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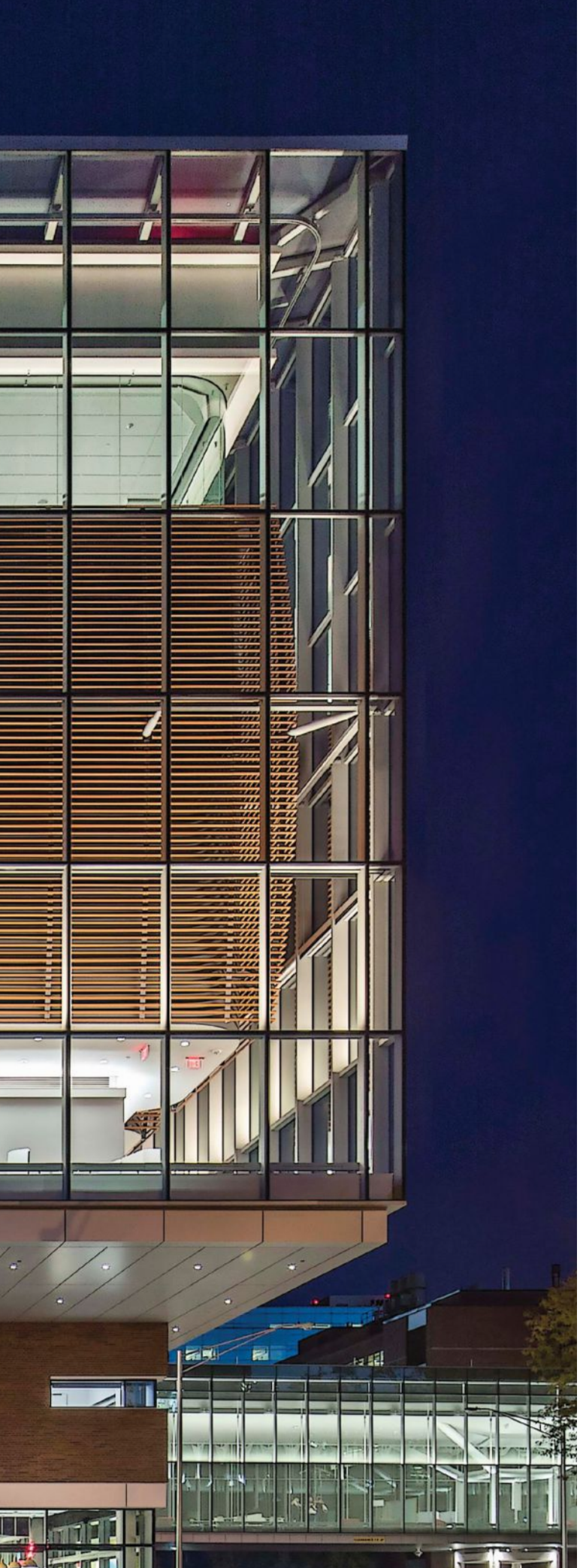
The Case for Tiny Victories

A community of small houses in Texas gives hope to people who formerly experienced homelessness



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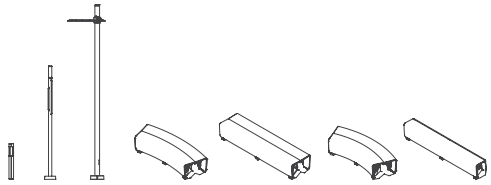

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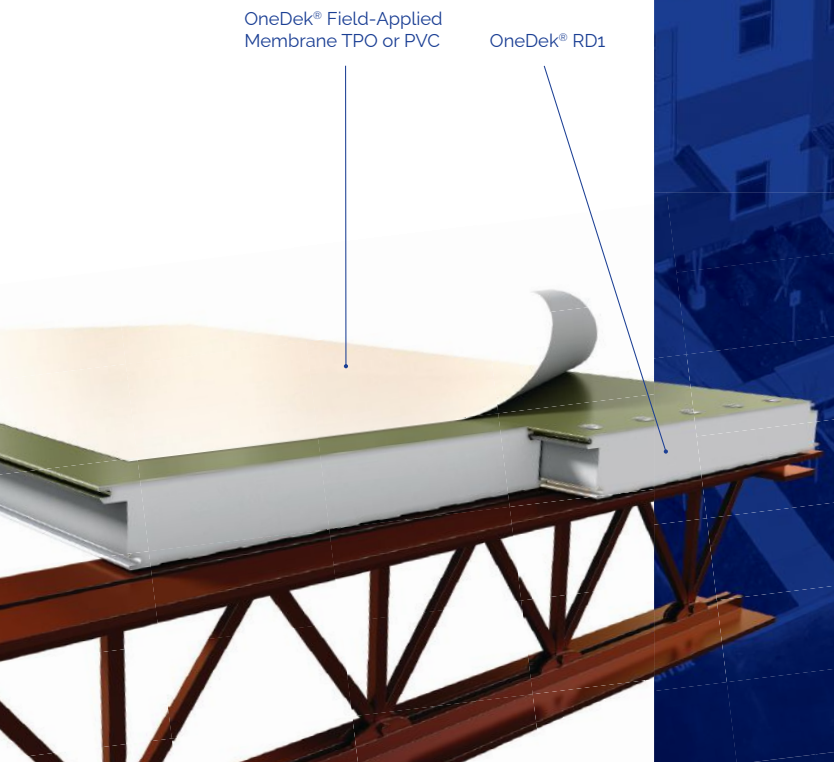

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Contents

Volume 110, number 03. April 2021.
On the cover: Community First! resident Jesse Brown in his home designed by Jobe Corral Architects in Austin, Texas; photo by Leonid Furmansky.
Below: A microhouse designed by McKinney York for Community First! Village with a communal kitchen in background; photo by Leonid Furmansky.

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AIA Architect

The AIA Architect section of this magazine is produced by the Institute as a benefit to its members in partnership with ARCHITECT's editorial and production teams. Please direct any questions or comments to Frank Scanlan, MD, Strategic Communications & Content for AIA.

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Architectural Lighting: Strategic Daylighting in Schools

TEXT BY MURRYE BERNARD, AIA

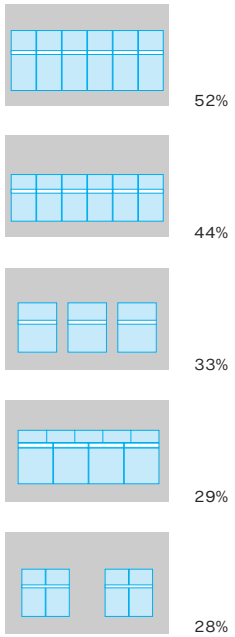
The appropriate use of daylight in educational environments has myriad benefits: healthier students and fewer sick days, as well as improved moods, learning aptitudes, and attention spans. In the study "Daylight and School Performance in European Schoolchildren," published in December 2020, researchers found that "classroom characteristics associated with daylighting do significantly impact the performance of the schoolchildren and may account for more than 20% of the variation between performance test scores" in math and logic. The window-to-floor area ratio in classrooms seemed to have the most significant effect, with larger window areas being more desirable.

However, the study emphasized the importance of controlling the amount of incoming daylight, through window shades for example. Stantec has reached similar conclusions through its studies. Since 2012, the global firm's Research + Benchmarking group has conducted post-occupancy studies in Texas schools designed by itself as well as by other firms. The feedback it has received includes, perhaps surprisingly, dissatisfaction with daylight.

Shivani Langer, AIA, a principal, senior project architect, and regional sustainability leader based in Stantec's Austin, Texas, office, expounded on these findings in her 2019 article "Education design: How much daylight is right for today's tech-enabled schools?" Two of the 10 schools surveyed had wall-to-wall glazing, but Stantec's research group found that even with sunshades and light shelves, user satisfaction with the daylight was very low—even lower than for the traditional classroom layout with two windows at each corner of the room. "The major source of dissatisfaction was glare and the inability of the students to see notes on the marker board or projections on the screen in their classrooms," Langer says.

Daylight that is not properly managed can cause glare on boards and screens in classrooms.

Window-to-Wall Ratio Study by Stantec



After studying a variety of window sizes and configurations in typical classroom settings in Houston, she and her team discovered that window size is not directly proportional to the amount of useful light available in a space. In fact, the amount of useful daylight illuminance (UDI)—a metric that references when illuminance is supplied by daylight alone—is actually lower in the case of larger windows. "Designing big windows doesn't necessarily mean adding quality daylight in a space," Shivani says. "Because glare is not considered useful, the amount of useful daylight available from a space with a 28% window-to-wall ratio may be higher than one with 52%."

Successful lighting strategies for educational environments artfully balance daylighting with electric sources and control technologies. From an architectural standpoint, sunshades and light shelves help to mitigate glare. Ample lighting controls, including features such as daylight sensors, color tuning, and dimming, allow for flexibility.

DAVID FUENTES PRIETO

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Architectural Lighting: Strategic Daylighting in Schools

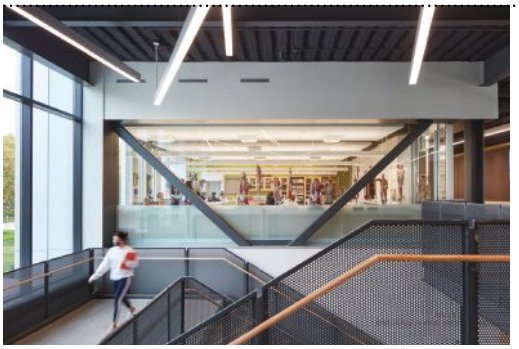
Designers specifying LED sources should aim for a minimum color rendering index of 80 and full-spectrum lamps that promote visual comfort, reduce glare, and exhibit low levels of noise and flicker, which can distract students. Using consistent fixtures throughout the building can ease maintenance.

Here are three projects that demonstrate the controlled use of daylight in educational environments.

Richard J. Lee Elementary School
Plano, Texas
Stantec

Lee Elementary School was the first elementary school to achieve net-zero in the state. To dramatically reduce the project's energy consumption from lighting, the design deploys large windows and daylight harvesting through reflective ceiling tubes, which enable natural light to reach 90% of the interior. "The placement and sizes of windows were strategic to ensure light reaches deep into spaces," Langer says.

Punched openings along the south façade create exterior overhangs for sun shading. Inside, corresponding surrounds further diffuse daylight to avoid glare. With these portals, Stantec has created colorful nooks in which students can read and learn individually.



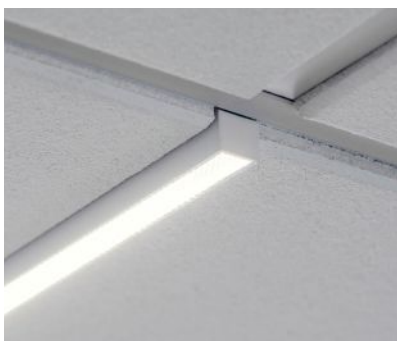
Nils K. Nelson Bioscience Innovation Building
Hammond, Ind.
CannonDesign

Housing Purdue University Northwest's College of Nursing and Department of Biological Sciences, the Nelson Bioscience Innovation Building weaves public spaces and laboratories that showcase teaching and learning innovations. The building is organized around a grand staircase and three-story atrium, through whose glazed walls classrooms and research labs are visible. Exterior windows respond to the interior program, with larger windows allocated to classrooms and labs, and smaller windows to offices. Window sizes are one to three times the width of the modular aluminum composite panels cladding the exterior.

"The lighting design follows the lead of the building's design drivers and centers on concepts of transparency, efficiency, and providing flexibility for future needs," says Raisa Shigol, a Chicago-based senior lighting designer at CannonDesign. Lighting elements and engineering systems evenly illuminate ceiling surfaces and teaching walls while accounting for spatial geometries and maximizing function and visual comfort.

The labs feature orthogonal arrangements of pendant LED lighting with indirect and direct distribution and flexible control strategies. Linear, angled fixtures convey movement in circulation areas and student hubs. Classrooms and labs feature sunshades to mitigate glare. "Health-education facilities require a unique balance," Shigol says. "It's critical to select lighting systems that support a realistic health-care environment and related medical tasks, while also ensuring a facility that nourishes campus and student life."

TOP: COURTESY STANTEC; BOTTOM: STEVE HALL/HALL + MERRICK



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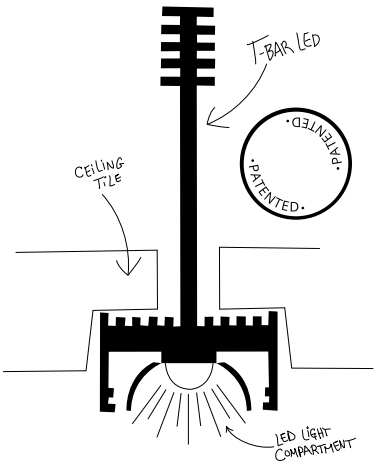

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Architectural Lighting: Strategic Daylighting in Schools

Cooke School & Institute
New York
PBDW Architects

The Cooke School & Institute is a free-standing building surrounded by green space on three sides—rare for upper Manhattan—and thus has access to an abundance of daylight. The terra cotta façade of the school, which serves K–12 students and young adults ages 18–21 with special needs, features a bay window motif, channel glass, and curtain walls. Colored slot windows enable students to identify their own classrooms from the street below. Light passing through these windows creates colored shadows that move across the floor over the course of the day. At the street level, the channel glass provides natural daylight for administrative and classroom spaces while maintaining privacy.

Classrooms are oriented to receive adequate daylight through expansive glazing. "We wanted the natural light to be primary in the learning spaces, supplemented by direct/indirect LED light fixtures," says project manager Erica Gaswirth, AIA, a New York–based senior associate at PBDW. "In classrooms, the fixtures are divided into multiple daylighting zones, each of which is independently controlled by photo sensors. The lights in each zone are automatically and smoothly dimmed to maintain required light levels for the tasks at hand."

Solar shades, which are manually controlled in classrooms and electronically controlled in the cafeteria, eliminate ultraviolet rays and glare when needed. Linear pendant fixtures in classrooms offer direct and indirect beam distributions, which are individually and manually controlled by wallbox dimmers. "The color rendering was fixed to 3000K to complement the architectural spaces as well as to create a uniform color for the entire project," says Yasamin Shahamiri, a senior associate at the New York–based lighting design firm One Lux Studio, which served as PBDW's lighting consultant.

Through experience and mock-ups, PBDW has learned to choose fixtures that work in learning environments. The firm also works continuously with the school to troubleshoot any issues that arise. "Many students with special needs have sensory sensitivities as well," Gaswirth says. "When these children don't have to expend extra energy tuning out glare, buzzing, or flickering from fixtures—distractions easily ignored by other students—they are able to more fully focus on their schoolwork for longer periods of time."

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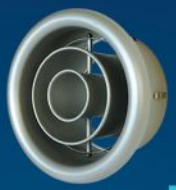

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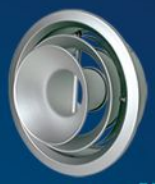

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NEW Model:**CFX**

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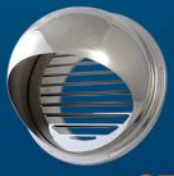
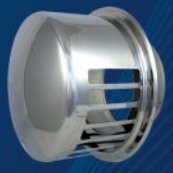
Model:**KX**



Model:**SFX-S**

Model:**SXL**



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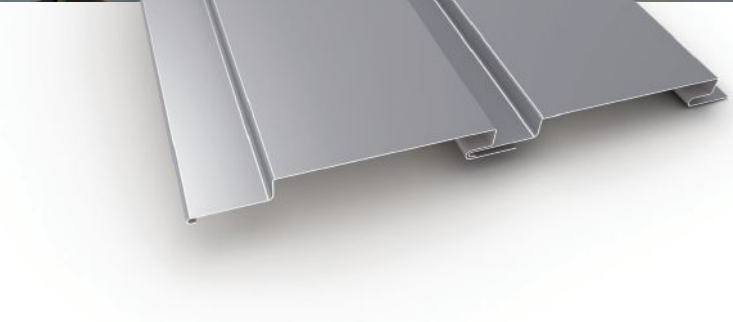
-Andreas Lange, AIA, senior associate, Perfido Weiskopf Wagstaff + Goettel



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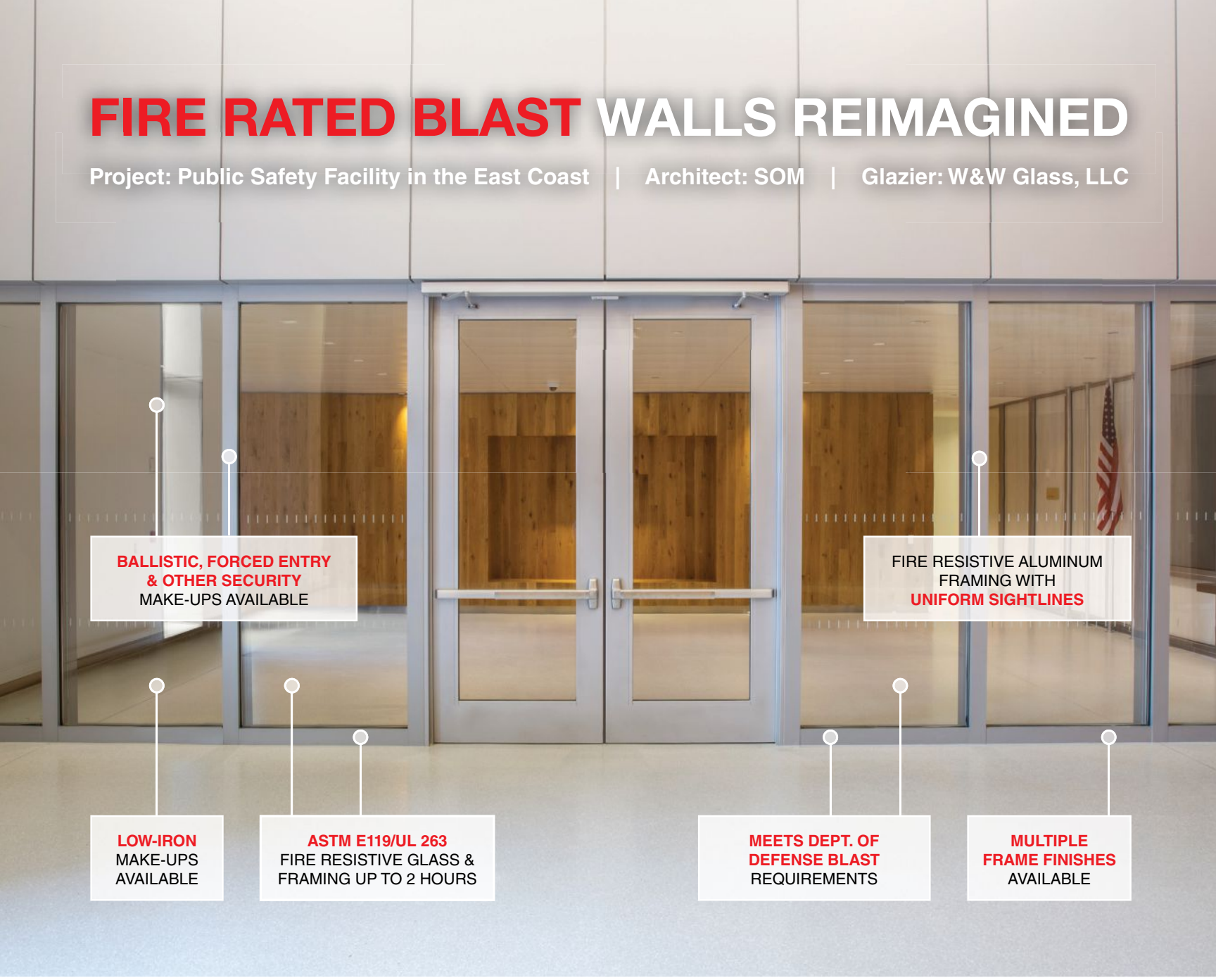

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Opinion: Increasing Opportunities for Deaf Designers

TEXT BY ROBERT NICHOLS, ASSOC. AIA

TODD A. SMITH PHOTOGRAPHY

"Can you read my lips?" "How do you communicate with others at work?" "You can do the technical drafting under the project leadership." These are examples of questions and statements that design companies often ask or tell deaf or hard-of-hearing professionals today. Yet Title I of the Americans with Disabilities Act of 1990 requires companies with 15 or more employees to provide reasonable accommodations to qualified deaf or hard-of-hearing job applicants without discrimination. Are employers aware of this requirement and how to meet it? For example, do they know whether ADA's definition of "reasonable accommodations" explicitly includes American Sign Language, interpreters, or closed captioning on communication display devices that deaf job applicants require during the interview hiring process?

Few owners and principals likely consider the topic of deaf people in the workplace in their day-to-day lives due to their lack of interaction with deaf and hard-of-hearing individuals. Employers may not know that the provision of effective communications access entails enabling people with sensory disabilities to communicate—and be communicated with—on an equal footing with those who do not have such disabilities.

According to a 2019 National Deaf Center report, only 53% of deaf people were employed in 2017, versus 76% of hearing people. During the hiring process, accommodation

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Opinion: Increasing Opportunities for Deaf Designers

for a disability is rarely considered without an explicit demand by the candidate. Another common oversight is the prerequisite that a prospective employee possess oral communication and/or presentation skills in the support of team collaboration. However, do employers consider the different modes of communication that team members can utilize to exchange information?

In 2016, I founded World Deaf Architecture, a not-for-profit organization that is involved within the subdivision activities of the AIA Office of Equity, Diversity, and Inclusion. Approximately 20% of AIA members identify as having a disability, which can include hearing loss. With the support of the Office of EDI and in support of other minority and women advocacy groups, WDA hopes to engage leaders among the AIA membership and the Institute's Knowledge Communities.

WDA aims to grow membership of deaf and hard-of-hearing individuals in related professions and collaborate with topically relevant KCs to provide resources about the needs of the deaf community, such as guidance on reasonable accommodations for professionals working in an architectural studio. It is seeking to connect with design professionals in the arenas of health care, education, social justice, and affordable housing, among others, and to infuse new resources into existing programs and public meetings.

Through small and bold actions, WDA is creating opportunities for the deaf community. While leading the evolution of the Education for All Handicapped Children Act of 1975 into the current ADA of 1990, former President George H.W. Bush received many letters from the parents of children with disabilities who expressed anger and angst at the discrimination against their child's disability. From 1984 to 1986, Bush started a new initiative for disability rights and submitted the report as an early draft of the ADA to Congress in February 1986. Four years later, he signed the ADA into law as president. We know we cannot wait for closed doors to magically open on their own.

As the COVID-19 pandemic subsides, WDA will move forward with its overarching goal to increase access to employment opportunities for deaf architects across the nation. The organization will provide AIA member training on the benefits of hiring, developing, and promoting design professionals with hearing loss, as well as resources for hard-of-hearing architects to grow their own practices. Moreover, WDA plans to provide mentoring to deaf architecture students in the foreseeable future.

We will hold steadfast to our vision of building an organizational structure that can sustain deaf, deaf-blind, and hard-of-hearing professionals. Learning from the civil rights movements for social justice and the women's rights movements that continue today, we know that our resolve won't subside until all spoken and unspoken demands for human rights are fully entrenched in society.

Robert Nichols, ASSOC. AIA, is co-founder and executive director of World Deaf Architecture. WDA News editor Karen Kim contributed to this piece.

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On the Boards:

NCCU 24/7 Collaborative Research and Learning Center
Durham, N.C.
Evoke Studio Architecture

TEXT BY MADELEINE D'ANGELO

Located in the center of Durham, N.C., North Carolina Central University, a historically Black institution, has grown dramatically since its founding in 1910, and today is home to more than 8,000 graduate and undergraduate students. Hoping to provide that student body with a flexible study space that would knit the campus into its residential surroundings, NCCU chancellor Johnson Akinleye charged the local firm Evoke Studio Architecture with designing a 24/7 Collaborative Learning and Research Center. The commission builds on an existing relationship between the university and the firm, which renovated NCCU's Broadcast Studio, a high-tech digital communication hub, in 2019.

The new center will be located at the well-trafficked intersection of Fayetteville and E. Lawson streets at the northwest corner of the campus, making the building a university anchor and a bridge between the school and the local community. "It's strategically located in a place where the students who are off campus can get to it quickly and safely," says Evoke co-founding principal Teri Canada, AIA.

Approximately 5,000 square feet, the design offers a mix of study areas, multipurpose rooms, retail space, and an open, collaborative lounge that flows into a spacious outdoor plaza along Fayetteville Street. Shaded under the center's upward sloping roof, the outdoor space blurs the divide between indoor and outdoor work areas, nearly doubling the project's usable space, and becomes an inviting, porchlike entry to the building. The roof's soaring form nods to both the site's residential history and the school's mascot. "[The university is] proud of the idea of the eagle and what it means," says Evoke co-founding principal Edwin Harris, AIA. "So we [wanted to] create something that's uplifting, that evokes a light, airy feeling."

When night falls, the building will emit a gentle glow, thanks to Evoke's decision to wrap it in perforated metal cladding. "At nighttime, it's got to glow," Harris says. "It's got a presence. But it's not domineering. It's not going to blind the residential neighbors."

With construction scheduled for the beginning of 2022, Evoke plans to finalize the design by the end of 2021, staying closely aligned to NCCU's aims of bettering "not only the student body, but also the environment, the community, and the professions that each student chooses," Harris says. "These buildings are basically mechanisms to help them in college and really empower whatever [profession] that is. That's what this building is."

COURTESY EVOKE STUDIO ARCHITECTURE

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CarbonPositive: The Make-or-Break Year for the Planet

TEXT BY EDWARD MAZRIA, FAIA

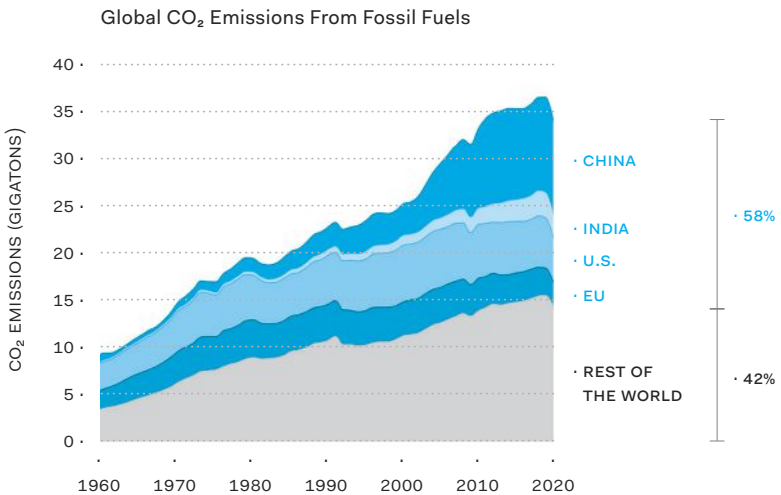
In the Feb. 26 release of the interim United Nations Framework Convention on Climate Change report, Secretary-General António Guterres boldly declared 2021 the "make or break year" for the planet. The report found the 2030 Nationally Determined Contributions (NDCs) emissions-reduction pledges of 75 countries to be wholly inadequate. Global greenhouse gas emissions would only be cut by about 1%, far short of the 65% cut in carbon emissions from January 2020 levels needed by 2030 to have a 67% probability of limiting global warming to 1.5°C above pre-industrial levels and to meet the goals of the 2015 Paris Agreement.

The science and global carbon budget for limiting warming to 1.5°C are clear. The remaining budget at the beginning of 2020 was 340 gigatons of carbon dioxide, which means that if the world achieves a 65% reduction of CO_2 emissions by 2030 and zero emissions by 2040, we can expect warming to be kept at about 1.5°C.

The time to act is now. The most significant climate event since the 2015 Paris Agreement—when all parties agreed to pursue efforts to limit the global temperature increase to 1.5°C—will take place this November. At the 2021 U.N. Climate Change Conference (COP26), countries must submit their updated 2030 NDCs. To date, only the European Union, the United Kingdom, and Denmark have committed to significant 2030 emissions reductions from 1990 levels: 55%, 68%, and 70%, respectively. Much, much more is needed to reach the critical goals.

Fortunately, the U.S. is now poised to lead in this endeavor, as COP26 will be the first U.N. climate change conference the country will attend since rejoining the Paris Agreement. All eyes will be on its updated NDC pledge. This figure should be announced before April 22, when President Biden will host world leaders for a summit "aimed at raising climate ambition." The country must persuade other nations to follow suit by setting a minimum 2030 NDC of a 65% emissions reduction from 2005 levels, in line with the 1.5°C carbon budget. Additionally, the U.S. must work with the EU, China, and India to be similarly ambitious, as these four entities are responsible for 58% of global CO_2 emissions.

The U.S. *can* lead other nations with confidence and the knowledge that a 65% reduction is achievable. Why? U.S. carbon emissions today are already down 23% from 2005 levels. The building sector, the country's largest energy consumer, continues to reduce its emissions and is now 30% below 2005 levels, ahead of the U.S. Paris Agreement's NDC of a 26% to 28% reduction by 2025. The Biden pledge of a clean electricity grid by 2035 should further cut emissions from the building sector, surpassing the targeted 65% reduction, and also drive emissions down in other sectors.



SOURCE: GLOBAL CARBON PROJECT AND CARBON BRIEF

> *To read the full text by Edward Mazria, the 2021 AIA Gold Medal recipient and founder and CEO of Architecture 2030, visit bit.ly/ARcp0321.*

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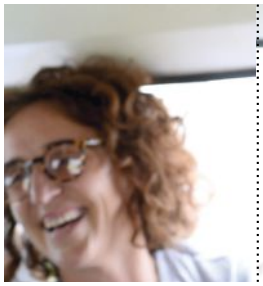
Next Progressives: Kounkuey Design Initiative

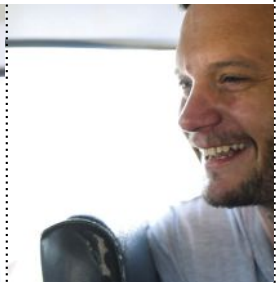
EDITED BY ERIC WILLS

Location:
Los Angeles; Eastern Coachella Valley, Calif.; Nairobi, Kenya; Stockholm, Sweden

Year founded:
2006

Firm size:
50





Firm leadership:
Chelina Odbert, co-founder and executive director; Joe Mulligan, associate director

Education:
Odbert: Master of Urban Planning from the Harvard Graduate School of Design; *Mulligan*: Ph.D. from the KTH Royal Institute of Technology; M.Phil. in Engineering for Sustainable Development from the University of Cambridge

Firm mission:
For far too long, the design disciplines have reinforced the inequities that originate from systemic racism and other imbalances of power, creating disparities in the built environment that impact health, wealth, opportunity, and life expectancy. KDI uses design, planning, and advocacy to undo those disparities. Partnering with historically disinvested communities, we work to advance equity, improve quality of life, and bolster resilience.

First commission:
It started as an independent research project at the Harvard Graduate School of Design. Six classmates wondered if our design training would be useful in addressing some of the biggest challenges of our time, including urbanization, poverty, and environmental degradation. After two weeks of research in the dense, informal settlement of Kibera, Nairobi, it was clear that research without action was part of the problem. So we created a commission for ourselves: a new park, or productive public space, as we called it, that would provide much needed open space for recreation and gathering, but would also address urgent needs such as water and sanitation services, income-generating opportunities, and enhanced watershed management.

Defining project and why:
We have been working in California's Eastern Coachella Valley since 2011, and this long-term initiative—comprising more than a dozen discrete projects—has been a defining engagement for our firm. Though this region is most recognized for the music festival that bears its name, the Eastern Coachella Valley tells an entirely different story: communities of predominantly Latinx agricultural workers with high rates of poverty and acute public health challenges stemming from environmental pollution. We have heard from residents about their needs and visions for their communities, and we have responded with projects that include a network of productive public spaces, transportation infrastructure, affordable housing projects, and an environmental justice campaign.

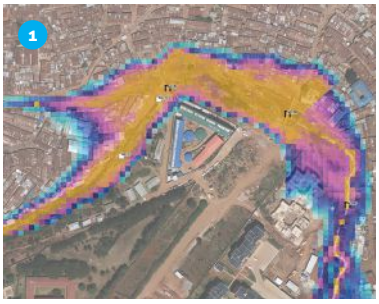
Another important project:
In 2019, the World Bank commissioned us to research and author the *Handbook for Gender-Inclusive Urban Planning and Design*. We present quantifiable evidence of the ways in which gender disparities leave everyone worse off, and we provide actionable guidelines to make the public realm work better for women and gender minorities. The handbook is already being used by municipal and national governments around the world to create new standards for how public realms are planned and designed for a more inclusive future.

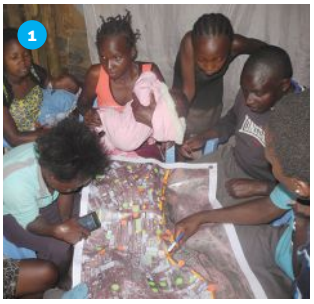
Most urgent political question facing architects today:
How to develop cities and neighborhoods without leaving others behind. For all the real and urgent challenges architects face—climate change, climate risk, infrastructure, energy—the question of gentrification looms large. Each of these challenges needs to consider gentrification because we can't solve these big problems for only some people.

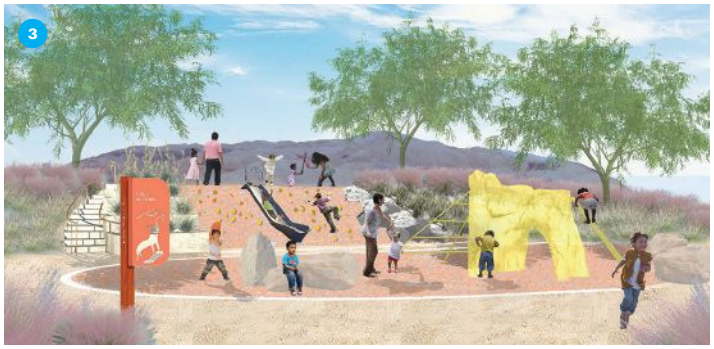
COURTESY KOUNKUEY DESIGN INITIATIVE

> *To read more about KDI, visit bit.ly/KounkueyDesignInitiativeNP.*

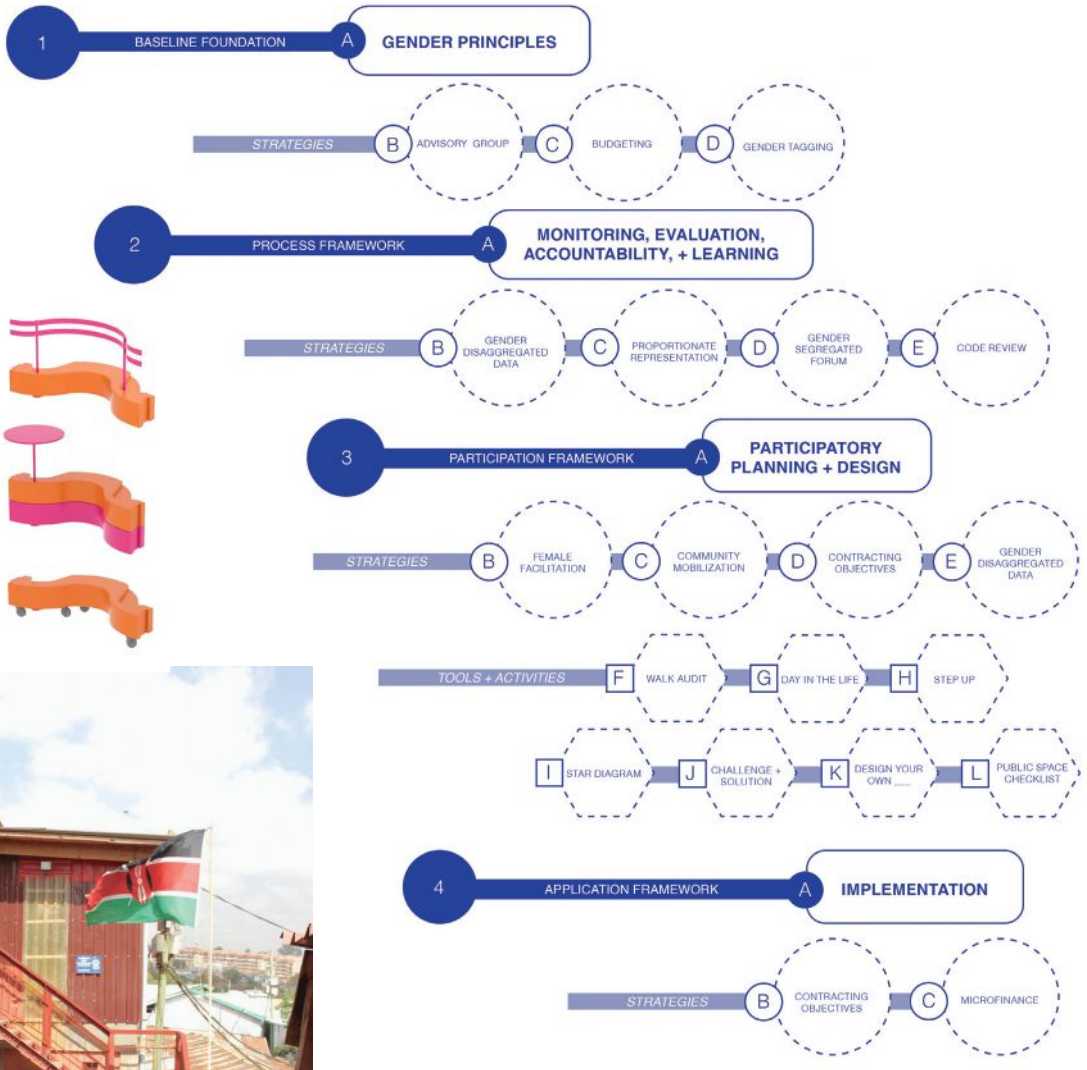
Next Progressives:
Kounkuey Design Initiative







COURTESY KOUNKUEY DESIGN INITIATIVE



1. In the Kibera settlement of Nairobi, KDI is working with residents, the local government, and university partners to devise flooding adaptations that not only introduce drainage systems and rainwater harvesting but also create places of social gathering. **2.** Nuestro Lugar, a KDI-designed park in the North Shore community of the eastern Coachella Valley, incorporates community programs, small businesses, and environmental features. **3.** For the Somos Oasis, also in the Eastern Coachella Valley, KDI is partnering with local residents and the Desert Recreation District to design another productive public space that will include a marketplace, community center, garden, and nature playground. **4.** Children play with "wobbles" designed by KDI as part of the Play Streets program, which allows neighborhoods to turn their block into a pop-up recreation area. **5.** A diagram from the *Handbook for Gender-Inclusive Urban Planning and Design* helps illustrate strategies for government agencies to make public spaces more inclusive and acessible. **6.** KDI worked with the students and parents of the Anwa Junior Academy, an informal school in Kibera founded by a group of mothers, to design a new building for the institution that reflected the local architecture with its mud walls and matabi sheeting.

SAFTIFIRST
FIRE RATED GLAZING SOLUTIONS

Are Ceramics Going the Way of the Phone Booth?

Next-gen fire-rated glass reinvents the category and unleashes fresh design opportunities.

Remember the phone booth?

In its heyday there were more than two million of them coast to coast. Today they number fewer than 100,000, the same as in 1902.

Welcome to the march of progress. Communication, entertainment, household technology, and a slew of other categories, including building products, have all been transformed by relentless innovation.

Take fire-rated glass, for example. For nearly the last three decades, ceramic glazing reigned as the go-to fire-protective solution. Invented in the 1950s by Corning for consumer kitchenware (cooktops and casserole dishes), ceramics took on a new life in the late 1980s as a fire-protective alternative to wired glass.

Ceramic glazing has some limitations, however. Notable among them: an amber tint, brittleness and fragility (it fails to meet the Consumer Product Safety Commission's safety glazing standards unless it's filmed or laminated), high thermal conductivity, overseas sourcing, and a high cost. Still, for many years, ceramics played a key role in architectural glazing applications.

Now Obsolete?

Tim Nass has carefully followed the developments in glazing. As the vice president of sales at SAFTI FIRST, a leading fire-rated glass manufacturer, Nass has discovered that more and more architects refer to ceramic glazing in the past tense. Architects can now use a new generation of glazing products that virtually eliminates ceramic's aesthetic and performance shortcomings at a much more economical price point.

The evolutionary leap is profound: Architects now command design options few would have imagined even two years ago. So much so, SAFTI FIRST believes ceramic glazing to be obsolete. "USA-made, fire-protective glass is 100% code-compliant and meets all fire, hose stream, and safety requirements without films, laminates, or amber tints," Nass explains.

Times Have Changed

The transition came with launch of patent-pending SuperClear 45-HS-LI (hose stream, low-iron) a revolutionary fire protective glazing product that is economical, optically clear, and meets all the fire, hose stream, and safety requirements of 45-minute doors, sidelites, transoms, and openings.

Given the benefits, Nass says some architects ask, "What's the catch?" or "What am I sacrificing?" Nass says the answer is nothing.

"Architects have been constrained by ceramic glazing limitations for so long," Nass says. "We tend to spec products we know. It's been 30-some years since a new protective product entered the market. It also happens to be domestically-sourced and aesthetically superior."

Consider the University of Houston Quadrangle project, where SuperClear 45-HS-LI was used instead of ceramics primarily because of superior optical clarity. "It's not often that a VE option is an upgrade. In this case, it absolutely was," Nass says.

A Toast to Then & Now

Ceramics served the industry well for three decades, presenting architects worldwide with a fire-rated glazing alternative.

The good news is that the successor technology boasts all the features architects have long sought in a fire-protective product: superior optical clarity with low-iron glazing, high impact safety ratings, low cost, and domestic manufacturing.

One of the University of Houston Quad's seven townhouses. Courtesy EYP Architecture & Engineering. Photo: Austin Commercial/Cloyce J. Wall.

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Exterior Color Trends

CONTINUING AND FUTURE DIRECTIONS 2021–2024

LEARNING OBJECTIVES

1. Identify market radar cities, associated growth trends, and new color palettes trending within each.
2. Explore current leading exterior color trends that will continue to be important over the next few years.
3. Compare and contrast current leading exterior color trends with the emerging exterior color trends that will become increasingly popular in the next 3–5 years.
4. Examine the cultural and consumer trends that have influenced both current and rising exterior color trends.
5. Identify how the 2:1 ratio of colors used in exterior color palettes is influenced by cultural and consumer trends.

CONTINUING EDUCATION

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INTRODUCTION

Architectural styles are changing across the U.S. housing market. Nowhere is this more evident than in large secondary cities where noticeable design shifts are afoot, brought on by consumer and cultural trends. Migration and a desire for visual relief from a hectic world are helping to drive the trends in exterior residential color palettes. It is interesting to see the fruition of predictions made years ago in today's evolving styles and color hues.

While certain hues already popular may remain important for the next 3–5 years, *how* they are used in palettes may shift from the way they are used now—a detail that's rather important for long-term planning.

Of course, as all trends evolve, they may cast off certain details and take on other ones. They may even intertwine with other rising trends, creating blended design aesthetics whose influences are pulled from different places. And this is the impetus for introducing and understanding color trends and the emerging exterior hues.

Architects and designers who can identify and apply these color trends will stay on the cutting edge of style and consumer preferences while remaining true to classic looks and color palettes to create timeless, yet modern, retreats and oases for their clients.

MARKET RADAR

Of all the numerous U.S. regions, there are always ones that linger in the mind. While places can be labeled "hot spots" based on migration of tech giants or Millennials, often the new energy in a region tends to follow forward design. And sometimes just a little forward design sets a foundation for a lot of great new market shifts—like the future of color.

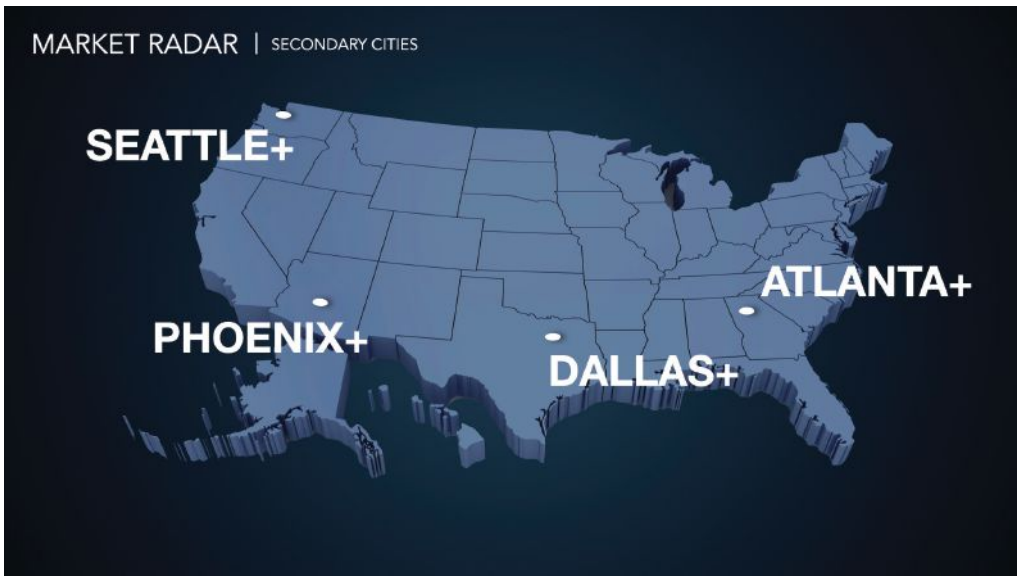
The cities discussed in this section are on the architectural radar. While they are not always on that radar for the same reasons, what they *do* have in common are:

1. A fast-growing housing market, and
2. A distinct and discernible shift in the existing versus emerging architectural styles in the region.

Content is segmented by the following types:

- Secondary cities,
- Tertiary cities, and
- Vacation towns.

While the precise definitions of these terms vary depending on the source, for the purpose of this course we have provided our own definitions.



Secondary Cities

In this course, **secondary cities are defined as those under 3 million people and are far less known outside of their regional or national area**. For example, one might expect a person living in rural Austria to be able to label New York, Miami, or Los Angeles on a blank map. But Denver? Likely not.

But while secondary U.S. cities may be less well known to the world, they are beginning to play larger roles in economic ecosystems. In 2016, when the World Health Organization (WHO) predicted that more than two-thirds of the global population would be living in cities by 2030, the focus and forecasting attention immediately shifted to secondary and tertiary urban markets. This is because these are the precise regions where rapid growth of residential and commercial infrastructure could be achieved with the fewest pain points (comparative to primary cities or rural markets).

The secondary markets highlighted here combine rising growth and a shifting architectural design emphasis—a winning combination for trends to take root.

Seattle, WA

The Sea-Tac metropolitan area is a secondary market on the cusp of becoming a primary one. While only three-fourths of a million people reside within the city of Seattle, the greater metro area boasts almost 4 million inhabitants and more than half of Washington state's total population.

But recently, it's become a top destination for people leaving cities like San Francisco and Los Angeles. With the city center becoming saturated, outlying areas with strong tech connections are continuing to see economic and housing gains. Amazon has shifted its focus away from Seattle to its Bellevue offices, and Google continues to expand its footprint in Kirkland. As of September 2020, the median home price in Kirkland increased by 41.8 percent since 2019, while Bellevue saw a 25.5 percent rise.

Commuters are also sprawling toward Snohomish County in the north. The Lynnwood light rail expansion, scheduled to open in 2024, will establish faster connections to downtown and introduce an opportunity for new residents, businesses, and developers. Lynnwood, Mountlake Terrace, and surrounding areas will be ones to watch as this project unfolds.

The Pacific Northwest boasts an aesthetic heavily influenced by its climate and environment. Dark hues, wooden elements, natural light, and diverse elevations typify its unique architectural style. This region was one of the early adopters of both the Gabled Modern style and black for exteriors.

Phoenix, AZ

Over the last decade, Phoenix has seen a large increase in its volume of residents. In 2018, Phoenix topped the list of migration destinations, gaining its largest portion of new residents from Los Angeles. A major draw to the city has been its high standard of living at a lower cost—which, in addition to retirees, also now attracts a population that is 22 percent Millennial-aged. Dubbed the "Silicon Desert," nearly 3,000 new tech jobs have been added to the state since the start of 2019.

Architectural trends are now seeing new shifts. The renowned architect Frank Lloyd Wright, who designed several structures in the Phoenix area, continues to inspire a wealth of mid-century modern houses. Following his "organic architecture" doctrine, modernist homes are built around the desert landscape but are moved forward with contemporary palettes and design elements. Ranch homes that line the streets are being reconstructed into upscale gabled designs, while the Southwestern style continues with

GLOSSARY

Gabled Modern: New construction style drawing influence from minimalist, Depression-era homes of the 1930s; relative to barn homes of the 1940s
Millennials: The generational demographic born between 1981 and 1996, also known as "Gen Y"; the largest cohort of homebuyers in the U.S.
Minimalism: A design aesthetic that favors simplicity, clean lines, and absence of excess materials or accents
Monochromatic: Color schemes utilizing single-color hues or palettes, or starkly contrasting colors to create visual appeal
Muted: Refers to more neutral color palettes that are more subtle and less vivid.
Neu Naturalism: Macro-trend that marries contemporary architectural design with colors, materials, finishes, and details associated with nature and/or natural elements; can be seen as the literal intertwining of built and natural worlds
Secondary Cities: Under 3 million people and are far less known outside of their regional or national area
Sensorial Ease: A design aesthetic that focuses on less visual stimulation through austerity and minimalism; distinguishable by designs in a single hue or material
Tertiary Cities: Those with fewer than 1 million people, usually located close to secondary cities
Vacation Towns: Smaller markets than secondary or tertiary cities, which focus on a lifestyle or grouped set of sporting or relaxation activities

an upgraded twist that encompasses modern elements and a more neutral palette. For the Arizona market, where clay and terracotta tones held favor long after other regions had moved on, the shift toward more neutrals is as indicative of the new residents as it is a sign of the times.

Buckeye, the westernmost suburb of Phoenix, is an area to watch with its fast-rising population. With over 640 square miles of land, only 5 percent of it has been developed so far, offering a multitude of opportunities for residential and commercial expansion. Verrado, a burgeoning residential development, offers a small-town community feel as well as 4 million square feet of prospective commercial property.

Dallas, TX

Over the last decade, the Dallas-Fort Worth (DFW) area grew more than any other metropolitan region in the country. Growth in the city center has pushed some residents to look out toward the northern suburbs. Frisco specifically saw a 71 percent growth rate since 2010, while nearby McKinney increased by 41.9 percent. A few interesting points about Frisco include a median household income that is double the national average and a high median home price at $425,000. Homeowners aren't the only ones attracted to this suburban city; many businesses call it their home as well. The Dallas Cowboys, Professional Golfers' Association, and T-Mobile have all established their headquarters in Frisco.

Dallas' architectural style is as diverse as the city's residents. Traditionally, Dallas has looked to European architecture for inspiration, with Mediterranean, French country, and colonial styles seen prevalent throughout the city. Today many of these more classic styles take on a fresh facelift, most commonly by way of a white façade and reduced ornamentation.

While the "grand proportions" common of a Dallas home remain, the overall aesthetic and "jewelry" of the exterior have begun to tone down. This speaks volumes in a market where curb appeal was once synonymous with a "go big or go home" sensibility. The larger cultural shift toward toned-down elegance over ostentatious styling has set a new tune for the Dallas market, where architectural styles are reimagined through contemporary interpretation.

Atlanta, GA

Atlanta is positioned to be an ideal location for those with post-COVID desires of relocating somewhere with a hybrid of both urban and suburban energy. Urban sprawl has increased Atlanta's metro area to over 8,000 square miles. While Millennials are fueling a downtown renewal, most of the population growth has come from the suburbs.

Atlanta's job market already boasts a premier list of Fortune 500 companies from Home Depot to Delta to Coca Cola and is home to the fourth largest tech hub in the U.S. Google is also specifically investing $2.5 million toward tech startups owned by African Americans. Employment prospects aren't only affiliated with the city center—the rapidly urbanizing northern city of Dunwoody has allured companies like Zillow and State Farm. Nearby, Cherokee County is experiencing the highest growth of any county in the metro area.

A true historic Southern city, the traditional colonial aesthetic remains prominent but has recently been stripped down to a more minimal look. New builds often embrace a boxier frame, single or dual neutral hues for the whole exterior, and contemporary gables that boast minimal to no eave overhang. A progressive residential community was newly constructed in the southern outskirts of the city in the town of Serenbe, with homes influenced by Scandinavian and Belgian cities that take cues from the farmland environment that surround them.

Tertiary Cities

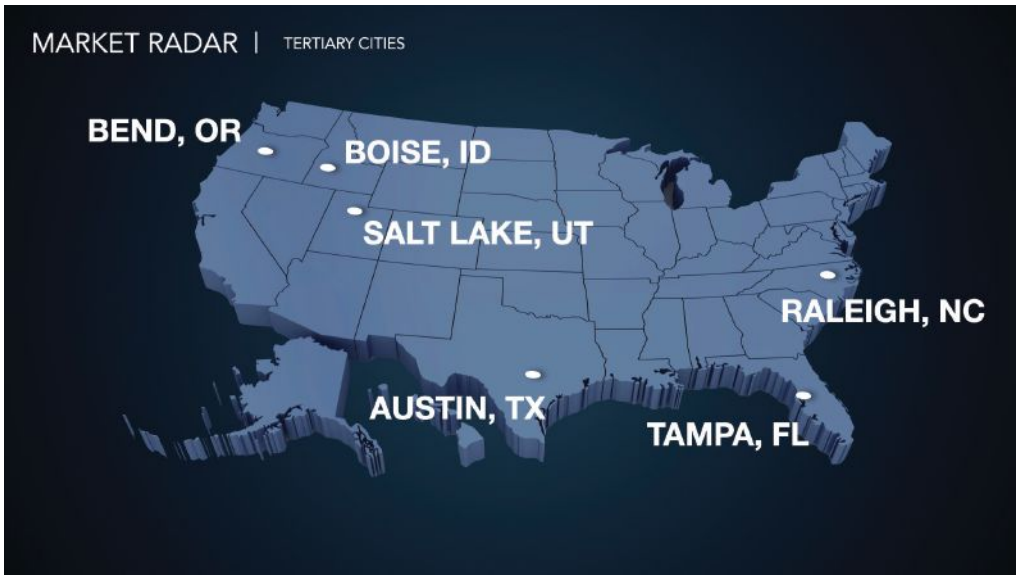
Tertiary cities are where the design market is really getting interesting.

The rising attention to design in these markets is a clear confirmation of what's been tracked for several years now: that residents of primary and secondary regions are increasingly drawn to the allure of smaller markets.

Tertiary cities, as defined for this course, are those with fewer than 1 million people. The specific cities featured in this section are typically within a short commute of a primary market or burgeoning secondary one and have some amount of natural beauty or recreational allure that make the region more attractive to the wave of consumers increasingly looking for a low-key way of life.

Bend, OR

Bend is currently the type of tertiary city that has all the makings of becoming one of the coolest places in the U.S. Portland may have the largest population growth in Oregon; however, Bend is seeing a significant shift in design as buyers begin to favor smaller markets where the cost of living is lower but lifestyle isn't sacrificed. With easy direct flights to the West for those who work elsewhere, Deschutes County has the highest



net migration out of all Oregon counties—predominantly from California but also from Portland and Seattle.

The housing market in 2020 continued to set new records for median prices, with a demand that continues to outpace the supply. Prices rose 18 percent over the summer of 2020 to a median price of $547,000—the highest it's ever been. With demand increasing and a limited inventory of homes, new construction is expected to fill the gap.

Set among the trees, homes in Bend incorporate a style that matches their surroundings by blending modern with rustic designs. Craftsman and chalet designs abound in this town, with wide roof overhangs and organic materials. Homes drenched in saturated dark colors like soot black, ash gray, or charcoal brown disappear into the natural landscapes—often with a monochromatic roof and exterior palette, somewhat reminiscent of the Sea Ranch community in California. Elevated details are unexpected in this under-the-radar town and create an elegant overarching theme to the architecture here.

This article continues on http://go.hw.net/AR4211. Go online to read the rest of the CEU course, complete the corresponding quiz for credit, and receive your certificate of completion.

SPONSOR INFORMATION

QUIZ

1. _____ is an example of a secondary city.
   A. New York City
   B. Denver
   C. Los Angeles
   D. Miami

2. Certain tertiary cities have recently become more alluring _____.
   A. To residents in primary cities
   B. For their access to outdoor lifestyles
   C. For their growing tech economies
   D. All of the above

3. The residential architecture trends in these two resort towns have been recently leaning more modern and progressive:
   A. Palm Springs and Tahoe
   B. Aspen and Key West
   C. Sun Valley and Whistler
   D. Aspen and Tahoe

4. On a trend timeline, "healthy" palettes and hues are linked to this design direction:
   A. 2:1 ratio
   B. Privacy and minimalism
   C. Neu Naturalism
   D. Sensorial Ease

5. The color black has been trending through exterior residential architecture since the early 2000s because _____.
   A. Blue was finished
   B. Design forecasters made it happen
   C. Larger cultural trends influenced what colors resonated with designers and consumers
   D. None of the above

6. The cultural and consumer influences that have shifted the trend in color palettes can be explained by the "three M's," which are:
   A. Minimalist, modish, muted
   B. Minimalism, monochromatic, muted
   C. Minimalism, monomorphic, muted
   D. Materialistic, monochromatic, muted

7. The 2:1 ratio refers to _____.
   A. Doors and windows
   B. The ideal spatial balance between master bedroom and bathroom
   C. The application of a two-color palette for exteriors
   D. Black and white palettes only

8. Contributing factors to the rise of Neu Naturalism include all of the following, EXCEPT:
   A. Consumer interest in indoor/outdoor living
   B. Rising concern for climate change
   C. Increased usage of smart home technology
   D. Mistrust of America's food industry

9. A head-to-toe application of a single material in a single color is characteristic of the _____ trend.
   A. Sensorial Ease
   B. Neu Naturalism
   C. 2:1
   D. Healthy colors

10. Key colors beginning to make their way into the U.S. housing market for exterior palettes include _____.
    A. Oat Milk Whites
    B. Soft Cedars
    C. Abundant Seas
    D. All of the above

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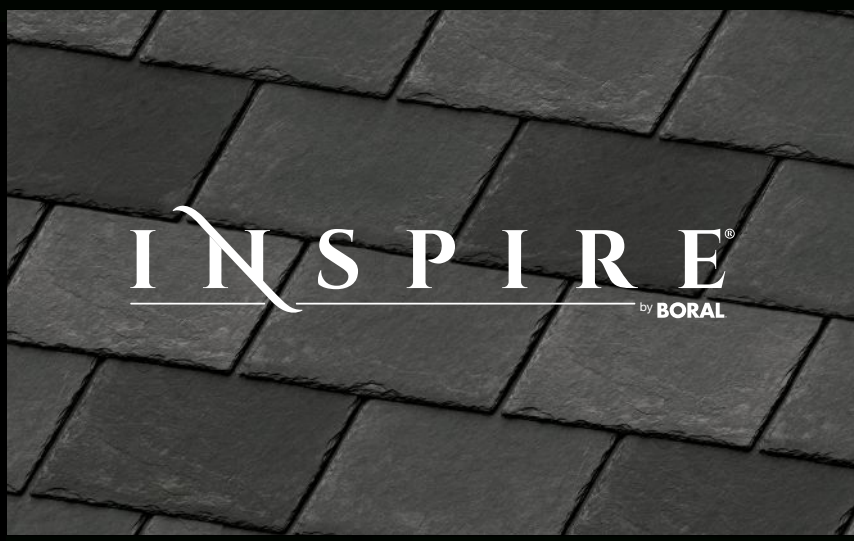

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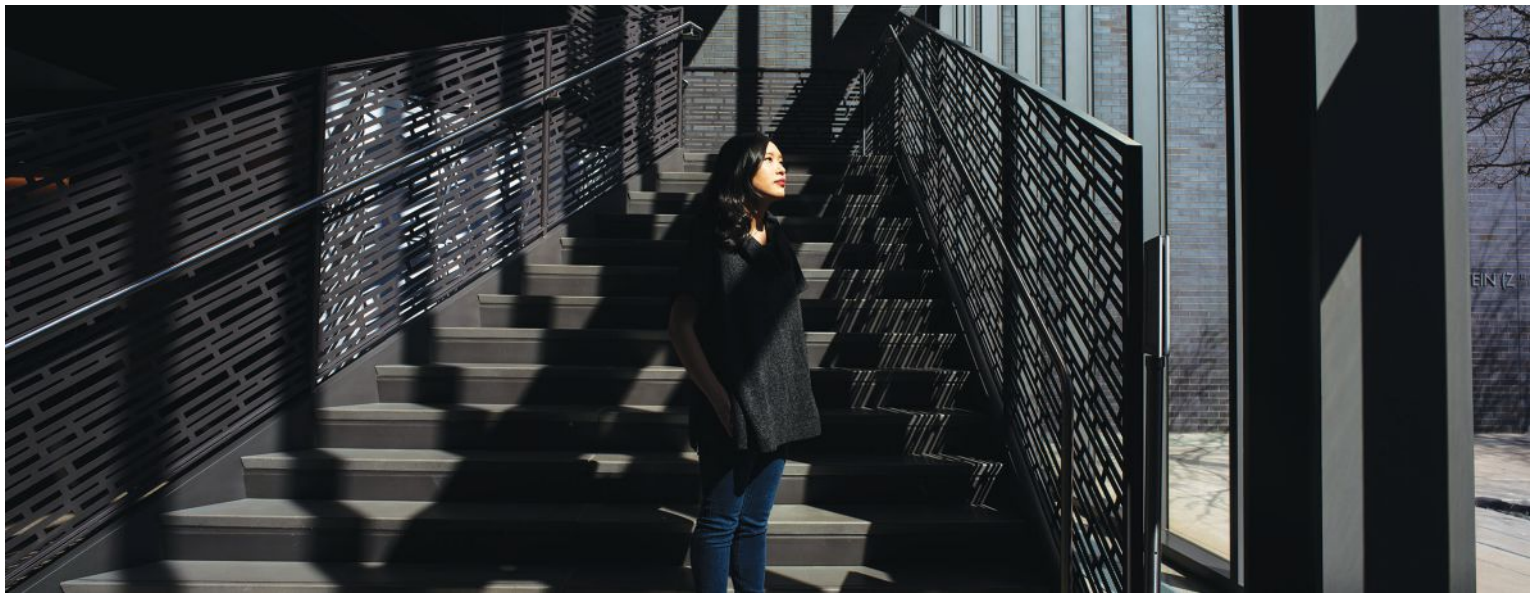

CREDIT: ZERB MELLISH

Education and Tolerance

Designing a building with a mission.

The Dallas Holocaust and Human Rights Museum, originally established in 1984, re-opened in September 2019 in a brand-new 55,000-square-foot facility, a building five times larger than its previous location. The museum shines a spotlight not only on the atrocities of the Holocaust, but on human rights struggles in the United States and genocides around the world. Dallas firm Omniplan designed the museum's new facility, which also served as the subject of the grand prize winner of AIA's 2020 Film Challenge. We talked to Emily Teng Yan, AIA, a project architect on the Dallas Holocaust and Human Rights Museum, about what the project meant to her.

As told to Katherine Flynn

I didn't know what I was getting into when I first started architecture. I was good at math, science, and art, so it seemed like the perfect marriage between [all three]. I really loved the idea of architecture influencing not only the everyday, but the sacred. I definitely gravitate toward buildings that are for everyone to experience.

The [museum] project came to our firm in 2013. I was heavily involved at the beginning, especially with the [design] competition, which was open to a certain number of firms. I helped with our approach to the design of the museum, and then when we actually won the project, I worked with a designer to visualize the exhibits. That helped develop the formation of the shape of the building; it was programmatically driven. During fundraising, I helped with Sketch-Up models that helped explain the story of the building. The museum had a mission to find a local firm from the region, [but] some firms had partnered with other firms in New York and other areas. When we competed, it was just us, not partnering with a starchitect firm.

I worked on the competition when I was first at Omniplan, in 2013, and the museum was completed in 2019. It shows that building is a long process, and there has to be a lot of support, there has to be a vision, there have to be people to want to see [the project] come to fruition. You have to be patient, but I think it's just so gratifying because I know what it means to the community. I feel like the building represents more now, with how polarized politics are. In 2013, I just don't think the world was as charged. It's interesting looking back at the younger me, and at what the building means now.

I love the museum's mission of not only telling the story of the Holocaust but extending the idea of human rights to all people: civil rights in the United States, and human rights globally and internationally. My family is from Dallas, and my grandfather came to Dallas after World War II. My parents talked about how schools were segregated, and since they were Chinese-American, they weren't considered "colored," so they didn't go to the Black school, but they went to "white" schools and weren't quite accepted there. I think this building is telling the history in my own backyard. It's meaningful for my family because of my family's history in Dallas. As a minority woman, I appreciate that the museum's mission is one of education and tolerance. AIA


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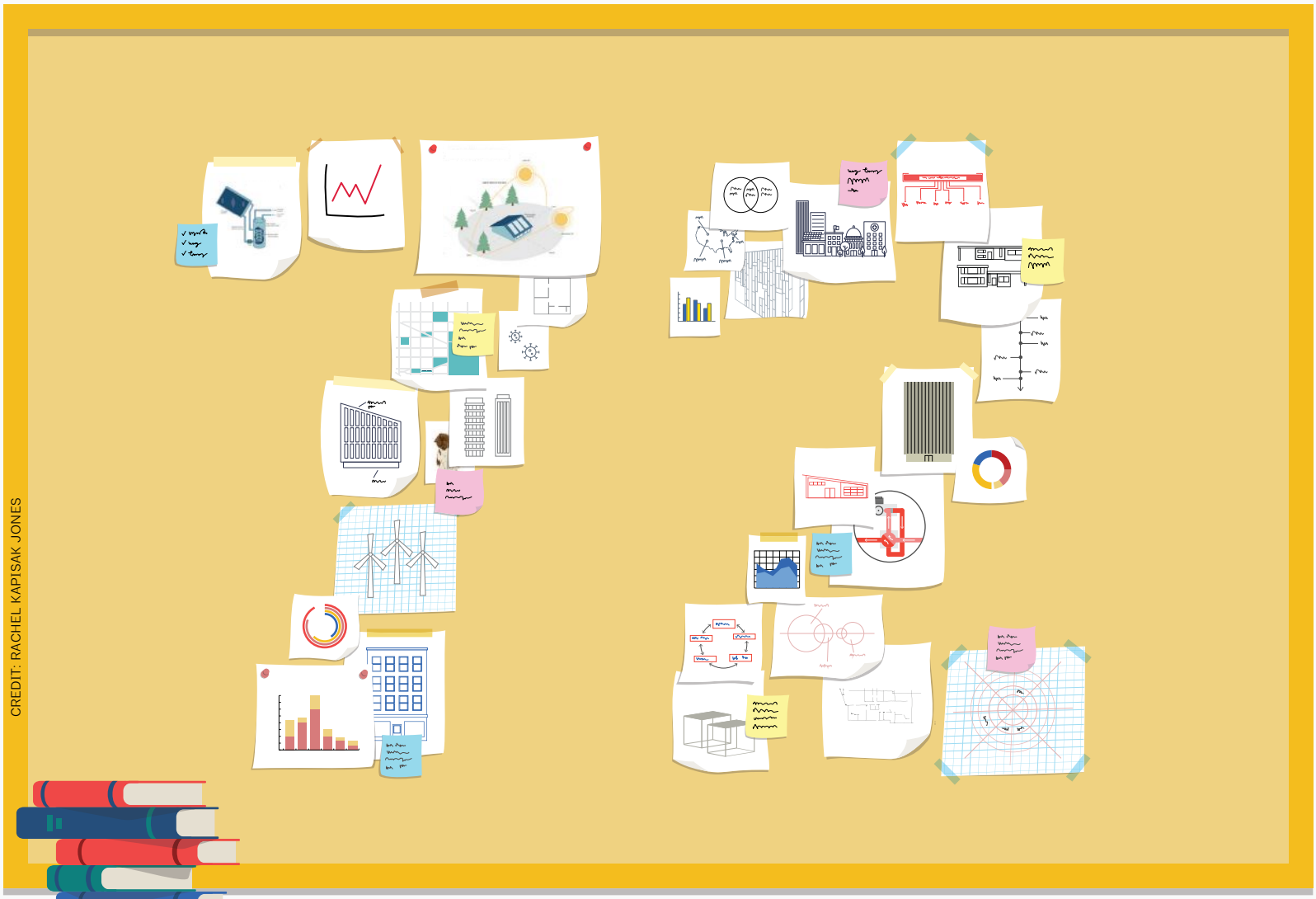

CREDIT: RACHEL KAPISAK JONES

The Power of Research

By Michele Russo

Seventy-two percent of architecture firms engaged in some aspect of practice-relevant research in 2019, up from 66% in 2017. Firms of all sizes (44%) use literature reviews and save and revisit past projects as case studies for analysis and research (43%).

Large firms with more resources are able to invest in research more heavily than small firms. For example, 43% of large firms (50 or more employees) and 48% of midsized firms (10 to 49 employees) have an in-house database/library for research, compared with only a fifth of small firms (fewer than 10 employees); and 33% of large firms use evidence-based design practices, compared to 17% of midsized firms and 6% of small firms.

R&D tax credits were also most often pursued and received by large firms in 2019: A quarter of firms with 10 to 49 employees applied for them (20% received them), and 29% of firms with 50 or more employees applied for them (26% received them). All small firms (3%) that applied for R&D tax credits received them in 2019.

Large firms were also able to dedicate annual budget for research projects or investigations—17% of firms with 50 or more employees report they currently have research budgets, compared to 2% of firms with fewer employees. AIA

Source: AIA Business of Architecture Firm Survey Report, 2020

The Problem With Exceptional Buildings

To truly cut carbon, architects must design better systems, not singular structures.

By Patrick Sisson

Scott Shell, FAIA, architect and principal at San Francisco-based EHDD, designed his first zero-energy building in 2000. He thought he was seeing the future constructed before his eyes. In a decade, he thought, every building will be made just like this. In the years since, he's become an expert in high-performance, zero-energy buildings, which generate as much energy on-site as they use in a year. But his vision still hasn't come to pass.

The number of zero-energy buildings that rely on on-site solar is still relatively small, compared with the need to cut emissions. The New Buildings Institute lists just a few hundred such structures in its database. Ever since Shell built his first such building, renewable power has exploded, with costs shrinking and production increasing at a rate previously thought to be impossible. The cost of solar power fell 82% in the last decade alone, and predictions call for an additional 17% drop in the next five years. That disconnect—accelerating green energy production, and just incremental growth in zero-energy buildings—represents

Above: The new headquarters for biotech firm Exelixis in Alameda, Calif., designed by brick. and Peter Rumsey at PEI, will buy power from a city-owned utility that can provide 100% renewable energy.

a significant challenge to larger goals of eliminating carbon from the built environment.

"I put solar on my house because it makes economic sense and it's a smart thing to do," Shell says. "But for many of my projects, it doesn't work. There just isn't enough roof space or site area available to generate [all necessary energy] on-site."

Evolving standards and practices around green building design and development have all led in one direction, spurring the architecture and construction industries to commit to reducing and eliminating carbon emissions. The Zero Code, developed and promoted by the group Architecture 2030, advocates for buildings that have no carbon footprint. It's the most extreme example, the end point of such a movement. But in the pursuit of more-sustainable buildings, we've often asked buildings to do all the work themselves, to be both superior designs as well as masterpieces of sustainable engineering. What if, instead of asking for all our buildings to be unique, we pushed for a world where the energy systems we set up helped buildings reach their carbon reduction goals? Don't ask one building to use zero net energy, an engineering challenge that only grows more difficult for larger structures; make sure as many buildings as possible can plug into clean, 100% renewable power.

"Going from zero energy to zero carbon shifts the conversation," says Shell. "Doing these exceptional buildings was fun and I loved it. But we need every building to do this starting tomorrow."

While the nation is far from having a fully renewable grid, a growing group of local energy organizations offer grassroots green power that can make Zero Code compliance more accessible and affordable. That's part of the benefit of so-called Community Choice Aggregation, organizations that function as community-based utilities that allow customers to control their energy generation and reduce costs. Many CCAs contract with local renewable power producers and send energy via the existing grid to their clients, letting customers hook up to 100% renewable power for a small premium. They currently operate in seven states, mostly in California; in 2017, roughly 750 of them served 5 million customers.

These organizations, which first took shape in the late 1990s, have been riding the wave of improved renewable energy efficiency, along with other options for local, renewable power, such as community solar projects. They provide confidence that designers and developers are running their buildings on clean power and offer what Charles Eley, FAIA, an Architecture 2030 senior fellow, calls "additionality," investment that supports the construction of new renewable generation facilities.

These organizations often offer more than just cheap power. Aimee Bailey, director of decarbonization and grid innovation programs for Silicon Valley Clean Energy (SVCE), a California CCA, says her organization works closely with building owners and architects to help promote energy efficiency initiatives.

"The 13 cities and communities we serve formed us to address climate

CREDIT: BRICK. ARCHITECTURE AND DESIGN

Above: The rooftop of the future Exelixis building will feature solar panels, allowing it to generate on-site energy as well as be plugged into a renewable grid.

change, broadly," she says. "We have a $6 million portfolio focused on building and transportation electrification. The community energy model enables us to make changes very rapidly."

CCA, together with another growing trend, the increasing electrification of buildings, is creating the necessary infrastructure to scale sustainable building.

One of the reasons AIA decided to support the Zero Code, Eley says, was to push local governments to support these kinds of agreements and renewable energy options and help more make the investments SVCE has made in its community.

"So much of global growth in the next decade is going to be in urban areas—tall buildings located downtown or the fringes of downtown—and there simply isn't enough roof space or parking lot space for those buildings to get to zero with on-site generation," says Eley. "With the Zero Code, we're trying to open up options for them to succeed."

CCAs and similar options often make it easier, and more cost effective, to achieve significant carbon reduction and meet sustainability goals. California, for example, has gone so far as to mandate all new state buildings, as well as major renovations, meet the zero net energy standard starting in 2025, a requirement that has led the state's Department of General Services to set up a variety of power scenarios, from on-site power to solar shares and CCAs.

Peter Rumsey, an engineer, energy consultant, and Stanford University lecturer, is helping the growing Bay Area biotech firm Exelixis design a new four-story headquarters in Alameda, Calif., working with the architets at brick. To design the new HQ to net zero standards—the massive office building would have to generate as much power as it uses—would have been cost prohibitive. Typically, Rumsey says, once a building hits four stories, it becomes exceptionally difficult to generate all its power on-site. Instead, the currently under-construction, all-electric workspace will buy electricity from Alameda Municipal Power, a city-owned utility that can provide 100% renewable energy.

While the project has succeeded because it could plug into a renewable municipal power supply, its design underscores a few important things that can be missed in debates around standards and practices, says Rumsey. Just because the building is zero carbon doesn't mean it's OK to gloss over energy efficiency, or skip on-site generation (there will be solar panels on the Exelixis rooftop). Think of buildings like Teslas, he says: They should already be extremely aerodynamic and energy efficient before being electrified. It's cheaper and more sustainable to eliminate energy usage with efficiency measures than simply swap to renewables.

It's also important to lessen the strain on the wider energy system. As the grid evolves toward more renewable use in the coming decades, it'll face increased demand as more big users of power, especially building heating and transportation, become electrified. Buildings that use less electricity, and generate some when possible, relieve the strain during such a significant infrastructure evolution.

Expanding CCAs beyond the coastal, progressive areas where they tend to be clustered and establishing the legal structures that allow them to operate in more cities and states would make it easier to increase the number of zero-carbon buildings. To help encourage more-sustainable new construction, Shell and others have also been lobbying for more electrification ordinances in cities, which prohibit the use of fossil fuels in new buildings. Currently more than 40 California cities have such rules, and municipalities in other states, including Massachusetts, Colorado, and Washington, are considering similar policies.

What about the rest of the nation, which may not have the same progressive building and energy codes, or commitments to sustainable utilities? Rumsey says it's important to ignore stereotypes and frame this concept through the lens of renewable power and its popularity across the nation. Rapid growth of wind turbines in Texas and Iowa, and solar power in Arizona, points to the possibility of setting up similar systems.

"Even if you aren't blessed with the same amount of wind and solar resources as other areas, CCAs mean more local control, and make it easier to promote renewable options," says SVCE's Bailey. "It's incremental. In some states, offering 40% clean power is a big win."

The movement toward electrified buildings and renewable power generation is as much about cutting costs and instituting local control and resilience as it is about notions of sustainability and stewardship.

"This democratizes sustainability," says Shell. AIA

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The Architecture of Rosenwald Schools

Photodocumentary reveals design in service to education.

Story and Photographs by Andrew Feiler

Above: The Emory School in Hale County, Ala., was constructed around 1915 and remained in use as a school for Black children until 1962 and is likely the oldest surviving Rosenwald school.

Hale County, Ala., has a storied place in American arts and letters. The legendary book *Let Us Now Praise Famous Men*, with prose by James Agee and photographs by Walker Evans, documented the lives of three impoverished sharecropping families in Hale County in 1936. William Christenberry, born in Hale County the year Agee and Evans lived there, spent a career photographing how time was transforming the southern landscape. Architects Samuel Mockbee and D. K. Ruth established Rural Studio in Hale County in 1993. Believing "everyone, both rich and poor, deserves the benefit of good design," the Auburn University program has built hundreds of projects using design to create simple and efficient beauty at very low cost.

Predating each of these is Hale County's Emory School. Constructed around 1915 and in use as a schoolhouse for Black children until 1962, the modest, white clapboard structure is likely the oldest surviving Rosenwald school. One of the most dramatic—and effective—philanthropic initiatives the country has ever seen, the Rosenwald schools program was created by Tuskegee Institute principal Booker T. Washington and Sears, Roebuck & Co. president Julius Rosenwald. From 1912 to 1932, this collaboration built 4,977 schools for Black children across 15 southern and border states. One final school was added in 1937. Hundreds of thousands of students walked through the doorways of Rosenwald schools.

The Emory School rises on small brick piers, which enable moisture and temperature control as air circulates below the building. Inside, cloakrooms served to keep muddy outer garments separate from learning spaces. Large double-hung windows let in lots of light, since most Rosenwald schools initially lacked electricity. The windows also provided ventilation during warmer months. In colder months, potbelly stoves heated the rooms. These vented through brick chimneys.

In addition to a larger main classroom, a smaller room at the rear was for industrial education, such as agriculture and trade skills for boys, as well as home economics and domestic skills for girls. These spaces were separated by a movable partition—usually a series of doors—that could be retracted so the full space could be used as a community center outside classroom hours. Each of these design features was laid out by a team of Tuskegee architects led by Robert Robinson Taylor, the first accredited Black architect.

Julius Rosenwald led Sears, Roebuck & Co. from 1908 until his death in 1932. He helped turn Sears into the world's largest retailer, and he became one of the earliest and greatest philanthropists in American history. His cause was what would later become known as civil rights. Booker T. Washington was one of the most prominent Black voices in the late 19th and early 20th centuries. Born into slavery, he became an educator and was the founding principal of Tuskegee Institute. He led the college for more than 30 years.

Rosenwald and Washington met in 1911. At that time, Black public schools in the South were usually in terrible facilities with outdated materials and a tiny fraction of the funding provided for educating white children. Many communities did not even have public schools for Black students. Rosenwald and Washington attacked this education challenge with originality and sophistication and created the program that became known as Rosenwald schools.

I first heard of Rosenwald schools from Jeanne Cyriaque, a preservationist who had dedicated her career to saving these historic structures. The story shocked me. How could I have never heard of Rosenwald schools? I am a fifth-generation Jewish Georgian, and I have spent my life working on progressive civic causes. Some of the pillars of this story—Jewish, southern, progressive—are the pillars of my life.

I quickly found a few books on Rosenwald schools but no comprehensive photographic account. I set out to create exactly that. Of the original 4,978 Rosenwald schools, about 500 survive. Over three and a half years, I drove 25,000 miles and photographed 105 schools in all 15 program states. This work includes interiors and exteriors, schools restored and yet-to-be restored, and portraits of people with compelling connections to these schools. Narratives accompany each photograph, telling the stories of Rosenwald schools' connections to the Trail of Tears, the Great Migration, the Tuskegee Airmen, Brown vs. Board of Education, embezzlement, murder, and more. The book recording this work was recently published as *A Better Life for Their Children: Julius Rosenwald, Booker T. Washington, and the 4,978 Schools that Changed America* (University of Georgia Press). The accompanying exhibition will premiere this spring at the National Center for Civil and Human Rights in Atlanta.

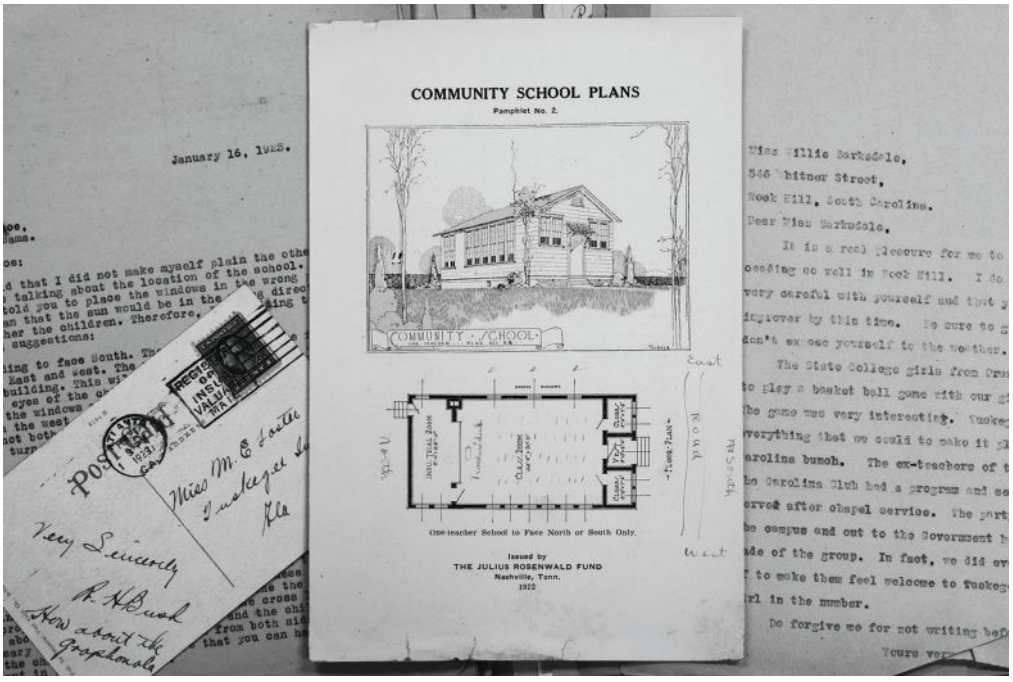
The Rosenwald schools program changed America. Between World War I and World War II, the persistent Black-white education gap that had plagued the South narrowed significantly. Economists at the Federal Reserve would later conclude that Rosenwald schools were the most significant factor in that achievement.

Further, Rosenwald schools would be a meaningful force in helping give rise to the civil rights movement as many students went on to be the leaders and foot soldiers of the movement. Medgar Evers, Maya Angelou, and U.S. Representative John Lewis were among those who attended Rosenwald schools. As Lewis, who passed away in July 2020, wrote in a foreword to the book, "I was curious. I was hungry to learn. I was absolutely committed to giving my all in the classroom. My parents would describe education in almost mythical terms, that it offered the keys to the kingdom of America, the keys to a better life and to opportunity."

One of the core design principles of Rosenwald schools was that they were to be modest. Such humility was in part to control costs and in part to avoid provoking a backlash, specifically arson, from the local white citizenry. But despite being offered architectural plans and design guidelines, Black communities often adjusted designs in an expression of agency.

The Pleasant Plains School displays this dynamic. The community wanted a cupola, and they built a cupola. But cupolas were anathema to Fletcher Dresslar, a professor of architecture at George Peabody College in Nashville, who was hired by the Rosenwald Fund in 1919 to review the school building program. Dresslar felt strongly that civic institutions should have an architectural idiom distinct from that of churches to honor the separation of church and state. When he came across a cupola on a schoolhouse, Dresslar railed that such niceties needed to be firmly prohibited on future schoolhouses, as "these are remnants of church architecture!"

In 1920, administration of the Rosenwald schools program moved from Tuskegee to the new Rosenwald Fund office in Nashville under the direction of Samuel Smith, who had been a student of Fletcher Dresslar. Smith and Dresslar developed an expansive new set of plans for Rosenwald schools. Building on the principles laid out by Tuskegee architects, yet integrating new thinking on schoolhouse design, the Rosenwald Fund started issuing a series of designs in four-page pamphlets. Full sets of plans were available upon request at no charge. These proved to be in great demand and were used across the region, frequently without Rosenwald funding, for the construction of both Black and white schools. These designs marked a shift in



Top: A Rosenwald Fund–issued pamphlet detailing designs for schoolhouses that could be implemented across the country.

Below: The interior of a restored classroom at the Pine Grove School in Richland County, S.C.

the program from building better schools to building model schools.

In working through how to tell this story visually, I initially focused on schoolhouse exteriors. Over two decades, the program advanced from one-teacher, two-teacher, and three-teacher wooden structures to brick buildings of one, two, and three stories. As I visited more schools, I ventured inside and marveled at how they were being used today. While a handful remain active schools, most were outgrown as educational facilities decades ago. Today, these former schoolhouses are community centers, church halls, daycare centers, apartments, and private homes. Many, though, remain unrestored, and at several sites I came across piles of rubble so recent they were surrounded by emergency fencing or yellow caution tape. I hope my photographs will bring new urgency to the cause of preservation.

But by far the most emotionally rewarding part of my experience was meeting people who attended these schools, taught in these schools, and are focused on saving these schools. I strove to capture this remarkable part of the story through portraits. One of the stories I found most inspiring is that of Elroy and Sophia Williams. The portrait that opens the book shows them inside the Hopewell School, then undergoing renovation, in Bastrop County, Texas. They are holding an enormous photograph in a beautifully ornate, gilt frame. More than a century old, it portrays Sophia's grandparents—Sophia and Martin McDonald—youthful and elegantly dressed.

Sophia Williams' grandparents were both born into slavery. Upon emancipation, Martin McDonald started raising farm animals, bought some land, and eventually accumulated 1,200 acres. When the Rosenwald schools program came to Bastrop County in 1919, the family donated land for the school. The first teacher was Sophia Williams' mother; Sophia was one of the first students. Elroy attended a different Rosenwald school in Bastrop County. Elroy and Sophia both went on to college, returned to Bastrop County as teachers, and have been leading the effort to preserve the Hopewell School as a community center: students becoming teachers becoming the keepers of the flame of history.

Julius Rosenwald and Booker T. Washington reached across divides of race, religion, and region, and they changed America. To me, the heart of this story speaks to each of us: Individual actions matter; you can make the world a more just place. Of all the lessons taught to us by Congressman John Lewis, to me his most powerful call was this: "Be hopeful. Be optimistic. Our struggle is not the struggle of a day, a week, a month, or a year, it is the struggle of a lifetime." May we all continue to make #GoodTrouble. AIA

AIA PERSPECTIVE

Design Is the Expectation, Not the Exception

Good design is a right we can all deliver.

By Peter Exley, FAIA, 2021 AIA President

Our abilities as architects are equal to our skills. Our capabilities are equal to our opportunities to ply those skills. I promise you, this isn't double-talk. If you put them together, your abilities and your capabilities create a space for architecture to intersect with business. A space where creativity meets profitability. It's the place where I can thrive as a small business owner, along with my wife and partner, Sharon. But, it also must be the place where I can be the kind of architect I want to be.

When I hear the term "firm resilience," then, I think beyond meeting my expenses and realizing a profit. I consider the engine of design that drives me to do my best thinking and drives our clients to engage us, time and again. In this sense, design is not a byproduct of my business. It is not an exception to some standard product I make. Design is an expectation that I create and my clients share. This isn't a convenient rhetorical argument, either. It's my observation after several decades in practice. It has been the through-line for my firm, recession or not: Every single one of our clients share how they are moved by the impact of design on their project.

What does that mean? Perhaps they were moved to realize what design signifies—the accommodation of needs through an affordable investment. But I think it's more about what design ultimately means—a real understanding between client and architect. They thought they were doing something exceptional by hiring a firm called Architecture is Fun, but in the end they were realizing their right to inspiring and healthy spaces.

Marlon Blackwell, FAIA, and Ed Mazria, FAIA, the two most recent AIA Gold Medalists, have staked their careers on this right to good design that's inspiring and healthy, too. What they've done individually has always been prescient, even if it's not always been popular, and it has all been done in small, resourceful shops like my own. I am not immodestly placing myself in their company, but I am candidly saying that design is a right we—you, me, Marlon, and Ed—can all deliver, and design is the expectation we can all set. Theirs are small practices, just like a majority of AIA member firms. Theirs are resilient firms, too, just like yours if you're reading this in the few minutes between calls and CAD layers, and actively drumming up business for the quarter ahead.

Thriving in a competitive business climate is hard on a good day, never mind during a recession or the period of limbo we seem to find ourselves in now. We all must chart a way forward in spite of uncertainty and the still-deadly pandemic. But, as long as we remember that design is the expectation, not the exception, there will always be work—and rewards—for architects committed to finding capabilities for their ample abilities. AIA

The A'21 Conference on Architecture's first day is about firm resilience. Learn more and register at conferenceonarchitecture.com.

CREDIT: RUTH YARO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Small Houses, Big Impact

Thoughtbarn's Community First! microhouse offers a natural-stained back porch that opens onto the surrounding landscape.

Two microhome developments in Texas combat homelessness with community

TEXT BY MADELEINE D'ANGELO
PHOTOS BY LEONID FURMANSKY

Community First! Village has many of the hallmarks of your average suburban development. Located 8 miles east of downtown Austin, Texas, the 27-acre master-planned neighborhood has its share of cul-de-sacs and residential circles that branch out from a central avenue, Goodness Way. But there's nothing conventional about the community, which provides affordable housing for over 200 former chronically homeless individuals, many of whom have disabilities, and includes an eclectic mix of model RV units, microhouses, communal kitchens, and even an art house. "Community First! is the type of place that you can describe all day, but it feels different when you're there," says Sarah Satterlee, AIA, the Community First! director of architecture and site development, who also happens to be a resident.

The village was the brainchild of real estate developer Alan Graham, whose local nonprofit Mobile Loaves & Fishes, a network of food trucks and 20,000 volunteers, delivers food, clothing, and other necessities to those in need. In his work with Austin's homeless community, Graham came to believe that the "single greatest cause of homelessness is a profound, catastrophic loss of family."

Community First! was his answer. In 2014, Graham partnered with the AIA Austin DesignVoice Committee to send out an RFP to design an affordable microhouse. They called the competition Tiny Victories. Fifty-four firms from around the world submitted designs, and a jury selected four winning entries from the local teams led by Cody Gatlin; Stephanie Motal, AIA; Michael Smith, AIA, and Mick Kennedy, AIA; and Becky Jeanes, Tray Toungate, Laura Shipley, and Brianna Nixon. Each house was between 144 and 200 square feet and cost just

$12,000 to $20,000 to build. During the construction process, Community First! welcomed additional microhome designs, materials, and construction help, and the neighborhood was born: 135 microhouses—30 of which are Tiny Victories designs—and 100 model RV units, as well as communal bathrooms and laundry facilities, gathering spaces, and other resident resources. "We were not intentional about providing a diversity of architectural choices for our neighbors," says Satterlee. "It just happened that way."

The project was so successful that Graham decided to embark on a second phase, building another, 24-acre community next to the first one. In March, construction was completed on a second set of five microhouses, designed by five new winning firms: Chioco Design, Jobe Corral Architects, McKinney York, Michael Hsu Office of Architecture, and Thoughtbarn. By the end of 2022, when the second phase is completed—bringing the cost of the privately funded project to $40 million—the two developments will offer a total of 545 units that will house 560 residents. The timing is fortuitous. During the pandemic, the need for affordable housing has only grown more acute: Travis County, which includes Austin, reported that its homeless population increased last year by 11%, with Black and older residents disproportionately represented.

"Our goal is to get [chronically homeless individuals] up off the streets and permanently settled," says Graham, who, like Satterlee, lives in the village. Community First! residents average 58 years old and pay a monthly rent between $230 and $440, depending on the unit. Residents who want to work can tend to the on-site organic gardens or create artworks that are sold through the Community First! online marketplace, among other options. Graham says this model of affordable housing is rooted in the "inherent community" inspired by RV parks, which he frequented with his family on summer vacations. He says, "Mobile Loaves & Fishes has the saying that housing alone will never solve homelessness, but community will … Housing is necessary, but it's insufficient."

A Different Kind of Design Competition

How to create that sense of community? That was the challenge faced by the winning architects, who in the second phase of the development made a concerted effort to respond to the input of residents. "To me, there was a huge gap in phase one of not having the voices and the experience of the people who had lived in the homes involved in a design process," says Shelby Blessing, AIA, a senior associate at the local office of Page, who served as DesignVoice co-chair. "We're experts in design and how to put a building together, but we're not experts in the lived experience of the [residents] or their needs."

Which is why Community First! and AIA DesignVoice facilitated a different kind of design competition for Tiny Victories 2.0. Instead of an RFP, they released an RFQ, asking local firms to partner with a builder, complete a questionnaire, submit a portfolio of five relevant projects, and commit to pro-bono work if selected. The winning firms each worked with one current Community First! resident who was interested in designing a new home for themselves. "We were looking for neighbors who felt passionate about moving from their existing home, which is a big deal for somebody who has not had a home for a long time, to ask them to uproot again," Satterlee says.

The design process began with a two-day kickoff retreat in January 2019, with each design team arriving at Community First! for an immersive overnight experience. "We did not start designing during this 24 hours," Blessing says. Instead, the event emphasized collaboration between the design teams and laid the foundation for their relationships with the five residents through carefully guided conversations, activities, and tours of the community and individual residences.

The teams also reviewed a post-occupational study conducted by Satterlee, DesignVoice, and a group of students from the University of Texas at Austin. "Our research question was, How well does the built environment of Community First! Village meet the needs of its residents?" Blessing says. Resident desires included a greater variety and quantity of space and storage, kitchenette spaces inside the microhouses, multiple sources of interior light, and acoustical privacy. Some of the original microhouse designs—such as a dogtrot layout, units with a spacious screened porch, and options with extensive storage—were more popular than others. "The houses that allow people to create a gradient of privacy and a level of control over their space have been really successful," Blessing says.

Many of the design teams used image boards to get an idea of their client's aesthetic appreciation and went through rounds of drawings, altering plans to each seed neighbor's specifications and distilling design priorities. "It was the first time I ever did something like that," says Jesse Brown, a two-year Community First! resident who worked with Jobe Corral. "The architects were friendly. They listened to what I wanted."

"I did measurements and had them all laid out," adds Richard Devore, a three-and-a-half-year Community First! resident who worked with MHOA. "I knew what I wanted concept wise, as far as I've got 200 square feet to use."

Some of the teams even integrated virtual reality into the process. "Seeing that VR world, it just gives you a feel for, okay, this is what we're talking about," Devore says.

At the same time, the winning firms had a second client: Community First! Village. Although each design

Richard Devore worked with Michael Hsu Office of Architecture to design a secure space with durable shelving and drawers tailored to his possessions.


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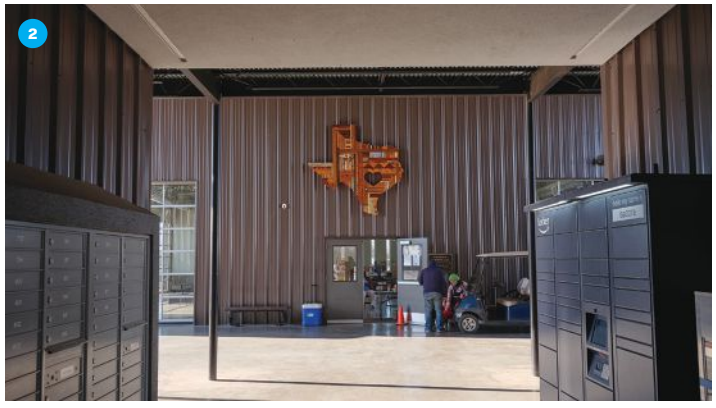
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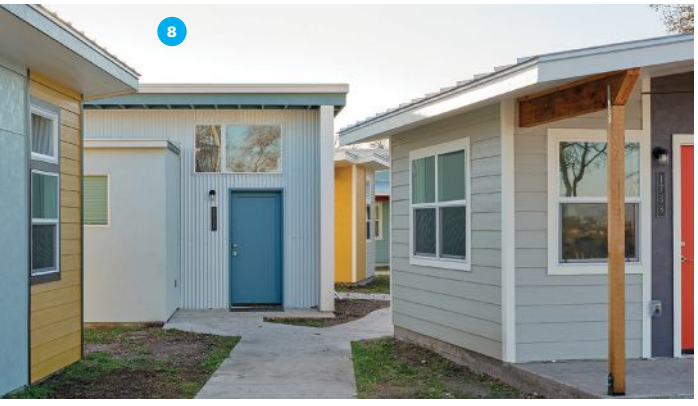

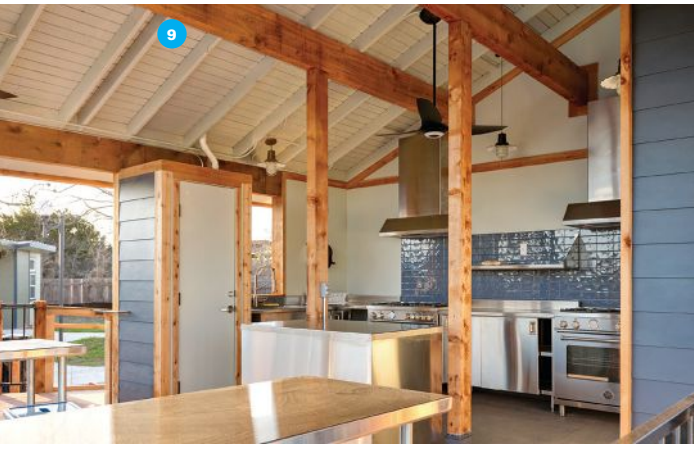

Community First! Village Siteplan

1. Units with porches or roof decks, such as the Rooftop Hospitality House by Cody Gatlin, proved popular in the first phase.
2. The Topfer Health Resource Center provides residents with mental and primary health care services.
3. Local firms Sixthriver Architects and Hatch+Ulland Owen Architects wrapped the Hope Chapel in metal sheets to create a tentlike form.
4. Residents maintain the central Community First! chicken coops.
5. The Genesis Gardens Organic Farm provides fresh produce and employment.
6. The Community Art House provides the village with an accessible creative hub.
7. Residents can generate income with their art, selling it through the Community First! online marketplace.
8. Chioco painted its microhouse door a cheery blue, creating individuality in a colorful cul-de-sac.
9. Communal kitchens foster community and provide residents with spaces to prepare meals.

- Tiny Victories 2.0 homes
- Communal restrooms and laundry
- Outdoor kitchens
- Phase one microhomes
- RV homesites
- Program buildings

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team was assigned to build a custom project tailored to one resident, that microhouse design will be replicated on three other locations in the second village. "We encouraged designers in the process to lean into the things that were unique about their seed neighbors, but still think about how to make sure that home would work for other people," Blessing says.

Given the limited space and budget (up to $25,000, a $5,000 increase from phase one), the firms opted for simple but flexible forms: accessible spaces, adjustable storage, porches that could be built on the front or back of the house, depending on whether the resident preferred privacy or a more-social setup. "There's not a lot of complex geometry," says MHOA partner Micah Land of the firm's design. "It's a very primal form, which makes it adaptable."

A New Set of Keys

Brown moved into his custom house last September; Devore got his keys in December. But one seed neighbor, Dave (last name withheld), passed away during the design process, and the two other participating residents will not make the move due to family and health complications. But the designs they helped create will still benefit new residents in the community. "We have a physical representation of something that Dave got to dream up," Satterlee says. "Now it gets to welcome in another neighbor."

Graham hopes the new development will give residents a "place of permanence" and a sense of community that offers a stark contrast to the "hermetically sealed, single-family sarcophaguses that we call the American Dream." The project, in other words, is an attempt to redefine the concept of the home itself, especially for those who have been deprived of this basic necessity.

Nkiru Mokwe Gelles, an MHOA project designer, says the long process of Tiny Victories 2.0 was a "humbling experience," but it's given her new insight into the way architecture can help drive social change. "Even for our office, [it] made us more empathetic to different projects that we decide to take on in the greater community."

The Tiny Victories 2.0 winners used diagrams and inspiration boards to get a sense of their client's design priorities and aesthetic sensibilities.

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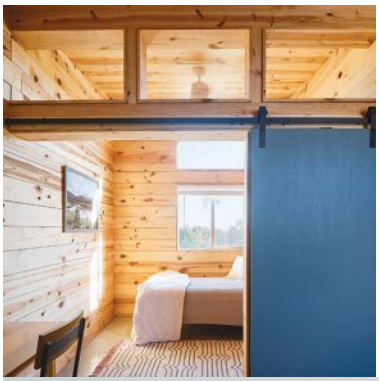
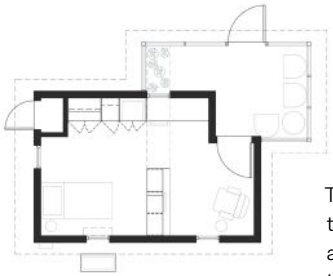
When **Chioco Design** began the Tiny Victories 2.0 process, the team "perhaps arrogantly assumed that all residents would prioritize the same things we value as designers: copious natural light, connection to the outdoors, open plan," explains founding principal, Jamie Chioco, ASSOC. AIA. Instead, their home's resident, a woman who had been chronically homeless for decades, was looking for something functional. "It challenged us as architects to look past our Modernist tendencies, which are rife with privilege, toward a more practical sense of comfort and safety," Chioco says. By offsetting the living area and sleeping area from the main kitchenette, the firm created a sense of multiple rooms, hoping to lend the 200-square-foot project a spacious feel. The firm exposed the project's interior framing wall in an effort to save square footage, and then built ample shelving into the wall as another nod to function. Light spills into the house through operable windows, which also ensure proper cross ventilation, and a private screen porch extends off the back of the house.

Thoughtbarn's client, Dave, was living in an RV residence in CommunityFirst! alongside a busy road, so "his privacy felt compromised and the noise was a real problem to him," says Thoughtbarn co-director Lucy Begg, AIA. The firm designed an enclosed, 186-square-foot private space that also met his strong desire to connect to nature, adding a private, natural-stained porch on the back that complements the dark-stained cedar exterior. In this way, the house has "a private and public face," with a closed exterior on the front and a back that "opens out to the landscape and reflects [Dave] as a person," says architect Anna McConnall. The porch can be reconfigured for either side of the house depending on its orientation to the street. "It can take on different identities and relationships to the larger community as it gets built in different locations," Begg says. The design team also paid close attention to the house's window orientation—placing smaller windows on walls facing neighbors and wider ones on landscape-facing walls—and ensured that "we had enough insulation for sound reasons, as well as temperature, and [to ensure] a thickness and permanent feel," says architect Alexandra Krippner.

It wasn't until Richard Devore first moved into Community First! that he recognized the stress he carried when he was homeless. No matter where he rested, "it was never your place," he says. "You're always somewhere you don't belong." **MOHA**'s 200-square-foot design aimed to provide Richard with a sense of security. "We asked ourselves, should this be a sort of challenging piece of architecture? Or would it be more appropriate to address our users' familiarity with what an iconic house looks like?" recalls founding principal Michael Hsu, FAIA. "We felt like that was appropriate as opposed to coming in and asking Richard to live in an architectural blob that we might find interesting." The design team opted for traditional forms but slightly tweaked: They topped an uncentered, hip roof with a flat-topped, glass cupola, which became the fulcrum of the project, filtering daylight into Richard's home and functioning as a lantern at night. "It becomes an element that communicates with the rest of the village," project designer Nkiru Mokwe Gelles says. "It's a powerful way of conveying community and fellowship in the design itself."



"When you have a space that's going to be small, how can you keep it simple, but also build in some complexity about it? [How do you] allow it to be reconfigurable in as many ways as possible, allow it to be able to adapt over time, allow it to be able to function efficiently?" That's how Heather McKinney, FAIA, the co-founding principal of **McKinney York**, defined the challenge of designing the firm's 206-square-foot house. One multifunctional element: A sliding barn door that when closed provides privacy for the bedroom and also exposes a tidy unit of built-in shelving on the wall. The project's Galvalume-metal butterfly roof, meanwhile, collects rainwater and funnels it into a cistern. "If the neighbors have little gardens, they can use [the] rainwater," says McKinney. "[It's] an opportunity to share with the neighbors something that [the resident] collected."



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To maximize square footage, **Jobe Corral Architects** minimized doors and walls and used varying ceiling heights and shapes to differentiate sections of its 199-square-foot house, says project manager Kevin Keating. A high ceiling lends living space an airy quality, while a low, gabled ceiling creates a sense of privacy for the bedroom. The ceiling also reflects daylight that spills in through compact windows, brightening the solid, secure space. "The walls are kept light colored and the ceilings are high so we can maximize that [brightness] without giving a lot of exposure to the outside," says co-founding principal Camille Jobe, AIA. Jobe Corral took into account the social sensibilities of its client, Jesse Brown, by ensuring that his living space had room to position his recliner near the house's entrance—a design priority for Brown. "I like looking out there and saying, 'Hi,'" he says.

Jesse Brown's Jobe Corral–designed microhouse features a screened front porch, giving him an outdoor option for entertaining guests.

> *To see more images of Community First! Village and Tiny Victories 2.0 project credits, visit bit.ly/ARTV221.*

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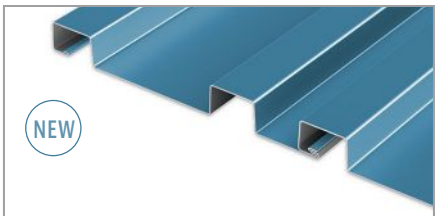

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Forgotten Towers

Here stands the Gillender Building in New York City, completed in 1897 on a prominent corner on Wall Street. Rising 20 stories, this early skyscraper was built on a site just 26 feet wide and lasted but a New York minute, demolished in 1910 to make way for the Banker's Trust Building. Early supertalls like the Gillender are the subject of a new book, *The Structure of Skyscrapers in America 1871-1900: Their History and Preservation* (Association for Preservation Technology International), by Manhattan-based engineer Donald Friedman. Friedman documents 443 early examples of the form, delving into the obscure and forgotten building technologies of the 19th century. Karrie Jacobs interviews Friedman about his comprehensive quest at architectmagazine.com, where he ponders the lessons these early towers might hold for us today.

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