted steel structure. True to the complex's industrial character, all infrastructure is exposed and was meticulously thought through. This rigorous arrangement of infrastructure mirrors the original building's engineered quality and is a testament to the great care and craftsmanship employed by the artisans who installed it.



Retrofit Team

DESIGN CONSULTANT // Herzog & de Meuron, www.herzogdemeuron.com, in collaboration with

EXECUTIVE AND PRESERVATION ARCHITECT // PBDW Architects, www.pbdw.com

MEP ENGINEER // Buro Happold, www.burohappold.com

STRUCTURAL ENGINEER // Silman, www.tylin.com/silman

LANDSCAPE ARCHITECT // Ken Smith Workshop,

www.kensmithworkshop.com

LIGHTING // Tillotson Design Associates, www.tillotsondesign.com

CIVIL ENGINEER // Philip Habib & Associates, www.phaeng.com

GEOTECHNICAL // Langan, www.langan.com/services/geotechnical

ENVIRONMENTAL // Roux, www.rouxinc.com

ACOUSTIC // Longman Lindsey, longmanlindsey.com

FAÇADE // Eckersley O'Callaghan, www.eocengineers.com

CONCRETE // Reg Hough Associates, www.reghoughassociates.com

MASONRY CONSERVATION // ICR-ICC, www.icr-icc.com, and Eugene Architecture, www.eugenearch.com

GENERAL CONTRACTOR // Urban Atelier Group, www.uag.nyc

Materials

EXTERIOR MASONRY // The Belden Brick Co., www.beldenbrick.com, and Glen-Gery, glengery.com

METAL PANELS // Tetra from Everlast Metals,

www.everlastmetals.com

WALL COATING // Dryvit, www.dryvit.com

MOISTURE BARRIER // GCP Applied Technologies, gcpat.com/en

ROOF MEMBRANE // Parapro from Siplast, www.siplast.com

ACOUSTIC ROOF DECK // Epic Metals, www.epicmetals.com

ROOF PAVERS // Hanover, hanoverpavers.com

METAL WINDOW FRAMES, SKYLIGHTS // Stahlbau Pichler, pichler.pro/en

METAL DOORS // Workspace11, www.workspace11.com, and LIF Industries Inc., www.lifd.com

FIRE-CONTROL DOORS, SECURITY GRILLES // NY Gates,

www.nygates.com, and United Steel Products,

www.unitedsteelproducts.com

ACOUSTICAL CEILINGS // Armstrong World Industries, www.armstrongceilings.com

PAINTS, STAINS // Sherwin-Williams, www.sherwin-williams.com

SOLID SURFACE // Corian, www.corian.com

WOOD FLOORING // The Hudson Company, thehudsonco.com, and Gray Fox Flooring, grayfoxflooring.com

TOILET PARTITIONS // Kemmlit, kemmlit.com/en

DIMMING SYSTEM, LIGHTING CONTROLS // ETC,

www.etcconnect.com, and Lutron, www.lutron.com

DRINKING FOUNTAINS // Elkay, www.elkay.com

TOILETS, URINALS // Kohler, www.kohler.com

FAUCETS // T&S Brass and Bronze Works Inc., www.tsbrass.com, and Elkay www.elkay.com

SINKS // Kohler, www.kohler.com; Just Manufacturing Company, www.justmfg.com; Advance Tabco, advancetabco.com; and Elkay, www.elkay.com

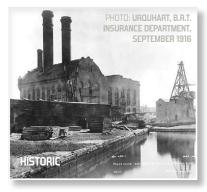
EMERGENCY EYE WASH, SHOWER // Bradley Corp.,

www.bradleycorp.com, and Haws, www.hawsco.com

ENERGY MANAGEMENT // Delta Controls, deltacontrols.com







▲ The former **BROOKLYN** RAPID TRANSIT POWER **STATION** in its found condition (above), as seen from the Gowanus Canal.

The historic photo (left) of the Brooklyn Rapid Transit Power Station looks south down the Gowanus Canal.



▲ The **NEW BOILER HOUSE** is clad in washed red concrete, an economical material that is sympathetic to the brick of the turbine hall while remaining true to its modern expression.

Vestiges of the building's original use and organization abound. An early discovery embraced by the design team was the "corduroy wall", a grooved brick wall that originally contained terra-cotta conduit carrying electric cables from the transformer mezzanines down to the street grid. This wall is featured in the lobby and Grand Hall. Bricked-up openings for the steam mains from the original boiler house are evident on the turbine hall's north wall, most now overlaid with graffiti. Certain areas of the turbine hall were removed and, where possible, evidence of those removed elements—cut off beams, arched slabs, sections of removed brick bearing wall—were left exposed. The building tells its story through all these remnants.

The adaptive reuse of any structure is enriched by featuring and re-interpreting the original architecture. Similarly, our built environment is enhanced by retaining important markers of our history and culture and making them viable and useful for the future. Powerhouse Arts remains an unsentimental reminder of the industrial Gowanus that used to be while ensuring that New York City and the building itself continue to be infused by the creative energy of artists and their work.

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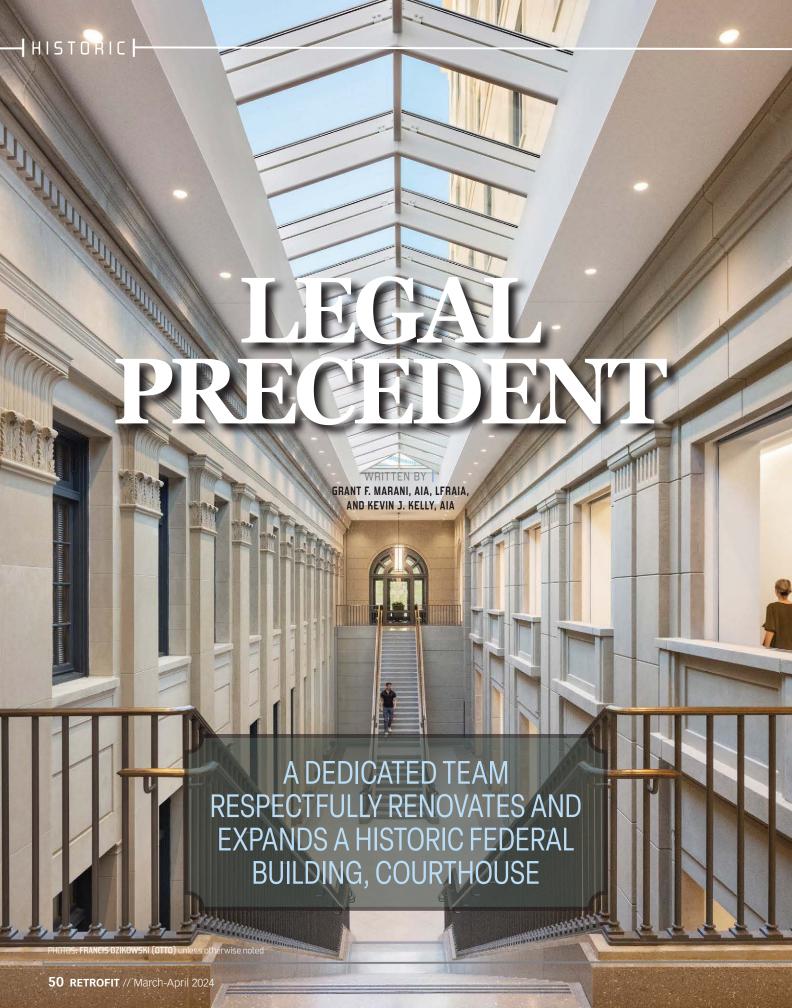


INTERIOR STAIRS

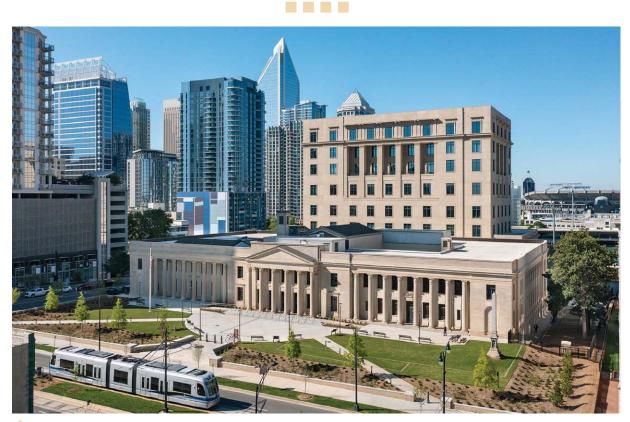


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courtroom in the new wing of the Charles R. Jonas Federal Building and Courthouse in Charlotte, N.C., has one of the country's rarest designs. In a nod to an early 1800s courtroom design, championed by Thomas Jefferson, its jury box is centered in the room in front of the judge's bench as opposed to off to the side where it typically sits. The witness box also is centered, facing the judge and jury.



BUILT AS A U.S. POST OFFICE and single-courtroom facility in 1915, then expanded in 1934, the existing 134,000-square-foot courthouse is listed on the National Register of Historic Places. RAMSA doubled the size of the downtown judiciary facility by designing a new 8-story wing that rises behind the historic courthouse.

It's one of the many unique elements of the newly restored and expanded Jonas courthouse, a project designed by Robert A.M. Stern Architects (RAMSA) for the U.S. General Services Administration.

As one of the few remaining historic structures in Charlotte's central business district, the original courthouse has long been a source of civic and judiciary pride. But the property needed significant upgrades to bring it into the 21st century and to help meet the court's long-term security and space needs.

The Jonas courthouse was one of eight federal court buildings to receive construction funding from Congress in 2016. RAMSA, which has been designing courthouses for some 30 years, was tasked with increasing the size of the courthouse, maintaining its historic entrance and improving security.

THE CHALLENGE OF BLENDING OLD AND NEW

Built as a U.S. Post Office and single-courtroom facility in 1915, then expanded in 1934, the existing 134,000-square-foot courthouse is listed on the National Register of Historic Places. The limestone-clad building exemplifies Classical architecture with its traditionally proportioned front columns forming a colonnade across the main entry.

RAMSA doubled the size of the downtown judiciary facility by designing a new 8-story wing that rises behind the historic courthouse, giving the building a civic presence on the Charlotte skyline for the first time. The new wing provides facilities required for modern-day court proceedings, adding nine new courtrooms, along with judges' chambers and support spaces.

A key part of RAMSA's regular process is researching precedents when designing buildings so they are



A UNIQUE ELEMENT of the restored and expanded Jonas courthouse is the Virginia Revival Model courtroom (top photo). Its jury box is centered in the room in front of the judge's bench; the witness box also is centered, facing the judge and jury. Bottom: Inside a new skylighted double-height stair hall, the historic and new building façades meet, allowing staff and visitors to appreciate the building's original architecture and craftsmanship up close.

THE ORIGINAL COURTHOUSE HAS LONG BEEN A SOURCE OF CIVIC AND JUDICIARY PRIDE. BUT THE PROPERTY NEEDED SIGNIFICANT UPGRADES TO BRING IT INTO THE 21ST CENTURY AND TO HELP MEET THE COURT'S LONG-TERM SECURITY AND SPACE NEEDS.

contextually and historically respectful of their surroundings. To that end, the new wing references elements of the historic structure in its materials and design.

RAMSA carried forward the historic courthouse's Classical style by cladding the new wing in precast concrete panels, carefully selected to complement the original building's limestone. The addition defers to the existing building at the street, retaining the ceremonial entrance and historic lobby. As a large-scale civic gesture, the portico of the existing courthouse is echoed in the form of a double-height loggia high on the new building's façade that provides courtroom staff secure outdoor space and city views.

A new skylighted double-height stair hall further connects new to old. Inside, the historic and new building façades meet in this striking atrium space positioned between the two structures. A skylight running the width of the space washes it in natural light, showcasing and celebrating the historic building's façade, now a feature wall of this transitional space. Staff and visitors can appreciate the building's original architecture and craftsmanship up close and in detail. The elevation of the new wing echoes some of the details of the historic façade across from it without duplicating them.

The project presented a logistical challenge, as well. The courthouse had to continue functioning during construction of the new wing. After it was completed, all the court's functions were moved into the new building, allowing RAMSA to restore and find adaptive-reuse programming for the historic side. It was like choreographing a complex dance.

DESIGNING FOR BETTER SECURITY, EFFICIENCY

Architecturally, the existing Jonas courthouse lacked effective security elements, a common concern among historic courthouses across the country. To improve security, RAMSA designed secure and separate circulation paths through the building for the public, judiciary and U.S. Marshals.

Although the renovation and expansion were precipitated by the urgent need to accommodate security requirements and ensure workspaces supported the needs of the staff, the project also upgraded and replaced aging building systems. This included energy-conservation strategies and an effective stormwater-management system, deployed with cisterns for drip irrigation. Native plants were selected for the landscape, supporting the regional habitat.

The complex is awash in daylight, helping orient visitors. Surrounding courtyards and galleries allow natural light into agency offices, jury assembly rooms and circulation spaces, as well as offer more relaxed spots for casual discussions outside of courtrooms. The courthouse is on track to achieve LEED Gold certification.

A STORIED SITE

In 1836, the West Trade Street site housed the U.S. Mint, an imposing Classical Revival-style building designed by renowned architect William F. Strickland. The structure burned down in 1844 but was rebuilt, largely keeping with Strickland's original design, and reopened in 1846.

In 1891, a Romanesque Revival post office and courthouse opened beside the mint. It was later razed and, in 1915, the government began building a new post

>>> RETROFIT TEAM

DESIGN ARCHITECT // Robert A.M. Stern Architects, www.ramsa.com

- Partner in Charge: Grant F. Marani, AIA. LFRAIA
- Project Manager: Kevin J. Kelly, AIA, partner
- Project Designer: Paul Zembsch
- Project Team: Melody Hanna

ARCHITECT OF RECORD/ENGINEER //

Jenkins-Peer Architects, www.jenkinspeer.com

COURTROOM PLANNER, ARCHITECT //

CGL Companies, cglcompanies.com

GENERAL CONTRACTOR // Brasfield & Gorrie, www.brasfieldgorrie.com

STRUCTURAL AND BLAST ENGINEER //

Thornton Tomasetti,

www.thorntontomasetti.com

MECHANICAL/PLUMBING ENGINEER //

MSWG Engineers, mswg.com

ELECTRICAL ENGINEER // Apogee

Consulting Group, www.acg-pa.com

HISTORIC PRESERVATION,

ENVELOPE // Wiss, Janney, Elstner

Associates, www.wje.com

LIGHTING DESIGNER // Cline Bettridge Bernstein Lighting Design, cbbld.com

ACOUSTICAL AND AV // Cerami,

www.ceramiassociates.com

MILLWORK AND DOORS // Mortensen Woodwork Inc., mortensenwoodwork.com

ARTWORK // Ellen Driscoll and Mosaika
Art + Design, mosaika.com/project/
ellen-driscoll

>>> MATERIALS

EXTERIOR WING PRECAST

CLADDING // Gate, gateprecast.com

JONAS COURTYARDS BRICK

CLADDING // Taylor Clay Products Inc., taylorclaybrick.com

TERRAZZO FLOORING IN PUBLIC SPACES

// David Allen, davidallen.com

SKYLIGHT // Uni-Sky Corp.,

www.uni-sky.com

TPO ROOFING // Everguard TPO 60-mil Membrane from GAF,

www.gaf.com

DOWNLIGHTS // LDN4 LED, Lithonia Lighting, lithonia.acuitybrands.com

DIFFUSED LIGHTING // BLT Series,

Lithonia Lighting, lithonia.acuitybrands.com

ACOUSTICAL PANELS // AVL Systems Inc., aylonline.com

GYPSUM // Gold Bond Building Products, www.goldbondbuilding.com

CARPET TILE // JJ Flooring,

www.jjflooringgroup.com; Bentley, www.bentleymills.com; Contract Flooring, www.contractflooringllc.com; Mannington, www.mannington.com/home; and Tarkett, commercial.tarkett.com

INTERIOR, EXTERIOR SIGNAGE // Fravert, www.fravert.com



JONAS COURTHOUSE has a civic presence on the Charlotte skyline for the first time, as seen from Truist Field, home of the Charlotte Knights.

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office facility, the first portion of which became the Jonas Federal Building and Courthouse.

A 1934 addition to the post office, constructed in a Classical style, tripled the structure's size and reoriented the building's main axis north to front West Trade Street.

The new design incorporates some of the rich history. The footprint of the original mint is memorialized with an outline of granite pavers on the front lawn of the Jonas courthouse. A monument memorializing First Lieutenant William Ewen Shipp of Charlotte also stands in the front yard. The monument of Shipp, who died in the Spanish-American War, was originally located at the front of the U.S. Mint and relocated when the post office expanded. In 2018, the granite obelisk returned to the front lawn facing the appropriately named Mint Street as part of the courthouse modernization project.

CELEBRATING HISTORY WITH PUBLIC ART

As part of the GSA's Art in Architecture Program, Brooklyn-based artist Ellen Driscoll created a series of mosaic panels that represent the history of the Jonas courthouse and the region, each commemorating a different aspect of the site's rich history.

The seven hand-glazed ceramic and Byzantine glass mosaics, called Site Woven, animate the streetscape along the building's back façade at grade. The images include the U.S. Mint and U.S. Post Office. Other scenes include representations of the landmark desegregation case Swann v. Charlotte-Mecklenburg Board of Education and U.S. citizens taking the Oath of Allegiance during naturalization ceremonies that take place in the courthouse throughout the year.

The artwork has become an important public amenity. The panels front a public street, allowing for far more exposure than if they were kept inside as was originally planned. Judges often take visitors on tours of the artwork—and those attending baseball games at the neighboring Truist Field, home of the Charlotte Knights, will cross the street to look at the mosaics.

JUDGING COURTROOM DESIGN

RAMSA's dedicated approach to creating the most modern spaces for the judiciary and

staff while respecting historical precedence involved restoring the Robert D. Potter Courtroom, the crown jewel of the original building. RAMSA worked with courtroom planning experts CGL Companies to maintain the room's historic character while improving its functionality.

To design the new courtrooms, the RAMSA team used 3D modeling to develop several different courtroom types. Those designs later became full-size mockups, complete with walls and furniture, so the judges could experience the space configurations and provide feedback before they were built.

The courtroom with the centered jury box is known as the Virginia Revival Model. Its design, which harkens back to Thomas Jefferson while he was a lawyer/architect in Charlottesville, Va., is meant to emphasize the jury's role in the administration of justice and facilitate courtroom interactions. In this configuration, the lawyers sit off to the side. Cases are now being tried in the courtroom and the response has been positive. Jurors have said they appreciate being more physically centered in the middle of the conversation and better able to observe the witnesses directly.

U.S. District Court Judge Robert Conrad, who worked close with RAMSA on the project, was the driving force behind bringing this courtroom design to the building. And his work paved the way for other courthouses to introduce the style more easily. The design guidelines that federal court buildings must adhere to initially didn't include the Virginia Revival Model. But because of Conrad's efforts, they now do.







Decarbonization Depends on Renewable Energy and Electrified Buildings

t's no secret a significant factor of tackling the climate challenge rests in the built environment. Buildings are massive consumers of energy and resources, as well as major emitters of greenhouse gases. According to a report from NREL, citing 2021 data from EPA and EIA, buildings are responsible for about 70 percent of the energy use in the U.S., about 40 percent of total primary energy consumption and about 30 percent of operational greenhouse-gas emissions. Buildings worldwide were responsible for about 37 percent of global CO2 emissions in 2020. (Read the report at www.nrel.gov/docs/fy22osti/81670.pdf.)

Lowering the energy used and emissions generated by buildings is vitally important, and the drive toward better energy efficiency has indeed been the backbone of much of the green-building movement of the past two decades.

The good news is those efforts have not been in vain. Findings in a recent USGBC report, "State of Decarbonization: Progress in U.S. Commercial Buildings 2023," show absolute commercial-building emissions in the U.S. have decreased to 1990 levels, in spite of a 55 percent increase in commercial floor area since then. The same report states buildings constructed in 2023 are projected to be 15 percent more efficient than those built in 2017. (Read USGBC's report at build.usgbc.org/state-of-decarbonization-2023.)

Despite the good news, the fact remains: Most of the energy currently being used, in the form of grid-delivered electricity and direct space heating, comes from sources that continue to emit CO2. To make the next leap in decarbonization, the demand and supply sides must set a new course toward electrification. Electrification is a term that is coming up more often in the context of community and building planning. But what does it mean?

Going Electric

"We think about electrification in really simple terms—remove all need for fossil fuels onsite and you are left to develop approaches for heating, cooling and domestic hot water based on systems that use electricity," says Lonn Combs, FAAR, AIA, principal and cofounder, EASTON COMBS Architects. "Electric-based systems have been around for a long time but historically many of these systems were never that efficient. There was simply no incentive to bring affordable high-efficiency electric-based heating and cooling systems to market when dependable solutions using readily available and inexpensive fossil-fuel-based solutions were everywhere. That is changing."

"A key to progress has been a rapid expansion of high-efficiency electric-based systems," adds Rona Easton, RA, NCARB, ARB, principal and cofounder, EASTON COMBS Architects. "Another has been the expansion into renewables to generate electricity. In terms of onsite production, solar coupled with battery backup is an obvious approach but, generally speaking, the transition to electrification can influence the next generation of utility-level power generation and further support the onboarding of renewable power-generation capacity at a grid level."

Investments in renewables increasingly are being made, thanks in part to funds from the Inflation

Reduction Act (IRA). In the first year since the law's passage, approximately \$282 billion was invested in renewable-energy projects (bit.ly/48TPmCa). Substantial incentives also are available to businesses and homeowners for upgrades and energy-efficiency retrofits.

Code Green

IRA also provides \$1 billion to improve state and local energy codes (www.energy.gov/scep/technical-assistance-adoption-building-energy-codes) to help push the drive toward electrification and net-zero targets. The goal is to achieve a carbon-free economy by 2050, and it will take a lot of work to make that happen—work that must start now.

Many smaller communities, universities and corporate campuses are currently blazing a path to **ELECTRIFICATION**. Cooper Robertson has completed a long-range plan for the University of Maryland, for example.



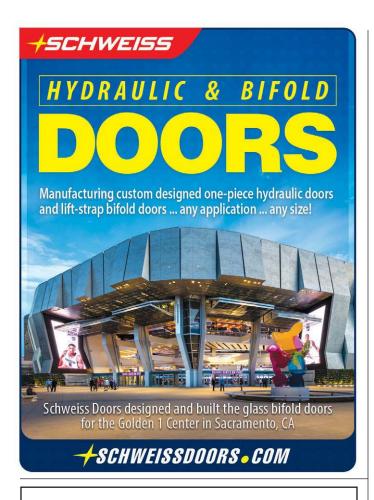


AGES: COOPER RO

Part of that work is the traditional energy-efficiency improvements we've been pursuing for many years. ASHRAE 90.1 continues to be the gold standard in that realm, and ASHRAE has committed to net-zero for all new buildings by 2030 (bit. ly/48Z3eei). Buildings themselves remain an enormous part of the equation.

The recently released *Building Performance Standards (BPS): A Technical Resource Guide* was created jointly by ASHRAE, DOE and DOE's national laboratories to provide the information needed to make informed design decisions that drive deeper existing building decarbonization and provide equitable outcomes for all involved. "These

Cooper Robertson
has identified ways to
systematically **DECOM- MISSION** the University of
Maryland's central steam
utility plant. The phased
strategies shift toward
a smaller district-scale,
electrification strategy
that pairs satellite utility
buildings with large-scale
geothermal, deep-energy
building retrofits and
high-performance new
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Buildings are a key ingredient, but achieving true zero emissions means taking a more holistic approach that includes electrification and other strategies. This is where many states, municipalities, and local entities are stepping forward to set targets, incentivize innovation and establish codes to point the way forward.

Local Action

"There are many states that have climate-action plans in place today, which discuss energy systems in some detail," explains Mike Aziz, AIA, partner with Cooper Robertson. "We're seeing sweeping changes in the way building codes are being written, and policies at the local and state level limit the amount of energy that can be drawn from natural gas or coal as part of development. Some go as far as a complete moratorium on new gas hookups, which is interesting. Instead of incentivizing, they're just cutting off the opportunity to do it."

Examples of such policies include Chicago's Mayor Brandon Johnson recently proposed legislation establishing an indooremissions standard to eliminate use of fossil fuels in new construction and building additions of more than 10,000 square feet. If approved by the City Council, such a law would likely go into effect one year after its passage. (Read more at chicago. suntimes.com/2024/1/22/24047447/brandon-johnson-bannatural-gas-new-homes-buildings.)

The city of Denver also has launched an electrification effort, dovetailing with the state of Colorado's sustainability and decarbonization targets (www.cpr.org/2023/06/01/ colorado-adopts-a-new-climate-minded-statewide-buildingcode). New building codes in Denver will ban natural-gas furnaces and water heaters in new commercial and multifamily construction beginning in 2024. By 2027, natural gas will not be permitted for any heating or cooling equipment in new commercial buildings. (It's important to note, given recent prominently voiced concerns, these codes do not impact residential gas stoves.)

At an even more local level, action is being taken by many smaller communities, universities and corporate campuses to blaze a path to electrification.

"We recently completed a long-range plan at the University of Maryland, which identified ways to systematically decommission the central steam utility plant," Aziz says. "We developed phased strategies for shifting toward a smaller district-scale, electrification strategy that pairs satellite utility buildings with large-scale geothermal, deep-energy building retrofits and high-performance new buildings."

A key to the University of Maryland's strategy is geothermal. For example, a lot of energy is used to heat water in campus settings like this, and smart use of geothermal can take the load off traditional natural-gas-powered waterheating systems.

"About 90 percent of university buildings need low-temperature hot water, and that's what the ground can give you," Aziz explains. "You need to get the water temperature up to 140 F; if you start at the 50-70 F found underground, you don't need a lot of energy to get water to 140. That can be done with electricity. You store the water in the ground, and you bring it up to whatever temperature is needed."

The Future is Electric

The sustainability movement, unfortunately, has long been compartmentalized. There are individual crusades focused on materials. embodied carbon, operational carbon, renewable energy, energy efficiency and so many other factors. The truth is, to address the climate crisis before us, we need strategies that embrace and embody all these themes and more.

In many ways, the move toward electrifying our buildings is an example of the kind of big-picture thinking required. More than

just a singular tactic, it is a long-term transformational goal that relies on change and advancement from many sectors. Buildings need to find new ways to operate without direct use of fossil fuels, and utilities need to generate the clean energy that will power the built environment of the future, free of greenhouse-gas emissions.

Inspiring investment toward targets in a yet-unseen future with incomplete infrastructure is no easy task. Fortunately, the data has been compelling enough to convince major cities, smaller communities and campuses, and more.

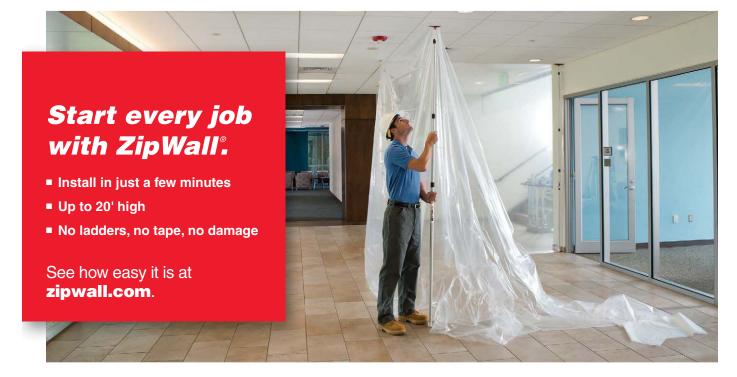
"It's important that decisions around these big investments are data informed," Aziz notes. "It's important to communicate the value of the long-term economic, environmental and social value to decision-makers whether that be the president of a company or university or the mayor of a city. You cannot avoid upfront costs, but when you look at the long-term benefit in value to residents of a community, it's undeniable the high value of these investments. Communicating using real data is how we build consensus."

BUILDINGS NEED TO FIND NEW WAYS TO **OPFRATE WITHOUT** DIRECT USE OF FOSSIL FUELS. AND **UTILITIES NEED TO** GENERATE THE CLEAN **FNFRGY THAT WILL** POWER THE BUILT **FNVIRONMENT OF** THE FUTURE. FREE OF **GREENHOUSE-GAS FMISSIONS**

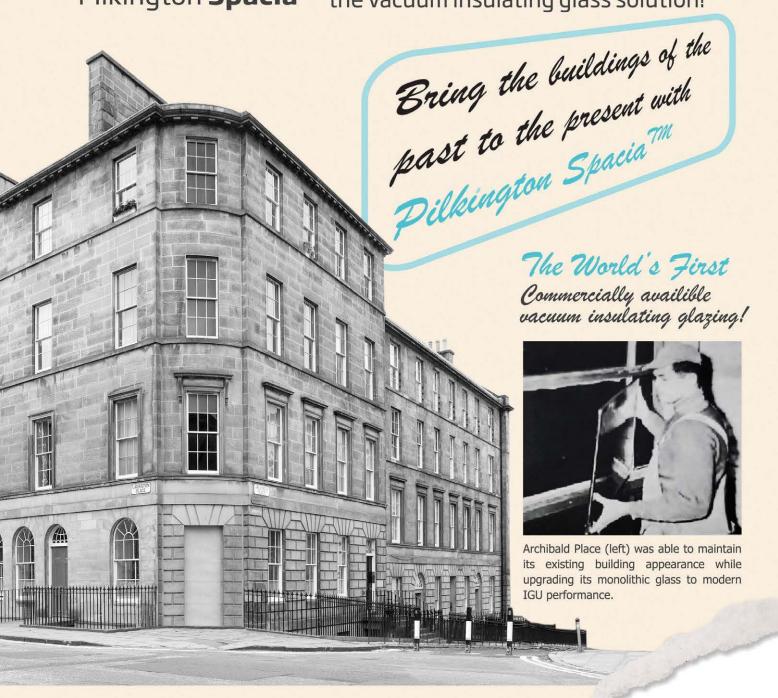


DUST BARRIER SYSTEM

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There are many benefits to using a VIG. The thin profile, high-performance product allows for potential to:

- Reduce embodied carbon impacts from additional materials by allowing reuse of existing window sash
- Improve buildings operational carbon and energy use by upgrading from monolithic to IGU performance
- Mitigate outside noise by improving acoustic performance



Scan for more on historical restoration glass solutions





CERAMIC GEAR TECHNOLOGY LASTS LONGER IN EXPOSED SENSOR FLUSH VALVES

Zurn Elkay Water Solutions has updated its line of exposed sensor flush valves with new Zurn Top Mount Exposed Sensor Flush Valves With Ceramic Gear Technology (ZER6000AV-TM, ZER6003AV-TM). By using ceramic gear technology instead of solenoids and an AquaVantage thermoplastic elastomer (TPE) diaphragm, the flush valves are reliable, precise and efficient. GO BLUE gaskets and seals are made of chemical-resistant TPE, which lasts eight to 10 times longer than traditional rubber for reduced maintenance and unexpected downtime. For reliable operation, choose between battery-operated units or hardwired options with battery backup (with the suffix -HW); both versions work when electricity goes out.

www.zurn.com/products/finish-plumbing/sensor-flush-valves/gear-driven-battery-powered

LVT IS OFFERED IN 13 NEW COLORWAYS

Karndean Designflooring has added 13 new colorways to its popular LooseLay collection. The collection offers a combination of design versatility, easy installation and high-end performance. At 4.5-millimeters thick, Karndean LooseLay transitions easily to most carpet tile. Engineered and manufactured



for installation as a floating floor, the product also can be glued down if a project requires. With the addition of 13 designs inspired by wood from around the world, the Karndean LooseLay collection now includes 43 different colorways: 33 wood and 10 stone.

www.karndean.com/karndeanlooselay



↑ INJECTION-MOLDED NEON LIGHTING RESISTS ENVIRONMENTAL ELEMENTS

Nova Flex has introduced its in-house custom injection molding. Transitioning from traditional neon lighting assembly with clips to silicone injection molding creates increased focus on the craftsmanship of the lights' outer casing. providing a sleeker appearance and improved resistance to environmental elements. Silicone injection molding ensures a polished and seamless finish, enhancing the aesthetic appeal of neon lights, especially in directview applications. Robust silicone material was developed to withstand harsh outdoor conditions and prolong product lifespan with minimal maintenance. Nova Flex's in-house injection molding process delivers neon light projects in five to 10 days.

novaflexled.com

≥ METAL ROOF RESOLVES TRAPEZOIDAL STANDING-SEAM SHORTCOMINGS

The Trap-Tee symmetrical metal roofing system is a site-formed, mechanically seamed system, measuring 2 3/4-inches tall. Trap-Tee is designed to resolve the three major shortcomings of trapezoidal standing-seam roof systems: leaking end laps, low wind-uplift capability and repair difficulties. Site-forming eliminates end laps vulnerable to leaking over time. The oversized seam and special clips dramatically increase wind-uplift capacity, and the symmetrical design allows for easy repair or alteration after the roof is installed. Standard clips are 16 gauge and 8-inches long while Super Clips are 16 gauge and 16-inches long. Offered with Sherwin-Williams PVDF Fluropon coating, the Trap-Tee has a life expectancy approaching 60 years. Rectangular metal buildings and tilt-up warehousing are the best candidates for the Trap-Tee panel in remove and replace, as well as re-cover projects.

www.mcelroymetal.com



→ CUSTOMIZE ACOUSTIC PANELS VIA SHAPE, FABRIC AND QUANTITY

AcousTech Contour Flat and 3D Shaped Panels are available in an array of standard and custom shapes; sizes; and fabric options, including flat-faced and 3D designs. The fabric facings offer a wide range of choices, featuring selections from Guilford of Maine and designer fabrics from Maharam, Carnegie, DesignTex, Knoll and others. Emphasizing customization, AcousTech allows for any combination of quantity, shape and fabric. The panels are not only visually striking but also boast high sound absorption efficiency, enhancing the acoustic quality of the environment. Lightweight and easy to install, the panels come with fully concealed mounting hardware, seamlessly blending into the design of the space.

avlonline.com/acoustech-contour-3d-flat-shapes



← 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 sheetbased products, such as wall panels and doors.

www.c-sgroup.com

AIR CONDITIONER CAN HELP **ACHIEVE NET ZERO**

Mojave Energy Systems has released its commercial liquid desiccant air conditioner, ArctiDry, which reduces negative environmental impacts by using significantly less electricity and refrigerant, resulting in lower carbon-dioxide emissions. By only using air to transfer heat, ArctiDry increases energy efficiency and ensures reliable operation. ArctiDry installs like conventional packaged HVAC equipment, needing only an electrical connection. It requires minimal maintenance and helps customers achieve Net Zero compliance. The product reduces energy draw by 40 to

60 percent compared to today's legacy air conditioners.

mojavehvac.com





← RECYCLED RUBBER TILES, PLANKS CREATE UNIQUE FLOORING LOOKS

REGUPOL has introduced REGUPOL upscale, a collection of recycled rubber tiles and planks for commercial installations. A blend of postconsumer tire rubber, postindustrial EPDM chips and low-VOC binder, upscale is available in two standard sizes: 4 millimeters by 8 by 36 inches and 4 millimeters by 12 by 24 inches. Custom sizes and colors also are available. REGUPOL upscale is available in 12 standard color combinations and features a square or micro-bevel edge. Squareedged floors fit together flush, resulting in a smooth and seamlesslooking transition. In contrast, the micro-bevel edge brings subtle texture and dimension to an interior space. The addition of a sealed finish can be applied at the factory or in the field, strengthening the tile's defense against dirt and spills.

www.regupol.com/us

→ CREATE CLASSIC BOARD AND BATTEN WALL AESTHETIC WITH METAL PANELS

The PAC-CLAD Board and Batten wall panel system from Petersen expands the creative options for designers and specifiers of exterior cladding systems. The Board and Batten system uses concealed fasteners to maintain clean lines and a rhythmic pattern of alternating wide vertical boards and narrower elevated battens. The Board and Batten panel provides a classic design aesthetic for residential and commercial wall applications. The 3/4-inch depth and 2-inch width of the batten create dimensional interest while keeping trim offsets to a minimum. The Board and Batten panel is available in 24-gauge steel and .032 aluminum. It installs with mechanical fasteners through pre-punched holes in vertical wall applications only. Maximum lengths are 30 feet for steel and 22 feet for aluminum. Available panel widths are 12 and 16 inches. pac-clad.com



TROFFER FEATURES HOUSING-AGNOSTIC LIGHTING MODULE

Signify has introduced its Ledalite BloomBox, a 2- by 2-foot troffer with a small, housing-agnostic lighting module. The product offers high efficacy (170 lumens per watt) and excellent color quality (Color Rendering Index >93). Its optics deliver uniform light distribution with low glare (Unified Glare Rating <19), supporting building occupants' visual comfort. It also allows for greater spacing between luminaires (up to 14 feet), helping to reduce the total number of luminaires and light power needed in a space. This contributes to a quiet ceiling design; a lower initial investment for building owners; and an easy, fast installation and module replacement experience for electrical contractors.

www.signify.com

★ KIT REJUVENATES NON-SLIP STAIR NOSINGS, TREADS

Wooster Products introduces the Stair Saver Epoxy Kit, which rejuvenates non-slip stair nosings and treads, restoring them to like-new condition. The easy-to-use kit will restore any brand of nosing or tread where the abrasive fill is missing. Treads repaired with Stair Saver meet or exceed all codes and standards for coefficient of friction. It is far more economical than replacing the empty nosing shells, which are a trip hazard because of the missing abrasives. The Stair Saver Epoxy Kit is suited for interior or exterior usage and can be applied in less than two hours. Repaired treads are ready for foot traffic in 24 hours. Each Stair Saver Epoxy Kit contains all the materials needed to repair a 40-foot section of a typical 3-inch nosing.

www.woosterproducts.com





↑ SPRAY FOAM UNITES TWO EXISTING BRANDS

Holcim Building Envelope has launched Enverge, a spray foam insulation brand that unites two market-leading spray foam brands—Gaco SprayFoam and SES Foam—bringing together more than 40 years of experience in providing high-performance spray foam insulation, technical support, building-science expertise and training to the market. Enverge provides high-performance insulating solutions to support Holcim Building Envelope's mission of building progress for people and the planet.

www.envergesprayfoam.com

→ GALVALUME AND PVF FILM MERGE FOR PROTECTION IN COASTAL ENVIRONMENTS

U.S. Steel Corporation and DuPont have launched COASTALUME, North America's first GALVALUME solution engineered and warrantied for coastal environments. The new COASTALUME product combines the strength and self-healing characteristics of U.S. Steel's GALVALUME solution with DuPont's Tedlar polyvinyl fluoride (PVF) film barrier that helps resist saltwater corrosion, UV damage, cracking, impact and more. The jointly designed product is exclusively available through U.S. Steel. COASTALUME's best-in-

class coastal warranty covers roofing and siding products installed up to 300 feet

from breaking surf, large bays, marshes and other coastlines. The exclusive warranty also covers up to 50 years for finish and 25 years for substrate.

www.ussteel.com/customers/products/coated-sheet





PURIFY AIR WITH OZONE

The CerroZone air purifier safely harnesses ozone to kill 99.9 percent of viruses, bacteria, mold and other air-

borne 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, Cerro-Zone 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

→ MOUNT MODULE LEVEL POWER ELECTRONICS TO PV FRAMES

S-5! has made available its MLPE (Module



Level Power Electronics) Mount, which provides a universal, cost-effective method for attaching MLPE directly to solar PV module frames. Designed for use with most solar modules, the MLPE Mount secures optimizers and microinverters along the underside of the module frame at desired locations so wire management is simplified. This provides the versatility needed to better handle module-to-module wire management and electrically bonds the equipment together to easily comply with grounding requirements. The MLPE Mount is suited for use with all S-5!'s solar attachments and can be used in rail-based installations or paired with the PVKIT rail-less solar mounting solution for direct attachment to metal roofs.

www.s-5.com



← SINGLE- AND DOUBLE-GLAZED MODULAR GLASS PARTITIONS PROVIDE SAME VISUAL APPEARANCE

PurOptima has launched its Revolution 100 in the U.S. Revolution 100 is a dry-jointed modular glass partition system that can be single- or double-glazed, allowing for the same visual appearance across a workspace while addressing varying acoustic requirements. In its single-glazed form, the glazing is offset with discreet glass-to-glass joints between the glazed panels. Revolution 100 Shoreditch Edition is an enhanced version of this acoustic product and features a slimline aluminum mullion framework. Bonded to the glass it thereby retains the structural stability and acoustic performance of the glass partition while giving the appearance of cutting through the glass.

puroptima.com/products/revolution-100-2

AD INDEX

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COMMON PANTRY

Chicago's Longest-operating Food Pantry Incorporates
Trauma-informed Principles











esigned by Wheeler Kearns Architects, the new headquarters for Common Pantry is now open at 3908 N. Lincoln Ave. in Chicago. This is the first facility owned by the non-profit, which is the oldest continually operating food pantry in the city, serving Chicago's North Side since 1967.

Common Pantry is committed to addressing the emergency needs of the local community by providing healthy food, kinship and support to overcome poverty-related challenges. In its new 6,252-square-foot home—more than double the size of its former location—Common Pantry has expanded access to services, including emergency groceries, monthly produce distributions, weekly meal services, home delivery for seniors, nutrition counseling, cooking classes and social services.

The adaptive-reuse project transformed a 1-story building that once was a nightclub, laundromat, and, most recently, a restaurant, into a thoughtfully designed home for the non-profit. Brightly lit and vibrant interiors, featuring custom graphics, custom wallpaper and striking green floors, welcome and uplift clients.

The design incorporates trauma-informed principles, such as the glass entry vestibule that provides sightlines into the space, leading to a friendly face at the reception and intake area. The fellowship hall, a

spacious multifunctional space that acts as a waiting room, sorting/packing space, event venue and dining area, combines street-facing windows that let in natural light with interior plants that offer privacy from the street. The commercial kitchen, visible through a peek-through window, doubles as a demonstration area for cooking and educational events. Outside, a renovated courtyard becomes a protected public space that offers respite.

With its proximity to public transit lines, ADA accessibility and high visibility on a major thoroughfare, the existing building was the ideal space for Common Pantry to meet increased demand and enhance the quality of its services.



RETROFIT TEAM

ARCHITECT // Wheeler Kearns Architects, wkarch.com
CONSTRUCTION MANAGER // Bulley & Andrews, www.bulley.com
STRUCTURAL ENGINEER // Enspect Engineering, enspectinc.com
MEP ENGINEER // Primera, primeraeng.com
FOOD SERVICE CONSULTANT // Edge Associates Inc.,
edgeassociates.net

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