



DESIGN QUAR- TERLY

ISSUE 12



EQUITY AND INCLUSION

Promoting fairness through the built environment

DESIGN QUAR- TERLY

ISSUE 12

**THOUGHTS, TRENDS AND INNOVATION
FROM THE STANTEC BUILDINGS GROUP.**

The Stantec Design Quarterly tells stories that showcase thoughtful, forward-looking approaches to design that build community.

IN THIS ISSUE: EQUITY AND INCLUSION



We design with community in mind and therefore we have a responsibility to drive equity in our work. Equity means fairness in the treatment of people. In this issue we highlight current projects in which equity is a strong theme. We examine design ideas that promote equitable housing and drive culturally relevant healthcare. We explore smart data to provide city services fairly, innovation to make career education more flexible, and research in neglected housing types to make cities more affordable. We also share insights and actions we surfaced in frank conversations within our teams to contribute to a more equitable and inclusive world.

01

Supporting equity in Charlestown

What's driving the design for a new mixed income community in Boston

BY TAMARA ROY AND DAVID LUNNY

06

Listening to the land

How landscape and culture shaped a health home for Toronto's indigenous community

BY SUZANNE CRYSDALE AND MICHAEL MOXAM

11

Black box theory

To keep pace with a dynamic global economy CTE needs a new space type with maximum flexibility.

BY THEO PAPPAS

17

The seen and unseen

How design for neurodiversity reminds us to design for all the senses

BY BRENDA BUSH-MOLINE AND SCOTTY DENNEY

22

Ask an expert: Ramandeep Josen

What do big data and broken sidewalks have to do with equity?

BY JOHN DUGAN

27

Elevating low-rise

Why we're investigating non-traditional methods for design and delivery of resilient urban housing

BY TERRA MAZZEO AND DAVID CARNICELLI

32

Final Thought: Taking action on diversity and inclusion in design

Actionable ideas for increasing diversity and inclusion in design

BY ANTON GERMISHUIZEN

Supporting equity in **CHARLESTOWN**

What's driving the design for a new mixed income community in Boston

BY TAMARA ROY AND DAVID LUNNY



The Bunker Hill
Housing Redevelopment
Boston, MA

In 2012 the head of the Boston Housing Authority, the late Bill McGonagle, had an innovative idea—to ask developers to look at every public housing site in Boston's high rent neighborhoods and propose mixing market rate apartments with deeply affordable ones to bring badly needed improvements to those sites. Public housing had been defunded for 40 years by the City, State, and Federal governments, and Bill once said that each year the dollars he received were 1/10th of his request to simply maintain the properties. The buildings were beyond their useful life and desperate measures were needed.

Stantec's Charlestown project—**Bunker Hill**— is a result of that innovative idea. A public-private partnership with Legatt McCall Properties, the Joseph J. Corcoran Company and the Boston Housing Authority will replace the existing 42 red brick buildings and surface parking lots with a vibrant, new, mixed-income neighborhood of 15 new residential buildings, 2.7 acres of open spaces, and eight new streets including a new retail main street.



What's more, the project **reconnects** and reintegrates an isolated, stigmatized area with the surrounding **historic** fabric of Charlestown.

The new buildings will meet Passive House criteria and be built efficiently and sustainably with cross-laminated timber and prefabricated panels. It is a model for how a mixed income project can raise up everyone, providing the same unit layouts, finishes, security, and amenities to rich and poor alike.

Several drivers emerged as powerful guiding principles alongside our strategies for urban planning. Our design work for Bunker Hill shows how an emphasis on active participation of community residents in the design process, developing strong connections to the history and culture of the place, and achieving parity in quality of space and amenities for all residents are important elements in creating successful mixed-income communities.



The Bunker Hill
Housing Redevelopment
Boston, MA

PARTICIPATION

Successful design solutions emerge from a process of thoughtful engagement with the community, which for Bunker Hill includes the current residents, the larger Charlestown neighborhood, and the City of Boston through the Boston Planning and Development Agency. From the start, the planning process was inclusive of the Charlestown Residents Alliance (CRA), which represented the existing residents. Their voices were critical because we are essentially recreating their neighborhood. It was interesting to hear the residents eschew brick, for example—a material that is used ubiquitously in Charlestown—because it had mostly negative connotations for them regarding public housing.

The process also included numerous public meetings with the wider neighborhood, the Charlestown historic review board, and extensive discussions with the City. Over several years, this input resulted in a plan that scaled back the height and total number of units in the new development, increased the amount of open space and eliminated structured parking garages. Community and city engagement pushed the development team and us as designers to produce a more contextual scale and ultimately a better master plan that the residents, community, City Hall, and the developer can stand behind. >

Typical of many public housing projects of the 1940s, the existing development at Bunker Hill is characterized by repetitive buildings that have no relationship to the surroundings, presenting an unwelcoming edge that separates people living there from the nearby neighborhood. Except for Monument Street, the existing street grid was erased as it crossed Bunker Hill Street, reinforcing a sense of isolation for residents.

Our plan does three things to connect to the neighborhood: First, it reconnects and extends the street grid through the development from Bunker Hill to Medford Street, organizing all the buildings along new tree-lined streets. Second, the plan creates a variety of public open spaces that invite the public in and through the new development. And third, in place of the blank brick walls of the existing buildings, the plan features a series of storefronts along Bunker Hill offering retail opportunities that will be accessible to lower income residents and the wider community of Charlestown. There is an opportunity for the National Park Service to extend the Freedom Trail from the Bunker Hill Monument through the Boston Housing Authority development to the Charlestown Navy Yard, bringing tourists into the neighborhood to hear stories of how this area and its immigrant population played a role in the historical narrative of Boston's history, from the American Revolution to the present day. >



AESTHETICS

Charlestown is one of Boston's most cohesive historic neighborhoods, with brick and clapboard street walls that have both variety and a set of rules regarding windows, doors, bases, tops, and decorative details. While we did not want to replicate the existing fabric, we looked at the context and design principles so that we could connect to the uniqueness of the place.

We observed a rhythm of "fabric" and "object" buildings with a relationship to open spaces reminiscent of the dots and dashes in Morse Code—an inspiring coincidence as the inventor of Morse Code, Samuel Morse, was born and raised in Charlestown. We've applied that Morse Code to our plan to create relationships to the color and quality of historic buildings and to continue the texture and rhythm of streets as they traverse over Bunker Hill and into the new neighborhood. Our goal was to develop a conversation between the architecture of the new buildings and the existing neighborhood. Several architecture firms will be engaged to design each of the buildings within this multi-phased development to ensure a thoughtful variation in architecture from block to block.

PARITY

To achieve and support 1,100 deeply affordable housing units, the development increases the density of the neighborhood and adds housing for a total of 2,699 units. Market rate units will partially subsidize the affordable units to create the mixed-income project. Currently three buildings will be entirely comprised of affordable housing units, with the remaining 12 buildings being a combination of market rate and affordable. The design makes *no distinction* between market rate and affordable apartments

in terms of finishes, quality standards of construction, and materials. The public private partnership will fund future maintenance, open space, and program events that will help make this a vibrant part of Charlestown. Stantec designed the multifamily residential buildings with private outdoor space including courtyards with seating, dining and grilling areas, pergolas, and recreation spaces. Parity is paramount. The same high quality outdoor spaces are available to both mixed-income and affordable housing buildings.

Long term maintenance will be taken care of by a management entity through a housing trust that will no longer need to rely on public housing funding. This is a critical component of the public/private partnership that will ensure that the units, the buildings, and the open spaces do not deteriorate, making the project financially resilient over the long haul for residents of all incomes. >



Parity is paramount. The same high quality outdoor spaces are available to both mixed-income and affordable housing buildings.

When we implement a performance-based set of design criteria known as **Passive House** on projects it results in highly energy-efficient buildings. All 15 new buildings at Bunker Hill will be designed to meet PHIUS certification—they're highly insulated and outfitted with extremely efficient mechanical systems, which will result in an 85% reduction of on-site burning of fossil fuels and a commensurate reduction in pollutant emissions. PHIUS certification requires that these dwellings provide a constant higher-than-code level of ventilation to bedrooms and living rooms. This will greatly improve the air quality of the housing for all residents and represents a critical move toward improving public health and wellness for the most vulnerable.

In terms of reducing greenhouse gas emissions, all floors will be constructed of cross laminated timber (CLT), a durable renewable building material and one of the only structural materials that sequesters carbon. By using CLT and limiting the use of concrete, we reduce the embodied carbon across the project.

**The Bunker Hill
Housing Redevelopment**
Boston, MA



With the knowledge that housing will continue to be a critical issue for cities across North America, but especially in Boston where the high cost of living is squeezing out the lower and middle class, we believe that projects like Charlestown's Bunker Hill help to move the needle toward a more equitable approach to housing. By engaging with the residents, reconnecting the site to the neighborhood, picking up on architectural cues that create a sense of belonging, and championing sustainable and resilient construction techniques, the project will create an equitable, resilient, and cohesive community that will endure for generations. **D**

✓ [RETURN TO TABLE OF CONTENTS](#)

MORE MASTER PLANNED COMMUNITIES

Located in our Boston studio, **Tamara** is an architect and urban designer specializing in residential, academic, and mixed-use projects. **David** is an architect located in our Boston studio with more than 30 years of experience managing large, multi-disciplinary teams on a wide range of project types.

**Anishnawbe Health Toronto
Indigenous Community Health
Centre (AHTICHC)**

Toronto, ON

Image courtesy of BDP/
Quadrangle

Listening to the land

How landscape and culture
shaped a health home for Toronto's
Indigenous community

BY SUZANNE CRYSDALE AND MICHAEL MOXAM



**Anishnawbe Health Toronto Indigenous
Community Health Centre (AHTICHC)**
Toronto, ON
Image courtesy of Stantec



Anishnawbe Health Toronto (AHT) places traditional Indigenous practices at the center of its health care model, programs and services. AHT provides services to hundreds of Indigenous groups in the Toronto area. For decades, AHT and its clients have made do with a patchwork of three separate facilities in downtown Toronto, making it difficult for AHT to integrate its services.

The new Indigenous Hub, slated for completion in 2023, occupies a prominent location in Toronto’s Canary District in the West Don Lands, within what was once the delta of the Don River. It’s important traditional indigenous land. Human settlement in the area can be traced back 7,000 years. The site is highly visible and accessible within the downtown core.

Row Architect on the master plan. The site will accommodate condominiums and 200 units of rental housing, an education and training facility, a daycare, and the adaptive reuse of the heritage designated Canary Building (all designed by BDP Quadrangle and Two Row). The heart of the Indigenous hub is the four-story, 43,000 square foot Anishnawbe Health Toronto Indigenous Community Health Centre (AHTICHC), designed by Stantec together with Two Row Architect.

Its design is inspired by indigenous cultural touchstones—the land, natural remedies, traditional healing, sunrise, woven patterns.

But no longer. AHT’s purchase of a downtown city block means, for the first time, AHT will unite its services under one roof to centralize and improve access to health services for Toronto’s Indigenous communities.

The vision for the Indigenous Hub evolved through years of engagement with the First Nations community and other stakeholders. Stantec collaborated with BDP Quadrangle, the site developer’s architect, and Two

Land has a cultural and spiritual dimension in many First Nations cultures. As Joe Hester, Executive Director, Anishnawbe Health Toronto has said “Our view of land is a little bit different. In terms of orientation, directionality, how it’s utilized, the idea of the medicine garden. Land is a partner in the healing process.” >



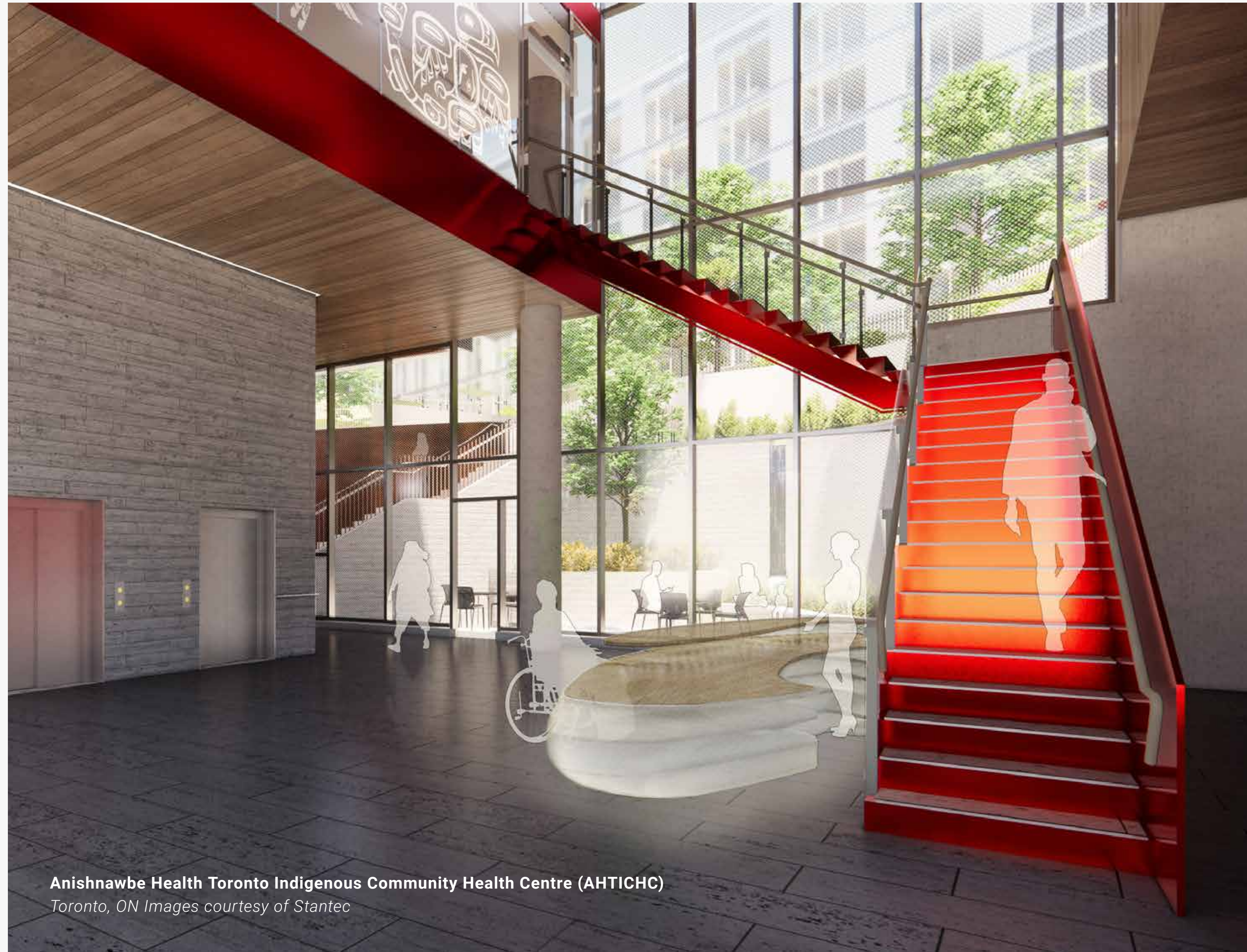
Anishnawbe Health Toronto Indigenous Community Health Centre (AHTICHC)
Toronto, ON, Image courtesy of BDP/Quadrangle

We took inspiration from the land by looking at the city block first as a landscape to inform the masterplan for the Indigenous Hub. If we think of the block as landscape first, it suggests a new paradigm in how built form is introduced. Rather than the usual ‘build to the street edge’ it implies a dominance of landscape–street edges that are more about transparency and connection to inner landscape than typical ‘street definition.’ The masterplan features a fully accessible public piazza at the corner of Mill and Cherry Streets as well as a central landscaped courtyard fully visible from the surrounding street edges—a unique condition for any city block.

The AHTICHC building is located mid-block on Cherry Street at the heart of the Hub. Its design is inspired by

indigenous cultural touchstones—the land, natural remedies, traditional healing, sunrise, woven patterns. Landscape was a primary driver. Joe Hester pushed for the Health Centre itself to rest directly on the land, so rather than placing parking underneath, the AHTICHC connects directly to the earth.

The central landscaped courtyard, rising 21 feet from the street level and accessible from the first and second floor of the AHTICHC, is unique to this project and emblematic of our land-inspired approach. We designed this landscape with a sensitivity to an indigenous perspective with native trees and traditional healing plants. The building and landscape relate to each other almost as if they are one. The elevated interior green space provides essential landscape access for the AHTICHC, conceals services and support spaces, and acts an amenity for the surrounding residential portion of the development. >



Anishnawbe Health Toronto Indigenous Community Health Centre (AHTICHC)
Toronto, ON Images courtesy of Stantec

The upper three floors of the AHTICHC are lifted to allow a visual and physical connection via the ground floor public space through the building from the city through to the elevated courtyard.

Our design treats important programs located on the ground floor such as the ceremonial space, community kitchen, and traditional healing areas like standalone pavilions inspired by pebbles in the stream of the Don River Delta.

Curvilinear design and organic shapes are embedded elements of Indigenous culture. AHTICHC, we embraced natural forms whenever possible: the pavilions on the ground floor, the shape of the floor plates from level two to four. All of these took on curvilinear forms. The spaces for the Traditional Healer on levels two, three, and four are curved. This is expressed in the exterior as a Corten-clad cylinder culminating in the entry vestibule at street level—visitors and staff enter through the “influence of the healer.” >

The traditional indigenous woven shawl serves as our inspiration for the building cladding—an idea that emerged from dialogue at user engagement sessions. The building exterior curves and folds like a shawl, offering comfort and protection to its users. This idea is expressed in perforated aluminum panels that suggest folds in fabric and reference traditional indigenous textile patterns. A stainless-steel mesh is suspended from the bottom edge of the cladding and is intended to move and sway in the breeze.

Levels two, three, and four are connected to the main floor through the central four story high, east facing atrium. “The Shawl” opens at the atrium letting in all the east light and

The building exterior curves and folds like a shawl, offering comfort and protection to its users.

providing dramatic views to the central landscape from each level. The red staircase was inspired by “the red road,” an indigenous metaphor relating to making wise and spiritual choices in life.

Art is an important part of storytelling and indigenous culture. The design weaves art into the building fabric itself through interior glass panels displaying patterns and artwork chosen by the community. We have incorporated exhibit space within public zones and corridors where AHT can display its extensive art and craft collections.

The Anishnawbe Health Toronto Indigenous Community Health Centre is an important project within the landscape of the Indigenous Hub and Toronto’s urban core. The design team had the opportunity to bring together diverse perspectives to deliver a unique building, one that is respectful of its site, history, and culture. It will enrich the urban landscape of Toronto with a new layer of indigenous culture and presence, while making a difference in the lives of the city’s Indigenous people through better access to care services and their cultural heritage. **D**



[RETURN TO TABLE OF CONTENTS](#)

MORE HEALTH

Based in Toronto, Ontario, **Suzanne** is an exceptionally organized and extremely personable architect. Her strength is her collaborative and diligent approach to all aspects of design and management. A vice president and design culture lead within our Toronto, Ontario studio, **Michael's** career has been focused on delivering contextual design solutions that share a commitment to design quality, a collaborative process, and a redefinition of expected stereotypes.

**Anishnawbe Health Toronto
Indigenous Community Health
Centre (AHTICHC)**
Toronto, ON
Images courtesy of Stantec



BLACK BOX THEORY

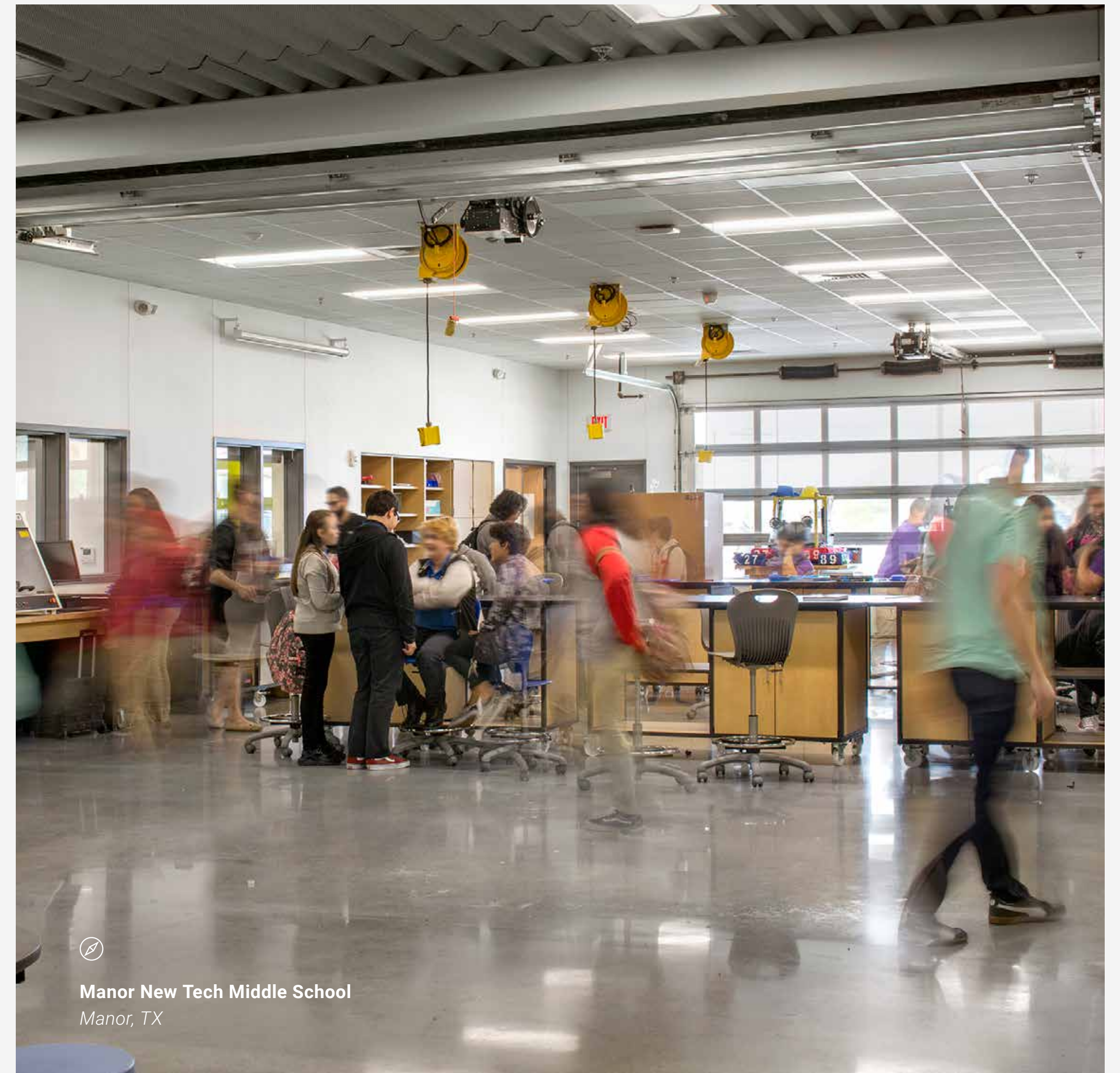
To keep pace with a dynamic global economy Career and Technical Education needs a new space type with maximum flexibility.

BY THEO PAPPAS



New technology—artificial intelligence, advanced robotics, automation, analytics, and IOT (internet of things)—is transforming the world of work. But that doesn't mean humans are out of the equation. It just means that our future workforce will require a different set of skills to interact with technology, especially in operationally intensive and highly automated fields like manufacturing.

Already underway, the technology revolution is revealing a mismatch between the skills required for the jobs available and those possessed by the talent pool. Deloitte and The Manufacturing Institute say a *"skills gap"* may leave an estimated **2.4 million positions unfilled** between today and 2028, with a potential economic impact of \$2.5 trillion. That's just for the manufacturing sector. In fields from healthcare to infrastructure and energy, the demand for skilled workers is growing. >



 Manor New Tech Middle School
Manor, TX

Career and technical education (CTE), at both the high school and post-secondary level, is evolving to help fill that gap by giving students the training to do tech-intensive jobs immediately after graduation and certification. CTE is especially effective when it gets input from the industries who need the workers, creating a feedback loop that informs programs and trains students in the latest tech, equipment and applications. It's a win-win for students and industry.

A reason to stay in school

When we ask students throughout the nation about CTE, they respond positively to applied learning. Many CTE students say they stay in school because they like seeing how knowledge applies to a profession.



Academies of Loudoun
Loudoun County, MD



They understand that they are learning math because it is essential for the job they will be qualified for upon graduation. They see the relevance, they come right out of school with a certification, which gives them viable employment options. Students may choose CTE to graduate from high school with a certification to gain immediate employment, and then later, choose to supplement their expertise with higher level certification at community colleges or universities within that chosen field.

CTE integration, hybrid roles

Not long ago, CTE was accessed by students as a separate program apart from their core class requirements. Increasingly, CTE classes qualify as core credits. For example, a student going into construction can take mathematics for architectural engineering and earn math credits.

We're seeing the relationship between CTE and other departments in high school and middle school change because CTE-related careers are emerging so quickly. Emerging careers are hybrids of existing fields—biology and robotics, for example—so students must access education across departments.

Even traditional subjects like mathematics are evolving to become more responsive to the marketplace. >

MORE THAN 2.6 MILLION BABY BOOMERS ARE EXPECTED TO RETIRE FROM MANUFACTURING JOBS OVER THE NEXT DECADE. AND MORE THAN HALF OF THE OPEN JOBS IN 2028 (2.4 MILLION) COULD REMAIN UNFILLED” DUE TO SHIFTING SKILL SETS, MISPERCEPTION OF MANUFACTURING JOBS, AND RETIREMENT.

Source: Deloitte Insights, Manufacturing Skills Gap Study



Innovation Zone concept

Changing needs, flexible space

CTE's partnership with industry and the community means that programs can train students for jobs that are available now. We must, however, design spaces that can accommodate education and skills training for a dynamic job market—especially hybrid jobs.

So, how can we make CTE spaces flexible enough to respond to the dynamism of emerging fields? In working on the master plan and educational specifications for the Austin Independent School District in Texas it became clear that we needed a new space typology that could keep pace with rapid change in CTE and other departments.

Inspired by the stage

Perhaps the most flexible space we can think of is the stage. The theater stage with its working grid is infinitely configurable in three dimensions to allow scenes, sets, and props to appear and disappear in minutes. Facing a dynamic economy fueled by rapidly changing technology, what if we reimagined learning spaces as black box environments? Enter the Empower Center. >

IDEAS



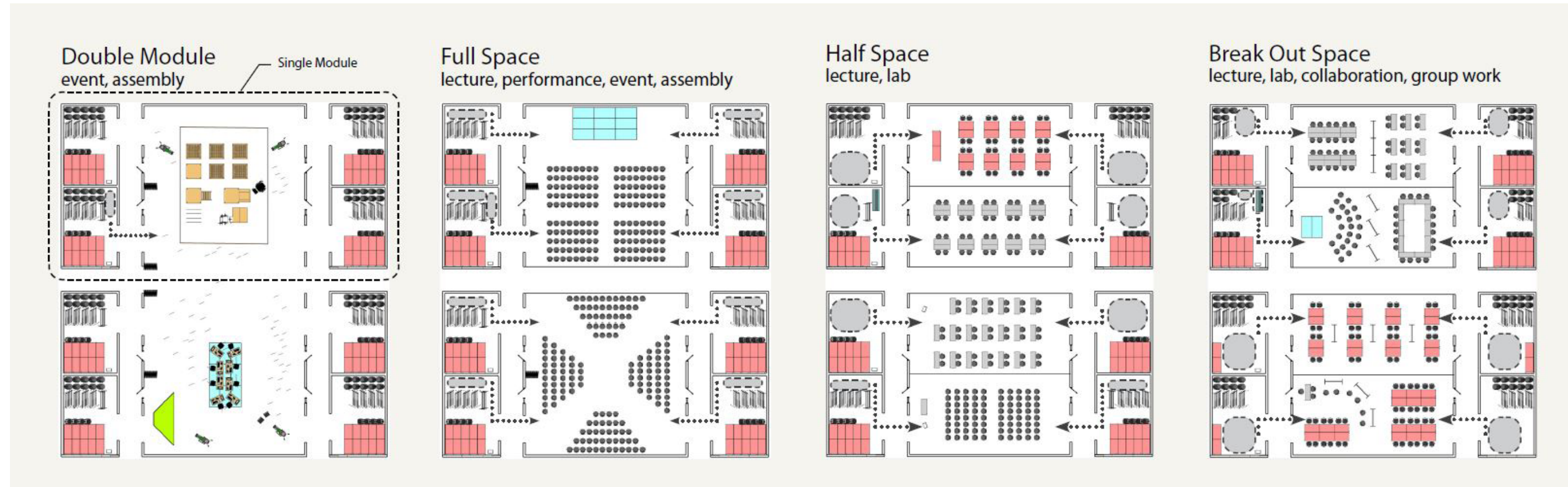
READ

Transforming Career Technical Education (Part 1):
Creating a flexible innovation zone



READ

Transforming Career Technical Education (Part 2):
What are the needs and challenges?



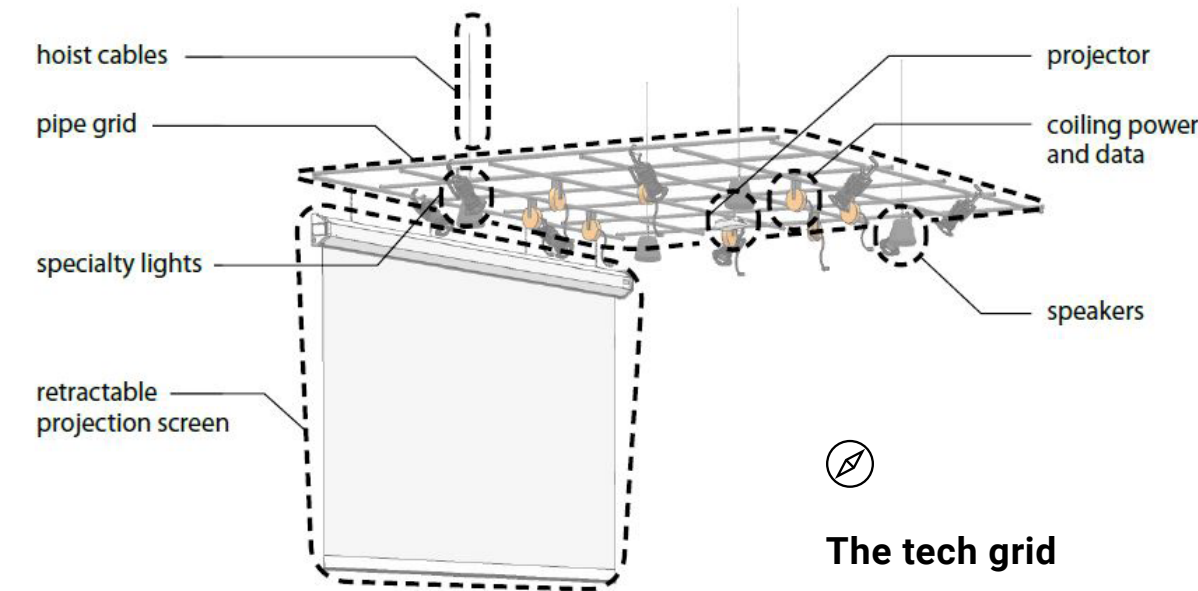
Flexible Plans

The Empower Center

The Empower Center plays host to traditional classroom, lecture, and lab arrangements. It is comprised of four primary features. **The core space** is a large unprogrammed double-height space for education. **Staging areas** function like the wing spaces of a stage which can hold mobile furniture, equipment, and fixtures. **Acoustical partitions** are movable and allow users to divide the space as needed.

The tech grid houses a variety of key technologies and allows users to change up the conditions in the space. Users can adjust ceiling heights, they can drop in power and data, they can tune lighting and audio conditions. Users can give the class access to whatever it needs for a lab, be it robotics or electrical engineering. When they have finished, they can spool up those services and suddenly the box becomes a gallery space. Or a meeting room.

We envision this hyper flexible space as universally shared, not owned by any one department, so that schools can use it to respond to changes in class programming and student population without costly facility renovation.



The tech grid

A community asset

Users can scale the Empower Center from a smaller studio space to a large event space within minutes. When opened up, it can be used by the institution to welcome partners such as career day visitors, for events, visiting lectures, e-sports and robotics competitions. It can be adapted to broadcast remote learning to the community. While the Empower Center was designed to align with CT programs at the high school, we have seen these spaces adopted as a flex space for the community at large. After hours, it can be used for adult education or extracurricular gatherings. >

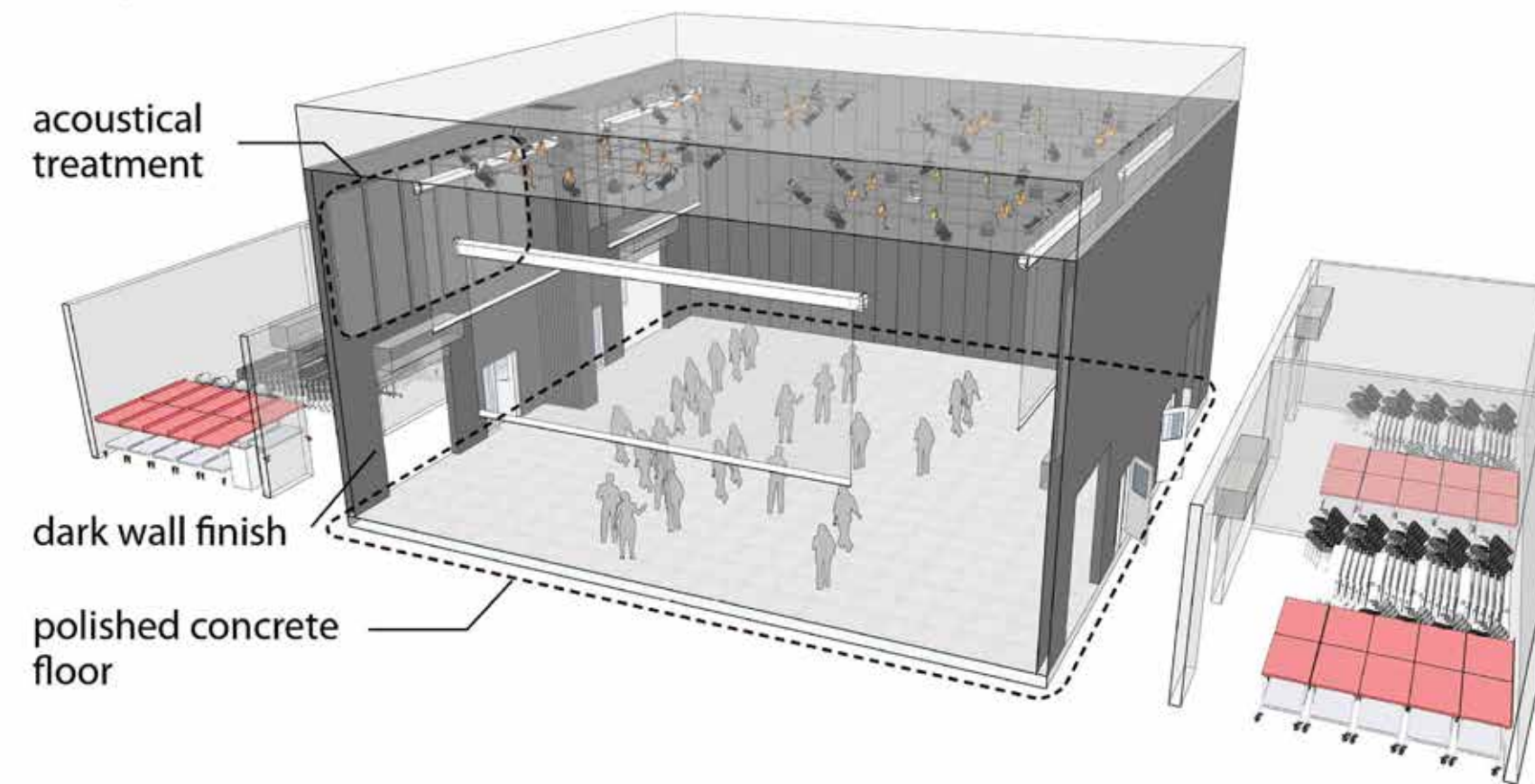
SEE AN EMPOWERMENT CENTER IN 3D



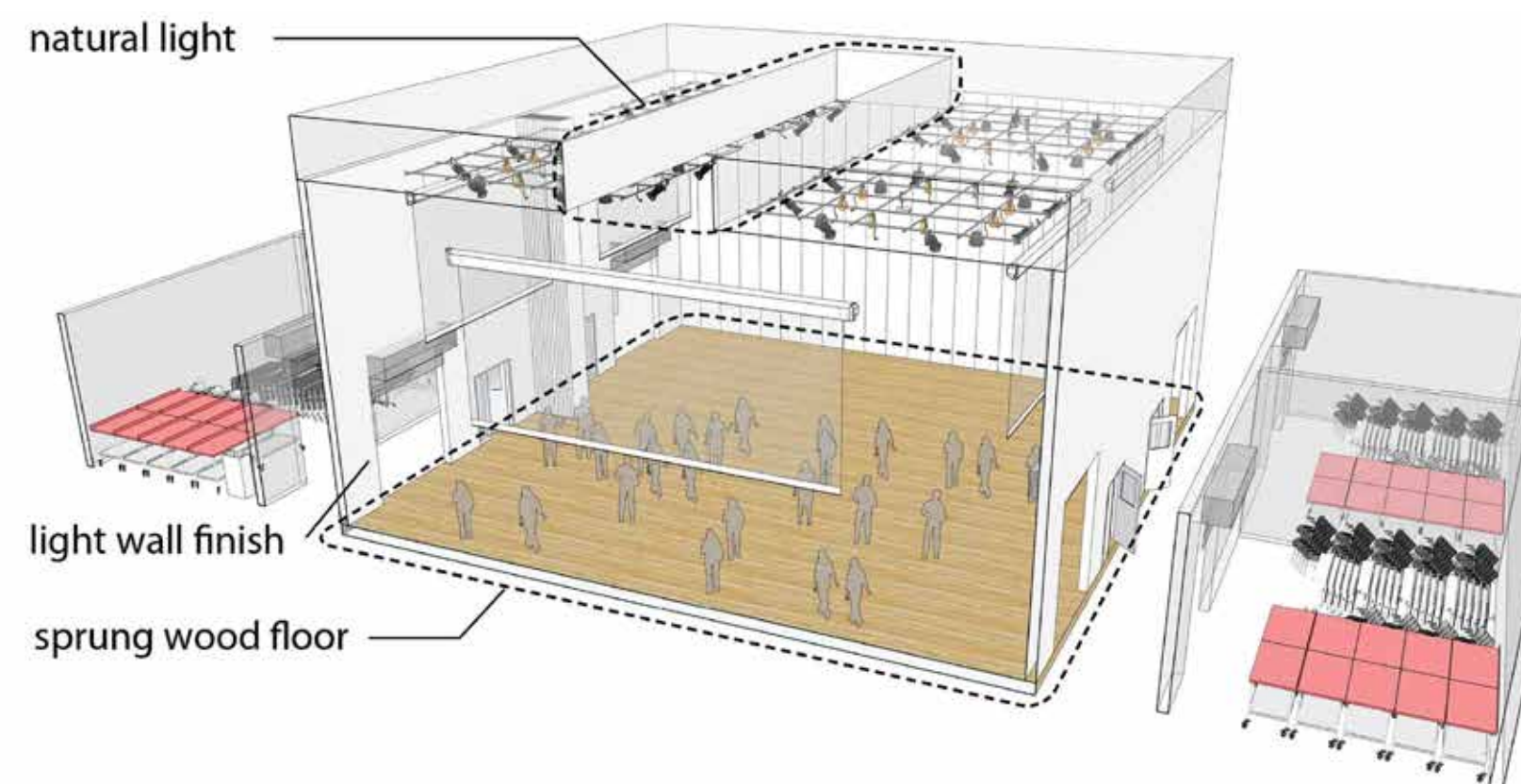
Two Types of Empower Modules

The Lab is a black box characterized by durable materials which permits users to strictly control of lighting conditions and acoustic properties. It is well-suited to theatrical productions, musical performances, STEM labs, esports, or robotics trials. **The Studio** is a white box with natural lighting that emulates exterior conditions. It's conducive to drone piloting, digital photography or temporary art gallery exhibitions. The Studio's sprung wood floor accommodates dance, aerobics, and other fine arts, as well as athletics and wellness programs.

Empower Center Lab Core Module



Empower Center Lab Studio Module



A modular approach

We can extend the principles that gave rise to the Empower Center to our career and technical education design and planning approach. The idea of modularity is critical to achieve this broad flexibility. We recommend the utilization of a high-bay steel structural system based on a 30' x 30' module as opposed to less flexible masonry bearing structures. This allows clients to make less costly adjustments to the spaces over time facilitating program growth and change. In addition, we locate restrooms and other more permanent building support spaces outside of the bays dedicated to CTE space.

The great equalizer

CTE is about preparing students for a rapidly changing, technology-driven career marketplace and millions of emerging jobs that require technology know-how. It's about giving students more agency and options to pursue their education, develop expertise and forge careers in a dynamic, technology-driven, global economy. **D**

✓ [RETURN TO TABLE OF CONTENTS](#)

MORE CAREER AND TECHNICAL EDUCATION

With more than 35 years of experience in the planning and design for education, **Theo** is most passionate about next generation learning spaces and is our CTE Thought Leader at Stantec.

THE SEEN & UNSEEN

What we can learn from design
for neurodiversity

BY BRENDA BUSH-MOLINE AND SCOTTY DENNEY



Burkhart Center for Autism Education
& Research
Lubbock, TX

At the Autism Treatment Center of San Antonio and the Burkhart Center for Autism Education & Research, the mood is calm. Lighting is soft, never harsh—and often indirect. The walls and floors are colored using balanced vibrant tones to create a sense of place. Subtle clues in pattern and texture suggest which pathways and areas are public and which areas are for administration offices—those no-go spaces are stark and white. There are multisensory play areas, but they are spacious presenting clear options for activity.





There are two ways in which learning the lessons of design for neurodiversity impacts our design thinking. Firstly, we suggest that the buildings we design today will inevitably be used by individuals on the spectrum. We should plan to be inclusive of these individuals in our work as awareness and understanding of the needs of people on the

spectrum continues to evolve. And secondly, because designing for experience means designing for all the senses, not just what we see.

In Stantec's design for the Autism Treatment Center of San Antonio and the Burkhart Center, we developed a series of strategies for design that would make the space as comforting and functional as possible. Studies say 30 to 90% of people with autism either overreact to or ignore ordinary sights, sounds, smells and sensations. Among the key characteristics that shaped our design were the desire to create a pervasive sense of calm and order, healthy levels of natural light and ventilation, secure and easily observed spaces, a balanced color palette, indirect lighting rather than overhead fluorescents, mitigation of disruptive scents and sounds, and uncluttered classrooms and exam rooms.

Security is a major consideration for spaces serving young people

on the spectrum. By creating extra turns in interior spaces and transitional spaces such as vestibules, in the building, we can delay egress and require decision-making. Delayed egress, a security feature interwoven in the design, can mitigate running.

We thoughtfully employed color, pattern and texture to enhance wayfinding and to demarcate certain areas while avoiding hard lines and arbitrary distinctions that could suggest a barrier. Elsewhere, we employed tunable light fixtures that allow care teams to control light temperature in occupied spaces. We defined engaging interactive areas and zones for activities. Outdoor activity areas are designed for security and to limit visual distraction from beyond the courtyards—this supports feelings of comfort and safety. We positioned and isolated mechanical areas to minimize hum and vibration which can be intensely distracting for some of those on the autism spectrum. >



**Burkhart Center for Autism
Education & Research**
Lubbock, TX

Artificial Lighting

Anecdotally, we have seen that when certain elements are out of balance it can be disruptive to those on the spectrum. For example, when corridor lighting was brightened for an event, occupants judged it as too harsh and avoided that public area. We also know that around half of individuals on the spectrum exhibit fluorescent sensitivity. Qualities from electric lighting such as flickering, excessive brightness, and humming, whether subtle or extreme can be distracting or even debilitating. Designers should use LED fixtures that have tunable white and dimming controls to provide the highest flexibility and success for these environments.

When we design for neurodiversity we must also consider non-visual sensitivities—we take extra care to think about acoustics, vibration, odors, texture, and tactility, etc. Through the lens of design for neurodiversity, we have come to see how the non-visual elements of design should be important design principles for any project.

Design for harmony and all the senses

The strategies we employ in autism centers are not always easily adaptable, in a literal sense, to other design projects. The needs and sensitivities of the occupants of a senior living center or surgical clinic are simply not the same as design for people on the spectrum. However, the lesson we can take is that the harmony we seek to achieve in good design that listens to users must account for design elements that are barely perceptible, but still powerful. We may not use the same guidelines, but there are some similarities in how thoughtfully we apply design strategies to populations with the building experience in mind.

Transition spaces

Designs for autism centers recognize the value in transition spaces in slowing egress and by providing a gradual transition between low and high activity. Transition spaces, however, have a variety of applications in other project types, beyond being the places that keep the wind and elements at bay, that are not

always obvious. They can help control sound, provide a layer of security, and most fundamentally give building users a moment to pause before or after their appointment—which can, in a healthcare setting, be a stressful or emotional event.

Sound reflection and finishes

People on the spectrum can be particularly sensitive to sound and have complex and profound auditory processing difficulties. Speech accompanied by noise can make voices virtually unintelligible. But it isn't only people on the spectrum who experience this auditory challenge, we've all had similar experiences in a noisy restaurant or lobby space full of hard surfaces and lots of voices and music. Design strategies should focus on dampening extraneous sounds and work to eradicate echoes. Interior finishes should be chosen with high NRC (noise reduction coefficient) values such as acoustic paneling, resilient rubber flooring and high-quality ceiling tiles to reduce sound reverberation. >



**Autism Treatment
Center of San
Antonio, Phase 1**
San Antonio, TX

30-90%

OF PEOPLE WITH AUTISM EITHER OVERREACT TO OR IGNORE ORDINARY SIGHTS, SOUNDS, SMELLS AND SENSATIONS.



Autism Treatment Center of
San Antonio, Phase 1
San Antonio, TX

Designers should also work to reduce conflicting auditory stimuli by thoughtfully placing mechanical units away from occupants, design duct runs and air velocity to limit noise, and minimize use of electric hand dryers.

We already know that acoustics are important. As designers we know that decibel levels matter, which is why we work with acousticians and use STC (sound transmission class) ratings for partitions to control sound. We can think about sound more holistically, however, and look at our choices for flooring and finishes and consider their sound control qualities for a space—how reflective, for example, industrial materials and finishes can be.

Air/sound/mechanicals

Mechanical and ventilation systems can rumble, vibrate and whirl, so we must carefully consider their placement, insulation, and their adjacencies in places like exam rooms. And the increasing use of video call technology means that acoustics in our workspaces are going to be more noticeable than ever.

Olfactory

Individuals on the spectrum may be highly reactive to changes in their environment. Designers should work to adequately ventilate and provide proper air flow minimize unwanted smells—at autism centers and everywhere else.

Cues for wayfinding

In design for places that primarily serve those on the spectrum, color can be used to create a sense of place and identify activity areas differently from circulation.

Corridors should have minimal detail to eliminate distractions and thresholds should be used throughout the facility to aid navigation and delineate accessible areas. Likewise, we can and do use color, pattern and texture as clues for wayfinding, letting the user know which department they are in, marking certain types of rooms with graphics and color. We shouldn't forget that color and simple graphics are often much clearer to a wider audience (multi-cultural, visually disabled, geriatric population) than generic text signage in larger institutional settings. >

Designers should make an individual's journey through the building navigable by visual cues in a clear and self-guiding manner with minimal distractions.

Natural light control

Designers can also look at natural light and its control in environments focused on supporting autism as an example of the delicate balance that requires thoughtful design. While designers have sung the praises of more ample natural light for years, we must now recognize its limitations. In autism centers, for example, if direct sunlight casts stark shadows on the floor it causes a distinct pattern that can create distraction, even debilitating fixation. Therefore, we try to use more indirect light, creating softer transitions in areas with natural light.

More generally speaking, in health, education, or workplace, we must also enable occupants to control that important natural light especially in classrooms, conference rooms, and other areas where they regularly access technology.

Visibility/Stimuli

Mitigating and controlling outside visual stimuli is a key component in design for autism centers. But we also see visual connection and transparency used in these settings for security and safety. We must deploy these elements just as carefully in education and health settings. Care team areas, for example, can be designed

with visual connection to patient rooms. And transparency is a key component in our designs for the workplace and educational spaces today. But are we creating enough space for contemplation, free of stimuli, with privacy for one-on-one or small group collaboration?

Low vision

What about design for senses that are limited? We know that a portion of our users in many settings may have limited vision. We also know that with our aging population, visual impairment in the U.S. is expected to double by 2050.

Today, designers have access to a variety of technologies for auditory communication that improve accessibility. These sound beacons help people navigate space and can make the spaces we design more accessible to people with limited vision.

Above all, considering neurodiversity in our work reminds us that good design is anticipatory design that's informed by our understanding of our client's needs and sensitivities. **D**



ErinOaks Center for Treatment and Development

Multiple locations in Ontario, Canada



✓ RETURN TO TABLE OF CONTENTS

MORE HEALTH

Based in Chicago, **Brenda** is Stantec's global health sector leader. She specializes in integrated health design that considers related markets such as workplace, hospitality, retail, and education—and collaborating on design for places of healing and wellness. A senior design architect in Austin, Texas, **Scotty's** focus on educational design has also made him a strong advocate for creating useful learning environments that use the building as a teaching tool.



Aerial view

Boston, Massachusetts



ASK AN EXPERT:

What do big data and broken sidewalks have to do with equity?

As an asset management specialist, **Ramandeep Josen** looks at surface infrastructure and helps cities spend their dollars wisely to maintain it. With the City of Boston reorienting towards resiliency, Ramandeep was instrumental in helping Boston Public Works reexamine its sidewalk repair practices.

INTERVIEW BY JOHN DUGAN



Q So how did you get into asset management?

RAMANDEEP: I graduated from the University of Connecticut with an undergraduate degree in civil engineering. I intended to be a structural engineer, but then I saw this webinar by the Connecticut Department of Transportation where they talked about how they assess infrastructure conditions, but don't know what to do with that information. They had this huge data set with images and they asked somebody to help make sense of it. So, I took that as a challenge and made that into my dissertation and that's how I got into asset management.

Q What is asset management?

RJ: Asset management is essentially assessing the conditions of your surface

infrastructure; where it is, what it looks like, how it's deteriorating and how should we plan to repair it to prevent it from becoming more expensive. When I started working at Stantec a lot of our work was single asset management, so just pavement or sidewalks. As my career has evolved, it's gone towards "What do we do with the information we're collecting? Are we doing the right thing?"

Q You're applying that data revolution to aspects of city government that may not have changed much in decades. Has that been challenging?

RJ: I started working with the City of Boston eight years ago. We have worked together on so many things that we're a team now. It takes time to establish that trust before you get into something like equity, and

to admit that change is required. Once I earned the trust of the client, I was able to push the limits.

The City of Boston hired a new Chief Engineer, Katie Choe, and she and I were on the same page regarding equity, so that opened the doors for me to start digging deeper, to analyze data differently.

Q Tell us about the project that began with the city's 311 citizen reporting system?

RJ: Typically, I'll do an analysis based on the budget for sidewalk infrastructure for my clients. The result is a dollar amount required to keep the sidewalk network in a certain condition. Boston has a half-a-billion-dollars-worth of sidewalks to fix, but like many other municipalities, a limited budget. In the case of Boston, they had implemented a 311

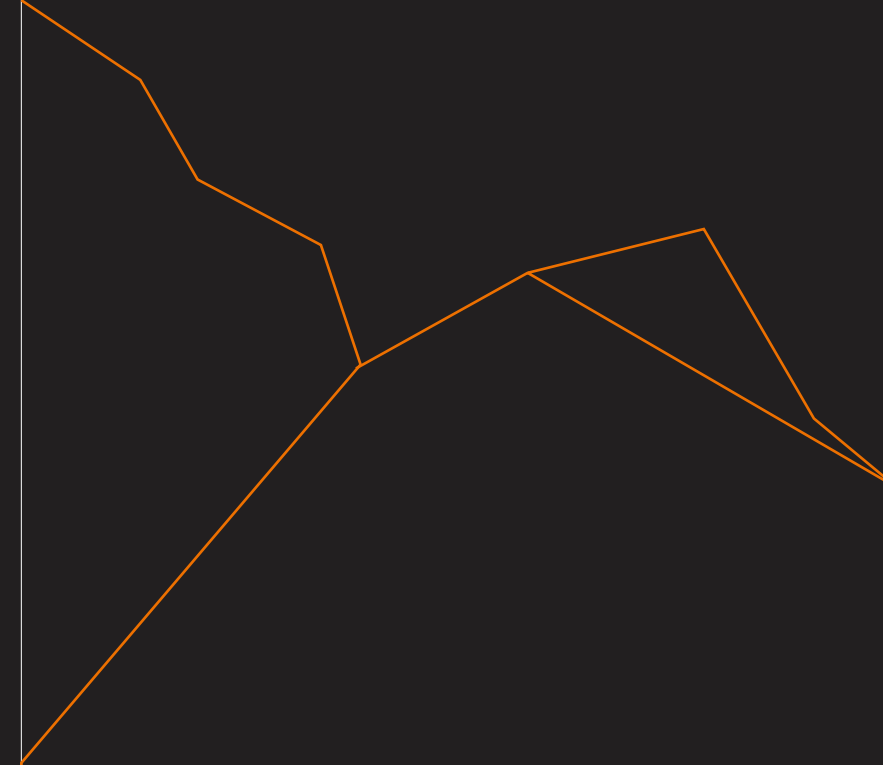
system and promised that if you make a complaint, they would send a crew for a spot repair. That was the precedent, responding to whomever called in. In 2016, Boston created a new smartphone app BOS:311 which made it even easier to create a complaint, but they couldn't respond to them all.

They were advertising the app, but they had an incredible backlog of things they had to fix. With a huge backlog of work requests and limited budgets, they found themselves questioning everything, including "Are these repair requests even indicative of the actual sidewalk conditions?"

What they uncovered is that the system is not set up to succeed because it's too reactive. If the city isn't proactive enough to know what's out there, then they have no idea of the legitimacy of these complaints. >



\$485M
repair backlog with only \$11M to spend annually on repairs



Q So, were they accurate complaints?

RJ: In 2014, with the city engineers, we did a full sidewalk inspection, 1,600 miles of sidewalk. We went to each block with tablets and literally measured all the damaged sidewalks.

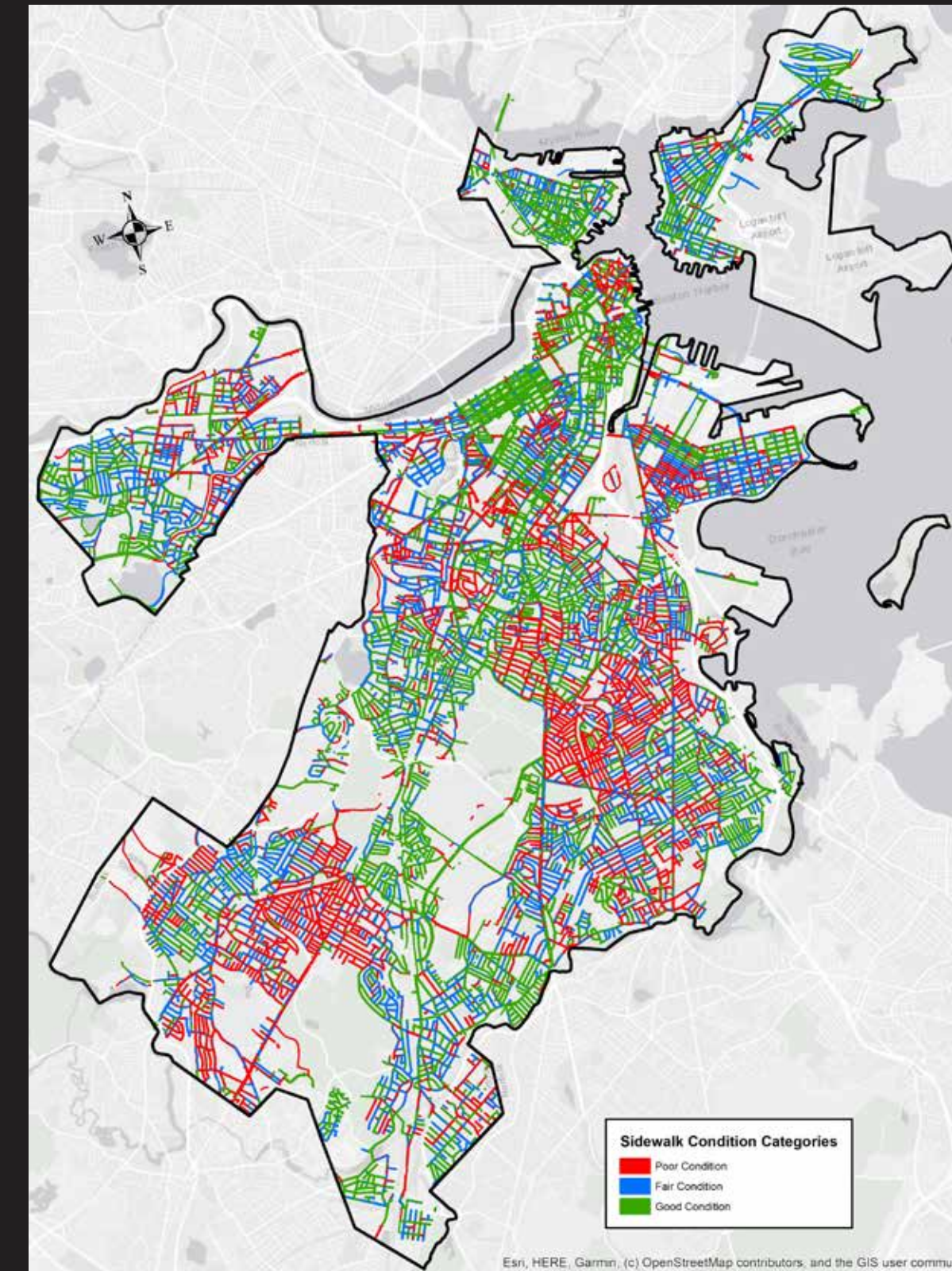
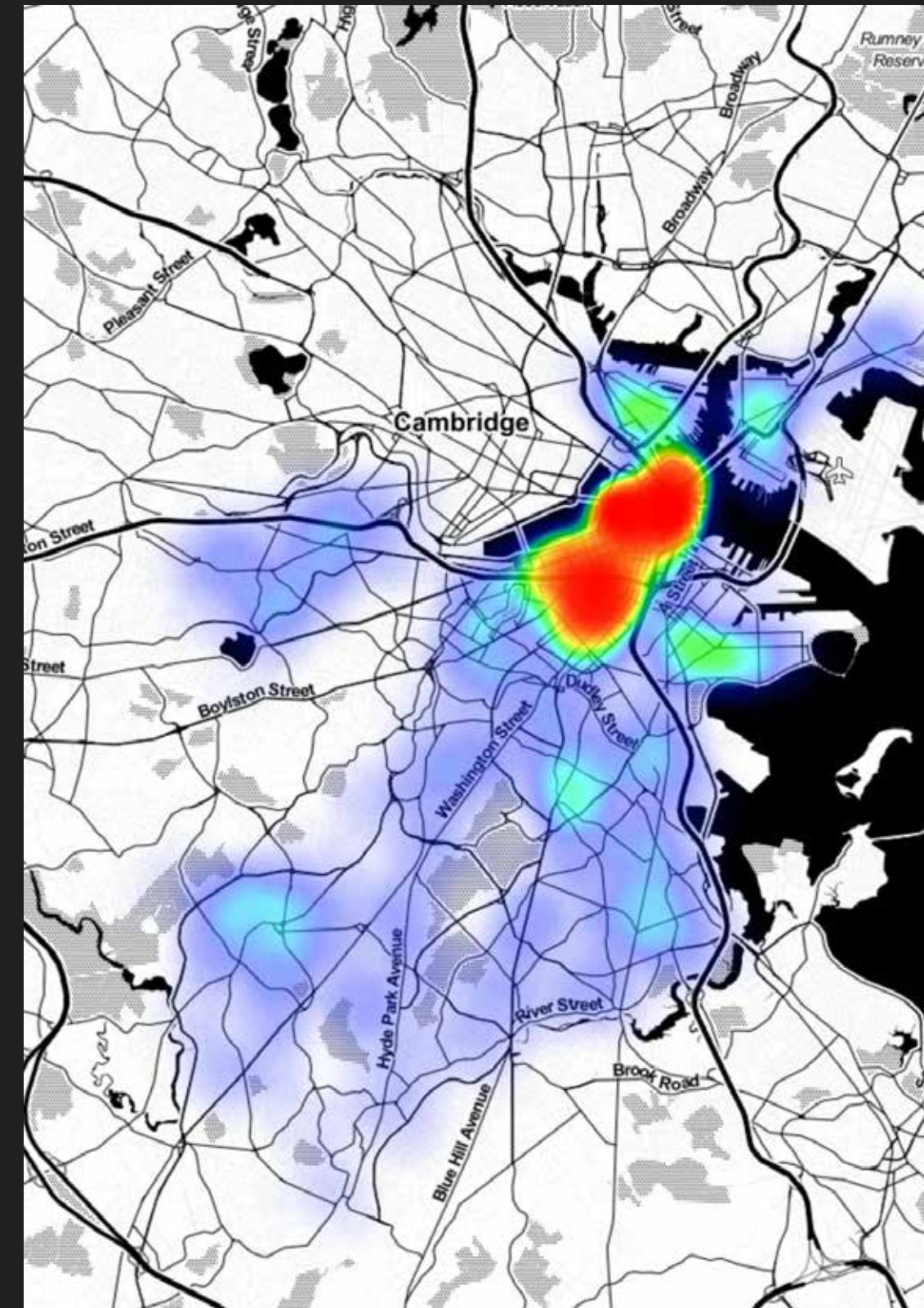
We mapped the complaints to specific sidewalks to see the conditions where complaints were received. The crazy thing was that most of the complaints about sidewalks came from high income, privileged areas where the sidewalks were in good condition.

Yet, sidewalks in other parts of the city that are equally important with a population that relies on public transportation were in a worse state of repair.

Q What else did you look at?

RJ: We realized that something needed to be changed. We thought, "Why can't we focus our money and effort in areas where people walk a lot, but also where people are socially vulnerable and fix accessibility in those areas first?"

So, we utilized trip generation modeling data to see how many Bostonians in different zones were walking to the nearest school, park, retail and commercial zone, and transit routes. This helped us understand which quarters of the city are the most important walking areas. We also met with every neighborhood liaison and asked them to tell us where people actually walk. We took the top 20% of the high walk scores, linked it all together and created a high walk network. >



Boston sidewalks before Streetcaster

Ramandeep and Boston Public Works compared sidewalk requests via the 311 system (heat map, left) with a map of actual sidewalk conditions as inspected (map, right) and saw that most complaints the city received were for areas where the sidewalks were already in good condition.

1,600+
miles of sidewalk network

Q And how did the community react to this project?

RJ: With Boston Public Works, we went to neighborhood fairs, held a Streetcaster Sidewalk Fair and met with communities to get buy-in and engagement. We could say, "This is what we're doing with your sidewalks. Tell us how can we do this better." We put people in our shoes. We helped them understand that we only have so much budget. It helped residents see the bigger picture.

Q And then?

RJ: Once we had that high priority network, the next step was isolating and finding places where need was the highest. We used a social vulnerability index from a data set of six key metrics to isolate those regions of the city. Once we made a heat map of the vulnerability data, we overlaid it with the places where people are walking the most from our previous analysis.

Using this overlay, we could see there's parts of the city that are highly walked and need repair the most from a social vulnerability perspective.

So, why aren't we building accessible corridors there? We pitched this new approach to the budget team and they said "That makes a lot of sense, we should be doing this." In 2018, the Boston Department of Public Works initiated the Streetcaster program to address sidewalk network improvements. The idea took off. We submitted it to the Bloomberg U.S. Mayors Challenge and became a Champion City.

In 2019, the Streetcaster program justified a 20% increase in sidewalk repair funding and the replacement of 3.5 miles of sidewalks in socially vulnerable areas. It's also increased the percentage of ADA-compliant sidewalks in these areas. Boston has been investing three to five million a year since and we've done work in every single one of the zones we identified.

Q What's next for the project?

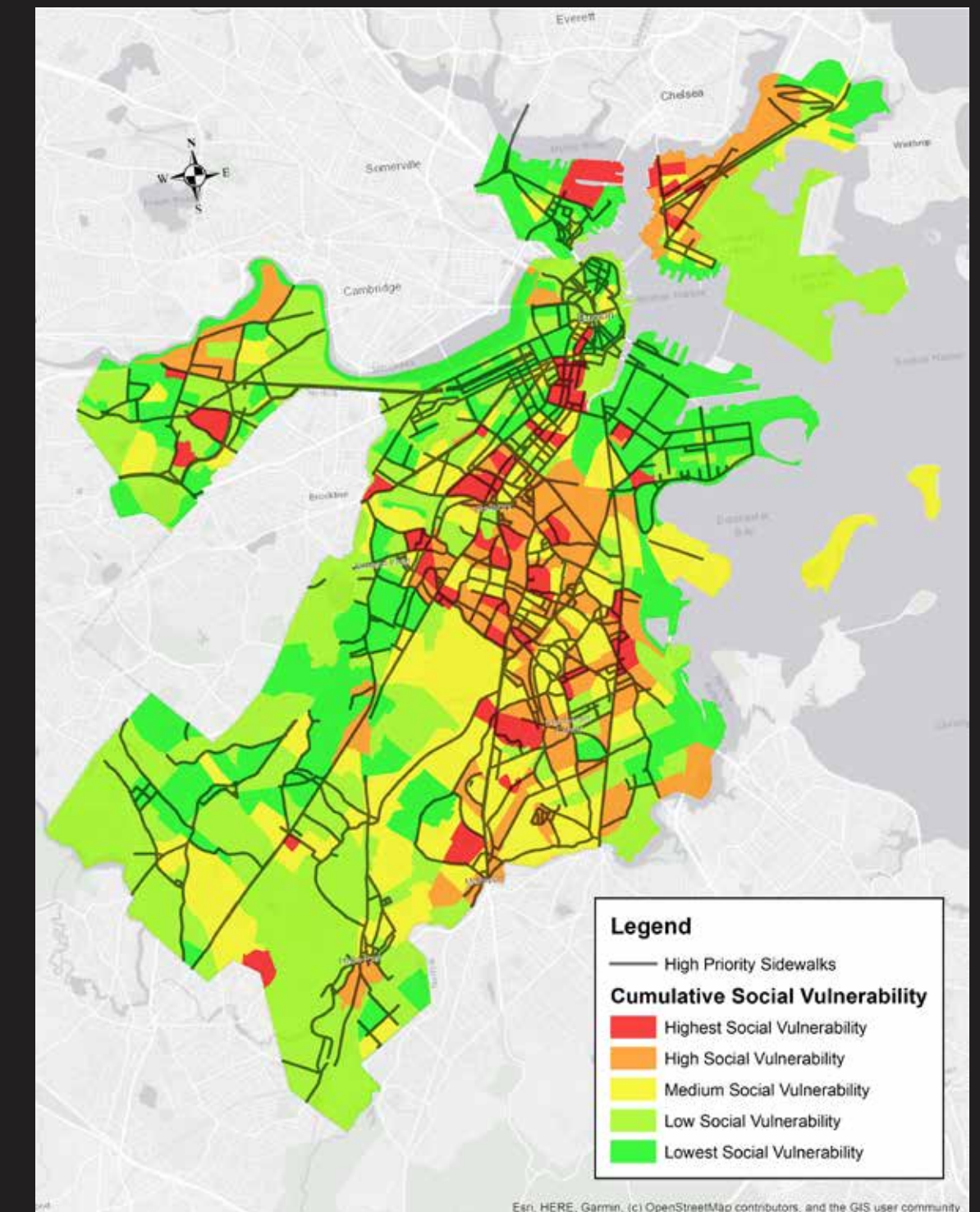
RJ: We're trying to take the next step forward using a fine-tuned analysis to find the gaps in accessibility between these target zones. We want the city to get the best bang for its buck in network connectivity and walkability. Now, in Boston, equity is always on the table when it comes to any kind of capital project. That's a great outcome.

Q What's next for you?

RJ: My goal, from a career perspective, is to create our own asset management software with a capital planning component that incorporates equity. So, when you're running plans from the data, it's creating a module with an equity lens to give you that reality check. >

**New Strategy:
Prioritizing Impactful Repairs**

- Make highest impact per dollar, increase effectiveness, focus on people.
- Perform full sidewalk replacement instead of partial repairs.
- Create a high priority network. Prioritize repairs where people are/walk the most.
- Look at social vulnerability. Prioritize repairs where they help citizens the most.
- Overlay this data to locate regions where full reconstruction will be most beneficial.



Q What did you personally take away from this?

RJ: Rarely do people take the time to step back and ask, “Is this the right thing that we’re doing?” It may not be sidewalks for every municipality, but there’s some practice they have in place that could be re-examined.

This is much bigger than just sidewalks. It’s about equity. When you talk to the people that weren’t complaining their attitude was “They’re not going to come here and fix it anyway, so what’s the point?” The trust that people have in government correlates with the services they experience.

I feel like I’m a troublemaker sometimes because in my office I’m always questioning things. But the reality is we should all be questioning things and making sure that we’re on the right path. If you don’t question, the greater danger is nothing happens. **D**



Neighborhood sidewalk

Boston, Massachusetts

[RETURN TO TABLE OF CONTENTS](#)

MORE ASSET MANAGEMENT

John Dugan is the Editor of the Stantec Design Quarterly. Located in Burlington, MA, **Ramandeep** is an asset management specialist with dedicated energy and enthusiasm for helping municipalities optimize infrastructure assets through transformational technology and modeling analysis.



Elevating low-rise

Why we're investigating
non-traditional methods for
design and delivery of
resilient urban housing

BY TERRA MAZZEO AND DAVID CARNICELLI



■ SUSTAINABILITY

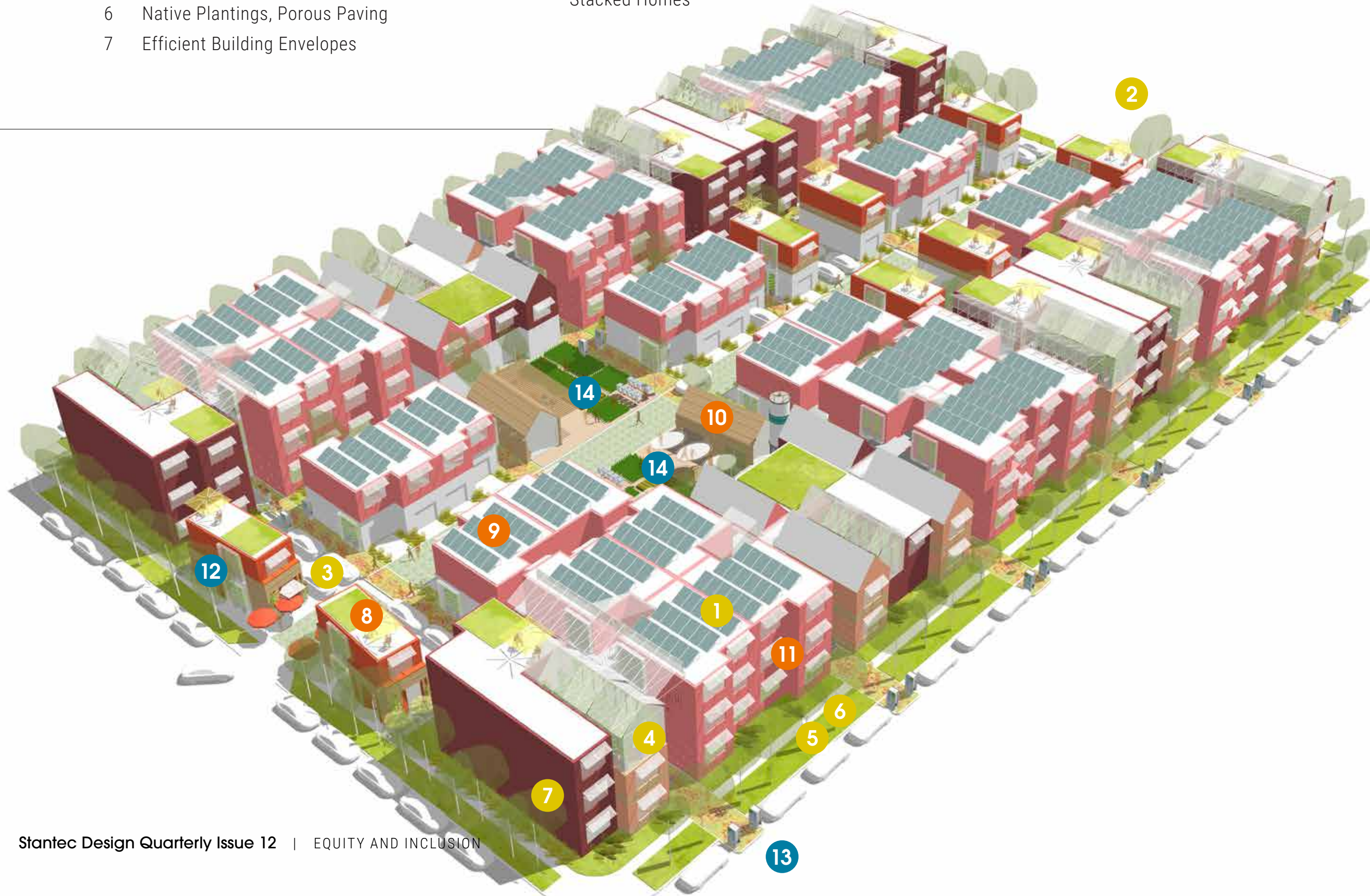
- 1 On-Site PV
- 2 Community Microgrid
- 3 EV Charging
- 4 Hydroponic Gardens
- 5 Water Collection / Irrigation
- 6 Native Plantings, Porous Paving
- 7 Efficient Building Envelopes

■ AFFORDABILITY

- 8 Community Owned + Operated Short-Term Rentals
- 9 Accessory Dwelling Units
- 10 Shared Spaces
- 11 Volumetric Modular Stacked Homes

■ COMMUNITY

- 12 Cafe
- 13 SWELL Spine
- 14 Gardens + Playground



The housing affordability crisis is particularly acute in Denver, CO where we live and work. 63% of Denver residents are cost-burdened by housing. Denver is the second most intensely gentrifying city in the United States. Much of the city’s population faces displacement because attainable housing is in short supply. Many U.S. cities are in the same situation.

63%
of Denver residents
are cost-burdened by
housing.

With a desire to point our professional energy toward contributing tangible solutions to this housing crisis and backing from Stantec’s Innovation office, we gathered a group of internal and external experts to develop strategies for reducing the cost of housing. Our focus has been on two approaches to make new housing affordable—factory construction (prefabricated components brought to the site for assembly) and

non-traditional formats (new models of living including co-living and micro-housing, both with shared amenities).

Missing middle

For much of the 20th century, a focus on the single-family home in the American West has resulted in sprawling subdivisions. With climate change and extreme weather events in mind, the carbon footprint of the standalone home and the automobile-centric infrastructure required to sustain it is hard to rationalize. We need to explore alternative housing types and strategically locate them.

Our research led us to low-rise housing, often referred to as the “the missing middle,” and defined as all housing typologies between single family residential and mid-rise or high-rise. This includes single family plus ADU (accessory dwelling unit), “the plexes” (duplexes, quadplexes, etc.), three-story walk-ups, courtyard apartments, rowhouses, and townhouses. In most major U.S. cities, outside of the East Coast cities like New York and Philadelphia, these housing types are somewhat rare in an urban context. >

The missing middle can be a crucial part of the solution to solving housing affordability in many cities.

The housing types that comprise the missing middle offer diversity in the market between the single-family home and the multi-family mid-rise and high-rise. They offer livability, walkability, and improved affordability—they're often less expensive to build because they don't require elevators or structured parking. These middle types offer sustainability through a lower carbon footprint—they have lower embodied carbon than other housing types because they are usually wood-framed. The missing middle can be a crucial part of the solution to solving housing affordability in many cities.

Process

We developed new concepts for affordable housing through a five-

day sprint process—a quick way of collecting perspectives of experts and figuring out if our ideas were worth testing further. We brought in outside partners to capture varied and diverse points of view and expertise. We connected with the City of Denver for advice on economic development and sustainability issues around urban housing. We consulted with some of Denver's multifamily housing developers and fabrication advisors such as [Simple Homes](#) and [Family Built Homes](#). Panelized fabrication company Simple Homes will eventually be capable of automated production of panels for modular housing from a digital model. In our sprint, we prototyped three ideas and presented these to active, progressive real estate

developers for comment. Their strong support for our concepts gave us the confidence to develop our ideas further.

SWELL

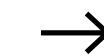
The result of our research is SWELL (a contraction of super and well), a name that hints at our focus on excellence and wellness which also implies growth. SWELL is our team, a group of housing experts within our design studio.

The SWELL Toolkit

SWELL is also a toolkit. The SWELL toolkit is comprised of three main offerings: **SWELL Sites**, **SWELL Communities** and **SWELL Homes**.

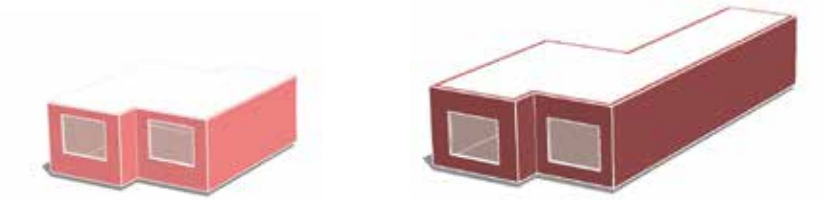
We imagine SWELL Sites as an app which allows housing developers to identify sites ripe for low-rise housing development based on parameters they can control, including favorable zoning, incentive zones, access to transit,

and other equity measures, etc. This tool addresses one of the most common problems identified by our development advisors during our five-day sprint: difficulty in identifying sites suitable for low-rise development. >



The Missing Middle

Low-rise housing, often referred to as the "the missing middle," and defined as all housing typologies between single family residential and mid-rise or high-rise. This includes single family plus ADU (accessory dwelling unit), "the plexes" (duplexes, quadplexes, etc.), three-story walk-ups, courtyard apartments, rowhouses, and townhouses.



Swell 01

2 Module, 600sq ft
\$80K Fab + Transport

Swell 02

3 Module, 600sq ft
\$80K Fab + Transport



Rowhouses



Plexes + ADUs



Three-story walk-ups



A SWELL Community

We intend SWELL Communities to be models for the resilient and sustainable future of urban housing.

SWELL Homes are three standardized units, each targeting a different family size. These are rigorously optimized for factory-fabrication, allowing us to deliver outstanding value to housing developers and a higher-quality home at a lower cost for potential homeowners. SWELL Homes are 100% electrified and include a small personal greenhouse bay window, optimized natural daylight, and natural ventilation.

For a recent design competition submission for Los Angeles, our fabrication partners estimated that the 420 square foot SWELL Studio single-module unit will cost about \$60K, the 600 square foot SWELL one-bedroom, two-module unit will cost around \$80K, and the 850 square foot SWELL two-bedroom, three-module unit will cost about \$100K—all prices including fabrication, transportation, and installation.

SWELL Communities are collections of SWELL homes assembled in various low-rise building typologies to form a community: two-, four- and eight-plexes, accessory dwelling units, rowhouses, and three-story walkups. Once a developer or municipality has identified a site (ideally using SWELL Sites!), our designers, with our development partners, can use this proprietary parametric tool to quickly assess various development possibilities for a given parcel. This tool, based on an actual application we recently developed to automate the masterplan for the Park Hill development in Denver, lets our development partners visually play with unit configurations and delivers output data on the unit count, unit mix, parking spaces, and other planning metrics—

all in real time. Beyond this SWELL Community features on-site food generation, water collection, and energy gathering, offering residents both security and community through self-sufficiency. SWELL Communities include shared hosting spaces that double as space for short-term rentals, shared maintenance and operations, and job creation. We intend SWELL Communities to be models for the resilient and sustainable future of urban housing.

The need for affordable and resilient housing in nearly all US cities has been made more urgent by the job loss and economic disruption resulting from our current global pandemic. As a toolkit for delivering resilient urban housing and communities, SWELL is particularly relevant today.

The SWELL team believes resilient urban housing is low-rise housing optimized for sustainability, affordability, and community.

Sustainability

Electrification of our SWELL Homes and Communities gives us an opportunity to connect to a cleaner energy source, consider site-wide micro utilities, fuel our communities using photovoltaics, and fuel our vehicles with plentiful EV charging stations. The prefabricated structures minimize waste and are designed with a highly efficient building envelope, optimized insulation, natural ventilation, and natural daylighting. Within the SWELL building typologies, each SWELL Home is connected to wastewater reuse systems and rainwater collection. Every SWELL Community meets or exceeds the [WELL Building Standard's prerequisites](#). >

✓ RETURN TO TABLE OF CONTENTS

MORE RESIDENTIAL

Located in our Denver studio, senior designer **Terra** has more than two decades of design experience in the mixed-use, hospitality, multi-family residential, and workplace sectors. Terra is a strong advocate for affordable urban housing volunteering her time to advance ideas and advocacy via Housing Colorado and the ULI Healthy Places Committee. Focusing on the residential sectors, architect **David** is a principal within the Denver studio who has focused his career on the development of socially conscious, sustainable and affordable housing and mixed-use projects that create positive impact within the community.

SWELL Communities feature regenerative onsite agriculture at a variety of scales, from the individual home (each home features a SWELL Bay—a private greenhouse), to the building (three-story walk-ups feature at least one upper-level greenhouse with vertical gardens), to the community (each block has opportunities for street level community gardens). Beyond food, native plants, porous pavers, pollinator gardens, and plentiful trees connect urban residents to the wild systems that sustain them.

Affordability

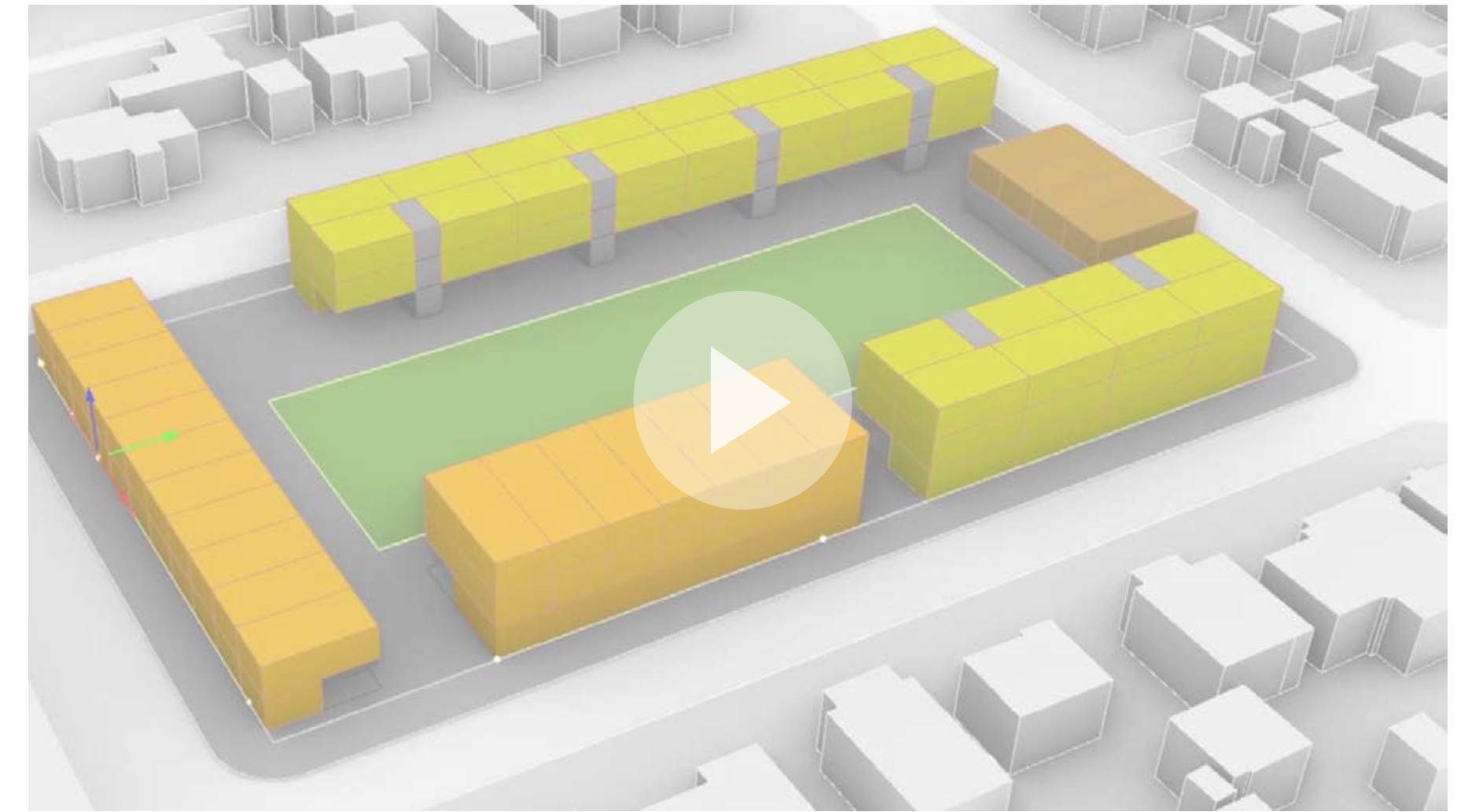
Our approach to creating affordable urban housing is threefold: reduce construction costs, increase city incentives, and offer on-site income generation. Construction costs are reduced through factory fabrication, design standardization, wood-framed construction, small unit sizes (made smaller using shared amenities) and building typologies without elevators or structured parking.

City incentives, confirmed through our conversations with the City of

Denver, may include everything from reduced permit fees, expedited permitting, layered incentives for combinations of sustainability and affordability, density and height increases, offerings of cheap or free city-owned land, and waiving of parking minimums. On-site income generation opportunities include community-owned and operated accessory dwelling units (ADUs) as short or long-term rentals, live/work homes, and in-community jobs. ADUs are often detached from the main house (either in place of a garage or above a garage) or attached with a separate entrance. They must have a dedicated kitchen or bedroom to be considered dwelling units.

Community

SWELL Communities are made more affordable and joyful through shared amenities —with possibilities ranging from shared laundry and package delivery lockers to community kitchen and gardens, shared gear storage, tool libraries, makers spaces, and coworking spaces. Other community-focused



VIDEO: Assessing development possibilities with the SWELL Communities parametric tool.

amenities within our SWELL Communities may include on-site childcare, job training, and recreation opportunities tailored to the needs of the surrounding neighborhoods including playgrounds, fire pits, and art.

Our plans for SWELL include advancing the conversation about financing, designing, and delivering

resilient urban housing through building developer partnerships, design competitions, speaking and writing, and other forms of thought leadership. For now, SWELL is an ongoing effort to create tangible solutions to the housing crisis in Denver and beyond; this effort is both a humanitarian imperative, professional responsibility, and an enormous market opportunity. **D**



FINAL THOUGHT

Taking action on diversity and inclusion in design

An informal self-examination yields actionable ideas for increasing diversity and inclusion in design teams and design process

BY ANTON GERMISHUIZEN



The Amazing Brentwood
Burnaby, BC

The events of 2020 surrounding equity and justice in our pluralistic societies inspired and motivated many of us to take a new look at what we are doing in our daily lives to manifest a more just world. As designers for a global firm, we know that we live in a diverse world—and we must design for that world. Furthermore, we believe good design responds to and serves our communities—diverse communities. But is there more we can do?



In the fall of 2020, we embarked on a pro-active initiative to prioritize diversity and inclusion in our design outcomes in direct response to the market, the rapidly changing composition of our clients, and our own organization.

We looked to our people. We undertook an informal self-examination with a series of small, frank, group discussions on diversity and inclusion in design. These conversations were intended as a forum to collect perspectives and to yield ideas we could use to formulate actions for our global design practice. As a result of this effort, we have identified areas where Buildings could improve the design process, staff, and client engagement in design, and deliver design solutions that better respond to the communities we serve.

Our professionals agreed that diversity and inclusion are complex and important in design. They believe more work needs to be done. They see that nurturing a more diverse profession and project teams is important, but they also recognize that there are inherent issues in how design is practiced every day that we must address. Our designers are passionate about design's social power. Several ideas for action emerged from our discussions that could help promote diversity and inclusion. >

From these conversations, we developed a list of actions that we plan to implement at Stantec Buildings to promote diversity and inclusion.

Assemble diverse teams

PROACTIVELY ASSEMBLE DIVERSE DESIGN TEAMS. UNDERSTAND POSITIONALITY.

We must drive broader engagement and inclusion of cross cultural, multi-generational and diverse voices throughout the design process. By assembling a diverse team with intentionality around the project we can exploit the talent and resources we have across the organization. Ethnic, demographic, and cultural diversity within our teams will surface alternate points of view and design insights. We can be purposeful about selecting people with different backgrounds when assembling our design teams. >

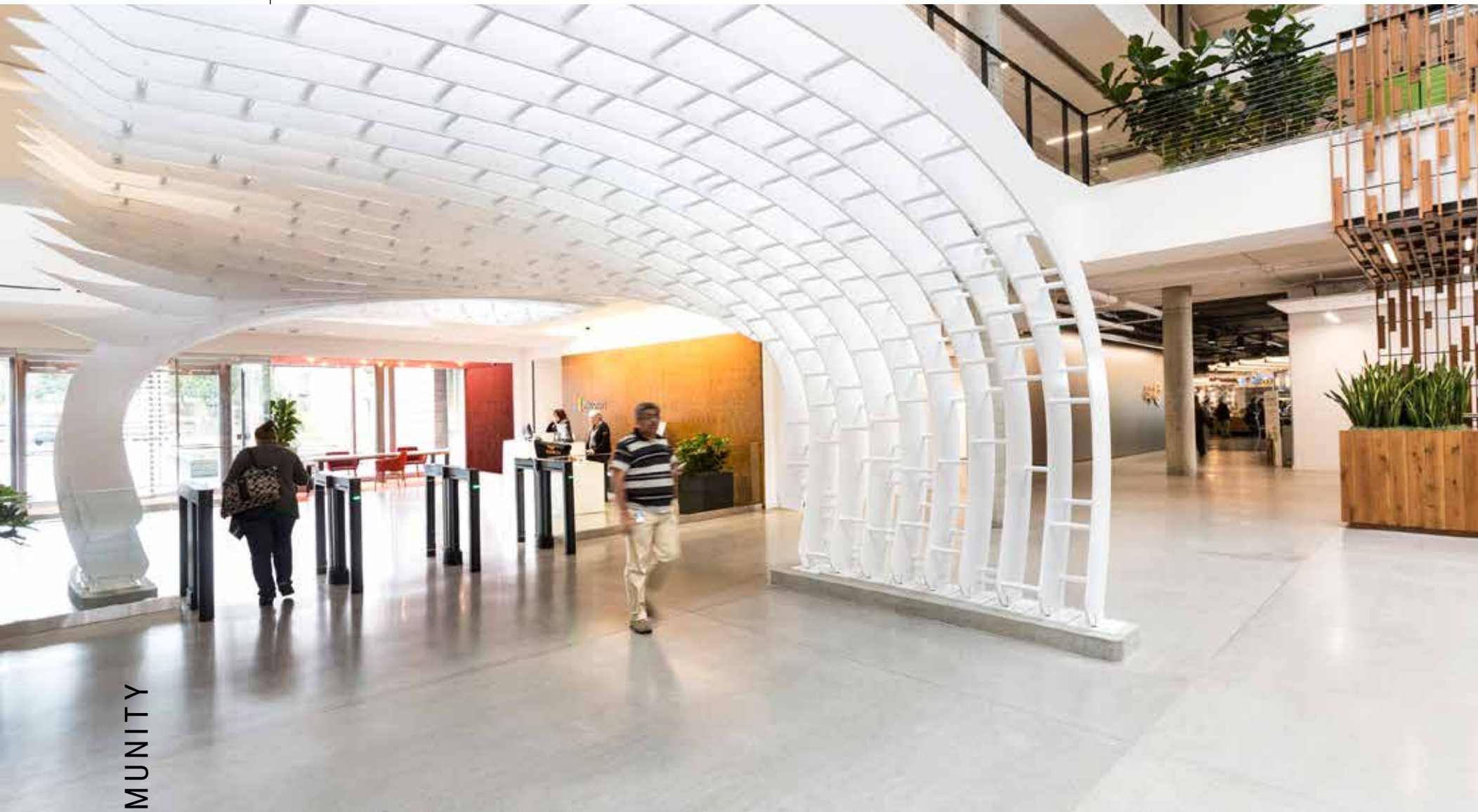




Welcome input, crowdsource ideas

WELCOME DESIGN INPUT EARLY AND OFTEN.
We should make room for input from earlier career designers early in the design process. To elicit and welcome the insights and ideas that can make better designs, we must create forums and environments that make this engagement possible in the early stages of design. Lunchtime charettes and critiques are excellent forums to increase participation and harvest perspectives.

CROWDSOURCE DESIGN IDEAS ACROSS OUR NETWORK OF EXPERTISE.
As a global organization we are rich and diverse in our composition. We can virtually crowdsource alternative perspectives from across our design community. Teams can access and exploit internal talent across our geography, ethnicity, and cultural perspective and apply it to the benefit of a project. >



—
Bringing more voices to the table should test and strengthen our ideas, not weaken them.

Engage the community

DO YOUR HOMEWORK.

As designers, we must go the extra mile to prepare and research the project and client context. The better we can understand the larger social, ethnic, and cultural context, the richer we can make our design response. The more we know about local sensitivities and culture, the better our design insights. By adding an ethnographic element to the design thinking process, particularly during the early conceptual design phase, we can address social and cultural dimensions of the project in the design.

CREATE OPEN FORUMS FOR COLLABORATION WITH CLIENTS AND COMMUNITY MEMBERS.

As designers we should apply a growth mindset when we engage clients, community members, and other stakeholders in conversation. We must invite open conversations that allow for authentic engagement from all participants—and invite a wide range of stakeholders to the table. We must recognize the value of “Street PhDs,” those whose insights come from lived experience.

ASK QUESTIONS, LISTEN.

Use the research of the client and the project to prepare and ask questions that yield insights. Drill down into challenges and be provocative. Get people out of their comfort zone, but be respectful. And listen!

Bringing more voices to the table should test and strengthen our ideas, not weaken them. As one participant suggested, the ideal is that “everyone gets their say, not everyone gets their way” and the best idea wins out.

IMPLEMENT PROCESSES THAT VIEW DESIGN THROUGH MORE PERSPECTIVES.

Our participants endorsed codifying diversity and inclusion and widening perspective more formally as an aspect of the design process through checklists and the use of representative personas. We will offer tools and processes that enable designers to utilize a checklist or create personas and questionnaires to see projects from diverse perspectives. We will consider a tool like a Diversity Audit to set metrics that can be measured throughout the design process. >



Promote diversity in the industry

PROMOTE DIVERSITY IN AEC INDUSTRIES THROUGH MENTORSHIP, INTERNSHIP, AND OUTREACH TO EDUCATIONAL INSTITUTIONS.

A more diverse design profession starts in primary school. We will look for opportunities with AIA, universities, and primary schools to promote AEC professions and education in design and engineering to the generations to come.


Through our offices, Stantec is already involved in mentorship and organizations that promote diversity in the industry such as the ACE (Architecture, Construction, Engineering) Mentor program. Stantec has mobilized our internal community to engage in relationship building with identified Historically Black Colleges and Universities and national organizations like the National Organization of Minority Architects (NoMA) or the National Society of Black Engineers (NSBE) to identify and attract minority candidates to our organization. We have established an Equity Scholarship program and have a young professionals mentorship program launching that pairs minority professionals with students as peers. >

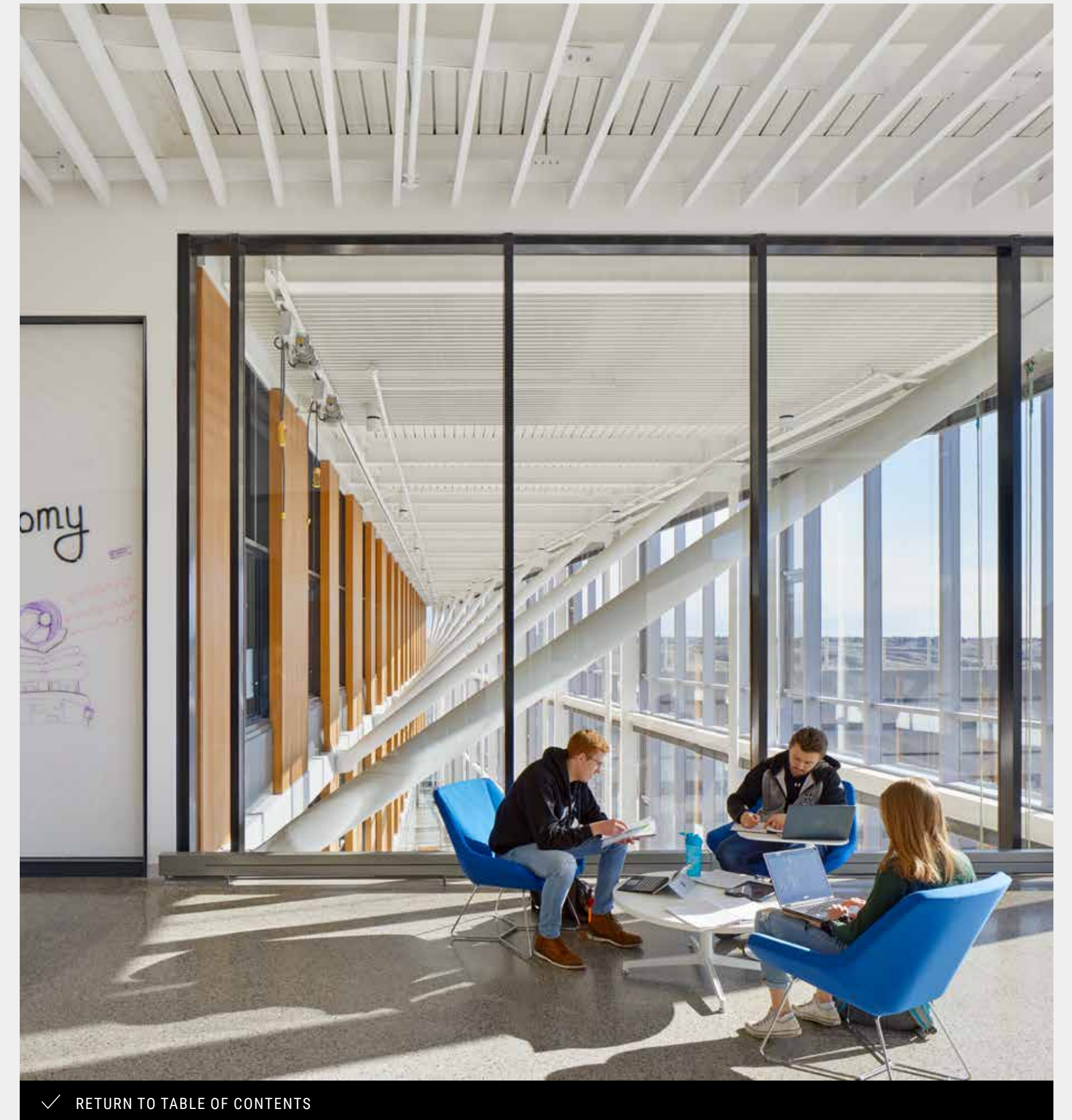
Recognize the social power of design

CELEBRATE THE POWERFUL SOCIAL IMPACT OF SPACE.

The quality of space influences our emotions, behavior, and well-being. Spaces can make us feel uncomfortable if they do not accommodate the right functions and interactions. Design elements such as material finishes, spatial configuration, and levels of transparency must support and reflect cultural norms for privacy, safety, and comfort. Comfort is key to utilization. We need to continue to share stories about design that successfully serves public needs with measurable outcomes for communities. And, we can also highlight the creative and aesthetic possibilities for more inclusive design through competitions—as we’ve done with sustainability.

IN CONCLUSION

We are committed to improving our design process to make it more diverse and inclusive. We will use these action items as benchmarks against which we periodically evaluate our progress. Our efforts are ongoing. 



✓ [RETURN TO TABLE OF CONTENTS](#)

MORE ARCHITECTURE AND INTERIOR DESIGN

Hailing from Philadelphia, Pennsylvania, [Anton](#) is a senior vice president within the practice charged with driving design and technical excellence, equity, and diversity to grow a strong and cohesive design culture across the practice.



DESIGN QUAR- TERLY

SUBSCRIBE STANTEC DESIGN QUARTERLY

Executive Editor **Andrea Johnson**
Editor **John Dugan**
Graphic Design **Miranda Esteve**

© 2021 by Stantec. All rights reserved. Images except where noted © Stantec.