



# R+B

RESEARCH AND BENCHMARKING

ISSUE FOUR

## **Inclusion, Diversity, and Wellness**

Embedded in everything we do is the fundamental importance of equality, wellness, and representative design.



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## FOREWORD

## Research + Benchmarking

Design is an industry of constant change and evolution.

**To be truly successful, you must continually learn. This is the simple idea behind our Research + Benchmarking (R+B) program.**

Our designers, planners, engineers, and team members are constantly striving to stay ahead of the curve and provide clients with the most innovative solutions. R+B is the process that guides our learning and understanding by providing an internal framework that allows our team to investigate areas where we see opportunity to increase our collective knowledge, study trends, evaluate the effectiveness and efficiency of our designs, and share what we learn with our partners across the globe.



Communities are the heart of our purpose because we are all a part of them. In order to best serve and advance the designs we provide, we must remain vigilant about understanding best practices and striving for continuous improvement. Research and Benchmarking (R+B) equips Stantec with the knowledge to design spaces that fit the needs of our clients where they can immerse themselves in learning and living while being the best version of themselves.

We are keenly aware that each project is designed to fulfill the unique needs and desires of its community. We understand the role inclusion, diversity and wellness play in design. The articles found in this issue highlight the work Stantec has done alongside incredible clients to ensure our designs meet expectations allowing for inclusive, diverse, and equitable experiences through various learning environments.

We create opportunity by inviting, embracing, and celebrating differences!

**Meredith Watassek**

Senior Associate, Planner





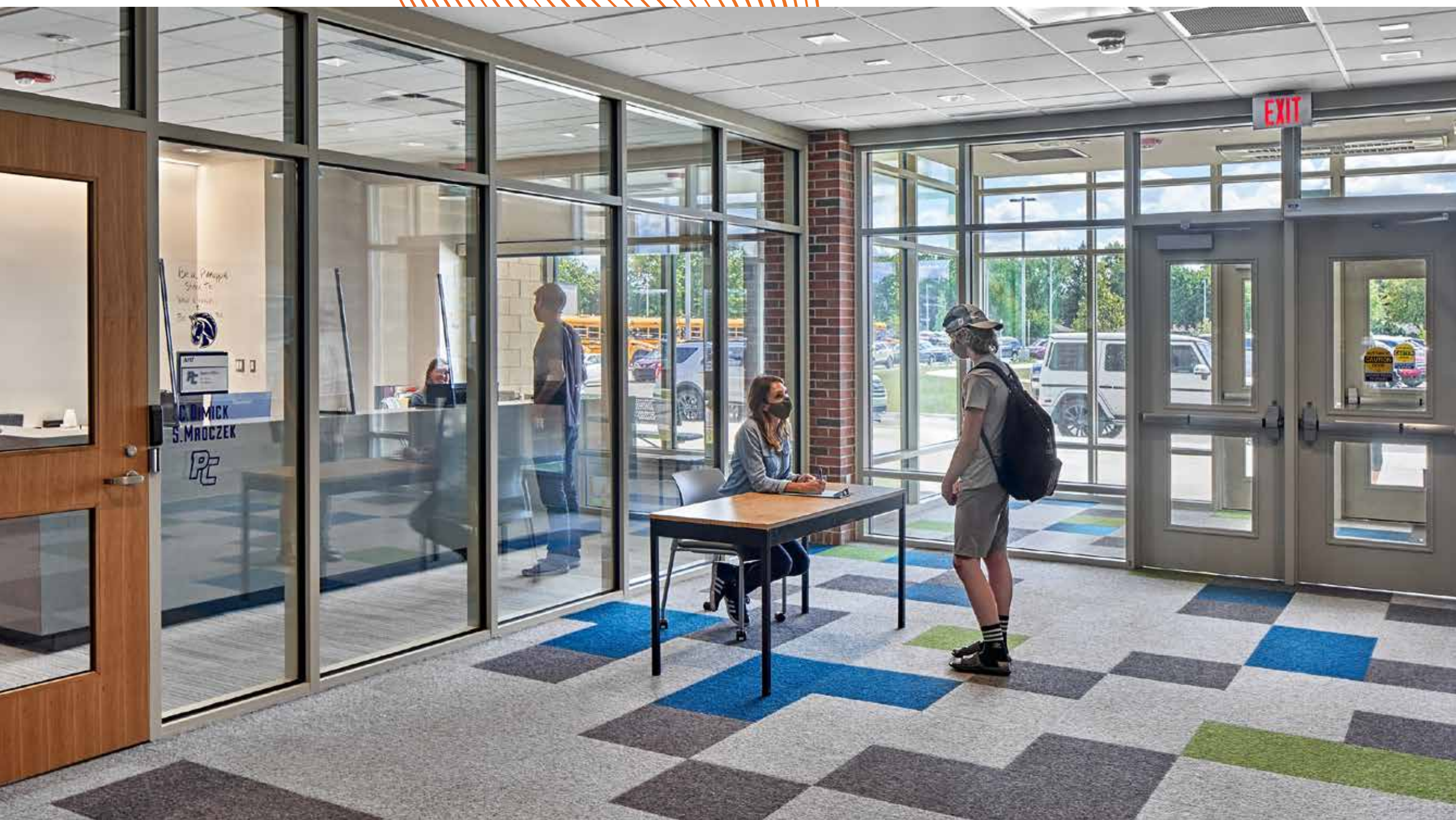
# Meaningful solutions for safe, inclusive schools.

Care for people, care for place:  
Designing for school safety  
through CPTED, biophilic  
concepts, and inclusivity

BY STEVE JELINEK AND  
KAITLYN LABRECQUE



Secure vestibule at Portage Central Middle School Portage, MI



## Safe places set the stage for learning.

The most successful learning and academic environments meet the needs of their users. For designers, it's a balancing act to create schools that are places where students feel a simultaneous sense of security, welcomeness, freedom of expression, and growth. Ideally, feeling safe in the space enables educators and students to focus on teaching and learning without the distraction of crime prevention.

By starting with a human-centered approach, we can create school designs that synergize Crime Prevention Through Environmental Design (CPTED) with biophilic principles, and intentional inclusivity. We can create places that allow students to feel safe, secure, and soothed.



Biosciences Building, Central Michigan University  
Mt. Pleasant, MI



Collaboration is essential. We find that thorough communication during the early design phases is essential to the success of the built result. Designers should engage with the full spectrum of stakeholders—faculty and students to family and public safety officials—to solicit their perspectives and expectations for a safe space. Input from the final users will help us create the consensus needed to begin a culture of care.

### **Introducing Crime Prevention Through Environmental Design (CPTED) for safe and sustainable schools**

Our communities share similar concerns at all levels across all types and scales of education spaces. Although not a one-size-fits-all approach, CPTED provides a framework we can use to evaluate existing conditions and as a guide for renovation or new projects.

Sheldon Lake Elementary Sheldon Lake, TX



# Engaging with the full spectrum of building users helps create spaces for everyone.

CPTED (pronounced sep-ted) is a planning, design, and management approach that helps create safe and sustainable places. It can empower designers and clients alike to examine their physical environments in relation to human behavior and crime, with the goal of making their schools and campuses safer. Schools adopting CPTED principles have reported positive outcomes such as reduced vandalism, improved student behavior, and increased sense of safety. The Readiness and Emergency Management for Schools Technical Assistance Center recommends a CPTED approach in schools for increasing safety. And the Centers for Disease Control offers resources such as a CPTED School Assessment for evaluating CPTED principles in three areas of schools: grounds, building, and interiors.



**CPTED is built on four design principles. Research shows that these principles discourage illegitimate activity through the physical and visual control of space:**

**1. Territorial reinforcement**

Establishing a sphere of influence and identity creates a perception of risk to abnormal users. Public areas are clearly distinguished from private ones. The strategic placement of entry and egress points, fencing, landscaping, pavement treatments, and signage can be used to develop a sense of ownership and deter crime.

**2. Natural access control**

Physical barriers control the routes people and vehicles enter and move throughout a site or building. CPTED uses walkways, fences, walls, lighting, signage, and landscape to clearly guide people to and from proper entrances. Spaces and zones on the inside of the building are separated to limit access. The goal is to direct the flow of people while decreasing the opportunity for crime. Guiding people throughout a facility will call attention to those who stray off course and prevent intruders from moving unnoticed around a building.

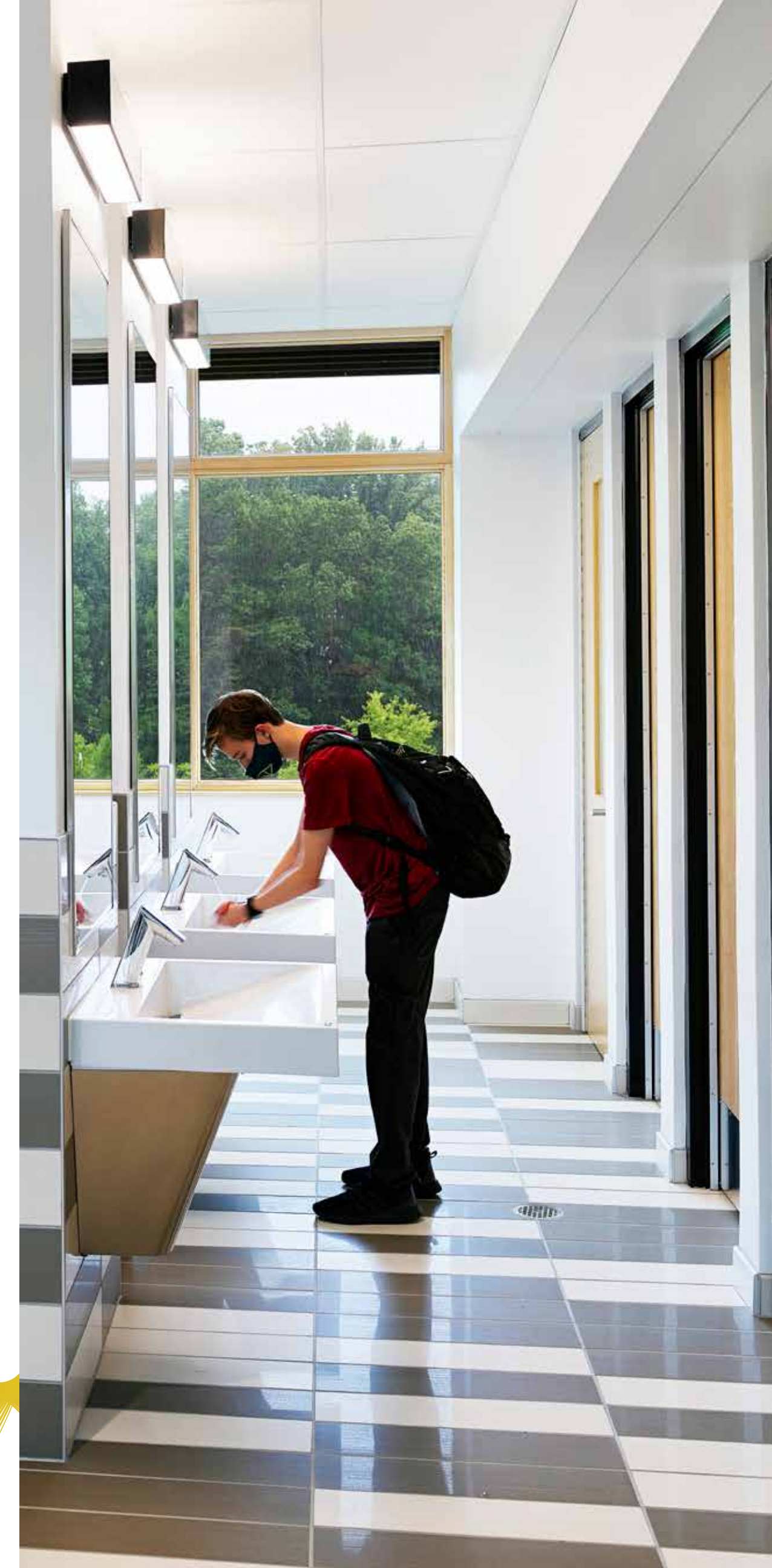
**3. Natural surveillance**

The placement of physical features can improve visibility. For example, we can design school washrooms with sinks and mirrors in higher visibility locations adjacent to a row of private bathroom stalls. Similarly, we can strategically size and locate windows so staff can see throughout the school. Transparencies like these can help deter crimes that might typically happen behind closed doors

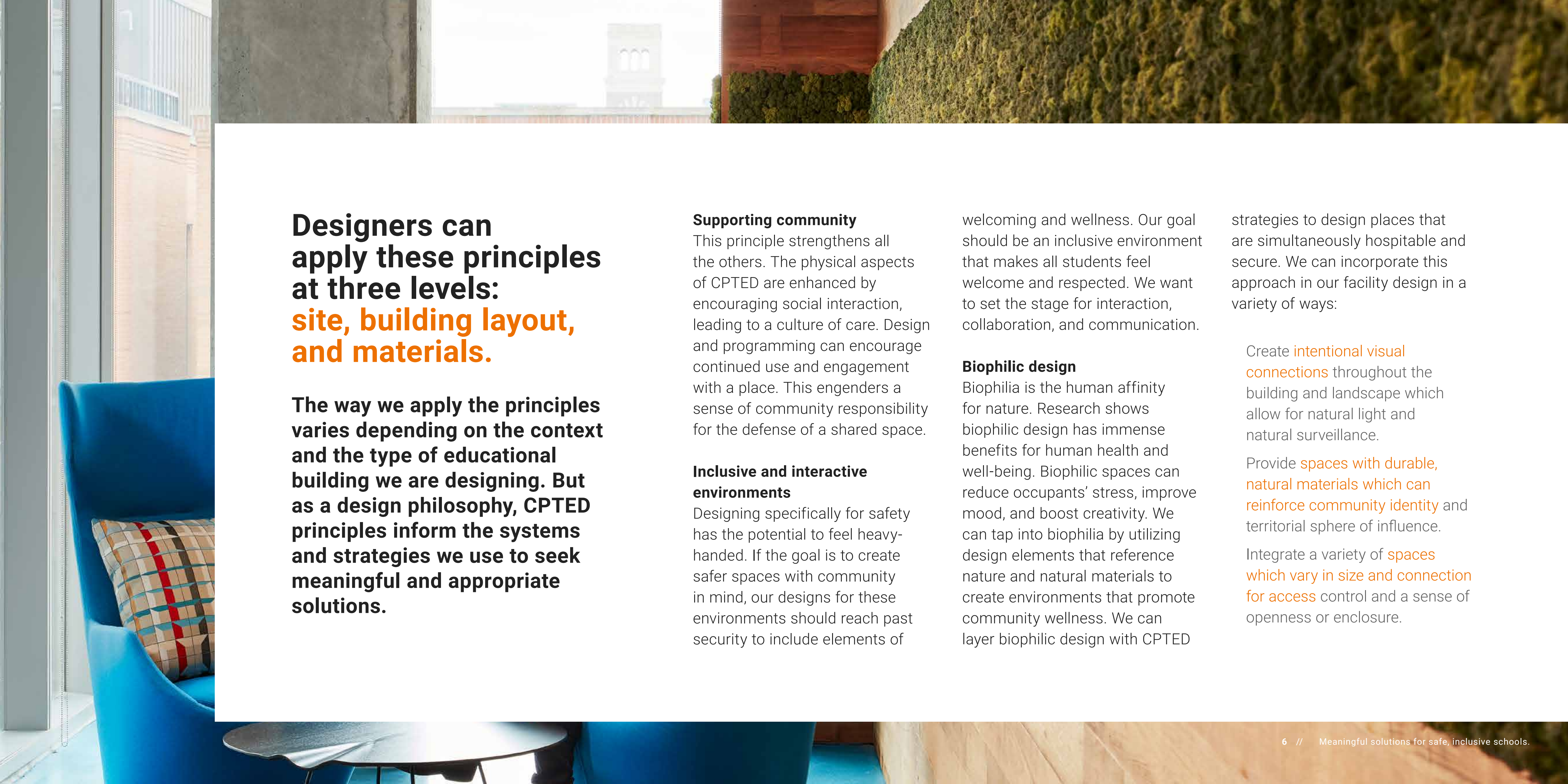
**4. Maintenance and management**

Building materials should be long lasting, resilient, and durable. They should look clean and safe. The “Broken Window Theory” says that one broken window, if allowed to persist, will lead to others and ultimately to the decline of the entire site. Essentially, crime is attracted to the areas that are not cared for or abandoned.

Sandy Spring Pen Y Bryn Upper School Sandy Spring, MD







**Designers can apply these principles at three levels: site, building layout, and materials.**

**The way we apply the principles varies depending on the context and the type of educational building we are designing. But as a design philosophy, CPTED principles inform the systems and strategies we use to seek meaningful and appropriate solutions.**

**Supporting community**

This principle strengthens all the others. The physical aspects of CPTED are enhanced by encouraging social interaction, leading to a culture of care. Design and programming can encourage continued use and engagement with a place. This engenders a sense of community responsibility for the defense of a shared space.

**Inclusive and interactive environments**

Designing specifically for safety has the potential to feel heavy-handed. If the goal is to create safer spaces with community in mind, our designs for these environments should reach past security to include elements of

welcoming and wellness. Our goal should be an inclusive environment that makes all students feel welcome and respected. We want to set the stage for interaction, collaboration, and communication.

**Biophilic design**

Biophilia is the human affinity for nature. Research shows biophilic design has immense benefits for human health and well-being. Biophilic spaces can reduce occupants' stress, improve mood, and boost creativity. We can tap into biophilia by utilizing design elements that reference nature and natural materials to create environments that promote community wellness. We can layer biophilic design with CPTED

strategies to design places that are simultaneously hospitable and secure. We can incorporate this approach in our facility design in a variety of ways:

Create **intentional visual connections** throughout the building and landscape which allow for natural light and natural surveillance.

Provide **spaces with durable, natural materials which can reinforce community identity** and territorial sphere of influence.

Integrate a variety of **spaces which vary in size and connection for access** control and a sense of openness or enclosure.



## CASE STUDY:

### What does this approach mean for the important spaces inside school buildings? Let's look at safety, and inclusivity in school building washroom design.

Our teams have provided roughly a dozen K-12 building post-occupancy evaluations for provincial governments in Canada over the last 10 years. Over the course of these evaluations, we conduct interviews and surveys with both students and staff at the newly constructed schools. We make observations about what is working, and which

areas are not functioning as intended. From these assessments, a reoccurring topic emerged in our interviews with both students and staff; washrooms are often areas where bullying is heightened, and areas where vandalism is particularly evident.

#### So, what can designers do to promote safety, security, and inclusivity within K-12 school washrooms?

Like the design of your own home, there is no right-size solution for restroom design that applies universally to every school. Appropriate designs for school restrooms vary significantly from community to community and grade level to grade level. We see preferences range from full gender-neutral

layouts to traditional gender divided layouts. Components of washrooms today, such as sinks, can be designed for complete privacy (sinks within individual washroom stalls), or minimal privacy (sinks facing hallway spaces).

We have years of experience designing and evaluating K-12 schools. From our experience we have identified several successful design approaches. These strategies align with CPTED principles and produce results that support the wellbeing, equity, dignity, and safety of students and staff.

#### Inclusive and accessible environments are key.

Gender neutral washrooms support inclusive learning environments where all

users can feel safe and welcomed. There are different ways to implement this scenario, including an open restroom design that offers fully enclosed stalls and communal sinks. Following all applicable building codes and regulations, rest room environments should include barrier-free stalls and sinks to promote accessibility and inclusion. In addition, private washroom stalls that lock from the inside should have override hardware from the exterior for emergencies.

#### Placement matters, too.

The CPTED principle of natural surveillance suggests we locate washrooms in main circulation paths and areas of high visibility. We should also position sinks and mirrors outboard of toilet stalls.

Centennial College Bombardier Centre for Aerospace and Aviation Toronto, ON



# WASHROOM

**INCLUSIVE WASHROOM**  
Anyone can use this restroom, regardless of gender identity or expression





**KAITLYN  
LABREQUE**

AAA B.E.D.S., MRAIC

*Kaitlyn is a project architect in our Alberta Education Design Studio. She prides herself on championing the goals of all stakeholders in the schools she designs.*

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**École À la Découverte K-9 Gender Neutral  
Washroom Cluster**

Edmonton, Alberta

This allows for passive supervision by both staff and passersby, which supports mitigation of bullying and vandalism. Assign washroom clusters to specific grade divisions and space them throughout the building to reduce wait times. This gives students greater autonomy over their washroom cluster, which mitigates vandalism according to school board reports.

**Acoustic comfort for overall wellness**

Students in younger grades reported being frightened by the loudness of the automatic flush valves on toilet fixtures. Whereas, students in older grades desire full height washroom partitions that provide a level of acoustic control to further support privacy. Manual flush valves are often quieter and more approachable for younger students. We can design

washroom stalls with full height concrete block walls, rather than standard steel partitions, to offer greater acoustic privacy for all users.

**Durability for restrooms that last**

The durability of materials in K-12 washroom design is critical. We should avoid drywall wall surfaces, utilizing impact resistant materials instead, such as concrete block or tile. Following the CPTED principle of maintenance and management, areas that are not cared for attract vandalism. Whereas areas that look clean and safe can deter destruction.

When students feel safe, secure, and soothed they thrive. No matter the scale, from master planning to a detailed washroom layout, thoughtful design of learning environments can help to

encourage good student behavior and promote student well-being through CPTED principles, biophilic design, and inclusivity. Holistic design can also facilitate engagement through programming to offer places where all members of the school community feel welcome and accepted.

By starting with a goal of the end users' perspective and carefully considering the needs of students and staff, we can collaborate with our education clients to create safer and more inclusive environments. When students feel connected to their community, they are more likely to feel safe and succeed. Consider an integrated approach to educational design with heightened safety through CPTED, wellness, accessibility, inclusivity, and biophilic principles.





# Reducing anxiety in college students

Can multi-sensory environments mitigate stress?

BY GWEN MORGAN AND STEPHEN PARKER



## The kids are not alright.

Like many young people, college students are stressed and anxious in a post-pandemic world.

In fact, according to [\*one Boston University study\*](#), they are more stressed and anxious than ever before, with **more than 50 percent of students in the study screening positive for depression or anxiety**. Managing an academic workload under such circumstances is difficult, and colleges and universities are exploring ways to support students' mental health. One approach that seeks to help students is the provision of multi-sensory environments: spaces that are designed to stimulate or sooth an individual's senses to promote positive emotions, facilitate relaxation, and foster a sense of control and choice.



The challenge is creating learning spaces that meet the needs of a diverse population and understanding that there is not a one-size-fits-all approach to designing them. In fact, it's quite the opposite. For populations with neurodiversity, environments that support learning should be both dynamic and flexible. We draw upon our experience in the design of psychologically-safe environments that are supportive and create opportunities for various levels of engagement in group and individual settings.

We understand how furniture arrangements, spatial layouts, organization and limiting visual clutter, color, texture, acoustics, and light all play a delicate balance in creating a harmonious space that foster an ideal place to learn.

### Could multi-sensory environments provide stress relief for college students?

We partnered with Amanda Gale, professor of the Department of Interior Architecture at University of North Carolina - Greensboro and Lisa Williams, a graduate student in that program, to study the following questions about

multi-sensory rooms for college students:

1. What effect does visiting a multi-sensory environment have on the perceived anxiety and stress of college students?
2. What strategies do college students use to cope with anxiety and stress?
3. What multi-sensory elements do college students identify as being the most effective at reducing perceived stress and anxiety?



**Sensory Environments & Architecture (SEA) concept design**  
Stantec-lead design research into immersive & experiential environments across typologies.

## To find out, we started with an old, empty office.

The 267-square-foot room was located on the ground floor of a building on the UNC Greensboro campus. Our budget for renovations was minimal, but we were able to install:

**New carpet with biophilic patterning**  
*(donated by Interface flooring)*

**An acoustic divider screen**  
*(donated by Autex)*

**A large-scale mural**

**New wall paint**

**Lighting elements that are individually adjustable to change light intensity and color**

**Swing chair**

**Bean bag chair**

**Weighted stuffed animal**

**The option to play music**

**A bubble tube**  
*(sensory device that provides calming visual feedback in color-changing moving bubbles)*

**Water fountain**

**Smart fan**

**Essential oil diffusers**

**A multi-texture textile created by Lisa Williams**





When the room was ready, students were invited to use the space. We asked 49 students to take a short survey before and after visiting the room for 30 minutes. We used the Perceived Stress Scale and Perceived Restorativeness scale, along with seven open ended questions to measure stress and the restorative effects of the room. The Perceived Stress Scale asks participants to describe how often they were bothered by a list of problems such as trouble relaxing or feeling nervous, anxious, or on edge on a four-point scale from “not at all” to “nearly every day.”

The Perceived Restorativeness Scale asks participants to indicate the extent to which a series of statements accurately described their experience in the room. They range from “being here is an escape experience” and “this place is boring” to “the setting is fascinating.” We also asked the participants to list which elements in the space helped them to feel less stressed and what, if anything, they would like to see added to the space.

## The stats

Of the 49 participants, most were female (87.1%) and between the ages of 18 and 22 (90.3%). They spent an average of about 28 minutes in the room.

Most participants indicated their levels of perceived **stress decreased**, with an average **reduction of 3.62 points** out of 40 on the Perceived Stress Scale.

The average restorative score was **4.5 out of 6**. In other words, most of our **participants felt stressed before** entering the room, but for the majority, their stress **decreased after spending time there**. Most found the space to be restorative.



### What was most effective?

Giving participants control over their environment aids in self-regulation. The room provided full-spectrum lighting with control of light color across the Kelvin scale of the light spectrum as well as power intensity with dimming features.

In the survey, students told us that they liked the adjustable lighting and sound elements, particularly the ability to select and control music individually. Being able to individualize and personalize the space gave participants a comforting sense of control over their environment.

### What else did students want?

When students were asked what they would have liked to have had in the space, some mentioned “things to do,” meaning something to play with or fidget with. This response correlated with participants who preferred active strategies for coping with stress, while most of the elements within the designed room were intended for more passive engagement. Some students also mentioned a preference to recline or lay down rather than merely sit.

### What we learned

The scope and budget of this renovation was small, but the results were nevertheless positive. We hypothesize that with proper planning and implementation as a part of a renovation or new construction project, a multi-sensory environment is promising as one tactic for reducing student stress and anxiety.

As we strive to increase voice and choice through sensory environments and architecture, we plan to leverage best practices from the fields of trauma-informed design and sensory-sensitive research. Sensory room design deserves more research and attention.

#### GWEN MORGAN RID, IIDA, LEED AP ID+C

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#### STEPHEN PARKER

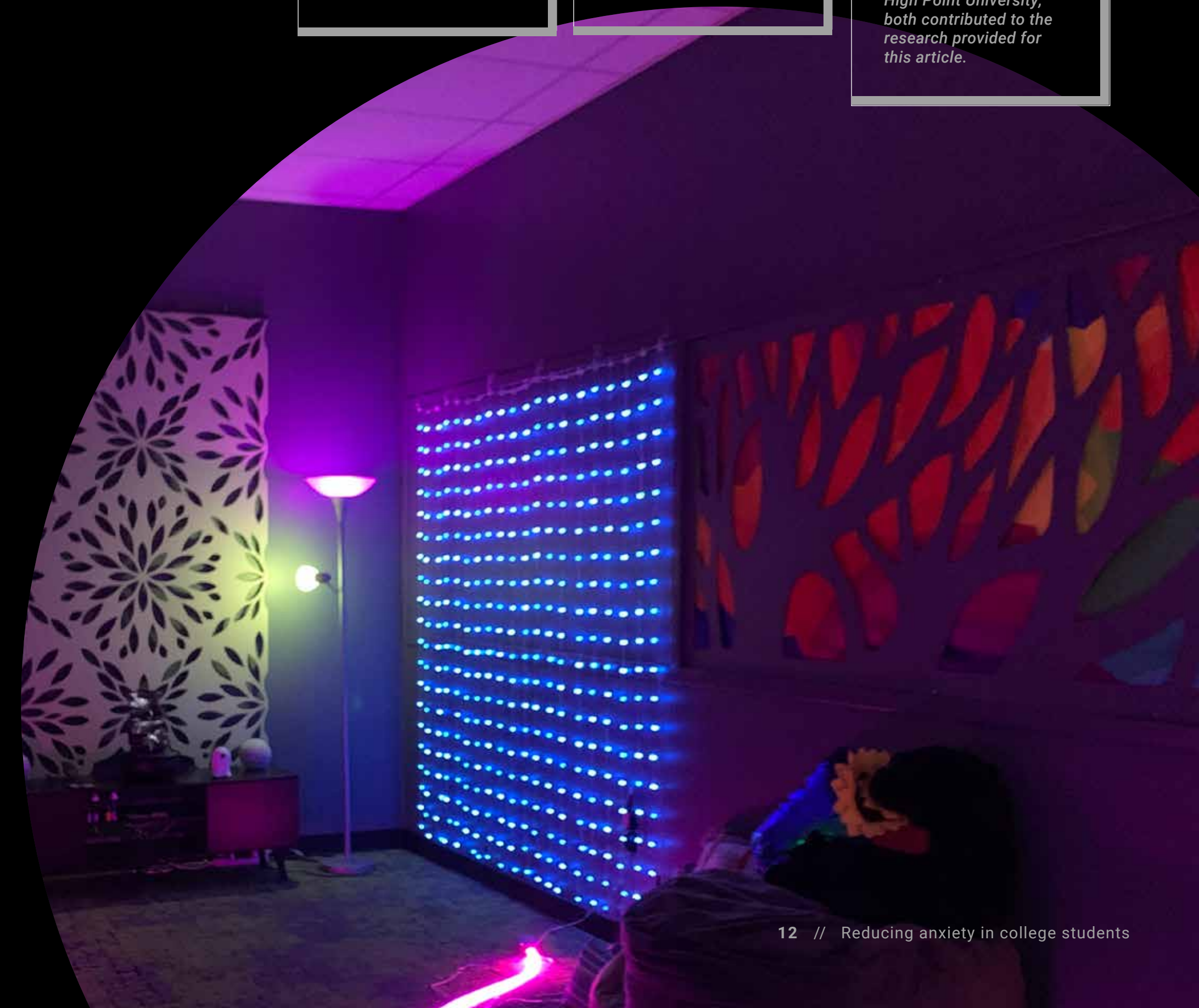
AIA NCARB, LEED AP, NOMA

Stephen is architect and planner in Stantec's Arlington, VA, design studio who's dedicated his career to behavioral health. He is an accomplished researcher and advocate of mental health worldwide.



#### OTHER CONTRIBUTORS

Amanda Gale, Ph.D., Professor of the Department of Interior Architecture at University of North Carolina (UNC) Greensboro, and Lisa Williams, an Interior Architecture graduate student of UNC Greensboro and Assistant Professor of Interior Design at High Point University, both contributed to the research provided for this article.





# ***Designing for Jordan's Principle***

What we've learned about design for equity in creating new cultural and wellness centres

BY JEFF MOROZ AND SOUK XOUMPHONPHACKDY

📍 Souk Xoumphonphackd (left) leading a design charette and workshop for the Misipawistik Cree Nation Jordan's Principle project with Chief and Council





**Jordan River Anderson of Norway House Cree Nation was born in 1999 with multiple disabilities. But Canada's federal and provincial governments could not agree on who should pay for his home-based care. As a result, Jordan didn't get the care he needed, and he passed away at the age of 5 in the hospital.**

First Nations children have not always had the same access to services as other Canadian children. This is because different levels of government fund different services for First Nations children, especially those living on-reserve. This has led to disputes between governments about who should pay for which services.

In 2007, Canada's House of Commons passed Jordan's Principle in memory of Jordan River Anderson. It is a government commitment to get the First Nations children the products, services, and support they need, when they need them.







Misipawistik Cree Nation Jordan's  
Principle & Cultural Centre  
Manitoba

The Canadian Human Rights Tribunal (CHRT) has issued several follow-up orders about Jordan's Principle that promote equality, culturally appropriate services, and safeguard the best interests of children. This commits the government to providing extra help when it is needed so First Nations children have an equal chance to thrive. Today, while programs and initiatives to support it may be temporary, Jordan's Principle is a legal obligation with no end date.

Our recent work on Jordan's Principle projects for Norway House Cree Nation, Nisichawayasihk Cree Nation, Kinonjeoshtegon First Nation, and Misipawistik Cree Nation has added to our experience on design for diversity, equity, and inclusion in Canada's Indigenous communities. We feel it is important to raise awareness and shine some light on the Jordan's Principle projects we have had the privilege to collaborate on with a few First Nation Communities, in particular, Misipawistik Cree Nation in Manitoba.





Designing for Jordan's Principle is an opportunity for us to engage in important equitable design. We believe the approaches we are developing in this work will be valuable on future Jordan's Principle projects, but can also be applicable to any design project where equity is a significant driver.

**So, what have we learned from designing for Jordan's Principle that can help us design for equity?**

1

### **Don't come with preconceptions.**

The Jordan's Principle centre is a new building typology. There's no existing template for their design, so that makes these projects unique. Partnering with communities to discover what they can be is a journey into the unknown. We can't bring a preconceived idea, a Western idea, about these spaces, because they are new and need to serve a community with different expectations.

2

### **Educate the team.**

Jordan's Principle centres are part of a healing process for Canada's Indigenous people. A spirit of reconciliation needs to inform our design work and collaboration on them. We've held educational sessions in our office, viewing a documentary on Jordan's Principle, so that every member of our team touching one of these programs knows the history of Jordan River Anderson.

3

### **Every community is unique.**

When approaching these projects, it's important to understand that each community brings with it its own unique circumstances, history, culture, needs and leadership. The unique goals and resources available to realize the project will shape the building design.

Take Misipawistik for example. The name means "big rapids." Before the construction of the nearby hydroelectric dam, the rapids defined this community. Now, the rapids are largely lost, and the connection to the Misipawistik culture and language has been fragmented. Cultural education was a central mission in this Jordan's Principle centre design. A new community cultural centre will provide a place where residents are prompted to and can learn about the Misipawistik Cree Nation's history and culture.

***Since 2016, Canada has pledged more than \$3 billion toward Jordan's Principle to better support First Nations children.***







Misipawistik Cree Nation Jordan's Principle & Cultural Centre Manitoba

4

#### Listening, building consensus, and understanding leadership roles in the community is key.

We know from our experience in education design that collaborating with Indigenous and First Nations communities is all about listening. We listen to the youth, we listen to families, we listen to community elders—we listen to everybody. On Jordan's Principle projects, we find that recognizing the leadership in the community, listening and allowing a consensus to emerge around the most compelling ideas is an important part of the process.

In our collaboration for the Kinonjeoshtegon First Nation Jordan's Principle project, listening surfaced as a central idea. It inspired the notion that the facility shall be a central place to gather and share stories/teachings, indicative of gathering in a traditional tipi space.

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#### Sharing a range of visualizations to elicit ideas.

Rather than coming with a blank slate and asking questions when we meet face-to-face, we share visuals in our collaboration from early on. Designing a Jordan's Principle project is very much an iterative and reactive design process. We find it best to provide multiple options and visual cues for the stakeholders to react to and choose from, letting the community leadership guide the decision making. From three or four concepts, we begin to narrow it down based on their feedback. We use printed floor plans, site plans, 3D massing, perspectives and renderings to share an evolving idea. Eventually we create 3D virtual walkthroughs to simulate the space as realistically as possible to get reactions and further refine the design.



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## Understanding the role of iconography and symbology.

An efficient use of space is often the starting point for a building program. But with a Jordan's Principle project, we need to understand the power of symbolism. Taking an open-minded approach to designing for healing and diversity means being open to curvilinear forms, even circular rooms rather than a building composed strictly of right angles.

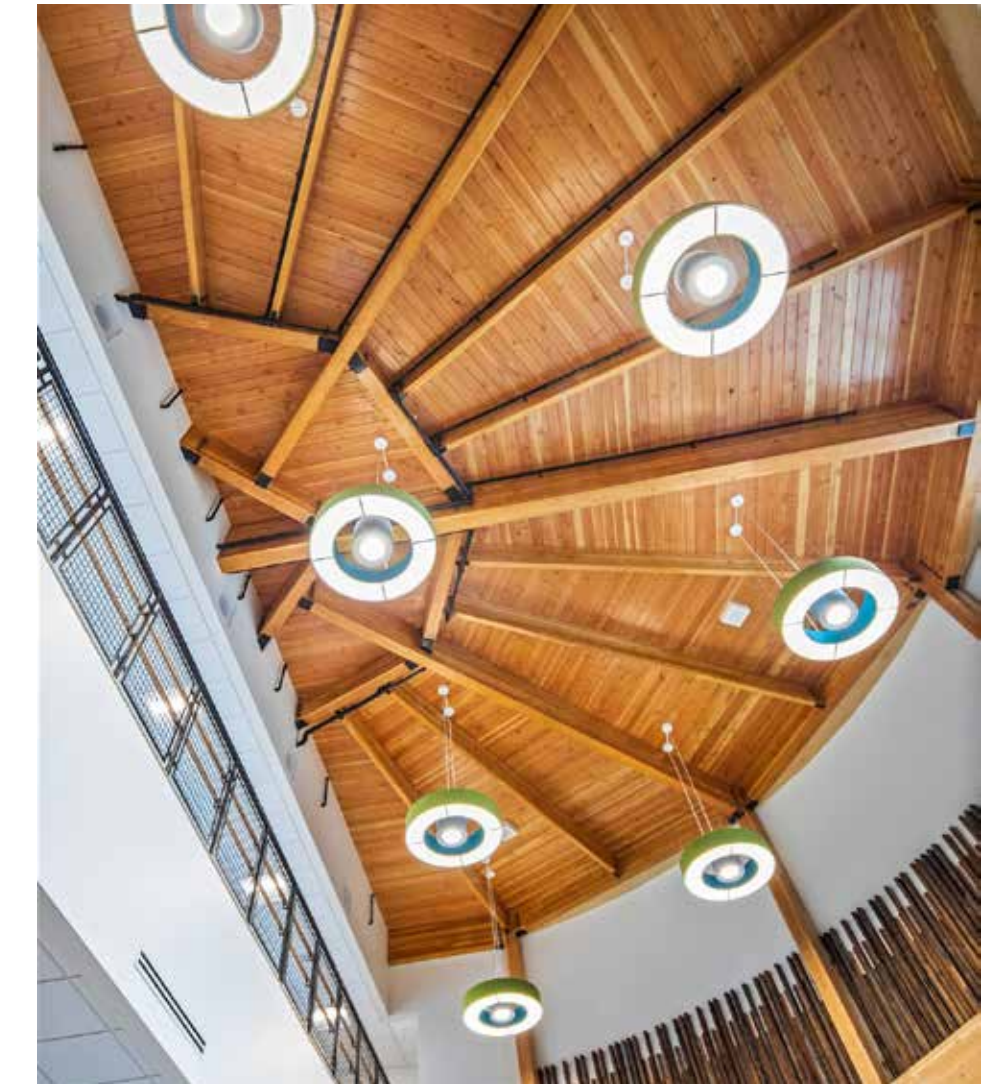
While in Misipawistik Cree Nation, we listened intently and heard that the circle is a sacred symbol. A consensus emerged; a Jordan's Principle Facility inspired by curvilinear expressions would facilitate healing, resonate a greater sense of cultural identity and provide a more welcoming environment. Through an iterative design process led by Misipawistik Cree Nation and facilitated by Stantec's design team, we were able to collaborate on a building design that

features three concentric rings: the first for the cultural spaces/traditional healing centre, the second for Jordan's Principle recreation/therapy spaces, and the third for staff/elders' accommodations and land-based learning.

In some communities that we have collaborated with, symbols representing animals, the turtle, bear, or eagle for instance, are powerful and meaningful. Therefore, we look for opportunities to infuse a space or even design an entire building to capture local iconography that will engage the community for generations. On Jordan's Principle projects, we are looking for holistic and iconic designs that can express meaningful symbolism for the community.

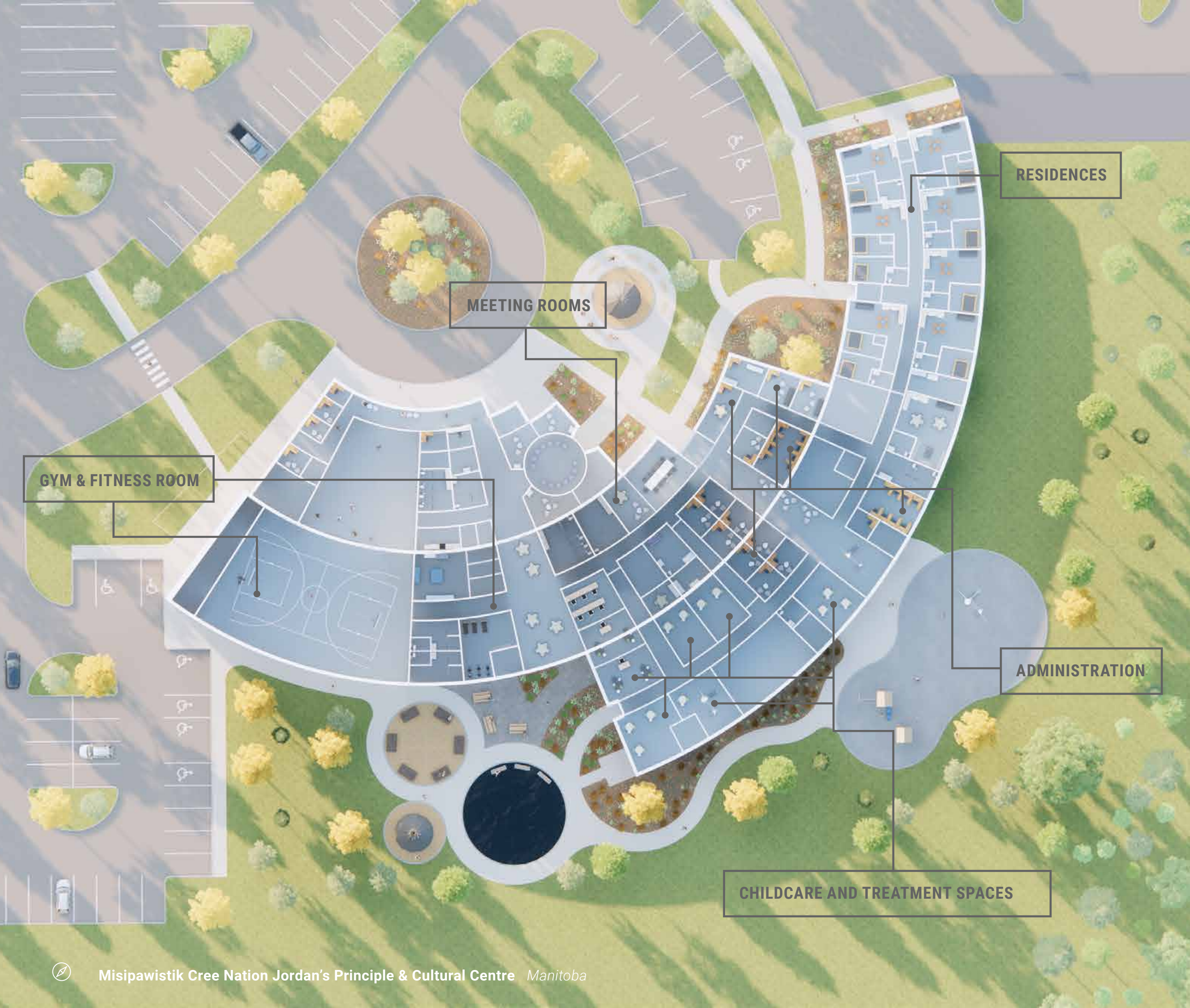
In the St. Theresa Point First Nation Kookim's Lake Wellness Camp Project, designed to support Jordan's Principle Programming, we have provided a healing lodge aptly named "the Bear Lodge" that takes inspiration and symbolism from the bear. The symbolism extends to the Powwow Arbour and Sundance Grounds, traditional cultural facilities adjacent to the Bear Lodge.

 Kenaitze Education Center Kenai, AK



*The circle is a sacred symbol for many Indigenous cultures across North America. It represents the path of the sun and moon, as well as the shape of the Medicine Wheel, the tipi, the drum; it holds different meanings for different cultures. In addition to Jordan's Principle facilities, our teams integrate circular design in projects of many types for Indigenous and First Nations communities.*





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### Creating a sense of ownership and community.

In the spirit of reconciliation, our designs for Jordan's Principle centres must deliver an experience of ownership to the community. To succeed in their mission, the community members must feel that the centre is a place where they and their children belong.

In designing the Misipawistik project, we were advised by Chief and council of a greeting in Cree, "Tansi Tawaw" meaning "Welcome, there is room." This is what community members say when they welcome someone into their home. It is the purpose of the Jordan's Principle & Cultural Centre to embody this feeling. Therefore, the spaces required in the centre, the colors, the finishes, and the layout of the spaces will all contribute to creating the "welcoming home" feeling and a lasting sense of ownership.

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### Finding equitable solutions for programmatic needs

Fundamentally, these facilities need the right kinds of spaces to provide equitable services. While we may include circular meeting rooms, we must create functional spaces where staff can do their work.

The current Jordan's Principle program for Misipawistik Cree Nation is run in a residential style facility with limited space for group activities and no access to private treatment spaces as they are taken up by the necessity for storage. Visiting professionals that commute to give short- and long-term treatment have no place to stay or work productively. As a result, the quality and amount of care that the children have access to is immensely restricted.



The proposed Jordan's Principle Building and Cultural Centre will provide a vital resource to the community's 400+ families. It will host community events, ceremonies, funerals and large-scale meetings that promote an overarching sense of healing and identity for Misipawistik Cree Nation. It will address the needs of Misipawistik Cree Nation children so they can thrive. Concurrently, the Jordan's Principle Centre residence program gives visiting professionals a place to stay to ensure the highest standard of care.

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## Creating a connection to nature

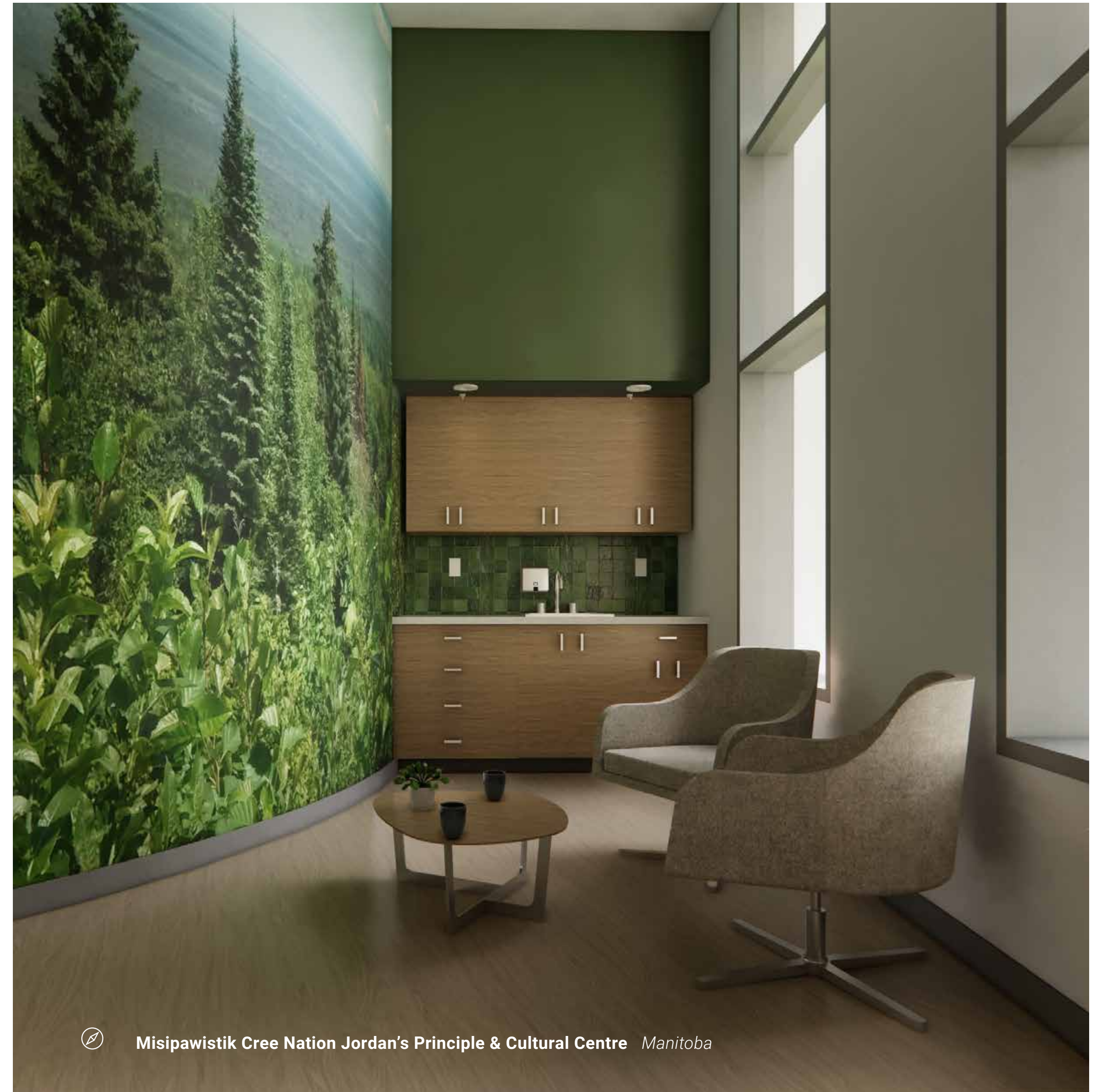
Creating a connection to the land and the environment through landscape architecture, environmental assessment, and land-based learning is critically important on Jordan's Principle projects.

We have the opportunity to design for nature-based learning, to create direct connections to the outdoors, and, when appropriate, use natural or nature-inspired materials.

This openness to nature even means that sometimes a building doesn't require a traditional front and back, but faces nature from different sides.

Our environmental assessment is essential for every facility before it is designed and constructed. We must make sure that we're not interrupting any local wildlife flora and fauna, migratory pathways, or archaeological sites or burial grounds. We must take all these possibilities into consideration.

Being open to nature and natural materials, however, doesn't necessarily mean that those elements will dominate the design. Each project is different and it's entirely possible that the community might prefer modern finishes to traditional or local aesthetic. We can't be presumptuous.





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### Highlight local languages and tradition.

Embracing the local languages and traditions of the communities and putting them at the forefront of the design is powerful. Some First Nations communities we visit want to reclaim, celebrate, and use local language and traditions that have faded into obscurity over time. They often introduce themselves in their local tongue, then switch to English to be more inclusive. Likewise, in their Jordan's Principle centers, they want to highlight the local language first in building signage and present English as a secondary option. They want to reclaim culture to empower their children to move forward.

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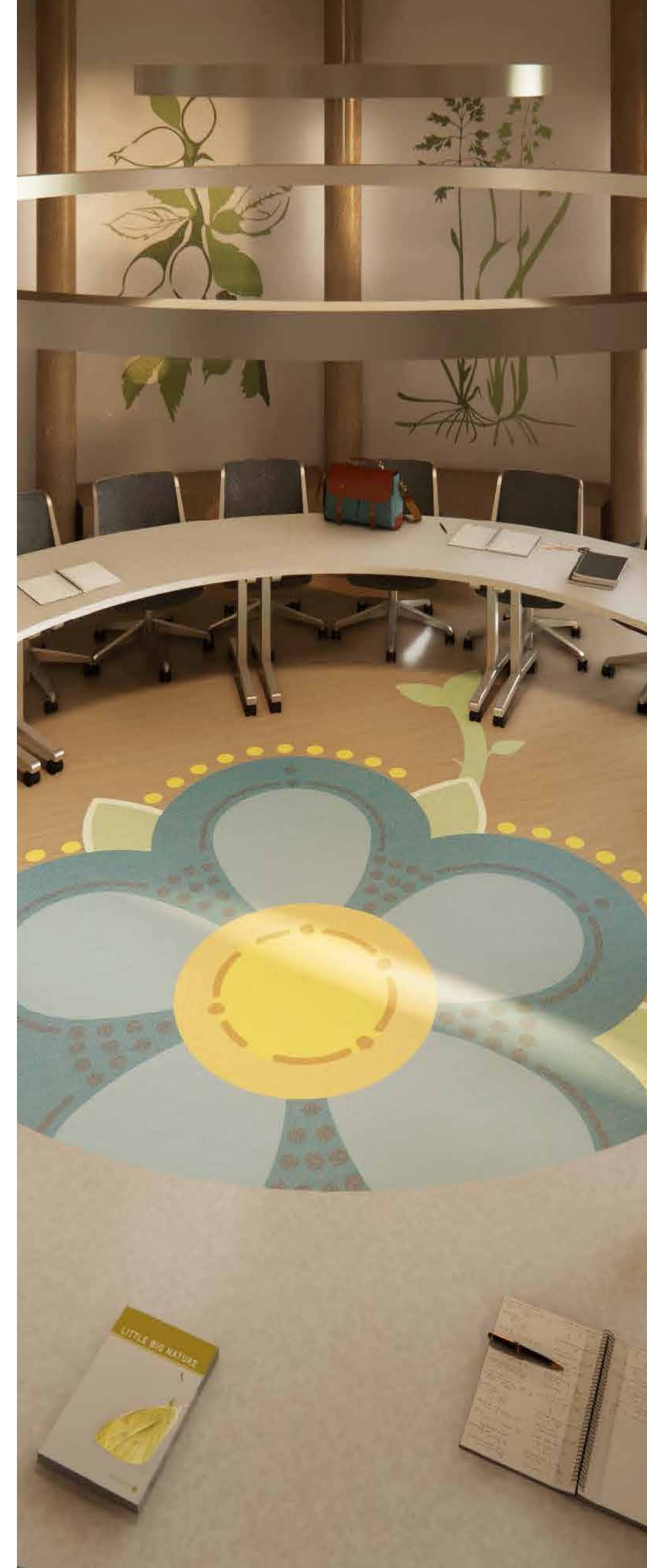
### Dream big, be flexible and ready for a phased approach.

These new Jordan's Principle buildings have yet to be built. The funding situation for these projects is still uncertain in many cases but remains encouraging. We need to be prepared to pivot or find economies so that we can complete projects within the uncertain funding realities.

We must be prepared for a phased approach in which early phases address the community's most pressing needs: daycare, for example, might come before a cultural centre.

Our vision for a Jordan's Principle in Nisichawayasihk Cree Nation includes an in-house daycare facility complete with shared indoor play spaces and a focus on enhancing cultural learning. While many of us designers may never know what it truly means to experience life through the lens of Jordan's Principle, we can contribute our efforts through a lens of allyship. In designing for Jordan's Principle, we can show the power of equitable design.

Jordan's Principle will support First Nations children for generations to come.



**SOUK  
XOUMPHONPHACKDY**  
MAA, OAA, AAA, B.EVDS

*Souk is a senior associate and architect in our Winnipeg, MB, Education Studio. He's dedicated his career to design that makes a community impact in education, healthcare, recreation and in projects for First Nations communities.*



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**Misipawistik Cree  
Nation Jordan's  
Principle & Cultural  
Centre**  
Manitoba





# Equitable design for school engagement

How designing learning environments for diverse communities can increase student engagement

BY PARUL VYAS





**Every year, more than 1.2 million students drop out of high school in the United States.** Canada has a similar dropout rate. For low-income and minority communities, the drop rate tends to be higher. And in the U.S., roughly 20% of students prematurely leave school because of mental health or psychiatric issues.



The Martha Raines  
Academy for Katy  
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District  
Katy, Texas

## Engagement crisis in education

Recent indicators suggest students drop out due to circumstances beyond their control. Remote education during the pandemic resulted in a slide in student engagement. Since then, a portion of the student population has found re-engagement challenging. Managing teen pregnancy, overcoming the language barrier, and working to support family present further challenges to engagement and performance, resulting in a continuing education gap.

When it comes to learning, one size does not fit all. Students come from diverse economic and cultural backgrounds, as well as different social and personal circumstances. They also differ in neurological and physical limitations. These characteristics directly impact an individual's learning capabilities. An awareness of these facets should inform the way we design the learning environment.

School districts are looking for solutions to increase engagement and counter the education gap. They are now introducing campuses with features to target diverse learners and help them overcome barriers to engagement. Their overarching goal is to reduce the student dropout rates in public schools while creating inclusive environments that provide for learning for all. That's where design comes in.

[Universal Design for Learning](#) is an educational framework based on the science of how humans learn. We use it as a tool in creating spaces that put those with unconventional needs and abilities at the center of the design process. UDL is intended as a guide for learning outcomes, assessments and curriculum that serve everyone, including students with specific learning needs or disabilities. As designers of learning environments, we should make extensive efforts to understand the fundamentals of UDL and translate them to the built environment.





## Designing holistic learning environments

Our design teams partner with educators, health and wellness specialists, along with key campus leaders to outline the characteristics that will make a holistic learning environment successful. What will it take to re-engage the students and ensure their future success? How can the learning environment be supportive, inclusive, and authentic? There are a number of key strategies that designers can weave into the school design to provide a sense of belonging and enhance re-engagement.

We've found the key factors, supported by research, to be essential considerations when we design educational spaces for diverse populations.

## Stimulation

Engaged, hands-on learning is our goal. But as designers and educators, we should understand that research shows the amount of stimulation introduced in the learning environment is very critical (*Aug 2022, Rachel Green, Overstimulation in ADHD*). Individuals who experience ADHD, for example, are particularly sensitive to stimulation.

Our designs can ensure adequate daylight is allowed within the classrooms with colors that create an upbeat atmosphere while not intimidating neuro-sensitive students and provide opportunities for experiential learning. We can create a balance of color, texture, and natural light that allows for concentration.

At Katy ISD's Martha Raines Academy near Houston, TX,

natural light filters into the classroom as well as the learning commons where most students gather for group or solo work. Muted colors of gray and green give the campus an inspiring higher education feel. Our design approach for Goose Creek CISD's Special Olympics Center focuses on textures that help students with physical disabilities navigate the building. The neurological characteristics of colors and their impact on students' senses should be considered and understood by classroom designers as well as the educators who decorate the room. Optimum stimulation is imperative for a healthy mind and body.

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## Access to the outdoors and fitness

Facilities that offer fitness centers and access to the outdoors have been successful in engaging learners and preventing staff burn out. Numerous studies show the benefits of being outdoors for reducing stress, and that outdoor learning can benefit student's mental health.

Raines Academy has a fitness center that is open to all students and staff. The center is regularly used by students for a mental break or exercise. Teachers use the facility to take quiet time outs from their hectic schedules. Outdoor learning is a key focus for learning environments today especially for early learners for whom exploration and discovery is important for development.

Extensive research supports the value of out-of-classroom learning and learning in nature. At places like Roark Early Education Center in Houston, TX, an outdoor learning center provides opportunities for out-of-classroom learning; while at Elise Walker Outdoor Learning Center in Irving, TX, the natural environment provides a setting for hands-on science.

Inclusiveness also means that we design facilities that allow every learner to engage and participate as fully as possible. Goose Creek CISD's Special Olympics training center offers a platform to students with disabilities to participate and excel in their chosen sport.



## Access to support

Access to counselors, nurses, social workers, training and development resources, and equitable design is key to providing opportunity for diverse learners. When they are struggling with curriculum, personal issues, or health, students need adult counselling support. Studies show that access to above average counselors can benefit students from diverse backgrounds in likelihood of high school graduation and enrollment in college.

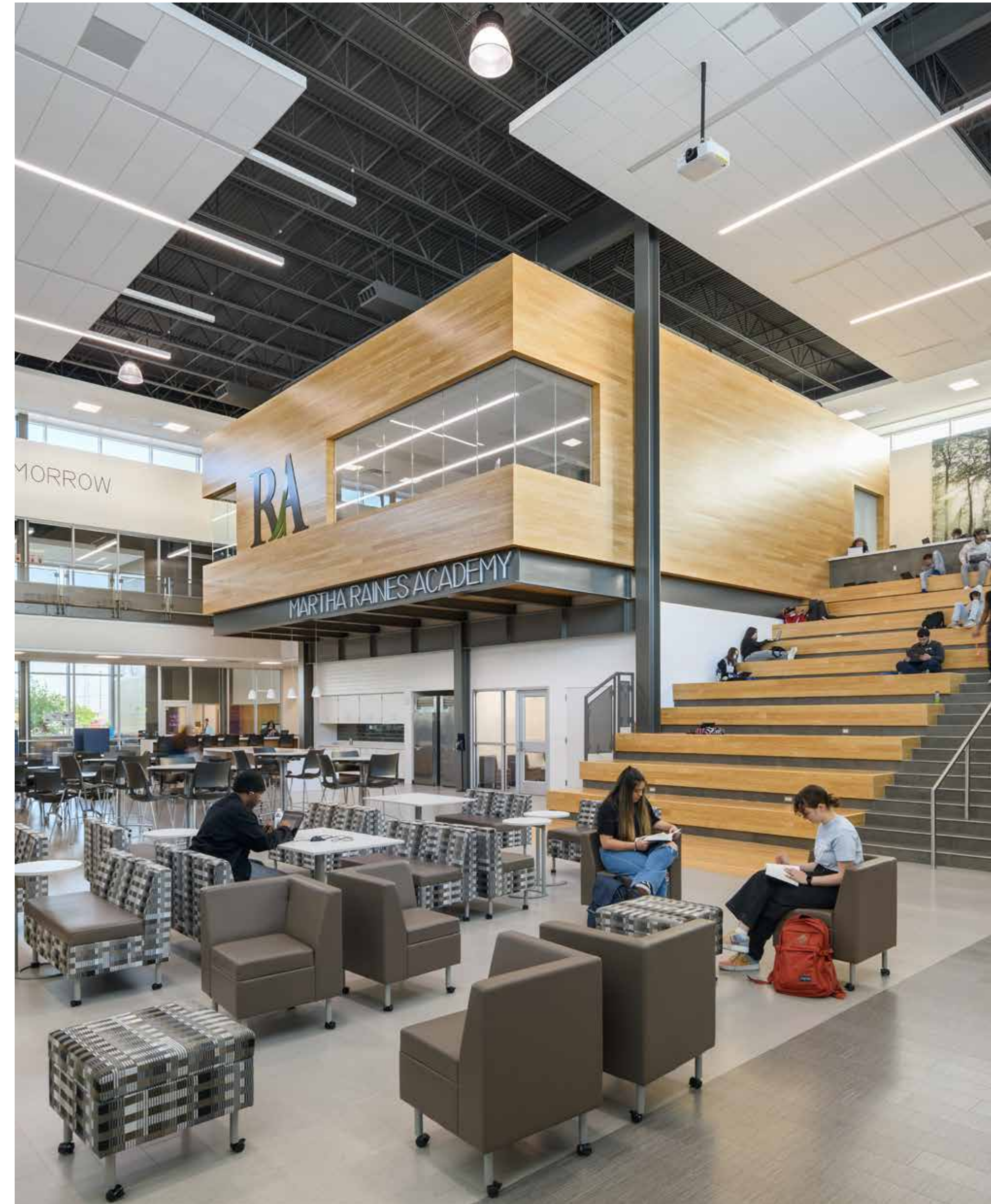
Centrally located, easy access counseling centers, like that of Raines Academy, encourage students to seek help when needed. Social workers also play an important role in engaging with students.

They're especially important in reconnecting those who have aged out of grade level classes to educational

opportunities. At Raines Academy and similar schools, there are organizations on campus which offer job training and vocational development for these students.

Raines Academy and similar alternative learning campuses offer flexible schedules for students to learn at their own pace. This helps address the generation gap and intimidation issues students may experience at a traditional campus. So, our design for Raines features a highly flexible, transparent space that supports the school's mission of supporting students that are at-risk of dropping out.


With the thoughtful application of these design considerations, learning environments can promote engagement.



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