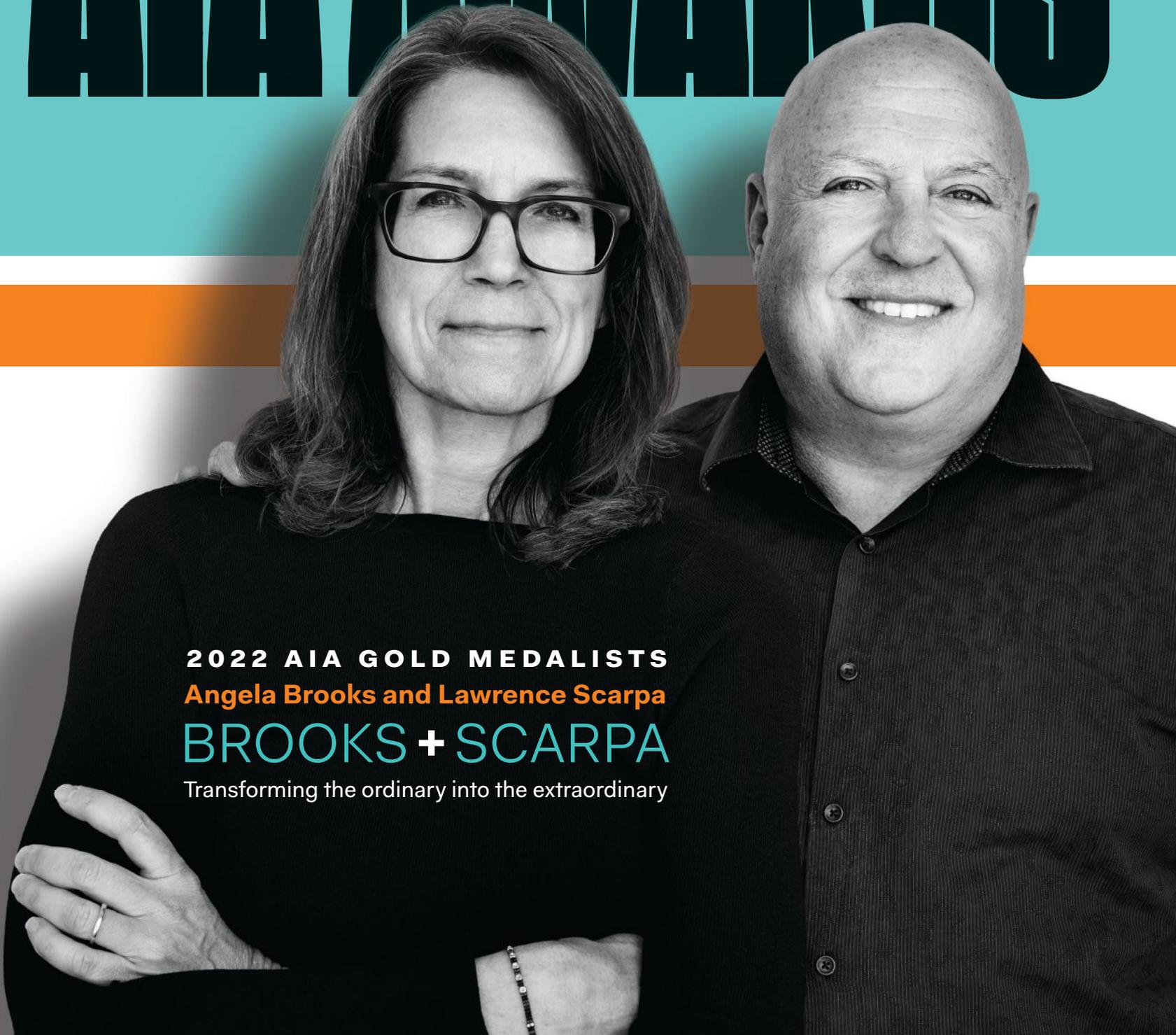


Ignacio Urquiza Arquitectos
Float Studio
Deegan Day Design

Spring Product Call Highlights
Schools for Every Child
Summer Reading List

architectmagazine.com
The Journal of The American
Institute of Architects

AIA AWARDS



2022 AIA GOLD MEDALISTS

Angela Brooks and Lawrence Scarpa

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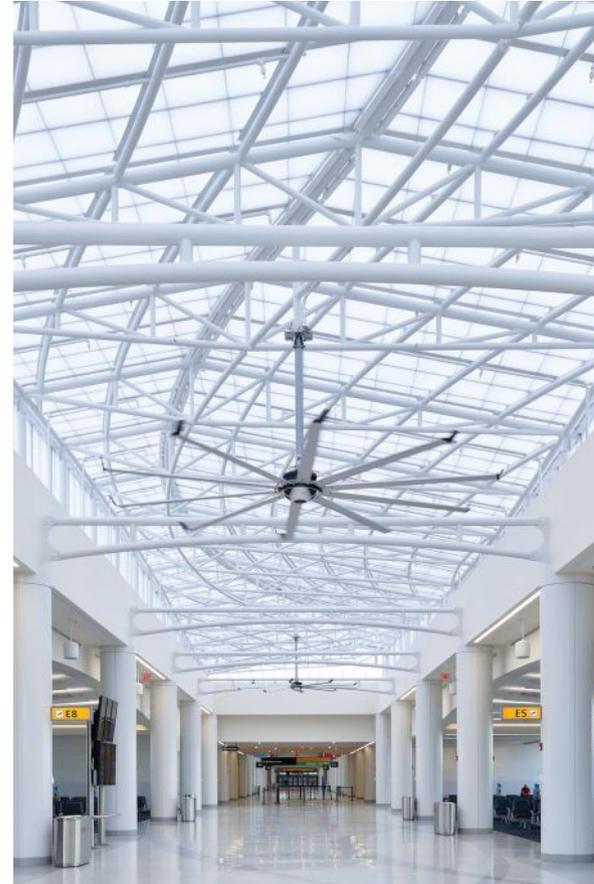


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Volume 111, number 04. May/June 2022.

On the cover: Angela Brooks, FAIA, and Lawrence Scarpa, FAIA, of Brooks + Scarpa; photo by Amanda Friedman.

Below: photo by Katie Bricker Photography.

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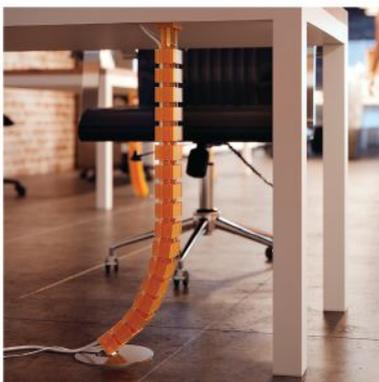
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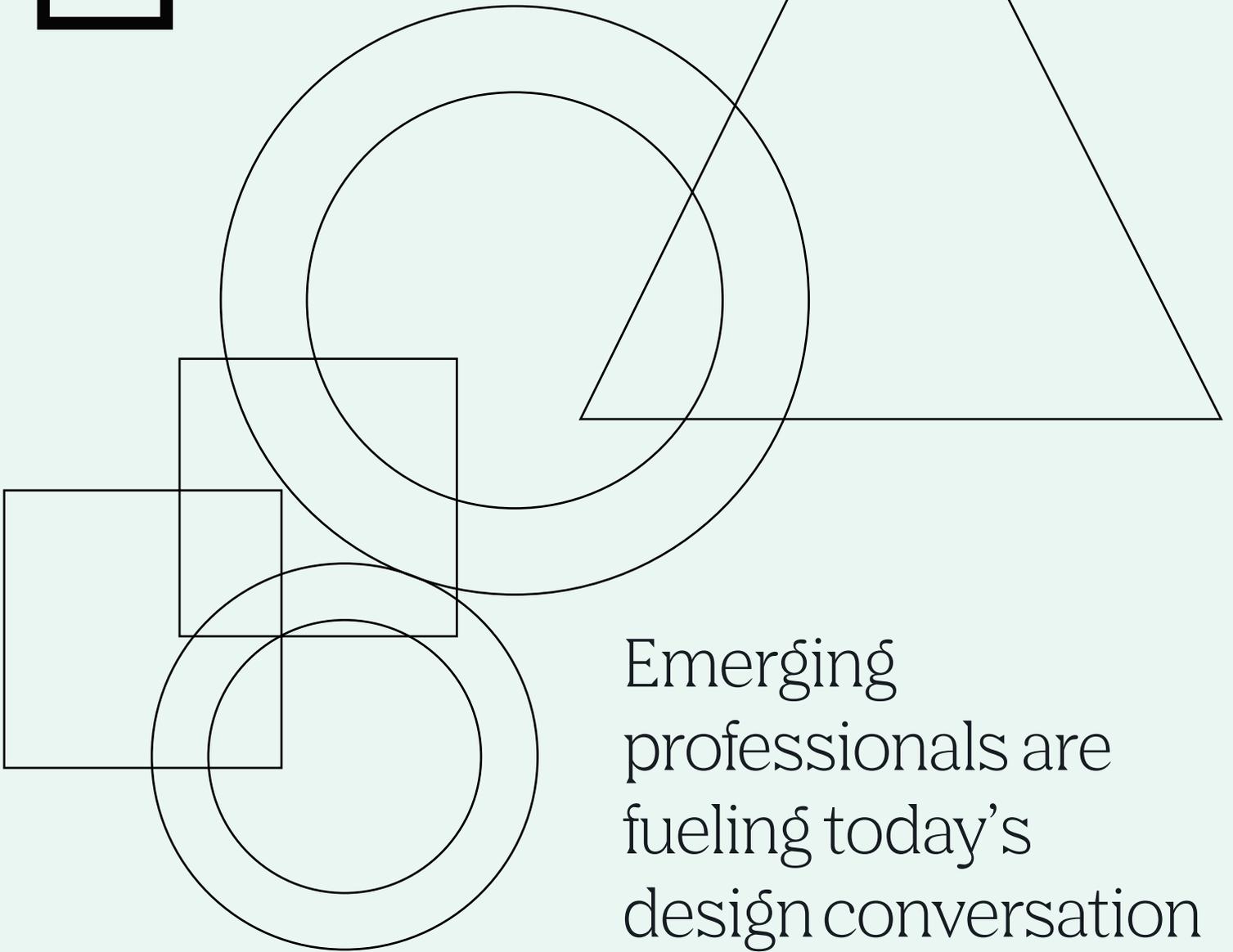
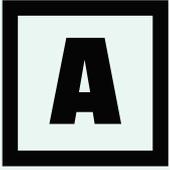
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Emerging professionals are fueling today's design conversation with high-energy ideation that challenges stated norms.

Zonda Media congratulates and thanks ASI Group for its ongoing commitment to design innovation driven by architecture's next generation.



Next Progressives: IUA Ignacio Urquiza Arquitectos

EDITED BY MADELEINE D'ANGELO



Firm leadership: Ignacio Urquiza Seoane

Location: Mexico City

Year founded: 2019

Education: M.S. in advanced architectural design, Columbia University GSAPP; B.A. in architecture and urban design, Universidad Iberoamericana Ciudad de México; Studies in Professional Photography, Spéos—École Internationale de Photographie, Paris.

Firm size: 12 people

Firm mission: Our firm's mission is to produce architecture congruent to the present era (economic, political, social, and environmental). We pursue

this goal by giving the same value and importance to the three elements we work with: architectural object (what we design); user (who we design for); and context (where does the object lay). Our way of thinking relies on this principle. Actually, it is the clash of these three elements—each of a different nature—where our architecture is generated.

First commission: Casa en El Torón I. My first commissions and defining projects were the earliest developed in my former office, Centro de Colaboración Arquitectónica: Casa Estudio Hill, Torre de Tierra, Cuna de Tierra Winery, the first EBC Campus in Guadalajara, amongst some others, were the starting point of my career. These projects helped me understand how clients entrust architects with their patrimony. This way, I learned that we can challenge our understanding, our ideas, and materialize them with architecture, with constructed buildings.

Defining project: Las Rocas is a relevant project to the office because it provided the possibility to intervene in such a delicate and particular context. It is also one of the first projects that IUA designed in collaboration with my wife, Ana Paula de Alba, leading interior design.

How you decided to become an architect: My father is a photographer. Since I was a kid, I had the opportunity to travel with him around the country, assisting

him in taking photographs and learning about the culture, traditions, gastronomy, and architecture of Mexico, meeting great people and places along the way. I guess those encounters really influenced me and are part of who I am today.

Most important piece of criticism you ever received: That we are producing boring architecture—in a way, it is just what we are aiming for: boring but unexpected.

Special item in your studio space: Our plants and camera; our studio is as much as an architectural office as it is a photography studio. You can turn it into a set in just a couple of minutes.

Biggest challenge in running a successful practice: Maintaining an adequate level between a creative and a sustainable practice.

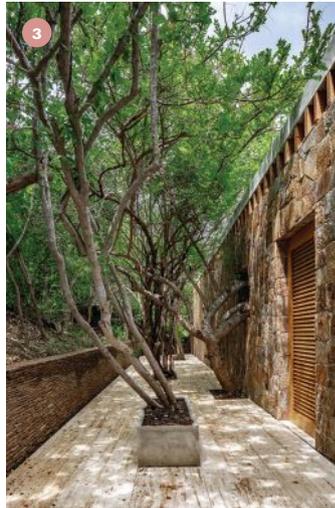
Biggest challenge facing architects today: Engaging and responding in an agile and smart way toward the environmental crisis we are facing today with architecture that possesses this premise at its core. It is not a commodity but a necessity with no exception.

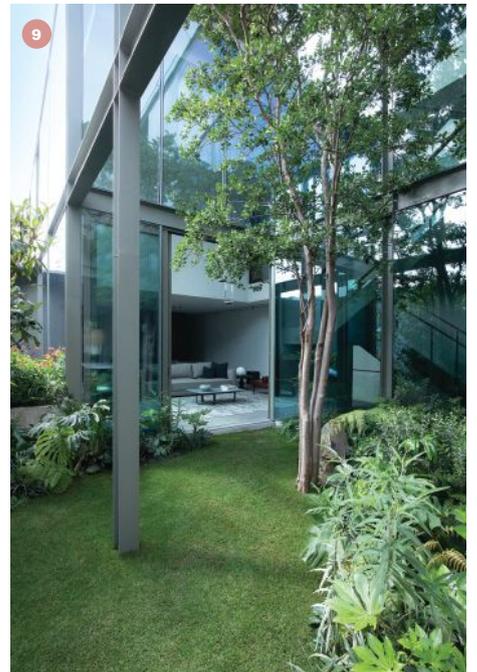
Design tool of choice: Photography. We try to use it not only for the documentation of our finished buildings but as a part of our design process. Models, drawings, texts, collaboration, and round tables are also fundamental tools in our process.

Next Progressives:
IUA Ignacio Urquiza Arquitectos



1. Casa en El Torón II is nestled into the hillside in Mazunte, Oaxaca, Mexico. **2.** IUA completed Casa en El Torón II in collaboration with the Mexico City-based interior design firm APDA Ana Paula de Alba. **3.** No heavy machinery was used in the construction of Casa en El Torón I in Mazunte, preserving the site's natural landscape. **4.** IUA also replanted 80% of the vegetation located under Casa en El Torón I's footprint and sourced only local materials—certified tropical wood, stone, stucco, and clay—for the residence. **5.** A floor plan for Tlalpan 2860, a proposal for high-density housing in Mexico City that IUA designed in collaboration with the Bordeaux, France-based firm A6A. **6.** IUA completed this Valle de Bravo, Mexico, complex of four single-family houses, dubbed Las Rocas, in collaboration with APDA. **7.** The geometric volumes and intentionally restrained material palette of Las Rocas highlights the existing vegetation. **8.** Located in Mexico City, Cárpatos is sited on a narrow, approximately 4,305-square-foot plot that determined the residential project's elongated form. The house's first-floor living spaces open directly to the gardens, blurring the interior-exterior divide. **9.** Central and surrounding plantings transform Cárpatos into a "cloud forest" as greenery reflects in the steel and glass structure, explains IUA. The structure's blue-green tint was selected to blend seamlessly with the surrounding vegetation.







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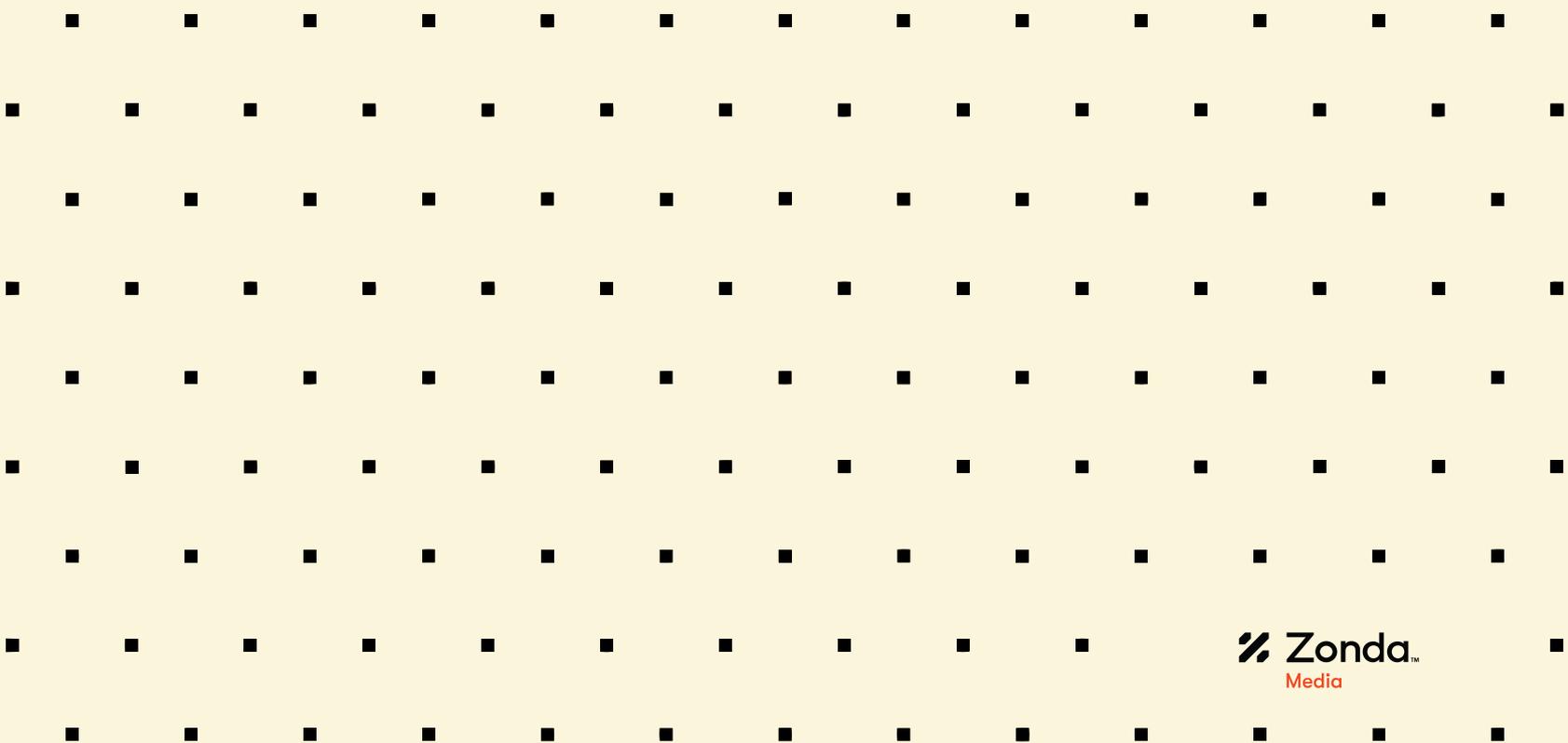


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CarbonPositive: Retrofitting Renewal and Transformation

TEXT BY CARL ELEFANTE, FAIA

Over the past few years, the architecture profession has turned a corner, significantly ramping up its commitments and contributions to confronting the climate crisis. Since the Glasgow Climate Change Conference in November, the importance of eliminating greenhouse gas pollution from the building sector is acknowledged much more broadly in industry, finance, and government both in the United States and globally. The search has intensified for principles, practices, policies, and programs that accelerate the decarbonization of buildings and cities.

The 2021 building energy codes require high-performance design at many levels. Cities across the U.S.—including New York and San Jose, Calif.—are requiring all new buildings to use no on-site fossil fuels—gas, oil, or propane—and to be 100% powered by on-site or off-site renewable energy, often in keeping with the Zero Code and 2021 International Energy Conservation Code Appendix CC. Examples of architecture that achieve the highest level of design and performance can be found in every issue of this magazine and in the design awards programs of local American Institute of Architects chapters.

This said, our profession frequently overlooks something just as crucial: eliminating greenhouse gas emissions from existing buildings. Even if every new building designed from today forward meets the zero-carbon



The Edith Green-Wendell Wyatt Federal Building in Portland, Ore., by SERA Architects and Cutler Anderson Architects is a 2014 COTE Top Ten winner that serves as an example of a high-performing renovation and retrofit.

operations standard, buildings and cities will continue emitting more carbon pollution than industry, agriculture, or transportation. To reach zero emissions, we must eliminate the existing carbon footprint of the building sector and transform the performance of existing buildings.

As cities around the nation and world take stock of their decarbonization challenges, retrofitting existing buildings is beginning to get the attention it deserves. Building performance standard targets for existing buildings are being adopted as an

essential program in citywide efforts to meet climate commitments. A growing list of cities around the U.S. have already passed BPS laws; Washington, D.C., for instance, began disclosing existing building energy performance in 2019 and implemented its first round of BPS in 2021.

AIA has been promoting and supporting building retrofit as climate action for nearly a decade. Notably, in 2013, AIA published *Deep Energy Retrofits, An Emerging Opportunity*; in 2019, *Renovate, Retrofit, Reuse: Uncovering the hidden value in America's existing building stock*; and



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a forthcoming release with the working title *Building Reuse Practice Guide Supporting Climate Action*.

While the economic recovery from the Great Recession proceeded over the last decade, contrary to expectation, the rate of architectural billings for retrofit work remained high. Many architectural firms are experiencing the financial opportunity in retrofit work.

“There is no pathway to a zero-emissions building sector without zeroing out emissions from America’s 325 billion square feet of existing buildings.”

As an architect who spent much of my career rehabilitating and adding to existing buildings, I speak with firsthand experience on the subject. The importance of decarbonizing existing buildings is paramount.

There is no pathway to a zero-emissions building sector without zeroing out emissions from America’s approximately 325 billion square feet of existing buildings. But the message I most passionately want to convey is how rewarding the design challenge is in renewing and transforming existing buildings.

Wrestling with the constraints of existing buildings, discovering design solutions that respond creatively to their character, and holistically integrating new with old produces an unequaled richness of place. Try it. You’ll love it.

Carl Elefante, FAIA, is an Architecture 2030 Senior Fellow and a principal emeritus at Quinn Evans Architects. He recently served as part of the Architecture 2030’s delegation to COP26.



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In this new series on innovative spaces, we ask designers **Nina Etnier** and **Brad Sherman** on the thinking behind designing the nonprofit workspace for **Understood**.

EDITED BY PAUL MAKOVSKY

Inside Out: Designing a Workspace That Is Welcoming, Flexible, and Inclusive

The Project:

Understood workspace, New York

The Client:

Understood is a nonprofit organization that helps those who learn and think differently—for example, people with learning differences such as ADHD or dyslexia—discover their potential, take control, and find community. This office sets new standards in design and accessibility and specifically addresses the needs of the neurodiverse.

What were the guiding principles for your project?

After developing a proposed floor plan and surveying the entire staff in depth to understand the workflow of the team, we developed guiding principles for the project where the space would be welcoming, flexible, and inclusive in all senses of the word. We wanted the floor plan to be extremely intuitive, and we didn't want anybody to feel unsure about where they were going in the office, so we made sure to have clear visual landmarks as you moved throughout the space.



As co-founders of New York City-based design firm Float Studio, Nina Etnier and Brad Sherman, met in college and started working together eight years

later when Sherman quit his job to start the studio after realizing there was a need for a firm to design headquarters for companies aging out of the coworking model. They found a niche, having designed and refreshed the headquarters of tech startup companies including Casper, Bonobos, Food52, and Bombas. In 2019, they were named Contract magazine's Designers of the Year. They have since expanded into working in other sectors, such as healthcare and hospitality.

> To read more about this project, please visit bit.ly/ARioFS

AARON THOMPSON

CREATE AN INTUITIVE SPACE.

The common core area has a blue curved wall at reception, which for people with low vision is helpful for navigating space. It encourages a person to move through the space in an intuitive manner.



INCLUSIVE DESIGN IS PARAMOUNT.

The designers worked closely with an ADA consultant to develop an intuitive layout, with design interventions that cater to all senses and promote inclusivity in design decisions. A variety of furniture types and sizes was specified. The curved walls in the center of the office help define the path of circulation, especially for individuals with low vision. A table with pedestal base and appropriate clearances was selected.



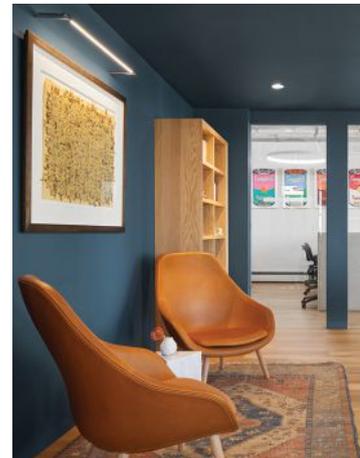
WAYFINDING SHOULD BE CONCISE AND LEGIBLE.

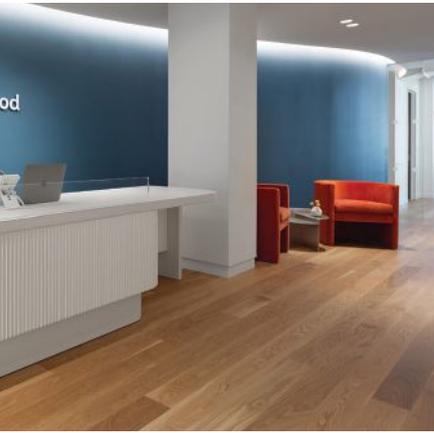
Restroom signage points to gender-inclusive bathrooms. Tactile dots were installed on the floor to awaken vigilance and alert blind or visually impaired people.



FLEXIBILITY IS KEY.

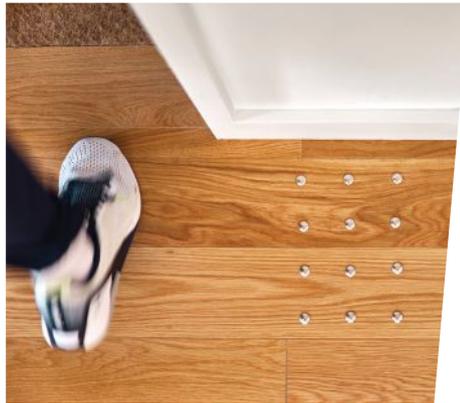
Small desks are properly equipped and users are encouraged to have a flexible mindset about alternate work spaces. There's also a clean desk policy to reduce visual clutter.





BE STRATEGIC WHEN IT COMES TO VISUAL STIMULATION.

The use of materiality, color, and texture was purposeful. Designers integrated natural elements where possible, and there was a strategic use of contrast.



PAY ATTENTION TO ACOUSTIC QUALITY.

Wall-mounted phone booths were provided for phone calls, and other acoustic interventions included refining the background white noise, as well as providing noise-cancelling options, and AV assistance for the hearing-impaired.



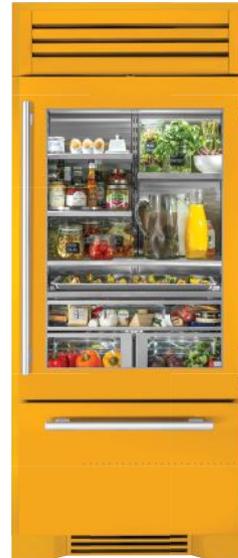
PRIORITIZE NATURAL LIGHT.

The floor plate isn't particularly large, so giving the team natural light throughout the space was important.

Products: Spring Product Call

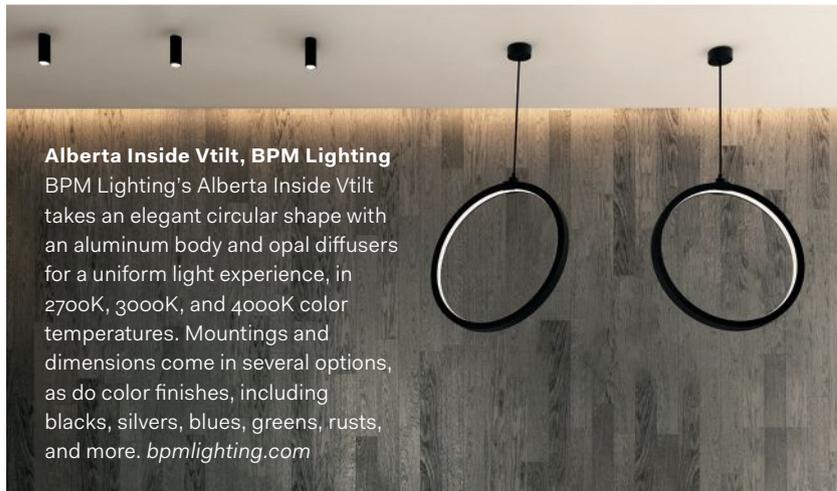
After two years of disruption from COVID-19, architects and designers are working to create better spaces for clients, communities, and themselves. Selected from ARCHITECT's third annual Spring Product Call, these 23 products embody the functionality, beauty, and sustainability needed to help realize those goals.

TEXT BY ALEX V. CIPOLLE AND MADELEINE D'ANGELO



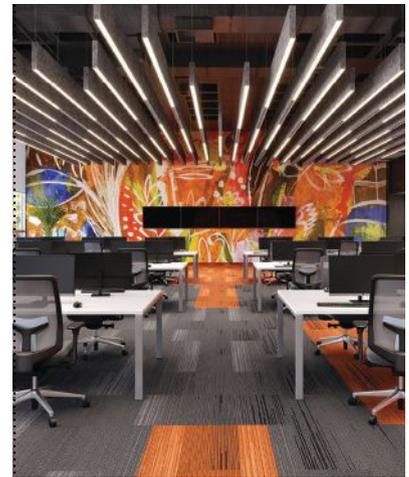
36" Refrigerator with Bottom Freezer, True Residential

In a first for the brand, True Residential is offering a new model with a stainless steel interior and a bottom freezer. The 22.6 cubic feet of interior space features room for four adjustable and removable half-width glass shelves and an 18"x26" commercial sheet pan. true-residential.com



Alberta Inside Vtilt, BPM Lighting

BPM Lighting's Alberta Inside Vtilt takes an elegant circular shape with an aluminum body and opal diffusers for a uniform light experience, in 2700K, 3000K, and 4000K color temperatures. Mountings and dimensions come in several options, as do color finishes, including blacks, silvers, blues, greens, rusts, and more. bpmlighting.com



Seem 2 Acoustic, Focal Point

This sound-absorbing, linear direct LED luminaire expands on Focal Points Seem 1, now offering a wider, 2½-inch aperture, higher lumen outputs, and increased acoustic performance. Featuring the company's eco-friendly AirCore for sound absorption, the Seem 2 is available in 25 different colorways and 3' to 208' lengths with 8", 12", or 16" nominal housing heights. focalpointlights.com



400 Series Windows, Andersen Windows & Doors

Andersen is expanding its 400 series, which was established in the 1960s, to include a selection of contemporary styles for windows and doors. This new profile is created from wood in customizable sizes, hardware, finishes, and grille patterns. andersenwindows.com



Crumpled Paper, HBF Textiles

Made from post-consumer recycled polyester, this woven textile was designed to echo the weight and texture of paper. With potential applications ranging from upholstery to wall coverings, the fabric is between 91% and 93% biodegradable and available in five bleach-tolerant colorways. hbftextiles.com



Dekton Gocce Shower Tray Collection, Cosentino

These new slip-resistant, lightweight—at only 20mm thickness—shower trays from Cosentino can be adapted to any bathroom, coming in several color options and two size formats. The trays are made with nonporous materials—from a mixture of the raw materials that are used to manufacture glass, porcelain, and quartz surfaces—allowing for easy cleaning. cosentino.com



Mobl, Arden Studio
 Matching the increasing popularity of flexible work environments, the Mobl panel doubles as a writing surface and partition, with an option to add sound-dampening felt acoustic panels, creating both private and public spaces. The partitions use Fineline glass dry-erase boards and magnetic surfaces, and come in more than 150 colors with customizable logo options. ardenstudio.com



Data Center Louver Solutions, Construction Specialties

Big Data also needs protection from the elements. The Data Center Louver Solutions includes four options specifically designed to minimize water penetration for data centers, sheltering these structures from hurricane-force wind and rain as well as high-velocity debris. The customizable louvers come in a variety of blade and frame styles. c-sgroup.com



Bob, Yellow Goat Design
 Poplar and powder-coated metal painted in earth tones, the Bob decorative LED lighting features three pebble-like clusters that mimic wind chimes. Each fixture from Yellow Goat Design is bespoke, so finishes, sizes, canopies, and light are tailored to the project at hand. yellowgoatdesign.com

Profile Light Family, Landscape Forms

Designed in collaboration with landscape lighting designer Linnaea Tillett, the Profile LED lighting series features elegant, minimalist designs for everything from accents to wayfinding, from concert venues to running trails. The modular I-beam lights come in four heights and four distributions. landscapeforms.com



Products:
Spring Product Call



Henri, Eureka Lighting

Made to complement office and hospitality environments as clusters or standalone fixtures, the Henri pendant can be specified in 11" and 17" diameters and in a black or white finish. Available with cable or stem suspension systems, Henri can deliver up to 4200 lumens through its LED board, and features an integrated driver. eurekalighting.com



R-Box Combi Steam Oven, Robam

Global kitchen appliance stalwart Robam has launched its new combi steam oven, designed to replace up to 20 small appliances with a temperature range of 95 F to 445 F. The stainless steel R-Box—available in mint green, sea salt blue, and garnet red—features three steam modes, two baking functions, grilling, convection, airfrying, and breadmaking. robamliving.com



Static Links, LightArt

An acoustic lighting system available in modular shapes of X, Y, L, and T that range from 3' to 8' in length, Static Links can be built into hundreds of different patterns (think honeycombs and arrows).

The configurable design, in wood and powder-coated finishes, allows for the lighting system to nestle into tight corners or nonlinear spaces. lightart.com

Graphic Patterns Collection, 3form

Inspired by ancient aspen trees near 3form's headquarters in Salt Lake City, Graphic Patterns comprises illustrations—Aspen, Heartwood, and Serotina—applied to the company's translucent co-polyester resin or etched-glass systems. The panels are available in 4'x8' and 4'x10' panels, with up to 1" gauges on either clear or low-iron glass. 3-form.com



Dart Round, Targetti USA

The Dart Round flood-light projector is designed to illuminate a range of space, from up-close details to long distances. The projector comes in three different sizes with a variety of optical and mounting accessories, and its mounting bracket allows for rotation on horizontal and vertical planes. targettiusa.com



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Lake Flato Architects Casey Dunn Photography

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Products:
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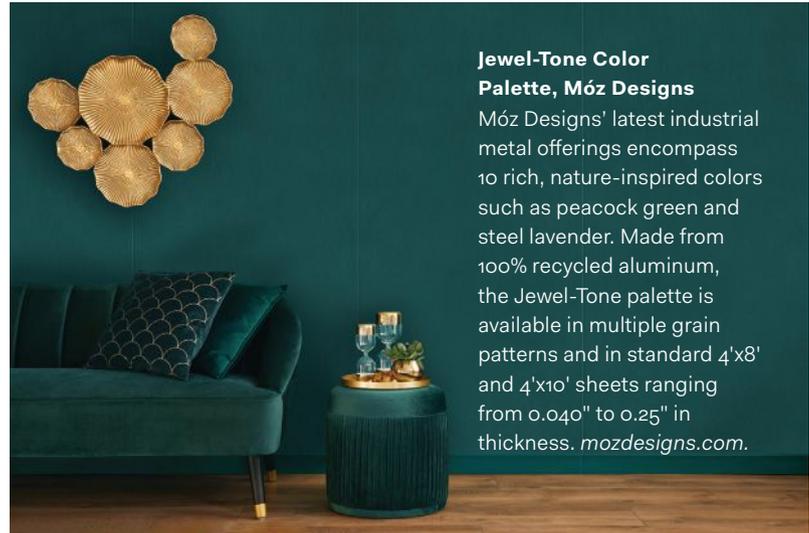
PD97ES, Inox

This sensor-controlled electrified mortise lock—available in satin stainless steel with ceramic finish options—was developed to provide commercial projects with a secure and touch-free option for sliding doors. According to Inox, users can integrate the lock with any existing access control system and use its monitoring sensors, fail secure functions, and auto-locking abilities. inoxproducts.com



Nisswa Sofa g6, Loll Designs

A trip to Nisswa, Minn., inspired the design of this four-seater outdoor sofa. With a width of 94" and a depth of 31", the piece's Sunbrella fabric cushions offer durability in shades including cast petal and canvas regatta blue. The base contains recycled high-density polyethylene and is available in Loll's nine signature, weather-resistant colorways. lolldesigns.com



Jewel-Tone Color Palette, Móz Designs

Móz Designs' latest industrial metal offerings encompass 10 rich, nature-inspired colors such as peacock green and steel lavender. Made from 100% recycled aluminum, the Jewel-Tone palette is available in multiple grain patterns and in standard 4'x8' and 4'x10' sheets ranging from 0.040" to 0.25" in thickness. mozdesigns.com.

Smart Multi, Mitsubishi Electric Trane HVAC US

These multizone, variable-capacity indoor and outdoor heat pumps and air conditioners simplify design choices for ducted or ductless residential and commercial applications. Available in 36, 42, 48, and 60 KBtu/h capacities, the Smart Multi series can hum at a quiet 50 dB(A) and can cool as low as -13 F. mitsubishicomfort.com



Brazn Collection, Kohler

Kohler has expanded its existing Brazn Collection with three lavatories and a free-standing bath, all inspired by Modernism. The 18" deep soaking bathtub is available in white acrylic and includes a color-matched toe-tap drain. Designers can specify the lavatories in a range of sizes and shapes including three undermount styles in square, pill, and rectangle shapes. us.kohler.com



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Products:
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Note Desk, HBF

Designed by the Copenhagen-based OEO Studio, this desk is HBF's first flatpack offering, making it a breeze to ship, assemble, and use, according to HBF. Composed of solid red oak, the desk includes a top with an embedded power module, a back panel shelf, and a cubby, and is available in three colors: light natural oak, stained, and black. hbf.com



**PoE Touch Panel
Room Controller,
Somfy Systems**

This interface can control up to 20 connected motorized shades and draperies in a room through the 5.7" in-wall touchscreen. It employs two-way communication and is available in white and black. somfysystems.com



Open Range, Mannington Commercial

Created for use in commercial typologies, this rubber plank flooring aims to evoke natural patterns such as wood grains. Available in 12 tones, the 6.25"-by-42" plank flooring is slip resistant and contains 4% rapidly renewable resource content by total product weight. manningtoncommercial.com

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MEET SEATTLE'S NEW \$6.6 MILLION GATEWAY TO THE STARS

The 60-year-old Seattle Center Monorail station celebrates curves in a transformative new aesthetic.

To help understand the evolution of the 60-year-old Seattle Center Monorail from a quaint tourist attraction to a high-impact public transportation link, start by looking up.

Thanks in large part to 340 gracefully arcing, sinewy metal beams, the once dowdy station is now an uber-cool, last-mile gateway to the likes of Paul McCartney, Cheap Trick, Shawn Mendes, Odesza, the NHL Kraken, and a world of big arena excitement.

The historic landmark underwent a \$6.6 million renovation last year. "If you had seen the station before, you'd know how radically different it is. Yet it feels like it was always there. It's transformational," explains senior associate and project lead Emily Perchlik, AIA, of Seattle-based VIA Architecture. "The ceiling is a very logical reaction to space and function."

The updated station is the transit gateway to the new \$1.15 billion Climate Pledge Arena, the world's first net-zero-carbon arena. The 0.9-mile monorail track links the city's light rail system to the 17,459-seat venue, the Space Needle, and other attractions at the 74-acre Seattle Center.

AGGRESSIVE BUDGET & SCHEDULE

The challenge for Perchlik and her team was to reinvent the station without disrupting the

facility's technical constraints. "To modernize a long and narrow space, we wanted a canopy that suggests mass while allowing at least 70 % of it to be open for air and light. The soft, curved aesthetic creates a spirit of movement," she says.

Just two things stood in the way: budget and timing. The scheduled opening was timed to coincide with the first home game of the NHL's Seattle Kraken in September 2021. The project commenced in April 2021 with an aggressive six-month schedule. Fabricating hundreds of custom extruded aluminum beams within budget and on time wasn't possible; some ceiling manufacturers offered beams but with design compromises that defeated the architectural intent.

ONLY CERTAINTEED ARCHITECTURAL

One commercial ceiling manufacturer stepped forward. "Only CertainTeed Architectural could handle vertical curves on both the top and bottom of the beam. They also met our schedule and budget," Perchlik recalls.

The custom extruded, curved metal beams—called High Profile Series Vertically Curved Beams—range in length from six to 18 feet. Installation was limited to evenings

(monorail trains operate up to 16 hours a day and run every 10 minutes), and beams were shipped in batches to keep the installation crew continuously busy. Each batch was transported to the station platform the only way possible: by monorail, of course.

EXPECTATIONS EXCEEDED

Each beam was sized and engineered to a specific angle and sequence. A sophisticated lighting system with programmable colors and lively sequencing was installed to enhance the rider experience. As the project's single-source ceiling supplier, CertainTeed Architectural was responsible for the station's entire ceiling system, including linear wood panels. All ceiling components were installed in six weeks and met every project requirement.

Today monorail ridership is running well above projection. Civic leaders hail the visually stunning station for helping energize riders to and from the arena. Especially hockey fans.

"The NHL Kraken includes free monorail rides with every single-game ticket and season pass," Perchlik says. With help from CertainTeed Architectural, this storybook makeover now plays a starring role in Seattle's public transit renaissance.

Learn more about enhancing your next project with CertainTeed Architectural innovation and style at certainteed.com/architectural.

Designers Select: Lighting

SHINING STARS

Top lighting picks by New York designers from workplace, residential, and hospitality industries.

WORKPLACE

James Cull



Design Director, Associate Principal
Rottet Studio
New York

Juniper: THIN Surface Mount Vanity Light

juniper-design.com



"The elegant system is precision-machined from 1/2-inch solid brass tubing and comes with beautifully integrated dimmers and minimal connections, making the design well-considered, sleek, and architectural."

Apure: Minus Series

apure-system.com



"This miniature 'glare-free' lighting system has an almost-unbelievable 3/8-inch to 1-inch aperture. The shallow depth makes it perfect for ceilings without the space required to install typical recessed lighting."

Circa Lighting: Fascio Scence

circalighting.com



"This decorative crystal fixture comes in multiple sizes and several elegant finishes. It brings a luxurious hospitality or residential tone to corporate projects and is beautifully installed along corridors or as the centerpiece of a lobby."

RESIDENTIAL

Katherine Mendez



Director of Interiors
ODA
New York

Roll & Hill: Fiddlehead Cantilever

rollandhill.com



"This elegant and versatile fixture gives weight to the light glass, and the steel arm feels fine and airy and reacts to the architecture by creating a counterbalance from the ceiling."

Apparatus Studio: Signal Z Pendant

apparatusstudio.com



"This pendant has an intricate composition that adds interest to any space. From the rhythm of the metal and the natural patina finish of the brass to the glowing smoked glass, the fixture transforms when lit and becomes a focal point."

Carpenters Workshop Gallery: Clever Lamp by Atelier Van Lieshout

carpentersworkshopgallery.com



"This lamp blurs the line between art and design, becoming a floor lamp that is both functional and sculptural. The patinated bronze brings depth and texture, and when lit, the shadows created by the texture and form of the fixture add a playful touch."

HOSPITALITY

Krista Ninivaggi



Principal & Interior Design Leader
Woods Bagot
New York

RBW: Radiant Disc

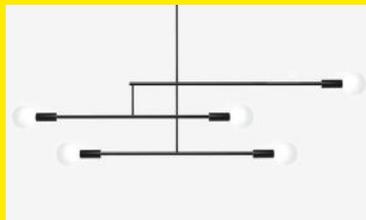
rbw.com



"We use this fixture—made from wood—when we need diffuse light and do not want to see the hotspot of the light source. We use it in spaces that need to be warmed with extra touches of natural material."

Andrew Neyer: Mobile Light

andrewneyer.com



"The best part of this versatile fixture is that the pivot allows you to position the arms as desired in a space. We have often used it in renovation projects, particularly where existing light points might be off center. You can visually adjust the center by the way you configure the arms."

Allied Maker: Aperture Scence

alliedmaker.com



"We love the tectonic nature of the way this light is designed. The assembly is beautifully expressed. The ribbed glass diffuses the light to be flattering but also to create a complex light pattern on adjacent materials."

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The Gathering Church, St. Louis, MO



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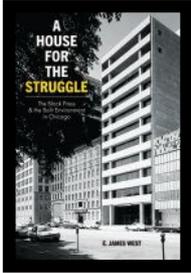


A

ARCHITECT'S Summer Reading List

With warmer months approaching, the ARCHITECT editorial team brings you a selection of 10 recently released titles that will delight the eyes and inspire the mind.

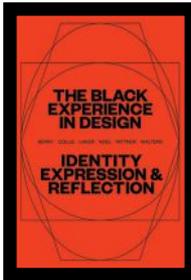
TEXT BY ARCHITECT STAFF



A House for the Struggle: The Black Press and the Built Environment in Chicago

By E. James West; Designed by Becca L. Alexander; University of Illinois Press, 296 pages, \$24.95

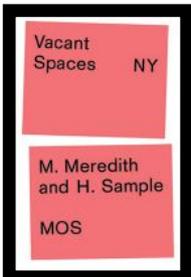
In the 20th century, Chicago was the heart of the Black media industry. When these publications established homes in existing buildings or built new ones, they themselves were cemented as institutions that could shape the political landscape and act as a beacon of racial uplift. Author E. James West narrates the stories of these buildings, like that of *Ebony* (the Johnson Publishing offices, “a poem of marble and glass”), drawing attention to their role as hubs for activism, art, and culture.



The Black Experience in Design: Identity, Expression & Reflection

Edited by Anne H. Berry, Kareem Collie, Penina Acayo Laker, Lesley-Ann Noel, Jennifer Rittner, Kelly Walters; Designed by Renald Louissaint; Allworth Press, 600 pages, \$19.99

Started after the Black Lives Matter protests in 2020 and published nearly two years later, this essay collection delves into the research, practice, and stories of Black designers and creatives. Each piece, however, also serves as a call to action, outlining how practitioners can make systemic changes to design research and education.



Vacant Spaces NY

By Hilary Sample and Michael Meredith; Designed by Studio Lin and MOS Architects; Actar Publishers, 608 pages, \$59.95

What to do with New York's empty storefronts? Hilary Sample, FAIA, and Michael Meredith, AIA—co-founders of the local firm MOS—tackle the question with vigor, painstakingly documenting long-disused storefronts and proposing a suite of possible solutions aimed at enhancing the city's community and urban fabric.



Queer Spaces: An Atlas of LGBTQIA+ Places and Stories

Edited by Adam Nathaniel Furman and Joshua Mardell; Designed by Alex Synge; RIBA Publishing, 240 pages, \$54.95

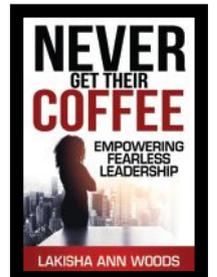
Divided into three sections—domestic, communal, and public—*Queer Spaces* is an intimate and vibrant examination of how LGBTQIA+ communities have carved out their own pockets in the built environment. As the editors point out, making and taking space is often a life-giving and live-saving endeavor. Through essays, photography, illustrations, and design sketches, the book showcases these safe and inventive spaces, from the palaces of Ludwig II in Bavaria and the Palladium night club in New York to the last carriage of a metro train in Mexico City.



Blank: Speculations on CLT

Edited by Jennifer Bonner and Hanif Kara; Designed by Neil Donnelly Studio; Applied Research & Design, 240 pages, \$49.95

The editors of *Blank* discuss the untapped potential of using cross-laminated timber and its material unit, the CLT blank, in architecture today. Bringing together texts and works from a wide range of theorists and practitioners (Sam Jacob and Nader Tehrani, to name two) who make CLT central to their research and practice, this book showcases how CLT applies to sustainability and materiality and how it can be used in conceptual and imaginative ways.



Never Get Their Coffee: Empowering Fearless Leadership

By Lakisha Ann Woods; Leaders Press, 160 pages, \$16.95

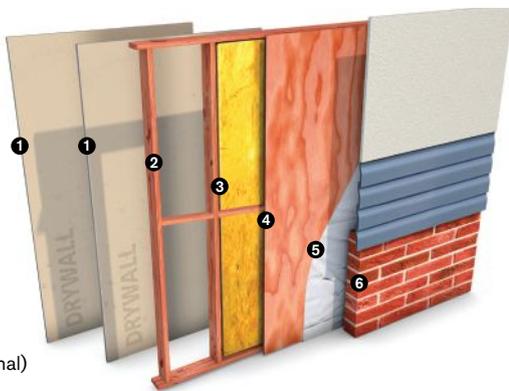
AIA's Executive VP and CEO Lakisha Woods weaves together compelling research, statistics, and first-person accounts about the role of female leadership in the workplace today. She offers strategies (communicate, coordinate, and compromise) to empower female leaders to grab their seat at the table and, above all, to stop apologizing.

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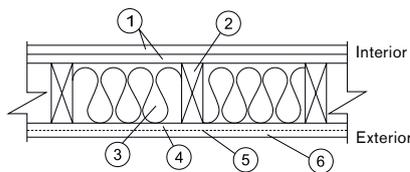
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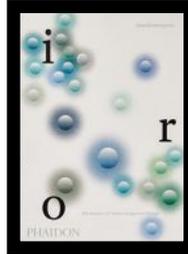
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ARCHITECT'S Summer Reading List

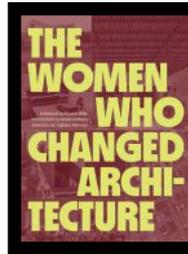


Iro: The Essence of Color in Japanese Design

By Rossella Menegazzo; Designed by
Julia Hasting; Phaidon, 288 pages, \$79.95

This beautifully bound volume explores
200 traditional Japanese colors
(iro) through objects ranging from
modern cutlery to rarified antiques.

The carefully curated selection
allows for a deeper appreciation of Japanese tradition and
design—as well as providing a true feast for the eyes.



The Women Who Changed Architecture

Edited by Jan Cigliano Hartman;
Designed by Natalie Snodgrass;
Princeton Architectural Press,
336 pages, \$50.00

An essential compendium of influential
women designers from the late 19th
century to today, *The Women Who*

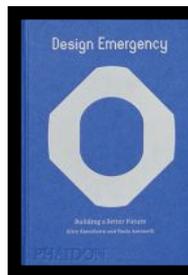
Changed Architecture profiles 122 architects including Marion
Mahony Griffin, Ethel Baily Furman, Maya Lin, and Deborah Berke,
FAIA—the 2022 AIA Topaz Award winner. Accompanied by beautiful
photos, this collection of biographies showcases the industrious
and unique paths each woman forged to master their craft, even
when credit was often given to their male partners or bosses.



Harvard Design Magazine 49: Publics

Guest edited by Anita Berrizbeitia and
Diane E. Davis; Designed by Alexis
Mark; Harvard Graduate School
of Design, 160 pages, \$49.00

This issue explores how public spaces
operate in a fragmented social and
political environment, both in the U.S.
and abroad. By investigating design
theories and outcomes, the publication probes questions about
who holds the power to define public spaces and their use.



Design Emergency: Building a Better Future

By Alice Rawsthorn and Paola
Antonelli; Designed by Studio Frith;
Phaidon, 320 pages, \$29.95

Focused on technology, society,
communication, and ecology,
this collection of writings and
interviews highlights design as
a catalyst for positive change.

Beyond identifying issues—from data bias to efforts to end
homelessness—*Design Emergency* posits solutions.

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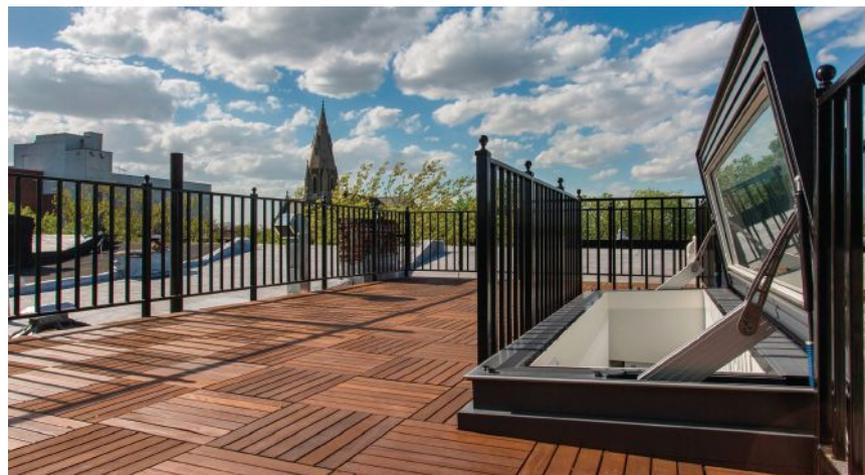
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THINKING OUTSIDE THE (RESIDENCE HALL) BOX

The University of Louisville in Kentucky selected a durable—and affordable—insulated concrete forms structural system.

The University of Louisville in Louisville, Ky., took no chances when it came to building their first new residence hall in 31 years. Budget was a priority, of course. But so was a building life, maintenance, interior flexibility, student comfort and engagement, sustainability, and acoustics.

What construction type should it be? Wood? Structural framed steel? Cold-formed steel? Or concrete masonry units?

Answer: None of the above.

“The construction manager’s review determined the least expensive non-combustible option meeting all university requirements was insulated concrete form,” reports Colin Drake, AIA, principal and the project’s design lead for the Lexington, Ky.-based firm JRA Architects.

\$34 PER SQUARE FOOT

At \$34 per square foot for building core and shell with precast floors, the structural system cost for insulated concrete forms was persuasive (about 5% less than concrete masonry units and 50% less than cold formed steel). What was convincing was the host of benefits that price is expected to deliver for the next 70-plus years.

The project—the 452-bed Belknap Residence Halls—is a pair of distinctive five-story, 130,000-square-foot, Z-shaped structures housing first-year students. The buildings occupy the heart of the campus, directly across from the Student Activities Center. That coveted real estate proved to be one of the challenges ICF uniquely addressed: minimal campus disruption through construction speed.

REMARKABLE SPEED

“We built two 130,000-square-foot residence halls in the time it took to erect a nearby wood-framed podium residence hall that’s half the size,” Drake says. “Each Belknap Residence Hall took about 13 months to build. That’s a remarkable pace ... about a floor a week.”

The ICF project is a first for the university and JRA Architects. “We are very agnostic to construction type. Ironically, when we started the second building the price of lumber spiked. We’re confident ICF was probably even cheaper than wood at the time. Also, concrete was one of the few materials that wasn’t hit by wild price swings,” the architect notes.

ACOUSTICS AND MORE

What else about the project sets it apart? Several things according to Drake:

- **Planes, Trains and Automobiles.** The close proximity of three major transportation systems could be a major study distraction as airliners pass by 1,000 feet overhead, trains rumble by 200 yards away and the ceaseless din of a busy interstate highway is just 600 yards away.



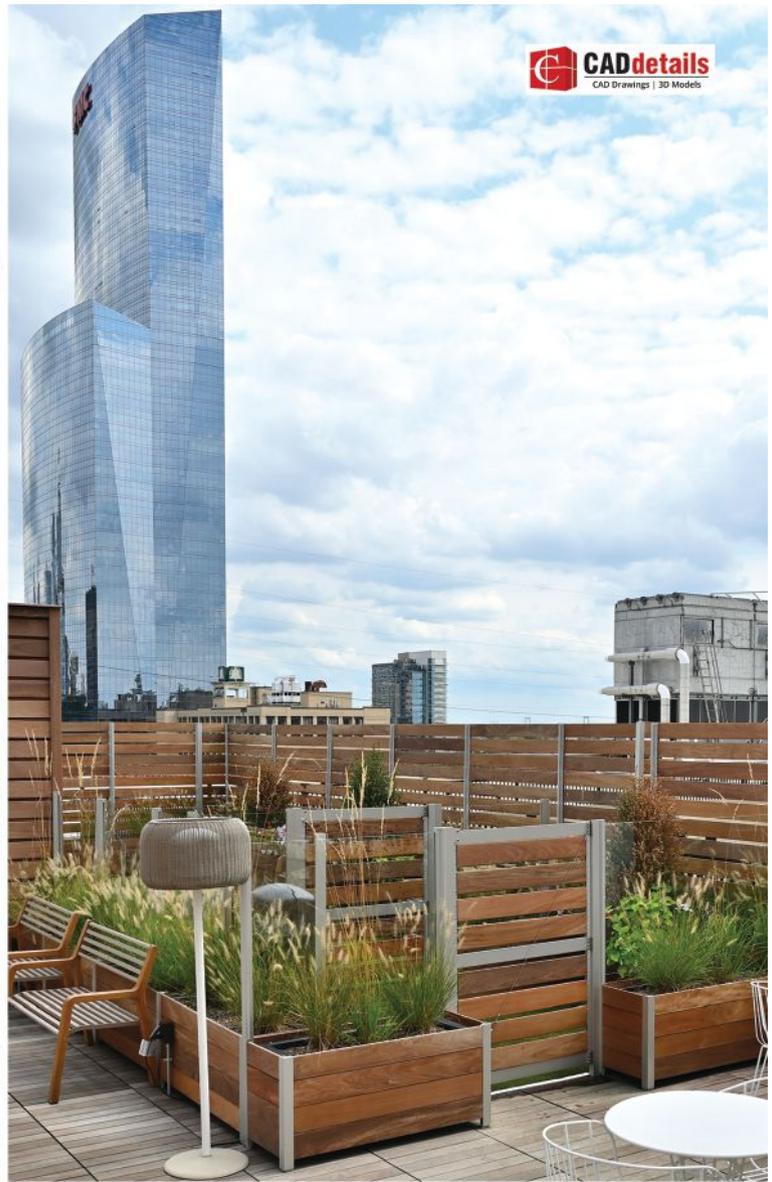
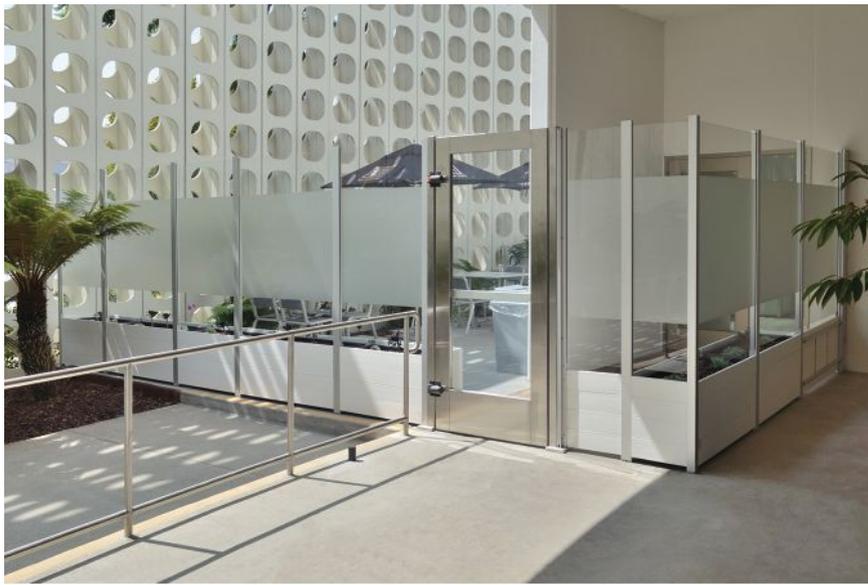
Fortunately, ICF quiets that cacophony to a barely audible whisper thanks to an STC 50+-rating.

What’s more, students are shielded from above and below interior noise by sound-silencing 11-inch-thick precast concrete planks.

- **Cold Weather Friendly.** “Not a day of ICF construction was lost due to winter weather,” Drake observes. Even below freezing temperatures don’t stop concrete pours. All that’s required is a thermal blanket across the top of the wall until the concrete is cured.
- **Adaptable Interiors.** “If the last two years taught us anything, it’s the value of adaptability,” Drake says. “Belknap Residence Halls interiors can be configured any way you like. You’re just moving around drywall. No load bearing walls. Nothing to hinder alternate floorplans.”
- **Design-Friendly.** Drake points out the residence halls are hybrid structures, integrating steel frame construction to “... celebrate public space with glazed cladding. Marrying two systems together gave us the best of both worlds.”
- **Lucky Seven.** The project’s structural engineers—Brown+Kubican—now count Belknap Residence Halls as their seventh higher education residence hall project in Kentucky made with ICF.

Drake knows ICF isn’t right for every project. No building system is. But when it meets the right conditions, it’s a powerful candidate. To prove the point, the JRA team was just awarded contracts for two public school projects using ICF as the basis of design.

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Opinion: In Schools, Design for Belonging

TEXT BY SOPHIA TARKHAN



As summer approaches, the fallout from the pandemic is still felt in classrooms nationwide. While children from every demographic have been impacted, minority children, children with disabilities, and children from low-income families have been disproportionately affected. As designers, our responsibility to create comfortable learning spaces that promote equity, engagement, and belonging is more vital than ever. The following principles and strategies are my foundational guide to students' ability and willingness to thrive.

Equitable Teams, Equitable Design

Diverse voices at the design table must be the first step when creating spaces, especially in the K–12 sector. As a Black woman in a historically white, male-dominated field, I am compelled to ensure that the next generation of leaders is inclusive and representative. I do this through recruiting talent from Historically Black Colleges and

Universities, engaging in programs that expose minority students to the profession with organizations like the National Organization of Minority Architects, and mentoring high school students for Atlanta-based organizations such as Cool Girls.

Diversity does not just entail skin color. Age, religion, personality type, culture, gender identity, and multilingualism are all factors to consider when assembling a design team because, ultimately, our work is an extension of who we are.

Design Strategies for Belonging

- **Arrival:** I begin with the arrival experience. No matter how a student arrives—by foot, wheelchair, car, bus—they should arrive on equal footing. ADA ramps should be directly adjacent to stairs. All students should enter at the same location, eliminating hierarchy and minimizing differences.
- **Art:** Art serves as a reminder that students are seen and heard. At Jonesboro High School in Jonesboro, Ga., larger-than-life graphic art with inspirational quotes graces the walls. As students walk the halls, they are greeted with the faces and words of people who have made a difference in the world including Martin Luther King Jr., President Barack Obama, and Malala Yousafzai. As students look at these images, they may identify with someone who looks like them, reinforcing belonging.
- **Tiered seating:** Comfort and

how it affects learning is often overlooked. In school, everyone is generally given the same seat. For shorter or taller students, this can be uncomfortable and distracting. When provided with tiered seating, students can choose seats that are comfortable for them and allow for maintaining eye contact with the teacher and improving visibility.

- **Gender-neutral restrooms:** In an exercise done by our team, we found that gender-neutral restrooms provide a positive environment for everyone. Individual stalls remain private; however, your hand-washing experience happens with peers. This helps reduce some of the discomforts that are typical in these spaces and minimize bullying, which often happens in school bathrooms.
- **Asynchronous learning:** Shifting to remote learning during the pandemic exacerbated racial, socioeconomic, and other educational inequities, as well as anxiety and isolation. Design can help alleviate these stressors by creating spaces “tuned” to the type of activity they support. For Global Impact Academy in Fairburn, Ga., this was expressed through flexible lounge spaces created by an expanded hallway that connects learning environments, helping students build relationships, work on group projects, or engage in independent learning.

Sophia Tarkhan, AIA, is a principal of the K–12 Education Studio at Cooper Carry in Atlanta.

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Residential:

4/Way House Topanga, Calif. Deegan Day Design

TEXT BY MADELEINE D'ANGELO

On Nov. 2, 1993, the Old Topanga Fire broke out to the northeast of Malibu, Calif., scarring nearly 20,000 acres of surrounding land, killing three people, and reducing some 388 structures, including many of the residences along Skyhawk Lane in Topanga, to ash. The incident sent Skyhawk's property values plummeting through the late 1990s, making an empty plot overlooking Santa Monica Bay affordable for Joe Day, AIA, and Nina Hachigian, a young couple enamored with the coastal surroundings. "It was literally a fire sale when we got it," says Day, leader of the Los Angeles firm Deegan Day Design. After nearly a decade of planning, permitting, and designing, Deegan Day began constructing a 2,250-square-foot, two-bedroom, single-family project on the lot in 2008, working on it incrementally when Day, Hachigian, and their growing family could shoulder the cost and logistics required. Now, 14 years later, the nearly completed 4/Way House stands as a physical embodiment of the evolving conversation surrounding managed retreat and the ethics of building on land that, having burned once, will likely burn again.

When Day and Hachigian first bought the land in the late '90s, many U.S. conversations around California wildfires—and humanity's hand in their increased frequency and intensity—were different. "Part of our take on it was, [Topanga] had burned in '93, so it probably wouldn't burn again," Day



Built to protect firefighters in the event of a blaze, 4/Way House's carport faces Santa Monica Bay and tilts upward, doubling as a movie projection screen.

recalls. "In retrospect, it was a pretty naive way to look at it. It was a slow realization that [a fire threat] would likely be something we'd face at some point in the future."

Deegan Day baked that realization into each element of 4/Way House's design through four rotation strategies, which inspired the project's name. The first rotation is a planimetric rotation approximately 18 degrees off the cardinal north-southeast-west to the southeast, toward the Santa Monica Bay view. The second rotation involves truss configurations that give the house its angular envelope, opening the house toward the view while providing what Day calls a

"faceted fire blanket for the house." The third rotation nods to the carport—a Topanga-required design element to aid firefighters—that tilts 90 degrees upward, doubling as a movie projection screen; and the fourth references an internal ruled-surface rotation that governs much of the cabinetry and the transition between floors, Day explains.

Disaster-proofing also drove the material selection and project orientation. Poured concrete retaining walls support trusses clad in standing-seam RheinZink, effectively fireproofing and rustproofing the exterior volume. "What we're trying to do is set it up so that the house itself, and anyone involved in protecting it, is

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Residential:
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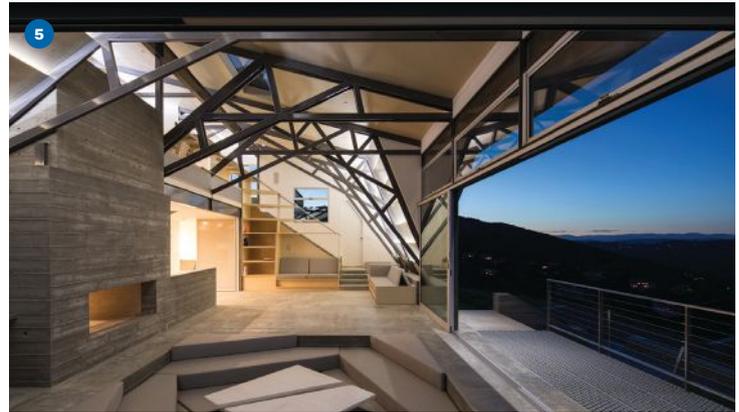
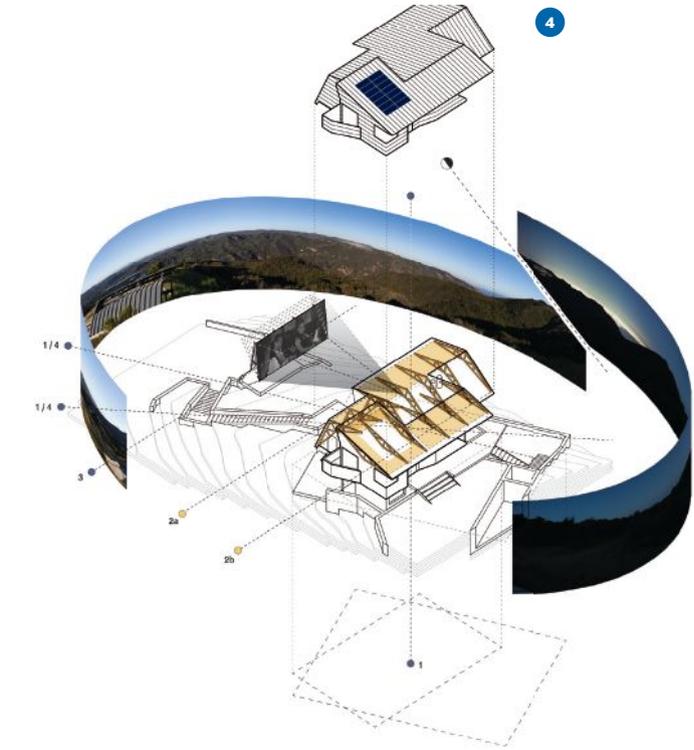
well served by it," Day explains. Sited along a sloping ridge on the property, 4/Way sits below upslope neighbors, positioning the structure as the first line of fire defense for the Skyhawk Lane community. "A lot of the rationale for the house has to do with the idea that now we're the outpost," Day says. "If you can defend our property, you are defending five houses up the street."

The home also provides a unique, almost archaeological snapshot of an architect's evolution and interests. Although the project does contain design moves that Day wouldn't necessarily make again—notably some exposed steel and concrete—it is modular and governed by a rigorous 8-foot grid that stems from the dimensions of the 8x4 birch plywood found inside the project. The house is built "like a big piece of furniture," Day says. The kitchen and dining area flow

into a conversation pit defined by an enormous, waffle-shaped grade beam, and the downstairs bathroom contains an Acorn prison toilet and sink combination unit, pointing to Day's study of prison system architecture.

Today, 4/Way house is "almost complete," Day says. A few finishing touches on landscaping remain, but the project is very much "within its setting," says Taiyo Watanabe, a designer at Deegan Day. "It really does work with its surroundings." Day often thinks about what will happen if those surroundings burn again, hoping that the house works as designed and "wouldn't imperil people to protect it." The more he thinks about it, the more he doubts considering efforts to rebuild. In that case, the concrete and RheinZink husk would remain, eventually becoming an artifact in a different kind of archaeology.





1. Sited along a ridge on the property, the lower floor of 4/Way lies along the hillside to help passively cool the interior. **2.** Fleetwood sliding doors and windows fill the project's interior with ample sunlight and capture views of Santa Monica Bay. **3.** Exposed steel beams are visible from the upper-level bedroom, which looks out over the living spaces below. **4.** A diagram showing the day and night view crescents of the house. **5.** The conversation pit situates itself within the waffle slab foundation. **6.** A section of 4/Way House. **7.** The open-plan kitchen includes custom birch plywood built-ins and cabinetry.

ARCHITECT INTEL



BASKETBALL ARENA'S STAR PLAYERS ARE THE TIMBER CURTAIN WALLS

Locally harvested Douglas fir mass timber beams and timber curtain walls create an undulating Idaho Central Credit Union basketball arena that celebrates the local landscape in Moscow, Idaho.

Rising from undulating topography in

Idaho, a new basketball arena showcases the innovation of long-span mass timber construction and spotlights the local timber heritage through the grand scale of its mass timber beams and timber curtain walls.

"I love this stuff and I can't get enough of it," says Chris Roberts, AIA, associate principal at Opsis Architecture in Portland, Ore., and the architect for the Idaho Central Credit Union basketball arena in Moscow, Idaho.

When many would naturally turn to aluminum for a complicated curtain wall design, Roberts utilized timber curtain walls as part of the University of Idaho's new, more than 4,000-seat Idaho Central Credit Union basketball arena.

Constructed with two million board-feet of timber from the university's forest on Moscow Mountain, the \$51 million building includes 854 mass timber Douglas fir beams and several timber curtain walls that span up to 40 feet tall and up to 150 feet wide.

HOW DOES THE ARENA REPRESENT IDAHO?

Unlike many modern, nondescript sports arenas, Idaho Central Credit Union arena uses form and material to pay unique homage to Idaho's rich forests and the local rolling Palouse hills.

"They wanted the building to mimic the natural landscape as much as possible," says Andrea White, director of architectural sales from Sierra Pacific Windows, the company responsible for the timber curtain wall system. "And part of that is the distinctive wave roof line and following the building's freeform structure. It required a little bit more conversation to make sure that we could design what they wanted to do with the wood."

WHAT'S THE BENEFIT OF WOOD?

Beyond the sustainability appeal of locally-harvested wood and the spectacle of seeing mass timber span such lengths, a timber curtain wall system has other benefits. As part of an active arena, the material's acoustics are important and wood absorbs sound better than smooth aluminum.

Wood curtain walls also offer some flexibility in accommodating electrical, hardware, and ventilation systems, as it's possible to design and route those elements into the wood beams. Plus, mass timber's structural integrity withstands fire because of the char factor—after it chars, it can no longer burn so it's no longer flammable.

WHAT WERE THE CHALLENGES?

As timber curtain walls are still a newer option and unusual for a large building, there is some extra work involved in taking the design feature from drawings into the built form.

"Each project is pretty unique and has its own unique features," White says. "With the curvature of the arena's roof, almost every beam is a different height."

The team at Sierra Pacific Windows carefully created the custom timber curtain walls collaboratively with Opsis Architecture and the project team, and the installer came to the factory where they were working on the timber curtain walls to go over all of the details. "There were a lot of very tedious conversations about how it would come together when they're installing it," says White.

They also had to accommodate for 2 1/2 inches of possible building movement. That engineering challenge was solved by anchoring the top and the bottoms of each wall with pin anchors.

WHY IS IT PARTIALLY HANDCRAFTED?

The massive timber curtain wall construction is partly made by machine and partly handcrafted. There is a small crew at Sierra Pacific Windows who just work on this timber curtain wall product line that has been offered for about 6 years. "It's almost like building hand crafted furniture," White says.

For the arena, White says the beams "were so big that they couldn't go through the equipment, so we have to do the sizing by hand." Still, the company is automating as much as possible, as there is growing interest in timber curtain wall construction.

WHY IS THERE GROWING INTEREST IN TIMBER CURTAIN WALLS?

Following the 2021 International Building Code change that increased the maximum height of mass timber buildings from six stories to 18 stories, there has been a swelling interest in mass timber construction. With that IBC change, the option to use timber for long spans in sports complexes and other large buildings became a more viable and reasonable possibility.

While it took almost 50 years of fundraising and planning to replace the 93-year-old gym at the University of Idaho, the new basketball arena may not have become the same undulating timber showpiece if it had been built earlier. And, as more mass timber buildings are planned, the Idaho Central Credit Union basketball arena demonstrates some of the possibilities of how mass timber curtain walls can be used as a more distinctive choice to encapsulate a building's natural surroundings.

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RUTH YARO

Chicago: A Big City but a Small Town

Architecture critic Lee Bey gives a primer on his hometown's rich history.

As told to Katherine Flynn

Lee Bey has lived in Chicago all his life. He's worn a variety of hats relating to architecture and planning in the city, including a stint in the mayor's office, leading the advocacy group Chicago Central Area Committee, and serving as architecture critic for the Chicago Sun-Times. In 2019, he published Southern Exposure: The Overlooked Architecture of Chicago's South Side, a book of photography. Lee will be serving as keynote host at the AIA Conference on Architecture 2022 in Chicago, and we chatted with him about the rich architectural history of his hometown and what's in store for the city's future.

The Great Fire of 1871 had a big impact on the city's architecture. Chicago shifted from being a wooden city to being one of brick and stone and terra cotta; the latter was an inexpensive way to clad a building to be more beautiful and more fireproof at the same time. So, you have this emerging city on the prairie, which is looking to Europe and Rome and Greece for architectural

inspiration. An affordable way to emulate those cities was to cast decorative pieces in terra cotta and apply them to buildings—everything from lions to gargoyles to columns. It fit the need to make a fireproof city, but also a beautiful city.

The Chicago of my youth was one that was in transition. There was white flight; people were leaving the city. African Americans who had been crowded into neighborhoods south of downtown were beginning to expand throughout the city. In this century, the Black population is beginning to leave, looking for jobs and opportunities elsewhere. The promise that drew African Americans during the Great Migration is, in many cases, unfulfilled, and architecture and urban planning played a role. We built housing projects instead of decent homes; in the 1980s and '90s, we left schools for these communities in horrible condition. Certainly, Chicago's downtown has improved significantly in my lifetime. I will say that, as a city, we

appreciate what architects and urban planners and engineers have done to improve Chicago, and the critical role that architects played in developing the city. There is a push now to invest in the neighborhoods on the South and West Sides, because Chicago's claim to be a world-class city is an incomplete claim if we're not taking care of the communities in those neighborhoods.

For A'22 visitors to Chicago, they're coming at the best time of the year. Chicago comes alive in the summertime. Walk around downtown, see the lakefront. If you can get a car, get out into the neighborhoods, particularly some of the South Side neighborhoods that may not be in the radar for many people—places like Hyde Park and Beverly and historic Pullman where I live. See the diversity of Ukrainian Village and Rogers Park; experience the restaurants. Chicago is a big city, but it's also a small town—everyone knows everyone. **AIA**

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Chicago's Must-See National Monument

By Katherine Flynn

While you're in Chicago for the 2022 Conference on Architecture, be sure to check out one of the most architecturally rich spots in the city—and in a town as renowned for great design as Chicago, that's no small feat.

Pullman National Monument was designated by President Barack Obama on February 19, 2015, making it the first National Park Service unit in Chicago. Located in what is now known as the historic Pullman neighborhood, the site is where engineer and industrialist George Mortimer Pullman manufactured his Pullman luxury passenger train cars, first developed in 1864, and founded a company town for the workers who built them. The Pullman Company exclusively hired African American men to

staff the Pullman cars, and the Pullman Porters were well known and respected, providing elite service. During the historic 1894 Pullman Strike, workers protested Pullman's decision to cut jobs and wages while increasing working hours for remaining employees. The strike, which impacted rail travel all the way to the Pacific coast and caused a blockade of federal mail, spurred President Grover Cleveland and congress to designate Labor Day as a federal holiday.

Today, Pullman National Monument is an important historical asset that preserves African American labor history and demonstrates one way in which it is inextricably linked with the history of the U.S. itself. **AIA**



Sleeping Beauties: Chicago's Adaptive Reuse

A wave of community-focused resurrections of former neighborhood anchors seeks to heal community—and architectural—neglect.

By Patrick Sisson

The Laramie State Bank Building, in Chicago's Austin neighborhood, strikes an alluring profile on the corner of Chicago

and Laramie avenues. A hulking, concrete box built in 1928 with ornate exterior terra cotta, it's one of the city's rare examples

of Egyptian Revival design. Architect Katherine Darnstadt, AIA—whose firm Latent Design is working on a \$37.5 million,



The Pioneer Bank & Trust Building in Chicago's Humboldt Park neighborhood is being redeveloped as a community hub and cultural center.

city-supported adaptive reuse project seeking to re-envision the structure—says the enormity of the landmarked space, with the double-height banking hall and interior columns, makes it one of a kind.

“It communicated power, finance, and trust, announcing that, ‘Yes, we are an important place,’” Darnstadt says. “What we found interesting about the project was the idea of bringing it back to that sense as much as possible.”

That’s no easy task after decades of disinvestment in both the building and the surrounding neighborhood. After short stints as a banquet hall and other temporary reuses, the building was foreclosed on in 2012, and the Austin neighborhood has seen its population plunge nearly 20% in the past two decades following economic and social disinvestment. Darnstadt describes entering the building as exploring a cave, with so much water damage from poor maintenance that she expected a stalactite to fall from the deteriorating

plaster ceiling. The excitement she feels for this project, part of a larger vision to create a “Soul City Corridor” featuring a blues museum and affordable housing, is palpable, with permitting expected to be complete by the end of the year.

“Honestly, it’s the dollars; it’s showing the city [is] investing in these areas,” Darnstadt says. “[It’s] a stark contrast to the previous administration, which focused on the central business district. Every component of it ties into a neighborhood strategy, instead of a single building reuse strategy.”

When Maurice Cox, commissioner of the city’s Department of Planning and Development, was discussing the city’s new Invest South/West Initiative, he described these buildings as “sleeping beauties”: buildings on formerly active commercial corridors that loomed large in people’s minds and just needed someone to reactivate them. The initiative is a \$1.4 billion 10-neighborhood vision to find community-oriented catalyzing

developments in oft-overlooked neighborhood corridors, including the Laramie State Bank Building.

The projects that Darnstadt and others have embarked on or will embark on—revitalizing the modern skeletons of once-vital community and economic infrastructure—highlight the potential of adaptive reuse not just to bring a classic building back to life but to heal a void in one of the city’s disinvested neighborhoods. Often, these projects can be completed with a speed and more economical cost that make them a key part of larger development strategies. It’s a running theme both across the nation and especially in Chicago: The resurrection of the South Side Pullman neighborhood, a worker’s village erected by railroad magnate George Mortimer Pullman, has become a national monument and magnet for millions in economic development. The continuing art and preservation work of local artist and professor R. Theaster Gates, whose Rebuild Foundation has

“What I’ve found with adaptive reuse, especially for communities of color, is that these buildings have generations of memories.”

created cultural and community hubs in the city’s Grand Crossing neighborhood, dovetails with the recent news that one of the city’s postmodern gems, the spaceship-like James R. Thompson Center, will be spared the wrecking ball and transformed via a \$280 million restoration into a new vital downtown destination with its soaring atrium intact.

Part of the reason Chicago has so many of these projects is the age of the building stock, especially compared with cities farther west, says architect Matt Nardella, AIA, whose firm, Moss Design, recently redeveloped a bank in the city’s Northwest Side. Older Chicago buildings also offer the unique potential of transit-oriented development ordinances and the city’s fairly suburban zoning ordinance. In 2020, the city was leading the nation in the number of adaptive reuse housing projects that were underway.

“Many of the buildings we do adaptive reuse projects with couldn’t be built as they are today,” Nardella says. By utilizing adaptive reuse’s potential for the Northwest Side bank redevelopment plan, which turned the triangular site into apartments and ground-level commercial space with a brewery and coffee shop, Moss Design was able to do a Flatiron-style building without having to provide the standard 20 parking spaces. “The last thing we want to see is a good building be demolished,” he says.

The Invest South/West projects underscore just how powerful the past can be, and how potent the narrative of rebirth can become. Juan Moreno, AIA, whose firm, JGMA, will be part of an Invest South/West project in the Humboldt Park neighborhood—the \$53.9 million overhaul of the Pioneer Bank & Trust building into a community hub and cultural center—says these vacant structures stand as vivid reminders of both financial abandonment and neglect.

“What I’ve found with adaptive reuse, especially for communities of color, is that these buildings have generations of memories,” he says. “When they sit

empty, it’s like an open wound. Oftentimes, especially in these working-class neighborhoods, I run into families that have worked on the construction of the buildings. When we bring them back to life, there’s an inherent joy. History is a great launching pad for contemporary work.”

Larry Kearns, FAIA, of Chicago’s Wheeler Kearns Architects, helped redesign the Community Bank of Lawndale, a 1982 structure that was the first Black-owned bank in the neighborhood. The bank is now a headquarters for the North Lawndale Employment Network, which operates a number of social enterprises and job training programs. He sees rescuing these stranded assets as vital to larger missions of community empowerment. Once the headquarters of Sears, which left in 1972 for the city’s Loop business district, the neighborhood has suffered through disinvestment and has been “crippled” by vacant lots, says Kearns. The reopening of the building last September helped provide a new gathering space and employment center.

Along with the challenges to find funding, and the right vision, for such significant overhauls, there are also the design difficulties of converting grand structures built in an era with very different ideas of space. Moreno’s vision for the Pioneer Bank, including rows of vibrant vertical louvers, a signature element of JGMA’s work, preserves the interior core of the bank and reimagns the soaring banking hall as a vibrant marketplace to showcase the entrepreneurship and energy of local Latinx entrepreneurs.

Dealing with these big volumes causes inherently challenging layouts, says Darnstadt. The reuse plan involves turning the banking hall footprint of the Laramie Bank building into a multiuse space with a cafe and museum and turning the upper-floor banker’s hall into a shared office and coworking space. Providing these spaces will make a place for the kinds of supportive services small businesses need to thrive and grow.

“Why should you bank outside of your neighborhood?” she says. “It’s about bringing financial institutions back to the corridors, so the dollars invested there stay in the corridors.”

Moreno’s work on the Pioneer Bank, which involves not only retrofitting the interior of the building but also incorporating a vacant lot alongside it, will contain an array of typologies and community assets, including affordable housing, a new public library, and even

a future office for JGMA. There’s the sense not just that these parts will play off each other and magnify their impact but also that they will help showcase the rich diversity of the neighborhood, once a Scandinavian enclave that became a Puerto Rican stronghold and now contains a vibrant, diverse Latinx populace.

“It’s all meant to feel part of one,” says Moreno, whose firm’s work includes other reuse projects, including the transformation of a big box store into a prep school. “It’s so refreshing with this initiative that design excellence needs to play a role. For the city to recognize design’s power in a process for uplifting and healing, that’s cool. It’s not just about bringing any developer in to do marginal work. It has to be catalytic.”

Other ongoing or in-process adaptive reuse plans focus on providing more job resources to the community. On the city’s Southwest Side, Blue Tin Productions, an immigrant- and women-led clothing collective, is crowdfunding \$2 million to build a new community center and manufacturing site, to be called 63rd House. By reusing an 11,250-square-foot post office and turning it into a center for sustainable manufacturing and an array of neighborhood services, the collective seeks to create a building and business model that can be replicated across the globe.

Architects from renowned Chicago-based firm Studio Gang have focused on two design pillars in their work on Blue Tin Productions: the concept of micro urbanism—the idea that small interventions having a multiplier effect across the surrounding neighborhood—and rethinking what a work site looks like, favoring a light-filled, airy interior that stands in stark contrast to the dark, dank factory and warehouse space.

Darnstadt sees her work on the Laramie project as an integral part of her practice, now and in the future. Boombox, her pop-up retail project, sited a mobile storefront along this corridor, and she sees herself working in the neighborhood for decades to come. It’s a reflection of the power of re-energizing landmarks and how a thoughtful redesign can create a reverse domino effect, restoring activity along the corridor instead of slowly removing the vibrancy from the block.

“It feels like a nice arc of the story, to hear the work community groups have focused on for decades is coming to fruition,” she said. “We’ll see new buildings, new trees, and new life, everything this neighborhood should have had if it was given the same priority as others.” **AIA**



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Chicago's Native Housing Problem

A new development seeks to address the issue of Native American housing equity in Chicago.

By Annie Howard

In Chicago's Horner Park, a grassy, multitiered earthen mound covered in unkempt, newly planted native grasses rises above the banks of the Chicago River.

The mound, which will be completed in 2023 and currently hides behind a temporary protective fence, is one of two Native mounds—along with its sibling mound, located 10 miles west in Schiller Woods—that have been erected on the North American continent in five centuries. As part of 4000N, a community-led proposal for an interpretive learning and recreation area, the mounds will serve as waypoints for pedestrians interested in learning more about the history of the communities between two of Chicago's landmark rivers.

Less than a mile from Horner Park, another landmark structure is set to begin construction in the coming years: Chicago's first purpose-built Native housing complex. While the building is still in the early financing stage, its organizers are moving forward with a vision for a mixed-use housing complex in the Albany Park neighborhood, which is itself a short distance from the American Indian Center—the nation's first urban Indian community site, first opened in 1953.

The density of Native activity in Chicago, and especially in the smaller geography of the city's North and Northwest Sides, has made the city a vital site of Indigenous activism over the past 75 years. At various points across the centurieslong colonization of the United States, Chicago's Native population dwindled for many years to just a few dozen people after the area served as tribal homelands of the Ojibwe, Odawa, Potawatomi, Miami, Ho-Chunk, Menominee, Sac, Fox, Kickapoo, and Illinois Nations peoples for millennia. Now, these contemporary projects enact generations of Native resistance, coinciding with the 50-year anniversary of the Chicago Indian Village movement, a series of actions that protested poor housing conditions in the city. Taken together, the three projects open a new chapter in Indigenous adaptation and resistance to colonization, a story whose unfolding has grown in urgency in recent years.

Building New Native Housing

For contemporary Indigenous activists and organizers, the need to secure better housing for Native peoples has only grown more acute. There are an estimated 22,000 Native people residing in the city of Chicago and more than 65,000 in the Chicagoland area, representing over 150 tribal nations. The stress of housing insecurity has proved a persistent problem for Native Chicagoans. According to a report produced by the Institute for Research on Race and Public Policy, approximately half of American Indian/Alaska Native households in the city are rent burdened (paying more than 30% of their income on housing). Census data also found that AI/AN people were more than six times more likely than white people to be living in emergency shelters, suggesting the incredible toll of housing instability on the community.

For Pamala Silas, these figures have been a personal motivator in her work in the housing field. After eight years as the executive director of Metropolitan Tenants Organization, which helps Chicago tenants organize against unsafe housing conditions and landlord retaliation, she also led the National American Indian Housing Council, which serves as the housing authority for tribal lands. While the Housing Council is able to leverage funding for tribal housing because of a density of Native peoples in one place, the relative smallness of urban Native populations has made it difficult for urban Natives to find adequate housing resources.

"When I came back from NAIHC, I was revved up to do more urban housing, because so many tribes use the leverage of members on tribal lands, even though the majority don't even live there," says Silas, an enrolled member of the Menominee Tribe of Wisconsin and a descendant of the Oneida Tribe of Wisconsin. "How are those resources translating to support Indigenous people elsewhere?"

Today, Silas chairs the board of Visionary Ventures, the organization working to create a new housing project in Albany Park. Together with its executive director and president Shelly Tucciarelli, and in collaboration with existing nonprofit

housing developer Full Circle Communities, the organization has submitted plans for a project that will offer a mix of unit types, allowing for families to live alongside seniors. Significantly, the building will include a top-floor community space to allow for intertribal gatherings, as well as a 3,500-square-foot ground-floor commercial space that Visionary Ventures hopes to rent to an Indigenous-led business, further enriching opportunities for meaningful communal ties to build within a single space.

"It's often taught that we're no longer here, but the Native American community in Chicago is vibrant, and we want access and acknowledgment, just like everyone else," says Tucciarelli, a tribal member of the Oneida Nation of Wisconsin. "Forty-five units doesn't even touch the need that we have, but it's a start."

Fighting Slum Conditions

All of the activity surrounding Visionary Ventures points to the longstanding issues that Native peoples have experienced in finding adequate housing in Chicago, as well as the centurieslong land dispossession that has largely erased countless generations of tribal ties to the region. More recently, promises made by the federal government to Native peoples encouraged to leave tribal lands remain unfulfilled. Visionary Ventures has pointed to this longstanding history in its promotional materials, recognizing the deeper lineage of its project.

In 1835, 5,000 Chippewa, Ottawa, and Potawatomi Indians gathered in Chicago. After collecting cash payments promised as part of the 1833 Treaty of Chicago, which ceded significant lands in present-day Wisconsin and Illinois, the tribes conducted the last recorded war dance in the city. For the remainder of the 19th century, census data records fewer than 100 Natives present within city limits, with just 90 American Indians recorded as city residents by 1900.

But over the course of the 20th century, the city's native population gradually expanded. Chicago's native population jumped in the mid-20th century as the Indian Relocation Act of 1956 attempted

CANOPY ARCHITECTS



The first purpose-built Native housing complex in Chicago is being designed by Canopy, an architecture and design firm based in the city.

to eradicate Native cultures on tribal lands by forcing Indigenous peoples to assimilate into urban areas. The city's Native population grew from 775 in 1950 to 3,344 in 1960, then nearly doubled to 6,575 in 1970. In Chicago, the growing Native population led to the opening of the American Indian Center in Uptown in 1953, the nation's first urban Native community space, which today remains a critical hub

for Indigenous activities.

Ironically, the goal of assimilating Native peoples into cities helped create the conditions for pan-Indian unity and foster a burgeoning "Red Power" movement in the late 1960s and early 1970s that grew alongside other radical movements of the era. Starting in November 1969, the most well-known Red Power demonstration was the 19-month occupation of Alcatraz Island,

led by an intertribal group called Indians of All Tribes, inspiring similar demonstrations across the country. In Chicago, Red Power activism took its most visible form in the Chicago Indian Village demonstrations from 1970 to 1972.

CIV was founded by Carol Warrington, a mother of six who was living in slum conditions in Uptown, at the time the city's most diverse—and impoverished—community. Warrington began a rent strike in response to her landlord's refusal to make repairs, which led to her and her children's eviction. Understanding that she would never find adequate housing conditions amidst the impoverishment of Chicago's Native residents, who were given false promises of abundant opportunities if they relocated to the Windy City, she and others began an encampment outside Wrigley Field, the first of several occupations over the next two years.

Mona Susan Power was between 8 and 10 years old when the Village movement was in effect. Her mother, Susan Power, was heavily involved in CIV organizing, often providing more stable shelter, in her South Side bungalow, to others who had been living in the encampments. Mona Susan Power, today a writer based in the Twin Cities, recalls how much the Bureau of Indians misrepresented the housing

The housing complex will include apartments, social services and space for Native cultural practices.



conditions Natives could expect, one of many false impressions given by the government during this period.

“If the Bureau of Indian Affairs came to the reservation on business, they’d bring a stack of these pamphlets, which basically said, ‘Take a look at this, there [are] all these opportunities in Chicago, lucky you to move to the city,’” Power says. “And then you’d arrive and the reality was nothing even close to what they promised people.”

Much of CIV’s emphasis was housing-related, especially the poor quality of housing that was available to Native renters. While city, state, and federal officials tried to end the occupations by

promising to house dozens of protesters, the encampments pushed on, knowing that they’d be placed in the same substandard units. In a telegram sent to politicians like Chicago Mayor Richard J. Daley and U.S. President Richard Nixon, the movement made its intentions explicit:

“The American Indians of Chicago, do, on this date, May 12, 1970, declare war on the slum conditions in and near the Uptown area. We demand that the state legislature and the city council enact and enforce meaningful legislation to force slum landlords to repair their buildings.”

Power, who appears in a 1979 documentary made about CIV, recalls the

turbulence of these actions. While she reflects fondly on the community spirit that sustained the demonstrations, she also recalls the pain and anguish that families faced dealing with unstable and unhealthy housing, and the wider sense of apathy the movement faced in fighting for a place in the city.

“The people who were committed to CIV were in it with our whole hearts because [we had] walked away from these slum conditions and were living in the encampments. ‘They’d invested everything into it, and it was heartbreaking that people couldn’t understand what we were fighting for.’ **AIA**

AIA PERSPECTIVE

A Solid Place to Stand

To change the world, we need to open the profession.

By Dan Hart, FAIA, 2022 AIA President

Archimedes once said, “Give me a long enough lever and a place to stand, and I will move the earth.”

It’s graduation season, and I’m thrilled to congratulate and welcome the architecture class of 2022 to what is next.

Graduates from all fields tend to emerge from school believing they can change the world. For the class of 2022, especially, there is much in the world that needs changing. They have completed their studies in the midst of a global pandemic. They understand as well as anyone how quickly the world can change—for better and for worse. Design thinking, the heart of an architecture education, is a considerable lever.

Architects, through design, positively change the world community by community. It is central to our social contract: We shape the built environment for health, safety, and well-being.

AIA is striving to make the profession a solid place to stand for the current and next generations of architects. Historically, we have left much room for improvement, especially for women and people of color.

NCARB’s latest By the Numbers report sets out some disappointing, if improving, statistics. In 2020, the proportion of individuals completing the Architectural

Experience Program who identified as non-white or Hispanic reached 43%. That’s a record high and a 16-point increase over the past decade. However, the improvement is uneven—coming mostly from the Asian and Hispanic or Latino populations, leaving African Americans and other underrepresented groups behind. As NCARB puts it, “The proportion of African American candidates in the profession has seen little change over the past decade and continues to be underrepresented when compared to the U.S. Census data.”

AIA is committed to doing better. We’re working to introduce the profession to K-12 students—issuing updated lesson guides and other tools for educators, parents, and pupils. Our popular Build the Block game for middle and high school students is now web-based and available to chapters to incorporate into their local K-12 initiatives.

At the college level, we’re focused on strengthening community college pathways and supporting talented students through scholarship programs that are achieving record levels of support. A highlight is the 2021 Diversity Advancement Scholarship, which was awarded to 12 students entering architecture school. Each of the students will receive \$4,000 per year toward

tuition for the next five years, totaling \$20,000 each.

Last summer, AIA welcomed six students from Historically Black Colleges and Universities to serve as paid interns for the renovation of our national headquarters building. Virtually embedded with the design team, these students gained real-world experience while offering invaluable insights into designing a post-COVID workplace of the future. A toolkit we’re releasing will guide firms in developing their own inclusive internship programs.

At the organizational level, we completed two major audits of AIA National’s overall governance structure and Honors & Awards processes, and we will be working in 2022 toward implementing best practices to break down barriers to participation and recognition.

We have a long way to go, of course. But I’m encouraged that the steps we’re taking now will bear fruit. Because equity, diversity, and inclusion aren’t just goals. They are requirements—indispensable to achieving the profession’s earth-changing potential.

There’s a lot of untapped talent out there that deserves a chance to make an impact. To change the world, let’s make the architecture profession a solid place to stand. **AIA**



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aiaa

Congratulations to the winners of the 2022 AIA Awards!

This cohort has shown grit, innovation, resourcefulness, teamwork, imagination, and empathy in the face of an ongoing pandemic, climate crisis, systemic racism, economic inequality, and other wicked problems. In the following pages, learn more about the designers who are looking for solutions and pushing the profession to be better.

awards



> To see extended versions of these Q+As, visit bit.ly/ARaia22.

brooks

seamless



GOLD MEDAL

Lawrence Scarpa, FAIA, and Angela Brooks, FAIA, are the co-founders of their namesake, Hawthorne, Calif.-based firm Brooks + Scarpa. In more than three decades of practice, Brooks and Scarpa have led the profession with sustainable design and elegant affordable housing solutions. Their win marks the second time that AIA has awarded its Gold Medal to a pair of individuals.

photo by
AMANDA FRIEDMAN



Pictured: Lawrence Scarpa
and Angela Brooks

What's the best way to describe the personality of your practice?

Obsessive, compassionate, caring, determined. We operate a bit like a family where everyone's opinion matters and everyone is cared for and everyone knows just about everything in the office. Nonetheless, we treat business and practice seriously, work hard, have fun, and strive to do the best that we can.

What's the best way to describe your approach to architecture?

That it is a sequence of spaces and not a form; we design from the inside out. Form is important, but it is experience that matters. One can recall a special place from childhood, or even more recently; when you think of it, it's very clear in your memory, but when visiting it, the place often looks very different than you remember even though the memory is fresh like it was yesterday. We try to leave something behind, whether there is a form there or not, something ingrained in one's memory that lasts even when the visual image fades.

What project from your firm best illustrates that approach?

The next one.

What projects are you most drawn to?

Those that ask for good design, whether it be a building, a park bench, a guideline for future development, or a zoning code. We are always looking to challenge ourselves and take on new projects whether they be schools, affordable housing, custom homes, offices, or any other project type. We tried to follow ideas where we think design can matter and make a difference.

What inspires your work and advocacy on housing, particularly affordable housing, in the U.S.?

Everybody wants to have purpose, and we believe that having purpose enhances art, so while we are interested in making art, we are more interested in making art with purpose. People and affordable housing need good design the most. We believe that good design and being disadvantaged are not mutually

exclusive and that everyone deserves good design, quality of place, and dignity. We strive to provide all of that in the context of making art for people. Art that they can live in.

What is the greatest challenge facing architects today?

Being irrelevant. Society needs the talent of architects. Oftentimes, it is others—lawyers, and professionals without the design experience—that shape our urban fabric. Architects need to be more involved in the processes that impact our built environment such as politics, planning, government, and running for elected office. The profession is large and complex now unlike how it was five decades ago, and we need people who are specialists. There is plenty of room in society for us as designers to be game-changers.

What is your greatest fear?

Plagiarizing ourselves.

Which talent would you most like to have?

The ability to create like an artist. There are so many artists we admire that work so freely. It seems that architects can sometimes be mired in the functionality and technical aspects of a building. We would love to be able to work more like a sculptor.

What do you hope your legacy will be?

That what we did mattered, made society a better place, and left our planet better than when we got here. That we were relentless in our pursuit of creating great spaces for people to live and work that had a positive impact on their lives and left a good memory of the place.

The Six Affordable Veteran Housing in Los Angeles by Brooks + Scarpa is a 2020 AIA COTE Top Ten Award winner that provides permanent supportive housing for formerly unsheltered veterans.





TARA WUJCIK

MASS DES



Above (left to right): Anton Larsen, Alan Ricks, Sierra Bainbridge, Jha D Amazi, Jean Paul Sebuyayi Uwase, Amie Shao, David Saladik, Matt Smith, Patricia Gruits, Peter Torrebiarte, Caitlin Taylor, Michael Murphy, Regina Chen, Adam Saltzman

ICM GROUP



photos by TONY LUONG

ARCHITECTURE FIRM AWARD

With an international team of more than 250 members—architects, landscape architects, furniture designers, makers, builders, writers, filmmakers, and researchers—the Boston- and Kigali, Rwanda-based MASS Design Group has raised the bar for innovation, equity, justice, and purpose in design. Founded in 2008, the nonprofit practice has been recognized with the highest honor AIA bestows on a firm.

What is the firm's greatest achievement?

The first, longest, and biggest project at MASS is the design of our practice. It was always our hope to create a place for people to build careers doing mission-based work, and we are proud to be building the largest, most diverse nonprofit architecture and design firm in the world.

What led to the founding of the firm?

MASS's story began through the shared commitments of doctors, architects, and policymakers in Boston and Rwanda to leverage the power of design to bring health and wellness resources to underserved communities. When co-founding principal Michael Murphy met the late Dr. Paul Farmer—the legendary doctor and public health leader—of Partners In Health, he learned how the construction of hospitals could have mixed results on patient health. He asked himself, what more important role could architects play than contributing directly to the design of hospitals and buildings that participated in the healing of patients? Michael and the early MASS team had the chance to accompany Dr. Farmer and the Rwanda Ministry of Health to design the Butaro District Hospital in Northern Rwanda. We employed simple, elegant systems to design for health, such as outdoor corridors to prevent the spread of infection, or passive ventilation within the wards, and beds that gave patients a view of the beautiful landscape. This formative partnership and work shaped MASS's philosophy of practice, and their influence is still felt today in all our projects and partnerships.



Below (left to right): Rosie Goldrick, Chris Kroner, Katie Swenson, Joseph Kunkel, Jonathan Evans, Sarah Mohland, Julia Rhoad, Christian Benimana, Ashley Marsh, Justin Brown



What struggles does a nonprofit firm specifically need to overcome?

First, we are accountable to demonstrate how each of our actions advances the mission of the organization. Second, we are accountable to a board of directors who shepherd the policy and financial commitments of the firm to this end. Third, we leverage philanthropic support in service to our partners and our mission, which allows us to engage in critical research and deliver design and community engagement to partners, who may have never built before, or don't yet have access to the capital required but have a specific goal for social impact.

What has been one of the firm's most rewarding collaborations?

In early 2015, the Equal Justice Initiative released a report tracing the history of lynching across 12 states between 1877 and 1950 in the most comprehensive investigation to date. Shocked by this research of a history that had gone undocumented for decades, MASS reached out to offer partnership to the Equal Justice Initiative, first through a community-engaged soil collection project and ultimately in the design and construction of the National Memorial for Peace and Justice [completed in 2018], the first permanent memorial to lynching in the U.S. In Montgomery, Ala., a city where markers commemorating the Confederate South still abound and markers to the civil rights movement and slavery are few, the memorial provides a necessary space for truth-telling, hope, healing, and reconciliation.

RIDING THE



WHITNEY M. YOUNG JR. AWARD

Created in 2007, when the United States had just 175 registered Black female architects, Riding the Vortex has been instrumental in growing that number to over 500 practitioners. Here, the group's founders—Katherine Williams, AIA; Kathryn Tyler Prigmore, FAIA; Kathy Denise Dixon, FAIA; and Melissa R. Daniel, ASSOC. AIA—share their perspectives on the profession.

INTERVIEW

photo by
CHRISTIAN
CARTER-ROSS

What makes the issue of diversity so important in architecture?

Prigmore: Issues are discrete items that can be described and resolved so that they never need to be addressed again. Diversity is not an issue. However it is defined, it is never something that will go away because every human is different. That the practice and discipline of architecture is perceived and practiced by almost all from a Eurocentric perspective is an issue that can be resolved, although it will take time. *William:* If buildings, communities, and cities are all designed from the same starting point philosophically, culturally, and intellectually, we end up with places that look the same. They don't accommodate a mix of personalities, ways of thought, ways of living, or ways of use. Blandness begets blandness. Most people want vibrancy, surprises, and liveliness. You get that only when diverse voices contribute to solutions. *Dixon:* Architecture is about experience, function, and beauty characteristics that everyone has an opportunity to experience. When only a small portion of the population is creating these experiences for everyone, the whole of society is significantly diminished regarding the range of cultural and social experience.

What is your approach to architecture?

Dixon: Successful architecture is about listening to the client's needs, embracing their vision, and reaching their goals. Our task as architects is to relay the needs, vision, and goals into the appropriate process and environment needed to achieve them.

What is the greatest challenge right now in the field?

Prigmore: Fire drill syndrome or focus on the short game; architects not promoting the importance of architecture to clients; and deprofessionalization of architecture programs.

Daniel: Continuing our complacency in social norms.

William: Architects not demanding their worth in job commissions. Firms can't pay staff adequately if they continue to undervalue or underbudget what it actually costs to complete a job.

Dixon: Equity is still a huge hurdle for the profession to surmount. Until there are significant increases in the numbers of minority architects and a return to minority-owned firms contributing to the built environment, we will not see the level of expression that we as a society are capable of.

What is the most promising recent development?

Dixon: The significant rise in the number of licensed African American women architects over the past decade is an encouraging development and we are hopeful that the numbers will increase to include Black men, Latino and Hispanic architects, and other underrepresented minorities.

What's one question you wish we had asked?

Prigmore: Why did you remain an architect when you encountered (and continue to encounter) so many barriers? My parents taught me decades ago what Michelle Obama has been quoted as saying, "Success isn't about how much money you make, it's about the difference you make in people's lives." I remain in architecture and am a Vortex Collaborator so others can have someone's shoulders to stand on.

What would you have been if not an architect?

Prigmore: Astrophysicist.

William: Writer and industrial designer.

Daniel: A reality star.

Dixon: In high school, I was good at computers (the only girl in the high school computer club, I think) and I applied to college as a systems analyst major and an architecture major.

Pictured here (left to right): Katherine Williams, Kathryn Tyler Prigmore, Kathy Denise Dixon, and Melissa R. Daniel

Deborah



AIA/ACSA TOPAZ MEDALLION FOR ARCHITECTURAL EDUCATION

The illustrious teaching career of Deborah Berke, FAIA—currently dean at the Yale School of Architecture—is informed by more than 40 years of professional practice and experience as an educator. First a built environment instructor for Brooklyn elementary school students, Berke also created a program for high schoolers at the Institute for Architecture and Urban Studies in New York, putting into action a core belief: Architecture and urban education should be broadly accessible public benefits so that people have a sense of engagement in and ownership of where they live.

photo by
WINNIE AU

Berke

What is the most memorable moment of your teaching career?

Teaching has been a continuously rewarding part of my career. I get the same fulfillment today teaching an advanced studio at Yale as I did working with high school students at the IUAS 40 years ago. Students renew one's faith in architecture. I love helping students uncover, discover, and develop their own talents.

What is your teaching style?

I try to help students find their own voices as designers. I'm not looking for a band of acolytes.

What, if anything, has changed about your style over the years?

I'm a much less nervous teacher, for one! More importantly though, I can point students to a much deeper breadth of examples, from within architecture and beyond, as well as precedents. Certainly, my view is more global and less based on the Eurocentric examples from my own education than it was when I first started teaching.

What has your scholarship revealed about the issues of diversity and equity in architecture?

The lack of diversity in architecture is well-known and well-documented. I have done everything I can to reach out to people, both groups and individuals, that architecture schools haven't typically engaged, through initiatives

like forming partnerships with HBCUs (and other majority-minority institutions) as well as increasing the amount of financial aid that is available. The work is ongoing and, while I am proud to say we have made meaningful progress on this front at Yale, there remains a lot of work to be done—in schools and in the profession. That progress must be sustained and advanced.

What is the most unfortunate reality about architectural education today?

Cost. It alone is discouraging to anyone with the talent and interest in becoming an architect—that your salary at your first job out of school will not be enough to allow you to pay off your loans. The cost of architectural education is a huge barrier to addressing the diversity and equity issues in the field.

What is the most promising aspect?

The breadth of the interests of students and their commitment to addressing sustainability, particularly the climate crisis.

What does winning the Topaz Medallion mean to you?

It's profoundly meaningful to me as an acknowledgement of over 40 years of work teaching architecture and sharing my passion for design as a discipline in context with other fields. I have always tried to teach architecture in a way that engages art, science, social sciences, and, most importantly, people.

UNIFIED TASK

photo by
MATT CARR

COLLABORATIVE ACHIEVEMENT

At the onset of the COVID-19 pandemic, AIA New York and AIA New York State joined forces to form the Unified Task Force, responding to an urgent call from the governor's office for assistance from design professionals. The task force collaborated with local governments, organizations, and businesses, as well as identifying more than 1,000 buildings statewide that could expand the capacity of overflowing hospitals.





Above (left to right): Timothy G. Boyland, Jessica Sheridan, Damyanti Radheshwar, Joseph Corbin, Gretchen Bank, Michael K. Chen, Willy L. Zambrano

What is the Unified Task Force's approach to architecture and design, especially in an emergency?

In many ways, the work of the Unified Task Force was to reconsider what we as architects mean by "good design," reassessing the concept through the lenses of health, safety, and welfare. Our efforts were largely focused on what this meant in terms of health facilities, schools, restaurants, small businesses, the public realm, and residential buildings.

The Unified Task Force, composed of member volunteers throughout the state and staff members from AIA New York and AIA New York State, was created in the early days of the pandemic under a rapid-response structure, with volunteers coordinated through a central chain of AIANY staff. The task force met regularly to provide updates on initiatives, ranging from requests from state and local government officials to help identify buildings for conversion to emergency health facilities to developing and sharing designs for outdoor dining structures.

What United Task Force projects have been the most impactful?

We consider the collective action approach that the Unified Task Force developed to collaborate with multiple organizations and seamlessly integrate with existing support networks as its greatest and most replicable achievement. In addition, the work of the task force opened doors for architects to change the mindsets of policymakers and influence policy directly, ultimately allowing our organizations to build stronger, mutually advantageous relationships with local and state governments.

Specific policy impacts of the task force include supporting the creation and implementation of the Open Streets program; co-founding the Design Corps to support restaurants in financial need with their outdoor dining structures; providing architectural advice in the drafting of a new law to convert empty hotel space into supportive housing; and collaborating with the New York City Department of Small Business Services to help businesses adapt their workspaces to address health concerns.

What has the task force learned about the art of collaboration in architecture?

Architects can be a tool for change when we recognize our innate ability to convene government bodies, designers, and community stakeholders together. Rather than waiting to get a seat at the table, the task force taught us that architects need to take part in setting the table, proactively assembling like-minded groups and stepping up to develop solutions.

UNIV. OF ARKANSAS

COMMUNITY DESIGN CENTER

What's the University of Arkansas Community Design Center's approach to architecture and design?

Our approach can be best characterized as platforms and projects. Because our work is focused on public interest challenges known as “wicked problems,” we have used design to develop eight platforms that triangulate policy, technologies (social and technical), and design. The eight platforms frame project development in areas like watershed urbanism, housing ladders, agricultural urbanism, context-sensitive streets, development-oriented transit, low-impact development (ecological-based stormwater management), arboreal urbanism, and big box urbanism.

These platforms provide a framework for assuming long-term leadership in shaping what we call the “grammar of context production,” or the design of building complexes, streets, infrastructure, riparian corridors, neighborhoods, landscapes, resource commons like food, cities, and other categories of the topographic

arts beyond the discrete project. These are the building blocks of the city as ecology, requiring design vocabularies and methodologies that differ from designing for “tame problems” like buildings and gardens. To qualify, neither type of problem entails more design innovation than the other; rather, the terms of discovery and innovation are different. A good analogy is the difference between public health and doctoring for the individual, though both are based on modern medicine.

What have you learned over the years about the art of collaboration in architecture?

Design education gives us the tools to build bridges not only among various kinds of logics and disciplines but also between experts and publics.

We are also committed to meta-disciplinary approaches in collaboration where each participating discipline internalizes the imaginaries and methodologies of the others, changing their own DNAs. True collaboration entails a deep intellectual

commitment and is not simply a casual rubbing of elbows. Remember, as American essayist and critic Louis Menand contends, successful interdisciplinary collaboration never undoes a discipline but functions as its force multiplier.

What is the greatest challenge facing architects today?

Our greatest existential challenge is design within human-dominated ecosystems. In this Age of the Anthropocene, atmospheric, terrestrial, and oceanic systems are no longer fully determined by nature but now are also shaped by human influences. This means that design solutions will also have to deliver the 17 ecosystems services delivered by all healthy ecosystems, in addition to the traditional urban services expected in a human habitat. While we often talk about decarbonization, which involves three ecosystem services—atmospheric, climate, and disturbance regulation—we need the other 14 life-affirming services to address the grave problem of ecosystem depletion.

Opposite (left to right): Isabelle Troutman, Stephen Luoni, Tarun Kumar Potluri, Elizabeth Wehr, Linda Komlos

photo by
IRONSIDE
PHOTOGRAPHY



COLLABORATIVE ACHIEVEMENT AWARD

Established in 1995, the University of Arkansas Community Design Center has become a national leader in urban design and development. Under the leadership of professor Stephen Luoni, Assoc. AIA, since 2003, the center has collaborated with engineers, sociologists, policy analysts, farmers, and other experts, as well as the university's Resiliency Center.

JOSEPH P. RILEY JR.

What advice would you give to other elected officials about how to engage with architecture and the built environment?

There is no excuse to build anything in a city that doesn't add to the beauty of the city. If the public can see it, it should be beautiful. Beautiful parks, buildings, and public spaces give every citizen a place of peace and beauty to call their own. Make excellence a habit. Never lose focus on the importance of the public realm. Scale always matters. Take care to weave the new into the fabric of the existing built environment. Parks must have a purpose. Embrace the power of saying no when you need to. Seize opportunities to listen, learn, and grow.

What is the greatest challenge facing cities and the urban environment today?

The greatest challenge facing cities and urban environments today has remained and always will remain unchanged: making and keeping the public realm a priority.

What have you learned over the years about the art of collaboration in architecture?

Regardless of your role in an organization or project, you need to establish a habit of excellence and work hard to sustain that habit. As mayor of Charleston, S.C., for 40 years, I demonstrated this by example, and

every member of my team of more than 1,400 city employees came to embrace excellence as a habit, too. Mediocre and bare minimum were never acceptable or even a consideration. Excellence was expected of the architects, landscape architects, and other contractors the city collaborated with, too. Charleston's built environment reflects this collective commitment to excellence.

What has been your most rewarding project that shaped or engaged in the built environment?

It was my great honor to serve the citizens of Charleston for 10 consecutive terms. Over those 40 years, I was involved in many projects large and small, and everything in between, that collectively are my most rewarding project—the transformation of the City of Charleston. Charleston is a beautiful city. It is a walkable city. It is a livable city. It is our city. It embraces the public realm.

Later this year or early next year, Charleston's public realm will be further and forever enhanced when the International African American Museum opens at Charleston Harbor on the site where Gadsden's Wharf, the largest wharf in the colonies, once existed and where more enslaved Africans first set foot in North America than any other place. It is a sacred site. In 2000, at that term's inaugural address, I announced that the

COLLABORATIVE ACHIEVEMENT AWARD

For more than four decades as Charleston, S.C.'s former mayor, Joseph P. Riley Jr., HON. AIA, worked alongside constituents, architects, landscape architects, contractors, and planners to revitalize the city's waterfront and historic downtown business district and expand the amount of affordable housing. Riley is the founder of the Mayors' Institute on City Design, a leadership initiative of the National Endowment for the Arts and the U.S. Conference of Mayors.

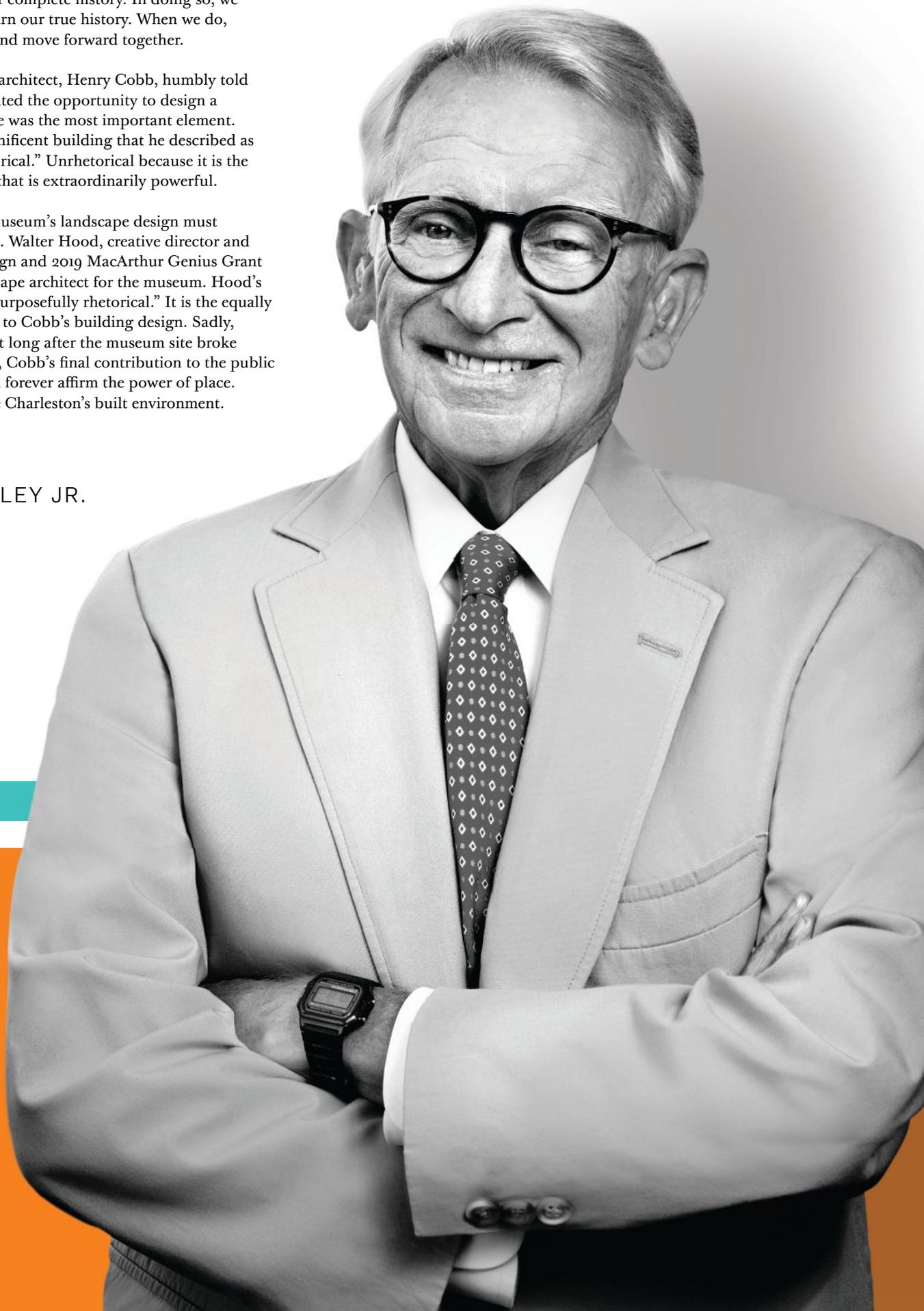
city would build an African American museum to tell the untold story of our complete history. In doing so, we as a country would learn our true history. When we do, we can begin to heal and move forward together.

The museum's design architect, Henry Cobb, humbly told me that he always wanted the opportunity to design a building where the site was the most important element. Cobb designed a magnificent building that he described as "purposefully unrhetorical." Unrhetorical because it is the Gadsden's Wharf site that is extraordinarily powerful.

Cobb also knew the museum's landscape design must respect this sacred site. Walter Hood, creative director and founder of Hood Design and 2019 MacArthur Genius Grant recipient, is the landscape architect for the museum. Hood's landscape design is "purposefully rhetorical." It is the equally powerful complement to Cobb's building design. Sadly, Cobb died in 2020 not long after the museum site broke ground. This museum, Cobb's final contribution to the public realm, will quietly and forever affirm the power of place. It will forever enhance Charleston's built environment.

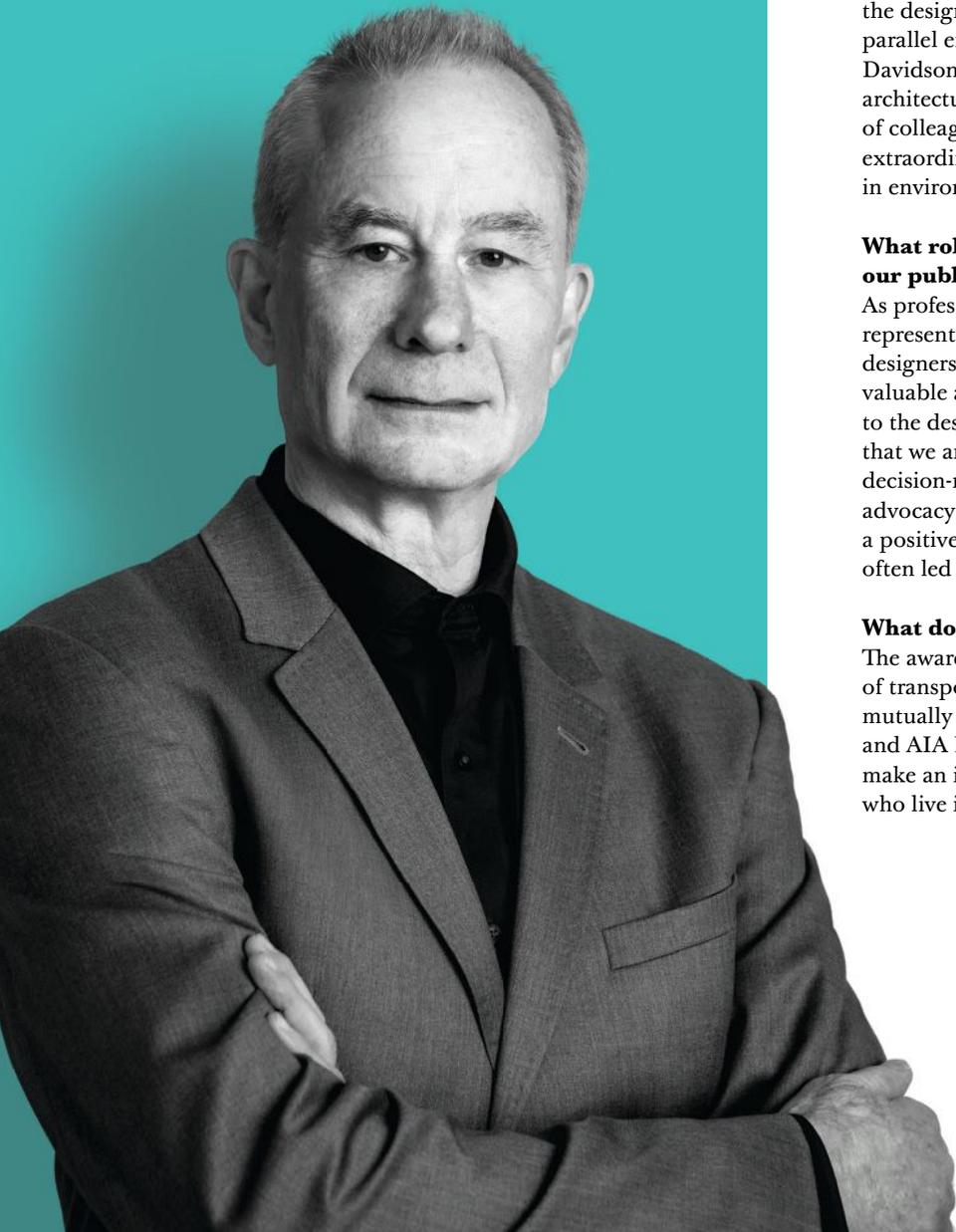
photo courtesy

JOSEPH P. RILEY JR.



AWARD FOR EXCELLENCE IN PUBLIC ARCHITECTURE

Before his current 30-plus-year tenure as design leader for the Port Authority of New York and New Jersey, Robert Eisenstat, FAIA, spent 15 years in private practice in the U.S. and Brazil. At the Port Authority, Eisenstat's work at the intersection of public space and transit—including the \$10 billion master plan to replace the Port Authority Bus Terminal—has impacted millions of people.



Robert Eisenstat

What is your greatest achievement? What is the most memorable moment of your career? What has been the most rewarding collaboration?

The answer to these three questions is intertwined—and revolves around the World Trade Center. In the aftermath of 9/11, as the principal architect within the architectural unit of the Port Authority, I served in a key role to this transformative effort. We had two basic tasks at hand—the restoration of the Port Authority Trans-Hudson commuter rail to Lower Manhattan and the transportation planning for permanent construction that would follow. The Temporary PATH Terminal was designed and built in approximately two years—to universal appeal—through a combination of light, space, and placemaking. The transportation planning effort we led expanded to include the entire Lower Manhattan precinct. The strength of our planning effort was confirmed through the design and construction efforts that followed. During these parallel efforts, I was “attached at the hip” with chief architect Robert Davidson, FAIA, while assistant chief architect Donald Fram, FAIA, led the architectural efforts for all the other projects of the agency. The number of colleagues involved within my organization, and on the outside, was extraordinary, and there was an incredible unity of purpose that resulted in environments that we are all proud of.

What role should architects play in the planning and design of our public buildings and spaces?

As professionals who care about and design the public realm, we should represent the concerns of the public—whether we are functioning as designers, administrators, or advocates, our training and experience are valuable assets that can be used to inform a consensus-based approach to the design of public space. This can be leveraged through the projects that we are directly involved in, as well as through participation in decision-making entities such as planning and community boards, and advocacy groups such as AIA committees. Public architects can also play a positive role in the transportation and infrastructure projects that are often led by engineers.

What does it mean to win this award?

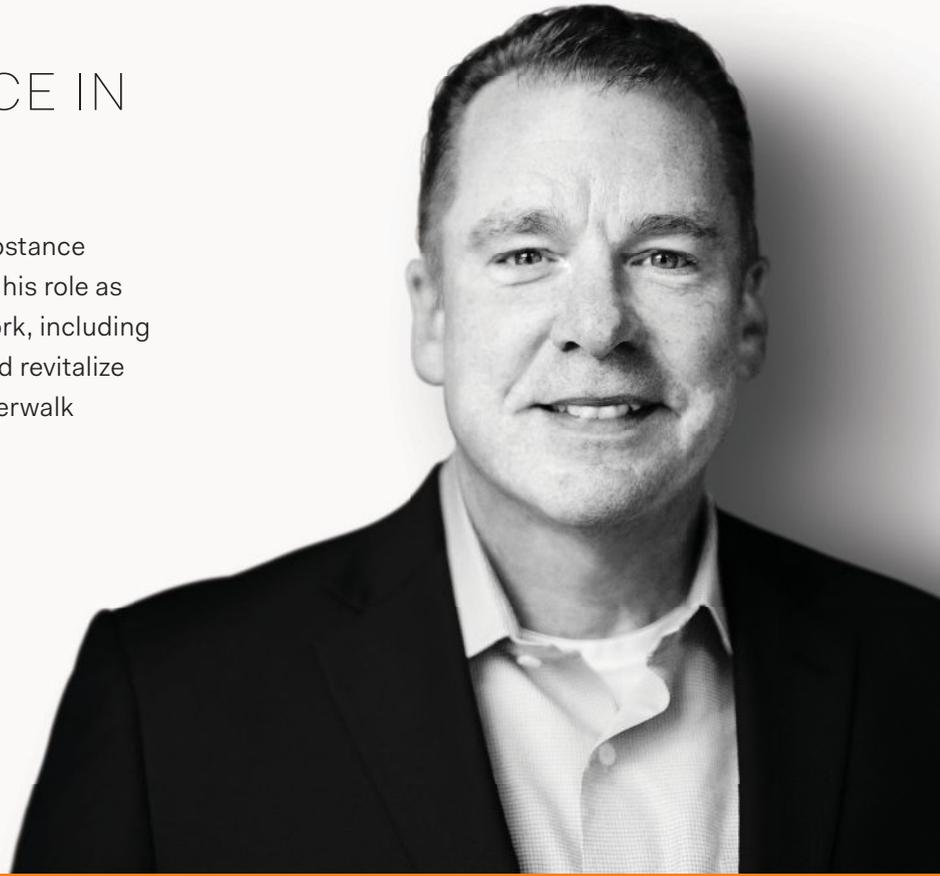
The award provides an affirmation that my passion for the promotion of transportation and infrastructure for public benefit are not seen as mutually exclusive. The Port Authority of New York and New Jersey, and AIA New York, have provided extraordinary opportunities for me to make an impact on projects and environments used by millions of people who live in or visit the New York City region.

photo by
MATT CARR

AWARD FOR EXCELLENCE IN PUBLIC ARCHITECTURE

Nearly 20 years ago, Paul Mankins, FAIA, founded Substance Architecture in his hometown of Des Moines, Iowa. In his role as principal, Mankins has produced renowned public work, including helping re-envision the city's public library system and revitalize its Mississippi riverfront, overseeing the Principal Riverwalk Pavilion and Pump Station development project.

Paul Mankins



What is your greatest achievement?

My greatest professional achievement is founding Substance Architecture in 2004—a design-focused practice that has grown to over 20 professionals with a shared desire to advance the discipline of architecture in service to our community. Starting a business is hard. Creating a culture is even more difficult, and, collectively, I believe we have created a collaborative culture with a shared set of beliefs and a desire to move our community forward.

What inspired your interest in public design?

Des Moines is a very democratic place. It is not a very diverse place, but it is a democratic one. It imbued me with a belief in architecture's capacity to improve the quality of life here and revealed the agency architects possess to impact their surroundings. My hometown has witnessed significant, positive change over the last

three decades. When I left for Yale in 1989, it was a small town. It has become a thriving and beautiful city. This change was the result of sound policy decisions made by prescient leadership. As important, however, it was the result of sound design decisions. Beginning with the Des Moines Vision Plan (Agrest and Gandelsonas, 1989) and continuing through today, the people of Des Moines have come to view design as an essential component of true quality of life and progress. Living in and around these changes—and in some cases participating in them—has been inspirational.

What role should architects play in the planning and design of public spaces and buildings?

As architects, we are the resistance to the "metaverse." We deal in real reality rather than the virtual, and, as such, need to shape spaces that support collective, person-to-person experiences. We must engage our

communities to understand the aspirations of the citizenry and translate those desires into architecture. This is a unique skill set. Many professionals can help shape public policy—and architects should do our part—but no other profession can effectively translate shared civic values into built form. We should embrace this expertise and actively deploy it in our communities.

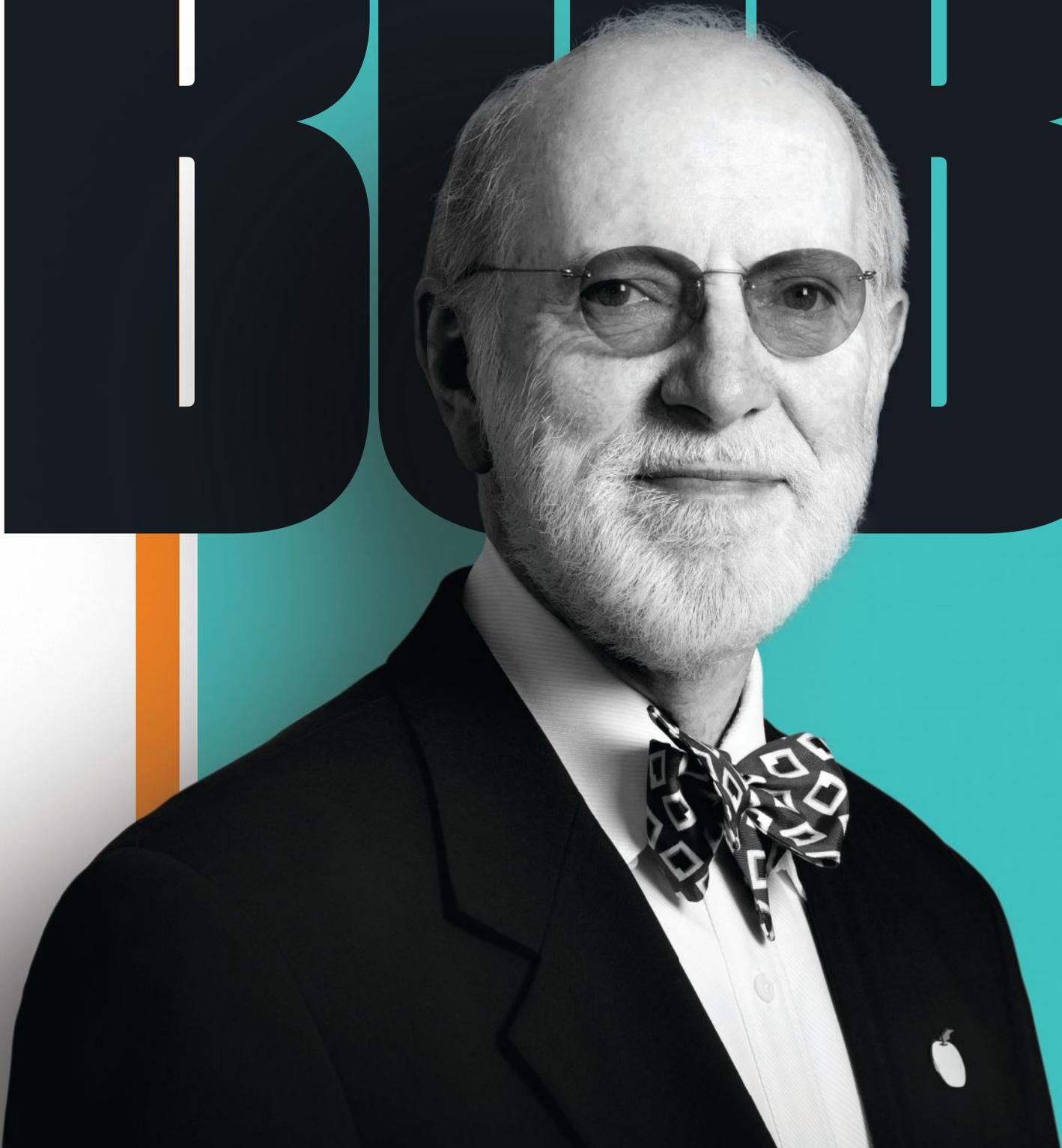
What is the greatest challenge facing architects today?

This isn't a very novel answer, but the greatest challenge facing architects is the greatest challenge facing everyone—climate change. It impacts everyone differently and is truly an existential threat. In Iowa, we have 500-year floods every 15 to 20 years. As a profession, we can and should be doing our part—we can make a meaningful difference. This is going to be the greatest challenge for our profession and our planet for the foreseeable future. It eclipses all others.

photo courtesy

SUBSTANCE ARCHITECTURE

BOB



EDWARD C. KEMPER AWARD

A leader in sustainable design, Bob Berkebile, FAIA, not only co-founded the Kansas City, Mo.-based firm BNIM—established in 1970 and winner of the 2011 AIA Architecture Firm award—he is also the founding chair of the AIA's Committee on the Environment, and helped found the U.S. Green Building Council.

photo by
DAN VIDETICH

What is your greatest achievement?

Co-founding a firm that has chosen to change the future of design and human development on the planet.

What inspired you to get involved with AIA?

I returned from Vietnam in the late 1960s, in time for the civil disturbances. In Kansas City, anger was expressed through demonstrations and fires, which destroyed businesses on Troost Avenue. As citizens, my wife Libby and I reached out to the Council on Religion and Race and helped create a two-year Black-white dialogue program. As an architect, I started trying to understand this from the point of view of community. Did community design failure lead to this unrest? I felt that beyond racism, block-busting, redlining, and limited design led directly to this outcome.

About that time, the Chamber of Commerce published an anniversary issue in which they featured the importance of the playgrounds and parks of Kansas City with pictures of children enjoying the most beautiful playgrounds. At the time, I was a young architect and volunteering as one of the writers for *Skylines*, the local AIA magazine. I wrote an article that borrowed Civil Rights leader Whitney M. Young Jr.'s phrase "Our thunderous silence" for the title and substituted photos I had taken on the East side in areas that were deeply affected by the civil disturbances and positioned them

over the chamber's captions. It created quite a ruckus at the time and brought attention to the disparities in our city and designs, but it also allowed me to discover the importance of the printed word and the importance of professionals speaking up for what they care about.

What's your approach to architecture?

To work with nature, rather than try to bend it to my will. Bucky Fuller taught me this. He said "Bob, everything you do has an impact on planet Earth, good or bad, no exceptions. So, it's important to figure that out before you make design decisions." From that point forward, with a lot of help from many others like Janine Benyus (a leading advocate for biomimicry); Jane Goodall (who helped me design a chimpanzee habitat); Leon Shenandoah (who taught me about Spirit—"the eternal truth"); and many others who have informed my approach. We forget that our designs either enhance the vitality and resilience of nature and the support system for human life, or they don't.

What would you have been if not an architect?

Without question, I would have been the German craftsman contractor that my family expected me to be. I still find a great joy in building things. I have designed and am building a pergola and free library for our home. I love working with beautiful materials and transforming them to become something unique.

BERKEBILE

The AIA Associates Award is given to individual Associate AIA members to recognize outstanding leaders and creative thinkers for significant contributions to their communities and the architecture profession.

ASSOCIATES



EMILY MCGEE (MCGOWAN)

**Medical Planner
HOK, Washington, D.C.**

“Crises have long been catalysts for societal and architectural change. This has been at the forefront of my mind with recent events—COVID-19, social injustice, climate change, political upheaval, war—and from my experiences volunteering on archaeological sites in Turkey. As a surveyor and site architect on these digs, I am constantly reminded of impermanence. Nothing lasts forever. That can be comforting or disconcerting, depending on your perspective. Ruin is transformative, and its temporal nature demands us to re-examine our narratives and build in ways that relate deeper to each other and the environment. As a healthcare designer and optimist, I view these challenges of today as an opportunity to improve and adapt our mindset to foster greater healing or lasting impact through architecture.”

JULIAN T. OWENS
Architectural Designer
Jacobs, Arlington, Va.

“When I think of the major challenges of today, such as climate change, racial inequities in the built environment, the erection of private prisons, and more, what stands out is that most issues aren’t recent. So, to me, it’s less about adapting to today’s challenges as architects and designers and more about intentionally learning and gaining an understanding of the history of the challenges different communities face today. Tap into the experts, both in and out of the field. Build relationships with and learn from communities and individuals who have lived through these challenges. Time dedicated to research is not a given at every firm, but it absolutely should be. Imagine a field where we all take the time to do the research and use our skill set to tackle larger societal challenges that extend past our immediate environments. That’s powerful.”



awards



JENNIFER PEELER TRUMAN
Apprentice
Matthew Konar Architect, Durham, N.C.

“Architecture is an evolving profession. Each younger generation of architects is increasingly diverse, cross-disciplinary, and aware of the systemic issues in which architecture can either perpetuate or catalyze positive change. For me, it’s critical that, as a profession, we capitalize on the voices and perspectives shared by emerging professionals. The energy and ambition to work on solutions for issues such as climate change, affordable housing, and discriminatory zoning exist within architecture. Too often, however, architects have been left out, or excluded themselves, from these cross-disciplinary conversations. That’s where I believe we have the most need to adapt and reinvent our profession. Architects need to step forward, speak up, and be leaders in solving today’s challenges. Architects need to ground our work in advocacy.”

young architects awards

The 2022 winners of the AIA Young Architects Awards have already left their mark on their profession, and in a time of unprecedented hurdles in the design fields. We asked this cohort: How must architecture adapt and reinvent itself to tackle the big challenges of today?



PAUL AVAZIER

Associate Principal
Atkin Olshin Schade Architects
Philadelphia

“To improve the ways we approach and solve design problems, we must account for how our decisions will impact users and consider the lasting effects of our designs on the environment. It is also imperative that we make architecture accessible to the next generation through increased educational and employment opportunities.”



MATT BARNETT

Senior Associate
LS3P
Wilmington, N.C.

“Architecture is still largely only accessible to the 1% wealthiest in the world. Architects have the visionary prowess to change the entire system of how and why we work, but that will include challenging the stakeholders, politics, and economics that created these challenges in the first place.”



GRACIELA CARRILLO

Senior Manager
Nassau BOCES
Garden City, N.Y.

“The decarbonization of existing buildings is imperative to counteract emissions. Architects must be more proactive and work closely with engineers to retrofit existing buildings requiring drastic energy and envelope upgrades while retaining their historical and architectural value.”



JOHN J. CLARK

Project Manager
South Florida Community
Land Trust
Fort Lauderdale, Fla.

“Our profession has ambitious goals to address social and environmental challenges, and the challenges to our relevance and influence. To adapt and evolve, architects must reset our mindsets and take more risks as individuals, firms, and as an institute.”



CAROLYN DAY

Senior Associate
Perkins Eastman
Boston

“To combat climate change, we need to rethink how we’re constructing buildings and the materials we’re using. Gypsum wallboard, for example, is heavy, carbon intensive, and ubiquitous. If instead we design with structures that can be exposed, or we use completely different finishes, we can improve material health and reduce our carbon impact.”



LORI FERRISS

Director of Sustainability
and Climate Action
Goody Clancy
Boston

“We need an industry-wide shift that centers reuse of our existing buildings and communities. Let’s reimagine architectural education and practice to leverage the fabric, knowledge, and collective memory of our existing built environment as a powerful and largely untapped climate solution.”



NATHAN GRIFFITH

**Associate Principal
Neumann Monson Architects
North Liberty, Iowa**

“We need to become a trusted guide so that we are continually invited to solve the big problems. By taking on an empathetic and teaching mindset, and by being open and honest with our process, we can become truly indispensable to our clients and communities.”



CHANA HAOUZI

**Principal and Founder
Architecture for Public Benefit
Boston**

“By identifying our contribution as designers and developing innovative strategies to communicate our value, we can form strong, interdisciplinary teams that address today’s most pressing challenges. My practice is committed to doing this work with mission-driven organizations in order to reach diverse communities and a broad public.”



EDWIN HARRIS

**Design Principal and Co-Founder
Evoke Studio Architecture
Durham, N.C.**

“Design has the power to positively change the world. We cannot continue to design and build with blinders on; we must design with the intention of improving our world. Today’s architects must design with the responsibility and power of knowing that we can leave a positive legacy for future designers to build upon.”



RYAN JANG

**Principal
Leddy Maytum Stacy Architects
San Francisco**

“Our buildings should strive to better represent the occupants and communities they serve authentically. One way to do this is to create a participatory and inclusive design process, which would result in more diverse architectural outcomes.”



PARKE MACDOWELL

**Senior Associate
Payette
Boston**

“The demographics of our profession reveal opportunities for growth: We can presume that underrepresented populations are facing barriers to entry. If we can reduce those barriers, we can tap into a wealth of latent human capital. Let’s find engaging entry points to introduce underprivileged youth to the design professions.”



ELIZABETH MCLEAN

**Senior Associate
Ayers Saint Gross
Phoenix**

“Architecture needs to gather ideas and people together in an open model to contribute to reparative and holistic design solutions. Environmental and social justice must be integrated throughout the design process, building the collective power of community toward a zero-carbon, equitable, resilient, and healthy future.”



CHRISTOPHER NIELSON

**Associate
Bruner/Cott Architects
Boston**

“We need to break down the barriers to entry by funding education, while evolving into a more supportive industry. Architecture needs better business models to promote projects tackling climate change, human health, and the local community in addition to meeting basic programmatic needs.”



JESSICA O'DONNELL

**Project Architect
Kitchen & Associates
Philadelphia**

“I would love to see the architectural profession proactively embrace change with the same vigor and care used to design the many elements of the built environment. Imagine how this approach would impact current issues related to planetary and human health, equity, and relevancy of the architect within society.”



ERIC F. PROS

**Director of Design
DS Architecture
Cleveland**

“The spaces we design must remain relevant and useful assets to our communities, not burdens for future generations to bear. Sustainability, resiliency, equity, and wellness are no longer merely buzz words; these tenets are the minimum threshold for admissible design.”



NAKITA REED

**Associate
Quinn Evans
Fort Washington, Md.**

“Architects will have to continue to break down information silos and explore how race, gender, policies, and resiliency all impact the built environment. Being holistic ‘both/and’ thinkers instead of ‘either/or’ thinkers will help keep the profession relevant and engaged with the general public.”



JENNIFER RITTLER

**Associate Principal
Moody Nolan
Columbus, Ohio**

“Start small. Take one step. Climate crisis, global health issues, social injustice, etc. are too complex for one architect or one firm to tackle. I imagine the practice of architecture evolving into a diverse collective force that empowers future generations. One daily practice is to listen: simple, yet profoundly impactful.”



EMILY ROUSH-ELLIOTT

**Co-Founder
Delta Design Build Workshop
Greenwood, Miss.**

“To adapt for greater relevance and inclusivity, the field of architecture needs to fling wide the doors, metaphorical and physical, and warmly welcome all those who have historically been excluded from the profession—inviting them to engage as clients, collaborators, and aspiring practitioners.”



YISELLE SANTOS RIVERA

Principal
HKS Architects
Washington, D.C.

“To bridge the gap that divides people around the world, we must embrace our differences and create a design culture that puts people first. In order to adapt and reinvent itself, architecture must consistently respond to the people it empowers and serves, striving to meet the world’s needs and create a truly resilient built environment.”



NICOLE SEEKELY

Project Architect
Perkins&Will
Atlanta

“Rather than preference statement pieces, architecture should be about creating a contextual urban fabric that promotes walkable communities, sustainable living, and qualitative design. Concerns of affordability and the built environment’s impact on global warming can be directly addressed by architects advocating for healthier urban design.”



MELODY TANG

Associate
LPA
Irvine, Calif.

“We can do a better job of communicating our value to potential clients and the larger community, dispelling the myth of the architect as a pretentious design snob in a black cape with little everyday relevance. Instead, our broad range of interdisciplinary knowledge equips us to solve complex problems.”



MARIO L. WALKER

Project Manager
Self+Tucker Architects
Memphis

“Events over the last three years—including the pandemic, protests against police brutality, and inflation—have affected every facet of society. These events have represented a rare opportunity for architects to reflect, reimagine, and reset our world by demonstrating a deep respect for people and place.”



ALLISON M. WILSON

Associate Principal
Ayers Saint Gross
Austin

“We must celebrate that the definition of ‘architect’ is broader and more inclusive today than it was in previous generations. Some architects draw construction documents every day, others analyze building performance or specialize in engaging users to understand the spaces necessary to support culture. These are all different ways of being an architect.”

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aida 2022 awards priorities

TEXT BY IAN VOLNER

JURY

Susan Blomquist, AIA, Payette (chair)
L. William Zahner, Zahner
Ana Astiazaran, AIA, University of Arizona, Tucson
Dominique Hawkins, FAIA, Preservation Design Partnership
Eddie Jones, FAIA, Jones Studio
Gia Mainiero, AIA, Dattner Architects
Pierre Roberson, AIA, AECOM
Gail Kubik, Assoc. AIA, Finegold Alexander Architects
Heather Young, AIA, Heather Young Architects

> To read more about the architecture winners, visit bit.ly/ARaiazz.

**Andlinger Center for Energy
and the Environment**
Princeton, N.J.
Tod Williams Billie Tsien
Architects

The Andlinger Center for Energy and the Environment at Princeton University represents a bold new attempt to create a research facility intended expressly for the study of the global climate crisis. Faced with this novel brief, Tod Williams Billie Tsien Architects responded with a design that combines state-of-the-art laboratories with a gracious socially and ecologically sensitive handling of space, materials, and structure, producing an architecture that bespeaks its core values even as it puts them into practice. Conceived as a sequence of pavilions set in a garden enclosure, the complex includes spaces for high-tech experiments, fabrication, and delicate chemical and biological analysis, as well as conference rooms, auditoria, and gathering and learning spaces, all housed in crisp brick-clad volumes relieved by broad glazed entries and apertures. Inside, alternating concrete, metal, and wood finishes make for a calm atmosphere, enlivened at intervals by signature decorative wall art from TWBTA and daylight pouring through the generous windows. Central to the whole ensemble, both physically and conceptually, is the landscape that simultaneously surrounds and penetrates it: Linked pathways create a chain of courtyards that shelter the buildings from the larger campus while connecting them to each other, serving both as a convenient circulatory system and a further enticement to mingle and relax with colleagues and visitors. Green (in every sense of the word), welcoming, fittingly Princetonian in its air of scholarly quietude, Andlinger is institutional design for a world in need of solutions.



Home Building at Thaden School
Bentonville, Ark.
EskewDumezRipple

Students at the Thaden School in Bentonville, Ark., are privileged with a unique educational experience that stresses hands-on learning in an atmosphere of freewheeling creativity, with a special focus on fields like filmmaking, engineering, and agriculture. Facilitating this unusual pedagogical approach is the new Home Building. Designed by the New Orleans-based office of EskewDumezRipple, the same team responsible for the campus master plan, the building marks yet another step toward the architects' ultimate goal of connecting the rustic Southern landscape with Thaden's modernizing mission. Situated on scenic grounds, flanked by pools, paths, and plantings, the Home Building lives up to its titular theme by way of a central gabled form, actually part of a single structure under a continuous roof with auxiliary spaces to either side and behind.

The primary, very homey-looking component contains the school's dining hall, its interior entirely unencumbered by vertical supports and featuring dramatic lighting and exposed wood surfaces under the vast pitched ceiling. In another nod to the American vernacular, the skin that wraps around the dining hall and its neighboring volumes—in fact disengaging from them completely at points, creating semi-enclosed terraces and protected walkways—comprises vertical slats that recall the cladding of the region's centuries-old barns. Pastoral references aside, the Home Building is in fact a sophisticated hub for interaction and growth, including a library, study spaces, and an enviably equipped test kitchen where students prepare meals for their peers, yet another example of Thaden's commitment to get kids out of the classroom and endlessly making.





Billerica Memorial High School
Billerica, Mass.
Perkins&Will

In Billerica, Mass., education is the stuff of history: The current Billerica Memorial High School can trace its roots to before the Revolutionary War, and the town's early teachers included a sometimes tutor to several Founding Fathers. But by the time Perkins&Will arrived on the scene, Billerica High needed a refresh—a building that could hold its own among the Colonial-era structures in the surrounding neighborhood, while at the same time announcing the institution's commitment to the future of its students and its community. The architects' solution is a kind of scaled-down megastructure, a single continuous volume housing a full battery of pedagogical functions (classrooms, gymnasium, social spaces, a theater) with each programmatic element expressed through subtle variations in the envelope. L-shaped in plan, the building follows the topography of the campus grounds, alternating between a rhythmically fenestrated low-rise that contains the facilities for athletics and drama, and a stepped-up adjoining block holding the labs and classrooms, with a bell tower-like extrusion acting as a compositional centerpiece at the point where the two arms meet. Most striking, to the casual observer, is Perkins&Will's use of brick, which is variously angled, recessed, raked, and stacked into beguiling patterns that lend the façade a gratifying sense of depth and animation. Opening up to reveal an interior suffused with light, rich in detail, and with an alluring wayfinding and graphics scheme, the building is a fully integrated machine for learning, well-equipping Billerica to face the next 300 years.



**Marine Education Center at
the University of Southern
Mississippi**
Ocean Springs, Miss.
Lake|Flato Architects in
collaboration with Unabridged
Architecture

While the Marine Education Center at the Gulf Coast Research Laboratory in Ocean Springs, Miss., may look, at first, like the world's most design-forward summer camp, its playful, outdoorsy ambience is really only one aspect of a remarkably nuanced design with a lofty objective. The product of a collaboration between St. Louis' Lake|Flato Architects and New Orleans-based Unabridged Architecture, the facility lies 25 miles east of the University of Southern Mississippi's Long Beach campus, right on the Davis Bayou inlet of Biloxi Bay. Dedicated to the preservation of the local ecosystem, the center acts as a meeting ground between nature and science, a place where both Mississippians and visitors can experience the Southern wetlands and learn about the challenges they face, all in a safe yet engaging environment. On a site previously occupied by a junkyard, the architects erected a sequence of structures, six in all, housing an exhibition space, offices, classrooms, and guest amenities, along with a bankside pavilion for getting up close with the bayou's teeming flora and fauna. Weaving their way slowly toward the water, users discover the spare, balloon-frame buildings nestled into the irregular topography, their simple wooden construction belying subtle technical features like passive ventilation, a solar-heated water source, and careful provisions against regular winds and flooding. With its modest footprint and open, airy feel, the facility activates its organic context without disturbing it, and even adds a dose of fun: Programming includes an actual summer camp, open to kids in grades one through five.





Menil Drawing Institute
Houston
Johnston Marklee

Any architect tasked with creating a new building on the ground of Houston’s Menil Foundation faces a daunting proposition: There’s not just one tough act to follow but several, not the least being Philip Johnson’s landmark Rothko Chapel from 1971. Yet for Los Angeles–based firm Johnston Marklee, the commission for the new Menil Drawing Institute appears not to have caused any undue anxiety—or if it did, it is no way evident from a result so distinguished for its assurance and tranquility. Showcasing the Menils’ extensive holdings of works on paper by major 20th- and 21st-century artists, the project had to do triple duty, serving as a center for preservation, an exhibition space, and an urban presence that could harmonize both with the famed institutional campus and the residential neighborhood that surrounds it. Johnston Marklee’s solution began with a plan of extraordinary clarity, a sequence of quadrilateral spaces organized into two rectangles shifted slightly on their east-west axes and eliding along their broader sides. The southern of the pair houses the primary public functions, with a gallery, flanking courtyards, and a “living room” for gatherings and circulation, each occupying its own quadrilateral; a similar pattern applies in the northern half, housing offices and conservation labs. All of this is wrapped in a gleaming white envelope interrupted by dark wooden paneling and with sharp, projecting eaves overhead, a profile understated enough to go almost unnoticed on the quiet side street yet fitting in perfectly with the high-Modernist monuments nearby.



Kendeda Building for Innovative Sustainable Design
Atlanta
Miller Hull Partnership in collaboration with Lord Aeck Sargent

Rarely does a building so thoroughly confound expectations as the Kendeda Building for Innovative and Sustainable Design at the Georgia Institute of Technology. So singular is the design of Miller Hull Partnership and Lord Aeck Sargent, so unfettered by the usual typological constraints that it is difficult, at first, to even say what exactly the building is—is it an educational space? A lab for scientific experiment? Or is the building itself an experiment, a three-story, 21,000-square-foot case study in efficient construction? In truth, Kendeda is all of these things and more. The design team’s scheme begins with a gigantic photovoltaic-clad canopy, mounted partially atop a series of peripteral posts to form a protected terrace around one portion of the complex. The rest

of the canopy is hoisted over the roof of the structure, acting as a sunshade for a glazed atrium running down the central spine and connecting the assorted classrooms, lounges, and meeting rooms within. An auditorium, teaching lab, and open offices round out the program, making the building a multiuse facility for investigating energy and reuse in both the built and the natural environment; yet the real functional action is embedded in the building itself. From the storm runoff system that feeds the surrounding rain garden, to the sub-grade cistern providing for most of the building’s water needs, to the operable glazed envelope that can be opened and closed to optimize convection and temperature, the project is an exciting new tool for pushing sustainability to new heights.

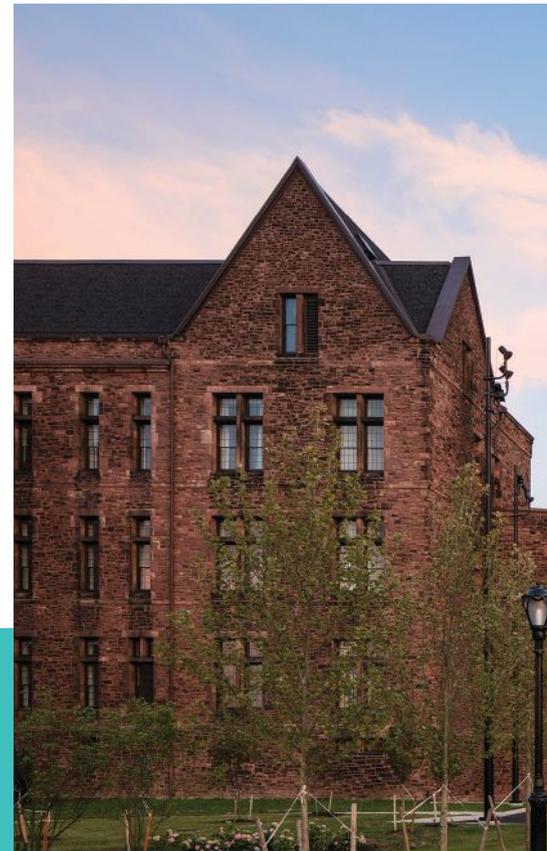
**The Century Project at the
Space Needle
Seattle
Olson Kundig**

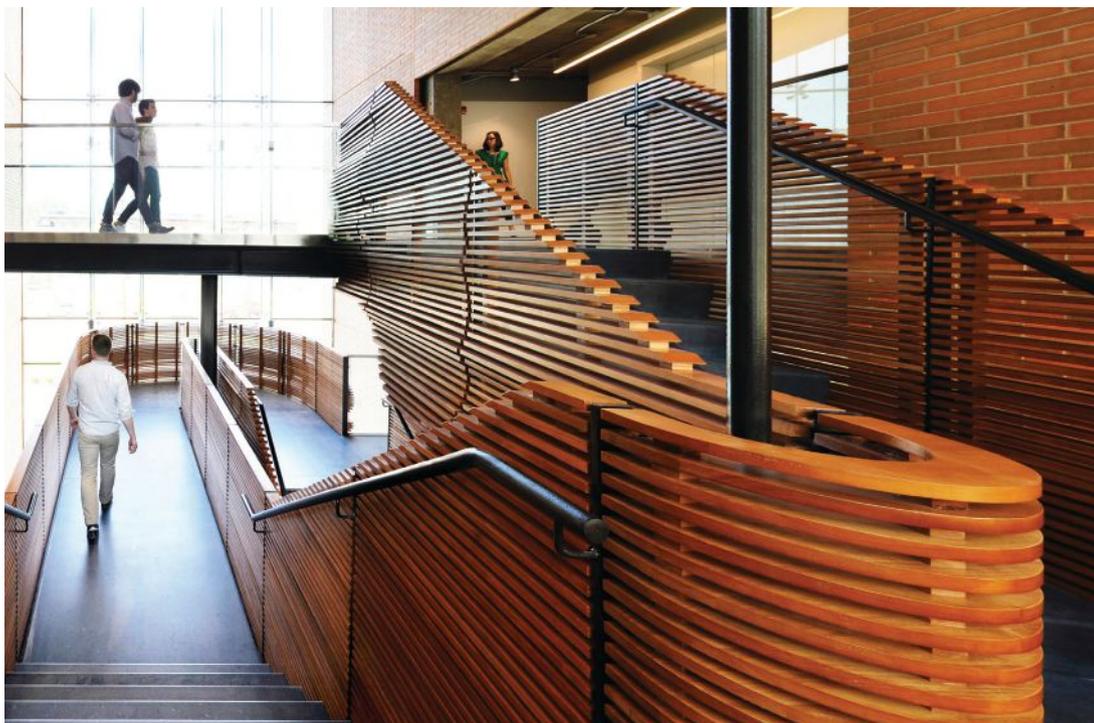
Few buildings are so synonymous with their locales as Seattle's Space Needle, as much a visual metonym for the Emerald City as the Capitol is for Washington, D.C., or the Empire State Building for New York. And who better to refresh the now 60-year-old landmark than the Seattle-est firm possible—Olson Kundig, which brings the spotlight back to its hometown with a project that shows all the technical and aesthetic prowess the firm has demonstrated on the world stage. As its name implies, the Century Project looks to the long term, aiming to retrofit the Space Needle to serve the needs of the city and its visitors well into the future. To realize this, the designers took the iconic saucer-like structure at the top of the lofty shaft and stuffed it nearly to the brim with new and enhanced features, leaving its familiar form intact but multiplying its durability and its functional potential. A more attractive, glass-enclosed exterior walkway; refreshed materials and details, including exposed structural members; a dramatic (not to say slightly terrifying) glass floor on the lower observation deck, allowing guests to gaze straight down the tower to the earth below—at every turn, the architects endeavored to remake the beloved tourist destination as a place not just for admiring the skyline but for showcasing the tower itself, putting its remarkable engineering on dramatic display. Better still, the spectacle can now be enjoyed by more people than ever before, with new bathrooms and new circulatory systems that guarantee maximum accessibility.



**Richardson Olmsted Campus
Buffalo, N.Y.
Deborah Berke Partners in collaboration with
Flynn Battaglia Architects and Good Clancy**

Snagging simultaneous AIA awards for Architecture and for Interiors, both with a single project, Deborah Berke Partners receives justifiable recognition for an accomplishment of fairly startling proportions—balancing the legacy of not one but two great American designers while transforming a complex institutional landmark into a gleaming contemporary resort. Once the home of the Buffalo State Asylum for the Insane in New York, the 191,000-square-foot Richardson Olmsted Campus was completed in 1870 by architect H.H. Richardson, the foremost exponent of the American Romanesque, working in tandem with the most celebrated landscape architect of his day, Frederick Law Olmsted. All but vacant since the last patients left in the mid-1970s, the central segment of the main building has at last been brought back to life as the Hotel Henry, a boutique hospitality destination that honors the past while offering its guests comfortable accommodations and a full battery of amenities. Only a new glass and steel entrance addition interrupts Richardson's façade, and in effect, it merely amplifies the original's grandeur, with the glazed, brightly lit extension serving as a kind of magnifying glass to bring the building behind it into greater focus.





**The Owsley Brown II
History Center**
Louisville, Ky.
De Leon & Primmer
Architecture Workshop

How to design a contemporary building that has to work not only with history but for it? That was the challenge confronting the Louisville, Ky.-based de Leon & Primmer Architecture Workshop in its commission for the Owsley Brown II History Center. The new structure serves as an extension to the Filson Historical Society, Louisville's premier institution for the study and conservation of the city's past. Since its inception, Filson's documents and artifacts have been housed in the Ferguson Mansion, a stately Beaux Arts residence dating to the 1910s and featuring ornate period rooms as well as space for readings and events. In building the addition, the client's objective was to increase its public profile while augmenting conservation capacity; yet implicit in the brief was another goal, that of complementing, without by any means outshining, the century-old building next door. The design from de Leon & Primmer meets the challenge with a volume whose scale and refinement seem a quiet echo of the old mansion: Brick cladding—delicately channeled at the base, and parting at intervals along the façade to form vertical apertures—is complemented by expansive glazing and a razor-thin roof slab, making for a frankly modern statement qualified by just the right amount of detail. The four floors of archival storage will delight scholars for decades to come, but for most visitors, the main attraction will be the long, curving central staircase and the events space, its walls and ceilings covered in woven patterns of warm, tactile wood, as decorative as anything out of the Gilded Age.



The Shed

New York
Diller Scofidio + Renfro
in collaboration with
Rockwell Group

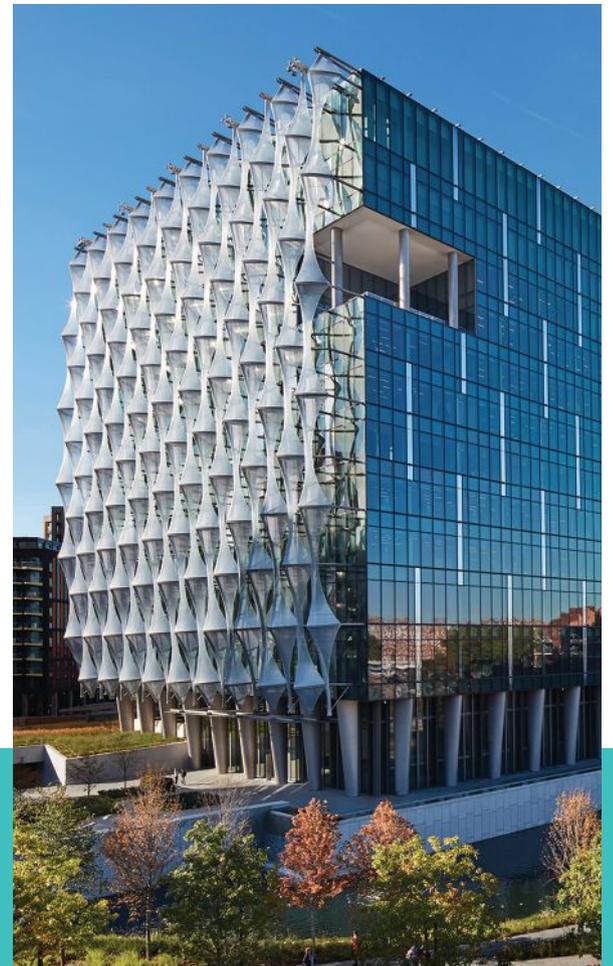
Fifty years is a long time for an idea to circulate in architecture's bloodstream. And to have that idea finally realized, and in such extraordinary fashion as The Shed, straddling Manhattan's Chelsea and Hudson Yards neighborhoods, is almost without precedent in the profession. Diller Scofidio + Renfro's multifunctional cultural facility draws its inspiration from the Fun Palace, an endlessly adaptable, techno-mad arts venue conceived by British architect Cedric Price in the mid-1960s. The scheme has remained a touchstone for designers ever since—but never has it come so near to fruition as it has in the cavernous, mechanized, events-and-exhibition space on the southern perimeter of the Hudson Yards development. The project derives its name from an enormous ETFE-coated frame structure, mounted on wheels and covering (in its customary “deployed” position) a five-story atrium space that can be used for large-scale installations or performances. Then, in a process that acts as a performance in itself, the frame can be rolled back courtesy of roof-mounted engines until it covers the adjacent, five-story-high structure that houses The Shed's offices as well as additional theaters and galleries. Retracted into this secondary “nested” configuration, the building gives way to an outdoor plaza suitable for seasonal shows or public gatherings, a useful amenity connecting directly to the popular High Line park, also designed by DS+R. In its manifold sense of possibility, its ability to follow wherever artists and performers might lead it, The Shed embodies all the giddy promise of a long-sought architectural dream.



U.S. Embassy

London
KieranTimberlake

KieranTimberlake steps into bold territory with its design for the new U.S. Embassy in London, a project as freighted with cultural and political significance as it is with logistical complexity. Replacing the long-outdated (and somewhat problematic) Eero Saarinen structure in Grosvenor Square, the new building takes the American legation across the Thames to Nine Elms, a former industrial area undergoing a rapid makeover. The design reckons with these conditions—the river; Nine Elms, its hard-edged past and glossy present; and the old Saarinen building, in all its flawed Midcentury grandeur—and synthesizes them into a compelling new form. The solution is a living system with a strong connection to the waterfront, surrounded by a lush landscape that works its way inside via a circulatory procession leading to upper-floor green spaces. The DNA of its Modernist predecessor is evident in a gridded exterior curtain wall, now swathed in a secondary skin formed of ETFE-clad diamonds, adding protection from the sun while making the building a striking, machine-like presence. Maximized for security and efficiency, the new embassy furnishes the diplomatic community with an optimal work environment as well as a true showplace for visiting dignitaries.



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Williston Basin International Airport

Location: Williston, ND
Architect: Allliance

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- Mark Bacon, AIA, BVH Architects
- Jodi Ernst, AIA, Architect of the Capitol in Bethesda, Md.

awards

> To read more about the interior architecture projects, visit bit.ly/ARaia22.

Amherst College New Science Center
Amherst, Mass.
Payette



Bright, airy, alive with movement and color, Boston-based firm Payette's interior scheme for Amherst College New Science Center is a perfect exemplar of design in the service of discovery and progress. Intended to foster an interdisciplinary approach to STEM research and learning, the facility affords students the opportunity to participate in the fundamental, daily work of professional scientists, exploring a whole array of technical fields alongside specialized faculty in a collaborative atmosphere. Flexible, fully equipped laboratories with en suite lecture rooms help keep this freewheeling pedagogical experiment in motion; but the real excitement is in the broader connections between the formal, educational side of the program and its interactive and social aspects. Through the labs' fully glazed

envelopes, users can look out to teeming circulatory corridors lined in wood and stone, faced in broad windows with views to the verdant New England landscape beyond. On breaks between classes, weary students can descend one of the long, slender staircases to the welcoming commons area below, gathering with friends and colleagues in a furnished concourse directly fronting the adjacent outdoor patio and topped by a broad skylight with mechanized louvers that automatically adjust to sun and temperature. For all its visual panache, the interior's most impressive qualities may be those that can't be seen, in particular an ingenious system of air delivery and convection that combines passive and forced ventilation to ensure a temperate indoor climate year-round with minimal energy outlay.

Ask any halfway-informed design fan what the capital of American architecture is, and there's only one proper response: Chicago, the birthplace of the skyscraper, the home of Louis Sullivan and Frank Lloyd Wright and Ludwig Mies van der Rohe, and the still-vital center of innovation for the building trade nationwide. With the new Chicago Architecture Center, courtesy of the city's own Adrian Smith + Gordon Gill Architecture, the town finally has an exhibition space both devoted to and worthy of its greatest contribution to global culture. Occupying the lowermost two floors of the Mies-designed 111 E. Wacker Drive, AS+GG's interior makes a point of celebrating its landmark Modernist surrounds, revealing the German master's signature bronze-plated piers with their slender vertical channels. The space, part of it

formerly a sheltered portico in front of the building proper, has been outfitted with a suitably Miesian curtain wall that serves a clever double purpose—on the one hand, it ensures the north-facing galleries are filled with light at all hours of the day, reducing the need for artificial illumination; on the other hand, it affords spectacular views of the Chicago River and the looming landmarks (the Tribune Tower, the Wrigley Building) directly opposite, making the city itself a part of the show. In the recesses of the interior, inventive exhibition design brings together acoustics and lighting to create installations like the 3D-animated model of the city's growth, demonstrating its development through the decades with an eye-catching dynamism sure to turn even the most archi-averse visitors into Chicago true believers.

Chicago Architecture Center
Chicago
Adrian Smith + Gordon Gill
Architecture





**Geneva Car Barn &
Powerhouse**
San Francisco
Aidlin Darling Design

**Rubenstein Arts Center, Duke University
Durham, N.C.**
William Rawn Associates, Architects

First-time visitors to Duke University's new Rubenstein Arts Center could be forgiven for assuming the building was home to some variety of high-performance, tech-focused research program—an engineering department, or biology. In fact, as the interior from Boston-based William Rawn Associates, Architects quickly demonstrates, the facility is indeed one dedicated to experiment and to heady new ideas, but ideas of a very different sort. Starting with a simple diagrammatic plan, the architects divided the curious, S-shaped footprint into two major zones, one serving as a public-facing entry suite and the other devoted to more user-intensive, work-and-rehearsal spaces. Both the circulation corridors and the studios—14 in all, capable of hosting practices for everything from music to dance to drama—put an emphasis on transparency, with exposed structural members and mechanical elements as well as extensive glazing that turns everyday activities into a performance and every passerby into a spectator. Even more static artistic practices are endowed with a sense of theatrics, courtesy of movable gallery walls that can be rearranged to host exhibitions of paintings and sculpture, while the largest of the building's studios can put on an architectural show of its own, transforming with the push of a button into a black-box theater space. Charged with the buzzy ingenuity of 1980s High Tech design, yet softened by a palette of mellow pastels and an organic connection to adjacent outdoor courtyards, Rawn's scheme is a brilliantly conceived incubator for creative innovation.



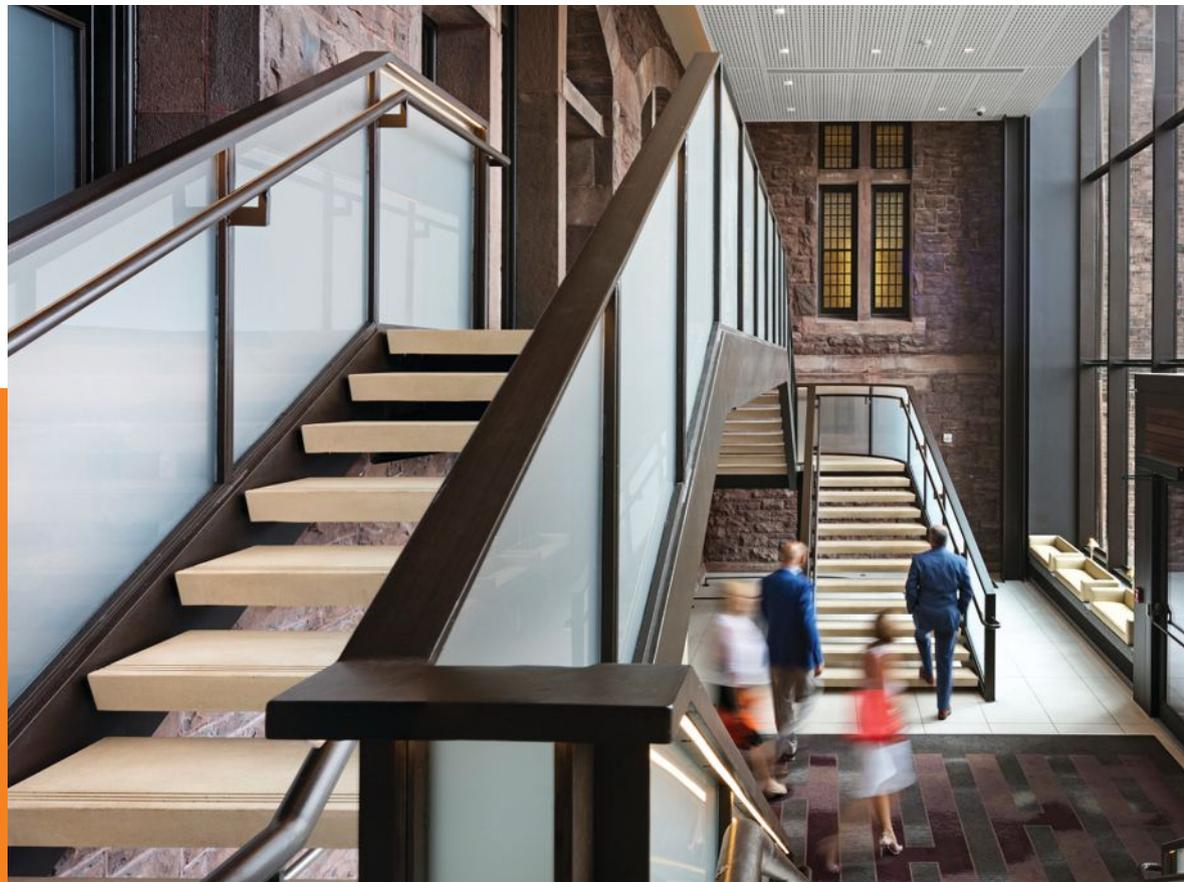
Whether cities like San Francisco can continue to grow sustainably may well depend on their ability to turn out high-quality adaptive reuse projects like Aidlin Darling's Geneva Car Barn & Powerhouse, as sharp and seductive an instance of low-impact, high-efficiency interior architecture as any in recent memory. Constructed in 1901 as a maintenance facility for San Francisco's original electric railway system, the building led many lives before being abandoned in the late '80s; threatened with demolition, the structure was saved by a pitched local effort to convert it into a community arts space. In making that vision a reality, Aidlin Darling let the building speak for itself, carrying out only a few, minimally invasive changes: a new roof system, with skylights that help cut

back on electrical usage; a couple of modest insertions to create bathrooms and support spaces, including a green room open to the ceiling for further ease of lighting; and a heating and cooling plant that uses the existing floor slab as a radiant surface, obviating the necessity for additional mechanical installations and upping the building's ecological bona fides yet again. But for all its technical resourcefulness and economy, what makes the architects' interior solution a model for the future is its undeniable aesthetic appeal. By turns riven with light and shrouded in darkness, with dramatic reveals like floor-installed vitrines peering down into the ancient cellar below, the project proves that designers and clients do not have to build from the ground up to create something truly new.



**Pennsylvania State University
Recital Hall**
University Park, Pa.
William Rawn Associates,
Architects

Making its second appearance in this year's Interiors category, William Rawn Associates, Architects demonstrates once again its deft hand for creating finely calibrated performance spaces with its design for the Pennsylvania State University Recital Hall. The project occupies a key site at the heart of Penn State's planned arts quad, branching off the existing music building and stretching out in the direction of the main corridor leading to the center of campus; its location effectively makes the recital hall the primary, most visible entrée to the growing cluster of arts buildings, a beacon for students and visitors alike. Accordingly, the designers have fitted the structure with a glowing, fully glazed façade that welcomes all visitors and gives them an advance peak of the happenings within: a multitiered, wood-encased, brightly lit music box, with room for more than 400 patrons seated on all four sides of the stage—the so-called “vineyard-style” hall, unusual for an academic facility of this size and geared toward providing an ideal visual and acoustic experience for every concert-goer. In its restrained beige and white palette, as in the soft, almost floating quality of the projecting balconies and catwalks, the mood of the interior is mellow, subdued, letting the performers take center stage both literally and figuratively, while barely hinting at the densely packed warren of rehearsal and mechanical spaces now concealed in the adjacent structure. With the firm's customary blend of pragmatism and poetry, WRA has given the university a top-notch cultural venue that is also a place for collective joy and coming together.



PHOTOS CLOCKWISE FROM TOP LEFT:
ROBERT BENSON PHOTOGRAPHY;
KEVIN SCOTT; CHRISTOPHER PAYNE



**Two Union Square
Repositioning
Seattle
NBBJ**

At the heart of NBBJ's concept for the new lobby and public amenities at Two Union Square in Seattle is a spirit of invention, leveled with refreshing irreverence to materials, to urban living, and (perhaps most surprisingly) to the firm's own history. The address of the refreshed interior has a special place in Seattle and NBBJ lore: Designed by the office in 1989, the tower is one of the prominent fixtures of the local skyline, a distinctly Pacific Northwestern take on the then-prevalent Postmodernist skyscraper. Revisiting the project three decades later, the designers had to keep the original vision in view while giving the highest-trafficked areas of the building a thorough 21st-century update, one that reflects the quickened pace of Seattle life today. The team first cut through a previously sealed passage, nearly doubling the size of usable public space at a single stroke; they then set about activating the entirety of the lobby level, turning a portion of the opened-up zone into an attractive fireplace lounge, another portion into a workspace, and still another into a coffee shop. Wrapped in glass, with views to the surrounding landscaped courtyards, these programmed spaces are complemented by new fixtures and finishes, most dramatically a ribbed-wood ceiling system and a stone-clad elevator core with a beguiling feature wall that greets visitors on arrival. The result feels equal parts business-casual and business-savvy, with a dramatic flair that seems just right for the building and the city.

Richardson Olmsted Campus

Buffalo, N.Y

**Deborah Berke Partners in collaboration with
Flynn Battaglia Architects and Goody Clancy**

Also winning an AIA Architecture award for the same project (page 102), here the work of Deborah Berke Partners and collaborators Flynn Battaglia Architects and Goody Clancy receives accolades for transforming the central portion of this historic landmark into the boutique Hotel Henry. The 191,000-square-foot project added 88 hotel rooms, a fine dining restaurant, a café, and conference facilities, as well as custom carpets in green and gray referencing the original Frederick Law Olmsted landscape. The keynote of Berke's intervention is precision: Florid corbels, lacework grilles, and other decorative details have been restored to like-new condition; new fixtures, from lighting to handrails to carpeting, are stringently minimalist, intruding as little as possible; even the addition of guest bathrooms, which required slight protrusions to be built into the historic hallways, scarcely interrupt the spatial flow or block the sunlight from the impressive windows at the ends of the corridors.





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Lan Ying Ip, AIA, Sasaki
Michael Davis, AIA, Sanders Pace
Erin Olson-Douglas, City of Des Moines

> To read more about the regional and urban design projects, visit bit.ly/ARaia22.

Atlanta University Center Framework Plan Atlanta Skidmore, Owings & Merrill



Renowned for a high concentration of distinguished Historically Black Colleges and Universities, Atlanta has also acquired a reputation as a city lacking in the conventional markers of good urbanism. Sprawling, riven by freeways, the eighth-largest U.S. metropolitan area faces steep challenges in forging a more equitable, sustainable built environment. Yet the basic rudiments for a denser, more pedestrian-friendly future are already embedded. As borne out by SOM's Atlanta University Center Framework Plan, those celebrated bastions of African American achievement, most clustered near the city core, hold the key to a radical transformation of downtown. Through an assiduous process of research and public engagement, SOM has developed a proposal that would tie together the

campuses of Clark Atlanta University, Spelman College, and Morehouse College into a cogent spatial continuum, a city-within-a-city connected by public transit, enhanced with new parks and public spaces, and organized around a central functional node. This router-like component, termed the AUC Commons, would feature a traditional university quad traversed by pathways that lead to a host of shared facilities for students, faculty, and the broader community, including new hotels and existing venues like the Ray Charles Performing Arts Center. With new commercial, residential, and mixed-use developments to be scattered throughout the immediate area, SOM's plan promises to build a new Atlanta on the foundations of some of the city's oldest and most illustrious local institutions.

The post-industrial economy, the legacy of racial discrimination, the challenges of America's decaying infrastructure—when it comes to facing tough issues, the Re-Live Downtown Pine Bluff plan is nothing if not ambitious. The University of Arkansas Community Design Center plan is a comprehensive, ground-up scheme intended to revitalize the historic community of Pine Bluff, Ark., a once-bustling manufacturing center home to a thriving Black middle class that has been in steep decline for decades, its population having plummeted by 25% since the turn of the millennium. Billed as a “housing-first” solution, Re-Live looks to bring people back to the center of town through the construction of hundreds of affordable dwellings financed by a local development agency and offered to lower-income

residents. From multifamily complexes to gabled free-standing structures, the housing will be built in clusters to create fully functional neighborhoods, complemented by improved roads and sidewalks and situated near new and existing amenities and attractions. For the latter, the Design Center's scheme calls for programming that furnishes each area with its own identity, including a lakefront recreational zone, an administrative core, and a new cultural district that capitalizes on the region's historic connections to the development of American music. With minute but transformative details, like raised landscaping to buffer residential areas from the noise of passing freight trains, Re-Live has the potential not just to put Pine Bluff back on the national map but to serve as a model for similar revitalizations elsewhere.

Re-Live Downtown Pine Bluff Pine Bluff, Ark. University of Arkansas Community Design Center





Willie "Woo Woo" Wong Playground
San Francisco
CMG Landscape Architecture in
collaboration with
Jensen Architects

Suffolk Downs Master Plan
Boston
CBT Architects

Where equestrian legends like Seabiscuit once galloped into the home stretch, the city of Boston is set to welcome a new live-work district as thrumming with life and energy as the North End, Beacon Hill, or any of the storied old neighborhoods nearby. With the help of hometown office CBT Architects, the site of the former Suffolk Downs racetrack (fully decommissioned in 2019 after 84 years of thoroughbred competition) will be reborn as a residential and commercial enclave replete with all the advantages of urban living as well as a few features, rare in any such densely packed development, that seem bound to make it a popular destination for Bostonians and out-of-towners alike. Taking up a bundle of spatial and infrastructural odds and ends, CBT's design artfully knits them into an integral whole: Conveniently located public transit lines are augmented by new bike lanes and pedestrian-friendly streets; administrative functions, elder housing, recreation, and other programming are tied together to form a legible, navigable streetscape; and a tightly woven urban fabric of high- and medium-density housing, retail, and office structures creates an organic continuity between the new community and the ones that surround it. Perhaps most impressive is the plan's revitalization of the area's long-neglected natural landscape—a complex web of coastal wetlands partially hidden for nearly a century under the defunct racetrack, now set to be daylighted at last and reconnected to the outlying marshes in an uninterrupted sequence of green spaces that recalls the historic Emerald Necklace just across town.



Though unfamiliar to most non-San Franciscans (or indeed to many locals not interested in basketball), the name Willie "Woo Woo" Wong is well known to devotees of the city's sports history: A Chinatown native, Wong rose gained fame in the 1940s playing for collegiate and semi-professional teams in the area. Today, the very court where Woo Woo sunk his first layup has reopened with his name on it, following a lengthy renovation under the supervision of Jensen Architects with CMG Landscape Architecture. The designers' reimagining of the former Chinese Playground is a thrilling exercise in spatial economy and functional maximalism, squeezing a diverse blend of recreational uses into a largely mid-block lot on highly sloping terrain with existing buildings in nearly every direction. In a daring bit of

planar gamesmanship, the Jensen team spread programming across multiple levels, beginning with a narrow street-fronting structure containing a clubhouse and service spaces, elevated terraces to the rear outfitted with playground equipment, and an additional outdoor deck topped with a fitness area, and, inevitably, a basketball court. This startling assortment of public amenities is given an appropriately ludic expression with colorful mosaic tiles in the lobby and abstract climbable sculptures, as well as a wide-eyed sense of its own processional complexity with the rooftop launching over the understory in a single thrust of concrete, with a skylight affording views to the action below. For Woo Woo, so named for the sound his fans would make when he scored, Jensen's design is an aptly celebratory tribute.

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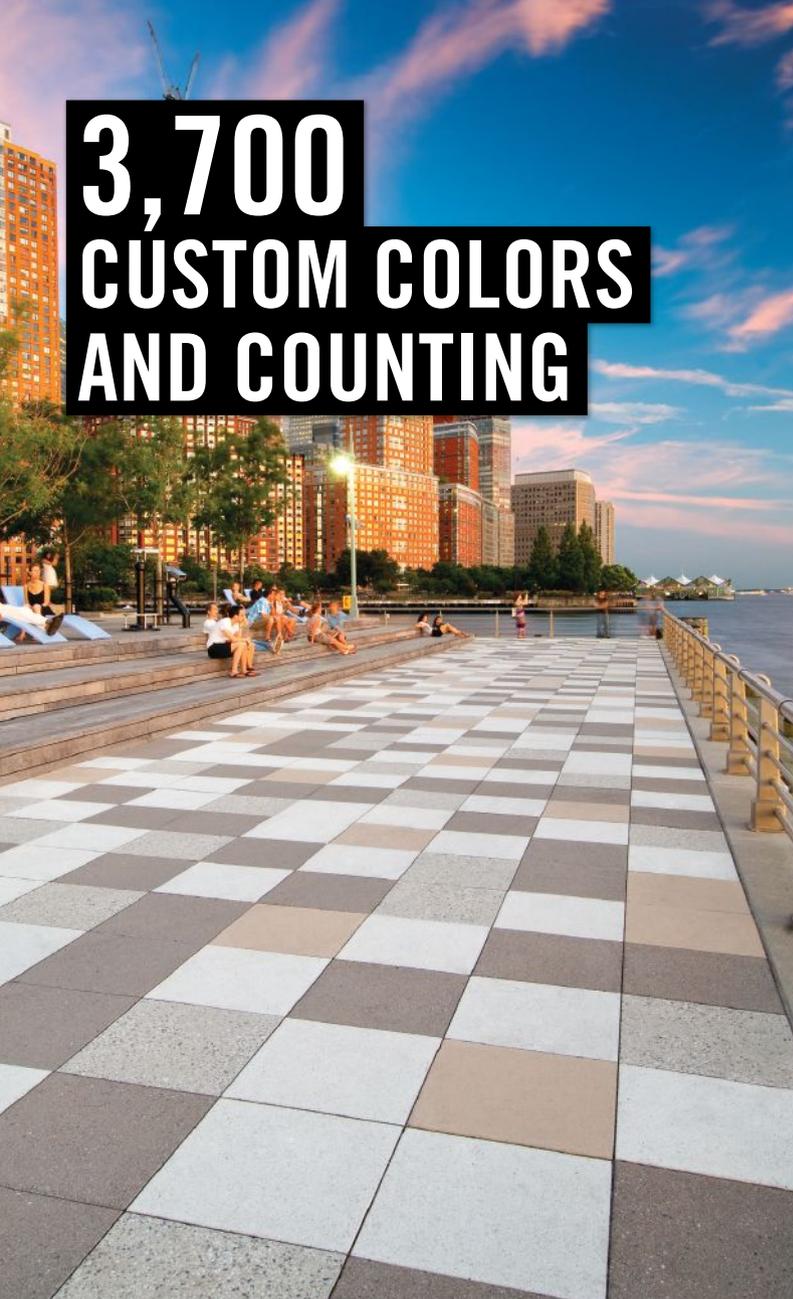
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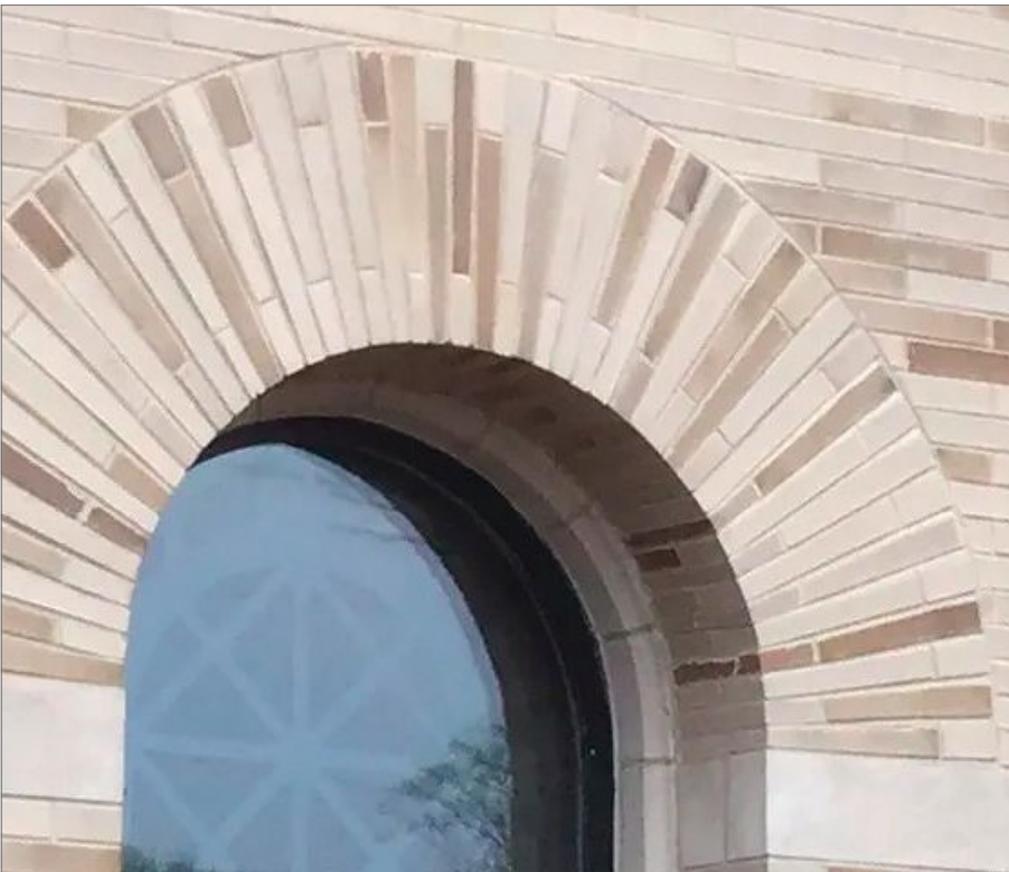
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Architectural Features in Brick — Considerations for Detailing and Construction

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LEARNING OBJECTIVES

1. Review the evolution of brick as a building material and how it has been used for millennia to provide durability, strength, and aesthetics.
2. Examine how to detail and construct architectural features such as curved walls, corbelling, and arches that properly manage water and eliminate stress that can cause cracking.
3. Describe how to accommodate the inevitable moisture intrusion and movement that will occur in a brick building envelope.
4. Explore several award-winning projects where brick stands out as the defining architectural feature of the building.

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A BRIEF HISTORY OF BRICK

Consider the adjectives used to describe brick structures — solid, durable, and classic. Brick has not only been used as a building material for millennia because of its regional availability and durability, but also because of its incredible beauty. Manufactured from clay and shale, brick displays tones and textures that give brick structures their unique appeal. Little wonder that brick has been the choice for builders and architects seeking to create buildings that embody both style and strength since its first use 7,000 years ago in Turkey and Egypt! Many people are satisfied

*“Architecture starts
 when you carefully put
 two bricks together.*

There it begins.”

– Ludwig Mies van der Rohe

with the limited palette available using traditional brick, while others have sought ways to expand the use of this classic building material. Brick shapes and colors are used to design new architecture while maintaining the material's traditional strengths.²

While brick does have an ancient history as a building material, which later found even greater use during Medieval times, “it was the transition from hand-molding to the mechanized mass production of [brick] components during the Industrial Revolution that led to the explosion of brick as a modern building material.³ By the early 1900s, brick



The Romanesque Revival style of architecture, which was popular from approximately 1870 to 1900, employed massive brick arches over windows and entryways, round brick turrets, load-bearing masonry walls, corbelling, and multicolored facades created with contrasting building materials such as brick and stone or several different colors of brick.

was the preferred material for commercial buildings, masons had fine-tuned the construction of elaborate brick architectural features, and the bricks themselves became more varied. Molded bricks were created by hand; brick was laid in elaborate patterns, often called “tapestry” brick; textured brick and different mortar beds were used to create a rough, informal look; and water-resistant glazed or enameled brick was introduced.⁴

Some of the world’s most famous architects, including Frank Lloyd Wright, Louis Sullivan, and revered 19th century architect Henry Hobson Richardson, created iconic residential and commercial buildings with myriad interesting brick details. In fact, the Romanesque Revival style of architecture, which was popular from approximately 1870 to 1900, is dubbed Richardsonian Romanesque. The style employed massive brick arches over windows and entryways, round brick turrets, load-bearing masonry walls, corbelling, and multicolored facades created with contrasting building materials such as brick and stone or several different colors of brick.⁵ Romanesque architecture emphasizes Syrian arches and classical Roman arches as its dominant feature. “The style became popular quite quickly and became an almost universal style for public buildings during the 1870s and into the

1880s for churches, libraries, train stations, courthouses, and schools. Due to the style’s massive construction requirements it was mainly affordable only for society’s elite residential mansions and urban townhouses.”⁶

Today, brick is still one of the most widely used building materials because it is timeless, versatile, and ever-evolving in colors, textures, and shapes.

CONSTRUCTING ARCHITECTURAL FEATURES WITH BRICK

Architectural features such as curved walls, brick shapes, corbelling, and arches are often used in design to add interesting details to a project. For these elements to be a functional part of the building envelope, attention to detailing and construction must allow for the collection and management of moisture that enters the exterior wall system. In addition, these features should not interfere with the natural expansion and contraction that occurs in brickwork. Proper detailing and construction ensure the brickwork is free to move and limits stresses that may result in cracking. By considering these details and including them in construction, the architectural statement of the project can be realized, experienced, and enjoyed over the service life of the project.

GLOSSARY

Basket-handle arch: Also called an elliptical or semi-elliptical arch, it is a flattened arch whose width is much greater than its height; it has three centers and creates a strong structure so can be used instead of a semicircular arch when the height of the semicircle over a wide span window or other opening would be too high

Beehive-style kiln: An older style of periodic kiln that is circular brick structure with a domed roof; they can be used to produce colors not available with tunnel kilns via flashing

Corbelling: The progressive projection of brick courses from the wall plane, which provides a dramatic, visual effect to structures and adds interest to wall elements

Expansion joint: Weatherproof compressible joints comprised of a backer rod and elastic joint sealant that allow for growth

Flashing: Creating a reducing atmosphere in the kiln with smoke or gas to enhance or darken the brick color

Gothic arch: Arches formed from two segmental arches leaning together to form a point

Pattern bond: The pattern formed by the masonry units and the mortar joints on the face of a wall (e.g. running bond and stack bond); the pattern may result from the type of structural bond used or may be purely a decorative one unrelated to the structural bonding

Romanesque Revival: A style of architecture that was popular from approximately 1870 to 1900 and employed massive brick arches over windows and entryways, round brick turrets, load-bearing masonry walls, corbelling, and multicolored facades

Tunnel kiln: Kilns, typically used for industrial manufacturing, that are continuously firing and never cool; the items to be fired are placed onto cars that are slowly moved through the kiln

Wythe: A continuous vertical section of masonry wall that is one unit thick

Curved Elements

Curved elements on building facades are often used to add interest and architectural flair to a design. These non-linear elements break up the rigid appearance often associated with long straight walls. But, constructing curved elements can be a bit complicated because it’s an attempt to install a curved form with a linear material — brick. The smallest radius that can be used to create a circle with un-cut, modular brick is 6-feet



Angling brick to achieve a radius only works in stack bond construction; if a running bond is used, the edges of the brick units in one course will project over brick faces in adjacent courses.

6-inches. This curve is achieved by angling the brick as they are laid and maintaining a 3/8-inch mortar joint dimension on the exterior side of the brickwork and a hairline joint on the backside. Unfortunately, this method only works in stack bond construction where one brick unit is “stacked” above another. If a running bond is used instead, the edges of the brick units in one course will project over brick faces in adjacent courses due to the linear nature of the material. The projected corners will extend approximately 3/32-inch beyond the straight faces, casting shadows. To minimize these shadows, the radius must be increased to 12 feet to create an even surface top to bottom.

If the design will not accommodate a 12-foot radius, curved walls can be built with smaller radii using one of two methods: field-cutting the brick to fit or using a shaped brick. When field-cutting, wedge-shaped cuts are taken off the brick ends to create a trapezoid shape rather than rectangular. This angled cut allows the finished wall to have a tighter radius and appear as if it’s constructed of full-size units. Curved units, on the other hand, allow for the desired radius and don’t require cutting. The brick manufacturer works with the designer to develop a shaped brick

unit with the curvature required. Because the brick faces are curved rather than straight, the bond pattern no longer impacts the layout and there are no projecting brick corners in alternate courses.

Special Shaped Brick

Many building materials are commodity items. They are, by necessity, the same no matter when or where they are purchased. Architects and builders rely on these commodity items for many parts of their construction projects. For those elements of a project that need to stand out to embody unique visual or structural characteristics, architects often require specialty products like shaped brick to see their creative designs through.

Manufacturing special shaped brick is now common practice in brick production, with a virtually limitless range of designs and shapes available beyond the traditional rectangle. They provide the curves, angles, corners, slopes, and other dramatic effects that often become the signature element of a residential or commercial building. Special shapes expand brick’s creative versatility while maintaining the material’s durability and strength. These custom bricks typically cost more per unit, but can reduce the high

labor costs associated with intricately field-fabricating straight brick into a featured element.

Shaped brick is produced like field brick, either by extrusion or by the hand-mold process, which will depend on the desired style and texture needed to match or compliment the project’s straight brick. Extrusion is used when special shaped brick must be mass produced; the clay is extruded through a die and cut to the proper dimension. Soft mud varieties can be mass produced and fired to look exactly like centuries-old handmade brick. Alternatively, skilled brick craftsmen can hand-sculpt custom shapes to create one-of-a-kind designs that may not be possible using a standard mold. Some manufacturers have a large inventory of dies, templates, mold boxes, and other tools used for creating special shapes with options for both large scale production runs or one-of-a-kind specialty items.

Once formed into shape, the clay, or green brick, is hand set onto kiln cars and taken to dry. Both standard and special shapes go through a critical, carefully monitored slow drying process before going to the kilns for firing. Bricks are then fired in high temperature kilns at the same time as the field brick to ensure both structural integrity as well as the desired appearance. Both tunnel kilns and old beehive style kilns can be used.

State of the art tunnel kilns provide more control for achieving uniform color continuity.



Manufacturing special shaped brick is now common practice in brick production to provide the curves, angles, corners, slopes, and other dramatic effects that often become the signature element of a building.



This design included projecting, vertical fins at regular intervals along the wall length, so the designer worked with a manufacturer to create a shaped brick that could be bonded into the field brick.

Smoke or gas can be added to create an effect known as flashing, which enhances the brick color. To produce colors that are not attainable in tunnel kilns, or when extensive flashing is required, beehive kilns are used. After the firing and cooling processes are complete, the bricks are inspected, and sorted. Some manufacturers blend by hand to provide the desired color blend needed for the job site. This hand-blending saves valuable construction time and money at the job site and ensures a balanced appearance. Bricks are then packaged, numbered, and often coded to correlate with specific assembly instructions at the job site.

QUIZ

- Brick has been used as a building material since its first use _____ years ago in Turkey and Egypt.
 - 15,000
 - 7,000
 - 1,500
 - 700
- The _____ style of architecture, which was popular from approximately 1870 to 1900, employed massive brick arches over windows and entryways, round brick turrets, load-bearing masonry walls, corbelling, and multicolored facades.
 - Italianate
 - Gothic Revival
 - Greek Revival
 - Romanesque Revival
- Which of the following is not a proper method to create a curved brick element with a 6' 6" radius?
 - Angle the brick as they are laid in running bond construction
 - Angle the brick as they are laid in stack bond construction
 - Field cut brick to fit
 - Use a shaped brick
- _____ bricks typically cost more per unit, but can reduce the high labor costs associated with intricately field-fabricating straight brick into a featured element.
 - Special-shaped
 - Field-cut bricks
 - Flashed
 - Soft-mud
- State of the art _____ kilns provide more control for achieving uniform color continuity.
 - Beehive
 - Flashing
 - Glazing
 - Tunnel
- _____ is the progressive projection of brick courses from the wall plane, which provides a dramatic, visual effect to structures and adds interest to wall elements.
 - Arching
 - Corbelling
 - Bracketing
 - Angling
- Which arch is the weakest of all arch forms?
 - Segmental
 - Semi-circular
 - Jack, or flat
 - Gothic
- A brick cavity wall may include insulation, but a minimum ____-inch open space for drainage is required by Building Code.
 - 1/2
 - 1
 - 2
 - 3
- _____ and _____ are the 2-part system used in drainage walls to collect, divert, and drain water that will inevitably enter the wall system. Choose two.
 - Cavity
 - Through-wall flashings
 - Weepholes
 - Insulation
- Expansion joints should be spaced approximately _____ feet on center in straight walls, based on a 3/8-inch to 1/2-inch expansion joint size.
 - 5 to 10
 - 10 to 20
 - 20 to 25
 - 25 to 30

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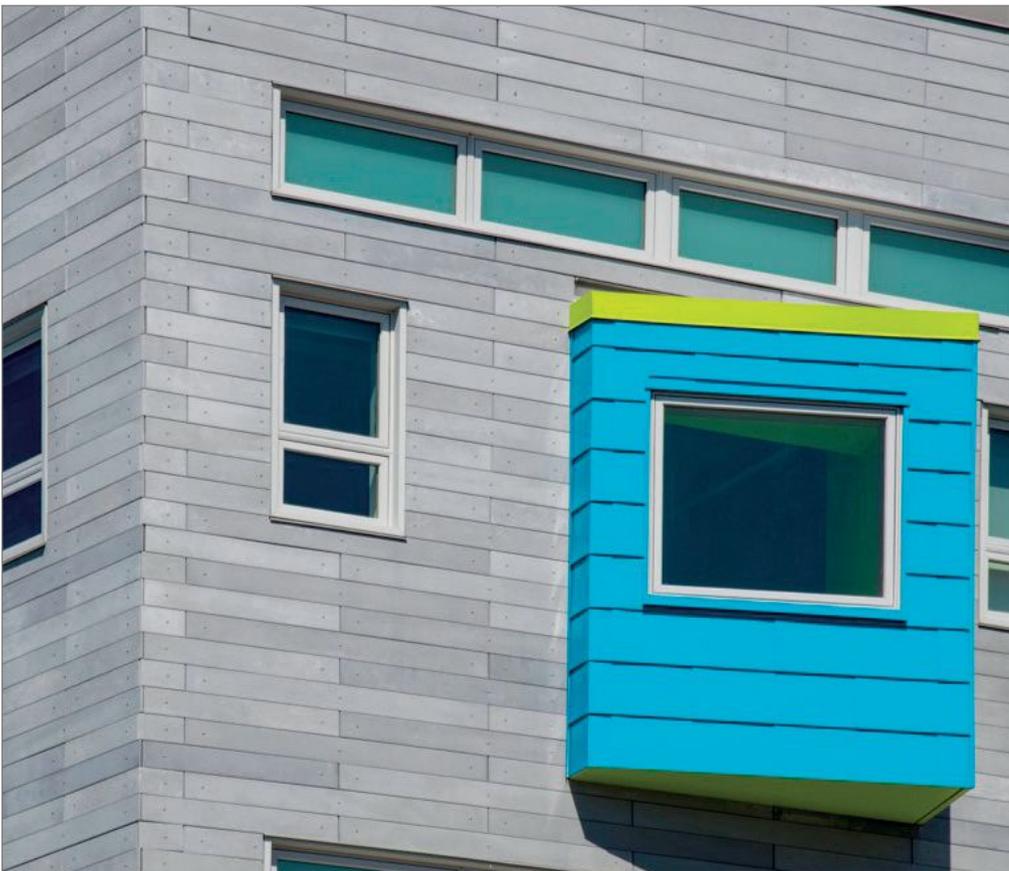
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Designing Ultra-High Performance Rainscreen Facades

Presented By:



SMALL DETAIL SHIFTS CAN MAKE THE GREATEST IMPACT



Kelly A. Henry, M. Arch, MBA, LEED AP

INTRODUCTION

The intent of this course is to explain how ultra-high performance concrete (UHPC) compares to glass fiber reinforced concrete (GFRC), fiber cement, and precast concrete (from a material performance and façade perspective), and provide architects with a clear set of essential tools that will help to facilitate optimal design and installation of UHPC rainscreen facades. Subsequently, the course will also discuss which drivers may shift the expense of a UHPC façade project and explain how to achieve the best installed appearance and performance characteristics

through the use of recommended specifications and attachment solutions.

Approximately 15 years ago, UHPC was first made commercially available to be used in the manufacture of thin panel concrete rainscreen systems. This type of system has since become increasingly popular, leading to the development and use of numerous alternative cementitious products in many innovative projects around the world. Because cementitious mix designs differ between manufacturers, their properties and performance capabilities can range significantly, it is important to understand the differences between these products in order to achieve optimal results.

LEARNING OBJECTIVES

1. Compare the material performance benefits of UHPC in comparison to GFRC, precast concrete, and fiber cement materials.
2. Explore the unique characteristics of specifying UHPC rainscreen for projects to achieve optimal results.
3. Analyze how color variability in UHPC panels can be used to create a more aesthetic experience for the occupants of the space.
4. Examine the key elements for architects to consider when specifying UHPC rainscreen façade to ensure the best quality results and appearance for the project.

CONTINUING EDUCATION

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Use the learning objectives to focus your study as you read this article. For details on the learning units or credit information, and to earn credit and obtain a certificate of completion, visit <http://go.hw.net/AR6225> to view the entire CEU and complete the quiz. If you are new to Hanley Wood University, CEU courses are free of charge once you create a new learner account; returning users log in as usual.

WHAT IS THE DIFFERENCE BETWEEN CEMENT, CONCRETE, UHPC, GFRC, AND FIBER CEMENT?

Many people think that cement and concrete are interchangeable in name and materiality. In reality, cement is simply a vital/key ingredient in the production of concrete and concrete products. In fact, cement is an ingredient in all "concrete-type rainscreen façade offerings available today. However, this does not mean that all these product offerings are equal. We will therefore spend a few minutes exploring and defining the differences between ultra-high performance concrete (UHPC), glass fiber reinforced concrete (GFRC), fiber cement, and standard precast concrete.

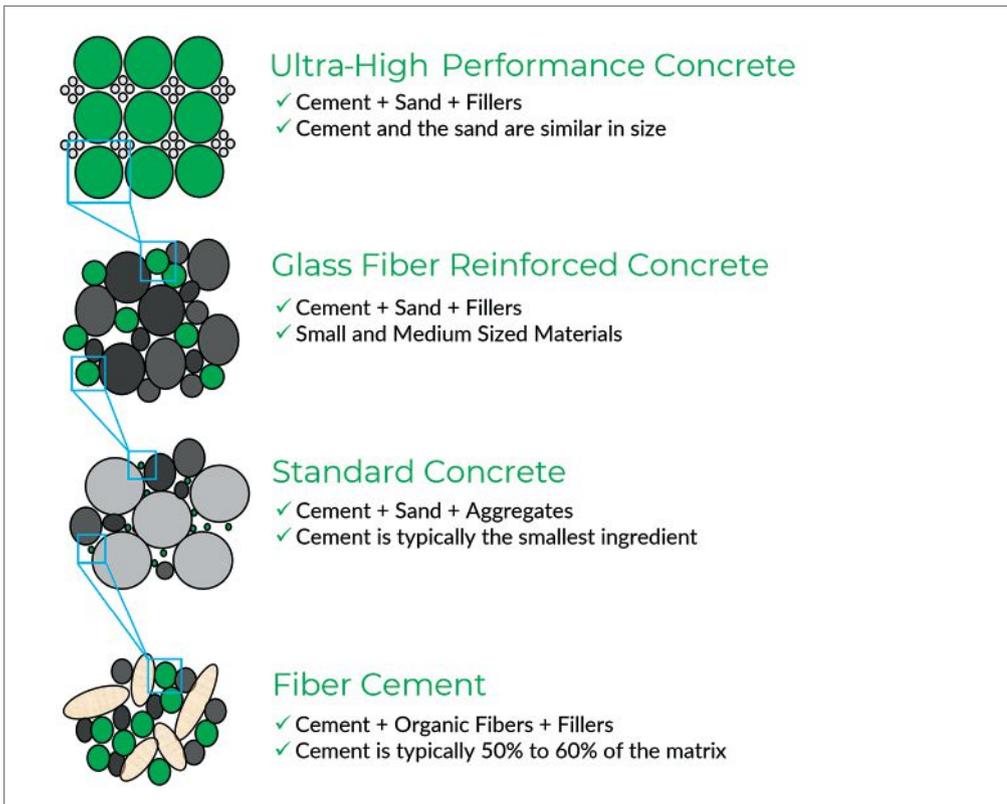


Figure 1: Concrete and fiber cement types

Since cement is an ingredient in all four of the products mentioned above, it is the relative amount and size of the cement particles in comparison to the other materials in the mix that creates most of the differentiating factors. UHPC, GFRC, and standard concrete are all technically pure concrete materials. Alternatively, fiber cement is composed of cementitious materials plus a large volume of organic fibers. Organic fibers can be anything from cellulose to textile fibers, paper pulp, or wood sawdust, depending on the manufacturer's mix design.

The two most important properties desired in this façade category are durability and flexural strength. "Pure" concrete materials tend to have better durability properties, while flexural characteristics are more driven by the size and shape of the ingredients used, as well as the passive reinforcing materials utilized. Passive reinforcing can be anything from traditional rebar to small hair-like fibers made of plastic, steel, glass, or even carbon. Figure 1 identifies the ingredients used in each of the four products along with a visual comparison of

the relative size of the cement particle, shown in green, compared to the other ingredients in the mix.

As shown in Figure 1, standard concrete is composed of a low ratio of cement, along with sand and aggregates. The cement in this mix design is typically the smallest particle in the mix. Because the aggregates tend to be larger and varied in shape, this results in a lower flexural and compressive capacity but higher economy by volume due to inexpensive large aggregates. GFRC uses a larger ratio of cement by volume than standard concrete, along with sand and other fillers that are more highly optimized by size than standard concrete but less so than UHPC, therefore providing a flexural capacity that is roughly between standard concrete and UHPC. As per its name, GFRC's mix design/matrix is reinforced with glass fibers. Because glass fiber reinforced concrete is not highly regulated and very dependent on the types of sand and fillers used in the mix design, there is a wide range of flexural and durability strengths recorded for this material type. When glass is used as the

GLOSSARY

ACM: Aluminum composite material, a laminated product with a very thin metal skin sandwiching composite materials.

Cement: A binder material that when activated can adhere other elements together and harden them as one matrix, commonly used in concrete.

Cementitious: Of the nature of cement, a product that uses cement in its makeup.

HSS Tube: Hollow structural section; steel tube that can come in square, rectangular and round profiles

Modulus of Rupture: Abbreviated as MOR; defined as the point at which a concrete beam will first rupture when under a 1/3-point bending test. An ultimate strength pertaining to the failure of beams by flexure equal to the bending moment at rupture divided by the section modulus of the beam.

On Center: A measurement taken from the center line of one element to the center line of the next element.

Phenolic Panel: Flat panel based on thermosetting resins, homogenously reinforced with wood fibers and manufactured under high pressure.

Passive Reinforcing: Metal bars or fibers in the cross-section of a concrete element that do not carry any load/forces until the concrete has cracked.

reinforcing material in either a fiber or glass mat format, it must be protected from attack by highly alkaline cement in the matrix. Most manufacturers use alkali-resistant glass, but the alkali resistance can begin to fade over time, so there is always a concern with respect to long-term durability on older structures.

UHPC uses the highest volume of cement when compared to the other mixes, as well as sand and fillers. Each of these raw ingredients is chosen for its specific gradation size and shape, with the cement and sand being the larger particles in the mix design. This creates a situation where you have an extremely high compressive strength and a matrix that likes to bond together, leading to a higher flexural strength, even without fibers. As well, the very dense nature of ultra-high performance concrete attributes to superior durability

properties, including high resistance to freeze thaw and moisture ingress, as well as impact. Overall, UHPC is the highest performing concrete for both durability and flexural characteristics.

Outside of the pure concrete category, fiber cement products use cement and high volumes of organic fibers, plus fillers, in their mix designs. This allows for a higher flexural strength than standard concrete and some GFRc mixes. However, organic fibers also create an issue for long-term durability and flexural capacity over time. The product relies on a painted/heavily sealed finish to protect the organic fibers from the effects of UV and moisture damage. Exposure to high summer heat in direct sun, freezing, thawing, and rain will begin to break down the organic fibers if proper maintenance is not established.

Comparing the flexural performance for all four material types, UHPC offers the highest flexural capacity and superior performance when exposed to heat, water, and freeze thaw over time. Conventional concrete, in comparison, has a very low modulus of rupture or initial cracking point and is totally dependent upon its passive reinforcement to not have a brittle failure or break completely in two pieces. GFRc, because it uses glass fibers, will show resilience to breaking completely in half, but after hitting the first rupture, the crack will expand quickly until full failure. Fiber cement in some cases has a higher modulus of rupture than GFRc; however, once cracked, the organic fibers' resistance to further breakage is low and the flexural capacity collapses quite rapidly after first crack. Again, exposure to heat, water, and/or freeze thaw over time can create a significant degradation to when a panel in this material may first crack. It is important to note that in some fiber cement panels, the sealer that is employed on its surface is to stop water ingress, and if the fiber cement panel loses this sealer by means of a panel being

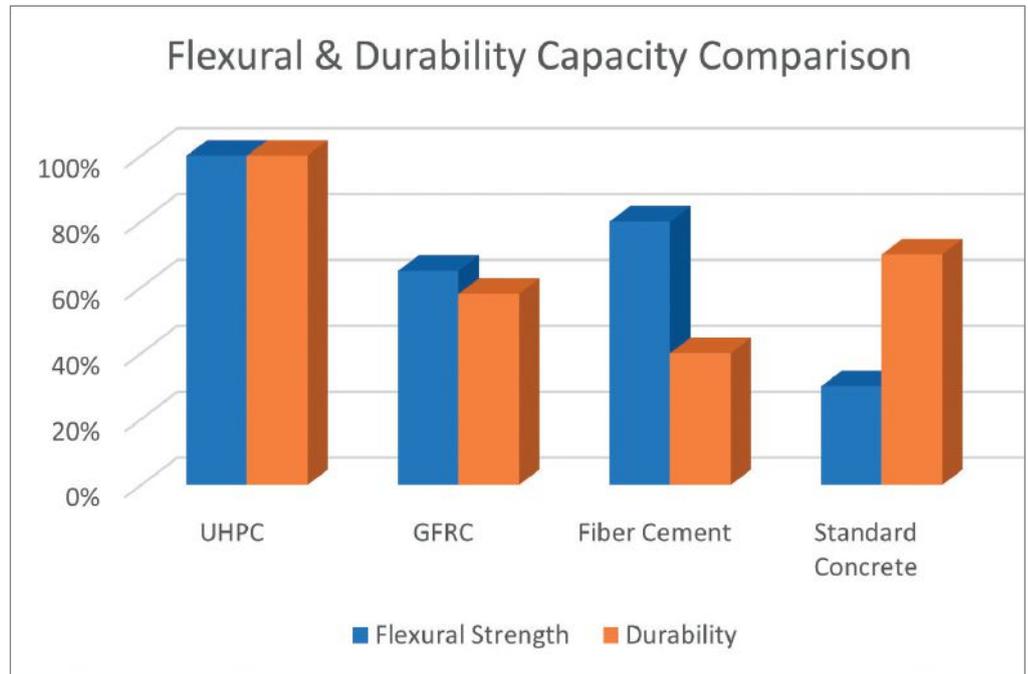


Figure 2: Flexural and durability capacity comparison

cut and the edge not properly resealed, it can also suffer almost immediate damage to its flexural capacity.

The flexural capacities of each of these products determine the thickness at which a panel can be manufactured, and this thickness also ranges based on the desired panel size and project conditions. Typically, UHPC, GFRc, and fiber cement panels will be the thinnest at 1/2-5/8 inches, whereas standard concrete panels would need to be 1-1/2 inches or thicker.

Figure 2 shows a relative comparison of each material to that of UHPC as a standard and its capacity for flexural strength and durability against aging factors such as water and salt ingress or freezing and thawing conditions. UHPC has the best flexural capacity and durability over time when exposed to heat, moisture, and freeze thaw. Fiber cement panels have the second-best flexural capacity; however, degradation over

time can occur, so the durability category is affected. GFRc panels offer good flexural capacity, but GFRc mix designs can be unregulated in the industry, and it is a good idea to write specifications with expected strength capacities in order to specifically define the project needs and put the onus on the manufacturer to show testing results of its specific GFRc mix design. Regardless, GFRc panels will likely use a typical hollow structural section tube (HSS) back frame as a means of support in a structure. Finally, standard concrete has excellent durability but in all cases must incorporate passive reinforcing to have any flexural capacity. This means that all architectural elements cast using standard concrete will be larger in cross-section than the other three.

Of course, there is also an aesthetic difference between each of the four materials based on the ingredients used in each mix design, but that can be an extensive topic itself and will not be covered in this course. It is a good practice, however, to compare product samples and observe how each one compares to a natural concrete look, and to confirm if the aesthetic nature of each material meets the expectations or requirements of the architect and owner.

For more information, see the following test reports published by the National Center for Biotechnology Information (NCBI):

Fire: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6471686/>

Moisture: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7344779/>

Freeze/Thaw: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6650814/>

ULTRA-HIGH PERFORMANCE CONCRETE

Fibers

We will now transition our focus to just UHPC or, more specifically, how ultra-high performance concrete works as a thin panel in a ventilated façade system. There are various fiber types that can be used in conjunction with UHPC. Poly-vinyl alcohol (PVA) fibers, glass fibers (or glass fiber mats), steel fibers, stainless steel fibers, and carbon fibers have all been used in UHPC mix designs. For rainscreen systems, the two most popular fibers used are PVA or glass. Nonferrous passive reinforcement is desired to keep rust spots from marring the look of the surface finish. Regardless of the material of the fiber, separate hair-like fibers, rather than a mesh or mat, allow for greater ease of three-dimensional casting of UHPC shapes. Shapes like column covers, L-shaped corners, or C-shaped slab edge components may be a desired design element. Separate fibers generally allow much more flexibility to cast a desired shape in comparison to the ridged placement needs of a glass mat. If a flat panel is all that is desired, then the use of a glass mat may be suitable for use. In all cases, the passive reinforcement serves as added security in the case of catastrophic breakage, allowing the panel to stay intact after first crack. But it is important to note that the modulus of rupture is typically the driving design criteria because most owners do not want the look of a cracked panel on their project.

Detailing and Optimization

Most manufacturers of ventilated UHPC panel façades include the panel, attachment clip, and the rail that the panels directly hang from as part of their scope. This system is typically hung from a sub-framing system that includes the insulation and water vapor barrier for the building. There are several different sub-framing systems that can be used, and each employs different tactics for thermal breaks,



This article continues on
<http://go.hw.net/AR6225>.

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QUIZ

- What is the difference between cement and concrete?**
 - Cement is a key ingredient in the production of concrete
 - Cement and concrete are the same thing, and the words are interchangeable
 - Concrete is a key ingredient in the production of cement
 - None of the above
- According to the course materials, the most significant difference between UHPC and other materials is UHPC demonstrates superior:**
 - Flexural capacity
 - Durability
 - Performance when exposed to heat, water and freeze thaw
 - All of the above
- What two fiber types are most typically used in UHPC ventilated façade applications?**
 - PVA or glass
 - PVA or stainless steel
 - Glass or carbon
 - PVA or carbon
- What is the most typical corner detail that will create the most cost savings?**
 - Closed factory applied
 - Open quirk miter
 - Open butted joint
 - Closed integral cast
- What is the most optimized attachment span for clips on a UHPC panel?**
 - 18 inches on center
 - 24 inches on center
 - 36 inches on center
 - 12 inches on center
- According to the course materials, the end result of a facades panel coloring should:**
 - Cut all panels from only a single batch
 - Never allow blending during panel cutting
 - Provide a mosaic effect when complete
 - None of the above
- Using two or more different textures on a façade project will do what for the color hue dynamic from panel to panel?**
 - Further push a random hue from panel to panel on the façade
 - Changing the textures will not change the color hue from panel to panel
 - There will be some color hue change but not very much from panel to panel
 - None of the above
- When specifying UHPC rainscreen facades, a key element that an architect should consider is:**
 - Requiring shop drawings and engineering calculation from the manufacturer
 - Establishing minimum panel performance characteristics
 - Having a minimum of two representative samples of reach color and texture
 - All of the above
- What project size is best if you would like to create a custom pattern but not have it drive the cost of the project too high?**
 - 10,000 square feet or larger
 - 10,000 square feet or smaller
 - 5,000 square feet or larger
 - 5,000 square feet or smaller
- Why is it a recommended practice for architects to show several panel-to-panel tones in their rendered drawings?**
 - To give a more realistic assessment of the façade's final look
 - Because concrete is a natural material that can shift in its color hue and tone from panel to panel
 - If a client would like a more uniform look to their façade, it should be specified as such to obtain this outcome
 - None of the above

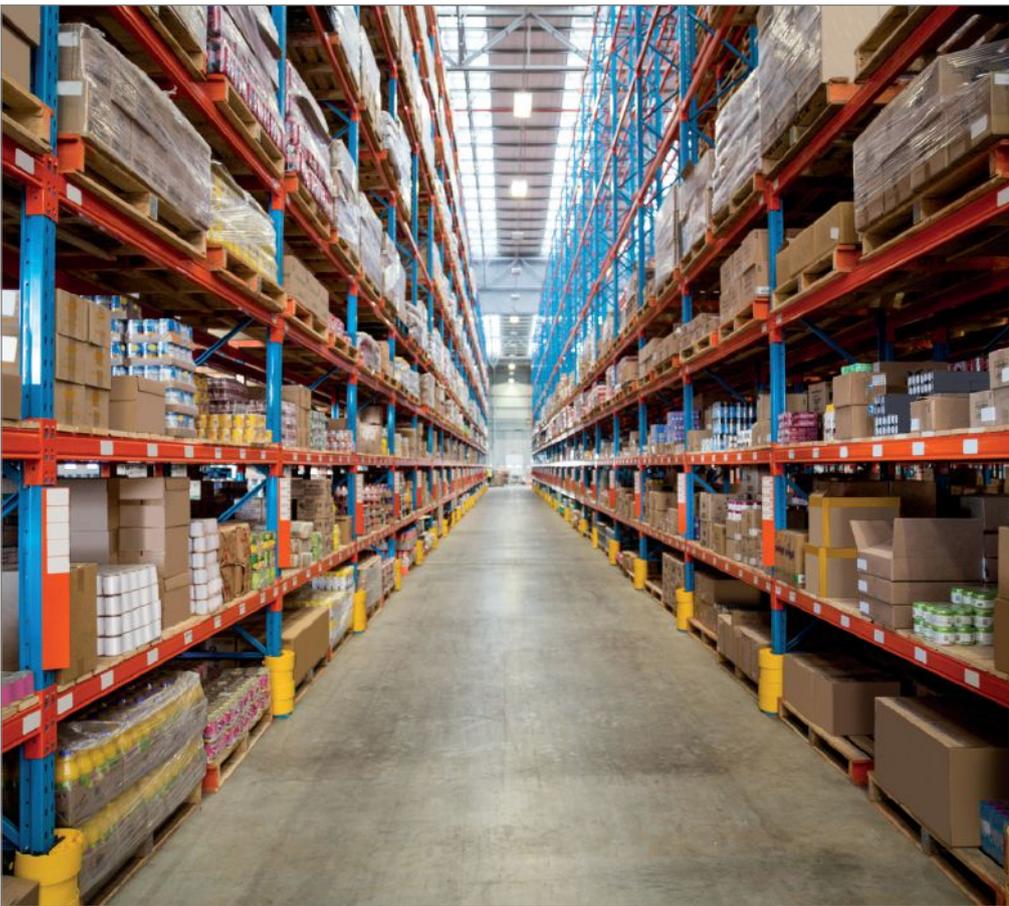
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Meeting the Energy Needs of Warehouse Facilities with Propane

Presented By:



LEARNING OBJECTIVES

1. Examine the growth of the warehouse sector and how warehouse construction has evolved, particularly with the proliferation of e-commerce.
2. Describe the challenges of supplying energy to warehouses and distribution centers in rural areas, and why it's sometimes difficult to meet energy needs in these locations.
3. Identify the energy needs of warehouse facilities and opportunities for using propane to power mechanical systems and amenities within these buildings.
4. Explore several case studies where propane systems were used to heat and power different types of warehouse facilities across the United States.

CONTINUING EDUCATION

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WAREHOUSE SECTOR SKYROCKETS

When we order a pair of shoes online and they appear on our doorstep the next day, it can sometimes feel like magic. And with autonomous drones set to speed that delivery time to 30 minutes or less, it might as well be. But undergirding the logistical miracle of e-commerce is a rapidly growing network of massive warehouses, logistics hubs, and fulfillment centers designed to deliver products to buyers as quickly as possible. These facilities are not only proliferating across the country, but they're also growing larger.¹

Warehouses, distribution centers (DCs), and fulfillment centers are used in every industry, from grocery and traditional retail to the exploding e-commerce industry. While these terms are sometimes used interchangeably, these types of buildings typically serve different needs and fall under the umbrella of "logistics centers," as they play a crucial role in supply chain logistics.² In the past, warehouses were staffed by a relatively small crew using forklifts and manual labor to sort, package, and ship goods. Today's modern facilities are highly complex, high-tech operations equipped with

miles of conveyor belts, automatic retrieval and sortation systems, packing facilities, and shipping operations. In addition, a growing number of applications require cold storage, which presents its own set of challenges. This course will examine the rapidly expanding warehouse vertical and identify opportunities for using propane to power mechanical systems and amenities in these buildings, particularly in rural areas where warehouse facilities are often located.

According to seasonally adjusted data from the U.S. Department of Commerce, U.S. consumers spent an estimated \$209.5 billion



Today's warehouses are significantly more complex due to high-tech sorting equipment that often uses robotics-driven automated storage and retrieval systems (ASRS), requiring greater expertise from architects, engineers, and builders when designing, specifying, and constructing such equipment.

online in the third quarter of 2020. That's a significant increase of 36.7% from the same period in 2019, when e-commerce sales made up 11.2% of total sales. Therefore, it's not surprising that in a 2022 construction forecast characterized by cautious optimism, one sector stands out: warehouses. The Dodge Construction Forecast indicates warehouse construction starts were set to increase 36% in 2021, with another 13% boost in 2022, according to an outlook reported by Alisa Zevin and Debra K. Rubin in *Engineering News-Record*.

Consumers aren't just buying more products online; they expect them to be delivered very quickly. Therefore, companies are increasing their inventory and stepping up operations and staffing to be more resilient and meet consumer demand. These factors point to the need for massive facilities that can be constructed quickly, with systems and amenities to foster highly efficient, safe distribution.

EVOLUTION OF WAREHOUSE CONSTRUCTION

The e-commerce market has had a significant impact on the design and construction of supply chain facilities. The size of campuses, an expanding labor force, construction

complexities, and the growing need for cold storage have all driven this evolution. In her recent article "Online Retailers Are Transforming Warehouse Construction," Jennifer Goodman notes, "U.S. consumers' zeal for nearly instantaneous access to groceries and other items has upended the design and construction of facilities like warehouses and distribution centers. Driven by consumers' desire for fast and reliable delivery of everything from furniture and clothes to milk and toothpaste, these modern facilities are crucial parts of the supply chain for e-commerce and brick-and-mortar brands like Amazon, Whole Foods, Kroger, and Wal-Mart." Unfortunately, due to this increasing demand, there has been a shortage of warehouse space since 2015.

Size

The size of these facilities has ballooned, with the number of commercial warehouses with at least a million square feet more than doubling from 23 in 2007 to 48 in 2018, according to Dodge Data & Analytics.³ In 2018, Amazon alone accounted for four distribution centers that each measure more than 2 million square feet.⁴ The footprint of some campuses has doubled, or even tripled, pushing them beyond 3 million square feet,

GLOSSARY

Automated storage and retrieval systems (ASRS):

A type of warehouse automation technology specifically designed to buffer, store, and retrieve product and inventory on demand that can consist of shuttles, cranes, carousels, vertical lift modules, micro-loads, mini-loads, unit-loads, or other systems⁵

Cold storage: A refrigerated facility or warehouse for the storage of temperature-controlled substances⁶

Distribution center (DC): A facility used for receiving, temporary storage, and distribution of goods according to orders as they're received⁷

Distribution system (piping network): Propane distribution systems are like natural gas systems in that underground pipes deliver the propane to individual service points on buildings; gas piping is buried according to local codes and standards

Propane standby generator: A key part of resilient design, propane-powered standby generators keep homes and businesses safe and secure, providing light, heat, and crucial power in the event of an outage

Propane storage tanks: On-site propane storage for commercial building projects of any size, from the smallest commercial building to a sprawling resort or retail complex; the smallest tank systems are available from 120 gallons to 2,000 gallons for spot energy needs and for larger projects, 18,000- and 30,000-gallon tanks are commonly used

Remote tank monitoring (RTM): Provides accurate readouts of supplier and customer gas levels, is accessible from any connected device, and can allow need-based deliveries to reduce travel time and costs; RTM tracks consumption trends and patterns and can automatically place orders when the need for more propane arises

Propane-air: Also called LPG-air, propane-air is synthetic natural gas (SNG) formed by mixing vaporized propane or LPG with air; this homogeneous mixture can directly replace natural gas in combustion applications

Tankless propane water heater: Compact water heater that does not have a storage tank, allowing unit placement close to points of use, improving hot water delivery time and reducing waste; because the water is heated when it's needed, tankless units provide a nearly endless supply of hot water and can be combined into larger arrays for water output rates of several hundred gallons per minute

Warehouse mezzanine: An elevated section of flooring or platform that's installed between the floor and the ceiling to increase storage space and workspace in a warehouse facility⁸

due to the addition of an elevated mezzanine level, which is used to “support the complex racking, conveying, and robotic systems in today’s facilities.”⁹

Labor Force

Despite popular belief that automation would minimize the need for warehouse employees, the growth of e-commerce and the need to individually package, sort, and ship thousands of items a day has actually increased labor needs. Amenities are essential to attract and retain these workers, so facilities must be comfortable and well-equipped with features such as full kitchens, dining areas, and landscaped outdoor break areas.¹⁰ Parking to accommodate a larger labor force is also very important, as is making sure that where a facility is located has both the infrastructure and talent pool to draw employees.

Construction

Today’s warehouses are significantly more complex due to high-tech sorting equipment that often uses robotics-driven automated storage and retrieval systems (ASRS), requiring greater expertise from architects, engineers, and builders when designing, specifying, and constructing such equipment. The construction of complex distribution centers also requires exacting timelines to bring them online as fast as possible. Owners need a facility’s critical systems and functions, such as electricity, plumbing, HVAC, and technology, built out first, so scheduling subs to build out the automated systems is crucial.



Although most warehouses are built near economic hubs with access to natural gas and electricity, growing distribution footprints and rapid industrial expansion mean opportunities beyond the gas grid.

Project teams must “demonstrate the ability to be nimble, creative, patient, and adapt in real-time.”¹¹

Need for Cold Storage

Cold storage is another hot market, with the growth of online grocery and meal kit delivery generating demand for up to 100 million additional square feet of cold storage warehousing space from 2020 to 2025, according to the CBRE Food Facilities Group, which serves the needs of cold storage, food processing, and food distribution users and owners in the U.S.¹² In fact, The Food Industry Association and Nielsen predict online food and beverage sales will reach

\$143 billion by 2025, representing 30% of all omnichannel food and beverage spending.¹³ “Accelerating demand for cold storage space could prove problematic due to cold-storage construction’s specialized and resource-intensive nature” and a lack of facilities, with cold storage accounting for only 1-3% of warehouses nationwide.¹⁴

Perishables require special handling, and it’s complicated and expensive to maintain the cold supply chain from the refrigerator or freezer to the warehouse, then to the final destination. In fact, “these facilities need to maintain temperatures between -25 degrees and +55 degrees, depending on the inventory,” and need significantly more equipment. Cold storage buildings can cost 2-3 times more than traditional industrial buildings because they must have special refrigeration and mechanical equipment, be constructed to handle heavy rooftop cooling units, and incorporate insulated metal panels and premium concrete floors with integrated cooling systems. And construction can take 4-5 months longer than dry warehouses.¹⁵ Even traditional warehouse facilities need more robust and powerful systems and building envelopes. For example, floors, walls, and roofs must be stronger, and operating 1-million-square-foot-plus, high-tech distribution centers requires large amounts of power.¹⁶

As developers strive to meet the growing demand for more warehouse space, new



Warehouses, DCs, and fulfillment centers are often extensive campuses with numerous buildings spread out over a large site, and they are growing. To maintain high efficiency, the parking lot alone must be able to accommodate loading docks and 100-plus trailers needing quick ingress and egress

buildings are popping up across all regions of the country. "Warehouse starts continue to stagger the imagination," says Richard Branch, Dodge Construction Network chief economist. "E-commerce businesses are the main catalysts, with online shopping growing in popularity." In addition, many of these businesses are being constructed in outlying areas without access to natural gas, making propane an ideal energy source.

CONSIDERING WAREHOUSE AND DISTRIBUTION CENTER SITES

As you can see, warehouses, DCs, and fulfillment centers are often extensive campuses with numerous buildings spread out over a large site, and they are growing. To maintain high efficiency, the parking lot alone must be able to accommodate loading docks and 100-plus trailers needing quick ingress and egress. Therefore, the footprints of these facilities have ballooned to house warehouse space, office space, a mezzanine, and "energy centers," as well as truck maintenance garages, fuel islands, maintenance buildings, and more.

Major transportation corridors near metropolitan areas close to ports, airports, and trucking facilities are growing markets for locating warehouse and distribution space.¹⁷ Smaller warehouses and distribution centers are also popping up in major urban centers for "last mile" processing of e-commerce orders. "For instance, Goldman Sachs Asset Management, PRE, and DPH are jointly developing a three-story, 370,000-square-foot institutional-grade warehouse and distribution center in Brooklyn."¹⁸ Older buildings such as dormant shopping malls, grocery stores, and warehouses are often repurposed for such use. Some companies are even raising ceiling heights on existing one-story buildings to allow for mezzanine-style, multi-story warehouses.

QUIZ

- Which of the following factors is driving the evolution of warehouse construction?**
 - Size of campuses
 - Expanding labor force
 - Construction complexities
 - Growing need for cold storage
 - All of the above
- The Food Industry Association and Nielsen predict online food and beverage sales will reach \$143 billion by 2025, representing _____% of all omnichannel food and beverage spending.**
 - 10
 - 20
 - 30
 - 40
- In warehouse construction, propane is used much like natural gas, providing fuel for which of the following applications?**
 - Space heating
 - Water heating
 - Power generation
 - Forklifts
 - Amenities
 - All of the above
- _____ provides accurate readouts of supplier and customer gas levels, is accessible from any connected device, and can allow need-based deliveries to reduce travel time and costs.**
 - Automatic storage and retrieval
 - Remote tank monitoring
 - Metered service
 - Onsite storage
- _____ means paying only for the propane consumed, as the supplier keeps track of usage via a meter and bills only for the amount used, similar to natural gas billing.**
 - Automatic storage and retrieval
 - Remote tank monitoring
 - Metered service
 - Onsite storage
- _____ is the ability to function after or during an ongoing natural disaster or accidental power outage.**
 - Resilience
 - Sustainability
 - Fortitude
 - Energy security
- In nonrefrigerated warehouses in the United States, _____ is the primary end use for electricity and _____ is the largest end use for natural gas, with these energy costs accounting for approximately 15% of a warehouse's operating budget.**
 - Lighting, space heating
 - Water heating, lighting
 - Space heating, lighting
 - Lighting, space heating
- With their ability to deliver heat efficiently over large surface areas, _____ systems can be a smart choice for large warehouse projects.**
 - High-intensity infrared
 - Low-intensity infrared
 - In-floor radiant heating
 - Propane boiler
- For some projects, _____ offers an innovative solution to protect mission-critical gas-fueled systems.**
 - Propane-air
 - Natural gas
 - Synthetic natural gas
 - Both A and C
- The capital costs of propane forklifts are almost _____% lower than those for electric when factoring in required refueling and recharging.**
 - 10
 - 20
 - 30
 - 40

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Getting in Touch: The Importance of Architect-Manufacturer Collaborations

Presented By:



THE RISE OF COLLABORATION BETWEEN ARCHITECTS AND MANUFACTURERS: AN INTRODUCTION

Collaboration in the architecture, engineering, and construction (AEC) industries helps to reduce building waste, improve on-site safety, increase productivity, and in general provide greater transparency for stakeholders across a project. Building information modelling (BIM) has aided collaboration, further allowing stakeholders to simplify information sharing around design and cost analyses, risk management, and various documentation. What is often overlooked in many discussions around collaboration in the AEC industries, however, is the role of the manufacturer. Successful collaborations between architects and manufacturers can result in invention, innovation, and more streamlined design and construction project phases.

Manufacturing and the Modern Movement

During the last century, the need for architect-manufacturer collaborations has become more pronounced. Throughout this time, the production of goods has shifted increasingly from individual craftsmen to industrialization,

and while the Industrial Revolution began in the 19th century, the architecture, engineering, and construction industries were slow to adopt more mechanized processes.

Traditional craftsmanship endured into the 20th century, and it was not until the Modern Movement in architecture, which began in Europe in the 1920s, that the AEC industries were catapulted into the use of new materials and technologies. Art Deco, Art Moderne, and the International style all experimented with new forms for buildings, whether it was the “smooth wall surface” of Art Deco or the “more streamlined, less ornamented” Art Moderne. The International style in particular changed the urban landscape. “Stark” and “unornamented,” it offered “rectangular shapes, punctuated with bands of windows” inspired by the Cubism modern art movement. The International style promoted new shapes and new forms that then necessitated new construction technologies.¹

In the period between the two World Wars, as Europe was experimenting with these new building styles in both commercial structures and homes, Americans were experimenting with new forms for

LEARNING OBJECTIVES

1. Assess the modern history of collaboration between architects and manufacturers and the differences between mass production and mass customization.
2. Evaluate definitions of collaboration and collaborative alliances and how they relate to architect-manufacturer collaborations.
3. Analyze ways architects and manufacturers can collaborate more effectively.
4. Examine case studies where architects successfully collaborated with manufacturers to innovate and implement products.

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skyscrapers. Just before the onset of World War II, many renowned European architects began to immigrate to the U.S., leading to the first modern architecture exhibit in New York City and the publication of *The International Style* by Henry-Russell Hitchcock and Philip Johnson.²

Art Deco, Art Moderne, and International style, combined with emerging American trends, went hand-in-hand with new theories of architecture. Modernism on both sides of the Atlantic embraced principles of industrialization, including ideas of “rationalization [...], systemization, standardization, prefabrication, and serial production.” Walter Gropius, in particular, explored ideas of industrial production logic,

including “a flexible construction kit” and “assembly line serial production.” Both of these concepts “aimed at rationalizing design and building processes in order to turn the house into an industrially manufactured product in the sense of a modern machine [of] architecture.” Gropius’s ideas resulted in real world experiments with structures, systems, and construction methods that necessitated working more closely with manufacturers.³

The Construction Kit, the Assembly Line, and “Rational” Architecture

The goal of Gropius’s construction kit was to transform the construction of homes into “an industrially manufactured product” assembled from flexible components of the kit. Rather than being built solely at the construction site, Gropius’s residential structures could be “produced as assembly-ready components in specialized factories.” He believed that his kits would allow the construction industry to achieve the “advantages and quality of industrial production,” reduce on-site construction time and cost, and create more uniform construction components.⁴

Gropius’s kits embodied the idea of interchangeable parts manufacturing, which was first developed in a modern sense in late 18th century France and eventually adopted and refined by Americans Eli Whitney and Henry Ford. Interchangeable parts manufacturing can be defined as identical parts that can be utilized in similar assemblies without the need for custom fittings. Interchangeable parts became the cornerstone to manufacturing, as industries ranging from clockmakers to steam engine companies, bicycle makers, typewriter producers, and even spice harvesters learned how to mass produce their products. Machine tools began to replace hand tools, fewer skilled laborers were needed across numerous industries, and manufacturers from countless industries eventually adopted the use of assembly lines.

For Gropius, interchangeable parts manufacturing translated architecturally to the assemblage of “the elements of houses which are previously manufactured in factories by a dry construction method on the construction site like machines.”

He hoped these construction methods would help modernize construction, turning it into an “industrial manufacturing process” where the disadvantages of traditional building, such as material imperfections, delays caused by inclement weather, and inconsistencies between the quality and availability of skilled labor, would be eradicated. The goal was not to industrially manufacture an entire dwelling, but rather, “individual components that can then be assembled into different types of houses.”⁵

Gropius’s construction kits, then, needed to contain new materials conducive to his proposed building methods. He advocated for “mechanically processed” materials of “exact uniformity,” such as “wrought iron, cement alloys, and artificial wood.” He also stated that the “in-fill of the walls, ceilings and roof... is to consist of standardized building panels machine produced from weather-resistant, structurally reliable, yet porous, insulating and tough lightweight material,’ such as pumice cement [or] plaster-board.” Some of the materials, such as concrete beams and bricks, were created on-site where laborers monitored the machines, performing the same tasks repeatedly, much like workers on an assembly line.⁶

Gropius’s experiments achieved mixed results. While the time spent constructing houses was greatly reduced (in 1928, Gropius built 130 houses in 88 days), his cost savings were not as significant as he had anticipated. Reflecting on his initial experiments, Gropius determined that additional cost savings could stem from “the development of a lightweight building material that is superior to brick, the improvement of lightweight panels and the production of flexible lightweight walls, in addition to improved window mechanisms, new façade materials, heat meters, as well as mechanical ventilation systems.” His focus shifted to his construction kits and away from the idea of on-site assembly line production. The kits and their various components not only allowed for more flexible construction and design but also aligned with “the idea of the house as an individual consumer product.”⁷

Today, Gropius’s experiments with the construction kit and assembly line serial production are echoed in prefabricated and modular construction, digital design tools, and robot-assisted fabrication.⁸ His theories,

GLOSSARY

Adaptive Customizers: Offer one standard, but customizable, product that is designed so that users can alter it themselves

Collaborative Customizers: Conduct a dialogue with individual customers to help them articulate their needs, to identify the precise offering that fulfills those needs, and to make customized products for them

Construction Kit: Embodied the idea of interchangeable parts manufacturing; part of Gropius’s attempt to transform the construction of homes into “an industrially manufactured product”

Cosmetic Customizers: Present a standard product differently to different customers, meaning that only the packaging, not the product, is customized

Interchangeable Parts Manufacturing: Identical parts that can be utilized in similar assemblies without the need for custom fittings

Interchangeable Parts Manufacturing in Architecture: The assemblage of “the elements of houses which are previously manufactured in factories by a dry construction method on the construction site like machines”

Mass Customization: Refers to customer-oriented and individualized mass production for a large market, meeting the different needs of each customer of these products at costs that are comparable to those of mass production

Mass Production: Equates to the (often quick) creation of a large volume of identical products and is reliant on the concept of interchangeable parts

Production: Involves transforming materials or resources into products for consumption

Transparent Customizers: Provide individual customers with unique goods or services without letting them know explicitly that those products and services have been customized for them

which relied heavily on industrialization and manufacturing, expressed a desire to combine “the aesthetic activity of the architect with the economic activity of the entrepreneur,” creating “a happy union...between art and technics” where various housing elements could be manufactured both to standard dimensions and to predetermined variants. In this way, Gropius sought to achieve a

collaboration between architect, client, and manufacturer, maintaining, “It is by the provision of interchangeable parts that the Company can meet the public’s desire for individuality and offer the client the pleasure of personal choice and initiative without jettisoning aesthetic unity.”⁹

Mass Production vs. Mass Customization

Part of Gropius’s vision for the future of architecture and the role of the manufacturer involved mass production. Put simply, production involves transforming materials or resources into products for consumption. Mass production, a term which dates back to the Industrial Revolution, is implemented “through division of labor, assembly lines, large factories, and specialized machinery.” Mass production, at its inception, “lowered prices for consumers, but relegated workers to low-skill ... jobs.”¹⁰ In general, mass production equates to the (often quick) creation of a large volume of identical products and is reliant on the concept of interchangeable parts.

Gropius’s vision, however, also advocated for flexibility and a degree of customization. Mass customization, as opposed to mass production, “refers to customer-oriented and individualized mass production for a large market, meeting the different needs of each customer of these products at costs that are comparable to those of mass production.”¹¹ Mass customization, then, often embraces aspects of mass production as well as traditional craftsmanship.

The Harvard Business Review describes “four faces,” or four approaches, to mass customization: collaborative, adaptive, cosmetic, and transparent.

1. Collaborative customizers conduct a dialogue with individual customers to help them articulate their needs, to identify the precise offering that fulfills those needs, and to make customized products for them.

2. Adaptive customizers offer one standard, but customizable, product that is designed so that users can alter it themselves.

3. Cosmetic customizers present a standard product differently to different customers, meaning that only the packaging, not the product, is customized.

4. Transparent customizers provide



FROM CONSTRUCTION KITS TO 3D PRINTING: CREATING A PROTOTYPE

The invention of 3D printing is largely credited to Charles Hull. In 1983, Hull developed the concept of hardening the resin of tabletop coatings with ultraviolet (UV) light, which then led to the creation of stereolithography (SLA) and what became widely accepted as the first 3D printer. SLA printing beams a UV laser at light-sensitive resin, causing it to cure and harden. Eventually, this UV technology was expanded to include materials beyond resin that do not have to react to UV light. Other types of 3D printing include material extrusion, powder bed fusion of polymers, material jetting, binder jetting, and powder bed fusion of metals. Put simply, 3D printing, or additive manufacturing, utilizes software to cut a design into separate layers. These digital layers are then printed into an object, layer by layer.

Manufacturers can help designers understand and utilize the benefits and limitations of 3D printing. For instance, manufacturers determine the parameters of SLA systems, inputting layer height and part orientation. The ability of the manufacturer to create products of different sizes is determined not just by the design specifications but by the size of the SLA machine.

There are both pros and cons to working with SLA machines. Some of the advantages include the following:

- SLA can produce parts with very high dimensional accuracy and with intricate details.
- SLA parts have a very smooth surface finish, making them ideal for visual prototypes.
- Specialty SLA materials are available, such as clear, flexible and castable resins.

Disadvantages are as follows:

- SLA parts are generally brittle and not suitable for functional prototypes.
- The mechanical properties and visual appearance of SLA parts will degrade over time when the parts are exposed to sunlight.
- Support structures are always required, and post-processing is necessary to remove the visual marks left on the SLA part.

That said, architects and manufacturers working together to innovate new building components can take advantage of SLA 3D printing to create visual prototypes. The material output from SLAs is an extremely smooth surface that allows stakeholders to see small details. SLA machines can also create components in a range of sizes, up to 1500 x 750 x 500mm.

individual customers with unique goods or services without letting them know explicitly that those products and services have been customized for them.¹²

Manufacturers often combine two or more of the approaches discussed above and many have “identified the dimensions along which their customers differ in their needs.”¹³ Regardless whether manufacturers adopt collaborative, adaptive, cosmetic, transparent, or multiple forms of customization, many have recognized that clients value goods and services that reflect their unique needs.

In the AEC industries, the shift from mass production to mass customization is reflective, in part, of changes in materials and technology. Importantly, new materials, technologies, and the shift to mass customization also necessitates closer collaboration between architects and manufacturers.

WHY COLLABORATE? DEFINING COLLABORATION AND COLLABORATIVE ALLIANCES

Collaboration can be defined as “a process through which parties who see different aspects of a problem can constructively explore their differences and explore solutions that go beyond their own limited vision of what is possible.” The concept can further be defined as “a process of joint decision making among stakeholders of a problem domain about the future of that domain.” Building from those definitions, a collaborative alliance “can be described as an interorganizational effort to address problems too complex and too protracted to be resolved by unilateral organizational [or individual] action.”¹⁶ In short, stakeholders can have both similar and differing interests at the start of a collaboration; they also often have differing areas of expertise and choose to collaborate to find innovative solutions that may not otherwise be discovered. Sometimes, collaborations can result in altering the course



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QUIZ

- Interchangeable parts manufacturing was first developed in _____.**
 - Mid-1920s America
 - Post-WWII Germany
 - Late 18th-century France
 - Between the two World Wars
- Which architect advocated for the use of construction kits, assembly lines, and “rational” architecture?**
 - Henry-Russell Hitchcock
 - Walter Gropius
 - Philip Johnson
 - Tadao Ando
- The Harvard Business Review describes approaches to mass customization which include:**
 - Collaborative customizers
 - Cosmetic customizers
 - Transparent customizers
 - All of the above
- According to the course materials, collaborations often result in which of the following?**
 - The creation of something new
 - A broader, more diverse vision
 - Altering the course of future processes
 - All of the above
- Collaborations between architects and manufacturers can often lead to the three “I’s”:**
 - Improvement, innovation, and invention
 - Improvement, isometric panels, and idealism
 - Innovation, insight, and invention
 - None of the above
- From 2010 to today, approximately _____ of work is team based.**
 - 90%
 - 80%
 - 70%
 - 60%
- Howard Bradston partnered with which lighting manufacturer when he redesigned the lighting for the Statue of Liberty?**
 - General Electric
 - Samsung LED
 - Philips
 - Nichia
- In the AIA survey on collaboration between architects and manufacturers, _____ of architects stated that having meaningful relationships with manufacturers was critical to their success.**
 - 33%
 - 56%
 - 88%
 - 90%
- Which of the following are attributes architects should look for from manufacturers?**
 - Improved websites and expertise
 - Transparency
 - Proactivity
 - All of the above
- Timing for the 3D printing process of extruded aluminum is about _____.**
 - 2 days
 - 2 weeks
 - 2 months
 - 2 years

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Residential Roofing and Architectural Trends for 2023 and Beyond

Presented By:

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TRENDS IN HISTORICAL REVIEW

When looking backwards into the past, if one were to go beyond the architectural industry and search for comparison trends in fashion, consumer products, and other areas such as automotive design, there would be clear relationships between each trend and its impact on culture and design.

Prior to the 2008 recession, America was enjoying a robust economy. Consumer spending and design trends directly reflected the comfort that citizens felt, evident in everything from clothing choices, vehicles, and home styles. In that era, big displays of consumption were part of consumer language. For example, Hummer vehicles were in demand and homes across the country displayed busy elevations, complex rooflines, and the kind of style mashups now synonymous with the dreaded “McMansion” moniker. Home buyers focused on curb appeal.

At that time, grandeur and ornamentation was indirectly coupled with the notion of success. Conspicuous consumption was alive and well.

Before the 2008 recession, consumers were in a period of conspicuous consumption and a more for me mindset; however, by the

mid-2010s, a shift began in which consumers started favoring simplicity and a less is more aesthetic. As early as 2018, there was the earliest trickle of a new consumer driver: community. In some ways, this is quite opposite to the pre-2008 recession period.

In the mid-2010s era, design became more subtle. Forms were influenced by minimalism and suddenly shed much of their previous interest in ornamentation. An understated look replaced the previous braggadocious one. Luxury was less loud. Tesla replaced the Hummer’s popularity and homes traded curb appeal for modern-influenced simplicity. On exteriors, the roof became less colorful and more tonal, but arguably more considered in the overall aesthetic of a home’s exterior.

Changes in design trends can be demonstrated across multiple industries and products. In looking back, designers can grasp a better understanding of the changes in consumerism happening now.

Looking Ahead: 2020-2030

So where do residential housing trends evolve from here? While designers are still experiencing the vast influence of the mid-2010s shift towards greater simplicity and ease, another macro trend is blending its

LEARNING OBJECTIVES

1. Describe how home styles have shifted since 2008 and how consumer trends influence residential architectural design.
2. List the new ways consumers are using their homes because of the pandemic, including specifying key consumer uses where the home acts like its own ecosystem.
3. Name the three macro influences that are impacting residential architectural styles right now and the two primary design styles that characterize each major trend.
4. Explain how architectural styles differ between macro themes and also within distinct trends and examine how finishes, materials, and roof pairings can be used for each one.

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influence into modern designs for today, tomorrow, and the decade ahead. Consumers, coming to terms with climate change and life in a post-pandemic era, are now feeling just how vulnerable global systems and economies are to such events. As a result, consumers are turning to the land and looking for ways to become less reliant on industries and more reliant on habitat and neighborhood.

This macro trend supports the re-connection or re-integration of humans, beings, and natural environments with each other ... the way to a truly sustainable, cooperative, bonded community.

CONSUMER TRENDS INFLUENCING RESIDENTIAL ARCHITECTURAL DESIGN

Designers need only look at consumer trends across other design industries to validate this point.

Fashion's darling today isn't a specific product – like handbag or sweatpants – but rather a way of purchasing. The resale clothing market, once reserved for shabby vintage shops and the salvation army, is now a \$40 billion industry with a compound annual growth rate of 20% in the next four years. This more communal approach has become the preferred method of shopping for a growing percentage of women shoppers, who now can get gently used designer goods for a fraction of the retail cost while being more thoughtful to the environment in the process.

For vehicles, while the Tesla still holds the

market's attention, vehicle trends indicate consumers are looking for vehicles that give the interior a more relaxed spirit and use environmentally sensitive materials. The soon-to-be released Fisker Ocean sport utility vehicle is one such vehicle slated to provide Tesla with real competition. However, the Rivian and Ford's forthcoming electric-vehicle trucks are in the same space.

In residential design, quiet luxury remains an ideal, yet the desire for greater integration with nature has increasingly influenced home design year over year – with the pandemic pushing this demand into the stratosphere. Features such as fluid indoor/outdoor living, natural materials, and an increase in natural light sources are no longer the apex of the conversation but rather the foundation for it. Rewilding cities, using the built environment to improve (rather than deplete) biodiversities, and taking a community-approach to wellness (self-care for humans, beings, and the planet) are all topics impacting the rise of design directions in this area.

As designers and consumers collectively move towards a new future, small collections of homes work together to share resources and provide needs to all occupants. A return to community, which is being dubbed the new currency, is fast at hand.

THE PANDEMIC'S INFLUENCE ON DESIGN

Changes in consumer mindset have the power to influence and change entire macro trends. Those mindsets can be driven by economic,

GLOSSARY

Clean Traditionals: One of two styles within the Glamour of Opposites macro trend, characterized by clean, simple, and streamlined design that also clearly references the traditional.

Conspicuous Consumption: A consumer style trend focusing on the individual; self-accumulation of wealth, status, and big displays of consumerism, or a “more is more” mindset.

Contemporary Escapes: One of the two design themes in the Naturalism macro trend. It focuses on a minimalistic aesthetic while relying heavily into natural elements and wood finishes create the feel of a contemporary escape.

Glamour of Opposites: One of the three macro trends influencing residential architectural design; focuses on emerging aesthetics that are both elegant and upscale.

Merged Aesthetics: A design style that blends traditional and modern styles on the same home; one of two styles within the macro trend Glamour of Opposites.

Naturalism: evokes a sense of living in nature and creating more harmony between the man-made world and the natural one.

Rural-inspired: One of the two design themes in the Naturalism macro trend. Farm- and barn-house vernacular provides the direction for transitional homes that are pulled back from using too much traditional ornamentation but still retain a warm, approachable spirit.

Sensorial Ease: A design aesthetic that focuses on simplicity and minimalism with the goal of less visual stimulation.

Quiet Design: A design aesthetic (and one of three macro trends) that uses color, material, texture, and finish in combinations that calm the eye and mind.

Quiet Luxury: a subtle, minimalistic, understated approach to demonstrating wealth, status, and consumer success.

Quiet Modern: The most forward trend and one of two styles within the macro trend Quiet Design; focuses on part of the broader gabled modern trend with similar characteristics and more involved elevations.

Quiet Transitionals: A home style evidenced by a three or four-color palette applied to the exterior, and perhaps two or even three materials; one of two styles in the Quiet Design macro trend.

cultural, or other design-led shifts. COVID-19, while a public health issue, has of course had mass economic impact around the world. In the pandemic, homes became everything. And while some parts of consumers' previous lives have returned to normal, consumer mindsets have been impacted for the long-term. Social circles have become smaller, vacations have become closer to home, and homes have needed to support more life activities than ever before.

As consumers become more reliant on home habitats for everyday needs, the future home must be so many different things at any given time. It must serve as a(n):

- Retreat space from the world and from other residents within the home,
- Entertainment space,
- Office or workplace, or even a
- Studio space.

The home may need to be adaptable to solo work, group work, and even some types of production. As consumers readily adapted to online ordering for almost every need during the pandemic, protected shipping and receiving areas are therefore also of increased importance to home spaces – especially ones that offer packages protection from the elements and would-be thieves. And of course, the home should also serve as a space for food and energy production.

If designers look at the new needs of the home from a broader point of view, they can see a larger understanding of the trends for the next decade.



Residential Design Trends for the Next Decade

First, designers know that the need for greater access and interaction with nature is of greater importance than ever.

As consumers may be stuck indoors more, they also may need to grow their own foods and rely on natural elements to help relax more. These changes indicate further support for the continued rise of naturalism trends that have grown even stronger over the last five years (and are suggested to continue).

Second, designers know that the home's design will need to balance so many opposing roles: workspace, fitness space, retreat space,

and so on. Entertaining guests will move more to the outdoor areas, putting greater demand on exteriors to reflect the owner's sense of taste and/or the style of the times rather than the style of a period or art movement (as architectural styles typically tend to reflect).

And third, the home's design must handle all those things without overwhelming homeowners with stuff.

In short, the design must still provide a feeling of calm sanctuary while managing multiple duties. This indicates that the spirit of the trends that rose in the mid-2010s will continue, even if they evolve.



INTRODUCTION TO THE THREE MACRO INFLUENCES

Three of the most significant macro influences that are driving the new aesthetic directions in residential exterior styling for the long-term are naturalism, the glamour of opposites, and a continued shift to quiet design.

In more detail, these themes can be expressed as follows.

Naturalism is all about a sense of living in nature and creating a softer balance between the man-made world and the natural one. The glamour of opposites trend, which evolves from cultural and consumer shifts regarding the balance of opposites, looks at emerging aesthetics that are both elegant and upscale.



Finally, quiet design evolves from the trend sensorial ease.

THE CONCEPT of sensorial ease was more closely examined in a 2021 course on gabled architecture. Sensorial ease, at its essence, is a visual reproach to the increased busyness of the world. It is a designed aesthetic that prefers austerity and minimalism. Examples of this include products that are visually devoid of excessive hype, collections of goods designed in a single color or material, an absence of giant logos or excessive ornamentation, and spaces meant for no purpose other than quiet time.

Sensorial ease is a devoted attention to austerity of form, function, and styling for the purpose of providing less visual stimulation. Although designs may be extremely simple or basic, the product often uses finishes or materials to create a luxurious appeal within the simplicity. Sensorial ease can be found across all design disciplines, and residential architecture today proves to be no exception.

Exceptionally basic shapes, unifying colors and materials for roofs and walls, and an extreme lack of ornamentation are a few of the ways sensorial ease can be expressed within the built environment. The goal is to create an emotional connection that resonates with the consumer.

And while quiet design was previously more prominent in custom and move-in ready homes for buyers with modern taste, its impact is now more mainstream and can be seen beyond modern architecture.



This article continues on
<http://go.hw.net/AR6221>.

Go online to read the rest of the CEU course, complete the corresponding quiz for credit, and receive your certificate of completion.

QUIZ

- In the ____ era, design became more subtle and forms were influenced by minimalism and simplicity.
 - pre-2008
 - mid-2010s
 - 2018
 - 2020
- Post-pandemic, consumers need their homes to serve multi-function purposes. These different ecosystems include:
 - retreat space
 - entertainment space
 - office or workplace
 - all of the above
- Three of the most significant macro influences driving new aesthetic directions in residential exterior styling are:
 - Naturalism, clean traditionals, quiet design
 - Biophilia, glamour of opposites, quiet design
 - Naturalism, glamour of opposites, quiet design
 - Naturalism, glamour of opposites, quiet modern
- Today, the conversation around naturalism is much more about the concept of _____.
 - integration
 - greening buildings
 - sustainability
 - bringing the outdoors in
- The rural-inspired color palette features either a three-color approach, where an accent and trim color flank the base color, OR:
 - monochrome approach using one base color
 - two-color approach, using the 50/50 split for the base, accent, and trim colors
 - two-color approach, using the 60/40 split for the base color and accent color, respectively
 - two-color approach, where the lesser color is used so sparingly that the home might appear to be treated as a single color from a distance
- Specific to the rural-inspired design aesthetic, _____ colors work well to convey a sense of nature's own weathering.
 - Core
 - Pastel
 - Dynamic/Bold
 - none of the above
- The _____ design style has been a popular approach in renovation markets but is beginning to influence new home construction.
 - Merged Aesthetics
 - Glamour of Opposites
 - Contemporary Escapes
 - Clean Traditional
- _____ describes a design aesthetic using color, material, texture, and finish in combinations that calm the eye and mind, create sanctuary, simplicity, and ease.
 - Quiet Modern
 - Quiet Design
 - Quiet Transitional
 - Sensorial Ease
- Quiet Transitionals materials use all the following finishes and materials EXCEPT:
 - smooth stucco finishes
 - brick in light, muted neutrals
 - flat or shake-like tile
 - reclaimed wood
- The trend within Quiet Modern that shows no sign of stopping is:
 - the less is more approach
 - material mashups
 - roofing material that extends to the vertical faces of the façade
 - contrasting light and dark hues

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Editorial: A Pivot in Education

TEXT BY PAUL MAKOVSKY

When ARCHITECT interviewed architect and dean Deborah Berke, FAIA, this year's recipient of the AIA/ACSA Topaz Medallion for Excellence in Architectural Education (page 76), we asked her what she thought was the most unfortunate reality about architectural education today. Her answer was short and simple: "Cost," she said. "It alone is discouraging to anyone with the talent and interest in becoming an architect—that your salary at your first job out of school will not be enough to allow you to pay off your loans." She also pointed out that the cost of architectural education is a huge barrier to addressing the diversity and equity issues in the field. I couldn't agree with her more.

Student loan debt statistics in 2022 show that there are about 44 million borrowers who collectively owe near \$1.7 trillion. Student loan debt is now the second-highest consumer debt category, making up 11% of the national total debt, compared to mortgage debt's 69%, according to [educationdata.org](https://www.educationdata.org). More than 7 million people, one of every five borrowers with payments due, have defaulted or failed to pay, sometimes for years or even decades.

Scott Galloway, a professor of marketing at New York University's Stern School of Business, has been critical of the higher education "business," outlining how in the past 40 years, college tuition has increased 1,400%. And while higher education is the most important industry in America, providing upward economic mobility and improving quality of life—studies show that college graduates lead longer, healthier lives—there don't seem to be any easy fixes coming soon to address the cost of education.

One trend emerging from the pandemic, however, is the popularity of online learning. In fact, the virtual education platform Coursera reported that more than 20 million new learners registered for courses in 2021, equaling the company's total expansion during the three years prior. The way we learn is changing, whether it's through AI-based learning, on-demand content, or the rise of massive open online courses (MOOCs) and skill



At the "Mayors Imagining the Just City" conference, organized by the Harvard Graduate School of Design's Just City Lab and the Mayors' Institute on City Design, a panel including (left to right) Mayors Jacob R. Day, Emily Larson, Jamael Tito Brown, and John J. Tecklenburg, and moderator Toni L. Griffin spoke on the topic of creating just cities, infrastructures, and community-building.

stacking (instead of mastering one skill, you build a skill set). As in-person conferences during the pandemic were replaced by Zoom meetings and online conferences, design schools and museums have done a better job of sharing their relevant content to wider audiences online. For example, the Canadian Centre for Architecture in Montreal has an excellent archive of past talks that have been held at the museum, like one covering what domestic life in outer space was like during the 1970s, and another revisiting the work of Swedish architect Sigurd Lewerentz, a key Modernist figure. Recently, the Harvard Graduate School of Design's Just City Lab, led by architect and urban planner Toni L. Griffin, and the Mayors' Institute on City Design shared online the "Mayors Imagining the Just City" conference, which gathered mayors nationwide to discuss creating an equitable recovery from the pandemic, as well as providing actionable ideas for city leaders and designers.

ARCHITECT has also launched the online series Studio Sessions—monthly conversations with design and architecture thought leaders sharing ideas and best practices on topics including innovative residential design, the advantages of using Tilt-Up concrete, and embedding equity in design with recent guests Kimberly Dowdell, AIA, of HOK and Rosa Sheng, FAIA, of SmithGroup. And, in a shameless plug, visit Hanley Wood University—ARCHITECT's sister online education platform—to choose from hundreds of free continuing education and training courses for design and construction professionals.

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