retrofit

november-december 2022 // retrofitmagazine.com

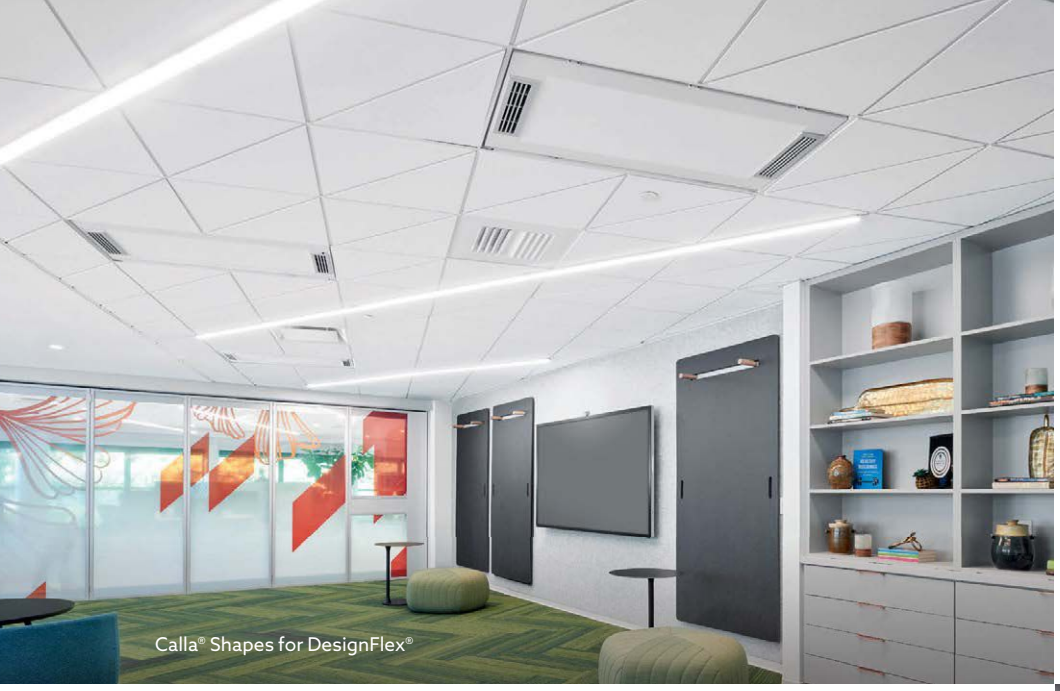


Winners Circle

Fourth-annual Metamorphosis Awards Winners

MIXED USE-CATEGORY WINNER

story on page 26


Calla® Shapes for DesignFlex®

SUSTAIN®
High Performance Sustainable Ceiling Systems



Simplest Way to Spec for Sustainability

No matter what sustainability or design challenges you're facing, the Armstrong® SUSTAIN® portfolio makes your decisions simpler – by offering the largest forward-thinking portfolio of healthy ceiling and wall solutions, with verified material transparency and low embodied carbon. Learn more at armstrongceilings.com/sustain

---

Armstrong®
CEILING & WALL SOLUTIONS

VIEW A VIDEO


AcoustiBuilt® Seamless Acoustical Ceiling System

Give your building interior a NEW LOOK

WITH LAMTEC WMP®-RETRO



BEFORE



AFTER



EASY TO INSTALL

Lamtec WMP-RETRO is specifically designed to cover damaged insulation

- **Attractive white appearance**
- **Abuse resistant multi-layer construction**

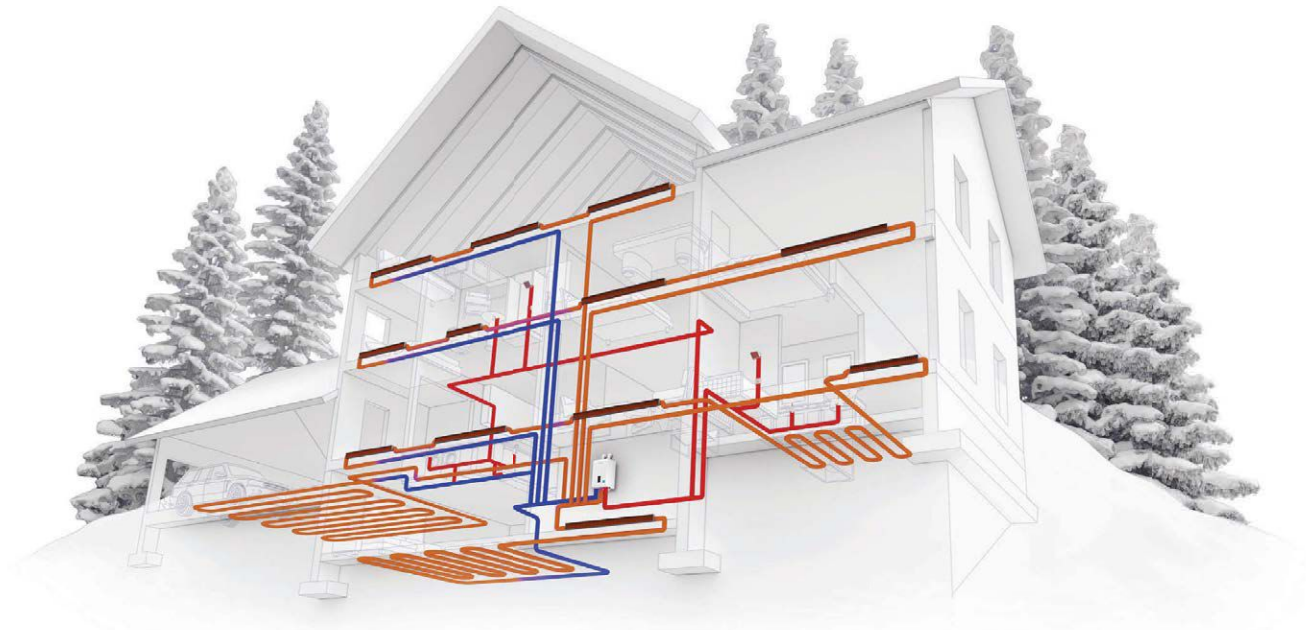
LAMTEC® CORPORATION

VIEW A VIDEO

Learn more at **www.lamtec.com/wmp-retro** | 1-800-852-6832


GSSI
SEALANTS
PREMIER BUTYL SEALANT TAPES
A LASTING DEFENSE
FOR OVER 30 YEARS, MANUFACTURERS AROUND THE WORLD HAVE ENTRUSTED THEIR BUILDINGS' MOISTURE DEFENSE TO THE MOST RELIABLE BUTYL SEALANT ON THE MARKET, MB10A BUTYL TAPE.
30 YEARS
800.288.9489
GSSISEALANTS.COM

The highest selling brand of condensing combi-boilers takes home heating and DHW to new heights



HEATING UP TO 150,000 BTU/h **DHW UP TO 210,000 BTU/h**

NCB-H

High capacity, High performance combi-boilers

Navien NCB-H high efficiency combis bring the highest level of whole house comfort to any size home...big or small

- **Highest** DHW maximum BTUs in residential condensing combi-boilers... up to 210,000 per hour
- **Highest** DHW flow rate @ 70°F rise... up to 5.4 gallons per minute
- **Highest** number of BTU sizes for the North American residential combi-boilers
- **Highest** residential combi-boilers domestic hot water turndown ratio...15:1



- **Highest** residential combi-boilers heating turndown ratio... up to 11:1
- **Highest** number of built-in zone controls for valves or pumps... up to three
- **Highest** full lineup 2" venting lengths... up to 65 feet
- **Highest** number of cascade capable units with up to 15 NPE tankless water heaters
- **High altitude certification...** up to 10,100 feet (NG or LP)

Aim high with Navien NCB-H combi-boilers...
To learn more visit Navieninc.com

Navien

The leader in condensing technology...does it again.

BOILER BONUS POINTS
SEP 1ST to NOV 30TH
NavienRewards.com

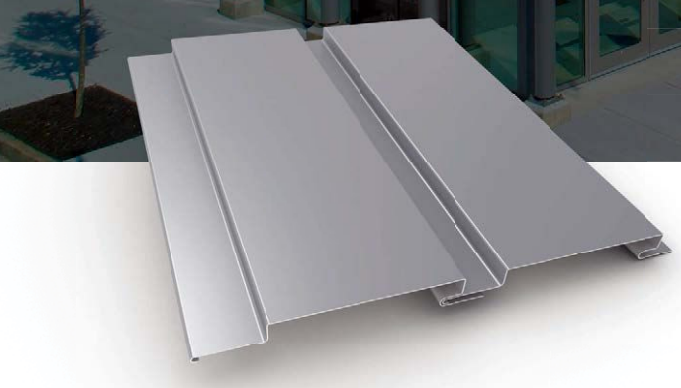
Rhythm + Character



"The contrast between the metal bays and traditional brick walls gives the project its rhythm and character."

-Andreas Lange, AIA, senior associate, Perfido Weiskopf Wagstaff + Goettel

Rennen & Beecher Flats, Cincinnati Inst.: Deuss Enterprises Architect: Perfido Weiskopf Wagstaff + Goettel
Dist.: Allied Building Products GC: Titan Real Estate Group Owner: 3CDC Photo: hortonphotoinc.com



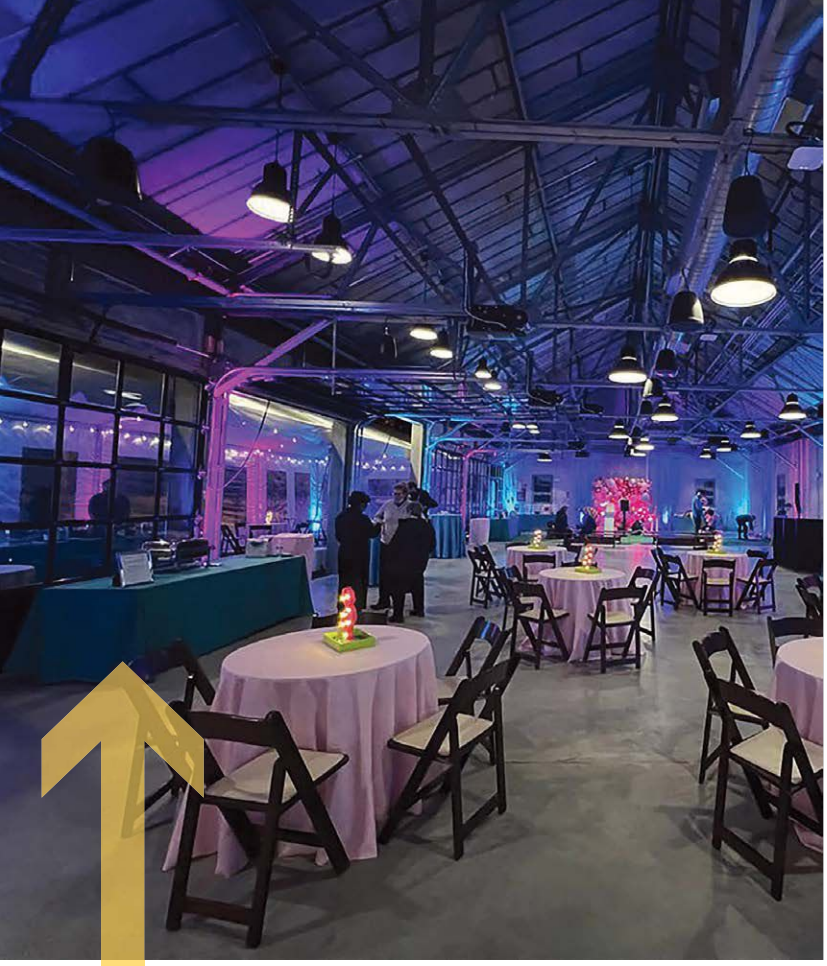
Flush + Reveal
Metal Wall Panel Systems
Slate Gray

View the case study

PAC-CLAD
PETERSEN
A CARLISLE COMPANY

IL: 800 PAC CLAD MD: 800 344 1400 TX: 800 441 8661 GA: 800 272 4482 AZ: 833 750 1935 WA: 253 501 2450

PAC-CLAD.COM | INFO@PAC-CLAD.COM



INSIDE THIS ISSUE

NOVEMBER-DECEMBER 2022 // VOL 13 // ISSUE 6

feature projects

2022 METAMORPHOSIS AWARDS

retrofit's fouth-annual Metamorphosis Awards culminated in 22 winners with outstanding achievements in retrofitting commercial, industrial and institutional buildings.

Adaptive Reuse 1st Place

16

COMMUNITY INVESTMENT

An increasingly dense Boston neighborhood receives a versatile new public courtyard with 21st century amenities within 19th century buildings.

Adaptive Reuse 2nd Place

22

TULSA, THE MUSIC CITY

A former church turned recording studio is expanded to welcome more musicians and preserve their legacies.

Adaptive Reuse 3rd Place

24

KREATION STATION

An abandoned school in Philadelphia is retrofitted as a canvas for artists.

Mixed Use 1st Place

26

BUILDING PSYCHOLOGY

Chicago's iconic Willis Tower is redeveloped into an attractive destination for its workers, tourists and all city residents.

Mixed Use Honorable Mention

31

STORY OF REDEMPTION

A derelict building in Memphis, Tenn., is reimagined for mixed uses and celebrations.

Mixed Use Honorable Mention

32

EXPERIENTIAL RETAIL

A beloved Asian market in Seattle undergoes a thoughtful redesign to celebrate its 100-year-old brand.

Interior 1st Place

34

HOLISTIC CARE

A 9,000-square-foot rectilinear box within a Modernist building is transformed into a calming space for Toronto's GBTQ community.

Interior 2nd Place

38

A HOUSE IN THE WOODS

An elite Penn State building is opened to the outdoors and campus.

Interior 2nd Place

40

ABSOLUTE DELIGHT

A library in Lakewood, Colo., goes from a home for books to a space encouraging an individualized experience.

Interior Honorable Mention

42

CAPTURE THE CHARACTER

A general contractor embraces a historic building's original foundry equipment while creating a sophisticated headquarters in Dayton, Ohio.

RETROFIT MAGAZINE METAMORPHOSIS AWARDS

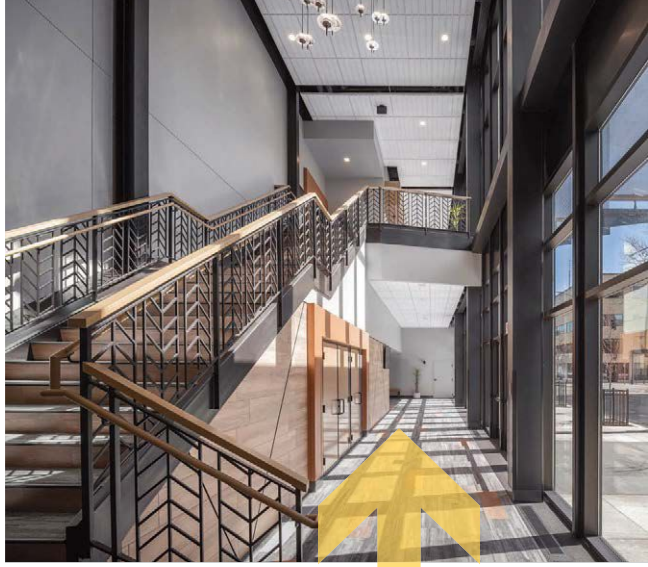


cover

COVER PHOTO: **TOM HARRIS**

INSIDE THIS ISSUE

NOVEMBER-DECEMBER 2022 // VOL 13 // ISSUE 6



Multifamily 1st Place

44

A LOFTY VISION

A skillful and inspired adaptive reuse turns a disused municipal complex into Courthouse Lofts in Worcester, Mass.

Multifamily 2nd Place

48

TRULY TRANSIT-ORIENTED

High-density affordable housing weaves together historic buildings with thoughtful new construction in Cambridge, Mass.

Exterior 1st Place

50

CREATIVE APPROACH

Ingenuity and technology breathe new life into historic terra-cotta half columns in New York City.

Exterior 2nd Place

54

CUSTOM CAST IRON

A New York City landmark building receives a well-executed façade restoration.

Whole Building 1st Place

56

NOTHING BUT NET ZERO

The American Geophysical Union's headquarters in Washington, D.C., chases ambitious performance and occupant comfort.

Whole Building 2nd Place

62

SUNSHADES

Fiber-reinforced polymer shades increase a San Francisco building's usable daylight while integrating the building into a changing neighborhood.

Whole Building 3rd Place

64

THE CASTLE ON THE HILL

A remarkable team effort revitalizes a 100-year-old school in Hartford, Conn., while facing numerous challenges.

Whole Building 4th Place

66

GATEWAY TO MEMPHIS

A Brutalist convention center is renovated to spark area redevelopment and draw more visitors to the city.

Addition 1st Place

68

THE PAGEANTRY OF THE THEATER

To ensure a 90-year-old theater in Billings, Mont., could endure, it's given new bones and better integrated into its downtown surroundings.

Historic 1st Place

72

A BRUTALIST LANDMARK DEFYING GRAVITY

Vacated because of seismic concerns, Mario Ciampi's former Berkeley Art Museum is reborn as a life-sciences incubator.

Historic 2nd Place

78

CHERISHED CIVIC LANDMARK

A distinctive library in Minneapolis receives an update that retains its beloved Brutalist character.

Historic 3rd Place

80

NOSE TO NOSE

One of the nation's last remaining historic zoo buildings, which is located in Chicago, provides a more accommodating and immersive experience.

COLUMN

12 POINT OF VIEW // Different perspectives came together to choose 22 Metamorphosis Awards winners.

retrofit

stay up to date

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



So. Much. We can help you with.

As a manufacturer, we believe our support should go much further than selling product off the shelf — and it does. Just ask the specifiers, consultants, designers, contractors and owners who have relied on our problem-solving support on thousands of retrofits and renovations since our beginning in 1939.

RESTABILIZE WALLS

CLEAN & PROTECT MASONRY

REHAB CONCRETE FLOORS

AIRTIGHTEN BUILDING ENVELOPES

PROSOCO

You. Us. The project.

SCHEDULE A CONSULTATION

GRIDLOC™



HANOVER®
Architectural Products
www.hanoverpavers.com



retrofit

November-December 2022 // VOL 13 // ISSUE 6

PUBLISHER
JOHN RIESTER
john@retrofitmagazine.com

ASSOCIATE PUBLISHER/EDITORIAL DIRECTOR
CHRISTINA KOCH
christina@retrofitmagazine.com

DIRECTOR OF OPERATIONS
BECKY RIESTER
becky@retrofitmagazine.com

CONTRIBUTING EDITOR
JIM SCHNEIDER

ART DIRECTOR
VILIJA KRAJEWSKI
vilijak@comcast.net

CIRCULATION MANAGER
LYN URE
lyn@retrofitmagazine.com

DIGITAL DESIGN DIRECTOR
MARIE MADRON

WEB ENGINEER
DEREK LEEDS

SOCIAL MEDIA MAVEN
ROBIN GRABER

ADVERTISING SALES

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

BARRETT HAHN
barrett.hahn@gmail.com
(919) 593-5318

BETH EMERICH
beth@retrofitmagazine.com
(781) 710-4745

EDITORIAL ADVISORY BOARD

NATHAN M. GILLETTE
AIA, LEED AP, REALTOR
Director, Natura Architectural Consulting LLC, Grand Rapids, Mich.

WILLIAM E. HOLLOWAY
AIA, LEED AP
Principal, BERNARDON, Wilmington, Del.

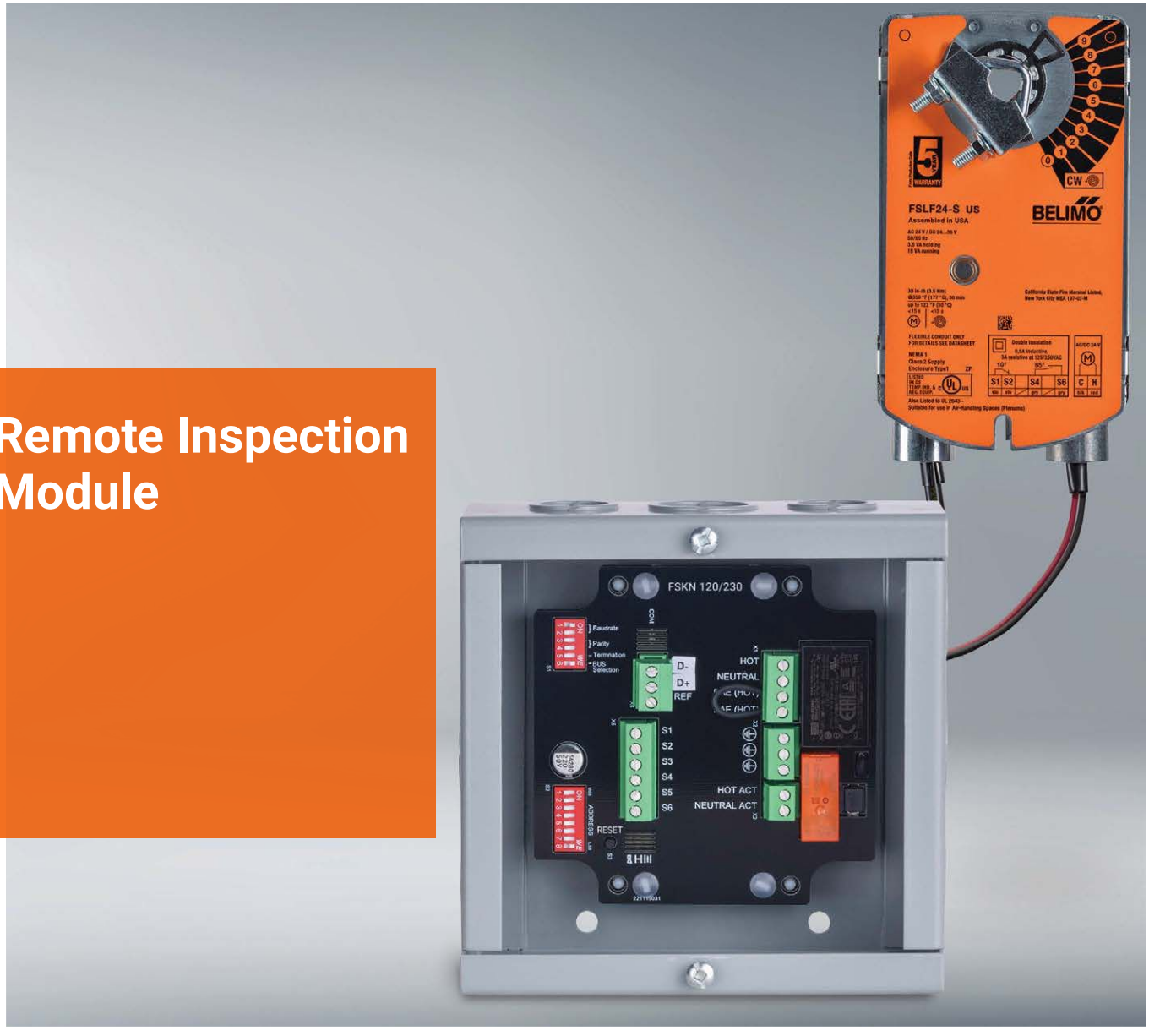
JOHN J. NOONAN
Vice President of Facilities Management
Duke University, Durham, N.C

MICHAEL P. WASHBURN, Ph.D.
Principal, Washburn Consulting, Scottsdale, Ariz.

RETROFIT // Vol. 13 // No. 6 is published bimonthly by Fisher Media LLC, 98 Booth Meadow Lane, Durham, NC 27713, (919) 641-6321. POSTMASTER: Send address changes to ***retrofit***, 2409 High Point Drive, Lindenhurst, IL 60046.

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

Remote Inspection Module



Technology that Saves Lives

Belimo's FSKN remote inspection module allows testing of actuated life safety dampers without the need for costly visual inspections and meets testing requirements of NFPA 80 and NFPA 105 referenced by the International Building Code (IBC). The module initiates damper cycling and verifies the damper position to ensure proper operation in emergencies. The FSKN connects seamlessly to Fire Alarm panels or Building Automation Systems using BACnet or Modbus communication protocols.

Discover the advantages
www.belimo.us/firesmoke

c UL US LISTED

BELIMO

pointofview



DIFFERENT PERSPECTIVES

My husband Bart co-owns a bar/restaurant in our small lake town. If you've read this column before, you're aware that this business has been a rollercoaster in our lives. In the beginning of our relationship, it was fun for our date nights and helped me get to know many locals when I moved to town. However, there is a constant battle to find staff; COVID-19 resulted in fewer patrons; and today's higher prices have prevented some of the usual eating crowd from coming back regularly. Owning this business just hasn't been fun for us anymore—and with a small child at home, our priorities are elsewhere. Consequently, the bar has been for sale for more than a year but the aforementioned challenges have deterred buyers.

Four years ago, my husband changed banks (he's a full-time agricultural loan officer; the bar was his "fun" side gig) to one that is known for building branch locations for the right employees. In a recent development, the bank has offered to buy the bar from Bart, and they are determining now whether it will be retrofitted it into a branch rather than building new. We are thrilled! It's a wonderful opportunity for my husband (not to mention a possible story for ***retrofit***!).

We recently made the announcement public on social media and have hung signs in the bar, alerting customers to its final day of operation. As you can imagine, our friends and family have been supportive but the general public has been quite negative. It has been disheartening for me to read the online comments, especially because I know the many struggles we have endured with this business. Bart is taking it in stride though, saying we have to do what's best for us. I worried he would feel like he's letting down our small community but he's looking at it as an opportunity to help the community in a different way. I appreciate the unique perspective he always brings to our marriage. He and I are complete opposites and—in many ways—that is a plus.

Different perspectives also are what I love most about the Metamorphosis Awards program, which is the focus of this issue of the magazine. Each year, our team assembles a group of judges who bring their particular expertise to the table while judging our many entries. This year's judges—Katie Hunt, architect, LRK; Amanda Markovic, AIA, principal, GBBN; Charles Van Winckle, vice president, Thornton Tomasetti's Renewal practice; and Ross Welch, AIA, NOMA, LEED Green Associate, associate, Trivers—really dug into the entries. They asked great questions. They pointed out nuances others may not have immediately seen. Sometimes they had personal experience with a project based on living in the city where the project was located. They challenged each other to look more closely. They truly were invested in choosing deserving projects and were a lot of fun to work with.

Ultimately, this year's judges chose 22 winners—the most we've ever published and a testament to the quality of projects we receive for the Metamorphosis Awards program. See page 15 to learn more about the judges and judging process, and view all the winning projects on our website, www.retrofitmagazine.com, to see even more photos of each. We hope you enjoy perusing the 2022 winners!

Christina Koch

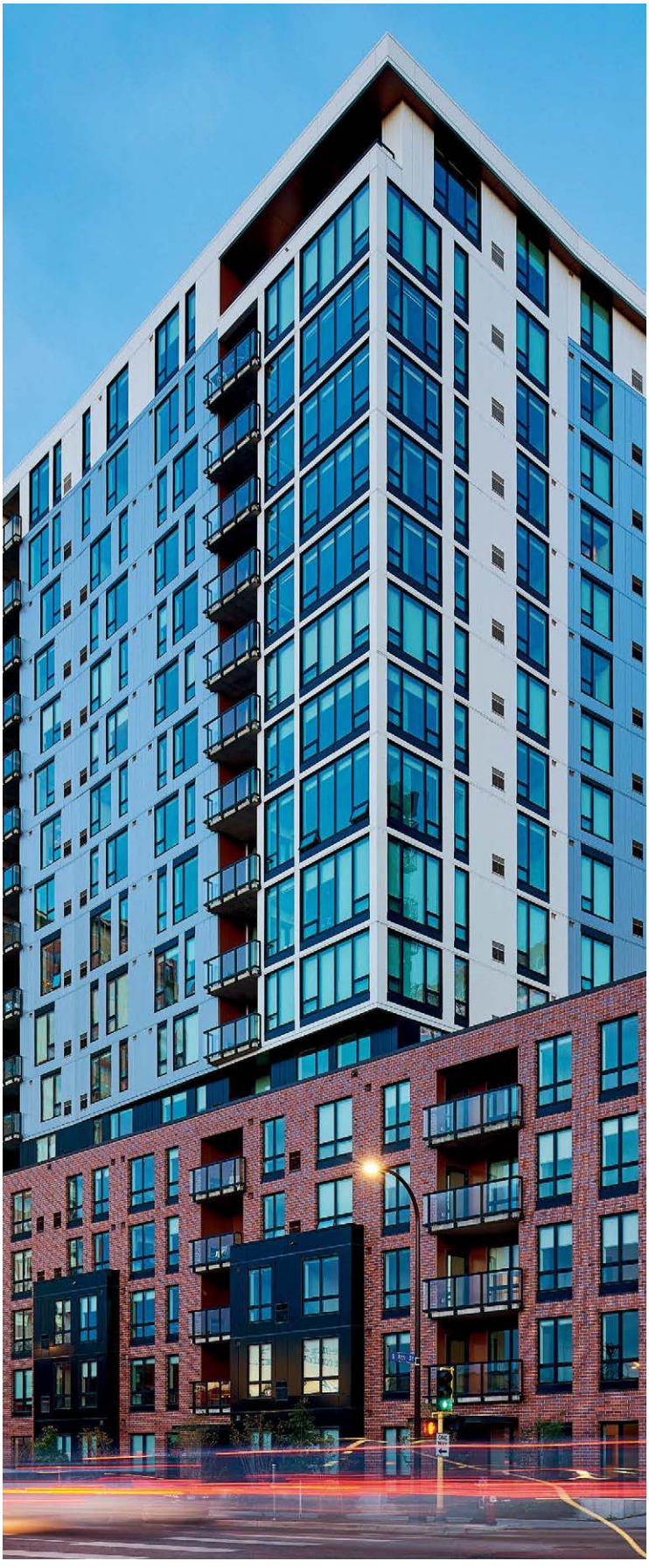
CHRISTINA KOCH
Associate Publisher/Editorial Director
retrofit

follow us



VIEW OUR DIGITAL EDITION FOR INTERACTIVE CONTENT!

Anywhere you see a video player icon, we've embedded a video in our digital edition of this issue. Visit www.retrofitmagazine.com and click on our digital edition in the top right corner. Then, flip to pages 2, 3 and 84 to watch videos that will give you more insight about the stories, products and ads you see in this issue.



17 stories, an entire city block and an airplane engine.

Pella Architectural Solutions helps bring new life to an urban neighborhood.

When Kraus-Anderson Construction in Minneapolis needed a window supplier to help transform an entire city block into a mixed-use development with a 17-story apartment building, the Pella Architectural Solutions team was up for the challenge. To make sure they met such strict performance requirements, Pella worked with Kraus-Anderson to conduct numerous air, water and structural performance tests on a 40-ft. wall assembly that featured Pella® fiberglass and competitive aluminum windows. They even performed a dynamic water test powered by an airplane engine. The result? Pella passed every test – ensuring a project of this scale would perform for years to come.

PELLA ARCHITECTURAL SOLUTIONS.
FROM CONCEPT TO COMPLETION.

The KA Block includes the new Kraus-Anderson Construction headquarters, HQ Apartments, Finnegan's microbrewery and the Elliot Park Hotel.

© 2022 Pella Corporation

Pella®

pella.com/impervia



CONTRIBUTING WRITERS




Henry Moss (left), AIA, LEED AP, a 35-year principal at Bruner/Cott Architects, and **Christopher Nielson**, AIA, CPHC, LEED AP, an associate with Bruner/Cott Architects, tell the story of the transformative reuse of the Charles River Speedway, a series of 19th century buildings that today house 21st century amenities for Boston's Allston-Brighton neighborhood. The project, which won 1st Place in the Adaptive Reuse category of the Metamorphosis Awards, is on page 16.




Todd Heiser (left), IIDA, is a principal and co-office managing director for Gensler while **Michael Townsend**, AIA, LEED AP, is design director for Gensler. The pair served on the team tasked with the largest restoration project in the history of Willis Tower, Chicago's iconic skyscraper built for Sears Roebuck & Co. in 1973. Learn how this 1st Place Mixed Use project impacts and adds value to the daily routines of tenants, tourists and the general Chicago population on page 26.



HQ Toronto, a health center where gay/bisexual men, trans and non-binary people can receive comprehensive services, occupies more than 9,000 square feet on the eighth floor of a Modernist building. **Nathan M. Gillette**, AIA, LEED AP, REALTOR, director of Natura Architectural Consulting, Grand Rapids, Mich., and a ***retrofit*** editorial advisor, spoke with Oliver Beck, principal of Architecture Counsel Inc., about the effort put forth to humanize and add warmth to the building's deep floor plates. The project, which appears on page 34, earned 1st Place in the Interior category.




Philip Renzi is an associate with The Architectural Team Inc. (TAT) and **Meghann Van Dorn**, LEED AP ID+C, is the director of Interior Design for TAT. The duo describes their transformation of the Worcester County Courthouse, Worcester, Mass., and its series of architecturally distinct additions and annexes into Courthouse Lofts, a 118-unit apartment community, which won 1st Place in the Multifamily category. Read the story on page 44.



Kunal Badheka, P.E., is an associate principal in Thornton Tomasetti's Renewal practice. On page 50, Badheka writes about the restoration of terra-cotta half columns on a building in Manhattan's Ladies' Mile Historic District. The 1st Place Exterior category winner underwent a comprehensive restoration program, involving a creative approach in temporary protection and structural stabilization.



Joel Anderson, AIA, NCARB, LEED AP BD+C, is an architect, principal and director of Design at Cushing Terrell. He writes about the Metamorphosis Award's 1st Place winner in the Addition category, the Alberta Bair Theater, Billings, Mont., on page 68. Built in 1931 and renovated in the 1980s with some questionable choices, the theater has been upgraded to improve audience and performer experiences while making it a more desirable destination for traveling shows.



Portland, Ore.-based freelance design journalist, critic and architectural photographer **Brian Libby** digs into the circa-1970 Brutalist Bakar BioEnginuity Hub, which won 1st Place in the Historic category. This former museum in San Francisco needed significant seismic upgrades, which were delicately integrated into the existing building. The story, page 72, also explains how the building was well suited to its new program as an incubator for science and engineering entrepreneurs.

BEHIND THE SCENES

The 2022 Metamorphosis Awards Judges Were Previous Winners

retrofit's fourth-annual Metamorphosis Awards program tapped four previous winners as judges: Katie Hunt, architect, LRK; Amanda Markovic, AIA, principal, GBBN; Charles Van Winckle, vice president, Thornton Tomasetti's Renewal practice; and Ross Welch, AIA, NOMA, LEED Green Associate, associate, Trivers. Each judge was gracious with his or her time and knowledge.

The jury was asked to evaluate each project on the success with which it met its own requirements. They were told to weigh projects individually—not in comparison to others—and choose as many projects as they felt deserving of winning. [Editor's Note: The judges recused themselves from judging projects in which they and/or their firms were involved.]

Through a judging platform, jurors were able to review entries and score them on their own time. John Riester, ***retrofit***'s publisher, and Christina Koch, ***retrofit***'s editorial director and associate publisher, conducted a Zoom meeting with the judges in late August to discuss highest-ranking projects, determine placements of winners and speculate about cover possibilities. Winners were notified in late August.

The 2023 Metamorphosis Awards program will open in January 2023 at www.retrofitmagazine.com/metamorphosis-awards.



KATIE HUNT

Katie Hunt brings nearly 10 years of experience to LRK's Memphis, Tenn., office. Since returning to Memphis from Seattle, she has focused on the adaptive reuse of buildings, including the former Gibson Guitar Factory and the Old Spaghetti Warehouse. She relishes in the opportunity to revive and reimagine existing structures. LRK has won Metamorphosis Awards in 2020 and 2021, including a 2nd Place award in the Adaptive Reuse category in '21 for the Fannie C. Harris Youth Center in Dallas. Read the story online, bit.ly/3E1rDTX.



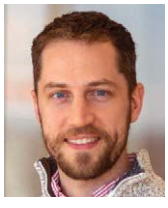
AMANDA MARKOVIC, AIA

Amanda Markovic is GBBN's firmwide market design leader, overseeing design strategy for the Community Development Market, which includes affordable and multifamily housing, community libraries and non-profit organizations. Her passion for libraries has led to award-winning renovations for the Carnegie Library of Pittsburgh and a reimagining of the Cincinnati Public Library's Deer Park Next Generation Library. GBBN won twice in the Adaptive Reuse category of the 2021 Metamorphosis Awards program: 1st Place for The Roundhouse at Hazelwood Green and 2nd Place for Contemporary Craft, both in Pittsburgh. Read the stories at bit.ly/3rKt1nF and bit.ly/3GR6VnO, respectively.



CHARLES VAN WINCKLE

Charles Van Winckle is a vice president in Thornton Tomasetti's Renewal practice and specializes in building forensics, technical architecture and historic preservation. His work includes several historically significant structures and landmarks, as well as a UNESCO World Heritage Site. Van Winckle was part of the Thornton Tomasetti team that earned a 1st Place 2021 Metamorphosis Award in the Exterior category for the façade restoration of New York City's iconic Helmsley Building. Read the story at bit.ly/3oPOCt0.



ROSS WELCH, AIA, NOMA, LEED GREEN ASSOCIATE

Ross Welch is an associate and senior project architect with Trivers. His background includes higher education, master planning and single-family residential design. Welch helps lead the Mixed Use and Multifamily Market at Trivers with more than 1,800 units designed in the past several years. Trivers earned Metamorphosis Awards in 2020 and 2021, including last year's 2nd Place win in the Multifamily category for The Georgian, St. Louis. Read the story at bit.ly/3gLBb8G.

ADAPTIVE REUSE *1st Place Winner*

COMMUNITY INVESTMENT

An Increasingly Dense Boston Neighborhood Receives a Versatile New Public Courtyard with 21st Century Amenities within 19th Century Buildings

WRITTEN BY | **HENRY MOSS, AIA, LEED AP, AND CHRISTOPHER NIELSON, AIA, CPHC, LEED AP**

Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT // Bruner/Cott Architects, www.brunercott.com
GENERAL CONTRACTOR // D.F. Pray General Contractors, www.dfpray.com
MEP/FP ENGINEER // BLW Engineers, www.blwengineers.com
STRUCTURAL ENGINEER // Silman, www.silman.com
LANDSCAPE ARCHITECT // Klopfer Martin Design Group, www.klopfermartin.com
HISTORIC PRESERVATION // MacRostie Historic Advisors, macrostiehistoric.com
LIGHTING DESIGN // Lewis Lighting, (857) 816-3663
ACOUSTICS // Boston Light & Sound, www.blsi.com
GEOTECHNICAL ENGINEER // GEI, www.geiconsultants.com
WINDOW REPAIR/RESTORATION // Boston Sash & Millwork, bostonsash.com, and Alpine Environmental, www.alpine-environmental.com

The Charles River Speedway is a multi-building reuse project that combines historic preservation and forward-thinking sustainable design. It repositions a 19th century stable and parks department into a versatile new public courtyard encircled by a brewery, brewpub, restaurants, retail, and informal indoor/outdoor event spaces. Historically, its neighboring sites along the Charles River were occupied by slaughterhouses and agricultural sites. The original buildings included a cow barn, trotting horse stalls and sulky storage among its more benign elements, as well as a small jail that gradually expanded as animals were moved from the site.

Known for its sensitive restoration and reuse of historic buildings, Bruner/Cott Architects' new program for the project, developed in collaboration with Boston's Architectural Heritage Foundation, is significant in terms of urban design. It dramatically transforms the Speedway's locked-down and fire-damaged 2-acre locale into a lively, mixed-use destination in the Allston-Brighton neighborhood of Boston.

COMPLEX BEGINNINGS

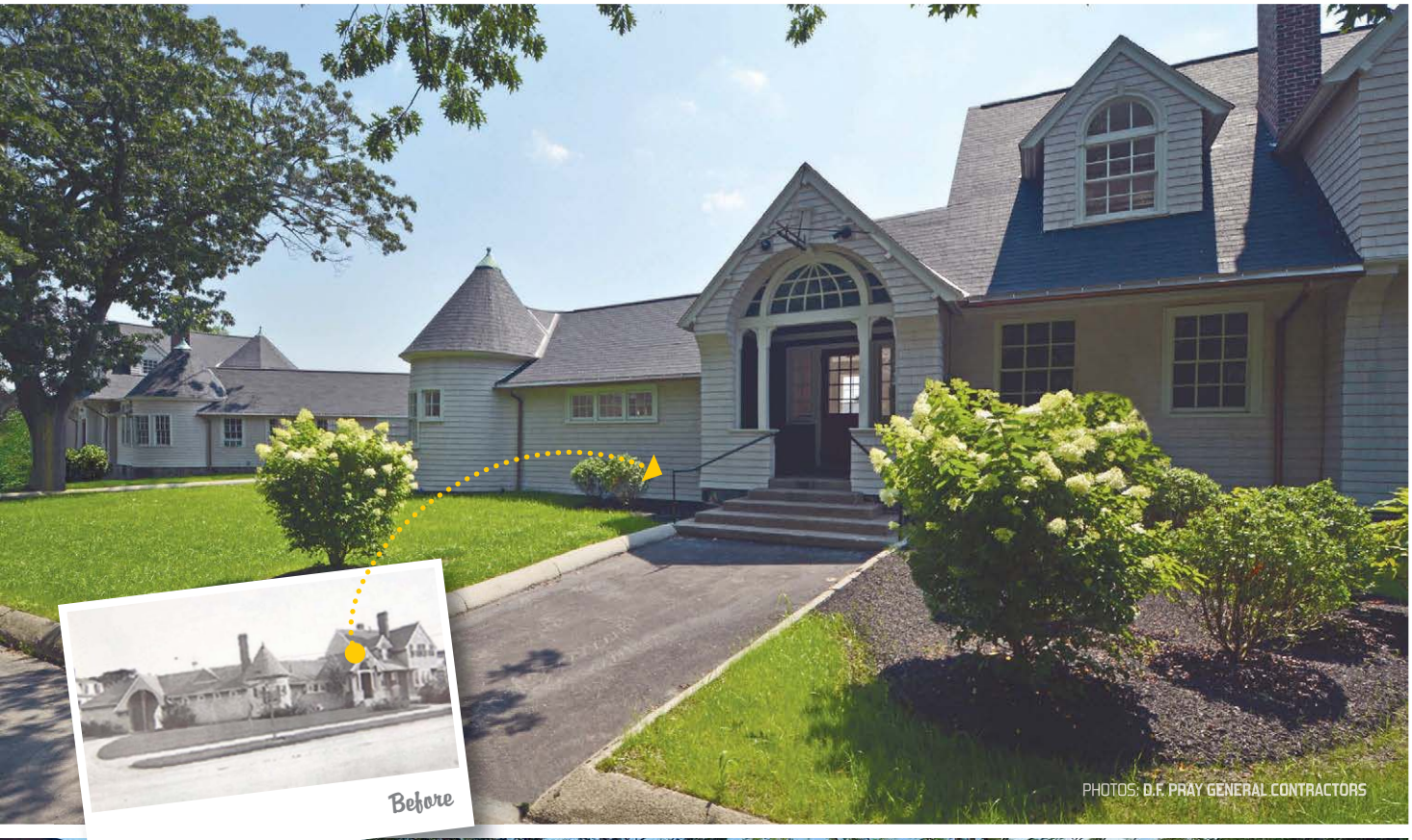
The complex was constructed in 1899 by the Metropolitan Park Commission as a headquarters to support a new Charles River parkway, which turned a stretch of tidal mudflats into an interconnected series of public parks. This development included a mile-long horse and bicycle racetrack, which became one of the city's most popular gathering areas.

Designed by William D. Austin in the Shingle Style with Colonial Revival influences, the buildings' architecture mimicked the styles often found in luxurious seaside escapes, such as Newport, R.I., reinforcing the premise that outdoor recreation and the enjoyment of leisure time was meant for all. An irregular roofline connected its six buildings, creating a single-story courtyard. The arched gable entrances, porches, double-hung windows and elaborate wood trim created an overall composition characteristic of Austin's architectural work.

In later years, the facility housed the now-defunct Metropolitan District Commission Police. Many of the original horse stables were altered and extended when they were



IMAGE: BRUNER/COTT ARCHITECTS





The view along Soldiers Field Road (top) and from within the courtyard of the Charles River Speedway (bottom) showcases a series of 19th century stable and parks department buildings that have been transformed into a brewery, brewpub, restaurants, retail, and informal indoor/outdoor event spaces.



PHOTO: **NOTCH BREWING**



Before



PHOTO: COURTESY **BRUNER/COTT ARCHITECTS**

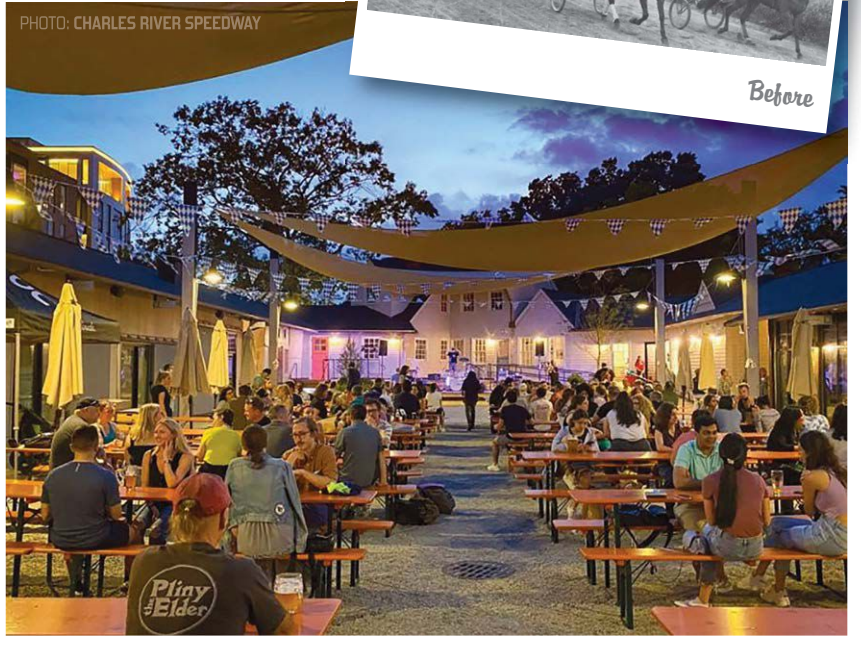


PHOTO: **CHARLES RIVER SPEEDWAY**

The Charles River Speedway's anchor tenant is Notch Brewing, which brews its beers onsite and serves them in a spacious taproom and year-round beer garden within the courtyard. The publicly accessible courtyard also offers a stage and lighting for performances.

Judge's Comment

> Nice project for the community and nice to see all-electric. The project seems simple, but sometimes achieving simple is a difficult task.— *Charles Van Winckle, vice president, Thornton Tomasetti's Renewal practice*

converted into vehicular garages to support parks maintenance crews. Over time, the rise of automobiles affected the complex in various ways.

Ultimately, the racetrack was razed mid-20th century to make way for Soldiers Field Road. The Speedway headquarters buildings were used for various purposes until the 1990s, then slowly fell into disuse. Hidden in plain sight, the facility was largely abandoned by 2005. Portions of the buildings began to decay over time, and one section suffered a fire. The resulting effect was analagous to deindustrialized sites where an entire urban precinct becomes impenetrable and displays neglect.

Today, the reintegration of large, disused historic sites into the present life of neighborhoods and cities is often a major attribute of their conversion to new uses. For decades, Boston-area historic preservation advocates understood the past significance of the Speedway, its architectural quality and the reuse potential of the complex. They continually rallied support to restore its buildings and revitalize its signature courtyard, eventually succeeding following several key benchmarks: In 2010, the Speedway was added to the National Register of Historic Places and Preservation Massachusetts included the site on its list of Most Endangered Historic Places. In 2013, the Speedway was nominated as a Boston Landmark.

Owned by the Commonwealth of Massachusetts and part of the Department of Conservation & Recreation's (DCR's) Historic Curatorship Program, DCR created a long-term lease opportunity for developers later that year. The increased attention led to DCR, the Boston Preservation Alliance, Historic Boston Incorporated, and the Brighton-Allston Historical Association to organize a public charette the following year, generating ideas and community feedback about the site's future. The area's state representative continued to advocate for the rehabilitation of the site as a resource for the community. In 2014, the non-profit Architectural Heritage Foundation was named the curator partner for the renaissance project. After years of work—and despite a serious fire and a global pandemic—the Charles River Speedway opened its doors to the public in summer 2021.

EXPECTATIONS EXCEEDED

The result of the Bruner/Cott Architects and Architectural Heritage Foundation collaboration on the Speedway produced results exceeding all expectations of how this complicated site could be transformed. The historic buildings and their central courtyard now form a space for gathering and year-round activities, attracting a new generation of Bostonians. Inviting all to eat, drink, shop and connect with the neighborhood, the renewed venue supports numerous commercial uses, including small retail shops and makerspaces; shared offices; a restaurant and cafés; a publicly accessible community courtyard with stage and lighting for performances; a large event space housed in the former multi-vehicle garage space; and an anchor tenant, Notch Brewing.

To preserve and transform the complex, piecemeal garage extensions at historic stable frontages were removed. Lost features, including wooden decks for access to stables and carriage cleaning, sliding barn doors and original windows were reimagined. In the courtyard, a new wooden ramp now unifies original building entrances for accessibility, starting from the same grade level and extending as a stage for outdoor performances. Within the original manager's house and police station, damaged interior plaster was removed to add insulation. Fieldstone foundations for stables, the house, and offices were reinforced with concrete and repointed. Former stables and the 1940 concrete garage were fitted with recessed glazed fronts and overhead doors that connect them directly to adjacent outdoor spaces, providing visual continuity between the upper courtyard and the lower events space.

The project employs a 100 percent electric mechanical system, which will become carbon-free as Boston actively decarbonizes its electric supply. The team approached the mechanical design with air-source heat pumps, which reduced the amount of ductwork and piping needed compared to an air system, and incorporated all 169 existing operable windows as a part of the ventilation strategy, eliminating the need for almost all ductwork. The envelopes leverage the low cost and carbon of cellulose insulation and include new detailing to promote drying of the roof and wall sheathing while maintaining the restored historic profiles of the existing buildings. This was accomplished through the development of a ventilation system under the roof sheathing. The new cladding system incorporated a drainage plane to create a wall assembly open to vapor movement and protect the new cedar shingles by promoting drying throughout the year. The new uses required sprinkler installation in all buildings.

NEIGHBORHOOD CONTINUITY

The site now includes a complex, sub-surface

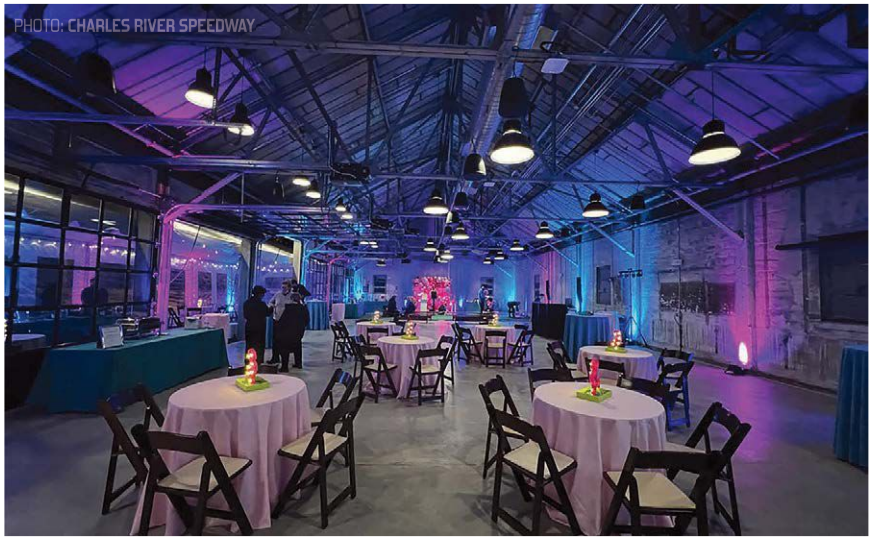

PHOTO: CHARLES RIVER SPEEDWAY





PHOTO: COURTESY BRUNER/COTT ARCHITECTS

Materials

WHITE CEDAR SHINGLES // Maibec, maibec.com

WEATHER BARRIER // Slicker HP from Benjamin Obdyke, benjaminobdyke.com

ASPHALT SHINGLES // XT 25 Moire Black from CertainTeed, www.certainteed.com

OVERHEAD DOORS // 511 Series from Overhead Door, www.overheaddoor.com

ALUMINUM ENTRANCES // Series 3000 from Oldcastle BuildingEnvelope, obe.com

FANS // i6 from Big Ass Fans, bigassfans.com, and XP8 from Hunter Fan Co., industrialfans.hunterfan.com

HEAT PUMPS // VRV from Daikin, www.daikin.com

PLUMBING FIXTURES // Elkay, www.elkay.com; Chicago Faucets, www.chicagofaucets.com; Fiat Products, fiatproducts.com; American Standard, www.americanstandard-us.com; and Zurn, www.zurn.com

WATER HEATERS // A. O. Smith, www.hotwater.com, and Watts, www.watts.com

LIGHTING // Acuity Brands, www.acuitybrands.com; Hinkley, www.hinkley.com; Troy Lighting, troylighting.hvlgroup.com; Bock Lighting, www.bocklighting.com; Lightolier, www.signify.com; Liton, liton.com; Murray, murraylighting.com; Bartco, www.bartcolighting.com; Barn Light Electric Co., www.barnlight.com; B-K Lighting, bklighting.com; Lumec, www.signify.com; Lithonia, lithonia.acuitybrands.com; and ELA Lighting, www.ela-lighting.com

LIGHTING CONTROLS // Crestron Electronics, www.crestron.com

TILE // Daltile, www.daltile.com, and Crossville, www.crossvilleinc.com

DRYWALL // Ecosmart from USG, www.usg.com

EPOXY FLOORING // Dur-A-Flex, www.dur-a-flex.com

stormwater recharge system to divert runoff from the adjacent Charles River. The basement and slab design implement a variety of barrier strategies at the building's foundation to prevent ground contamination by VOCs leftover from previous uses from entering interior spaces. This includes sheet barriers at slabs, clear sealing systems at historic fieldstone foundations so they can remain exposed and sub-slab ventilation systems.

The Speedway project reawakened its historic structures while emphasizing their original architecture; introduced new businesses with unit sizes, infrastructure and lease arrangements to favor startups; created a new communal open space within walkable distance from an increasingly dense neighborhood; and retained only the slightest hints of its 1899 and 1925 jail cells. The site is once again a vibrant source of connection and neighborhood continuity.

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner



CARLISLE SYNTEC SYSTEMS

Don't Delay. Request a **Roof Condition Report** Today.

Responsible building owners know that regular preventative maintenance is a crucial part of owning a building. The rooftop endures more abuse from the elements than any other part of a building's exterior, so routine preventive maintenance is critical in prolonging the roof's service life and saving money for building owners. When a roof system is maintained properly, it performs better, lasts longer, and provides more reliable protection of a building and its occupants.

Carlisle offers roof condition reports* performed by a trusted local Carlisle Manufacturer's Representative or Authorized Applicator and include a thorough examination of:

- Building exterior, interior ceiling and roof deck, roof perimeter and field of the roof
- All details, penetrations, and flashings
- Overall roof condition
- Identification of necessary repairs
- Re-roofing options available
- Recommended next steps

** Carlisle can refer a design professional when necessary.*

For more information or to request your roof condition report, scan here or visit www.CarlisleSynTec.com/Education/Re-Roofing

Re-Roofing Redefined

EXPERIENCE THE CARLISLE DIFFERENCE

800.479.6832 | www.carlislesyntec.com

Carlisle is a trademark of Carlisle. © 2021 Carlisle.

ADAPTIVE REUSE 2nd Place Winner

TULSA, THE MUSIC CITY

A Former Church Turned Recording Studio Is Expanded to Welcome More Musicians and Preserve Their Legacies

Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT // **Lilly Architects**, **www.lillyarch.com**
STRUCTURAL ENGINEER // 360 Engineering, www.360enggroup.com
MEP ENGINEER // HP Engineering, www.hpengineeringinc.com
DOOR HARDWARE CONSULTANT // Studio 8, studio08consultants.com
ACOUSTICAL CONSULTANT // Steven Durr Designs, www.stevendurr.com/architects.html

Materials

BROADLOOM CARPET // Mohawk Industries, mohawkind.com
GRANITE TILE AND TILE BASE // Daltile, www.daltile.com
GRANITE PAVER // Hanover Architectural Products, hanoverpavers.com
VINYL COMPOSITION FLOOR TILE // Armstrong Flooring, www.armstrongflooring.com
ENGINEERED WOOD // Woodwright, woodwright.net
RUBBER BASE // Roppe, roppe.com
METAL // Tektrim, www.tektrim.com
PAINT // Sherwin-Williams, www.sherwin-williams.com
QUARTZ // Corian, www.corianquartz.com, and Cambria, www.cambriausa.com
LOUVER BLIND // Graber, www.graberblinds.com
SHADES // SWFContract, www.swfcontract.com

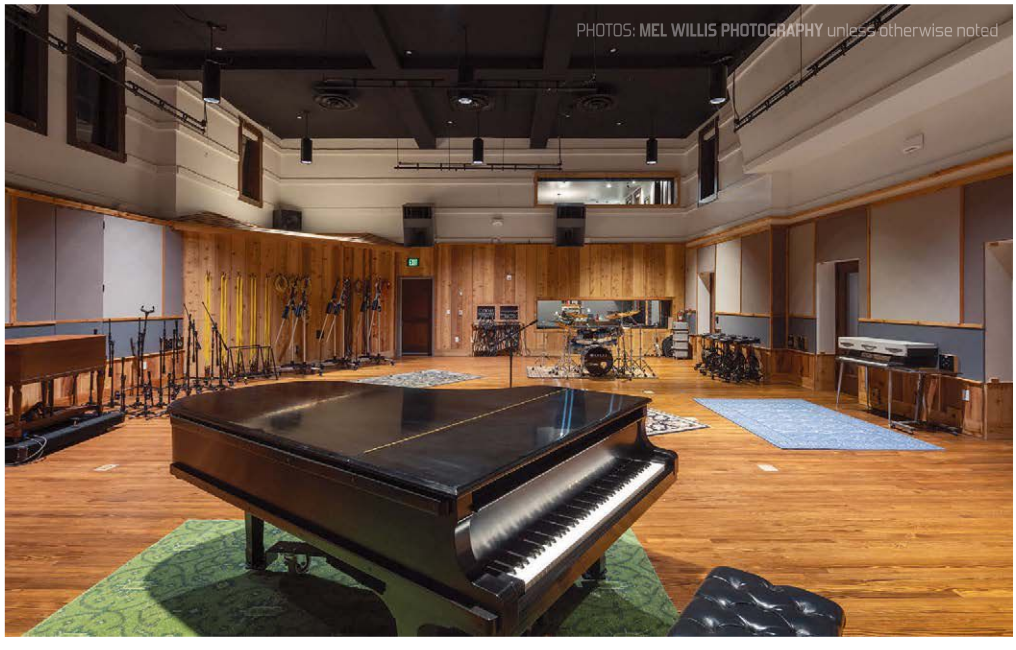
The Church Studio, built in 1915, started out as the Grace Methodist Episcopal Church. It was one of the earliest churches built in Tulsa, Okla. As the years progressed, it changed denominations and remained a place of worship until the early 1970s. That was when the church was purchased by musician Leon Russell and converted into an office and recording studio for Shelter Records.

Originally, the church façade was red brick. However, in the mid-1950s, contractors covered it with a sculpted stucco-like substance called permastone, leading to the moniker "Leon's Castle" when Russell owned it.

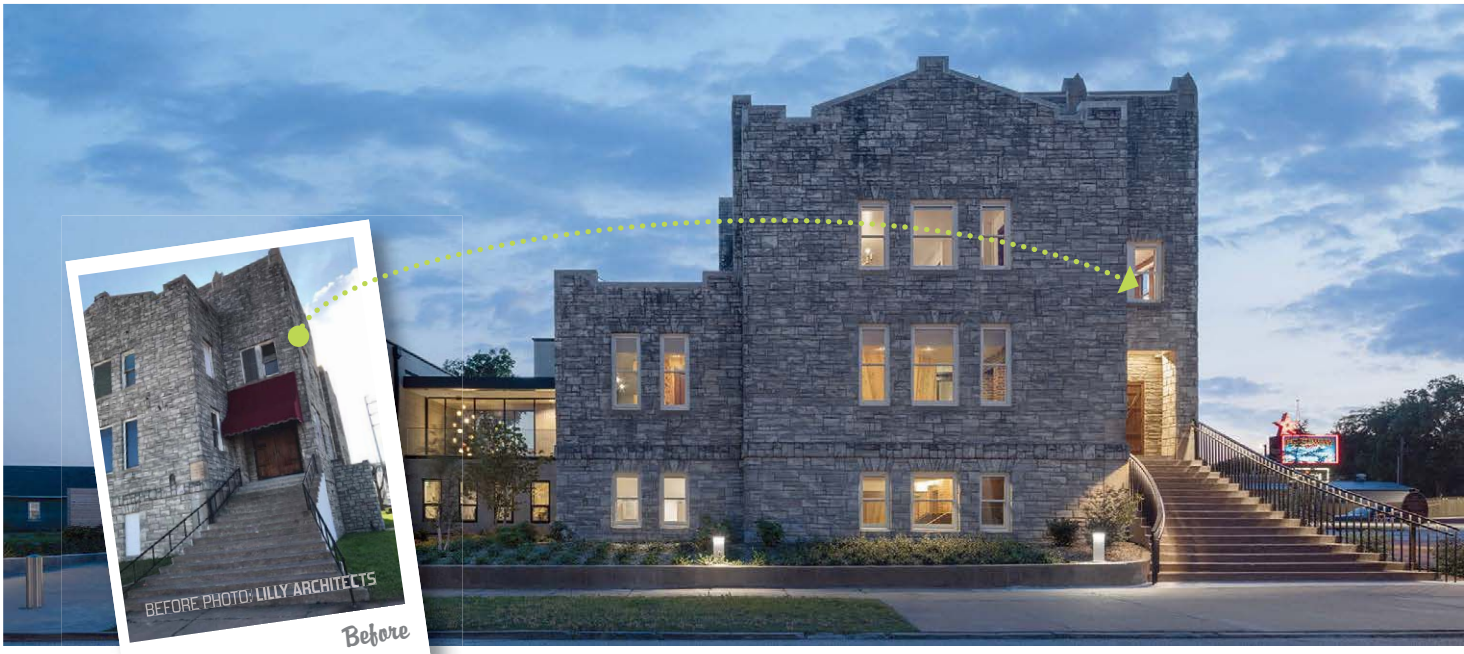
The mysterious-looking stone structure was a creative workshop for songwriters, musicians, engineers and singers. Successful and award-winning talent, such as Russell, Tom Petty, J.J. Cale, Jimmy Buffett, Georgie Fame, Eric Clapton, Willie Nelson, Stevie Wonder, Asleep at the Wheel, Michael Bolton, The Gap Band, Kansas, Mary McCreary, Freddie King, Jimmy Markham, Dwight Twilley, Phoebe Snow, Peter Tosh, Jamie Oldaker, Walt Richmond, David Teegarden, Wolfman Jack and many more, hung out or recorded in the studio.

As ownership of the building changed hands over the years, it continued to attract artists, like The Tractors, Dustin Pittsley, Wink Burcham, Hanson, Roy Clark, Freddy Fender, Carmen, Ronnie Dunn, Red Dirt Rangers, Paul Benjaman, Admiral Twin and Jesse Aycock.

Today's owners, Ivan Acosta and Teresa Knox, knew they wanted to renovate the building while inspiring musicians and preserving Russell's legacy. They decided to renovate the existing 9,000-square-foot facility and add 4,000 square feet to bring the building up to modern standards with a new accessible entry and elevator. The result is a fully restored historic building that serves as a modern-day state-of-the-art recording studio, live music venue, event space and museum. This restoration project has captured the hearts and minds of its community and is also adding momentum to Tulsa's image nationally and internationally as a vibrant music city.



PHOTOS: **MEL WILLIS PHOTOGRAPHY** unless otherwise noted









Judge's Comment

"Wonderful juxtaposition of existing and new! The addition is a thoughtful and restrained component that references the exterior materials of the church without trying to be just like it. I particularly appreciate how old meets new in this project." — *Katie Hunt, architect, LRK*

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

ADAPTIVE REUSE 3rd Place Winner

KREATION STATION

An Abandoned School Is Retrofitted as a Canvas for Artists

Thomas Powers School, a 40,000-square-foot stone-clad schoolhouse in Philadelphia sat empty for almost 10 years before it was sold by the school district to a residential real-estate developer. Given the inherent inefficiencies that come from wide school corridors with bearing walls on either side, neither the original developer nor the organization to whom it sold the property could make the building work as a project. Fortunately, Kreate Hub took control of the 1899 building with the goal of converting it into a canvas for artists, a place where businesses and careers could be launched and a community built.

At a targeted goal of $45 to $50 per square foot in renovation cost, which was met, the owner's goal was to return whatever savings could be achieved through efficient design and construction to the artists as reduced rental fees. When Kreate Hub Philly opened in August 2020, pre-leasing had already proven successful and, by early spring 2021, the building had reached 97 percent capacity.

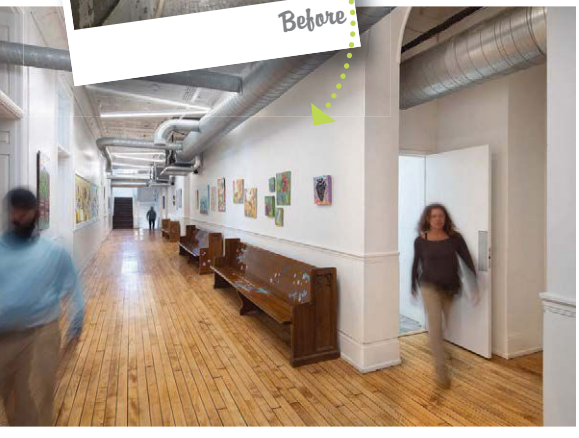
The building featured large multipurpose spaces on all three floors that were subdivided by massive rolling partitions, which hang from wide-flanged beams, allowing the spaces to be broken into anywhere from one to five classrooms. A number of these panels were fixed in place, providing the demising wall between various studios. Thick slate blackboards were cleaned for reuse or repaired using chalkboard paint to allow them to function as originally intended. The 10-foot-wide corridors were turned into galleries. The adjacent space, which had been storage, proved ideal for the building's single-occupancy toilet rooms and work sinks.

After more than a century of life, the floors had been worn by occasional refinishing, and minor sagging along beam lines was visible. Rather than toothing in new red-oak flooring, the owner purchased a less expensive, pre-finished red-oak product and planed off the finished surface to match the thickness of the existing floors.

The project benefited from an acoustic ceiling that had been added to the building at some point. Only sections of wall and trim below the pressed tin ceiling tested positively for lead and were ultimately encapsulated. Then, the ceiling was manually brushed with a firm bristled broom—not stiff enough to damage the ceiling, but strong enough to remove loose and flaking paint. The ceiling now is a highly detailed polychrome surface, interplaying with the exposed spiral duct, electrical conduit and light fixtures.

To provide a clean approach to lighting without detracting from the ceiling, a linear LED fixture was selected at 4- and 8-foot lengths. In most of the project, these fixtures are oriented in an orthogonal grid with the building's walls; within the central gallery corridors and lounge space, a more playful, angled arrangement is installed.







PHOTOS: KENDON PHOTOGRAPHY unless otherwise noted

Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT // LRK, www.lrk.com
MEP/FP ENGINEER // Hutec Engineering & Consulting, hutecengineering.com
CIVIL ENGINEER // E&LP Inc., elp-inc.com

Materials

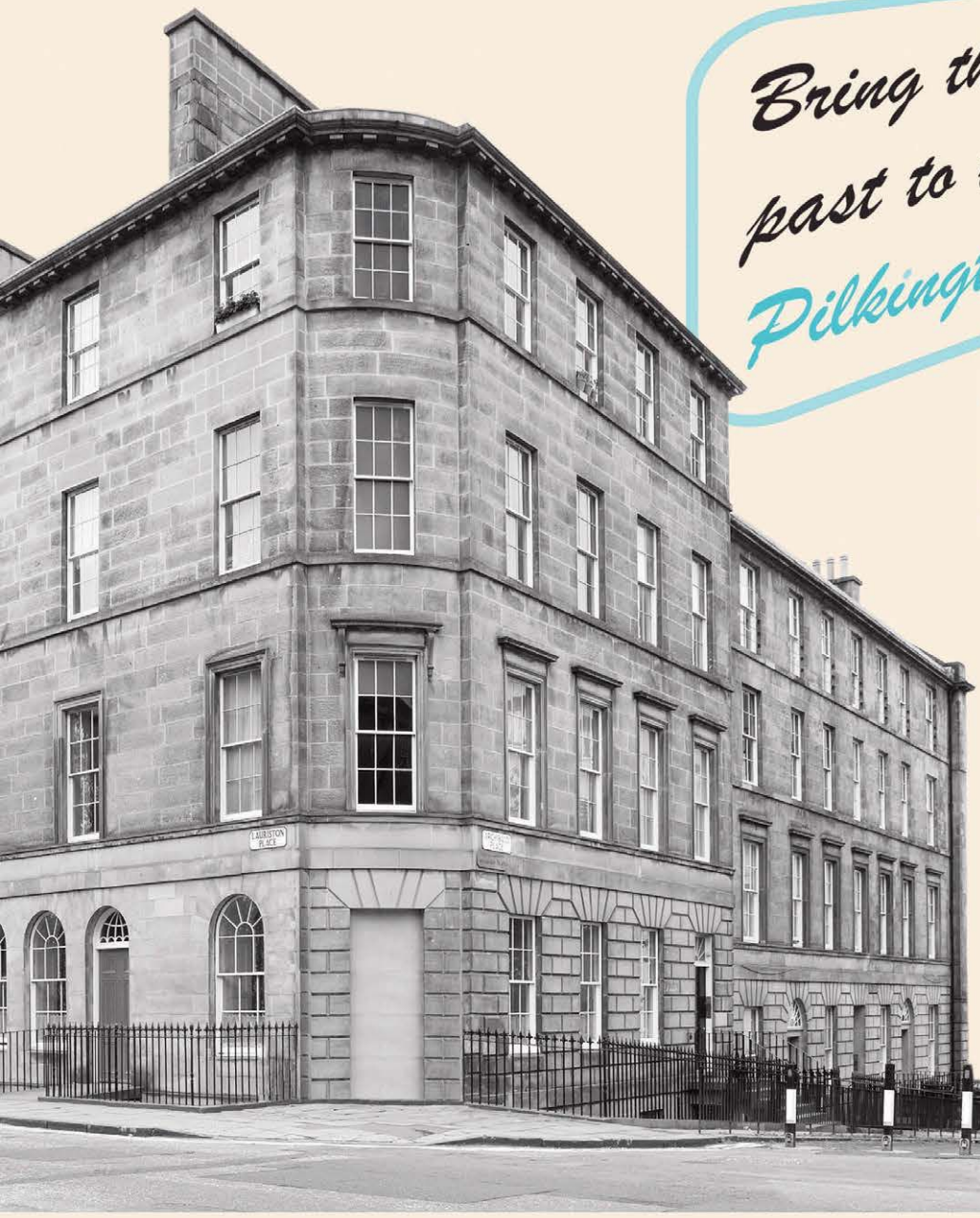
PAINT // PPG, www.ppgpaints.com
LIGHTING // Brandon Lighting, brandon-lighting.com
LOCKSETS/SECURITY // NSP Security, www.nspsecurity.com

Judge's Comment

"The Kreate Hub program seems like a perfect marriage for this building. Subdivision of classrooms for private studio spaces is very well designed to hold walls low and maintain the original volume and detailing of windows and tin ceiling. The project does well to embrace the program and provide a slate where users complete the design through their artwork. The vibrancy and energy of the final product is palpable."— *Ross Welch, AIA, NOMA, LEED Green Associate, associate, Trivers*

Pilkington **Spacia™** the vacuum insulating glass solution!

Bring the buildings of the past to the present with Pilkington Spacia™

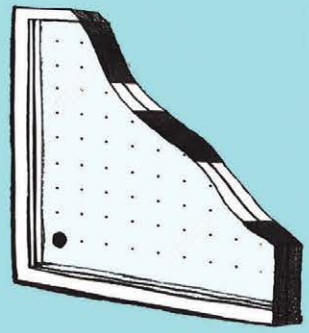


The World's First

Commercially availible vacuum insulating glazing!



Archibald Place (left) was able to maintain its existing building appearance while upgrading its monolithic glass to modern IGU performance.



Pilkington Spacia™

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

PILKINGTON

NSG GROUP

MIXED USE *1st Place Winner*

BUILDING PSYCHOLOGY

Chicago's Iconic Willis Tower Is Redeveloped into an Attractive Destination for Its Workers, Tourists and All City Residents

WRITTEN BY | **TODD HEISER, IIDA, AND MICHAEL TOWNSEND, AIA, LEED AP**

Willis Tower has been an American architectural icon and a centerpiece of the Chicago skyline since 1973. In 2015, Blackstone and EQ Office entrusted Gensler to lead the redevelopment of the site with a mission to re-envision the tower, formerly known as the Sears Tower and one of the world's tallest buildings, "from street to sky." In 2021, this transformation of the 110-story property was finalized, marking the completion of the biggest restoration project in the building's history.

The tower was initially created for Sears Roebuck & Co. as the single tenant with dozens of floors stacked on top of each other; few amenities; and a sea of desks, conference rooms and offices, resulting in a building that didn't appropriately reflect the evolution of how people work. At the time of its conception, people were not using computers and cell phones, everything was hardwired and much of business was done in an analog fashion.

A major driver for the redevelopment was to expand the building's offerings beyond office space and a single tourist attraction—Skydeck, which provides history of the building and Chicago, as well as views of up to four states. Much of Gensler's work surrounded diversifying the retail, amenities, meeting facilities and outdoor space, shaping Willis Tower into an attractive destination for more than just the workers and tourists who visit the site daily, but to all Chicago residents.

For Willis Tower specifically, it was about creating a district in the city and a building that was not simply about work, but about life. Recognizing the reciprocal relationship between a building and its community, it was important to not only breathe new life into the iconic structure, but to also reenergize the surrounding neighborhood. The team was also asking: How can the redevelopment better the neighborhood as a whole? How can it improve the streetscape? How can it make commuters' experiences better?

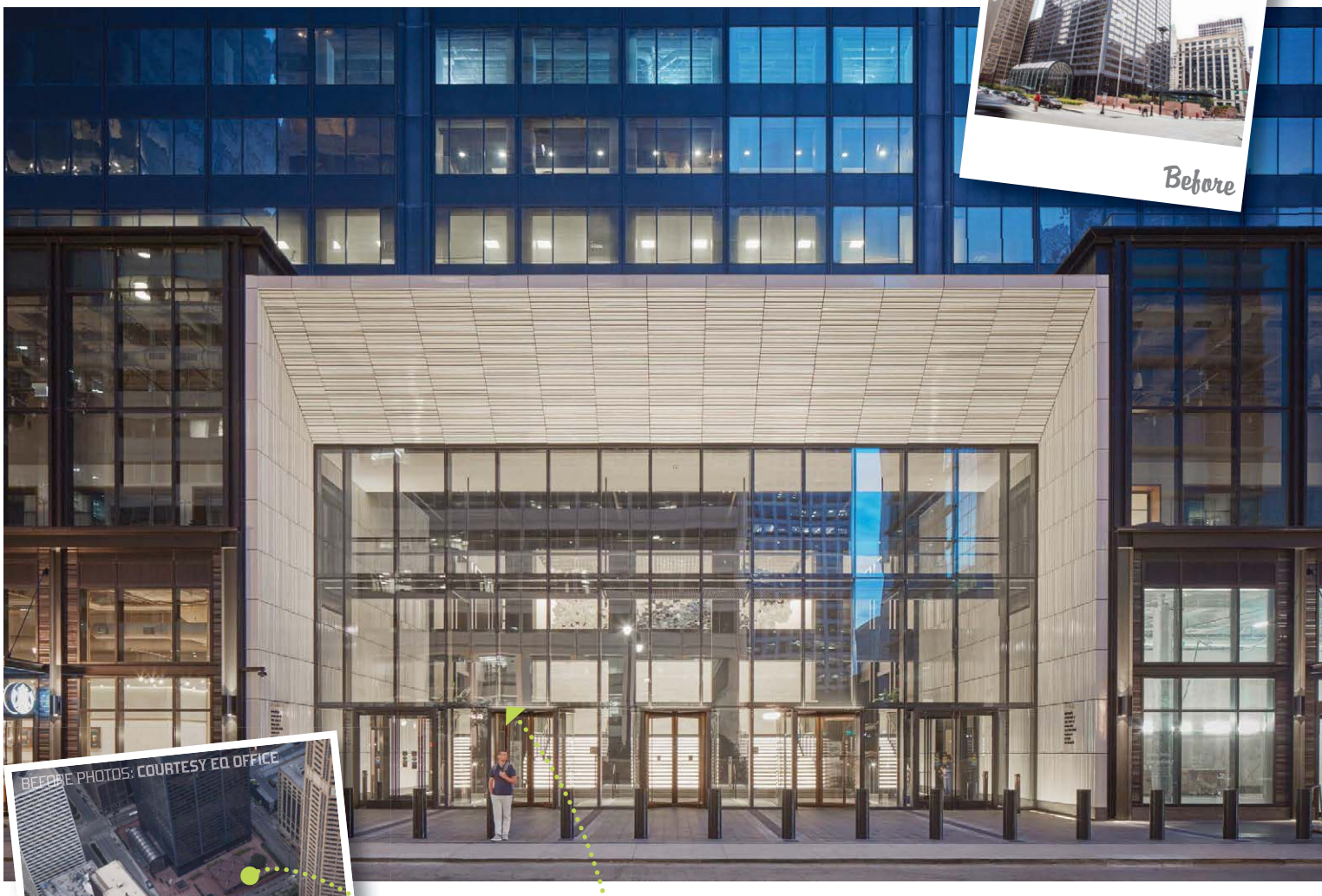
People think about cities as porous now; they want to move through buildings, use the amenities inside and be invited into the building's community in a much different way than before. What a tourist is looking for at Willis Tower is very different than what an office tenant is looking for, so studying the paths that users take helped to create distinct experiences throughout

Judge's Comment

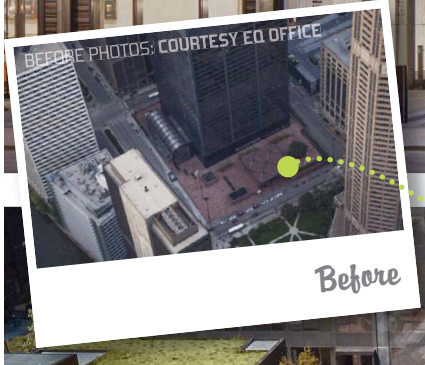
"New work is expertly integrated into the existing building without seeming out of place or too much of a departure from what was there. Addition of greenspace is nicely done. The mix of uses adds consistent activation on many levels." — *Katie Hunt, architect, LRK*

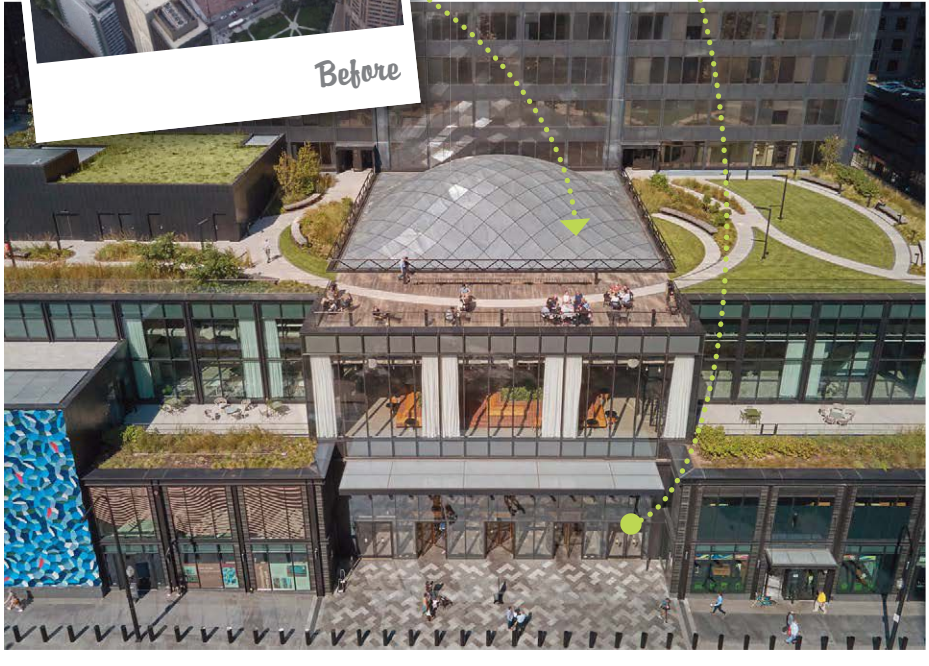


EXTERIOR PHOTOS: **TOM HARRIS**







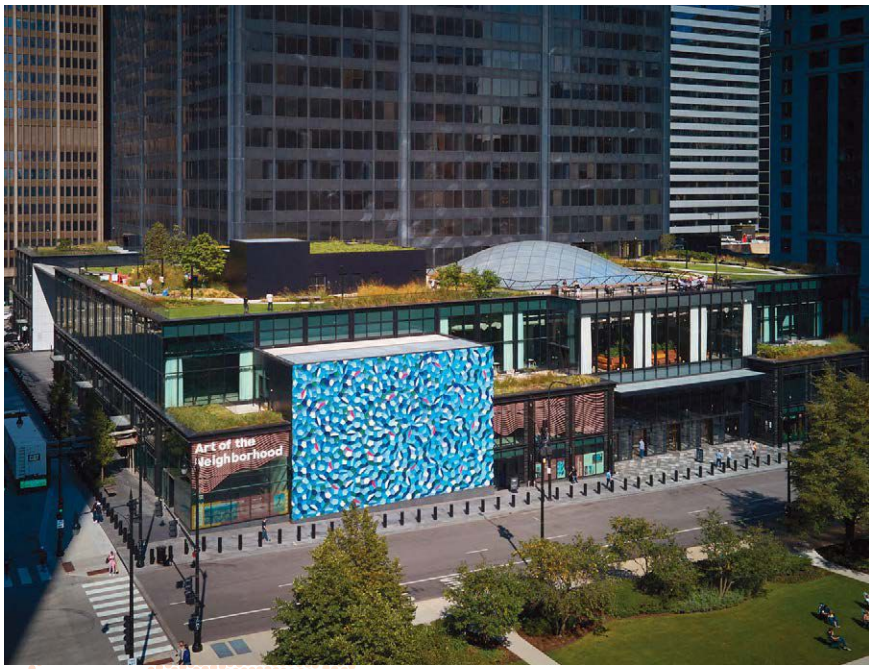


Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT, ARCHITECT OF RECORD AND INTERIOR DESIGNER // **Gensler, www.gensler.com**
EXTERIOR FAÇADE CO-DESIGNER // SkB Architects, www.skbarchitects.com
STRUCTURAL ENGINEER AND FAÇADE CONSULTANT // Thornton Tomasetti, www.thorntontomasetti.com
MEP/FP ENGINEER // ESD, www.esdglobal.com
ACOUSTICAL CONSULTANT // IMEG Corp., www.imegcorp.com
FIRE/LIFE SAFETY // Wiss, Janney, Elstner Associates Inc., www.wje.com
LIGHTING // Kugler Ning Lighting, kuglerning.com
LANDSCAPE ARCHITECT // OLIN, www.theolinstudio.com
GENERAL CONTRACTOR // Turner Construction Co., www.turnerconstruction.com, and Clayco Corp., claycorp.com





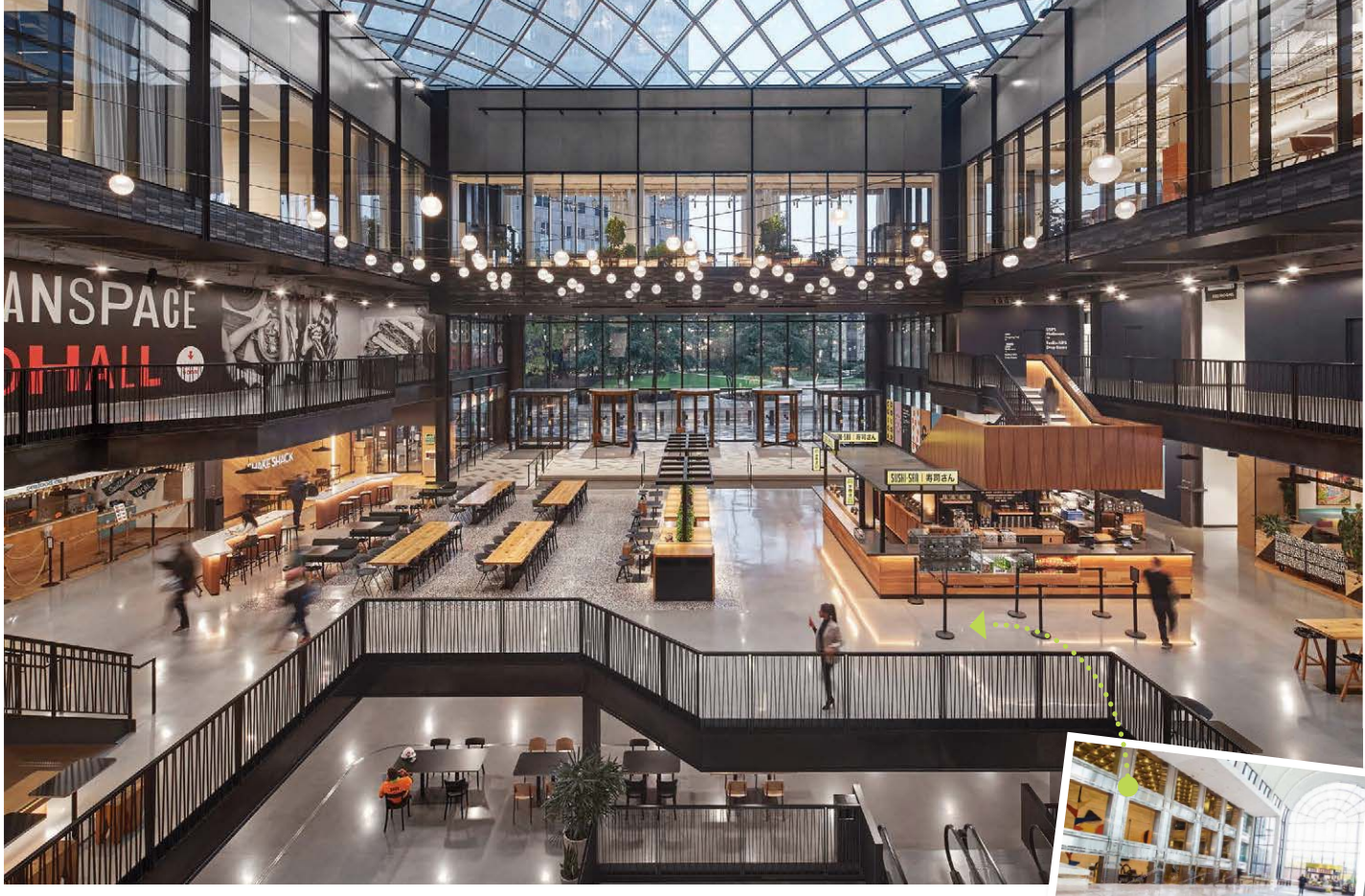
The Meadow is a publicly accessible outdoor roof park, spanning 30,000 square feet and inspired by the Illinois plains. Right: Catalog is 300,000 square feet of new dining, featuring emerging and widely recognized culinary talent; experiential art exhibits; and high-end convenience shopping. The name is a nod to the classic "Sears Catalog" and its spectrum of offerings.

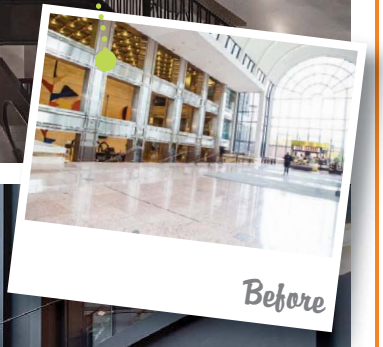
the building. The design team dedicated time to strategically understanding the psychology of the building, considering how it could most impact and add value to the daily routines of tenants, tourists and the general Chicago population.

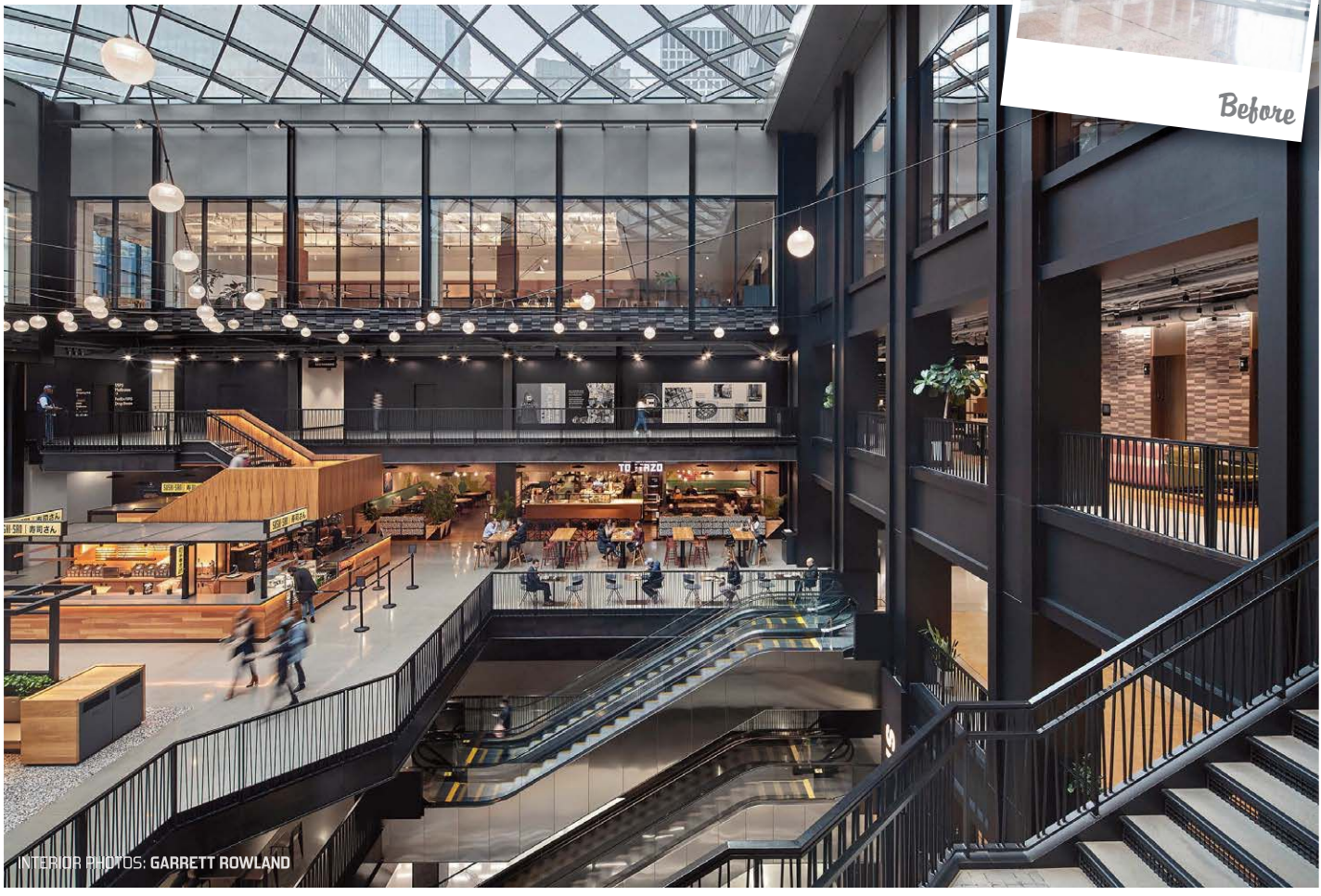
There's a sense of pride about this building and, like any historic repositioning, it is key to recognize the brand equity and history inherent to the project but also look forward because the goal is to reinvent a 50-year-old building for the next 50 years.

While honoring the tower's original glass and metal aesthetic, as well as its ground-breaking "bundled tube" structural module, the new podium offers a more textural and tactile design at a human-scale. Terra cotta, a nod to the rich history of its usage in the Loop, was incorporated at the streetscape level and main entries to add visual interest and contrast to the glass-clad façade.

The Wacker Drive entry, typically used by tenants, guides visitors up a grand staircase and through dark aluminum-clad columns to a hospitality-inspired open lobby that blurs the lines between work and leisure, offering lounge space for mingling and co-working. Original travertine walls in the Wacker Lobby serve as the backdrop to a permanent art installation at



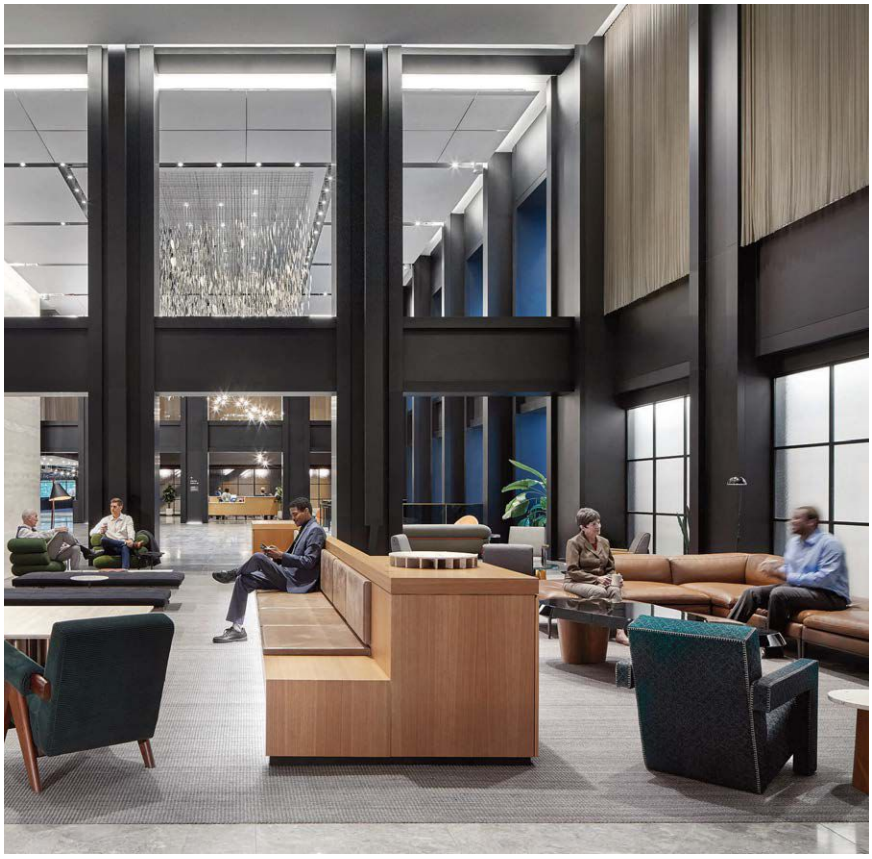

Before



INTERIOR PHOTOS: **GARRETT ROWLAND**

Materials

MASONRY // Boston Valley Terra Cotta, bostonvalley.com
METAL PANELS // Sobotec, sobotec.com
METAL/GLASS CURTAINWALL // Glass Solutions Inc., www.gsichicago.com
FLUID APPLIED PROTECTED ROOF MEMBRANE // Barrett Roofs, www.barrettroofs.com
SINGLE-PLY TPO ROOF // Carlisle Syntec Systems, www.carlislesyntec.com
INTERIOR GLASS CURTAINWALL // Reliance from Oldcastle BuildingEnvelope, obe.com
INTERIOR DECORATIVE GLASS // Bendheim, bendheim.com
SKYLIGHTS // Novum, novumstructures.com
INTERIOR DEMOUNTABLE WALL SYSTEM // PK-30, www.pk30system.com
ENTRANCES // Crane Revolving Doors from Dormakaba, www.dormakaba.com, and Dawson, www.dawsonmetal.com
FIRE-CONTROL DOORS, SECURITY GRILLES // McKEON, www.mckeondoor.com
ACOUSTICAL CEILINGS AND SUSPENSION GRID // Armstrong Ceiling & Wall Solutions, www.armstrongceilings.com
PAINTS AND STAINS // Benjamin Moore, www.benjaminmoore.com; Sherwin-Williams, www.sherwin-williams.com; and Scuffmaster, www.scuffmaster.com
WALLCOVERINGS // Carnegie, carnegiefabrics.com/wallcoverings, and Xorel, carnegiefabrics.com/carnegie-xorel
FLOOR AND WALL TILE // Daltile, www.daltile.com; Mosa, www.mosa.com; and Smink Things, www.smink.studio
CARPET // Bloomsburg, bloomsburgcarpet.com
CONCRETE FLOOR TILES // Concrete Collaborative, www.concrete-collaborative.com
WOOD FLOOR // Nydree Flooring, nydreeflooring.com
STRETCHED CEILINGS // NewMat, newmatworld.com
CATENARY LIGHTING SYSTEM // Tegan Lighting, teganlighting.com
DOWNLIGHTS // Zaniboni Lighting, zanibonilighting.com
LIGHTING CONTROLS // Lutron, www.lutron.com
ELEVATORS/ESCALATORS // Otis, www.otis.com



The Wacker Drive entry, typically used by tenants, guides visitors up a grand staircase and through dark aluminum-clad columns to a hospitality-inspired open lobby that blurs the lines between work and leisure, offering lounge space for mingling and co-working.

the site, "In the Heart of This Infinite Particle of Galactic Dust", by Jacob Hashimoto, who has ties to Chicago as an Art Institute of Chicago graduate.

The podium opens paths of travel through the entirety of the base; previously, different entries were designated for tenants and Skydeck visitors with no through access. The Wacker Lobby now leads to Catalog—300,000 square feet of new dining, entertainment and retail, reminiscent of Chicago's many public outdoor plazas. The name is a nod to the classic "Sears Catalog" and its spectrum of offerings, which include full-service dining with Chicago's emerging and widely recognized culinary talent, experiential art exhibits and high-end convenience shopping. Looking upward, guests encounter incredible views of the tower through an undulating 75- by 85-foot skylight, offering a unique vantage point of the superstructure from the ground level. Located off the Jackson Boulevard entry where world-renowned artist Olafur Eliasson's Atmospheric Wave Wall lives, Catalog serves as a main entry point for Skydeck visitors.

Atop Catalog is The Meadow, a publicly accessible outdoor roof park, spanning 30,000 square feet—a rare find in Chicago's Loop. Designed in collaboration with OLIN, the park features verdant landscaping inspired by the Illinois plains.

Willis Tower's new offerings, from food and beverage to the world-class art program to the outdoor public park, give a new generation of locals and visitors a reason to stay awhile to enjoy the experience.

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

STORY OF REDEMPTION

A Derelict Building in Memphis Is Reimagined for Mixed Uses and Celebrations

Like Memphis, Tenn., itself, The Commonwealth has endured years of highs and lows. A child of the roaring '20s, the building has sustained the Great Depression, World War II, the Atomic Age, the birth of Rock 'n' Roll, the depopulation of downtown Memphis and, ultimately, abandonment. But—also much like Memphis—there is another story. This story is not simply about the restoration of a hidden gem; rather, it's a story of redemption: a redemption that the great city of Memphis is also experiencing.

Drawing inspiration from the building's history, the adaptive reuse brings together a mix of uses, including retail, multifamily residential, and commercial offices with shared spaces for collaboration and celebration. Retail spaces and amenities at the ground floor bring residents, occupants and visitors together to experience the story of the building. Utilizing the original corridor and service core, new residential units and offices offer modern amenities while exposing and highlighting the historic structure. Restrained modern additions and the restored original steel windows bring natural light to spaces.

A selective insertion of understated new construction allows the reimagined ground-floor façade to emphasize the restored terra-cotta façade above while welcoming visitors into the mixed-use vertical community.

Design began in May 2015 with construction starting May 2017. Construction was completed in January 2020.

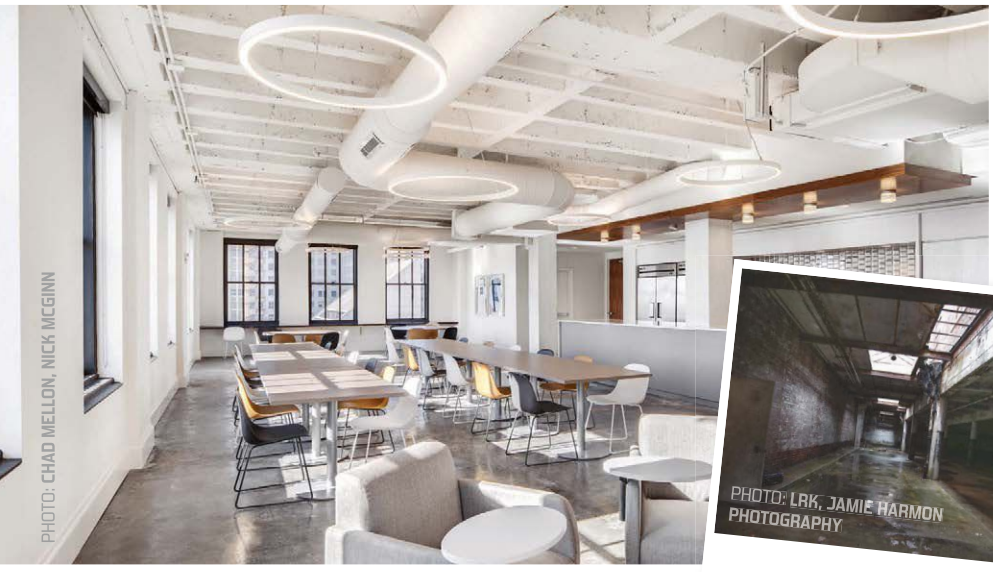


PHOTO: CHAD MELLON, NICK MEGINN

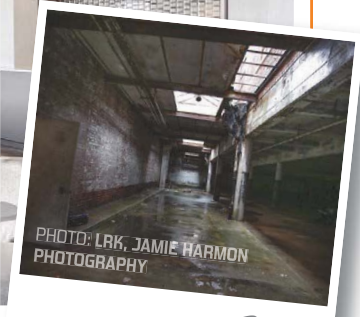


PHOTO: LRK, JAMIE HARMON PHOTOGRAPHY

Before

Retrofit Team

METAMORPHOSIS AWARD WINNER!

DESIGN ARCHITECT/ARCHITECT OF RECORD AND INTERIOR DESIGNER // **LRK, www.lrk.com**

MEP/FP ENGINEER // Haltom Engineering, www.haltomengineering.com

STRUCTURAL ENGINEER // Chad Stewart & Associates Inc., www.csastructures.com

GENERAL CONTRACTOR // Montgomery Martin Contractors, www.montgomerymartin.com

LANDSCAPE ARCHITECT // Kersey/Wike Associates, www.kerseywike.com

Materials

APPLIANCES // GE Appliances, www.geappliances.com

BATHROOM FITTINGS // BrassCraft, www.brasscraft.com

BATHROOM FIXTURES // American Standard, www.americanstandard-us.com, and ProFlo, www.ferguson.com

BATHROOM SHOWER TILE // Rittenhouse 3x6 in 0148 Spa from Daltile, www.daltile.com

ELEVATORS // KONE, www.kone.com

FLOOR TILE // Marble Falls in White Water from Daltile, www.daltile.com

CARPET // Alchemy Tile in Colossal Bismut from Shaw Contract, www.shawcontract.com

LIGHTING // GM Lighting, www.gmlighting.net; Capital Lighting Fixture Co., www.capitallightingfixture.com; Mobern Lighting, www.mobern.com; Eaton, www.eaton.com; and Troy Lighting, troylighting.hvlgroup.com

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

ROOFING // Cold Fluid Applied from Johns Manville, www.jm.com

PORCELAIN ROOF PAVERS // Archatrak, www.archatrak.com

WINDOWS // Marvin, www.marvin.com

Judge's Comment

"A great restoration and mixed use (and adaptive reuse) of the interiors.— *Charles Van Winckle, vice president, Thornton Tomasetti's Renewal practice*"

RETROFIT MAGAZINE METAMORPHOSIS AWARDS

Winner

MIXED USE Honorable Mention

EXPERIENTIAL RETAIL

A Beloved Asian Market Undergoes a Thoughtful Redesign to Celebrate Its 100-year-old Brand

Working in tandem with the executive leadership, merchandising and store leadership teams of Seattle's iconic Uwajimaya Asian Market, the collaborative design team of Cushing Terrell and Hoshide Wanzer Architects provided brand integration and store planning services to revitalize Uwajimaya's historic Chinatown-International District flagship store. The first Uwajimaya opened in Tacoma, Wash., in the 1930s, and the Seattle store has been in operation for more than 20 years, a milestone it celebrated with the unveiling of the renewed store environment.

Goals of the design included modernizing the nearly 100-year-old brand image to keep pace with the new world of experiential retail and celebrate the store's unique Asian-inspired produce, meat and seafood offerings. In addition, the store layout was revised to encourage exploration and easier in-store navigation without losing the Uwajimaya character longtime loyalists know and love.

Knowing that the redesign had implications beyond aesthetic updates to the well-worn 59,416-square-foot store, the design team worked with a cultural anthropologist, who interviewed shoppers—occasional and loyal alike—and talked extensively with the Uwajimaya family to discover what was most meaningful to their shopping experience. The insight gained was applied to thoughtful, impactful changes to the store environment without departing from Uwajimaya's beloved and unique character.

One key upgrade was a Bussanten space—akin to a fair, showcasing goods and specialties—by the food demonstration station. Uwajimaya works with vendors from certain cities or regions in Japan to feature specialty foods and products from that region. The space also can be used for promotional displays.

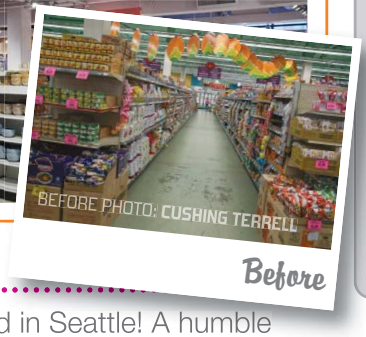
The revised and reimagined store plan created improved sightlines from the store entrance to the standout seafood and sashimi areas at the back of the store. The new, uninterrupted sightline offers an immediate invitation to participate in experiential retail. This approach plays out through enhanced, multi-sensory customer interaction at the sashimi-cutting station, BBQ duck-cutting station and the food demonstration stations.

The food court was enhanced to align with the overall revitalization goals. Improvements include a renovated seating area with new furnishings, lighting and layout. Additionally, store security was enhanced by redirecting traffic flow and circulation, an added benefit of which was more convenience for the commonly sought grab-and-go offerings.



PHOTOS: KEVIN SCOTT unless otherwise noted





Before

Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT, MEP ENGINEER AND STORE PLANNING // Cushing Terrell, cushingterrell.com
- Kara Eberle
- Alice Wang
- Mike Amestoy (mechanical, plumbing)
- David Sodini (electrical)

ARCHITECT AND INTERIOR DESIGNER // Hoshide Wanzer Architects, hw-architects.com

GENERAL CONTRACTOR // Abbott Construction, www.abbottconstruction.com

STRUCTURAL ENGINEER // Swenson Say Fagét, ssfengineers.com

LIGHTING // Collaboration between Cushing Terrell, cushingterrell.com, and Hoshide Wanzer Architects, hw-architects.com

Materials

REFRIGERATED CASES // Hussmann, www.hussmann.com

LIGHTING // Chameleon Lighting, chameleonltg.com; Pinnacle Architectural Lighting, www.pinnacle-ltg.com; and ConTech Lighting, www.contechlighting.com

FLOORING TOPCOAT // Ucrete DP BC6 from BASF, www.basf.com

Judge's Comment

"I wish this renovation had been done while I lived in Seattle! A humble program and one that many people from many walks of life experience on a regular basis. Wonderfully reorganized and upgraded shopping experience. Uwajimaya is so much more than a grocery store, and this project is evidence of the significance this market has in the local neighborhood and broader community." — *Katie Hunt, architect, LRK*

RETROFIT MAGAZINE METAMORPHOSIS AWARDS

Winner

HERE'S TO THE BUILDERS WHO PRESERVE THE PAST AND CREATE THE FUTURE!

THE EPDM ROOFING ASSOCIATION SALUTES THE RECIPIENTS OF THE 2023 METAMORPHOSIS AWARDS!

PHOTO: ED WONSEK



For information and inspiration about how to use our products as you build the future for your customers, check out our state-of-the-art technical bulletins on our association website, www.epdmroofs.org.

ERA | EPDM ROOFING ASSOCIATION

INTERIOR *1st Place Winner*

HOLISTIC CARE

A 9,000-square-foot Rectilinear Box within a Modernist Building Is Transformed into a Calming Space for Toronto's GBTQ Community

WRITTEN BY | **NATHAN GILLETTE, AIA, LEED AP, REALTOR**

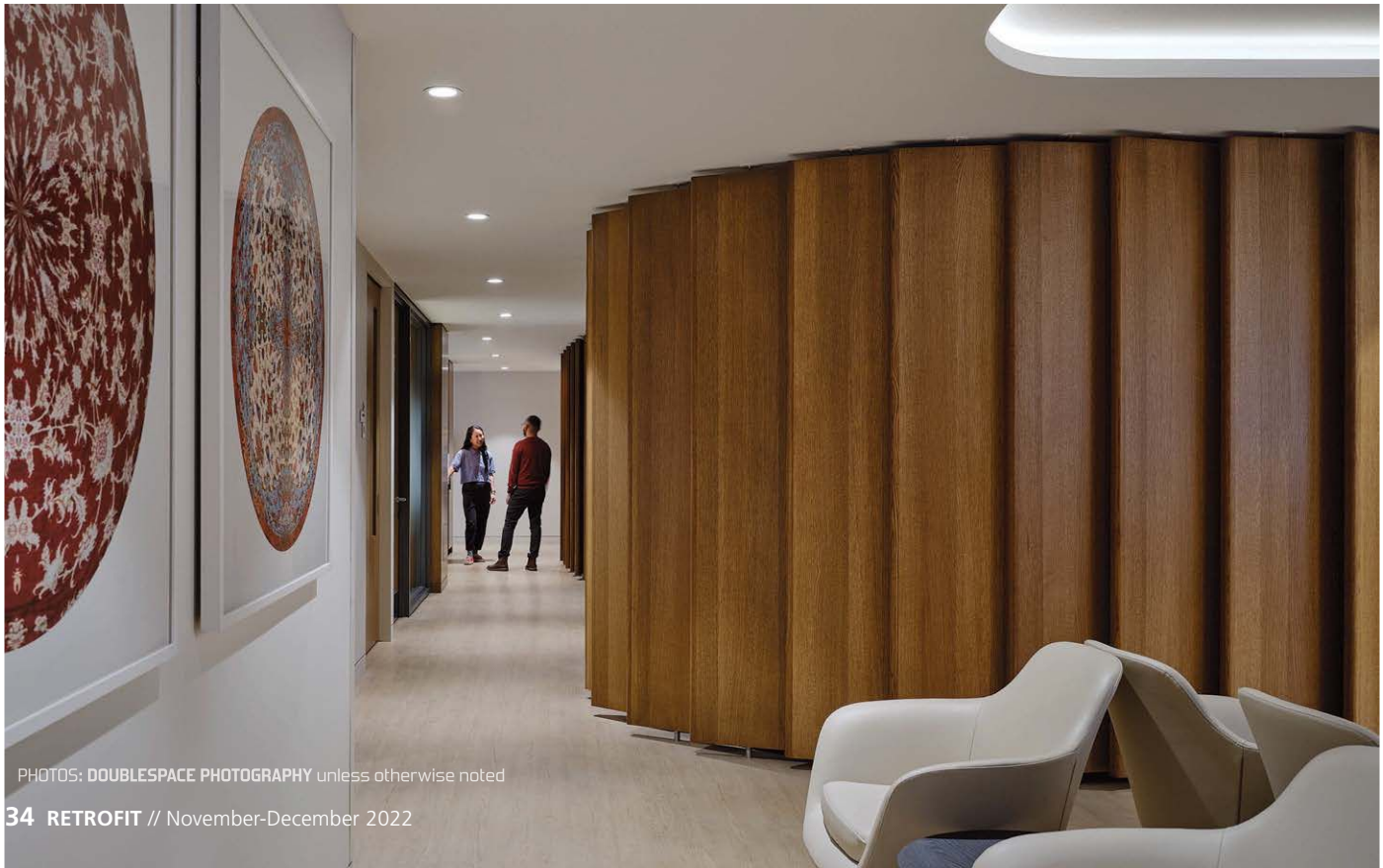
HQ Toronto, a spinoff of the Ontario HIV Network, is a new and innovative health-care facility born to provide specialized care to an underserved segment of the population, gay men. Although Toronto is one of the world centers of gay culture, health-care facilities geared toward this specific segment of the population were lacking. Therefore, the Ontario HIV Network set out to create a new inclusive facility where every male was welcome.

"At first the Ontario HIV Network envisioned a health-care facility that was mostly clinical in nature," says Oliver Beck, principal of the Toronto-based architecture firm, Architecture Counsel Inc. "But early in the process of working with the stakeholders, a bigger need was identified for a broader holistic style of care. The idea became treating the mind, as well as the body."

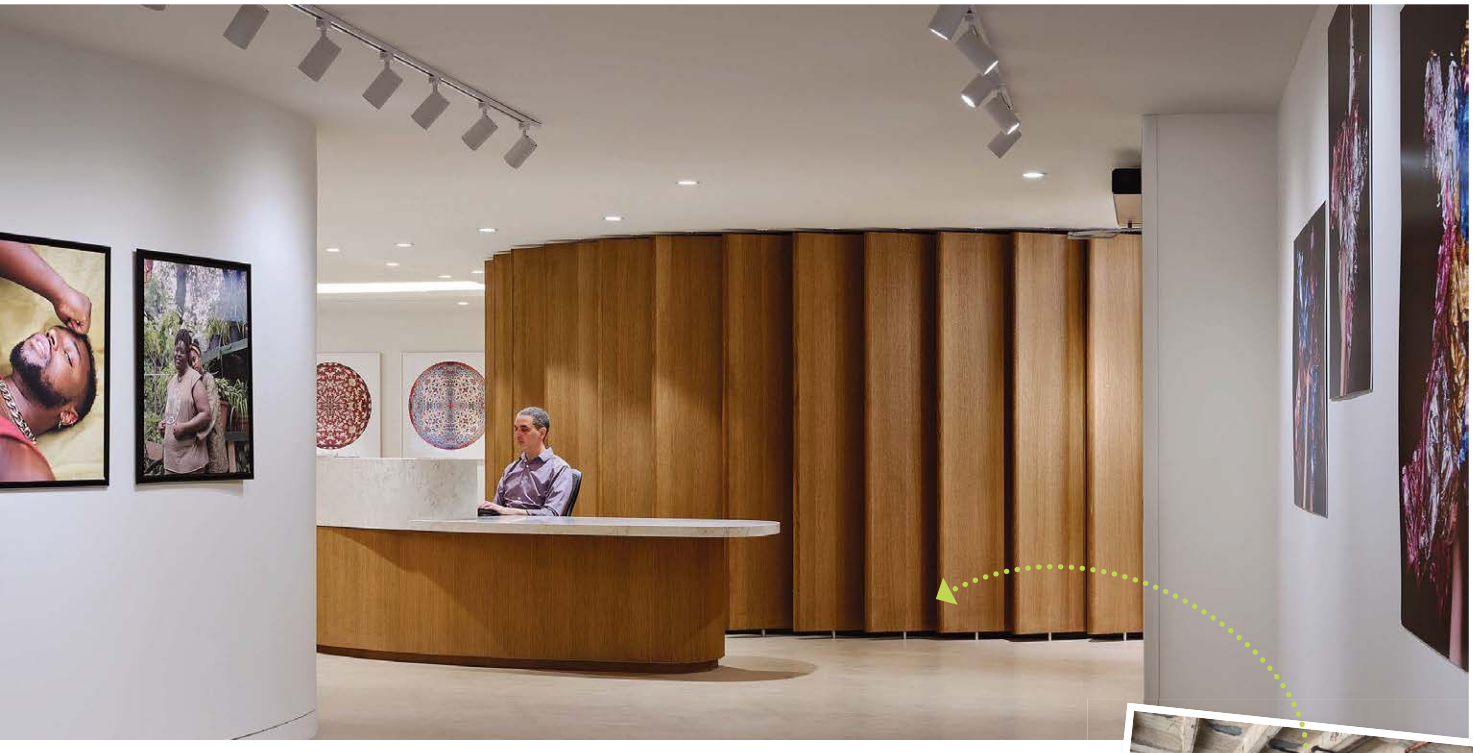
Beck, a specialist in pre-design documentation and schematic programming, led the Ontario HIV Network in an eight-month design phase that involved as many as 17 stakeholder organizations that provided input. "When we started with this project it was titled a gay men's health clinic; that's how we had it listed in our server," he recalls. "And everyone was uncomfortable at first. Employees and consultants asked if that was a proper name. Ultimately, the goal here was to redefine what gay men's health care means."

Once the programming stage of design was wrapping up, a location was needed to put it all together. A prominent historical building one block from the epicenter of Toronto's gay culture seemed a good fit. 790 Bay Street is a modernist building built in 1959 and designed by the celebrated Toronto architect, Peter Dickinson. The Women's Health College purchased the distressed office building in the early 1980s and created what is still believed to be the largest clinical health-care building in Canada. A 9,000-square-foot vacant space on the eighth floor was to become HQ Toronto's home. Beck describes the rigid rectilinear white box space as a "forest of columns".

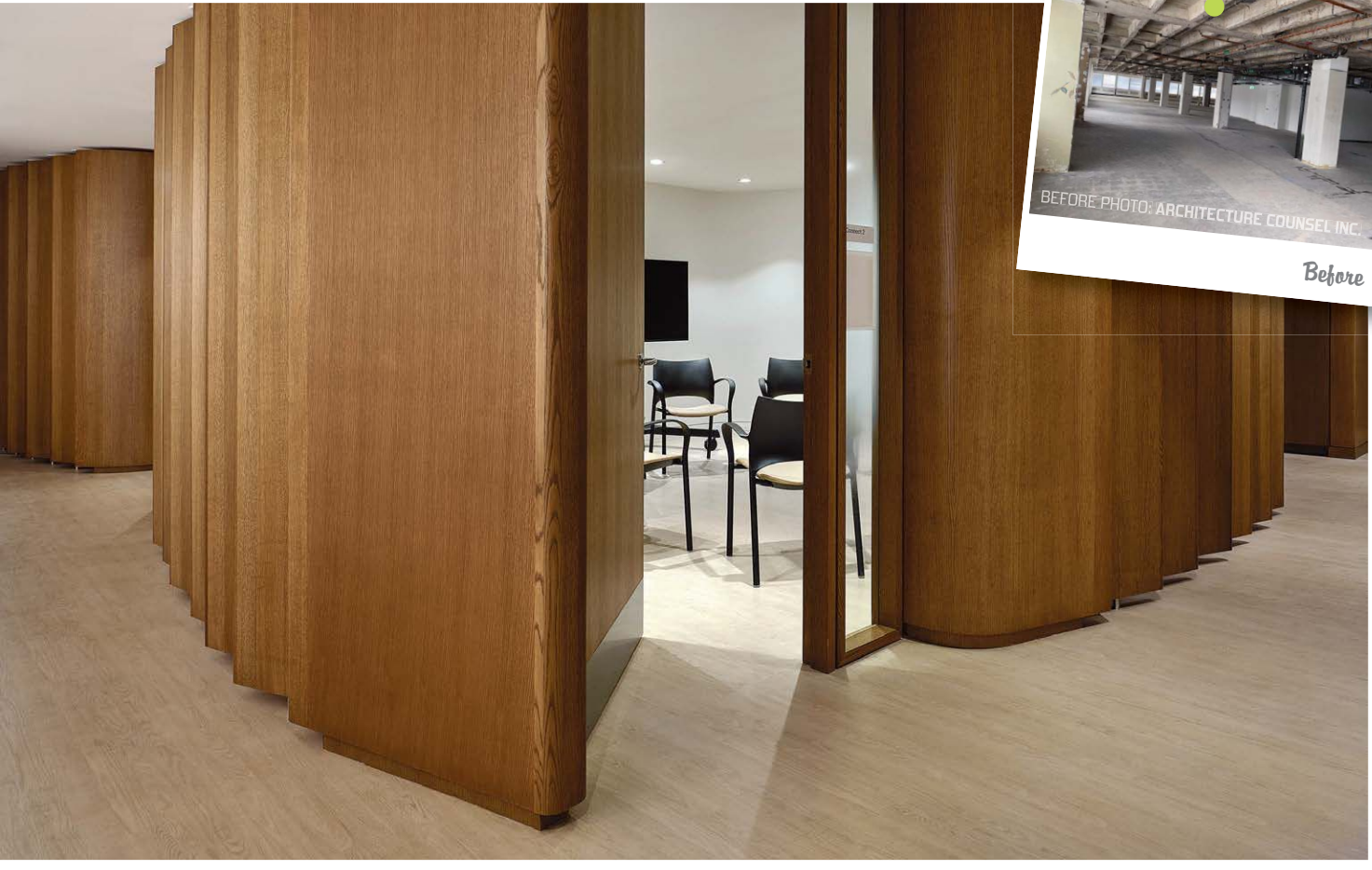
According to Beck, the design process



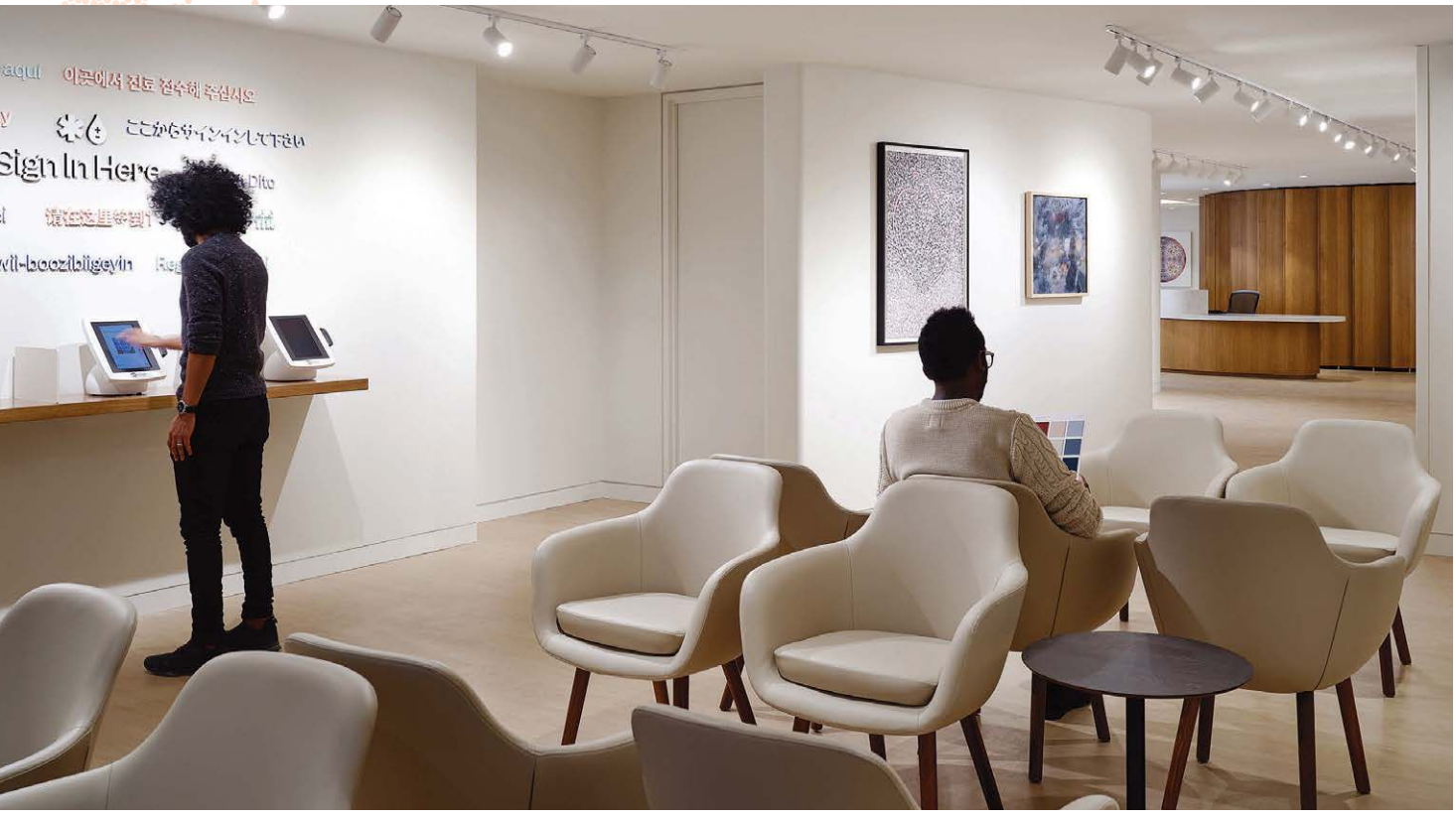
PHOTOS: **DOUBLESPACE PHOTOGRAPHY** unless otherwise noted

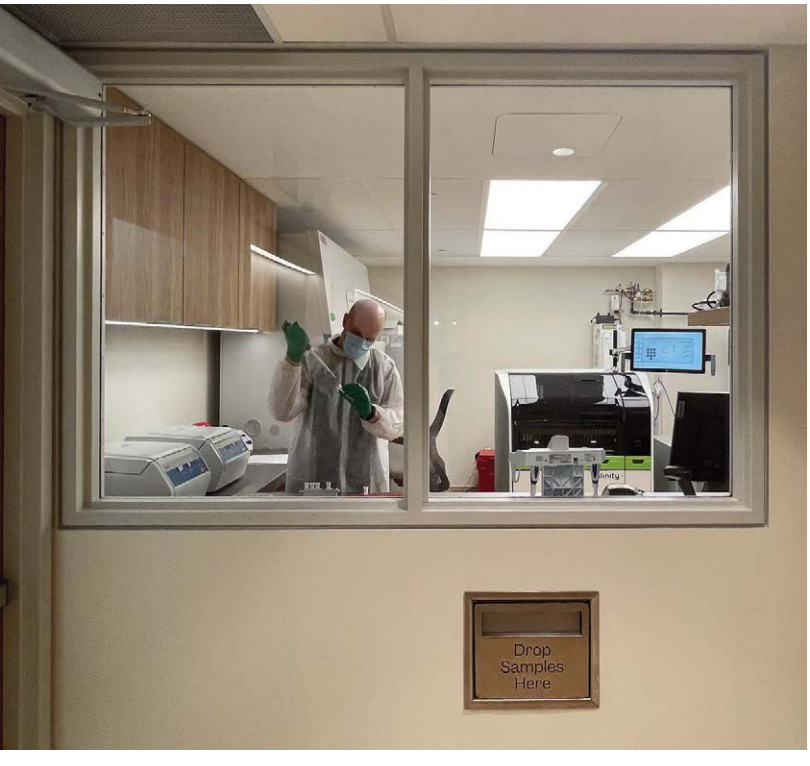






Natural wood is used in all the common areas to provide a sense of comfort, warmth, as well as sound attenuation. The design includes five convertible multi-use rooms that can accommodate a range of activities.







Patients are linked to appropriate care and services in the lobby's Express Check-in station. Bottom left: HQ Toronto's clinical lab can perform rapid HIV testing, which takes specialized equipment and technology. Bottom right: Clinical spaces and laboratory operate discretely from the social gathering spaces.

Judge's Comment

> What a transformation! The pared-down material palette feels welcoming without taking on the starkness of other clinic-related spaces. The curved wood elements add a wonderful texture and warmth, separate spaces in an unexpected way and focus attention.— *Katie Hunt, architect, LRK*

was a long conversation with the organization to understand everything the facility needed to offer. Flexible spaces were required that could accommodate a range of activities—from clinical rooms to one-on-one counseling and group activities. "It may have ended up being a rectilinear drywall maze if our firm hadn't been able to have these early, rigorous discussions with the client," Beck remarks.

WARM AND INVITING

The architects were challenged to take a rectilinear space and create a free-flowing area with natural light penetrating deep within. One of the design cues that Beck drew from was Woodland Art, a regional art style made famous by the works of Norval Morrisseau, an Indigenous Canadian artist. His artwork inspired the shapes of the spaces, particularly the consultation rooms in the entry area that take on a bird's eye look in plan and are shaped by the custom-made stained white oak fins that give a sense of flow and direction to the entry. The wood's warm tones provide visual punctuation to the interior's mostly neutral color palette.

The existing structure was a challenge to the design team. "We had to figure out what to do to hide all the structural columns," Beck recalls. "With well thought-out planning of wall and element placement, we were able to visually hide almost every column. If you look at the space now, you don't even notice them."

The interior design is subtle. Neutral walls, ceilings and floors act as canvases for the artwork on display. Throughout HQ Toronto, the art displays enliven the space. All the art pieces are a celebration of gay culture and rotate at various times of the year, bringing a fresh look with every new installation. "You won't find brightly colored accent walls and splashy colors. The intent was to let the art pieces speak for themselves," Beck explains.

From the onset, one of the design's central themes was the idea of including the Indigenous, or First Nations, culture, a group that has historically lacked resources for health care. "One of the wishes of the stakeholders was to have the ability to perform smudging ceremonies [which involve the burning of sacred herbs], an integral part of the Indigenous culture for spiritual cleansing," Beck says. "It's rare to have the ability to perform smudging in one space. HQ Toronto was designed to have three separate spaces where the ceremonies can be performed. As you might imagine, it's taxing on the HVAC system to have that ability, especially from a fresh-air standpoint".

The existing building suffers from undersized HVAC systems. Duct size and minimum ceiling heights became a driving factor in the design. According to Beck, it took an immense coordination effort to make the ductwork details work out.

In addition to providing health care, the capabilities of HQ Toronto's clinical lab are impressive. This is one of the only clinics in the world that can perform rapid HIV testing, which takes specialized equipment and technology. A patient can receive results in as little as 24 hours. "One of the most agonizing things if you suspect you may have contracted HIV is waiting for lab results," Beck notes. "Traditionally HIV testing results can take two to three weeks to receive. With the capabilities of this lab, a patient knows within 24 hours, which spares them weeks of agony."

A NEW FORM OF CARE

For Beck, the most rewarding aspect of the design was creating an entirely new program of holistic health care for the GBTQ community that didn't exist before. Beck comments that taking a mundane rectilinear existing space and creating something new and interesting provided a great sense of accomplishment.

"Overall the design and construction process went fairly smoothly," he says. "We had a good client that was good at being a listener and asked all the right questions."

When asked about the construction schedule, Beck notes that it took 18 months to complete the construction. "We could have easily shaved six months off the schedule, but construction took place during the height of the COVID-19 pandemic. As it did most everywhere at that time, construction came to a grinding halt while everyone figured out how to navigate the pandemic."

Prior to the creation of this facility, Toronto was one of the only major North American cities with a large GBTQ population that did not have an integrated health center to serve its community. Now Toronto joins the ranks of San Francisco, Boston and London as a leader in this new model of holistic and inclusionary care.

Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT // Architecture Counsel Inc., www.architecturecounsel.com

MECHANICAL/ELECTRICAL ENGINEER // McGregor Allsop Limited, mcgregor-allsop.com

Materials

ACOUSTIC CEILING TILES // Mars ClimaPlus and Clean Room ClimaPlus from USG, www.usg.com

ACOUSTIC DRYWALL CEILING // Ensemble Monolithic Acoustic Ceiling System from USG, www.usg.com

PRIVACY FILM // Fasara from 3M, www.3m.com/fasara

PORCELAIN TILE: // Stone Project from Stone Tile, www.stone-tile.com

RESILIENT FLOORING // Realities II Collection from Mannington Commercial, www.manningtoncommercial.com

SOLID SURFACE // Caesarstone, www.caesarstoneus.com, and Corian, www.corian.com

PLASTIC LAMINATE // Wilsonart, www.wilsonart.com

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

INTERIOR 2nd Place Winner

A HOUSE IN THE WOODS

An Elite Penn State Building Is Opened to the Outdoors and Campus



PHOTOS: MASSERY PHOTOGRAPHY INC. unless otherwise noted

Tucked into a grove of trees at the edge of Penn State's main campus in University Park, architect Robert Venturi initially envisioned the Oak Building as a "house in the woods"—a secluded faculty club where professors could relax, exercise and socialize.

When it opened, deep soffits and lattice window screens fostered the play of light across crisp, green walls, evoking a forest interior within its main hall. But as it was adapted for changing uses, much of its charm was lost to ad-hoc interventions. Its clerestory windows were covered; screens were stripped away; and its signature round, interior window was boarded.

Turning the building into the Marriott Foundation Building, a home for the School of Hospitality Management's Learning Center for Hospitality, Inclusion, and Innovation (LCHII), required tact and vision. Sensitive to the building's historical importance, GBBN's renovation restored much of what had been lost or covered while introducing distinctly new elements, such as the fins in the main space, to reinforce the original design intent and bolster LCHII's mission to welcome, support and inspire.

Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT // GBBN, www.gbbn.com

- Amanda Markovic, AIA
- Matt Plecity
- Mark Lee

STRUCTURAL ENGINEER // WBCM, wbcm.com

CIVIL AND MEP ENGINEER // CJL, www.cjlengineering.com

While opening access to the building with an intuitive, welcoming entry, the renovation reopened lost windows (filtering incoming light through the custom fins) and reconnected the airy interior to the beauty of the surrounding trees. The connection to the outside is reinforced by an outdoor event space, which the Events Lab, the heart of the building, opens directly onto.

Located in the main hall, the Events Lab pulls double duty as a classroom and event space. It is supported by a serving kitchen, the Beverage Lab and a lounge. The entire ground floor supports an experiential learning model by providing everything needed to host hospitality events. The building also integrates into the hospitality hub of campus, connecting to the historic Nittany Lion Inn and the School of Hospitality Management's home in Mateer Hall.

Additional conference rooms, graduate student offices, a studio and makerspace are housed in the building's upper and lower levels.

A challenge involved the building's distinctive cedar shake roof—a detail that is essential to its overall aesthetic. The team found the insulation and sheathing were in good condition, but a buildup of organic materials on the cedar shingles was causing some buckling. Preservative treatments were not a viable option because that would conflict with the code's requirement for fire-retardant shingles. Instead, the team installed zinc strips, just under the shingles at 6-foot intervals. When rain washes over the strips, it releases trace amounts of zinc particles that inhibit the growth of moss and extend the life of the roof.

The renovation transforms what was originally conceived as an exclusive destination—an elite faculty club—into a welcoming space for students and guests.





Before







Before



Judge's Comment

"Very nice stripping away of old interventions to get back to the root of the space's functionality and design. The fins and natural light in the space really make a marked improvement to the feeling of the interior without conflicting with the historic character of the building."— *Katie Hunt, architect, LRK*

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

INTERIOR 2nd Place Winner

ABSOLUTE DELIGHT

A Library Goes from a Home for Books to a Space Encouraging an Individualized Experience

The needs and expectations of a public library have drastically changed since 2000 when the Belmar Library, Lakewood, Colo., was completed. The existing design did not provide an environment where patrons felt a desire to stay, learn and collaborate. Sources of natural light were often hidden behind tall bookstacks and low ceilings. Vistas of the lush public park next door were closed off, and furniture consisted of one-size-only wood tables and chairs.

The master plan HDR developed for the Belmar Public Library identified the need to renovate the site and building systems to address deferred maintenance and life-cycle needs; modernize the interior to update the library service model; and evaluate the feasibility of significant building expansion to enhance capacity. It was determined that by reorganizing the floor plan and departments and relocating the entry and restrooms, an addition would not be necessary to achieve the project goals.

The client's vision for the project was to "foster community through absolute delight." This sentiment fueled the library's transformation from a home for books to a space encouraging an individualized experience focused on comfort, an enhanced sense of place and a customizable sensory experience.

To create a library experience unique to the Lakewood community, the team garnered input and engagement through small group community meetings, staff meetings and online surveys. HDR compiled the results from each engagement and synthesized them to reveal overall pain points and opportunities to drive ideation in concept design.

Wellness and sustainability were goals established by the stakeholders. Although no official certifications were pursued, HDR implemented its sustainable design standards and tracked the project to comply with the AIA 2030 Challenge. Solutions included the following:

- Increased daylight with the addition of a 180-foot clerestory and tubular skylights in the staff area, mitigated glare with biophilic patterned film and automatic shades.
- All light fixtures were converted to LED with dimmers and daylight sensors.
- Selected materials were made of recycled content and sourced locally where possible, improved indoor air quality, contained biophilic and fractal patterns, or reduced fatigue.
- Low-flow plumbing fixtures with automatic sensors were installed.
- A variety of seating arrangements, thermal zones and acoustic qualities were provided.
- Four electric-vehicle charging stations were added, and access to the site from adjacent transit stops was enhanced.
- Native plantings that require minimal watering and drip irrigation were installed.

A new canopy structure at the entrance provides a sense of arrival. Upon entry, users immediately can assess all the library's amenities. A red Welcome Desk is staffed to help visitors customize their experience for the day. Self-service stations are available for patrons on the go.

Dropped ceilings were removed, allowing for bright, diffused sunlight to reach the open bookstacks and provide a clear view of the park next door and beyond. Simple, sustainable materials became a canvas for the colorful books and furnishings and limit distraction from the exterior views available in nearly every line of sight.

Space planning and varied furniture selections enable the ability to individually select the space that feels right for you, in just this moment. There are no longer quiet signs but rather quiet and active spaces organized to encourage patrons of all ages to act naturally. Flexible shelving and furniture provide an opportunity to customize each space for various uses, including storytelling, crafting, public meetings and computer classes.

Approximately 200 additional square feet of usable space was added with the reconfiguration.

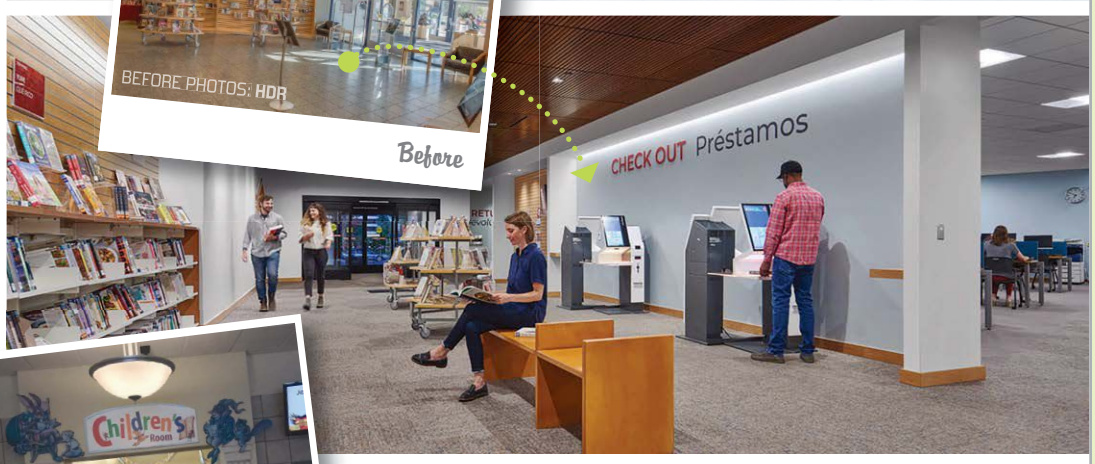


PHOTOS: BRAD NICOL, COURTESY HDR unless otherwise noted





Before





Before



Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT/LANDSCAPE ARCHITECT // HDR, www.hdrinc.com
CIVIL/STRUCTURAL ENGINEER // Martin/Martin Inc., www.martinmartin.com
MEP ENGINEER AND ACOUSTICAL AND TELECOM DESIGNER // BG Buildingworks, bgbuildingworks.com
IRRIGATION ENGINEER // Hines Inc., www.hinesinc.com

Materials

CLERESTORY // Kalwall, www.kalwall.com
LAMINATE // Wilsonart, www.wilsonart.com
ACOUSTICAL BAFFLES // TURF, turf.design
ACOUSTICAL CEILING PANEL // 3form, www.3-form.com
CARPET TILE // Mannington Commercial, www.mannington commercial.com, and Kinetex from J+J Flooring, www.jjflooring group.com/what-is-kinetex
FLOOR AND WALL TILE // Florida Tile, www.floridatile.com
CORK WALL PANELS // Organic Blocks from Muratto, www.muratto.com
TACKABLE WALLCOVERING // Forbo, www.forbo.com

Judge's Comment

"The design team's ability to 'find space' within the existing structure is most impressive—from vaulting spaces to occupying the wall with seating. Program and spatial reorganization are complementary to new daylighting and material selections. When ceilings are low, the choice of wood makes them much more inviting, and even then, the floor is lowered to find new volume in a restricted space.— *Ross Welch, AIA, NOMA, LEED Green Associate, associate, Trivers*"

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

INTERIOR *Honorable Mention*

CAPTURE THE CHARACTER

A General Contractor Embraces a Historic Building's Original Foundry Equipment while Creating a Sophisticated Headquarters Design

Retrofit Team

METAMORPHOSIS AWARD WINNER!

GENERAL CONTRACTOR // Brackett Builders Inc., www.brackettbuilders.com
ARCHITECT // MA Design, designwithma.com
STRUCTURAL ENGINEER // Jezerinac Geers & Associates, www.jgaeng.com
ELECTRICIAN // McKeever Niekamp, mnelectric.biz
MECHANICAL // AirTron, airtron.com
PLUMBING // Evans Plumbing, www.evansplumbingllc.com

Materials

WINDOWS // Pella, www.pella.com
WINDOW SHADES // Draper Inc., www.draperinc.com
METAL ROOFING // Dimensional Metals Inc., dmimetals.com
FIREPLACE // Foundation Series from Heat & Glo, www.heatnglo.com
CONCRETE PANELS // RealCast from Wall Theory, www.walltheory.com
COUNTERTOPS // Daltile, www.daltile.com
WOOD FLOORING // Shaw Floors, shawfloors.com
BATHROOM TILE // Garden State Tile, gstile.com, and Emser Tile, www.emser.com
BATHROOM ACCESSORIES // Trinsic from Delta, www.deltafaucet.com, and Bobrick, www.bobrick.com
BATHROOM PARTITIONS // Hadrian, www.hadrian-inc.com
OFFICE FURNITURE // Kimball, www.kimball.com
PLUMBING FIXTURES // Delta, www.deltafaucet.com; Kohler, www.us.kohler.com; and American Standard, www.americanstandard-us.com
MECHANICAL EQUIPMENT // Goodman, www.goodmanmfg.com
LIGHT FIXTURES // Gotham, gothamlighting.acuitybrands.com; WAC Lighting, www.waclighting.com; moooi, www.moooi.com; Tech Lighting, www.techlighting.com; and Lumens, www.lumens.com
OFFICE GLASS SYSTEMS // C.R. Laurence Co. Inc., www.crlaurence.com; Tubelite, tubeliteinc.com; and Zippy Grid, www.zippygrid.com

Brackett Builders, a regional construction management and general contracting company, moved into its new headquarters in downtown Dayton, Ohio, in the second quarter of 2022. Although the firm is the most recent company to occupy the building, it was not the first to call the building home.

Built in 1900, Andrew Plocher relocated his City Forge & Iron Works here to expand the company's architectural and ornamental iron work and forgings. After the company vacated the space, the building was mostly used for warehousing and storage. The restored and renovated building now serves as Brackett Builders' construction office headquarters. It features 12 individual offices, conference rooms, hoteling stations, informal meeting spaces, a café and balcony overlooking the Dayton Dragons' minor league ballpark.

As is typical with old buildings, the retrofit had to overcome multiple challenges. For example, after all the building's contents were removed, it became clear the floor was extremely unlevel. Because of the weight, a cementitious or gypsum-based product could not be used. Brackett Builders, which served as its own general contractor, had to laser level the floor, install new blocking strips and place new wood-floor sheathing across the entire level.

There were a few locations where some of the existing wood truss structure had been damaged by moisture. Brackett Builders poured a new foundation and block support column. The column was then faced with existing brick veneer that had been removed elsewhere in the building.



PHOTOS: MA DESIGN, BRACKETT BUILDERS INC. unless otherwise noted

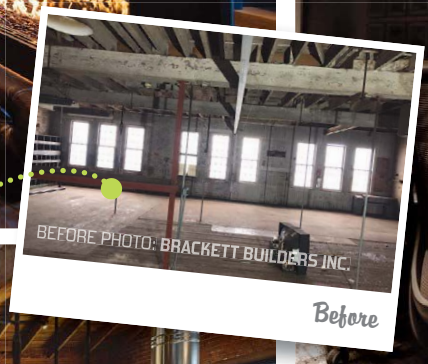
The building contained a short attic space that had been used for additional storage. It was critical for the design and aesthetics of the new space that this attic be structurally removed while retaining the unique equipment upon which City Forge & Iron Works had depended. The extremely dirty remaining brick and wood timber elements were left exposed. Bags of crushed walnuts were used to blast these remaining building materials to clean the surfaces and return them to their original beauty.

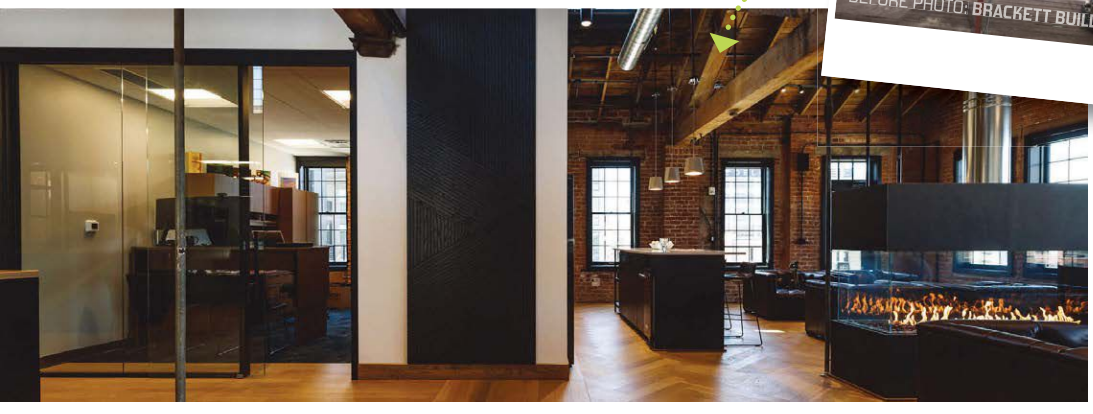
The contractors, subcontractors and material vendors had to work in constant communication with the architects, interior designers and engineers to ensure the project maintained its originality but could provide all of the current technological advancements that today's office environments require.

Judge's Comment

"The project team is to be commended for leaning into what the building provided and emphasizing that throughout all spaces. Restoration of attic structure and retention of original foundry equipment make the building unmistakably repurposed. Construction challenges of restoring century structures is appreciated.— *Ross Welch, AIA, NOMA, LEED Green Associate, associate, Trivers*"









RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

ZIPWALL®

DUST BARRIER SYSTEM 800-718-2255



Start every job with ZipWall®.

- Install in just a few minutes
- Up to 20' high
- No ladders, no tape, no damage

See how easy it is at **zipwall.com**.

MULTIFAMILY *1st Place Winner*

A LOFTY VISION

A Skillful and Inspired Adaptive Reuse Turns a Disused Municipal Complex into Courthouse Lofts

WRITTEN BY | **PHILIP RENZI AND MEGHANN VAN DORN, LEED AP ID+C**

Set on a prominent corner in Worcester, Mass., the Worcester County Courthouse has been a regional landmark since it first opened in 1843. Conceived as an impressive 2-story granite structure with just a single courtroom, it was expanded over the next century through a series of architecturally distinct additions and annexes—one in 1878, a second in 1898 and finally a third in 1955.

By the time the courthouse complex was decommissioned in 2008, this interconnected group of buildings existed as a dense and dramatically underutilized labyrinth of offices, hallways and monumental landmarked spaces. For local leaders in Worcester—a resurgent former industrial city that has experienced significant population growth over the past two decades—redeveloping the property presented an appealing opportunity to accomplish two goals at once: preserve an important touchstone of the city's architectural and cultural history while addressing an increasingly urgent need for new mixed-income multifamily housing.

Restoring this historic complex and converting it into a functional and appealing 118-unit apartment community, now called Courthouse Lofts, required a bold yet highly nuanced design vision, ultimately proving once again the enduring benefits of adaptive reuse and retrofit initiatives. When developer Trinity Financial brought on The Architectural Team (TAT) Inc. as architect and interior designer, that design vision came into focus with a simple framework: Honor the courthouse's historic spaces while giving them contemporary utility.

LANDMARK DIRECTIVES LEAD TO BIG MOVES

Working within the confines of a landmarked property helped to set parameters for the project team. For example, TAT's architects were compelled to preserve and restore key exterior components, including the granite façade of the original courthouse structure and 19th-century additions, as well as the glazed brick façade of the 1955 annex. Where possible, the architects also rehabilitated original exterior fenestration, though many windows, including the large storefront system at the annex entrance, had to be replaced with historically appropriate substitutes.

This same attention to historic elements applied to indoor spaces with interior landmark regulations helping to clearly define what must be preserved and what could be changed and reworked. On the National Park Service and Massachusetts Historical Commission's "must save" list were courtrooms from each distinct era of the courthouse complex's construction, along with the main entry spaces, circulation



PHOTOS: **ED WONSEK** unless otherwise noted

Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT AND INTERIOR DESIGN //
The Architectural Team Inc., www.architecturalteam.com

- Mike Binette, AIA, NCARB, senior partner, managing principal
- Philip Renzi, senior project manager
- Meghann Van Dorn, LEED AP ID+C, director of Interior Design

GENERAL CONTRACTOR // Tocci Building Corp., www.tocci.com

HISTORIC CONSULTANT // The Public Archaeology Laboratory, www.palinc.com

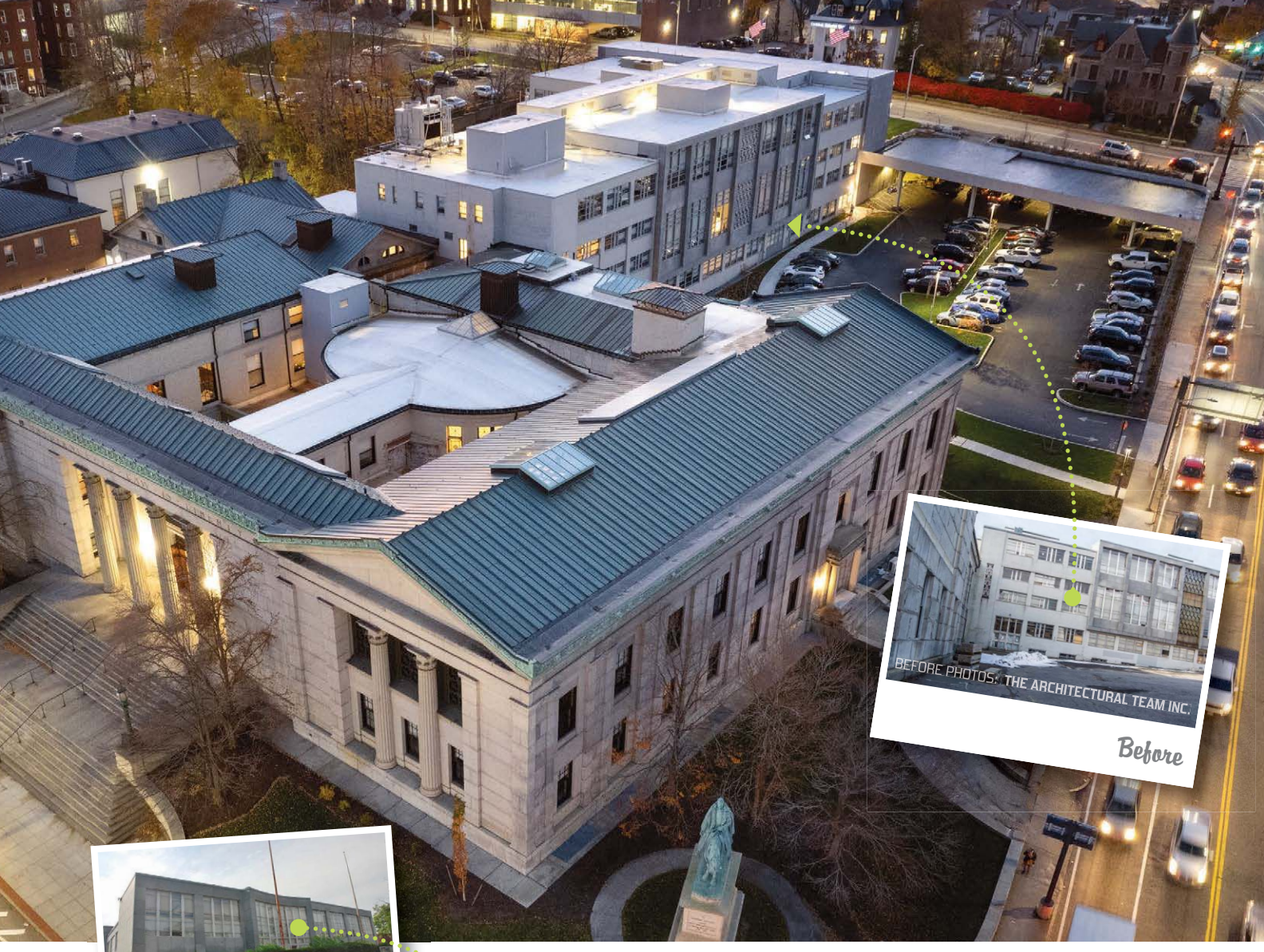
LANDSCAPE ARCHITECT // DMLA, www.dm-la.com

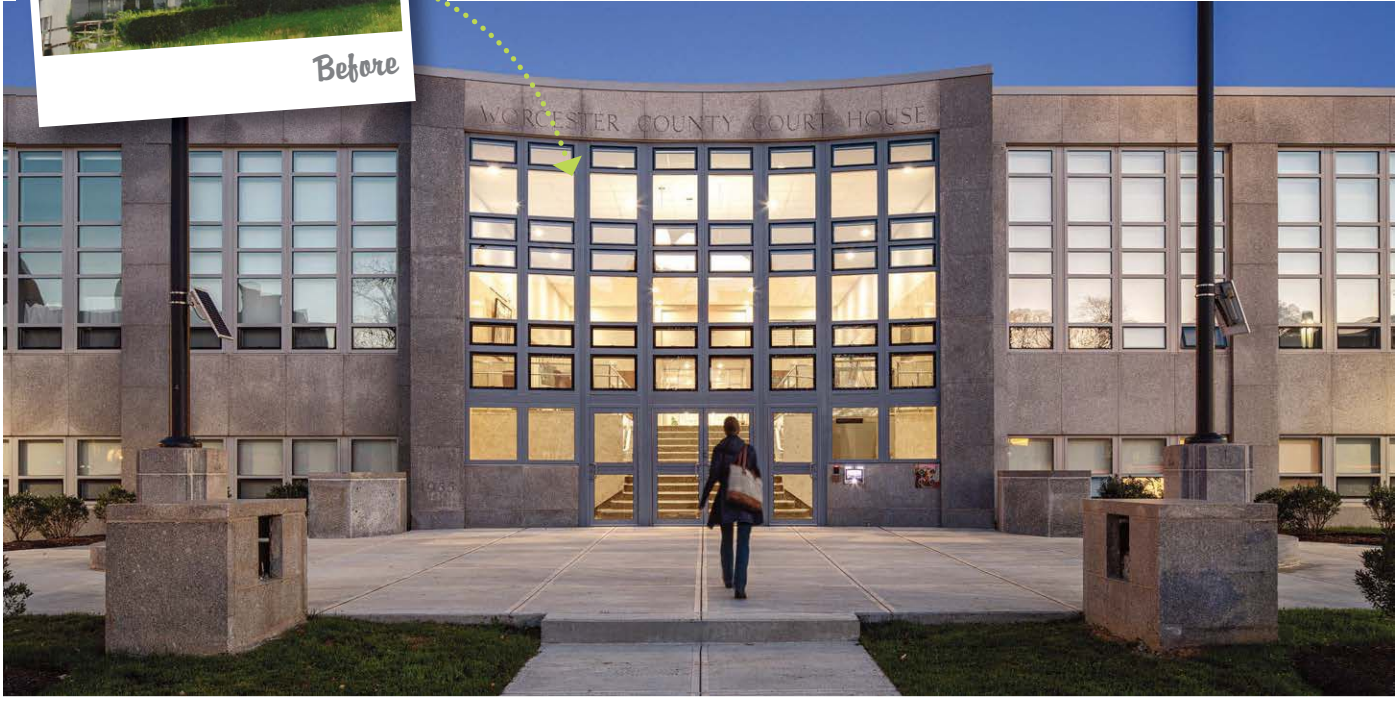
STRUCTURAL ENGINEER // DM Berg Consultants, www.dmberg.com

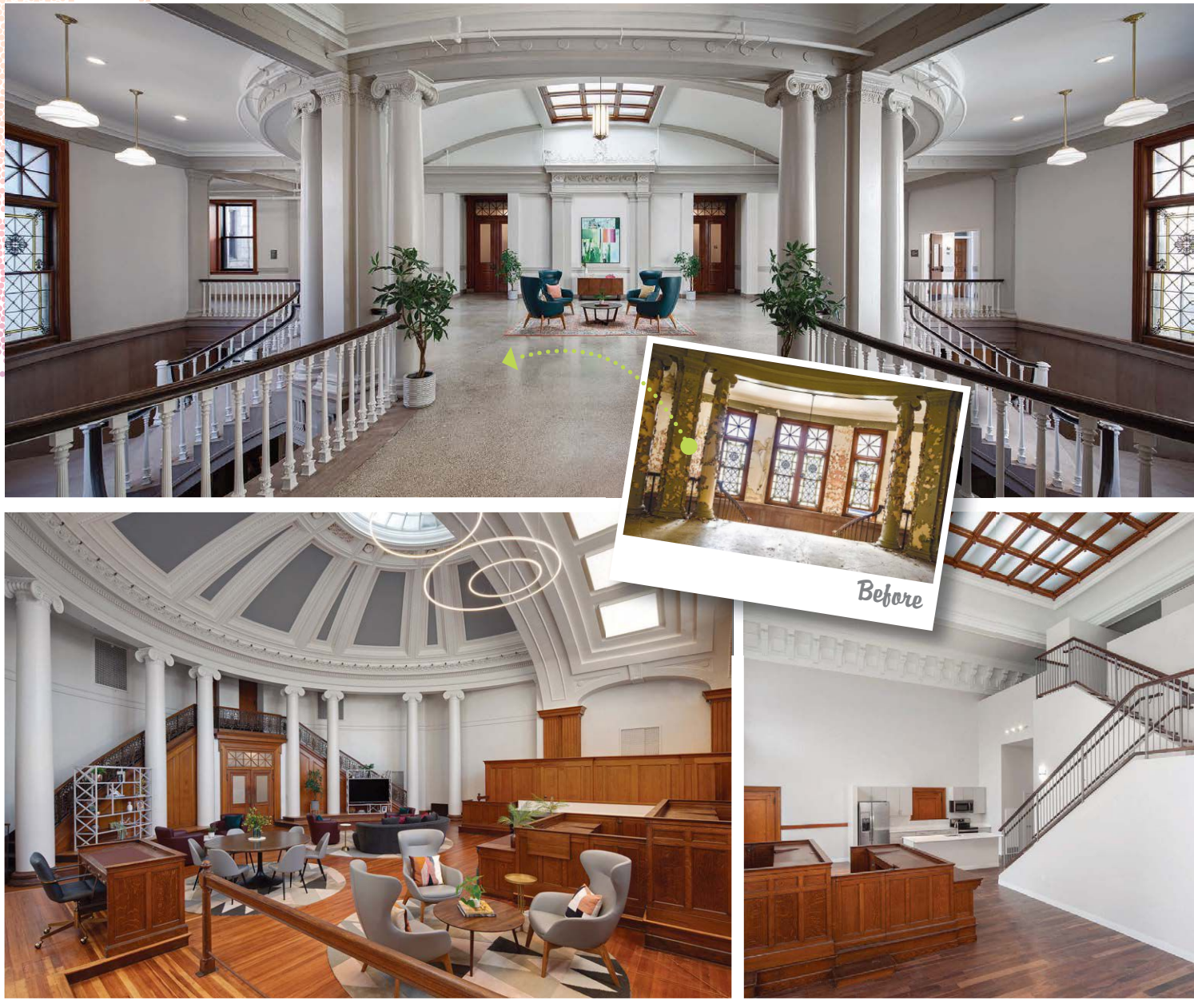
MEP/FP ENGINEER // Petersen Engineering, www.petersenengineering.com

Judge's Comment

"Wow! The cultural and architectural significance of this project is palpable. The insertion of new elements is done with great attention to the historic character of the existing building and yields interesting, one-of-a-kind spaces." — *Katie Hunt, architect, LRK*


BEFORE PHOTOS: THE ARCHITECTURAL TEAM INC.
Before
Before


WORCESTER COUNTY COURT HOUSE



Of the 118 units within Courthouse Lofts, only six share the same floor plan. Original detailing, courtroom benches, holding cells, phone booths, and other historic details are preserved throughout the multifamily community, providing residents with a nod to the building's storied past while providing contemporary and flexible amenity spaces.

corridors, numerous stairs, ceilings, flooring, stained glass in the lobby and several other spatial volumes that had been left abandoned for more than 12 years.

Although comprehensive, the specificity of landmarking directives opened the door for the important large-scale architectural moves that made this irregular courthouse complex viable as a single residential community. For instance, the location and layout of the 19th century additions resulted in very deep floor plates for the main courthouse building, leaving a majority of internal spaces without the daylight access required for residential use. To bring natural light into the core of the building—necessary to meet code requirements and to maximize the number of residential units—the architects were able to create two interior courtyards by removing several non-historical infill additions. In a similar act of strategic subtraction, the architects removed a portion of the 1955 annex structure that sat between the 1878 and 1898 additions, opening the original 19th century granite façades up to the sky after 70 years and pouring natural light back into the building.

INTERIOR CHALLENGES AND OPPORTUNITIES

Inside, the design team faced a circulation challenge. Rather than a single unified building,

the courthouse complex consisted of different structural systems appended onto each other over the course of a century and intended for a very specific institutional use with requirements often in opposition to its new residential purpose. For instance, the imperative for safe movement of witnesses and prisoners resulted in many adjacent portions of the courthouse not having direct connections with each other.

To regularize these convoluted circulation patterns and bring them up to code, TAT's architects were able to make a case for changes, including the demolishing of a number of the complex's original 32 stairs while restoring others for internal use within duplex apartments. Similarly, careful consideration was necessary in the highly ornate retained historic spaces as the project team installed updated mechanical and electrical systems and introduced a sprinkler system into the building for the first time.

Following these significant architectural efforts, the main interior design retrofit challenge became a question of balancing scale and character: In such a massive complex with grand balustrades, millwork and other historic detailing, how could TAT's design team craft spaces that felt intimate and welcoming and provided functionality for modern life?

For common areas, the design solution centered on the creation of dedicated zones that help to break up the community's large spaces and form discrete amenities. The monumental domed primary courtroom, for example, was reimagined as a resident club room with a variety of distinct uses that leverage its historic elements, ranging from a shared kitchen built into a former witness stand to media areas in the plinths that once served as seating for the courtroom audience, as well as a restored holding area behind the jury box. In the center of this space, new lounge zones and remote work settings add functionality and reduce the room's perceptual scale. Confined to a limited number of changes in this landmarked room, TAT delineated these zones through the strategic use of millwork, furniture, fixtures and equipment instead of through major structural interventions.

In other portions of the complex, TAT's interior design team found ways to build on the courthouse's architectural character, adding contemporary functionality with era-appropriate design cues. The new mailroom is a perfect example: Located near the primary entrance to the 1950s annex, the space was full of mid-century character with rose-colored marble and original phone booths. TAT's designers played off these elements, designing custom, clean-lined modernist mail infrastructure rendered in walnut. This bespoke millwork contributes to a mailroom tableau that looks as if it had always occupied the space.

HONORING THE SPIRIT OF THE PAST

Within individual apartments, TAT took an innovative approach to the mix of old and new. Thanks in large part to the irregularity of the courthouse complex's layout, just six of the 118 units share the same floorplan. Ranging from studio lofts to large duplexes, the atypical nature of these apartments presented a challenge for the design team: Many of the units incorporated a variety of historic elements that had to be preserved, such as original stairways and doorframes, courtroom doors and intricate moldings. Other units featured a less intensely detailed, yet equally charming, mid-century aesthetic.

TAT's design team chose to embrace the variety, approaching all 118 units with a color palette whose neutrality ensures that fixtures and finishes work as well in a structure from the 1850s as they do in one from the 1950s. In every apartment, medium wood tones and simple white cabinetry and backsplashes allow the rest of the architectural elements to play the central role in defining the units' character. The result is that every space feels as unique and special as possible while remaining functional for contemporary life.

In an exciting twist, the courthouse complex's large scale offered the design and development teams one more unique opportunity to honor Worcester's heritage: On the first floor of the 1878 addition, the building features a public museum dedicated to local hero Marshall "Major" Taylor, a pioneering Black cyclist and international celebrity from the early 20th century who called Worcester home.

The existence of this important museum in a new residential community full of original details is a perfect embodiment of what makes Courthouse Lofts, and so many historic retrofit projects, valuable. By honoring the spirit of the past while addressing today's most urgent needs, design teams can create enriching experiences for generations of end-users that are beautiful, perform flawlessly and tell a remarkable story.

Materials

1800s ORIGINAL COURTHOUSE

WINDOWS // Ultra Series Sterling Double-hung Aluminum-clad Wood Windows from Kolbe, www.kolbewindows.com

LIGHTING // DG4 Bollard Lights from Urban Accessories, urbanaccessories.com

1950s ANNEX

ALUMINUM CURTAINWALL // 1600UT system from Kawneer, www.kawneer.com

WINDOWS // 451T and Glassvents from Kawneer, www.kawneer.com

ROOFING // EPDM Non-reinforced 60-mil Membrane from Carlisle Syntec Systems, www.carlislesyntec.com

COMPOSITE METAL WALL PANELS // Alucobond, www.alucobondusa.com

BRICK REPLACEMENT COLOR\FINISH MATCH // Nawkaw, nawkaw.com

INTERIOR MATERIALS

ENTRY MATS // Mats Inc., matsinc.com

CARPET TILE // Shaw Contract, www.shawcontract.com

TILE FLOORING // Division 9 Collaborative, division9collaborative.com

VINYL COMPOSITE TILE // Azrock VCT from Johnsonite, commercial.tarkett.com/en_US/brand/johnsonite

RUBBER FLOORING // Dinoflex, dinoflex.com

LUXURY VINYL TILE // Allura from Forbo, www.forbo.com

WOOD FLOORING // Nydree Flooring, nydreeflooring.com

VINYL WALLCOVERING // MDC, www.mdcwall.com

WALL TILE // Emil America, www.emilamerica.com; Division 9 Collaborative, division9collaborative.com; and Imola Ceramica, imolaceramica.com

COUNTERTOP // Caesarstone, www.caesarstoneus.com, and Chemetal, www.chemetal.com

CABINETS // Metropolitan Cabinets, metcabinet.com

LIGHTING // Moonring from ALW, alwusa.com; Prudential Ltg., www.prulite.com; Tania from Vonn, www.vonn.com; Olio Wall Sconces from Oxygen Lighting, oxygen.lighting; and Mini Trac Lighting from Eaton, www.eaton.com

BACKSPLASH // Daltile, www.daltile.com

APPLIANCES // GE Appliances, www.geappliances.com

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

MULTIFAMILY 2nd Place Winner

TRULY TRANSIT-ORIENTED

High-density Affordable Housing Weaves Together Historic Buildings with Thoughtful New Construction

Frost Terrace weaves together three historic houses, significant contemporary architecture and a dynamic, human-centered landscape to transform a forgotten residential site along a commercial avenue. The high-quality multifamily affordable housing development contains 13 three-bedroom, 13 two-bedroom, 13 one-bedroom units and one studio.

The city of Cambridge, Mass., has one of the highest costs of living in the United States, and there is a dearth of family affordable housing throughout the city. Long-time residents have been priced out of Cambridge and those who make low or even moderate wages struggle to find housing within city limits. Frost Terrace addresses this issue by providing affordable housing specifically for families.

The design of the buildings and site at Frost Terrace contributes to a vibrant streetscape and unfolds in a varied volumetric composition that transforms its site and context for contemporary use. The development is made up of four anchoring elements:

- The circa 1865 William Frost House, a restored Second Empire building relocated on the site into realignment with an adjacent historic church building.
- A 5-story masonry volume set behind the William Frost House.
- Twin shingle-style homes, constructed circa 1900.
- An elevated 3-story ribbon-like clapboard volume knits together these diverse elements and unifies the site.

By relocating the original body of the William Frost House to the northwest and into realignment with the adjacent, landmarked North Prospect Church building, Bruner/Cott Architects helped communicate the residential history of the site along Massachusetts Avenue and freed up a significant portion of the site for new apartments/construction.

Throughout the restoration, Bruner/Cott Architects reused as much of the existing structures as possible and needled in new structure where it was needed to support renovations. Wood was prioritized as a construction material to keep costs down. The project employs Type 1 construction (podium) with Type 5A construction above to maximize the site while maintaining construction costs and material efficiency. Top cord bearing trusses are used to maximize daylight openings, and the project features a significant Vierendeel truss. The team also worked to create opening patterns on bearing walls that encouraged variation but minimized transfer of loads.

Frost Terrace's approach to sustainable design aligns with the principles of affordable housing—lowering utility costs, conserving resources, prioritizing mobility (bikes and transit) and creating healthy living environments for residents. The project includes energy-recovery ventilation, efficient electric-driven heat-pump systems and highly insulated envelopes (new and upgraded). Pending final review, the project is expected to achieve LEED for Homes and Multifamily Midrise Gold certification.

The design circulates 100 percent outdoor air through ERV in the new construction, which became increasingly critical in the COVID-19 pandemic. In the relocated William Frost House, each unit contains an independent ERV. All mechanical systems, except for the heating and cooling of buildings C and D, are centralized in building B and fed underground to the restored buildings, reducing mechanical complications that are typically common in restoration projects. Units feature independent air-source heat-pump systems that are the heating and cooling for each unit.

The living spaces at Frost Terrace were thoughtfully designed with comfort and convenience in mind and utilize premium materials and finishes. Each unit features a spacious, open-concept design, energy-efficient appliances, individual climate and temperature controls, ceramic tile in bathrooms, large windows, air conditioning and high-efficiency lighting. Select units include a washer/dryer. Community amenities include a community room, private outdoor green space, electric-vehicle charging stations, onsite professional management, indoor and outdoor bike parking, controlled-access buildings and a common laundry center. Preserved trees and new plantings create a verdant site with accessible community space for residents to enjoy and socialize.

A unique feature of the Frost Terrace development is its absence of parking. The design prioritizes space for people over cars and includes only three accessible parking spaces. The development's immediate proximity to the MBTA, bike lanes and essential community services, like grocery stores, makes it a truly transit-oriented development. Inside, there are 44 secure bike parking spaces for residents. Out of 100 potential points, the Frost Terrace site has a walk score of 97, a transit score of 74 and a bike score of 99.

Judge's Comment

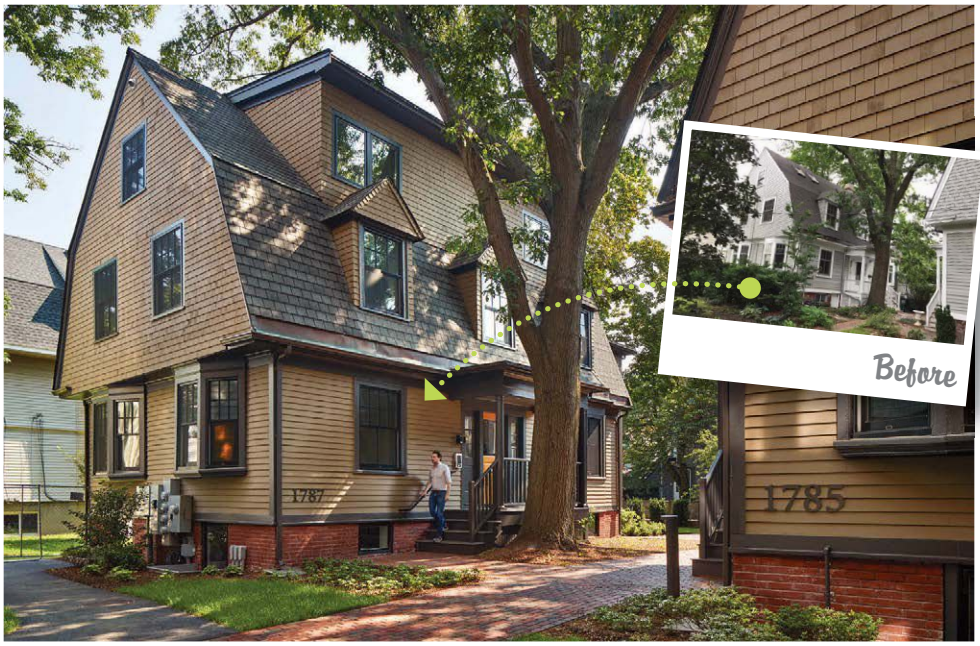
"Charming integration of old and new. Great story about affordability and increased density. I particularly enjoy how the historic house holds the sidewalk edge without being overwhelmed by the addition of new construction behind it. Expertly scaled new construction and lovely sitework makes all the buildings—old and new—fit on the narrow site without feeling cramped." — *Katie Hunt, architect, LRK*





PHOTOS: **ROBERT BENSON PHOTOGRAPHY**
unless otherwise noted





New construction anchors the relocated William Frost House (circa 1865) and provides more housing units for families. Bottom: The team restored and renovated the Frost Terrace houses while creating a community courtyard and preserving an original tree.

METAMORPHOSIS AWARD WINNER!

Retrofit Team

ARCHITECT // **Bruner/Cott Architects, www.brunercott.com**
GENERAL CONTRACTOR // Keith Construction Inc., keithconstruction.net
STRUCTURAL ENGINEER // L.A. Fuess Partners, www.lafp.com
MEP/FP/FA ENGINEERS // Petersen Engineering, www.petersenengineering.com, and R.W. Sullivan, www.rwsullivan.com
WATERPROOFING // Wiss, Janney, Elstner Associates Inc., www.wje.com
ACOUSTICS // Acentech, www.acentech.com
LANDSCAPE ARCHITECT // Lemon Brooke, www.lemonbrooke.com

Materials

PAINT // Sherwin-Williams, www.sherwin-williams.com, and Benjamin Moore, www.benjaminmoore.com
LVT // Commonwealth Commercial Plank from MetroFlor, www.metroflor.com
BATHROOM FLOOR TILE // Mosaic 2-inch Hexagon from Daltile, www.daltile.com
KITCHEN AND BATH COUNTERS // Quartz Select from Wilsonart, www.wilsonart.com
KITCHEN SINK // Undermount from Moen, www.moen.com
KITCHEN AND BATH CABINETRY // Legacy Cabinets, www.legacycabinets.com
WALL BASE // Tarkett, commercial.tarkett.com
EXTERIOR BRICK // General Shale, generalshale.com

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

EXTERIOR 1st Place Winner

CREATIVE APPROACH

Ingenuity and Technology Breathe New Life into Historic Terra-cotta Half Columns

WRITTEN BY | **KUNAL BADHEKA, P.E.**

Manhattan's Ladies' Mile Historic District is home to some of New York City's finest examples of late 19th and early 20th century architecture. Among these is 114 Fifth Ave., an 18-story commercial building designed by Maynicke & Franke that was completed in 1909. The brick, limestone and granite masonry structure recently underwent an extensive restoration program after a city-mandated façade inspection deemed its signature terra-cotta half columns to be unsafe.

Thornton Tomasetti provided the critical façade inspection and evaluation, as well as structural renewal services to L&L Holding Co. for the project.

UNIQUE AND CHALLENGING PROJECT

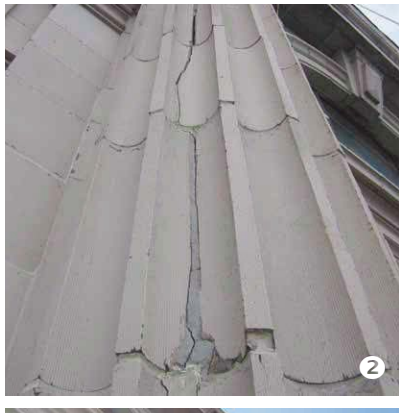
The 350,000-square-foot tower, also known as the Merchants' Exchange Building, sits on the corner of Fifth Avenue and 17th Street. The top three stories of the façade are clad in matte-glazed ornamental terra cotta, including seven 42-inch-diameter, fluted terra-cotta half columns. During New York City-required critical façade examinations, these terra-cotta half columns were classified as unsafe because of severe deterioration (See photos 1 and 2).

The building façade underwent a comprehensive restoration program involving a creative approach in temporary protection and structural stabilization. The team employed a unique solution to remove and restore the 3-story-tall terra-cotta half columns. This project was particularly challenging and required innovative approaches for working in unsafe conditions, time constraints and other complexities involved in restoring a historic building. Because the building is located in a historic district, all work needed to be approved by the New York City Landmarks Preservation Commission.

RESTORATION OF TERRA-COTTA HALF COLUMNS

A key aspect of the project was the removal and replacement of the fluted terra-cotta half columns. The team needed to develop a plan for protecting the unsafe terra-cotta column cladding while working on the structural and architectural design for the repair and its stabilization while the work was in progress. There also was the issue of eliminating the unsafe cladding while maintaining the integrity of the exposed elements for a prolonged period as the new terra-cotta units were being manufactured. Furthermore, the team had to reconfigure the terra-cotta cladding support scheme to overcome previous support deficiencies.


1


2


PHOTOS: **THORNTON TOMASETTI**
3

Recognizing the project's structural and schedule challenges, the team's goal was to quickly implement a temporary stabilization program to prevent the fragments of cracked terra-cotta units from falling to the streets below. A high-tensile strength, anti-shatter clear polyurethane coating temporarily protected the severely cracked terra-cotta units and served as an emergency repair (see Photo 3).

From a supplemental invasive probe investigation, the project team determined the original supports for the terra-cotta masonry units—stress-relieving steel brackets—only provided a sufficient bearing surface to the front-facing portion of the terra-cotta half columns (see Photo 4). The bracket extension toward the periphery of half columns did not extend far enough to provide full support. This resulted in a non-relieving condition toward the sides of the half columns. Over a prolonged period, the steel bracket corroded, resulting in large, full-height vertical shear cracks at the two mirrored sides of the half columns (refer to Figure 1). The severity of the cracked and unstable terra-cotta units made it necessary to completely rebuild the half columns. A creative restoration approach was essential to preserving the original characteristics of this landmark building façade.

The project posed additional challenges in navigating the unsafe conditions, which were reported to the New York City Department of Buildings (DOB). During the early stages of the repair construction, the column capitals were stabilized using anchors and temporarily shored using a cantilever framing hung from the roof.



114 Fifth Ave. is an 18-story commercial building designed by Maynicke & Franke, completed in 1909. The top three stories of the 350,000-square-foot tower's façade are clad in matte-glazed ornamental terra cotta, including seven 42-inch-diameter, fluted terra-cotta half columns. After a city-mandated façade inspection deemed the building's signature terra-cotta half columns to be unsafe, Thornton Tomasetti provided the critical façade inspection and evaluation.

FIGURE 1

TYPICAL PART PLAN DETAIL, SHOWING ORIGINAL BRACKET LAYOUT AND TERRA-COTTA MASONRY CRACK LOCATIONS

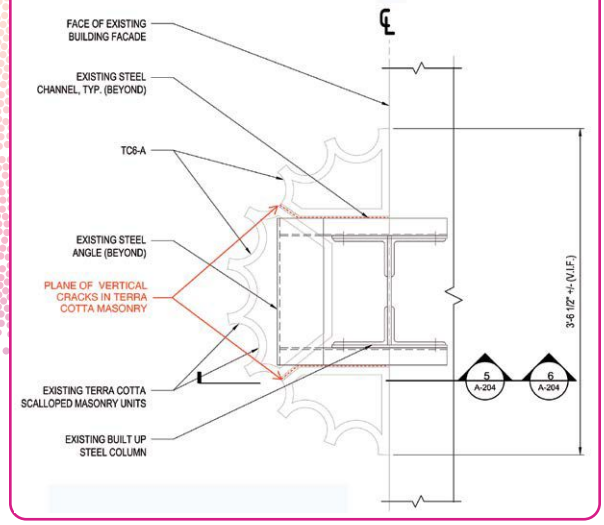
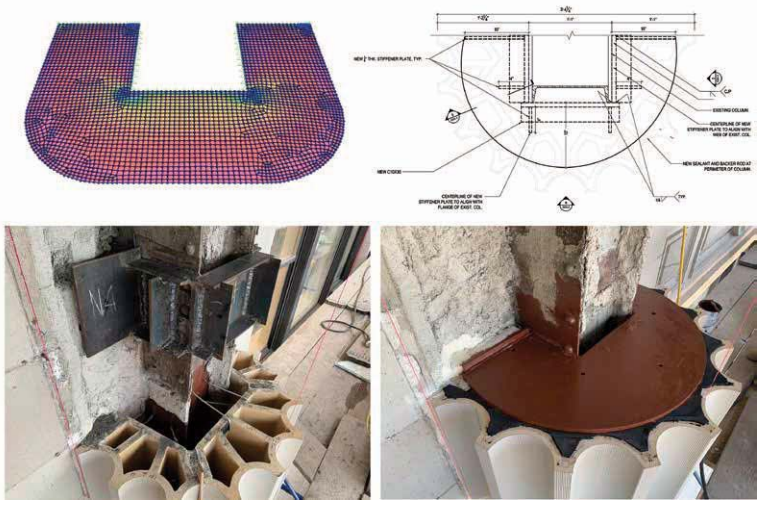
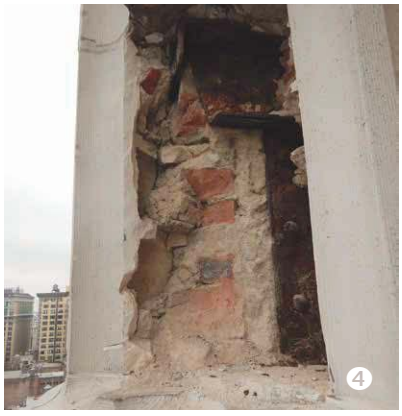


FIGURE 2

FROM DESIGN TO IMPLEMENTATION OF BRACKETS, SUPPORTING THE FLUTED TERRA-COTTA HALF-COLUMN UNITS




4


5



PHOTOS: THORNTON TOMASETTI



A key aspect of the project was the removal and replacement of the fluted terra-cotta half columns. The embedded steel columns, exposed when the terra-cotta cladding was removed, were cleaned and painted with a corrosion-inhibiting coating system, followed by an application of a lathed trowel-applied, weather-resistant cementitious fireproofing that is compatible with painted steel (Photo 5).

Judge's Comment

> Scope is relatively small, but the technical expertise of the design team is immense. The restoration is indistinguishable from adjacent existing construction, demonstrating extensive attention to detail in finish color and texture alongside the technical detailing. … Wonderful demonstrations of the use of current technology in preservation. — *Ross Welch, AIA, NOMA, LEED Green Associate, associate, Trivers*



PHOTO: ALEXANDER SEVERIN PHOTOGRAPHY

The project team was then able to remove the unsafe terra-cotta units.

Because of the anticipated long lead-time required to manufacture the new cladding units, it was crucial the integrity and watertightness of the exposed elements was maintained. To ensure this, the embedded steel columns, exposed when the terra-cotta cladding was removed, were cleaned and painted with a corrosion-inhibiting coating system. This was followed by an application of a lathed trowel-applied, weather-resistant cementitious fireproofing that is compatible with painted steel (see Photo 5). DOB accepted this innovative stabilization solution to bring the exposed embedded steel columns to a Safe with a Repair and Maintenance Program, or SWARMP in DOB jargon, condition, pending the completion of the full restoration.

The original terra-cotta half column construction involved open back-face units with a solid brick masonry backup. The design goal was to reduce the overall weight and provide a well-drained column cladding system. This was accomplished by eliminating the brick masonry backup. The new terra-cotta cladding units were then stacked up with three levels of steel brackets with a semi-circular plate to allow for proper bearing. Shop-fabricated stainless-steel anchors, welded to the backup steel columns, provide lateral support for the units.

The team used appropriate welding electrodes to connect stainless-steel anchors to the original carbon-steel columns to avoid galvanic corrosion. At the contact points of the anchors with the terra-cotta units, custom-fabricated neoprene pads and sleeve jackets were used to mitigate localized stress.

To provide a path for the incidental moisture that entered the system, the terra-cotta cladding units were fabricated with vertical open cells as opposed to the original open back-face units. The relieving steel bracket plates were provided with holes to allow for entrapped moisture drainage for the full height of the column. Refer to Figure 2 for the bracket design concept and bracket installation in progress.

The base of columns was waterproofed using a fluid-applied PMMA, or poly methyl methacrylate, waterproofing membrane and copper flashing, and the lowest terra-cotta units along with the bed joint were provided with weeps to allow for moisture egress.

With various field-condition constraints, particular importance was given to the construction sequence; the team worked closely with the contractor to identify creative solutions for the challenges that arose during the cladding assembly installation.

EXACTING STANDARDS

The project, which was completed in February 2021, successfully navigated the technical and logistical challenges of restoring large-scale terra-cotta columns while meeting the requirements of local government agencies. The team was able to repair key structural steel supporting components and breathe new life into the historic masonry façade to exacting preservation standards while improving performance and longevity.

Retrofit Team

METAMORPHOSIS AWARD WINNER!

STRUCTURAL ENGINEER AND BUILDING ENVELOPE CONSULTANT // Thornton Tomasetti, www.thorntontomasetti.com

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

GENERAL CONTRACTOR // Flag Waterproofing and Restoration, flagwaterproofing.com

Materials

NEW TERRA-COTTA MANUFACTURER // Boston Valley Terra Cotta, bostonvalley.com

ANTI-SHATTER COATING // Decothane Clearglaze from Sika Liquid Plastics, gbr. liquidplastics.sika.com

GROUT-SOCK ANCHORS // Cintec, cintec.com

POLYURETHANE PAINT // PerimePrime from Tnemec, tnemec.com

WEATHER AND FIREPROOFING OF EXPOSED STEEL // Monokote Z-156 from GCP, gcpat.com

LIQUID WATERPROOFING // Parapro Fluid-applied Membrane from Siplast, www.siplast.com

TERRA-COTTA AND STONE-MASONRY PATCHES // Various mortars by Jahn Restoration Systems, www.cathedralstone.com

REPLACEMENT BRICKS // Glen-Gery, www.glengery.com

MASONRY MORTAR // Spec Mix, www.specmix.com

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

EXTERIOR 2nd Place Winner

CUSTOM CAST IRON

A New York City Landmark Building Receives a Well-executed Façade Restoration

Retrofit Team

RESTORATION ARCHITECT // CTS Group Architecture/Planning PA, www.ctsarch.com

METAMORPHOSIS AWARD WINNER!

- David Abramson
- Brian Compertore
- William Slack, principal in charge

ARCHITECT // Greenberg Farrow, greenbergfarrow.com

CAST IRON RESTORATION CONTRACTOR // InDetail LLC, (347) 971-2233

Materials

CUSTOM SHEET METAL AND CAST IRON INSULATED WOOD WINDOWS // Caoba Doors, www.caobadoors.com/en/windows

Judge's Comment

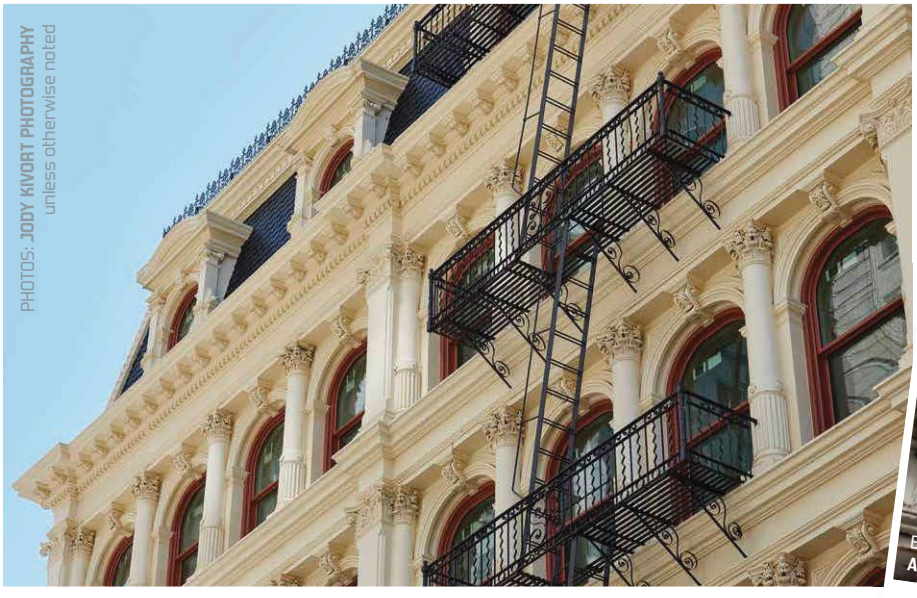
"Great exterior cast-iron restoration."
—Charles Van Winckle, vice president, Thornton Tomasetti's Renewal practice

55 Reade Street, New York, is a transitional Italianate/French Second Empire cast iron building and an individual New York City landmark. It fell under State Historic Preservation Office jurisdiction because the client sought historic tax credits.

Designed by noted architect John B. Snook for the estate of whole grocer and tobacco merchant Stephen Storm, the building's slate-clad mansard roof topped by iron cresting signified the prestige of this commercial structure.

The comprehensive restoration work included repair and replacement of missing and deteriorated cast-iron elements, including decorative columns, capitals and cornices; restoration and re-creation of deteriorated sheet metal dormers; replacement of damaged slate roofing; and replacement of arched wood windows and wood storefronts.

CTS Group Architecture/Planning PA assessed all building conditions guiding the selective repair and replacement and recorded existing details of all features, which served as the basis of the replication of missing and severely damaged features. Scientific paint sampling provided the basis for repainting of existing and new cast-iron and wood elements. New wood windows were fabricated based on detailed field drawings, and the decorative iron cresting was replicated from remnant pieces found on the site.



PHOTOS: JODY KIVORT PHOTOGRAPHY unless otherwise noted

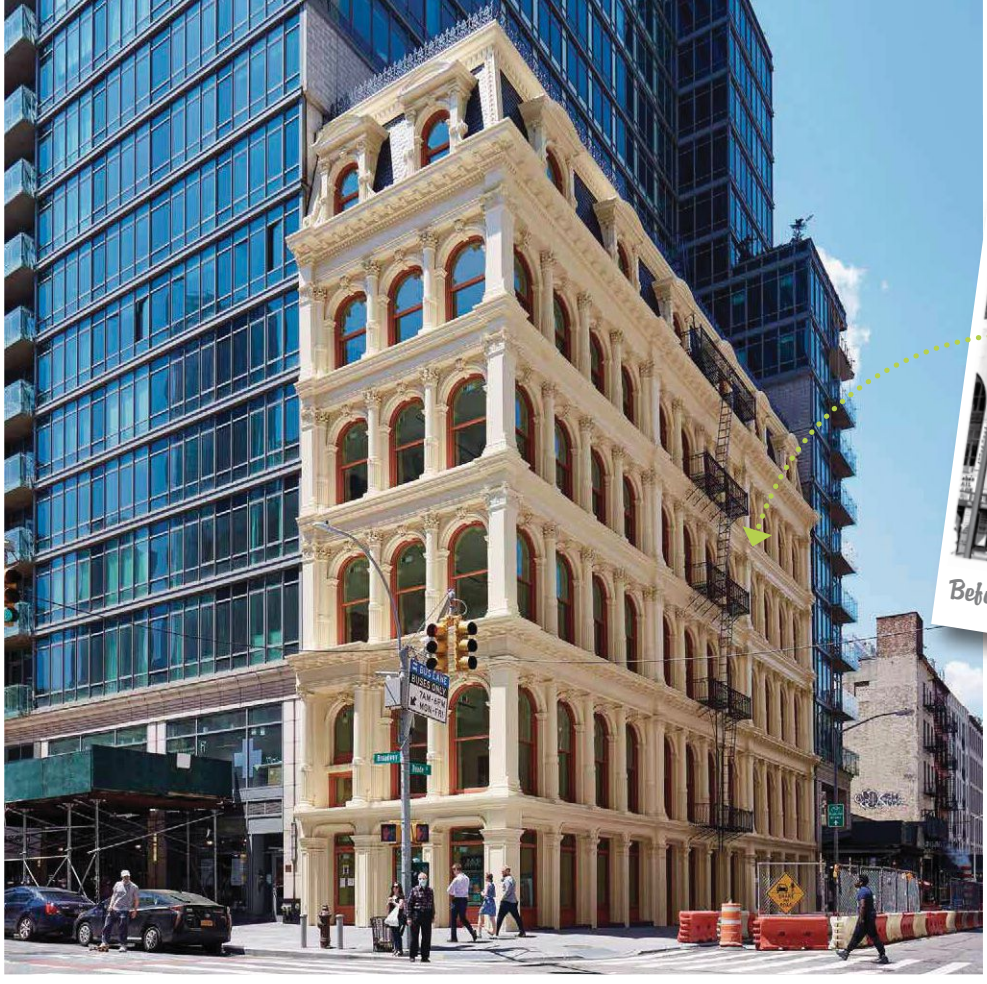


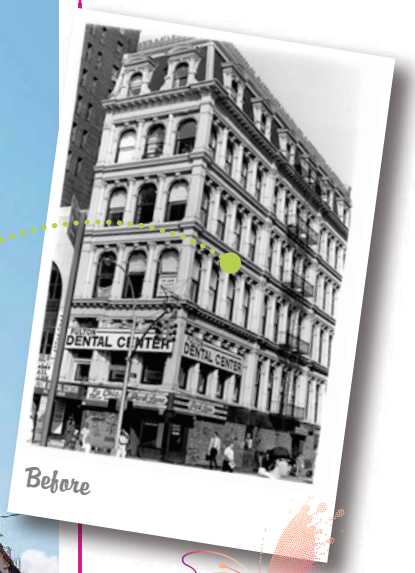


BEFORE PHOTOS: CTS GROUP ARCHITECTURE/PLANNING PA

Before

The project restored the cast iron façade; re-created cresting and dormers; and restored the mansard roof, cornice, dentils, column capitals and keys.

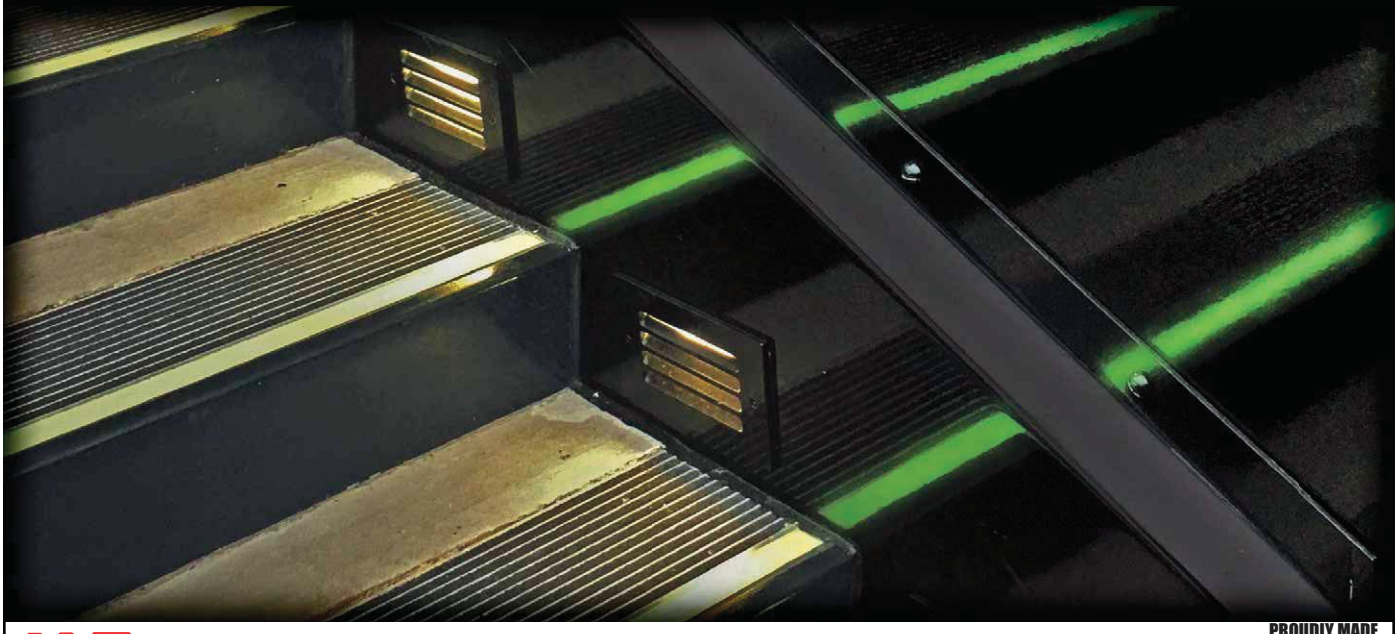




RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

NITEGLOW® ANTI-SLIP STAIR TREADS

#1 IN EGRESS SAFETY WITH THE LIGHTS ON *AND* OFF



Wooster Products Inc.
"Make Every Step a Safe One"

PHOTOLUMINESCENT ANTI-SLIP
SAFETY TREADS & NOSINGS
IBC, IFC & NYC CODE COMPLIANT!

Call or visit us at:
1-800-321-4936
www.woosterproducts.com
sales@wooster-products.com

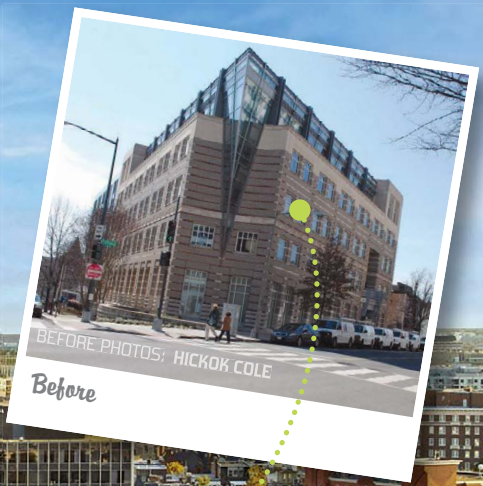
PROUDLY MADE IN THE USA

WHOLE BUILDING *1st Place Winner*

NOTHING BUT NET ZERO

AGU Headquarters Renovation Chases Ambitious Performance and Occupant Comfort

WRITTEN BY | **JIM SCHNEIDER**



PHOTOS: **ERIC LAIGNEL** unless otherwise noted

In 1994, the American Geophysical Union, or AGU, opened its 62,000-square-foot headquarters in the historic Dupont Circle neighborhood of Washington, D.C. The non-profit represents a global network of 130,000 Earth and space scientists and enthusiasts, and the building incorporated symbolic design elements that refer to its members' research.

Decades later, the building began to show its age. By 2013, the mechanical systems had come to the end of their useful lives and AGU leaders concluded they needed to move forward with a renovation. However, the group wanted to take this opportunity to demonstrate the organization's commitment to minimizing the built environment's impact on climate change. This kicked off a multi-year process that would result in a net-zero commercial renovation that provides a contemporary, mission-driven workplace for AGU staff.

"AGU hired an owner's representative, architect, engineer and general contractor to work together from the start," recalls Guilherme Almeida, AIA, LEED AP, lead project designer with Hickok Cole, the architect on the project. "In approaching the building's renovation, we sought to make an architectural and environmental statement. It was important to situate the building in the conversation around the future of net-zero energy development while maintaining the integrity of the original design, which was of paramount importance to AGU, its neighbors and the local Historic Preservation Board."

The ambitious renovation, whose lofty performance goals are intended to showcase progress in sustainable design and inspire similar approaches in other facilities, earned the AGU headquarters the 1st Place award in the Whole Buildings category of the 2022 Metamorphosis Awards.

Retrofit Team

METAMORPHOSIS AWARD WINNER!

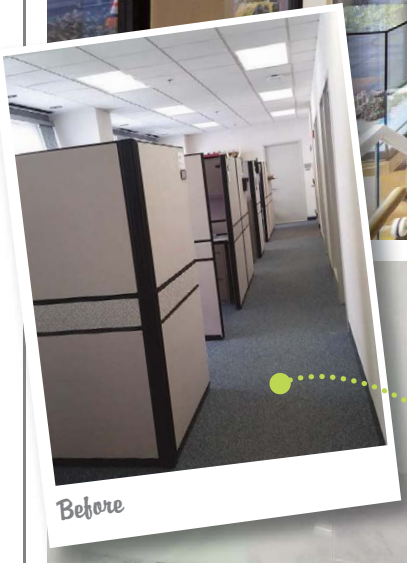
ARCHITECT AND INTERIOR DESIGNER // Hickok Cole, hickokcole.com
MEP ENGINEER // Interface Engineering, interfaceengineering.com
GENERAL CONTRACTOR // HITT Contracting, hitt.com
OWNER'S REP/PROJECT MANAGER // MGAC, mgac.com
STRUCTURAL ENGINEER // TCE & Associates, tadjerco.com
EXHIBIT DESIGN AND GRAPHICS // C&G Partners, cgpartnersllc.com

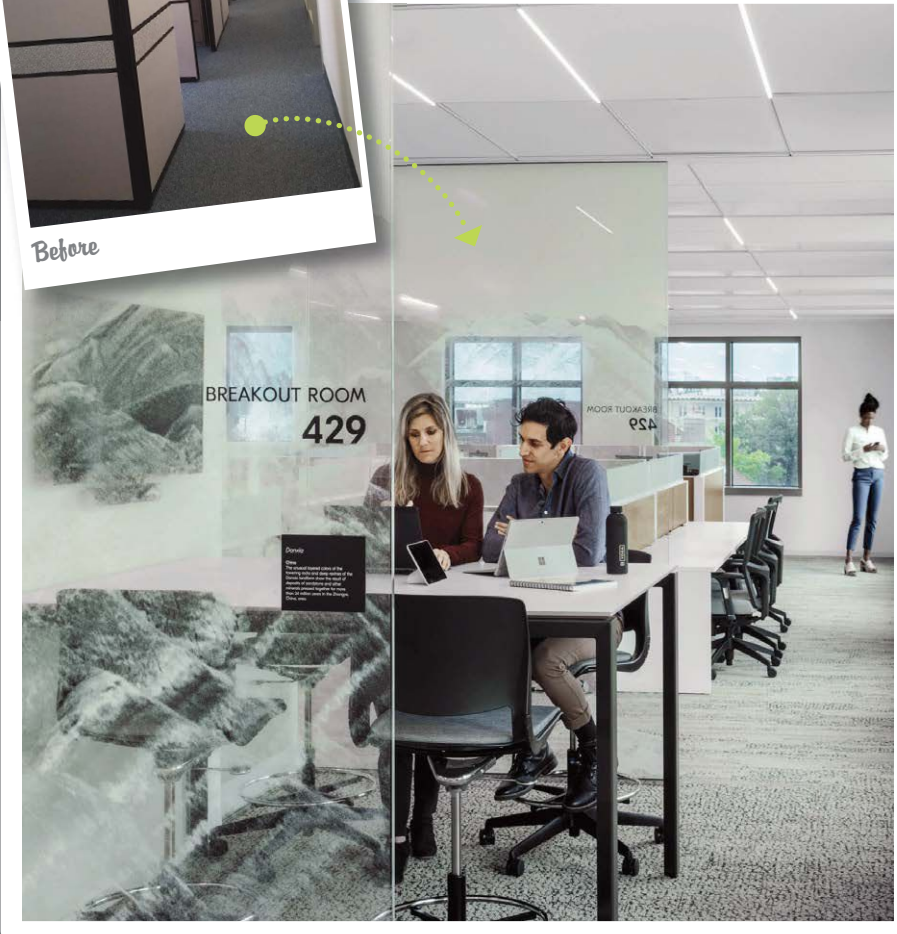




Tucked under the new PV array and prow, a green roof and private terrace overlook views of Dupont Circle.




Before





PERFORMANCE TRANSPARENCY

The design team understood that a net-zero-energy building is difficult to design and relies heavily on mechanical/electrical/plumbing systems and innovative technologies. They were also quite aware that a major factor in building performance is occupant behavior and to achieve those ambitious performance goals required more than just smart design and advanced technology. The people who work in the space needed to understand the building's operation and be part of the solution. That required an advanced level of operational transparency.

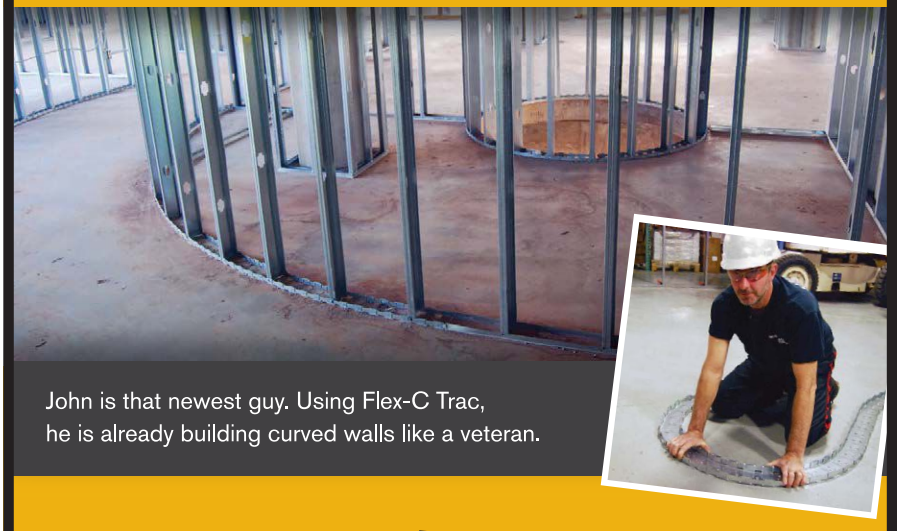
"Throughout the building, informative graphics point out significant operational features and explain how they contribute to meeting net-zero-energy standards," Almeida says. "Mechanical spaces are set behind glass to allow visitors a closer look. Upon entry, an interactive dashboard in the lobby presents an overview of energy consumption throughout the building."

Stepping beyond transparency to the regular occupants of the building, special attention was paid to make the space welcoming and informative of AGU's mission to anyone who visits.

"Seeking to engage with the public in its new home, the design transforms AGU's ground floor into an interactive exhibit showcasing members' research," Almeida explains. "Expanded street-level vitrine bays invite pedestrians to wander inside and attend regular public tours. A lounge and shared workspace welcome AGU members, giving them a home away from home to connect with and collaborate among peers. A flexible, state-of-the-art conference center supports AGU's internal events, social functions and public programming. We also transformed the concourse level to feature additional lounge space and showcase the building's open command center that provides additional insight into building operations."

To promote physical activity, the team cut into existing slabs to create a central connecting stair, uniting staff across three floors and providing easy access to shared amenities. Bottom left: Opaque perimeter private offices were replaced with an open plan to maximize daylight into the building's core. Bottom right: At the ground-floor, members can lounge with views of the exterior public courtyard.

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



John is that newest guy. Using Flex-C Trac, he is already building curved walls like a veteran.

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

FLEX-ABILITY CONCEPTS
The Curved Wall People™

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



Compliance just got easier! Download and view your required emergency lighting reports on your mobile device. Learn more at www.acuitybrands/star

IOTA®

1-800-866-4682 www.iotaengineering.com

Judge's Comment

> That new roof structure is insane! Not only does it draw attention, it also meshes well with the overall building. Also, a lot of upgrades to the façade but still recognizable as the original building; it feels like a natural evolution for the building owner's evolving needs.
>
> *— Charles Van Winckle, vice president, Thornton Tomasetti's Renewal practice*





Stone, glass and porcelain from toilets were repurposed as terrazzo and appear in this reception area terrazzo floor. An interactive exhibition hall is adjacent to the reception area. Bottom: The central café and pantry for staff fosters a greater sense of connectivity.

OCCUPANT OPTIMIZED

Along with engaging the building occupants in the net-zero strategy, the project team always had a strong occupant focus. So often, projects of this magnitude can get lost in the form and function of the building itself, but in this case a primary goal was making this the best possible space for those who work and visit.

"AGU sought to transform its workplace into a dynamic and collaborative modern environment—a destination employees sought out," Almeida says. "Our approach combined wellness and sustainable strategies that prioritize holistic health and support the changing needs of employees."

Fulfilling this goal to AGU's human assets involved some big changes in structure, flow and design.

"To foster a greater sense of connectivity and promote physical activity, we cut into existing slabs to make way for a new central connecting stair, uniting staff across three floors and providing easy access to a new café and other shared amenities," Almeida continues. "We replaced opaque perimeter private offices with an open plan to maximize daylight into the building's core. The open office is supplemented by a variety of flexible huddle and conference rooms conducive to different work preferences. Another strategy that combines sustainability and biophilia is the incorporation of hydroponic phytoremediation walls that function as a ventilation system to improve indoor air quality."

SUSTAINABLE STRATEGIES

The new AGU headquarters delivers a superior workspace to its staff and members, and the performance and sustainability goals are seamlessly wrapped into the full package. That involved everything from high-tech systems to basic material considerations.

"We sought to reuse or recycle as much as possible. In fact, 96 percent of the existing building's materials are reused in addition to many pieces of furniture," Almeida says. "Five-thousand bricks were salvaged and cleaned for reuse at the street level while stone, glass and porcelain from toilets were repurposed as terrazzo in the ground floor and conference-room table. On top of it all, about 90 percent of construction waste was recycled."

Some of the biggest hurdles the project encountered came from deploying new and

Materials

METAL PANELS // Reynobond from Arconic, www.arconic.com
EXTERIOR GLAZING // SageGlass, www.sageglass.com
EXTERIOR CURTAINWALL AND WINDOWS // Wausau Window and Wall Systems, www.wausauwindow.com
WOOD VENEER // Shinnoki, www.shinnoki.com
CARPET // Shaw Contract, www.shawcontract.com, and Interface, www.interface.com
CORK FLOORING // Capri Collections, www.capricollections.com
RADIANT COOLING // Messana, radiantcooling.com, and Zehnder Rittling, zehnder-rittling.com
LOBBY STONE WALL // Marmi Faedo, www.marmifaedo.com
COUNTERTOPS // Corian Quartz, www.corianquartz.com
ACOUSTIC WALL PANELS // Carnegie, carnegiefabrics.com, and CLIPSO Americas, www.clipsoceilingwall.com
LIGHTING // Erco, www.erco.com; Vibia, www.vibia.com; JLC-Tech, www.jlc-tech.com; and Bega, www.bega-us.com
GREEN WALL // Nedlaw Living Walls, www.nedlawlivingwalls.com
ACOUSTIC CEILING TILES // Armstrong Ceiling & Wall Solutions, www.armstrongceilings.com
ROOF PAVERS // Bison Innovative Products, bisonip.com

innovative solutions to achieve the net-zero goal.

"Understanding and properly applying leading-edge technology combined with our limited experience in designing for net zero were by far the biggest challenges," Almeida recalls. "That's why all entities had to be involved in every stage of development. We had to be creative in addressing energy consumption and generation, given the existing building constraints and its location in D.C.'s high-traffic and historic Dupont Circle district. For example, because of AGU's footprint, photovoltaic arrays alone couldn't offset the building's energy consumption. This prompted the incorporation of an innovative sewer heat-exchange system to facilitate heating and cooling. Likewise, we worked with the local historic board and community organizations to ensure the design respected and blended well with the neighborhood's character."

The completed building earned a LEED Platinum certification and, at 96 points, is in the top 5 percent of all international LEED projects. It features enhanced envelope insulation, a radiant ceiling cooling system, and achieves a 77 percent reduction in water demand because of efficient water fixtures and captured rainwater.

"The project has been largely embraced by the surrounding community and the city of Washington, D.C.," Almeida says. "AGU received the first Clean Energy DC Award from the D.C. Department of Energy & Environment at the District's 2019 Sustainability Awards ceremony. Today, AGU stands by its commitment to transparency and education, opening its doors regularly for public tours, programming and exhibits."

RETROFIT MAGAZINE METAMORPHOSIS AWARDS
Winner

VINYL STAIR TREADS & LANDING TILES

MAKE STAIRS & LANDINGS SAFE WITH MUSSON VINYL TREADS AND TILE

- Excellent for commercial, industrial and institutional use
- Vinyl treads are available in four colors and a variety of sizes and styles
- Contrasting 18" x 18" vinyl tiles have a durable 40 mil wear layer
- Matching cove risers are also available

Visit our website for additional information or to request samples and literature.



MUSSON RUBBER CO.

P.O. Box 7038 • Akron, Ohio 44306
800-321-2381 • Fax 330-773-3254
info@mussonrubber.com
www.mussonrubber.com

WHOLE BUILDING 2nd Place Winner

SUNSHADES

Fiber-reinforced Polymer Shades Increase a San Francisco Building's Usable Daylight while Integrating the Building into a Changing Neighborhood

633 Folsom is a building reuse story focused on embodied and operational carbon reductions, a novel façade system designed to increase usable daylight throughout the workplace, and the client's re-investment and commitment to the next generation of the downtown San Francisco working community. When approaching a once-in-a-generation full-building vacancy, the client strategically planned for a renovation meeting the demands of a new workforce and changing neighborhood.

In collaboration with Gensler, the client established occupant wellbeing and access to daylight as critical to future occupancy. The original black glass was foreboding from the sidewalk and interior experience. A new solution required the integration of building performance and an aesthetic offering to the increasingly pedestrian qualities of the neighborhood.

The preservation and upgrade of the existing concrete super structure allowed for the new design to embody 28.8 percent less CO2 than the complete demolition and rebuild of the same building. Various high-efficiency mechanical approaches were modeled and tested to inform a final system selection that achieves an EUI of 24.7 when paired with the bespoke enclosure design. On this retained chassis, the project deploys façade shading, which dramatically reduces peak loads and increases working hours with the blinds open. Computational tools resolved the shade form and established ideal control of daylight penetration.

The façade was conceived to respond specifically to the built and natural environment. The final sunshade geometry and orientation established an interior workplace with significantly increased usable daylight. Occupants may collaborate with the blinds open for hundreds of additional hours because of the shading capacity of the fiber-reinforced polymer (FRP) sunshades. The FRP shades were fabricated locally in the Bay Area.

The existing plan rotation from solar north means that all four façades are engaged in a meaningful relationship to sun exposure, and the orientation of the shading devices responds accordingly. Shade depth is maximized at the exposed upper reaches while reducing gently toward the lower levels where ambient light is welcome in the urban canyon. Gensler employed FRP for many advantages: inherent flexibility in form, as well as low weight and local fabrication, resulting in less embodied carbon. The effectiveness of the shading allows glass with exceptional light transmission for a building of such energy performance. That performance is delivered with a 100 percent dedicated outdoor air system, which was made more economical by peak-load reduction afforded by the shading devices.

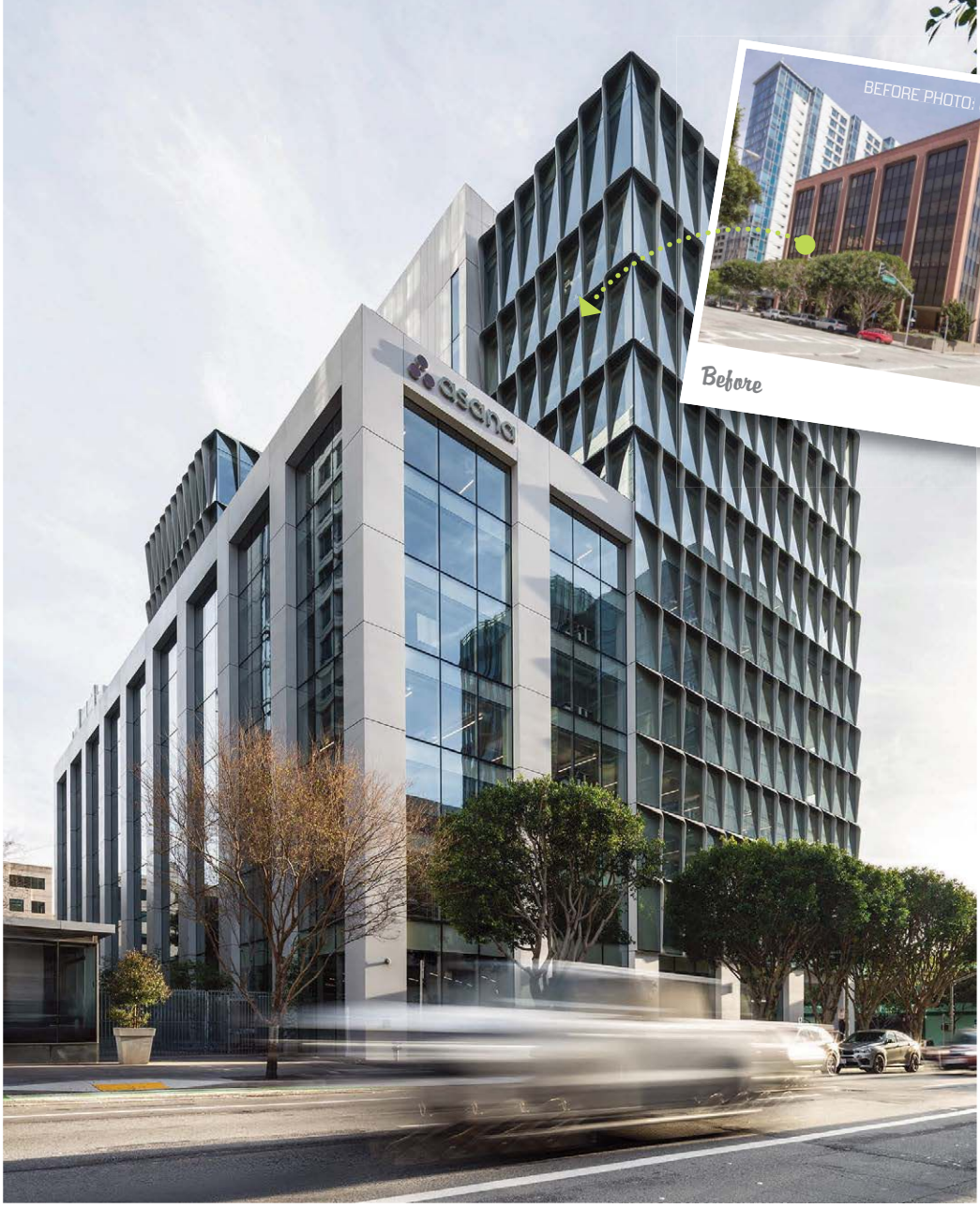
Resolution of the client's goals of wellbeing and access to daylighting resulted in a San Francisco-based tech company leasing the entirety of the building as its headquarters. The access to daylight, computational approach and unique identity of the façade resonated with the tenant's values as an organization.

Judge's Comment

> "Truly elevated from the original condition; definitely a metamorphosis! Great precedent for the argument supporting building reuse and modernization. I particularly appreciated the simplicity/rigor behind using a singular, obviously well-thought-out design element in a way that is visually impactful but also serves a sustainable function."
>
> *— Katie Hunt, architect, LRK*



PHOTOS: JASON O'REAR unless otherwise noted





Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT AND INTERIOR DESIGNER // Gensler, www.gensler.com

DEVELOPER // Swig Co. LLC, www.swigco.com

MEP ENGINEER // Meyers+ Engineers, www.meyersplus.com

STRUCTURAL ENGINEER // Tipping Structural Engineers, www.tippingstructural.com

ENVELOPE CONSULTANT // Wiss, Janney, Elstner Associates Inc., www.wje.com

GENERAL CONTRACTOR // Plant Construction, plantconstruction.com

LIGHTING CONSULTANT // Niteo, www.niteolighting.com

ACOUSTICAL CONSULTANT // Salter Associates, salter-inc.com

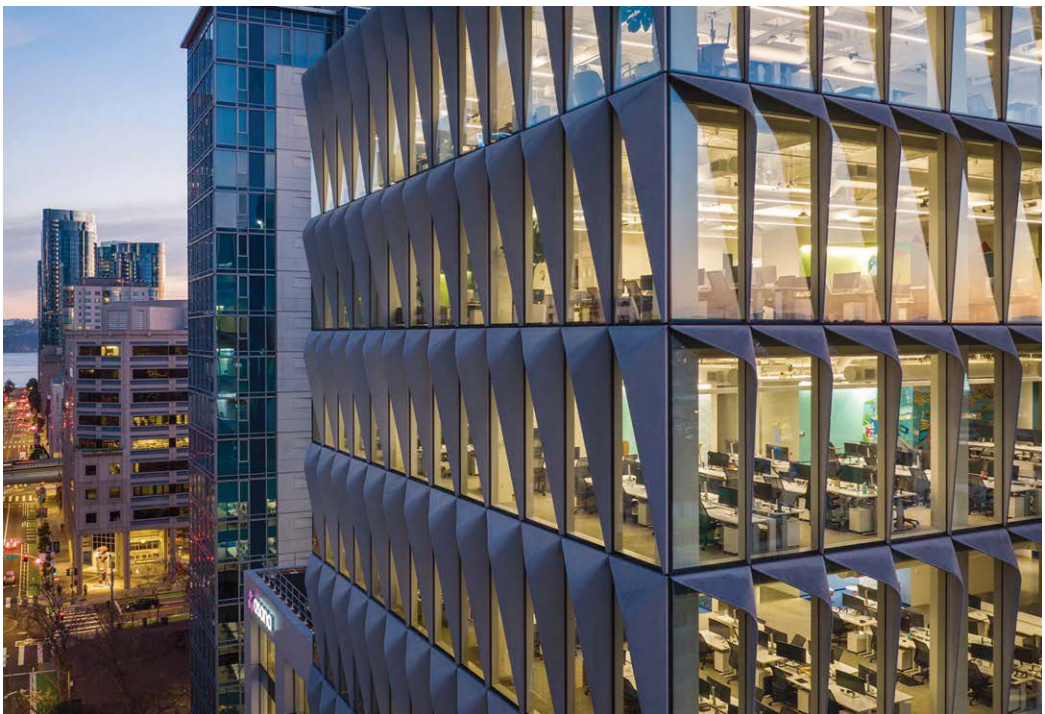
LANDSCAPE ARCHITECT // Mantle Landscape Architecture, www.mantlela.com

SUSTAINABILITY // Atelier Ten, www.atelierten.com

Materials

CUSTOM FIBER-REINFORCED POLYMER SUNSHADES // Kreysler & Associates, www.kreysler.com

LOW-IRON GLASS INSULATING UNITS // Interpane, www.interpane.com



RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

WHOLE BUILDING 3rd Place Winner

THE CASTLE ON THE HILL

A Remarkable Team Effort Revitalizes a 100-year-old School while Facing Numerous Challenges

Referred to by generations of Hartford, Conn., residents as "The Castle on the Hill," the Collegiate Gothic building designed by Boston Architect Frank Irving Cooper was opened in 1923 as Weaver High School. By 2015, district budget pressures and low enrollment had placed the school firmly on the chopping block. Frustrated families and energized stakeholders from Hartford's North End rallied to save the school and its significant building. Their efforts were instrumental in Hartford City Council designating the structure as historic and in securing approval by the city of Hartford and the state of Connecticut to fund renovations to an "as-new" condition. The school would be converted to accommodate two programs and would be renamed the Martin Luther King Jr. Campus.

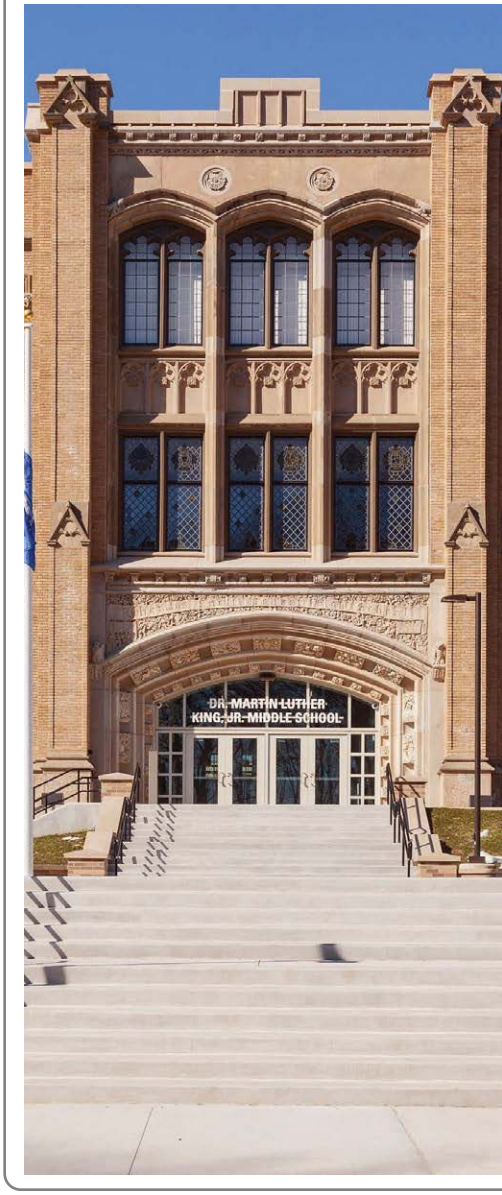
In late 2017, early 2018, the race was on to analyze and document the building's condition and undertake full design and construction for 140,000 square feet of renovations and 34,000 square feet of expansion. Many project challenges centered around the renovation of a 100-year-old building with significant architectural features and the reversal of sometimes brutal and invasive 1970s alterations that were made in the name of modernization and energy efficiency. Compounding challenges were a highly accelerated schedule; uncertainty and disruption caused by the COVID-19 pandemic; requirements to bring the building up to current codes and standards; and, ultimately, the need to transform a 100-year-old facility into an adaptable, flexible and highly functional 21st-century educational environment.

The gymnasium and auditorium were major focuses of the project. The team removed exterior-grade metal panels blocking off the mezzanine level of the gymnasium and replaced a series of south-facing windows that brought natural light into the space for the first time in 50 years. The original building included windows with unique masonry and millwork details, as well as 30-plus unique stained-glass windows, which the team took great care to remove and conserve. Four tall north-facing windows in the auditorium were exposed and replaced while acoustical clouds that obstructed the mezzanine were removed and seating was replaced. The team cleaned and repaired plaster and paint on existing capitals in the auditorium. Meticulous paint and color-matching occurred where new paint was required.

Furthermore, contractors remediated hazardous materials and removed ventilation ducts running through significant components of the auditorium's decorative plasterwork ceiling. With large areas of the ceiling damaged, contractors stabilized surfaces and replicated missing or damaged materials. The school's terrazzo floors were cleaned and resealed with areas of extensive damage repaired. Exterior masonry also was comprehensively repaired and, where replacement was required, contractors matched the existing masonry to create a seamless appearance.



PHOTOS: ROBERT BENSON PHOTOGRAPHY
Unless otherwise noted.



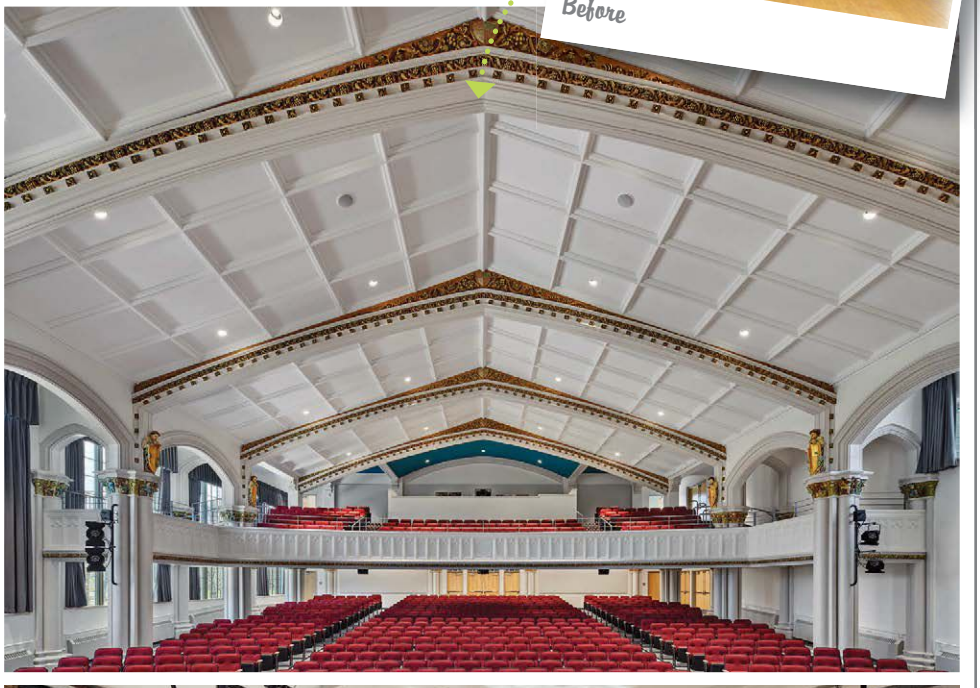
Judge's Comment

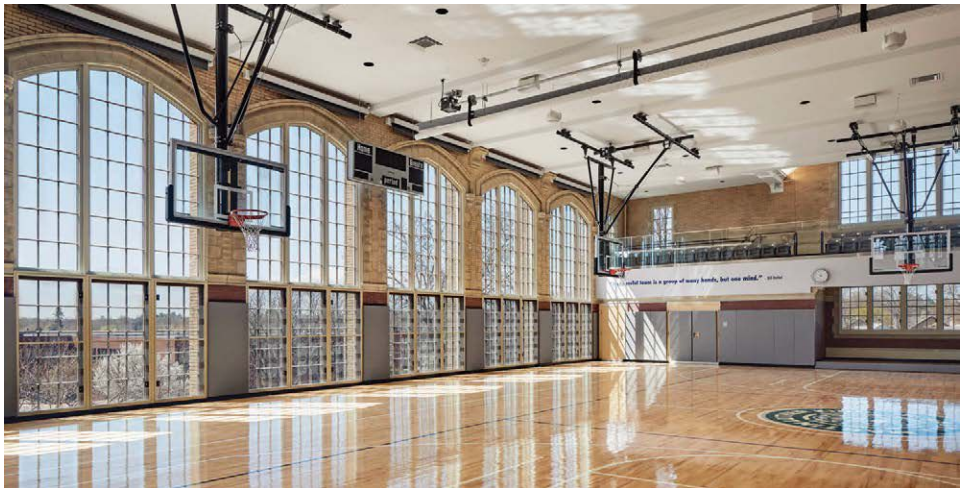
"This project has it all: masonry restoration, stained-glass detailing, envelope repairs, MEP coordination, undoing past mistakes, K-12 budget and politics, creative financing and schedule constraints. Restoration of the gym and auditorium are breathtaking. The project team likely deserves as much credit for the process as for the final result." — *Ross Welch, AIA, NOMA, LEED Green Associate, associate, Trivers*





Before





Retrofit Team

METAMORPHOSIS AWARD WINNER!

PLANNING, ARCHITECTURE AND INTERIOR DESIGN // **JCJ Architecture, www.jcj.com**
MEP/FP ENGINEER // Consulting Engineering Services, ceseng.com
STRUCTURAL ENGINEER // Macchi Engineers LLC, macchiengineers.com
ACOUSTICS, A/V, TECHNOLOGY // Jaffe Holden, www.jaffeholden.com
HISTORIC PRESERVATION // Building Conservation Associates, bcausa.com
THEATER PLANNING AND DESIGN // Fisher Dachs Associates, fda-online.com
COMMISSIONING // Sustainable Engineering Solutions, sustainable-eng.com

Materials

MODIFIED BITUMEN ROOF MEMBRANE // Tremco, www.tremcoroofing.com
ROOF INSULATION // Holcim Building Envelope, www.holcimelevate.com
METAL WALL PANELS // Reynobond from Arconic, www.arconic.com, and East Coast Metal Systems, www.ecmsinc.net
WINDOWS // Quaker Commercial Windows & Doors, www.quakercommercialwindows.com
CURTAINWALLS // Wausau Window and Wall Systems, www.wausauwindow.com
GLAZING // Oldcastle BuildingEnvelope, obe.com
ELEVATORS // Otis, www.otis.com
RESILIENT AND MULTIPURPOSE FLOORING // Tarkett, commercial.tarkett.com
CARPET TILE // Mohawk Industries, mohawkind.com, and Shaw Contract, www.shawcontract.com
ACOUSTICAL CEILING SYSTEMS // USG, www.usg.com
DECORATIVE ACOUSTIC CEILING SYSTEMS // Armstrong Ceiling & Wall Solutions, www.armstrongceilings.com
LIGHTING // Aron Lighting, www.aronlighting.com; Alphabet Lighting, alphabetlighting.com; NeoRay, www.cooperlighting.com/global/brands/neo-ray; Portfolio, www.cooperlighting.com/global/brands/portfolio; and Modern Forms, www.modernforms.com

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winners

WHOLE BUILDING 4th Place Winner

GATEWAY TO MEMPHIS

A Brutalist Convention Center Is Renovated to Spark Area Redevelopment and Draw More Visitors to the City

Constructed in 1974, Renasant Convention Center in Memphis, Tenn., is directly connected to The Cannon Center for Performing Arts, which opened in 2003. Upon completion of The Cannon Center, city leaders began thinking about renovations to the Brutalist convention center. In 2017, design plans were commissioned to create more than $200 million of much-needed improvements, which were completed in January 2021.

Before the transformation, visitors were confronted with a stark concrete structure with its back turned toward the Mississippi River. Now, passing over the river through the Mighty Lights, the convention center welcomes visitors to Memphis with a new metal panel exterior, expansive terraces and a curtainwall glowing with the setting sun. The main goals for the renovation were to attract larger conventions, spark interest in redevelopment of the historic Pinch District, open views to the Mississippi River and bring the outdoors into the building.

Visitors were previously greeted on the subsurface Parking Level with a low ceiling, leading to an unassuming painted concrete block entrance. In creating a sense of arrival, the deteriorating ceiling was removed, exposing the beautiful concrete waffle slab with a high concentration of decorative lighting over the new glass entrance to the lobby. The newly defined Main Street entrance is visible from the Lower Hall Lobby, drawing visitors up to the Grand Concourse. By removing the mezzanine on this level, a visual connection was created between Main Street and Front Street. As visitors make their way up to the Exhibit Hall Level, the South Concourse connects the buildings east and west sides, punctuated by glass jewel boxes overlooking Main Street and the river.

The existing meeting spaces weren't flexible and didn't meet current desires of event planners. The ground-floor and mezzanine-level meeting rooms were long narrow spaces with only 9-foot ceilings. To address this, the mezzanine level was replaced with 15 flexible meeting rooms with high ceilings, including two boardrooms with layering of curtainwall and terra-cotta screen. Creating flanking concourses and adding operable partitions allows the former South Hall to be used for banquets, award events or divided into 10 meeting rooms. The addition of meeting rooms on the west side of Front Street brings a previously unusable outdoor space into the offering.

The north end of the building has been replaced with two levels of loading docks and service spaces, allowing the convention center to host more events simultaneously.

Inspired by the Mississippi River, Memphis' intertwining rail lines, the local hardwood industry and the famed music scene, hotel-quality finishes were brought into the common areas, meeting rooms and exhibit spaces.



PHOTOS: KEN WEST PHOTOGRAPHY unless otherwise noted

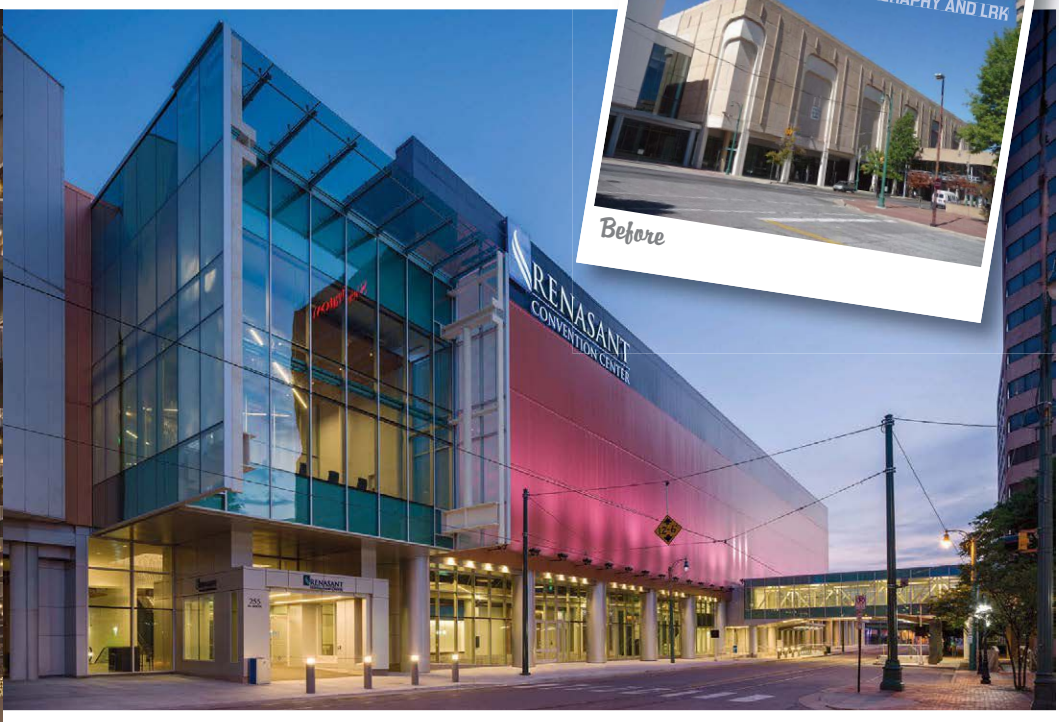


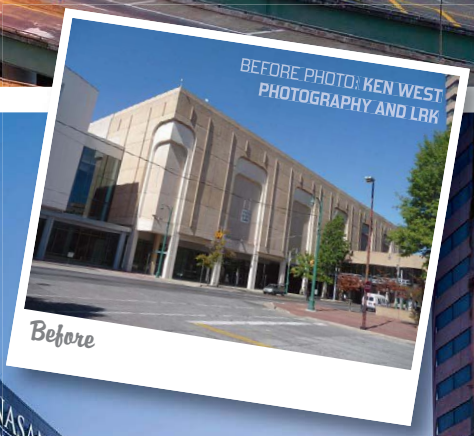
Judge's Comment

"I gasped at the before-and-after for this project. Projects of this scale are rare and often transformational on a civic scale. Modernization of the envelope is dramatic, and daylighting the concourse/meeting rooms is a highly valuable move toward the psychology of conference participants. The project's ability to reconnect with the river shows tactful urban design, especially with the remaining interstate adjacency."

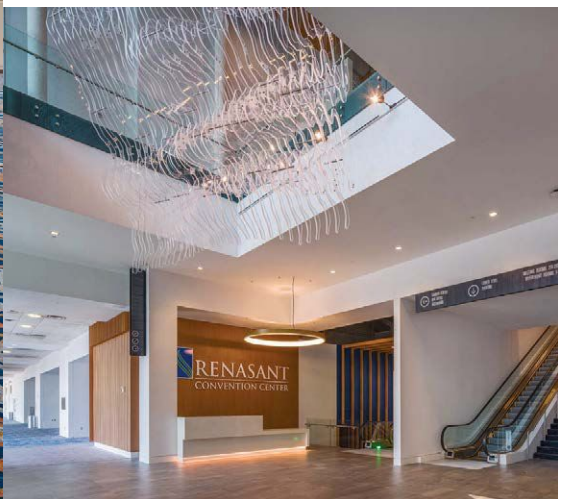
— Ross Welch, AIA, NOMA, LEED Green Associate, associate, Trivers

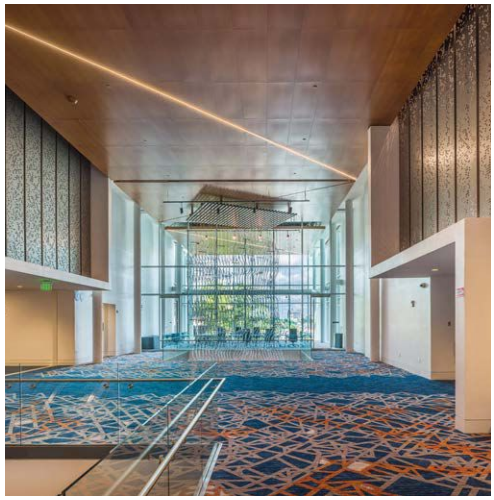






Before





Retrofit Team

METAMORPHOSIS AWARD WINNER!

DESIGN ARCHITECT/ARCHITECT OF RECORD // LRK, www.lrk.com
ASSOCIATE ARCHITECTS // tvs Design, www.tvsdesign.com, and Bounds & Gillespie Architects, bgktarchitects.com
MP/FP ENGINEER // Smith Seckman Reid Inc., www.ssr-inc.com
ELECTRICAL ENGINEER // Innovative Engineering Services LLC, innovativees-llc.com
STRUCTURAL ENGINEER // Chad Stewart & Associates Inc., csaengineeringinc.com
INTERIOR DESIGNERS // LRK, lrk.com, and tvs Design, tvsdesign.com
LIGHTING CONSULTANT // CM Kling + Associates Inc., cmkling.com
BUILDING ENVELOPE // Walter P. Moore, www.walterpmoore.com
GENERAL CONTRACTOR // Yates Construction, www.wgyates.com

Materials

ACOUSTICAL CEILING TILE // Armstrong Ceiling & Wall Solutions, www.armstrongceilings.com
SIMULATED WOOD CEILING // Hunter Douglas Architectural, www.hunterdouglasarchitectural.com, and Armstrong Ceiling & Wall Solutions, www.armstrongceilings.com
ALUMINUM COMPOSITE PANELS // etalbond, www.elval-colour.com
ENTRY DOORS AND CURTAIN-WALL // EFCO, www.efcocorp.com
FLOORING AND CARPET // Milliken, www.milliken.com
INSULATED METAL WALL PANELS // Kingspan, www.kingspan.com
LIGHTING // VODE, vode.com; Interlux, www.inter-lux.com; Focal Point, www.focalpointlights.com; Winona, winonalighting.acuitybrands.com; Targetti, targettiusa.com; and LSI, www.lsicorp.com
ROOFING // Carlisle Syntec, www.carlislesyntec.com
TERRA-COTTA WALL SYSTEM // Shildan Group, shildan.com

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winners

ADDITION 1st Place Winner

THE PAGEANTRY OF THE THEATER

To Ensure a 90-year-old Theater Could Endure, It's Given New Bones and Better Integrated into Its Downtown Surroundings

WRITTEN BY | JOEL ANDERSON, AIA, NCARB, LEED AP BD+C

The glitz and glamour of a theater performance is what the audience remembers. But the design team at Cushing Terrell now has a particular appreciation for the unseen yet detailed work that goes on backstage. After renovating the 90-year-old Alberta Bair Theater in Billings, Mont., it has become clear how important hidden elements are in a theater.

"The structural team, we're kind of always behind the scenes; we're not at the forefront like architecture," says Dane Jorgensen, a structural engineer and associate at Cushing Terrell. "We worked really closely with our theatrical consultant and the technical directors. All the things we did, no one's ever going to see or notice, but they're going to experience it through increased quality of shows, sounds, all those things."

Designed by Robert Reamer, best known for the Old Faithful Inn in Yellowstone National Park, Alberta Bair Theater was financed in part by the 20th Century Fox Corp., which purchased the land from Charles M. Bair. The theater is named for Charles' daughter. It opened in 1931 and was renovated—with some questionable choices—in the 1980s. Several decades later, the building was in desperate need of changes, from making it more ADA accessible to upgrading the stage facilities to make it a more desirable destination for traveling shows.

There was debate over building a new facility, but estimates placed that plan in the $25 to $30 million range while renovations to the existing building would cost a far lower $13.6 million.

Planning began with a few major goals: First was to expand the lobby to allow for more pre- and post-performance activity. The theater team also wanted to increase the restroom counts from 22 to 40 and simplify guest circulation between floors by eliminating pinch points and dead ends. An elevator and new balcony seating had to be installed for ADA accessibility while finishes, furnishings, fixtures, sound and lighting were updated. In addition, there were many upgrades needed, literally, behind the scenes. Ultimately, Cushing Terrell was tasked with restoring the pageantry of the theater by improving guest and performer experiences.

SEARCHING FOR CLUES

The design team had a bit of a mystery on its hands as planning began: No documentation from the 1930s build existed to show dimensions, layouts, material strengths or other information. Because the building was still actively used during the planning stages, it wasn't possible to do any demolition to locate the necessary information. Jorgensen recalls sitting in the fly loft—the space above the stage—sketching a gravity load pass that had been altered during renovation, trying to determine where loads originally went, how heavy they were and where they would go after renovations.

Once construction began, there was a lot of field verification and near-daily site visits to validate the recorded and presumed conditions and to update dimension and connection details. Among the oddest findings were the decisions made in the 1980s renovation. Unfortunately, much of the original Art Deco details were removed when the theater was gutted to add more seats and the fly loft. The '80s renovation also included the addition of an awkward 11.75-degree angle off the orthogonal to enlarge the stage size, thus



PHOTOS: **JAMES RAY SPAHN** unless otherwise noted

The 1931 Alberta Bair Theater is now wrapped in a glass box of sorts with some of the original terra cotta and brick detailing still displayed.



Judge's Comment

"The design team rescued this structure from Postmodernism. Beautiful lobby/pre-function restoration expressing the original brickwork through the curtainwall, ornamental details in the railing evoking Art Deco references. Though without grandeur of the original auditorium, the subtle detailing in the proscenium to pick up on the zig-zag motif from the original stage is appreciated."— *Ross Welch, AIA, NOMA, LEED Green Associate, associate, Trivers*



Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT, STRUCTURAL ENGINEER, MECHANICAL AND ELECTRICAL ENGINEER, AND INTERIOR DESIGNER // **Cushing Terrell, cushingterrell.com**

GENERAL CONTRACTOR // Langlas & Associates, www.langlas.com

GEOTECHNICAL ENGINEER // SK Geotechnical, skgeotechnical.com

THEATER PLANNING, LIGHTING DESIGN AND AV // Schuler Shook, schulershook.com

ACOUSTICAL ENGINEER // Threshold Acoustics, www.thresholdacoustics.com

Materials

COIL DRAPERY // Fabricoil from Cascade Architectural, cascade-architectural.com

GLASS // Solarban 70XL from Vitro Architectural Glass, www.vitroglazings.com

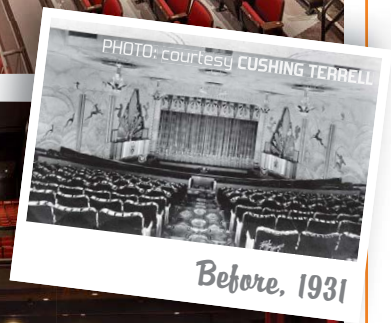
CARPET // Milliken, www.milliken.com, and Mohawk Group, www.mohawkgroup.com

TILE // Emser Tile, www.emser.com; Tau Ceramica, www.tauceramica.com/en; and Ottimo Ceramics, ottimoceramics.com

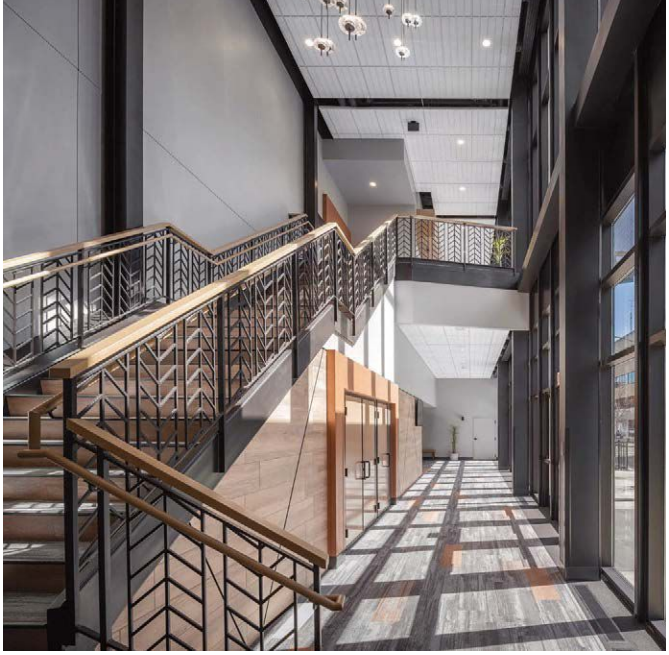
LIGHTING // Droplet Celeste Pendants from Eureka Lighting, www.eurekalighting.com, and Dora Pendants from Seed Design, seeddesignusa.com







Before, 1931





The team remained cognizant of the interactions between city and theater and highlighted this with the street-facing windows on each level. Even the staff working concessions face the city.

changing everything inside the structure.

In the acoustic modeling, Threshold Acoustics and the Cushing Terrell team found the redesign from the 1980s didn't have the intended effect of improving sound quality. In fact, seats close together were getting very different acoustic experiences. To correct the issue, the team built diffused, curved cheek walls to disperse sound more evenly throughout the space.

RAISING THE CURTAIN

To compete with other theaters for traveling performances, Alberta Bair Theater needed to upgrade its back-stage capabilities. Crew circulation corrections were required. For example, the catwalk added in the 1980s was only accessible during the show from the hallway outside, and it lacked a sound and light lock that would decrease performance interruptions. Once a crew member climbed onto the catwalk, he or she would dead-end on the opposite side. The solution was to add two 88-inch-deep open web joists. The team decked the bottom cords and used the bottom and top cords to support the reflectors and rigging beams. The upgrades would allow crews to rig out about 15 feet over the seating area.

To keep the load off the existing construction, a new column was added on one end, grounded by helical piers in a separate foundation in the basement. Brackets were installed into a concrete wall that was added as part of some lateral upgrades, which also helped the team lift the rigging into place (done "blindly" from outside the structure).

"The technical rigging aspect of this project was very involved and detailed," Jorgensen says. "We about tripled the capacity of the existing stage rigging because they were at risk of not being able to get current shows because of the rigging requirements."

The theater previously only supported 30,000 to 40,000 pounds of stage rigging, which supports curtains, scrim, scenery and the symphony's acoustic shell. To meet traveling show requirements, the theater needed about 125,000 pounds.

The team removed more than 100,000 pounds of the concrete roof from the 1930s and corrected a double-shear connection on the hanging rods. New grading, channels, and framing beams were installed to provide a new fly loft that was orthogonal to the playing surface and the proscenium opening—aligning everything properly.

Using billet steel sections, the crew upsized the grading so motor loads could be mounted anywhere on the grading to safely carry 4,000 pounds per motor pick. The end result not only increased the rigging load but reduced the net load on the structure.

GROWING INTO THE CITY

The 2-story, 4,800-square-foot expansion necessitated new framing, footing removal, lateral modifications and some unique metal scrims. The historic building is now wrapped in a glass box of sorts with some of the original terra cotta and brick detailing still displayed.

To keep loads off the existing structure—which was fairly brittle—the team set about using a sawhorse-like construction around the existing footings and aligning new columns with existing columns. In another tricky conversion, some of the existing concrete footing was cut away before installing the elevator. Concrete shear walls were installed, which helped hold the catwalk, along with columns and foundations to support the arbor in compression rather than suspension.

Because of the building's height and width, there wasn't a manufacturer who could provide typical storefront or curtainwall exterior shades for the theater's glass exterior. In addition to carefully considering load-bearing needs, the design team used an energy model to understand how the dimensioning of shades could impact the solar heat gain on the building. The resulting façade has an angled scrim opening toward the street corner, resembling a theater curtain being pulled up. The glass itself also keeps the building in conversation with the city—on one side reflecting the iconic Masonic Temple located across the street.

With these improvements, Cushing Terrell was able to increase the height of a couple ceilings and improve the circulation around the building, allowing space for socializing before and after the show, as well as during intermission. The city of Billings allowed the theater to expand into the street, part of the city's efforts to keep this cultural center in the downtown area. The team remained cognizant of the interactions between city and theater and highlighted this with the street-facing windows on each level. Even the elevator doors open toward the windows, and the staff working concessions face the city. At street level, the first floor is cut out at the corner to further integrate the city into the building and vice versa.

After almost a century of existence, Alberta Bair Theater now has the bones, backstage and cultural presence to last at least a century longer.

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

HISTORIC *1st Place Winner*

A BRUTALIST LANDMARK DEFYING GRAVITY

Vacated because of Seismic Concerns, Mario Ciampi's Former Berkeley Art Museum Is Reborn as a Life-sciences Incubator

WRITTEN BY | **BRIAN LIBBY**

It sounds almost like a daredevil act or at least a contradiction: a building located beside a fault line, in one of the world's most seismically active regions, that revels in structural agility.

Seen from above, the circa-1970 Brutalist-style former Berkeley Art Museum and Pacific Science Center (later renamed Woo Hon Fai Hall) looks like a handheld fan. Designed by San Francisco architect Mario Ciampi, its trapezoidal concrete terraces, each 5-feet higher than the last, together form one curving shape. Inside, its sky-lit atrium is marked by cantilevered balconies and terraced ramps, like a more cubist version of Wright's Guggenheim Museum, encouraging motion and interaction.

"I get the privilege of seeing



PHOTOS: **BRUCE DAMONTE** unless otherwise noted

thousands of buildings in the Bay Area, and this is the most unique structure," says Allen Nudell, a principal with Forell | Elsesser Structural Engineers; he and his wife went on their first date to the former art museum. "I mean, it's really out there. It just defies gravity."

The museum was constructed in 1970, before a succession of major earthquakes prompted more seismically stringent building codes. "If you had built that building even just a couple years later, it would have been completely different," Nudell says. "The amount of rebar in the concrete would have been a lot greater." By 2014, the building was deemed unsafe, causing the museum to move to another location. With a growing need for campus housing for the adjacent University of California, demolition seemed possible, if not inevitable.

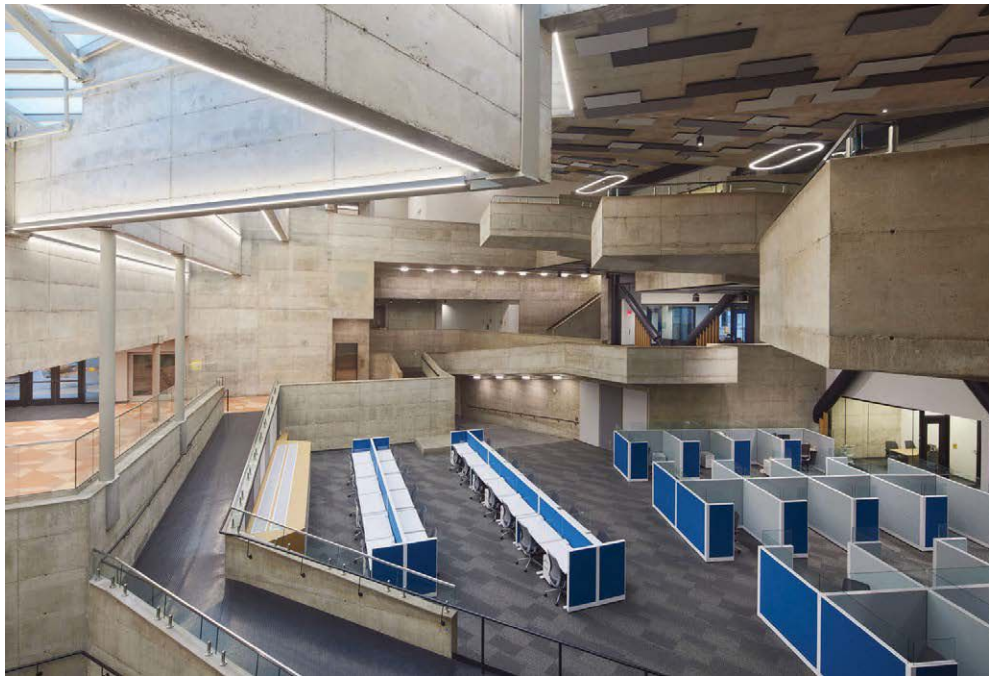
Instead, after two years of construction, the 52-year-old building has been restored and reborn as the Metamorphosis Award-winning Bakar BioEnginuity Hub, a 40,000-square-foot incubator for science and engineering entrepreneurs designed by MBH Architects. Laboratories, offices and meeting spaces fill its raw-concrete-clad former galleries and cinema, as well as a glass-fronted addition. The hub provides research space for life-science startups and biotech companies, as well as a place for UC students, faculty and the private sector to connect.

"There are plenty of spaces in the building to gather and convene in different ways," says Gino Segrè, Ph.D., director of the Bakar Labs, a network of smaller-scale campus laboratories overseeing the Bakar BioEnginuity Hub. "You can be alone or you can be in a room or a space with as many as 200 people."

A BUILDING SAVIOR

The original museum, located near the university's school of architecture, was beloved by generations of architects, art lovers and moviegoers. A background sound-effect from 1977's original "Star Wars" was even recorded in the building's freight elevator (for a Death Star hallway door). *San Francisco Chronicle* architecture critic John King has called this "the Bay Area's most emphatic example of

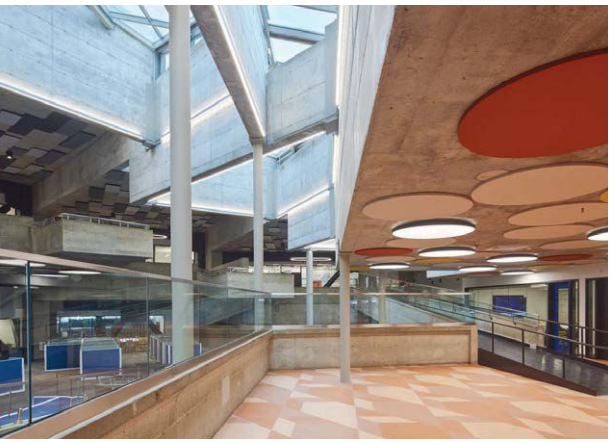






To accommodate the new use, a 6,600-square-foot addition was added. The addition complements the original architecture while remaining visually distinct. The expansion façade is comprised entirely of glass and metal and is intended to feel light and delicate as a contrast to the weight of the concrete.





Brutalism," in a time when this architectural era is experiencing a revival in popularity.

If its nominally reinforced concrete made the building seismically vulnerable, this signature Brutalist material was also what made it special. "They used every trick you could think of for concrete," MBH Architects Senior Associate Ken Lidicker says. "They did post-tension, they did one-way slabs, they did two-way slabs, they had upturn beams. The cantilevers are monstrous." Like Nudell, Lidicker comes to the project with his own memories: The son of a Cal Berkeley professor, he and his brother were there in 1970 on the museum's opening night. "We ran up and down the ramps all evening," he laughs.

With its substantial seismic-upgrade needs and unique layout, the building needed a savior, which came in the form of Bakar Labs and its parent, QB3, part of the state-funded California Institutes for Science and Innovation. The Bakar BioEnginuity Hub is named for University of California alumnus Gerson Bakar, a real-estate developer and philanthropist whose foundation donated millions to the project (Bakar died in 2017). The project was also funded in part by a $70 million anonymous donation.

The two-year construction was made easier by the Berkeley Art Museum's departure for a new Diller Scofidio + Renfro-designed headquarters, completed in 2016. "We could do more significant seismic upgrade work than if it was occupied," Lidicker explains, in part by using the atrium. "It allowed us to delicately lower the brace frames into the building from above without doing a lot of damage and get them tied into the new foundation."

Seismic exterior bracing, begun with a 2001 renovation, can now be seen on the interior: a series of X-shaped steel beams. "Each of the trapezoidal gallery levels had a concrete shear wall on one side. The 2001 temporary shoring exercise added bracing on a second side, outside," Nudell explains. "Now we've added two more brace frames." Yet the closer to the atrium one goes, the less visible the bracing is.

In a very large earthquake, the Bakar BioEnginuity Hub may still suffer irreversible structural damage, but it will give occupants

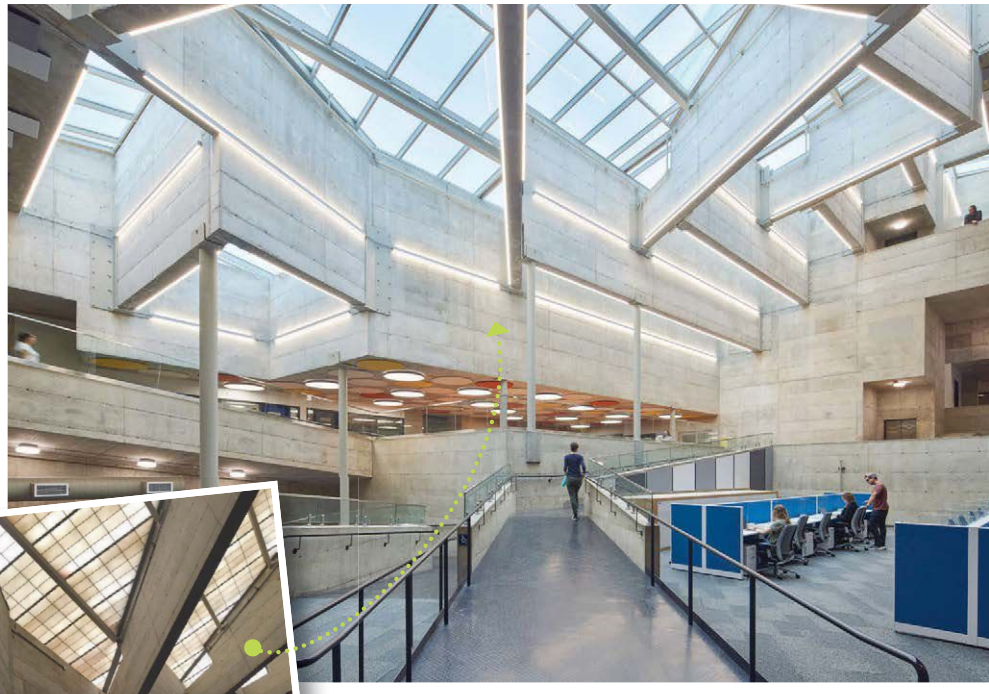
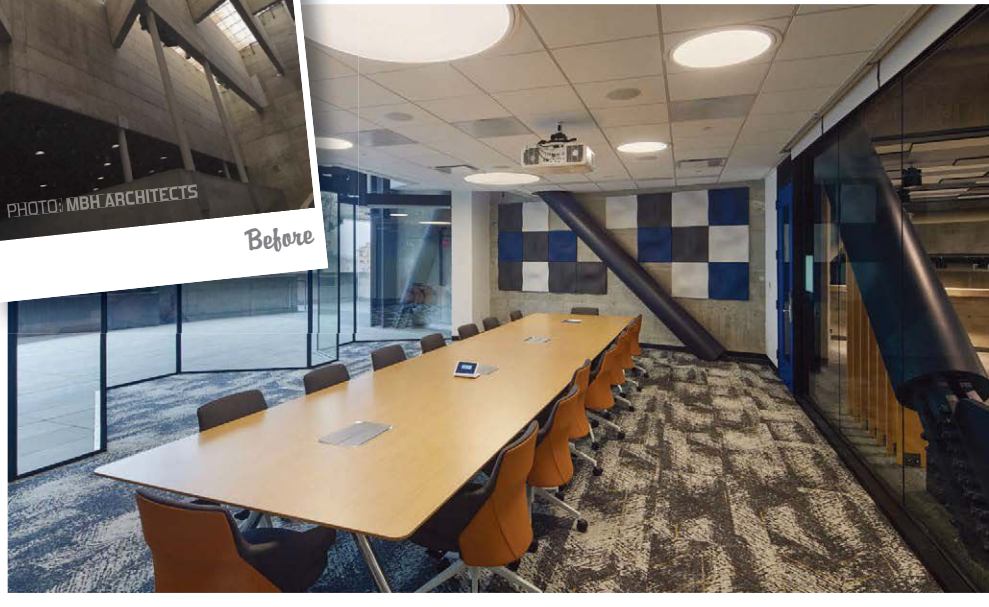
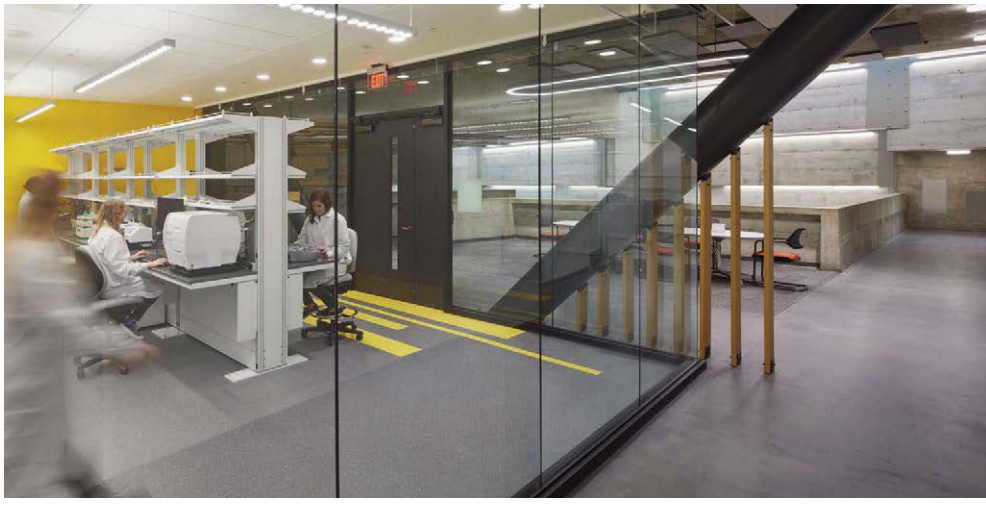




PHOTO: MBH ARCHITECTS

Before

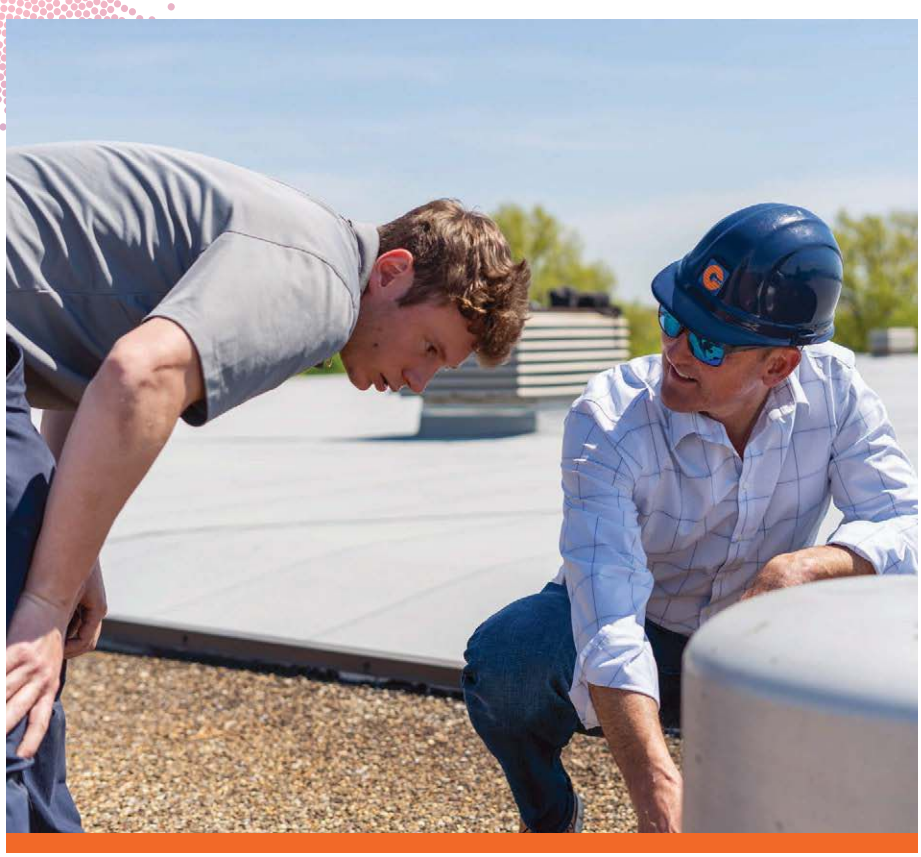




The cantilevered ramps that once led to the museum's galleries now create places for spontaneous interactions among scientists and lead to the glass-fronted laboratories. Structural brace framing was added along the demarcation line between the areas deemed of primary and secondary historical importance, preserving original circulation routes and views around the central atrium.

Judge's Comment

> Solid project. Impressive building and an even more impressive upgrade. Job well done.— *Charles Van Winckle, vice president, Thornton Tomasetti's Renewal practice*



time to evacuate. The new steel bolstering "gives it a very nice direct-load path down to the ground," Nudell adds. "Our theory is that will prevent collapse."

Inserting all the air-handling and electrical equipment necessary for modern laboratories also took careful planning with the building's every last millimeter modeled using Revit software to take full advantage of the building's utility columns. The team also converted its steam and gas-based heating system to electric. Even so, to meet the high-air-change requirements and exhaust-system requirements and to hide all the necessary ductwork from public spaces while introducing new air conditioning "was one of our biggest challenges," Lidicker says.

The team also needed to place the building's mechanical system in the basement to keep the roofline intact. "They actually built the building around those original mechanical systems," the architect explains. "To get our equipment inside, we had to make our air-handling units in small pieces, slide them down the elevator shaft and then reassemble them in the basement. And then there's a spiderweb of ductwork that goes out through the structural columns, which are actually hollow."

The most distinctive change outside the building is its new 6,600-square-foot glass-fronted addition, which provides office space and acts as a more transparent face for the otherwise largely windowless building. The original atrium is also more lighted than it has been since the museum's opening; over time, several skylights had been covered or heavily filtered to minimize heat gain, but the renovation added new UV-filtering clearer glass.

A WINDING PATH

The original atrium and cantilevered balconies are as conducive to a science hub as they were to an art and film museum, giving aspiring scientists of complementary disciplines, along with entrepreneurs and investors, places to share ideas and connect.

"I see it every day walking into the building: CEOs and companies having interactions amongst each other," Segré says. "We could have torn down the building and created a lot of walled suites, but that wouldn't have served the idea of community." The atrium, he adds, "makes the building a destination. And it demands or enables perspectives from a variety of different angles. There are really no right angles in this building. It's complex. That's a metaphor for the journey that that these tenants go through. The ramp still progresses upward, but it's not a straight-line path at all. I'm sure every entrepreneur would agree emphatically that that is their journey."

MORE THAN **A REP**

See why Garland's full-service approach to roofing is preferred among building owners and facility managers.

More at garlandco.com

GARLAND®

Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECT // MBH Architects, mbharch.com
WATERPROOFING // Simpson Gumpertz & Heger, www.sgh.com
HISTORIC CONSULTANT // Page & Turnbull, www.page-turnbull.com
LAB CONSULTANT // ZGF Architects, www.zgf.com
STRUCTURAL ENGINEER // Forell | Elsesser Structural Engineers, forell.com
MEP ENGINEER // PAE, www.pae-engineers.com
ACOUSTICS, LVT CONSULTANT // Salter, salter-inc.com
GENERAL CONTRACTOR // Plant Construction Co. LP, plantconstruction.com

Materials

METAL PANELS // Reynobond from Arconic, www.arconic.com
METAL/GLASS CURTAINWALL // EFCO, www.efcocorp.com
BUILT-UP ROOFING // Owens Corning, www.owenscorning.com
ELASTOMERIC // Sika Sarnafil, usa.sika.com/sarnafil
GLASS // Oldcastle BuildingEnvelope, obe.com
SKYLIGHTS // Metcoe Skylight Specialties, www.metcoe.com
METAL DOORS // ASSA ABLOY, www.assaabloydss.com
WOOD DOORS // VT Industries, www.vtindustries.com
SLIDING DOORS // Modernfold, www.modernfold.com
FIRE-CONTROL DOORS, SECURITY GRILLES, ELEVATOR SMOKE CURTAIN // Door Systems, www.doorsysinc.com
OVERHEAD DOOR // CornellCookson, www.cornellcookson.com
ACOUSTICAL CEILINGS // USG, www.usg.com; Autex Acoustics, www.autexglobal.com; and Acoustical Surfaces Inc., www.acousticalsurfaces.com
WINDOW COVERINGS // HunterDouglas, www.hunterdouglas.com
PAINTS // Kelly-Moore Paints, kellymoore.com
WALLCOVERINGS // Autex Acoustics, www.autexglobal.com, and Acrovyn from Construction Specialties, www.c-sgroup.com
PLASTIC LAMINATE // Abet Laminati, abetlaminati.com, and Formica, www.formica.com
SOLID SURFACE // Kewaunee, kewaunee.com; Wilsonart, www.wilsonart.com; and Krion, www.krion.com
FLOOR AND WALL TILE // Porcelanosa, www.porcelanosa-usa.com; Eurowest, www.eurowest.com; Emser, www.emser.com; Daltile, www.daltile.com; and Stone Source, www.stonesource.com
RESILIENT FLOORING // Gerflor, www.gerflorusa.com, and Johnsonite, commercial.tarkett.com/en_US/brand/johnsonite
CARPET // Bentley Mills, www.bentleymills.com
FEATURE LIGHTING // TMS Lighting, tmslighting.com; Delta Light, www.deltalight.us; Finelite, www.finelite.com; Visa Lighting, www.visalighting.com; Zumtobel, www.zumtobel.com; and Bega, www.bega-us.com
LIGHTING CONTROLS // nLight, nlight.acuitybrands.com
RESTROOM FAUCET // Sloan, www.sloan.com
KITCHEN FAUCET // Delta, www.deltafaucet.com
BOTTLE FILLER // Elkay, www.elkay.com
ENERGY-MANAGEMENT SYSTEM // Ascent Compass by Alerton, buildings.honeywell.com

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

SCHWEISS
HYDRAULIC & BIFOLD
DOORS
Manufacturing custom designed one-piece hydraulic doors and lift-strap bifold doors ... any application ... any size!



Schweiss Doors designed and built the glass bifold doors for the Golden 1 Center in Sacramento, CA
SCHWEISSDOORS.COM

EARLY WARNING WATER LEAK DETECTION
Installed in over 23,000 sites!
CEILING GUARD®



WATER ALERT®
WATER ALERT SENSOR CABLE



- 5 Year Warranty
- Made in the USA
- In Business 40 Years
- Ultra High Quality

DORLEN Products Inc.
1-800-533-6392
WWW.WATERALERT.COM

HISTORIC 2nd Place Winner

CHERISHED CIVIC LANDMARK

A Distinctive Midwestern Library Receives an Update that Retains Its Beloved Brutalist Character



One of the nation's most distinctive Mid-Century Modern public libraries, the Arvonne Fraser Library in Minneapolis, opened in 1967. The building is set along the east bank of the Mississippi River in the Dinkytown neighborhood, adjacent to the University of Minnesota. The design of the building—constructed as a credit union in 1963 and then renovated and converted to a library four years later—is among the masterworks of the preeminent Modernist Ralph Rapson, who led the university's school of architecture for 30 years. Rapson designed the original building and its inventive transformation to a library.

A FADING CIVIC LANDMARK

The 13,000-square-foot building is a singular example of Midwestern Brutalist architecture, consisting of a single-story concrete structure and basement. The building has long been recognized for its signature waffle slab roof. Supported by a grid of exposed concrete columns, the structurally expressive roof appears to float above the library walls, which are capped with a continuous band of clerestory windows. Twenty-two skylights bring natural light into the interior, including three large apertures at the center. Rapson's interior was also noted for its quirky "light scoops" that descended from the ceiling of the library's boardroom.

In recent years, library administrators were challenged by several issues with the facility, including aging infrastructure, a leaking basement, limited accessibility, and an interior that was long past its prime in terms of accommodating modern library programming and technology. Because of its deteriorating condition, the building was once listed on the Preservation Alliance of Minnesota's list of Ten Most Endangered Buildings. The library's provenance and distinctive design, however, were well recognized by architectural historians and the general public alike.

RETAINING CHARACTER WHILE REIMAGINING THE INTERIOR

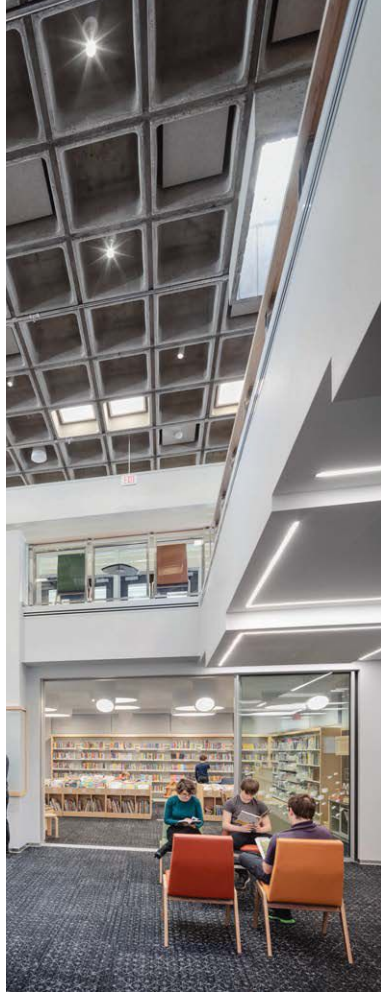
Beginning in 2016, the Hennepin County Board of Commissioners initiated a renovation process that would modernize the library while retaining its character-defining Modern features. A comprehensive facilities assessment explored numerous aspects, including site conditions, the exterior envelope, structural and building systems, security, technology and interior elements. The subsequent renovation restored the exterior, reimagined the interior, reclaimed the long-abandoned basement, improved public access and revamped exterior public spaces.

The project's most dramatic intervention involved the decision to renovate and reopen the dark and windowless basement, which had not been used for many years because of water damage. The architectural team cut through the first floor, creating a large opening at the heart of the building that provides a dynamic and inviting connection between the two floors. Aligned to the original skylights, the opening floods the lower level with natural light and creates distinct views from the lower level up to the Modern waffle slab and sky. The design also opened up an original stair and paired it with an elevator, so the physical connection between the floors can be seen from the main entrance and new opening. The opening, new circulation desk and stacks share a light wood finish that softly contrasts with the original Rapson palette.

The renovation design preserved the unique and compelling geometry that defined Rapson's original design, as well as its Modernist details, while making strategic modifications to the historic fabric to better serve the library's needs. The project retained and repaired the original concrete site walls while adding an accessible entranceway and outdoor furniture. It retained and repaired all exterior windows, cleaned and reused brick and exposed concrete, and







repaired original doors.

The renovation selectively removed some interior walls to allow for more natural light and views to the outdoors and provide better visual connections within the building for staff management and security. The boardroom, where Rapson's playful light scoops were restored, has been converted into a children's area. Contemporary furnishings reflect the building's utilitarian yet elegant character with select pieces modeled on Rapson's own designs. All new HVAC, life safety, and plumbing systems optimize energy efficiency and the conservation of natural resources. LED lighting was installed throughout. A new fire suppression system visually recedes into the waffle slab grid.

Retrofit Team

METAMORPHOSIS AWARD WINNER!

ARCHITECTS AND INTERIOR DESIGNERS // MacDonald & Mack Architects (firm of record), www.mmarchltd.com, with **Quinn Evans Architects (collaborating firm), www.quinnevans.com**

LANDSCAPE ARCHITECT // Damon Farber, www.damonfarber.com

STRUCTURAL ENGINEER // Mattson Macdonald Young, www.mattsonmacdonald.com

MEP ENGINEER // Nelson-Rudie & Associates, nelsonrudie.com

ACOUSTICS // Kvernstoen, Rönnholm and Associates, kracoustics.com

LIGHTING DESIGNER // Schuler Shook, schulershook.com

GENERAL CONTRACTOR AND MILLWORK // Shaw-Lundquist Construction, www.shawlundquist.com

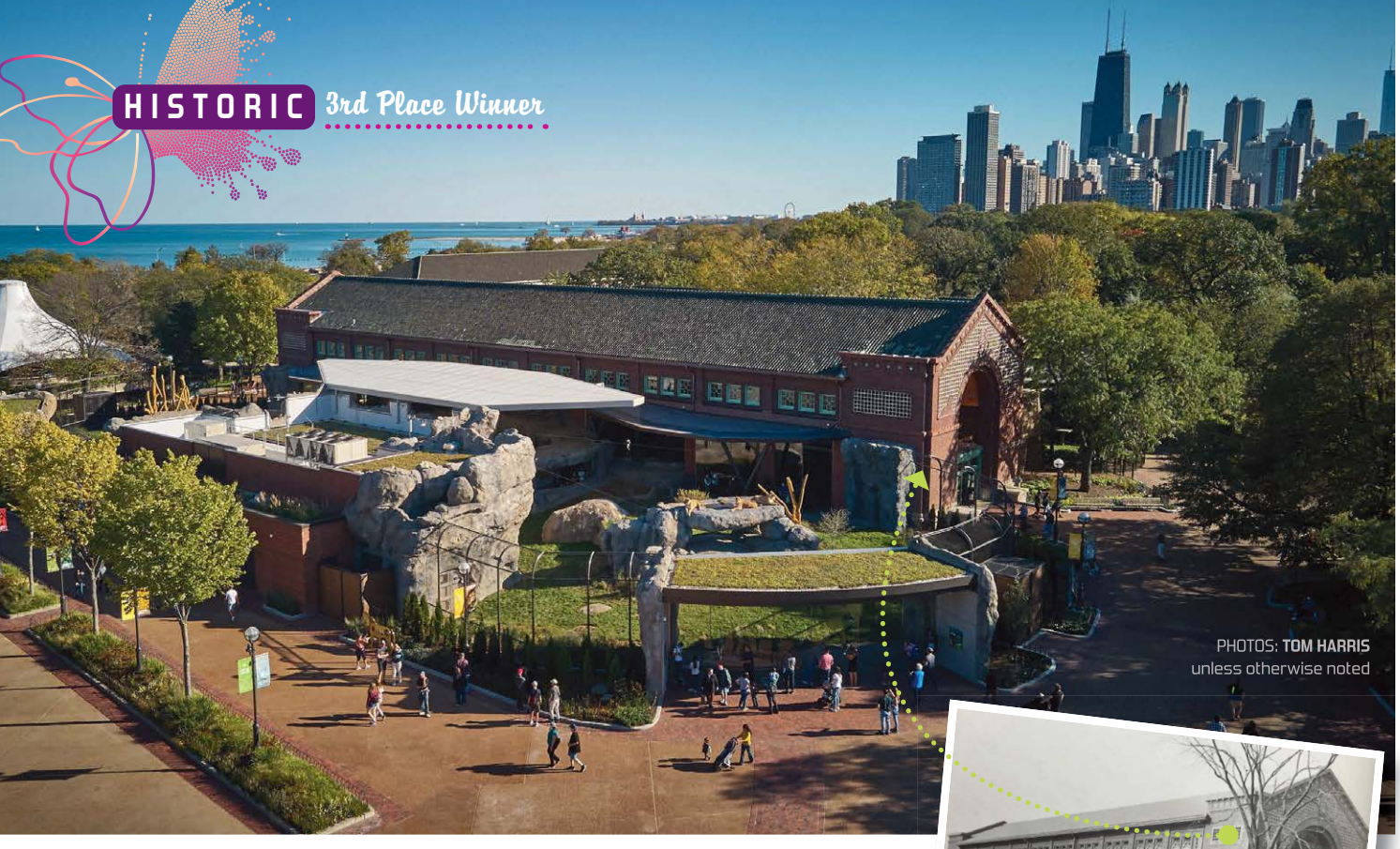
Judge's Comment

"This design embraces the Brutalism well. Love the playfulness of skylights/panels within the roof coffers and restoration of the light scoops. Opening through the ground floor to daylight the basement was the right move. Detailing with glass to maximize daylight penetration is well thought through."

— Ross Welch, AIA, NOMA, LEED Green Associate, associate, Trivers

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

HISTORIC 3rd Place Winner



PHOTOS: **TOM HARRIS**
unless otherwise noted



BEFORE PHOTOS: COURTESY GOETTSCH PARTNERS

Before

NOSE TO NOSE

One of the Nation's Last Remaining Historic Zoo Buildings Provides a More Accommodating and Immersive Experience

Sitting at the heart of Lincoln Park Zoo is the 1912 historic lion house. Designed by Dwight Perkins, it has long been a revered building with its Prairie-style decorative brickwork, including arched entry and lion reliefs, as well as its Great Hall with vaulted Guastavino tile ceiling. The zoo experience has, however, changed in the last 100-plus years. The animals are no longer displayed on stainless-steel shelves in brick cages separated by two lines of barriers, and the classical entries with raised stairs are no longer acceptable for accommodating all guests.

Through a complete renovation, restoration and expansion, the new 54,000-square-foot state-of-the-art facility balances the preservation of the defining elements with the need to adapt and change. With this, the animal habitat nearly doubled in size; an improved, more immersive visitor experience was realized; and revisions to the classical entry provided equal access to the building for all.

The design team worked closely with the Commission on Chicago Landmarks to preserve, restore and enhance the architecturally significant features of the original Arts and Crafts structure, including the masonry, clay tile roof and copper gutter, along with historic wood and cast-iron windows. The team also restored the original interior and exterior color scheme. In the process, non-historic interior additions, such as the gift shop installed within the volume of the Great Hall, were removed to reopen the hall's full volume, and views and natural light were returned to the north wall, which had been enclosed half a century prior.

The Pepper Family Wildlife Center is one of a limited number of remaining U.S. historic zoo buildings and one of a very few to retain its original function and many of its original features. The building bears the imprint of early 20th century zookeeping in contrast with more than 100 years of innovation and improvements in the quality of care of the zoo's animals.

The habitat focuses on providing choices for the animals and enhanced wellbeing. The facility is home to a pride of four African lions, as well as Canada lynx, red pandas and snow leopards. The new lion habitat spans the full northern side of the building with the design informed by data collected by the zoo over the last several years on lion behavior and space use to understand their preferences. Large 1 1/2-inch-thick glass panels provide expansive views of the outdoor lion space. The savanna-style habitat includes detailed rockwork to introduce climbing features for the lions while providing embedded heating and cooling elements. Tree structures are made from trees certified by the Forest Stewardship Council, and food ziplines, simulating prey, provide the lions an enrichment opportunity.

Guests now have immersive, "nose-to-nose" viewing opportunities from inside and outside the building. The unique design also facilitates viewing from the Lion Loop, a sunken elliptical path leading visitors down from the Great Hall into the center of the habitat. It provides visitors the opportunity to view lions from all around—even through skylights overhead. Not only does this space provide a unique perspective of what it's like to be with the lion pride, a meeting room included just off the walkway allows for a singular meeting experience with glass and views on two sides.













Before

Judge's Comment

"This project demonstrates an incredible transformation of the building and its relationship to zoo science over time. Integrating habitat around and into the historic structure is quite clever and proposes the question of whether the building belongs to visitors or lions." — *Ross Welch, AIA, NOMA, LEED Green Associate, associate, Trivers*

METAMORPHOSIS AWARD WINNER!

Retrofit Team

ARCHITECT // Goettsch Partners, www.gpchicago.com
EXHIBIT ARCHITECT // PJA Architects + Landscape Architects, www.pjarchitects.com
MEP ENGINEER // Primera Engineers, primeraeng.com
STRUCTURAL ENGINEER // WSP, www.wsp.com
FAÇADE/ROOF CONSULTANT // Revive Architecture, www.revivearch.com
GENERAL CONTRACTOR // Pepper Construction, www.pepperconstruction.com
LIGHTING CONSULTANT // CharterSills, www.chartersills.com
ACOUSTICAL CONSULTANT // Kirkegaard Associates, www.kirkegaard.com

Materials

GLASS SUPPLIER // Agnora Architectural Glass North America, agnora.com
SKYLIGHTS // Kalwall, www.kalwall.com
PAINT // Sherwin-Williams, www.sherwin-williams.com
CARPET // Interface, www.interface.com
DOOR HARDWARE // ASSA ABLOY, www.assaabloydooraccessories.us
LIGHTING CONTROLS // Leviton, www.leviton.com
SUSPENDED CEILINGS // Armstrong Ceiling & Wall Solutions, www.armstrongceilings.com
ROLLER SHADES // Mecho, www.mechoshade.com
BRICK // Endicott, endicott.com, and Ragland Clay Products, www.raglandclay.com
ACOUSTICAL METAL PANEL SYSTEM // USG, www.usg.com
VINYL BASE // Tarkett, commercial.tarkett.com
TOILET PARTITIONS // ASI Global Partitions, asi-globalpartitions.com
ALUMINUM ENTRANCES // Tubelite, tubeliteinc.com

RETROFIT MAGAZINE
METAMORPHOSIS AWARDS
Winner

AD INDEX

NOVEMBER-DECEMBER 2022

SHARING IS CARING
Share this issue with a colleague and encourage him/her to subscribe for FREE at www.retrofitmagazine.com/subscribe.

Armstrong Ceiling & Wall Solutions . . Page 2
www.armstrongceilings.com/healthyspaces

Arriscraft . . . . . Page 83
www.arriscraft.com

Belimo . . . . . Page 11
www.belimo.us

Carlisle Syntec . . . . . Page 21
www.carlislesyntec.com

Dorlen Products Inc. . . . . . Page 77
www.wateralert.com

EPDM Roofing Association . . . . . Page 33
www.epdmroofs.org

Flex-Ability Concepts . . . . . Page 59
www.flexabilityconcepts.com
(866) 443-3539

The Garland Co. Inc. . . . . . Page 76
www.garlandco.com

GSSI . . . . . Page 4
www.gssisealants.com

Hanover Architectural Products . . . . . Page 10
www.hanoverpavers.com

IOTA . . . . . Page 59
www.iotaengineering.com
(800) 866-4682

Lamtec Corp. . . . . . Page 3
www.lamtec.com

Modular Arts . . . . . Page 14
www.modulararts.com

Musson Rubber . . . . . Page 61
www.mussonrubber.com

NanaWall . . . . . Page 84
www.nanawall.com

Navien . . . . . Page 5
www.navieninc.com

NSG Pilkington North America . . . . . Page 25
www.pilkington.com/en/us

Pella Corp. . . . . . Page 13
www.pella.com

Petersen . . . . . Page 6
www.pac-clad.com
(800) 323-1960

Prosoco . . . . . Page 9
www.prosoco.com

Schweiss . . . . . Page 77
www.bifold.com

Wooster Products . . . . . Page 55
www.woosterproducts.com
(800) 321-4936

ZIPWALL . . . . . Page 43
www.zipwall.com



Columbus Fire Department – Training Academy
Columbus, OH
Architect: HKI Associates
ARRIS-clip Custom
Photo: Amy Carruthers

ARRIS-CLIP THIN STONE

ARRIS-clip thin stone solution rescues building from demolition

A smart renovation plan using Arriscraft's ARRIS-clip thin stone saved the city of Columbus, Ohio the cost of tearing down and rebuilding a relatively new building. Originally constructed in 2009, this firefighter training center was suffering catastrophic water damage and the city budgeted for demolition and a replacement build. The design team at HKI Associates Inc. proposed waterproofing and installing ARRIS-clip thin stone as a masonry rain screen solution. ARRIS-clip thin stone is an ideal recladding solution: this innovative product installs overtop of an existing surface and provides complete rainscreen protection.

solutions@arriscraft.com

Arriscraft
Building Stone · Brick · Limestone



GENERATION 4™

Folding Glass Walls by NanaWall

Drawing from four decades of innovation, NanaWall once again creates the most advanced family of folding glass walls.

Easy Operation: Smoothest and easiest operation of any folding glass wall.

Increased Transparency: Clean aesthetics with the slimmest profiles available.

Acoustical Privacy: STC ratings from 35 to 45.

Flexible Stacking: Unique floating panel sets can stack either to the left or right.

Proven Durability: Swing doors tested to 500,000 and bi-fold panels to 20,000 open/close cycles.

Available in three different material choices:

ALUMINUM WOOD CLAD

NanaWall.com
800 873 5673

NanaWall®
Boundaries **Unbound**®