Seattle Daily Journal of Commerce

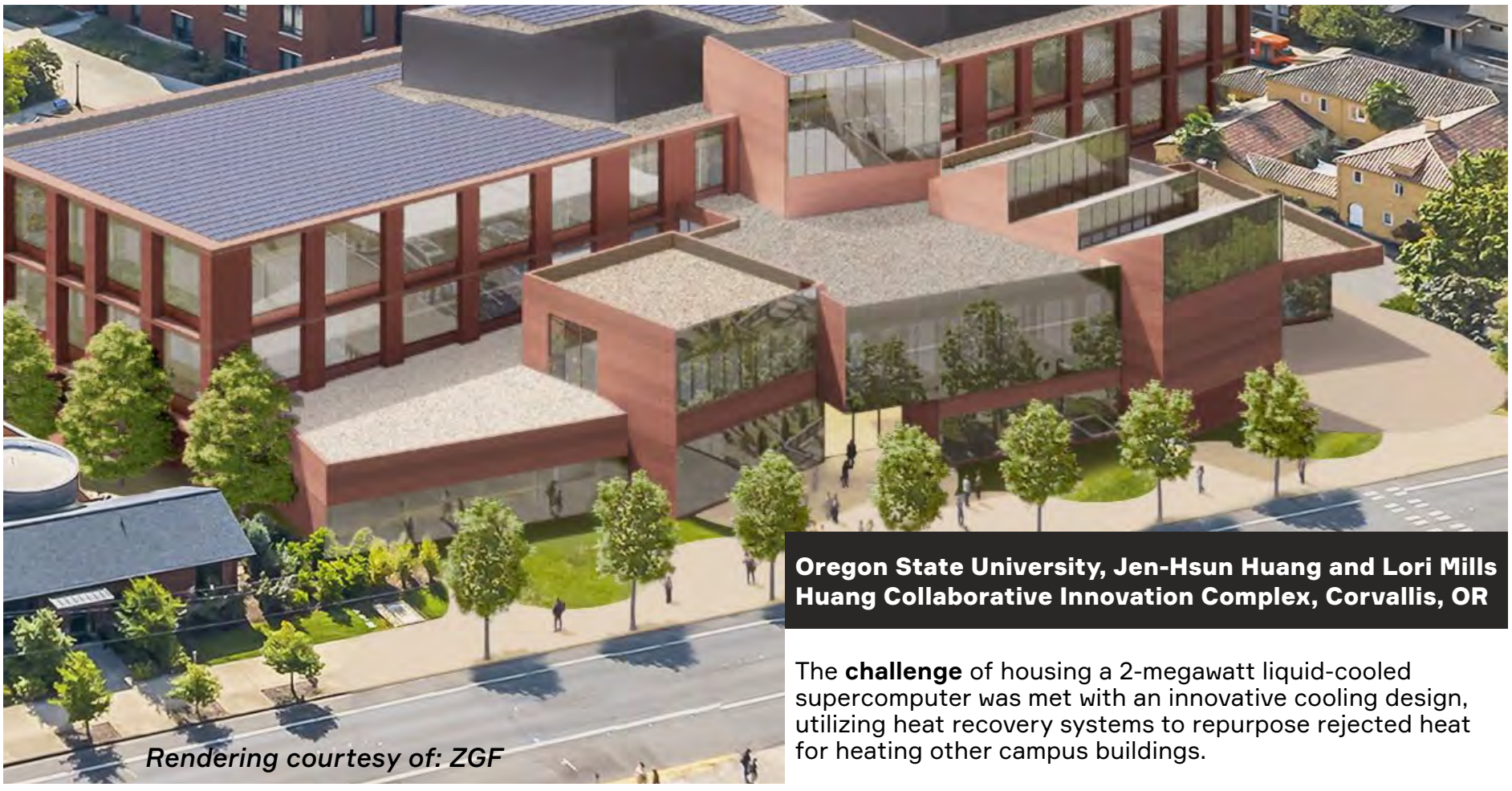
# Back to School


September 26, 2024

**Western Washington University, Interdisciplinary Sciences Building, Bellingham, WA**

This project presented an **opportunity** to implement various sustainable design strategies, including optimizing energy and water usage, incorporating sun shades and a green roof, reducing light pollution, and providing EV charging stations.

*Rendering courtesy of: Perkins+Will*



*Rendering courtesy of: ZGF*

**Oregon State University, Jen-Hsun Huang and Lori Mills Huang Collaborative Innovation Complex, Corvallis, OR**

The **challenge** of housing a 2-megawatt liquid-cooled supercomputer was met with an innovative cooling design, utilizing heat recovery systems to repurpose rejected heat for heating other campus buildings.

# WHAT DOES EQUITY LOOK LIKE IN A BUILDING?

**The newly renamed James Baldwin Elementary School in Northgate was designed with a focus on creating a non-institutional, flexible learning environment that supports vulnerable populations.**

BY KEVIN FLANAGAN & MATT RUMBAUGH
NAC ARCHITECTURE

Many school districts serve diverse populations with vulnerable students coming from trauma, food insecurity, housing insecurity and other challenges. These students often arrive at school without being ready to learn or to participate in their classes.

For many, especially those in a transient population, or families of recent immigrants or non-English speakers, the school environment is unfamiliar, confusing, or intimidating. School may be a family's first experience with a civic institution. Often these groups do not feel comfortable in school or represented by the building they are in. As districts consider how to best serve and support these populations, design of the built environment presents options that can change the dynamic for these students and their families.

As the previous Northgate Elementary School in Seattle started work on a replacement facility, it was clear that a "traditional" elementary school building was not the right response for this school. The school community included 11-25% of students experiencing homelessness with 40% transient; 73% of students qualified for free or reduced lunch, 35% were English Language Learners (students spoke 20 languages) with limited English proficiency, and a majority were from traditionally underrepresented groups.

A high percentage of students had Adverse Childhood Experiences (ACEs) – trauma directly or indirectly related to housing instability and living situations. This school community had a high number of students who were furthest from educational justice. Though the statistics sound intimidating, the focus was that these are still kids, with a lifetime of potential and opportunity ahead of them.

Mini-libraries and cozy seating nooks are found near classroom groupings and along curving hallways, providing easy-to-reach, easy-to-see places for a student to take a moment alone before rejoining their class.

PHOTOS BY BENJAMIN BENSCHNEIDER

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## ON THE COVER

An alternative phasing plan allowed students to remain in Juanita High School's existing building during construction, eliminating the need for portables and saving the Lake Washington School District approximately $5 million. PHOTO COURTESY OF CORNERSTONE

## DJC TEAM

SECTION EDITOR: SHAWNA GAMACHE • SECTION DESIGN: JEFFREY MILLER
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**"Our students are not defined by statistics except that they are 100% awesome."**

— Dr. Dedy Fauntleroy, planning principal of James Baldwin Elementary School (previously Northgate Elementary)

## COMMUNITY-DRIVEN DESIGN WITH A FOCUS ON EQUITY

While the school staff worked hard to foster a sense of welcoming, belonging and connection, many people commented on how the former building felt very institutional and often inhibited staff efforts. The planning and design of the new school presented an opportunity for its community, staff and students to reflect on their shared values and school culture in order to envision an inspirational and restorative school for their specific community.

Many factors can inhibit designing for equity, beginning with who is included in the process. Is it a broad, diverse group that offers differing backgrounds and perspectives? Does it include underrepresented voices? Does it include those who use the building every day? Community input processes often unintentionally create barriers that leave some groups underrepresented.

Issues such as the time of meetings, childcare, or other conflicts inhibit participation. Historically underrepresented people may have prior experiences of their interests being ignored; that would make them question the practicality of spending their time participating in a design process.

Sometimes "community" input is shaped by just a few individuals who have the availability and opportunity to be active in the process. The principal at this school made specific efforts to involve a wide range of voices, and to develop trust that all voices would be heard. To respond to the diverse needs of the school community, the design for the new school was heavily influenced by a collaborative process involving educators, parents and community members. Timeframes and format for input sessions were varied to allow opportunities for more voices.

## "WHAT DOES EQUITY LOOK LIKE IN A BUILDING?"

This central guiding question emerged early in the design process. Rather than focusing on equity as a concept, the staff, community and design team talked about the students and families at the school. There was a story shared about a girl who came to school with a blanket. Sometimes during the day, when the energy around

EQUITY — PAGE 4


The vibrant colors seen at the welcoming entry porch and on exterior window bays were inspired by African-American artists.

# EQUITY

CONTINUED FROM PAGE 3

her got to be too much, she would pull the blanket over her head and disappear for a while until she felt safe to come out again.

What if the design accommodated a space that provided the sense of protection and calming the blanket gave? What if the building allowed for lower scale interventions before disciplinary action was needed? Stories were shared by parents about how the old building gave a sense of exclusion because the institution, and front office in particular, were felt to be places of discipline rather than support. This led to investigations into how parents could feel more welcome at the school.

## AN INSPIRATIONAL AND RESTORATIVE LEARNING ENVIRONMENT

The newly renamed James Baldwin Elementary School is designed with a focus on creating a non-institutional, flexible learning environment that supports vulnerable populations. Features such as "blanket spaces" – comfortable, child-sized cubbies in classrooms and elsewhere – and the use of curved, meandering hallways with frequent openings to open learning commons remove any institutional feel. These also add to a sense of safety and discovery.

The design team and district reviewed research on students experiencing homelessness, which emphasized the need for schools to support the entire family to ensure students were well supported. This led to a Family Room being added to the entry area of the school, separate from the administration, designated as a welcoming space for parents and their children to access resources and support. Flexible to fulfill multiple needs, the room includes storage to provide clothing, food and other items that students and families might need, and a restroom with shower.

The school design takes advantage of research indicating that experiencing nature is restorative. Filled with daylight and views to outdoors, students experience nature from most areas within the school, including all classrooms, and have access to outdoor learning areas. "Mini-libraries" — small alcoves with seating, bookshelves filled with books, and interactive textures or details on the walls — are tucked around edges of shared areas and into the curving hallways throughout the school. These promote literacy, and offer a tapestry of spaces at different scales where students can interact, feel safe and find a spot to call their own.

## CULTURALLY RESPONSIVE AND INSPIRATIONAL ARCHITECTURE

In a school that serves students from multiple cultures and diverse backgrounds and experiences, culturally responsive elements are key to fostering a sense of belonging and inspiration among students. The colors used across the school are inspired directly by art from people of color. At the entry to each neighborhood of the school is a different constellation. The names for the constellations are identified as they would be in cultures from around the world, emphasizing that wherever we are from, we all live under the same stars.

A Wall of Luminaries, placed over the entry lobby and along one of the main curving paths on the second floor, celebrates those who have illuminated our world with their contributions to science, art, literature, sport, and through advocating for a more just, equitable, and humane world. Strategically placed mirrors within the photos allow students to see themselves among the luminaries — they become a future luminary.

While each community is unique, we have gained valuable insights into answering, "What does equity look like in a building," through the design process at James Baldwin Elementary School. Equity, in built form, means creating spaces, fostering experiences, and eliciting feelings in and with the building that support those students who need the most help. A building successful at these things is equitable – a place where everyone can thrive.

*Kevin Flanagan is the managing principal of NAC's Seattle office, and a skilled school planner and designer. Matt Rumbaugh is a principal architect in NAC's Seattle office, specializing in educational and institutional projects.*

Refuge spaces ("blanket" spaces) within the classroom provide comfortable, child-sized cubbies, and a sense of support and inclusion.

# NAVIGATING THE NUANCES: CONSTRUCTING PRIVATE VS. PUBLIC SCHOOLS

The distinctly different needs of independent and public school projects require different approaches in planning, communication and delivery.

BY MATT LUBBERS
BNBUILDERS

At BNBuilders, we've had the unique opportunity to oversee the construction of both private and public schools. Although the intention of creating safe and inclusive environments for students is the same, the paths we take to achieve this goal are distinctly different. Understanding these differences is crucial, as it directly influences how we plan, communicate and ultimately deliver these vital educational facilities.

BNBuilders is constructing a new, five-story building for Capitol Hill's Seattle Academy of Arts and Sciences, including classrooms, lab/shop space, video/sound studios, lunchroom, and admin space, expected to be completed next August.

IMAGE COURTESY OF BNBUILDERS

## FINANCING: THE FOUNDATION OF THE PROJECT

One of the most significant differences between private and public school construction lies in their financing. This difference shapes not just the flow of the project, but also the way we approach every stage of construction.

Public schools are typically financed through the sale of bonds or the passage of levies. Once these bonds are approved, the funding is secured, providing a guaranteed foundation for the project. This security allows us to focus on delivering the project within the established timelines and budgets. However, while the funding is guaranteed, it often comes with specific requirements and timelines that must be strictly adhered to.

In contrast, private school construction is funded through a more complex mix of private donations, fundraising efforts and lender financing. The challenge here is that funding isn't always fully available at the outset, necessitating a more dynamic and adaptive approach to planning.

We engage in detailed cash flow studies and collaborate closely with the school's administration to ensure that construction progresses in line with the flow of funds. This requires a thorough financial analysis to align our construction timelines with available funds, ensuring both timelines and budgets are meticulously managed.

The flexible nature of private school funding allows for creative problem-solving but also demands constant vigilance and adaptability to keep the project on track.

## STAKEHOLDER INTERACTION: FOSTERING PARTNERSHIPS

Another key difference is how we interact with stakeholders. In public school construction, our primary point of contact is often a capital projects director or a construction management firm. Additionally, we might work with the superintendent of the school district, and occasionally engage with community groups that include parents, teachers, and administrators. The decision-making process is usually straightforward, with a clear chain of command that streamlines communication and project progression.

In private school construction, the stakeholder landscape is more varied and often more involved. We typically interact directly with C-suite executives and, frequently, a construction management firm. We also find ourselves regularly engaging with the school's board of trustees, which is generally comprised of parents and other invested community members.

These stakeholders tend to be more involved throughout the entire project, requiring more frequent check-ins, board meetings and site tours. This high level of involvement can extend the project timeline, as decisions may take longer to finalize due to the more personal investment of those involved.

The interaction in private school projects demands a more nuanced approach, balancing the needs and expectations of a diverse group of stakeholders to ensure that everyone feels heard and valued throughout the process.

## PRECONSTRUCTION: FLEXIBILITY VS. FIXED PLANS

In private school construction, the preconstruction phase tends to be longer and more exploratory. There is often more room to consider various design options and building massing configurations, thanks to the flexible nature of private school funding. This allows us to engage in a more creative and adaptive design process, working closely with stakeholders to explore different possibilities and refine the project vision as we go.

Community input is also more heavily weighted in private school projects, with an emphasis on aligning the design with the values and expectations of the school's stakeholders.

In public school construction, the preconstruction phase is often streamlined and efficient. The process follows a clear, linear path from conceptual design to schematic design, with each stage building upon the last.

This structured approach, driven by the fixed nature of public funding and adherence to established timelines, ensures that the project stays on track and within budget. The consistency and predictability of this process allow for smooth execution, minimizing disruptions and enabling a focused effort to deliver a quality educational facility on time.

## EMBRACING THE DIFFERENCES

While the differences in financing, stakeholder interaction, and preconstruction processes require us to adapt our approach, they also offer us the opportunity to leverage our expertise in innovative ways. Ultimately, the key to success in either scenario is flexibility, creativity, and a deep understanding of the unique needs and expectations of the client.

*Matt Lubbers is a Project Executive at BNBuilders with 26 years of experience, specializing in ground-up school construction.*

# CULTIVATING FUTURE LEADERS IN TECHNOLOGY AND SCIENCE

## The fusion of STEAM education with physical design on campuses is key to nurturing the next generation of problem solvers.

For years, AHBL landscape architects and engineers have embraced sustainable design principles by integrating science, technology, engineering, art and math (STEAM) into our physical design on school campuses. By incorporating green stormwater infrastructure and nature play spaces in their school sites, these institutions reduce their carbon footprint and provide students with tangible examples of environmental science, which inspires curiosity and innovation among students to explore the many possibilities of a STEAM education.

BY SARAH SINGLETON -SCHROEDEL
AHBL

We do this through experiential stormwater gardens, storm ponds with trail systems and signage explaining the control. Our focus on building a sustainable education future is enhanced through partnerships with green school initiatives where partner schools and districts share best practices and perspectives on whole-system sustainability.

AHBL's landscape architects designed outdoor classrooms, learning gardens and a sensory path for Fife Elementary School.

PHOTO BY LARA SWIMMER

At Fife Elementary School, AHBL landscape architects designed a central learning courtyard featuring a stormwater collection system that conveys water across the courtyard to the play area, illustrating the local ecology of the nearby Puyallup River. The courtyard includes multiple "classrooms" for outdoor learning. Beyond the library, the playground features a synthetic play field, track, playground, sensory path and learning gardens where students learn about native plants and botany.

The greening of schools has been underway as cities and counties seek ways to increase access to open space and increase tree canopies in cities. Every neighborhood has a school nearby, so the greening of schools aligns with these objectives.

### SUPPORTING ALL USERS

In addition to STEAM, designing outdoor spaces

# AHBL INTERVIEWS JANE TESNER KLEINER

We interviewed Jane Tesner Kleiner, PLA, and owner of Nature + Play Designs, an expert in the Green Schoolyards movement.

**What has changed in the industry over the past five years or so?**

The roles for design professionals for Campus Planning & Design has changed significantly. For every project, campus planning and design needs to respond to the needs of all users, as schools tend to serve multiple goals for the community.

The role of the Green Schoolyards movement really took off during COVID as schools looked to continue education in safe environments, including outdoor classrooms. Along similar timelines, heightened awareness of DEIA (diversity, equity, inclusion and accessibility) as well as Climate Responsive Landscapes, opened the door to create spaces that everyone can access safely and reduce environmental impacts. Ongoing research shows the benefit of connecting people with nature. Even views of nature from school windows have proven benefits, such as stress reduction and improved academic performance.

**What inspires you to continue to do what you do?**

I have been collaborating with schools and school districts for over 25 years to rethink campus layouts and specific feature designs that support healthy living and learning both in the classroom and during out-of-school time. All you have to do is show up at recess or break time and talk to staff, teachers, and students to see how excited they get when everyone can have a diversity of play experiences and learning opportunities.

Research suggests that schools are the second most frequented space for kids, after their homes. One of my goals is to support student and staff health and well-being through inviting, safe, beautiful and nurturing environments. In neighborhoods where kids have little to no access to yards, parks, or natural areas, school play areas become a cornerstone of their day-to-day nature connections.

**How do you see the integration of STEAM into the physical landscape designs?**

The ecologist side of me is excited to introduce kids to nature using layers of native plantings and versatile gardens where they can dig, explore, and experiment with their ideas.

In Washington state, there are grants for Outdoor Learning, Outdoor School, and community partners to help students learn outside. Even a five-minute nature observation walk can benefit students. All curricula, including STEAM, can be taught outdoors if the landscapes are designed to inspire, and if staff and students can easily use the spaces to explore together.

that accommodate active and passive users of all abilities has been a standard we've been evolving for years.

When designing landscapes, it's crucial to consider the diverse needs of users, including those who are neurodivergent. By carefully planning and implementing inclusive features, we ensure that outdoor spaces are welcoming and accommodating for everyone. From wheelchair-accessible paths to sensory gardens, there are many ways to create environments that cater to a wide range of abilities. AHBL works to design outdoor spaces that meet the needs of everyone.

Neurodivergent users, including those with autism, ADHD, or sensory processing disorders, may have unique preferences and sensitivities that should be considered when designing landscapes. To create inclusive environments, consider implementing features such as quiet zones, textured pathways, and interactive installations that cater to a variety of sensory needs. By incorporating elements that promote comfort, safety, and engagement, we ensure that all users feel supported in outdoor spaces.

AHBL worked closely with Annie Wright staff to design a natural play area that invites exploration, curiosity and creativity.

PHOTO BY AHBL

As AHBL continues to integrate STEAM education into campus design, the impact of these innovative approaches is becoming increasingly evident. By embracing interdisciplinary collaboration, our landscape architects and engineers are partnering with architects and educational institutions to foster curiosity, inspire innovation and transform traditional learning spaces into hubs of creativity and discovery.

By ensuring that outdoor spaces are accessible and supportive of sensory needs, thoughtful design can make a significant impact on the overall usability and enjoyment of landscapes, creating spaces that are engaging and welcoming to all.

*Sarah Singleton-Schroedel is an AHBL landscape architect with nearly 20 years' experience. Jane Tesner Kleiner is the Owner of Nature + Play Designs, with more than 20 years of experience designing landscapes where everyone is included from the users to the staff to the maintenance department.*

# BLENDING OLD AND NEW TO BUILD A BRIGHTER FUTURE

## A closer look at Fairview Middle School's challenging rebuild, which involved constructing a new school next to the old one on a tight site and integrating both buildings into a cohesive, contemporary campus.

Over the last two years, Skanska has worked on the Fairview Middle School project in Bremerton, involving the construction of a new school adjacent to the existing one, while simultaneously renovating parts of the existing structure. This approach required that the school could continue operating during construction, with the old and new buildings eventually being integrated into a cohesive campus.

BY BRIAN URBAN
SKANSKA

Given the need to integrate new and existing construction, Fairview's progressive design-build approach – where the architect and design team work directly under the contractor and are hired as a team – helped enable efficient solutions to a challenging project. This approach allowed for early and continuous collaboration between Skanska, Bassetti Architects and other partners, streamlining both program and design development.

This project has involved significant demolition, renovation, and new construction during both the school year and summer breaks. This required the team to develop innovative solutions to address the project's unique challenges. Here are a few lessons we've learned.

### PLANNING, COMMUNICATION WITH PROJECT TEAM, SCHOOL

Mastering logistics and communication is essential when constructing a school next to one that's in session. Our work at Fairview Middle School required robust planning and communication to ensure synergy among the crews, faculty, students, parents and guardians, and the surrounding community. Flexibility in adjusting plans for unforeseen circumstances was vital, with contingency plans every step of the way.

To foster transparent communication, Skanska held weekly OAC (Owner, Architect, Contractor) meetings with the school's principal in attendance, ensuring alignment on construction and school timelines, helping to avoid conflict with school activities. Additionally, we utilized newsletters, emails, and social media to provide timely logistic updates to the community. We needed to be aware of everything from pick-up and drop off times to sporting events on campus to kitchen delivery schedules – even the repaving schedule of the county's nearby street work – so we could plan our work accordingly.

From a logistics standpoint, coordinating with subcontractors also was critical. Given the limited space on campus, subcontractors were required to comply with strict schedules to avoid obstructing student and bus drop-off.

### REDUCING NOISE, CONSIDERING ACADEMIC SCHEDULE

Managing noise and disruptions was essential to avoid disturbing the learning environment. Significant noise and vibration-making construction activities were scheduled outside school hours as much as possible to reduce interference, with major demolition and renovation tasks planned during summer breaks.

During the school year, the construction team implemented noise barriers and soundproofing measures to mitigate disruption. Coordination with the school ensured that any particularly loud activities were communicated in advance, allowing the school to make necessary adjustments. Additionally, the school informed us of major testing periods so we could avoid noise disruption during these sensitive times. This proactive approach minimized the impact of construction sound on the learning environment.

Additionally, the team utilized summer break to perform extensive work on the largest and most disruptive areas, such as the orchestra rooms. These spaces required significant work, including removing old concrete risers and adding large windows in the CMU walls to bring in natural light.

### CONTINUITY OF ESSENTIAL SERVICES DURING UPDATES

General contractors must ensure continuity of essential services like water, internet and power in occupied buildings while construction is underway.

During summer break, the team installed and tested all critical systems such as HVAC, plumbing, and electrical services to ensure these essential systems operated smoothly, avoiding disruptions that could have significantly impacted the school's activities.

Modernizing existing facilities brought its own set of challenges. For instance, the old fire alarm system at Fairview Middle School needed to be updated while keeping the existing system operational. Careful planning guaranteed that there were no periods when the building was without a functional fire alarm system. Upgrading existing facilities also meant dealing with unexpected issues, such as outdated wiring that needed replacing to meet current building codes. These efforts were essential to bring the facilities up to current standards and enhance the overall environment. The project team worked closely with the school to schedule upgrades during times that would cause the least disruption.


Mass timber beams were used in Fairview's Commons to reduce the building's environmental footprint, and offer biophilic benefits to students and teachers.

PHOTOS COURTESY OF SKANSKA USA

### SAFETY PROTOCOLS ARE ESSENTIAL

Safety and security are paramount. At Fairview Middle School, the construction area was securely separated from the school with fencing to prevent any interaction between students and construction crews. Skanska trained the construction crew on safety protocols and emergency preparedness to ensure they were well-equipped to handle any incidents.

During construction, safety protocols were strictly

enforced, with regular inspections to ensure compliance. The construction team coordinated with the fire marshal to establish clear emergency access routes and conduct regular drills. Temporary walls and clear signage were used inside the building to separate construction areas from occupied spaces. By maintaining stringent safety measures, Skanska safeguarded the well-being of the community.

## HIGHLIGHTING BIOPHILIC DESIGN TO INSPIRE WELL-BEING

Sustainable design methods, such as the use of mass timber, can create inspiring environments that boast many benefits. Mass timber components, such as a CLT (Cross-Laminated Timber) structure in the building's common areas at Fairview Middle School, reduces the building's environmental footprint, and offers biophilic benefits, creating healthier and more inspiring environments.

During the design phase, Skanska collaborated closely with the district to ensure that both the new building and the renovated spaces incorporated similar modern design elements, making the renovated areas feel fresh and desirable. This included adding new windows, updating flooring, and using contemporary materials and finishes. The goal was to create a cohesive and inviting environment that blended seamlessly with the new construction, enhancing the overall appeal and functionality of the entire campus.

This drone shot illustrates how tight the Fairview project site was with the existing school, athletic fields, city streets, nearby homes and bus loading zones.

## LOOKING FORWARD

This project highlights the complexities of building next to an operational school. Through meticulous planning, robust communication and innovative solutions, the construction team successfully overcame these challenges, delivering a transformative school that will make a lasting impact on the Bremerton community.

*Brian Urban is an account manager at Skanska with more than 30 years of experience in the industry, providing strategic leadership to the company's K-12 practice.*

Outdoor classroom modules can be clustered or distributed depending on available open space. The larger module at the center houses a shared kitchen and restrooms.

RENDERINGS BY CAST ARCHITECTURE

# HYBRID OUTDOOR PRESCHOOLS: A NEW SOLUTION FOR THE CHILDCARE CRISIS

## A prototype for a simple support structure enables nature-based preschools to remain open rain, shine, or smoke, allowing them to be more widely and equitably adopted.

BY FORREST MURPHY
CAST ARCHITECTURE

In September of 2020, as virtually every other school and child-care facility in the State remained closed due to the Covid-19 pandemic, seven new early learning programs opened for business. Located from Ellensburg to Olympia, the first full-day outdoor preschools in the country were licensed under a pilot program of the Department of Children, Youth, and Families (DCYF). With outdoor gathering considered low-risk for viral transmission, the program proceeded unhindered by the widespread shutdown of traditional early learning centers.

Outdoor preschools — sometimes known as "forest," "nature," or "farm" schools — are growing in popularity throughout the United States. A growing body of scientific literature demonstrates significant benefits to young children from nature-based education. Some of these evidence-backed benefits are seemingly self-evident, such as increased physical activity correlating with lower levels of childhood obesity and enhanced motor-skills development. Constantly changing weather is a direct stimulus that develops resilience and self-regulation. Regular exposure to nature is widely recognized as reducing stress levels in people of all ages.

Research suggests outdoor preschools provide a broad range of less obvious developmental benefits to children as well. Studies have connected nature-based education in young children to enhanced brain development; improved academic performance and educational outcomes; improved executive function; enhanced communications skills, emotional resilience, and socio-emotional health. Spending more time in natural environments has been shown to help reduce the negative symptoms of ADHD, and to provide therapeutic benefits to neurodiverse children

The state of Washington — like much of the United States — is facing a childcare crisis. In King County, the average cost of full-time preschool care for one child is 35% of the median family income. For nearly half of unemployed parents in Washington, finding child care is a barrier to seeking full employment. Already acute, the shortage of affordable child care was further exacerbated by the Covid-19 pandemic. In much of the state only 30-50% of estimated demand for child care is currently being met. Large areas of both eastern and western Washington continue to be "extreme childcare access deserts."

A major limitation on the quantity of new childcare capacity is the high cost of construction and the long-time horizon for building projects. Rapidly increasing the number of outdoor preschools has been proposed as one strategy to address the ongoing childcare shortage. There is almost unlimited potential to rapidly deploy low-cost outdoor classrooms at the neighborhood level wherever there is demand. Even the smallest parks and

Fiddlehead Forest School, located in Seattle's Washington Park Arboretum, was one of the original programs enrolled in the Full-Day Licensing Pilot Program.

PHOTO BY FORREST MURPHY, CAST ARCHITECTURE

green spaces provide ample opportunities for exploration and learning for young children.

Perhaps the biggest challenge for significantly increasing the capacity of outdoor preschools is the most obvious one: they are outdoors. Dealing with variable weather is an inherent part of nature-based education, but extreme heat or cold can make full-day programs impractical for both children and educators. Fully outdoor preschools may need to close suddenly in the face of high winds, thunderstorms, or poor air quality during wildfire season.

For many families with non-flexible working hours, particularly lower-income families, this level of unpredictability is a dealbreaker. All of the successful full-day outdoor programs in DCYF's pilot program had access to some type of indoor facility as a backup when invoking their "extreme weather protocol," such as an adjacent community center gymnasium, an existing preschool building, or in one case, an unused parks department greenhouse. These "backup" spaces allow outdoor schools to match the reliability of traditional indoor programs.

Working with Maddie Cole, director of Fiddleheads Forest School, Seattle firm CAST architecture has developed a prototype for a very simple support structure that would bridge this gap, making it feasible for nature-based preschools to be more widely and equitably adopted. Our analysis shows that ongoing operational costs and net income are roughly similar between the two models. However, the average initial capital cost per child to set up the proposed hybrid outdoor schools is only 25-50% that of comparable indoor programs. A rollout of hybrid outdoor schools at scale by a school district or umbrella non-profit agency could serve many more children for the same initial investment.

Minimalist classroom modules provide a home base for naps, meals and play without losing the essence of the outdoor preschool experience.

The basic module of the design is a pavilion-like structure with roll-up doors allowing it to become fully enclosed during bad weather and to prevent unauthorized use outside of school hours. It is sized so that when buttoned up, it exactly meets DCYF's minimum area requirements for child care, allowing it to operate continuously through most weather events. Full climate control is not required; outdoor schools regularly operate at temperatures between 20 to 90 degrees. Closed doors moderate the extremes of temperature, and can be supplemented by low-capacity radiant heat panels or portable air conditioning units if necessary.

An outer portion of the shelter provides covered outdoor space for everyday classroom activities over a dirt or wood fiber floor. An inner portion of the shelter, enclosed on three sides, accommodates portable napping cots on a raised floor. In one scenario, the shelter can include screening for portable toilets, and hot meals can be provided by an off-site kitchen or third-party provider. Alternately, where utilities are available, a slightly larger structure can accommodate fully-plumbed restrooms and a simple on-site kitchen serving as many as three classroom shelters.

Importantly, the structure is small enough to be placed singly or in unobtrusive groups in many public green spaces. The design is flexible enough to be repurposed as a picnic shelter or for other uses if desired in the future.

A white paper containing additional details on the prototype design, financial analysis, and additional references is available for download at: https://www.castarchitecture.com/early-learning

*Forrest Murphy is a principal at CAST architecture, recognized as a regional leader in design for early childhood education.*

# A TRANSPARENT LOOK AT SAFER SCHOOL DESIGN

**While individual security measures like locking hardware, secure entry vestibules and video surveillance can contribute to enhanced safety and security, project teams are encouraged to consider how these pieces fit together in a comprehensive approach.**

According to the National Center for Educational Statistics (NCES), approximately 80 percent of school buildings were built prior to 2000. This may partially explain why the American Society of Civil Engineers gave schools a D+ in the 2021 Infrastructure Report Card — stating most needed to update or replace multiple building systems.

BY DEVIN BOWMAN
TGP

As schools begin making these recommended updates to their buildings, they may also consider improving their campus' level of security. For these project types, there are several ways to achieve a safer school design, including using secure entry vestibules and improving access control throughout the built environment. While it might be difficult to determine which security measures are best suited for a particular campus, project stakeholders can look to best-practice recommendations and real-world examples as guides.

## RECOMMENDATIONS FOR SAFER SCHOOL DESIGN

The Partner Alliance for Safer Schools' (PASS) Safety and Security Guidelines for K-12 Schools remain the most comprehensive set of information available for securing schools — from the district level to the classroom. Among policies and protocols, PASS K-12 recommendations include architectural features like code-compliant locking hardware, secure entry vestibules, video surveillance and applying crime prevention through environmental design (CPTED) principles.

A renovation of an elementary school in Oregon City provides a key example of how elements within the PASS K-12 guidelines can help enhance a school's safety and security. The main office and secure entry vestibule in this elementary school are of note.

Relocated and reconfigured to improve monitoring efforts, the main office shares a wall with a secure entry vestibule. This wall and its door were specified with transparent, forced-entry rated glazing, which allows staff to visually assess visitors and control access.

In addition to supporting clear sightlines between multiple areas, the forced-entry rated glazing can resist physical attack for up to 12 minutes. As such, it provides a barrier that gives occupants time to alert first responders and take appropriate action during an emergency.

## WHEN FIRE SAFETY AND SECURITY GOALS OVERLAP

While the forced-entry rated glazing components support enhanced security, the specifiers for the Oregon school also needed to meet local building codes. Specifically, they needed a system that could maintain free egress in the event of a fire. The forced-entry rated glazing of the door and shared wall also achieves fire ratings that fully comply with local code requirements.

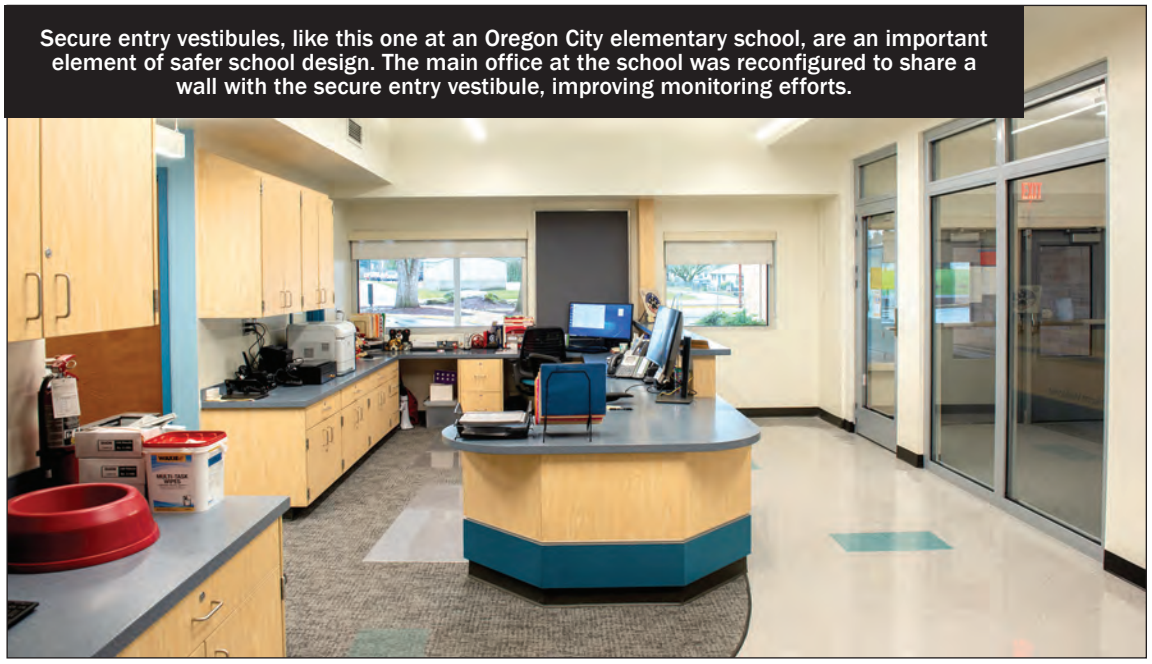
Although the particulars of this project may not translate to every school, the need to comply with code requirements remains central to safer school design. Given the National Fire Protection Association (NFPA) estimates there to be over 7,000 fires on school grounds annually, protecting egress is as important as controlling access in terms of occupant safety and security.

Areas where multiple protective concerns overlap can occur throughout a school building. For these spaces and designs, it is important project stakeholders choose systems that can achieve security goals without compromising code compliance.

## THE IMPORTANCE OF COMPONENT COMPATIBILITY

Building a multifunctional, fire- and security-rated glazing system may seem as simple as marrying fire-rated glass with security-rated components, but, in reality, it is much more complicated due to the various materials involved and the lack of testing protocols for multifunctional systems.

Many of today's security-rated products are plastic-based. As such, they can burn quickly and intensely, potentially surpassing the temperature rise and max temperatures used in the fire test. This can reduce or entirely negate an assembly's ability to safeguard occupants during a fire. Currently, there are no codes or set protocols for testing assemblies meant to provide multiple protections simultaneously.



Secure entry vestibules, like this one at an Oregon City elementary school, are an important element of safer school design. The main office at the school was reconfigured to share a wall with the secure entry vestibule, improving monitoring efforts.

PHOTOS COURTESY OF TGP

For these reasons, it is important to specify systems that use components known to be compatible or

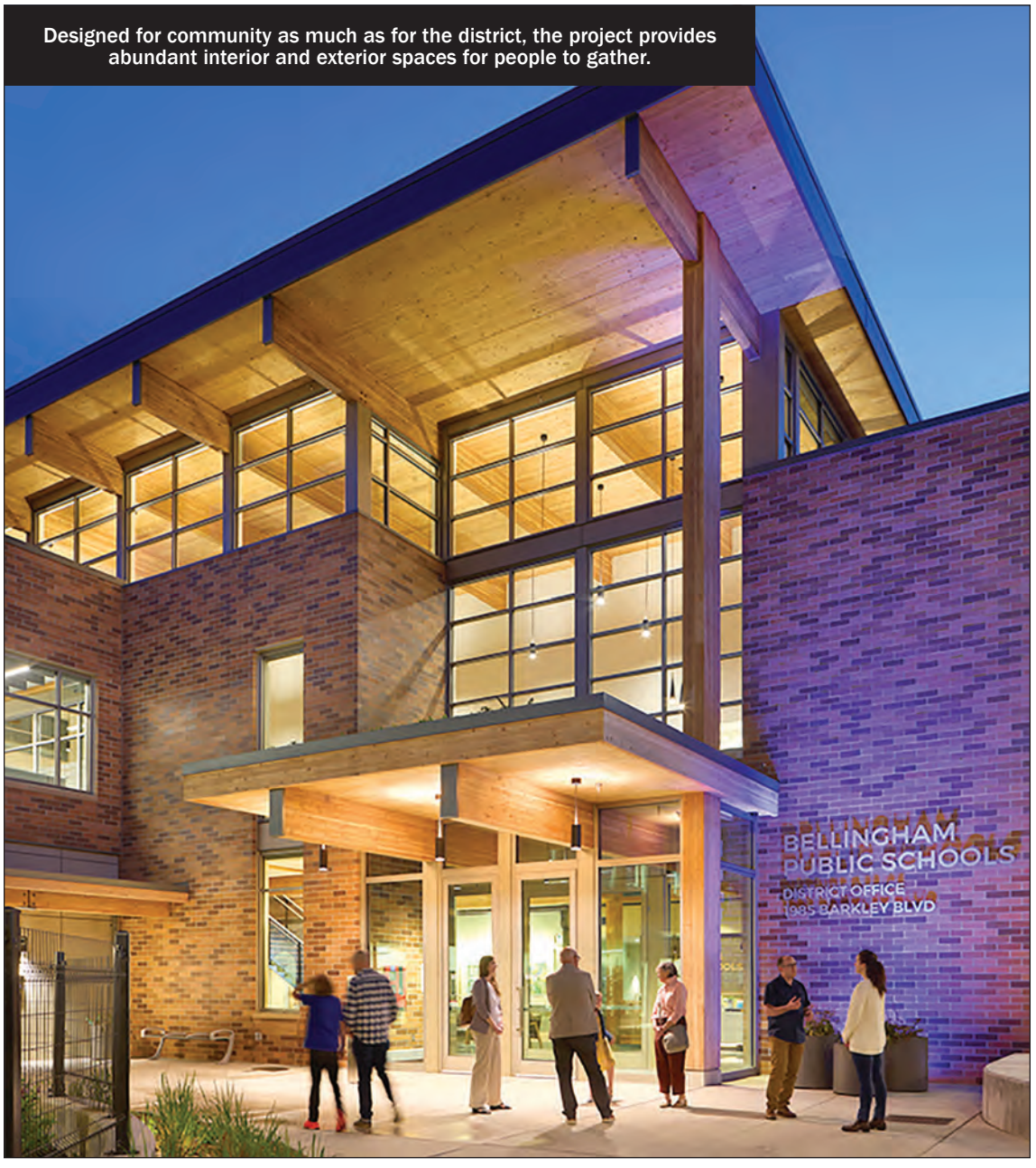
SAFER SCHOOLS — PAGE 25

# DESIGNING TO PROMOTE A MOBILE WORK ENVIRONMENT, SUSTAINABILITY AND COMMUNITY

## Bellingham Public Schools' new administrative office building empowers employees to work anywhere, promotes health and welcomes the local community.


The building's south side meets the street with ample glazing, designed to create an engaging presentation to pedestrians and passersby.

PHOTOS BY BENJAMIN BENSCHNEIDER




Designed for community as much as for the district, the project provides abundant interior and exterior spaces for people to gather.

When Bellingham Public Schools (BPS) approached RMC Architects to design their new administrative office building, they had several key goals: to create a mobile, open-office work setting; to promote sustainability, health, and well-being within the building; and to ensure that the result was an environment that not only welcomed the community but demonstrated the district's stewardship of community assets. In addition to the open workspaces, the three-story, 53,000-square-foot building includes multiple professional learning and conference rooms, an early learning center, a wellness room, a bike storage area and a central common space with a cafe. The building supports 11,000 BPS students, their families and all district employees.

BY JEFF MCCLURE
RMC ARCHITECTS

### A MOBILE WORK ENVIRONMENT

BPS was formerly located in a historical elementary school near Bellingham's downtown core. The 1908 building lacked sufficient daylight, suffered from major structural deficiencies, and could no longer support the district's needs. The relocation of their office to the new building in Bellingham's Barkley District provided an opportunity for BPS to rethink their operations. The first was to go paperfree to eliminate the need for excessive storage spaces, and the second was to make all technology mobile. From cell phones to laptops, employees are now free to work virtually anywhere they choose in the building. The open office plan is arranged in pods of four workstations, each with a table in the center for collaboration. However, community spaces, private offices and most of the meeting rooms are designed to be interchangeable for workspaces and for when employees need privacy.

While transitioning staff from an old space with individual offices to a new, open office environment can at times be challenging, we found that an inclusive process mitigated any concerns BPS staff had. Along with our interior designers, Walker Group NW, we brought in furniture samples, stand-up desk options, and a variety of chairs for people to test and select. One of their biggest concerns was how noisy an open office environment might be. Working closely with acoustical designers at Coffman Engineers, we were able to alleviate these concerns by creating an integrated lighting and acoustic panel system that mitigates noise efficiently from station to station. Overall, this kind of attention to detail early on made the transition seamless for BPS employees.

### SUSTAINABILITY, HEALTH AND WELLBEING

Health and wellbeing were a driving factor in the design, and RMC went through a design charrette with the district to incorporate aspects of Fitwel standards into the building. Fitwel, a commercial building rating system, provides guidelines on how to operate healthier buildings with criteria that includes more than just green building design. Some of the Fitwel categories are based on walkscore, views, stairs as an option to elevators and access to alternate forms of transportation — all criteria that the new BPS offices meet.

The project's Barkley District location made it easy to fulfill the walkscore criteria. The pedestrian-friendly area is within walking distance to many neighborhood eateries, shops, and businesses. Bike lanes also play a front and center role in the Barkley District, and the project was designed to provide plentiful bike storage as well as showers and locker rooms.

The architecture invites the building users to opt for stairs over the elevator. Surrounded by natural light and cross-laminated timber (CLT), along with the generous use of space, the feature stairway is the primary point of circulation in the building.

The implementation of CLT was a big step towards the district's sustainability, health and wellbeing goals, and can act as a prototype for inclusion in future school designs. From a sustainability standpoint, wood reduces carbon emissions; supports biodiversity; improves forest and human health; is more flexible, efficient, and cost-effective in design and construction; and is more fire and earthquake resistant than other building materials.

There are a range of psychological benefits wood brings to health and wellbeing, including lowered blood pressure and heart rate, increased activation of the parasympathetic nervous system, a calming perception of warmth, expressed visual preference for the space, and a feeling of connection to living things. In short, the use of CLT created a warm, desirable environment for both staff and visitors.

By locating the private offices away from the perimeter, the design facilitates maximum and equitable use of daylight and views for all. Even the interior walls for the offices are glass storefronts. Other energy savings measures include the elimination of natural gas in this all-electric building, a first for the district. Heat pump technology provides heating and cooling for the entire building and offers myriad options for control, including individual control in the open office spaces, lighting controls, and plug-load controls (where non-essential technology automatically shuts off at a certain time each day). Vehicle charging stations support the district's fleet of electric vehicles and are available for employee use when on the clock.

## A BUILDING FOR THE COMMUNITY

Public schools, including administrative and support facilities, are considered community assets. The district felt a keen responsibility to honor this with an inviting building that welcomed everyone and put people at ease. We designed the entries to feel like community spaces — the warmth of the CLT and light-filled interior animated by glass that allows visitors to see the inner-workings of the building assist in creating this ethos. The innovative addition of a café furthered the community vibe, and people who shop and work in the area frequent it along with BPS employees. Comfortable furnishings and artwork from children throughout the district complete the space.

The project includes Professional Learning Centers on both the main floor for BPS staff and on the upper floors, which are available for community use. The space has direct rooftop deck access and the CLT construction is on full display.

Ever mindful that the project is owned by the community, the design respects this in its simplicity. Using enduring materials and calling in natural resources like wood and daylight as primary design elements helped us honor the budget while creating something both contextual to our city and of high quality as the district's home for the next century.

*Jeff McClure co-established RMC Architects in 1986 and focuses his practice on projects that build community through context-sensitive design.*

Surrounded by natural light and cross-laminated timber, the feature stairway is the primary point of circulation in the building.

Johnson Science Building connects with the forested natural landscape.

PHOTO BY MATTHEW BISSEN, INTEGRUS ARCHITECTURE

# A 'RADICAL WELCOME' TO SCIENCE THROUGH ENGAGING FORM AND FUNCTION

**Pierce College desired its new Johnson Science building to move the needle toward change, supporting inclusive access to STEM education, environmental responsibility and meaningful placemaking.**

Students heading back to school this fall on the Pierce College campus in Puyallup will receive a 'radical welcome' from the new Johnson Science Building. The compact, state-of-the-art structure named for former Pierce College Chancellor Michele Johnson offers an inviting and environmentally responsible structure that blends seamlessly with the forested landscape. But it's not just a new building. It embodies the progressive school's inclusive philosophy of 'radical welcoming' — that in a diverse community of learners, everyone should be made to feel welcome, as innovative and engaged learners not only enrich themselves, but also their local and global communities.

BY MATTHEW BISSEN
INTEGRUS

Beyond programming needs, project teams are often asked to consider aspects of client 'mission, vision, values.' As the team engaged with academic stakeholders to consider the form and function of their new building, a key question emerged to guide the design. How can a building supporting scientific innovation and excellence tangibly extend the school's mission, to present a 'radical welcome' to science. To draw students to disciplines that have historically been a difficult reach for so many. Also to be an appealing environment for everyone, whether they're pursuing a STEM degree or drawn just to study and gather. Which design factors contribute to a better academic and social experience, reinforcing the belief that everyone deserves to thrive?

## INCLUSIVE ACCESS TO STEM EDUCATION

For nearly 60 years, Pierce College has been a community-based learning institution, nationally awarded for its commitment to student success on multiple campuses across Washington state. They have recognized the need for inclusive and equitable STEM education to provide opportunities for a broad range of students, and to meet ever-increasing demand for a science-based workforce. Reducing barriers of entry is a focus at Pierce on multiple levels — from curriculum and pedagogy development, outreach efforts, funding and its built environment.

The design of this space is not neutral. The collaborative design build team including Absher Construction determined to counteract how science spaces are typically perceived, organized in a way to make science feel less intimidating, especially for students that might be curious, but unsure if they belong. Not an easy feat, when accommodating teaching laboratories and classrooms for physics, chemistry, biology, as well as earth and space sciences. The design also prioritizes the adjacency of science-oriented spaces to approachable and engaging places. While much has changed across colleges and universities to address these dynamics, the Pierce leadership wanted their new building to definitively move the needle toward change supporting inclusive access to STEM education, environmental responsibility, and meaningful placemaking. A strong focus of the design was to ensure the structure extends a 'radical welcome' today, and for years to come.

## SUPPORTING PEER-TO-PEER COLLABORATION

Peer-to-peer learning is at the heart of the Johnson Science Building. While many spaces have limited access during off hours due to safety requirements, each of the three floors in the 55,000-square-foot structure is organized around open spaces designed for students to workshop ideas, share their thinking, relax and just be together. These spaces are visually linked or next to classrooms and labs, signaling that collaboration is central to science and there's room for everyone to engage.

The building offers a range of advanced technology resources available to all students throughout the day and in the evening, welcoming not just science students but anyone who needs a place to study or unwind. The intentional use of various types of seating, vibrant colors and plenty of natural light creates a receptive environment.

During the design process, students expressed a desire for 'perch' spaces — small, dedicated areas where they could take a quick break without feeling isolated. Responsively, each floor of the building features one or two areas with built-in banquette or bistro-style seating within large open spaces, enabling students to recharge between classes.

## ENHANCING FACULTY-STUDENT INTERACTION

An important goal of the building is to increase student access to faculty. The design team was guided by another simple, yet powerful question. How many doors stand between students and faculty? The answer here: as few as possible! Strategically placing faculty offices in small clusters throughout the building adjacent to collaboration spaces makes faculty more visible and accessible to students. It also fosters interdisciplinary connections among faculty members.

The transparency of the Johnson Science Building presents a welcoming front to the campus quad.

RENDERING COURTESY OF INTEGRUS ARCHITECTURE

## MAKING AND EXPERIMENTATION

One of the most exciting aspects of the new building is the introduction of 3,000 square feet of maker and fabrication labs, a first for the Puyallup campus and available to all students. Located near the building entrance, the labs present a maker-based gateway into the building. Large windows offer passersby a glimpse into the creative process and hands-on-learning, effectively inviting students from other disciplines to come in and explore. Placing the labs in such a prominent location also sends a clear message that making and experimentation are central to campus culture and innovative science.

## ENVIRONMENTAL RESPONSIBILITY AND PLACEMAKING

The Johnson Science Building is not just about what happens inside its walls; but also, about respecting and preserving the incredible natural environment that defines the Puyallup campus. The building was designed through the Progressive Design Build delivery model to meet LEED Gold standards. This fostered the integration of high-performance design that goes beyond traditional benchmarks and greatly reduced the volume of carbon emissions and energy usage from a typical baseline lab building. Its projected EUI of 78 is 61% of a typical lab building, and a notable reduction from the AIA 2030 lab baseline EUI of 220. The building is also solar-ready.

A key design driver was preserving the mature stand of trees and woodland ecology that defines campus character. Minimizing the building's footprint reduced clearing and grading required and respects the natural landscape, which plays a critical role in stormwater management and water quality. The design also utilizes elements of what was required to be cleared in the new landscaping by incorporating tree stumps for nurse logs, as is found in a natural landscape. This area is accessible as both a living environment and a learning space for studying flora and fauna. The landscape is intended to be directly used by the biology program, as an ecological extension of science studies.

## A THOUGHTFUL INVITATION

The Johnson Science Build-

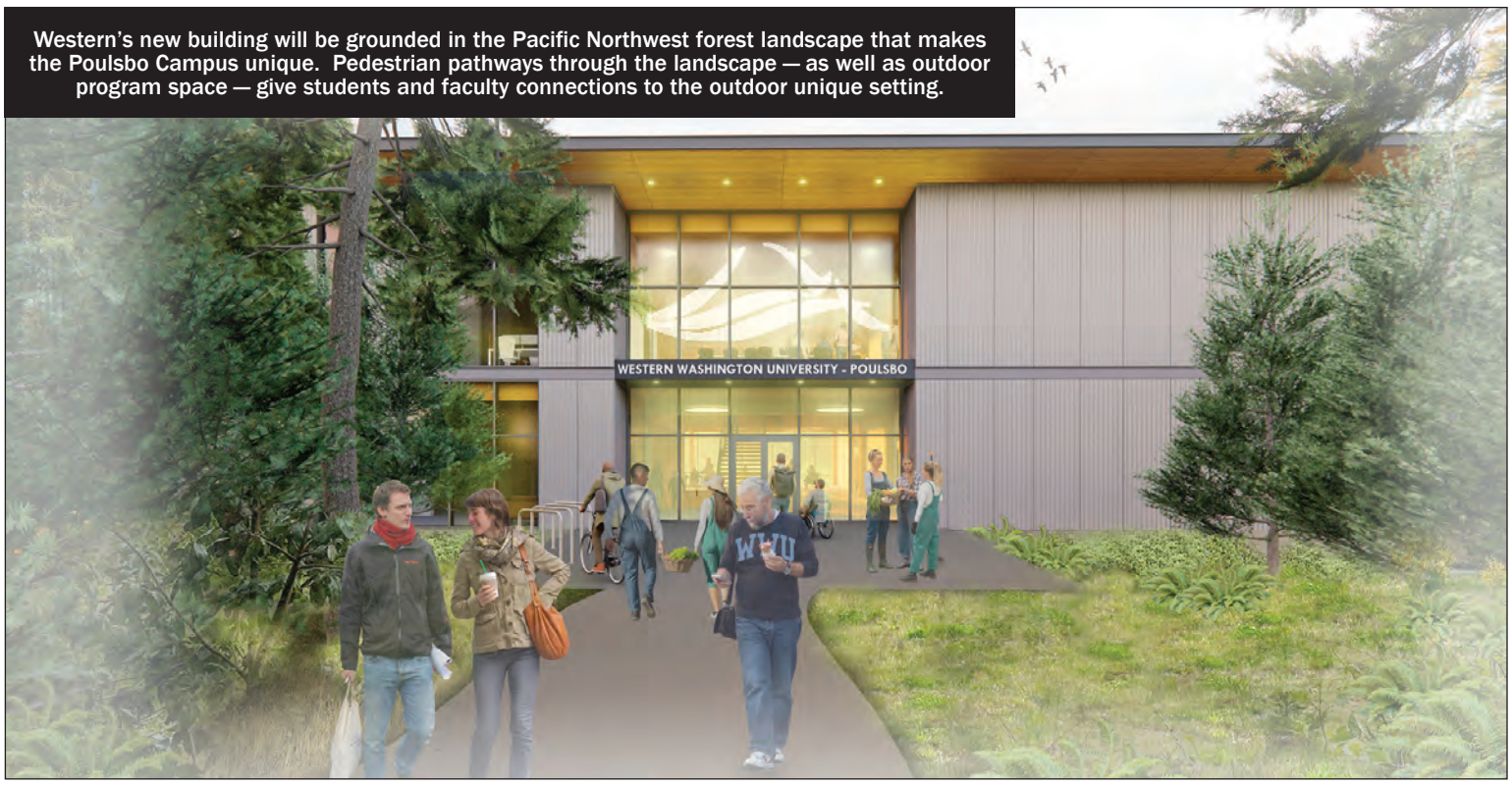
RADICAL WELCOME — PAGE 25

# CLOSING THE GAP: THE STRATEGIC IMPORTANCE OF MEETING STUDENTS WHERE THEY ARE

## A new academic building for Western Washington University at the Olympic College Poulsbo Campus will transform education and workforce development in the Kitsap and Olympic peninsulas.

BY RUTH BALEIKO & ELIZABETH MOGGIO
MILLER HULL

Western's new building will be grounded in the Pacific Northwest forest landscape that makes the Poulsbo Campus unique. Pedestrian pathways through the landscape — as well as outdoor program space — give students and faculty connections to the outdoor unique setting.




RENDERINGS COURTESY OF MILLER HULL

The Kitsap and Olympic peninsulas region is currently one of the most underserved regions of Washington state for access to four-year and master's-level degree programs. Most working-age adults in the region lack the four-year degrees required for the majority of family-wage jobs available. A significant percentage of young people residing in the peninsulas region only have a high school diploma or an associate degree, and thousands of working adults in the area have some college education, but no degree.

To address the educational and economic needs of the Kitsap and Olympic peninsulas, Western Washington University (WWU) worked with The Miller Hull Partnership to develop a predesign for a new academic building at the Olympic College Poulsbo Campus. Each college and university has a unique approach to supporting its students along a continuum of care, particularly for place-bound and non-traditional students. To craft a successful predesign, architects must collaborate with critical campus voices to make a clear and compelling case to the Legislature for funding. It is essential to set the document and the ultimate project up with flexibility and adaptability, particularly in the program, to weather the uncertainties of funding and economic conditions over time.

This predesign described a new 44,200-gross-square-foot facility that will provide essential spaces dedicated to hands-on learning, student support and technological research. It will house critical programs in high-demand fields and serve as the new home for WWU's Cyber Range Poulsbo program, a vital resource for cybersecurity education and research across the state.

By enhancing access to post-secondary education and aligning academic offerings with regional workforce needs, this project is set to transform the local economy and support the state's goal of increasing credential attainment among adults. This initiative underscores the strategic importance of expanding higher education opportunities to meet students where they are.

### SUPPORTING A GROWING REGION

WWU is committed to helping the state of Washington address the diverse educational needs of Washington residents, and to making meaningful progress towards the state's goal that at least 70 percent of Washington adults ages 25–44 attain a postsecondary credential. As part of this commitment, Western's strategic plan recognizes the university's obligation to contribute to future workforce needs by expanding access to four-year degree programs and other credentials to place-bound and non-traditional students in the state.

A 2019 needs assessment funded by the Legislature surveyed educational needs on the Kitsap and Olympic peninsulas, and the feasibility of expanding WWU's educational programs to meet those needs. The study concluded that a more established four-year university presence and additional degree programs and pathways to credentials are required to better serve regional needs.

### PROGRAM NEEDS WITHOUT SPACE

Over the last decade, the state has invested extensively in expanding access to 4-year degree programs on the Kitsap and Olympic peninsulas through 2+2 programs, where graduates of Olympic and Peninsula colleges transfer to WWU to complete their bachelor's degree. These 'Western on the Peninsulas' programs are primarily located in the lone Poulsbo Building of the Olympic College Campus, a 20-acre campus located in North Kitsap County. Current Western on the Peninsulas programs include Cybersecurity, Early Childhood Education, Business Administration, Business and Sustainability, Elementary and Special Education, Environmental Studies, Environmental Science and Multidisciplinary Studies. In 2023, the state further funded the expansion of Western on the Peninsulas programs in Data Science, Industrial Systems and Engineering, Sociology, and Social Work.

### CYBER RANGE REACH

In addition to the expansion of academic offerings, WWU's Cyber Range, located in the Olympic College Poulsbo Building, has undergone dramatic growth in both size and scope, and now constitutes a major hub of support for cybersecurity education and innovation for the entire state of Washington. Current Range operations support hands-on live experiences for students from twelve colleges and universities and fifteen public school districts across Washington, as well as a major program facilitated by the Department of Homeland Security.

Furthermore, Olympic College is expanding access to workforce opportunities through a multi-phase build-out of Allied Health programs at the Olympic College Campus. The first phase involves the repurposing of the Poulsbo building for several of these programs, limiting the space available for Western on the Peninsulas programs. The combined growth of Western on the Peninsulas and Olympic College programming and the Cyber Range in Poulsbo has resulted in a critical need for a new academic building on the Olympic College Campus.

### SUPPORTING NONTRADITIONAL STUDENTS

A new Poulsbo academic building will contribute significantly to WWU's ability to fulfill its mission to support the population of the Peninsulas with increased access to post-secondary credentials. WWU has worked with the navy, businesses and regional economic development agencies to develop programs that align with local business and industry needs.

Public and private sector

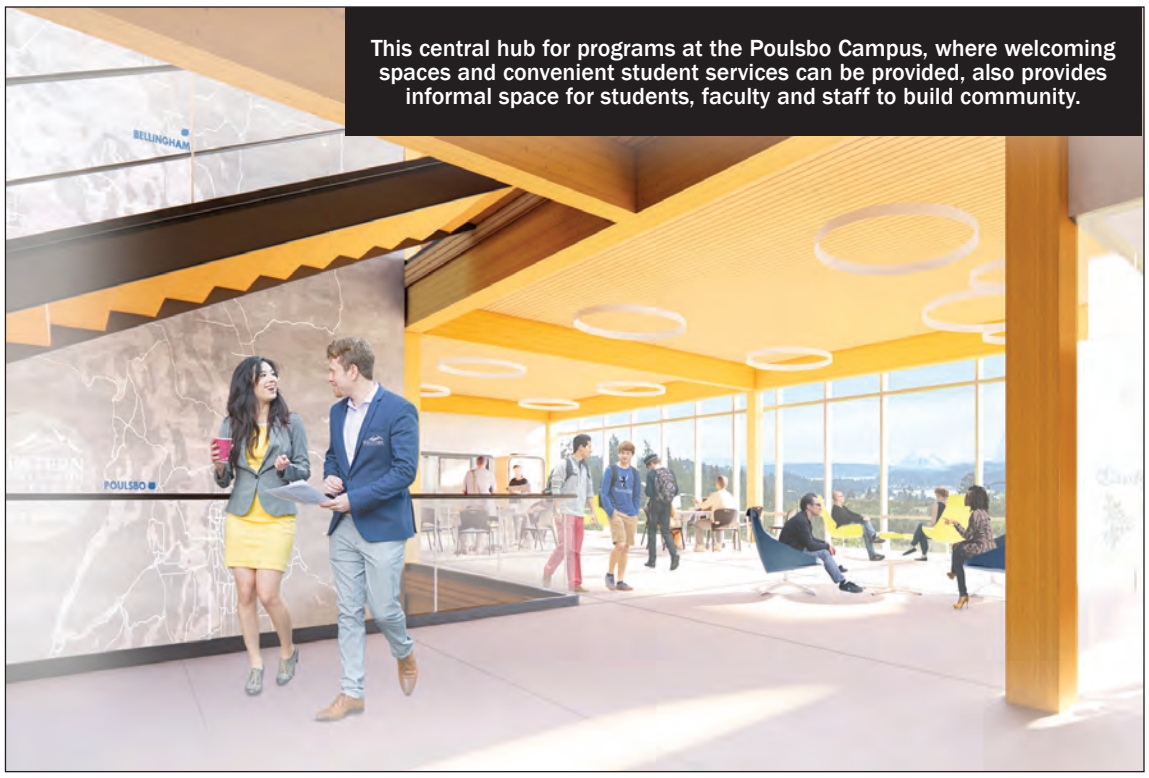
employers are seeking to employ qualified individuals who live and will stay in the region, and locals are looking to find employment that will provide a living wage. Based on market research conducted by the Education Advisory Board (EAB) for the expansion of Western on the Peninsulas programs, including estimates on program capacity, WWU anticipates growing its enrollment in existing and new programs by 300 students by Fall 2027.

Having a central hub for these programs at the Poulsbo Campus, where welcoming spaces and convenient student services can be provided, will help student persistence and graduation. Incorporating hands-on learning in specialized class laboratories will also better prepare students to be successful in the regional job market. Over the next decade, Western on the Peninsulas plans to enroll 1000 students in its existing and new degree programs.

A building that considers the population's unique learning needs will also support the state's credential attainment goals. Many students work full-time. Some are transitioning from military service, primary caregivers in military families, or connected to civilian contractors tied to military operations in the region. Many are also members of tribal communities. Balancing work and family commitments, and potentially commuting long distances, they seek connection among a non-traditional academic community.

Most also join WWU's programs after community college, driven by a desire to remain close to home as they seek a swift, targeted education or additional credentials to switch careers or move up within their current job. The creation of multi-purpose, technology-enhanced inclusive spaces, focused on the needs of this population, will provide students with the flexible pathways that allow them to succeed. The new academic building will provide the platform for WWU to support students with diverse needs for access to hands-on learning opportunities, and resources such as career closets, food pantries, and spaces for working adults to gather, connect, and build the networks that support their success.

WWU is focused on serving the needs of the state and the region through access to degree programs on the Kitsap and Olympic peninsulas, primarily located in the Poulsbo Building of Olympic College. Due to program growth, the Cyber Range expansion, and the expansion of Olympic College programming in the current facility, a new academic building is critically needed. This building will support increased enrollment, specialized learning spaces, and the needs of non-traditional students, enhancing opportunities for people to find living wage jobs in the region. Preparing today's learners for tomorrow's challenges, the new WWU academic hub at Olympic College Poulsbo Campus is set to redefine education in the Kitsap and Olympic peninsulas.



This central hub for programs at the Poulsbo Campus, where welcoming spaces and convenient student services can be provided, also provides informal space for students, faculty and staff to build community.

*Ruth Baleiko is a partner at Miller Hull specializing in weaving stakeholder needs into iconic, welcoming public spaces such as higher education, community centers and libraries. Elizabeth Moggio is a principal at Miller Hull who builds consensus with academic stakeholders to create inspiring educational and research spaces.*

# EMPOWERING STUDENTS IN THE DESIGN PROCESS

## Engaging students in meaningful dialogue about the design of their schools leads to stronger design and greater impact.

BY EMILY BELLO
EHDD

The Marin Country Day School Art Studio windows open to allow the sights and sounds of the creek to fill the classroom.

PHOTO COURTESY OF EHDD

Marin Country Day School, a lower and middle school, is nestled in the valley of Ring Mountain in Nothern California, just north of the San Francisco Bay. A seasonal creek that runs along the school's eastern edge eventually makes its way to the nearby bay. Student life at the school is anchored to this creek. Lines of muddy rain boots mark the entries to lower school classrooms, and middle school students often sit in small groups on the rocks lining the creek's edge.

When EHDD began designing a new campus learning commons and classroom building, the creek needed help. To protect the neighboring hillside from erosion, the upper section had been routed into a concrete culvert. The lower section had been battered into a skein of shallow, muddy strands that threatened to flood the nearby classrooms during heavy rains.

The easiest way to protect and rehabilitate the creek would have been to block it off from student use. But, as in many of our school projects, we learned that meaningfully involving the students in solving design problems always leads to more creative and impactful solutions.

As the design process for the new project began, we held a joint meeting between students, project managers from the Department of Fish and Wildlife, and our landscape team from CMG Landscape Architecture. The students shared stories about playing and exploring in the creek. In turn, the project managers recalled and shared stories from their own youth spent digging and exploring creek beds. The dialogue shifted from keeping the students away from the creek to finding ways for students to be its stewards and helping to restore it.

As part of the new building project, students helped to plant and rebuild the creek bed. To this day, each grade level has a different role in stewardship of the creek — from weeding to tracking invasive species and monitoring water quality and erosion. A problem quickly turned into a lasting and powerful educational opportunity once students were empowered to solve it.

### UNCOVERING IMPACTFUL STUDENT INSIGHTS

Students are the experts on their campuses. Involving them in the design process creates designs that are more impactful by reflecting a unique sense of place. But all feedback is not equal. Sending students home with fill-in-the-blank surveys or setting out suggestion boxes won't yield the type of eye-opening insights that shift designs for the better.

The more we work with students, the more we realize that using the right tools and asking the right questions are essential to uncovering meaningful results. This means thinking ahead about the type of feedback that may be most helpful given the constraints of the project, and making sure students are given real agency to impact the design while it is still malleable. This takes time, but the impact is well worth the effort. Here, we share a few of the strategies that EHDD's K-12 Design Studio has found to yield the most impactful insights from students.

### CAMPUS MAPPING EXERCISES

Understanding the hidden patterns of a school campus, the flows and special places visible only to those who know it well, can be difficult. We've found that the best strategy is to go right to those who know it best: the students. A lonely bench may be a special place where a beloved biology teacher used to sit in the afternoons. A damp and decaying log at the edge of the soccer field may be the favorite hangout for 2nd graders at recess. By asking students open-ended questions and using fun and engaging tools, a campus can come to life in a whole new way.

When developing a new campus plan for the Nueva School, we had the opportunity to engage nearly every student on campus in mapping exercises. The middle school students traced their daily paths through campus, earmarking their favorite hangouts, the spots they avoided, and why. Lower school students talked about their experiences, placing heart stickers on places they liked and putting "x" stickers on places they didn't. As a class, students discussed their answers to our questions: Where do you feel welcome or nervous? Where is it hot or cold? Where is it windy or muddy? Where do you like to play or hang out? We synthesized this data and reported our findings back to the students.

We learned that the middle school's social hubs were scattered across campus — there was no central hub or center of gravity for the middle school students. We were surprised to discover some of their favorite "secret" hideouts. We discovered wind tunnels or muddy areas that emerged at different times of year, turning certain zones into uncomfortable, underutilized places year-round. Each of these discoveries became opportunities to seize or problems to solve with the new campus plan — opportunities and problems that would have gone unnoticed without the exercise.

### STUDENT EXPERIENCE MAPS

Sometimes working with large student groups isn't feasible. For those instances, student experience maps can be an effective tool in the design process. We collaborate with a representative group of students or instructional leadership teams to outline the unique student experiences on a campus based on a range of ages, interests, needs, and learning differences. Through this process, design teams can understand students' daily experiences and preferences, the in-between spaces they seek out, and the support structures they rely on.

At Chartwell School, we used student experience maps to gain a better understanding of the needs of students with learning differences. Through that process, we

learned that we needed to be thinking far beyond the classroom walls to best support students. The entire campus is a tool for learning, connection and self-regulation. The instructional leadership team discussed how sometimes students need to take a quick break and run around the nearby basketball court to get back into a mindset for learning. Other students may need time between classes to sit alone, quietly, perhaps in a wellness room or under a tree, to be able to tackle a difficult next class. We learned that a campus should include a whole ecosystem of environments, indoor and out, to support students throughout the day.

## DESIGN THINKING GAME

Building empathy is a powerful tool in decision-making. Last summer, EHDD's K-12 design studio received a grant to develop a fun engagement tool that helped students reimagine their school libraries. Working with several groups of students across the US, we collaboratively developed a board game based on the design-thinking process. It's both a board game and a tool to teach the design-thinking process. Through a series of ideation sessions and test-runs, we discovered together that tough constraints and working collaboratively make the game more fun.

The game begins with students gathered around a game board choosing tiles and inspirational images about their ideal learning commons. Each student has an opportunity to talk about what is important to them and what types of spaces they prefer. Then they are asked to imagine the needs of another student not represented at the table. Collectively, the students choose three words that best describe their shared vision for the space. The group populates the learning commons with images and descriptions of their imagined environments.

Eventually, players must draw a budget card. Working together, they prioritize the environments they most want to include and set aside the ones that don't meet the budget. As moderators of this game, members of our K-12 design studio have noticed an inspiring effect: starting the game with an exercise in empathizing with the needs of fellow students, the students work together to choose design options that support the largest number of students and achieve a shared vision.

## CO-CREATION IN EDUCATIONAL DESIGN

The school years are a time of discovery. By involving students in real-world problem-solving, designers can ignite interests and passions in students that they may not have otherwise explored. By embracing co-creation, students realize their voices matter and that they have the power to make a real impact; when given the opportunity to dream and contribute, they generate transformative ideas. Empowering students in the design process not only creates spaces that truly reflect their needs but also nurtures a sense of ownership and stewardship, resulting in learning environments that are both practical and inspiring for everyone involved.

*Emily Bello leads the School Design Studio at EHDD Architecture, creating flexible environments that reflect a unique sense of place and serve schools for generations.*

MCDS students help in the creek restoration and ongoing maintenance and reporting.

PHOTO COURTESY OF CMG LANDSCAPE ARCHITECTURE

# THE LANGUAGE OF HEALING-CENTERED DESIGN IN THE MODERN AGE

## Trauma-Informed Design is essential in healing environments for children, families and communities.

Over 67% of children encounter at least one traumatic event before age sixteen (SAMHSA). Untreated trauma at any age affects learning and critical thinking abilities, mental health and serious long-term physical conditions. The brain is exposed to chemical changes that are often lifelong, impacting a person's ability to function fully. How can we design spaces that uplift and support individuals from all walks of life, at every stage?

BY DENA EATON-COLLES
BASSETTI ARCHITECTS

Small spaces outside of the main circulation paths at Van Asselt School in Beacon Hill provide students with opportunities to collaborate in small groups outside of the classroom.

PHOTO BY BENJAMIN BENSCHNEIDER

### FUTURE-LEARNING READY

Trauma-Informed Design (TID) requires intersectional solutions, especially as children are coming of age in the Fourth Industrial Revolution – a period characterized by the confluence of physical, digital and biological realms. To further complicate issues, the Fifth Industrial Revolution – tentatively coined the "Cognitive Revolution" looms on the horizon.

As a society, we are still learning the bounds of a world punctuated by Artificial Intelligence (AI) and the effects this has on communication and connection between humans. For students, increasing speeds of delivering information means more access to content as well as the tools to interpret it. But it may come with a price – too much information requires students to be more engaged in their own learning to ensure that they are focused.

Students who have experienced trauma often operate in survival mode. Whether their reaction manifests as hypervigilance, viewing the world through the lens of survival, or hypovigilance, retreating inward and withdrawing from the world – a traumatized brain is not capable of absorbing or processing new information. In these states, the capacity for learning is disengaged. Trauma causes chemical changes to the brain and though one may find moments of peace and resilience, there is no cure. It can take but a single experience or moment for symptoms to re-manifest themselves.

In today's rapidly evolving world, we can no longer rely on learning a single thing and depending on that knowledge for our entire lives. We need the skills to engage in lifelong learning, collaboration, adaptation and resilience. In a revolution that is characterized by leaps in AI, robotics, the Internet of Things (IoT), genetic engineering and quantum computing, resilience and self-awareness are essential in navigating a world where change is the only constant.

### HEALING-CENTERED DESIGN

Healing environments begin by incorporating Trauma-Informed Care (TIC) systems that "realize the long-term effects of trauma, recognize the signs and symptoms of trauma, and respond by implementing systems that seek to resist re-traumatization." (www.traumainformedcare.chcs.org) To incorporate TID into a design that supports healing and resilience, it is essential to develop Guiding Principles for each project, drawing from TIC principles: Safety, Trustworthiness and transparency; Peer support and mutual self-help; Collaboration and mutuality; Empowerment voice, and choice; and Cultural, historical, and gender issues.

Harry S. Truman Elementary School in Vancouver, Washington features calming experiential graphics in flexible small group learning spaces.

PHOTO BY JEFF AMRAM

Guiding Principles are big-picture ideas or goals that frame projects and help prioritize decision-making. Developed in collaboration with stakeholders from the onset of the design process, they serve as a reference point to ensure goals are

being met.

Each project's Guiding Principles will vary, tailored to the specific needs of its users and typology. We build on the principles that guide TIC by adding others relevant to the project, such as Lifelong Learning, Sustainability, and Flexible /Adaptable.

In the design of educational facilities, it is important to engage educators who use Social-Emotional Learning (SEL) to create spaces that support our young vulnerable populations. Yet, as we look ahead, the realization that trauma's effects are lifelong is paramount. Children with adverse childhood experiences (ACEs) grow into adults who are challenged with the same battles. Moreover, adults can experience traumas beyond ACEs. With the launch of Bassetti's fifth version of their TID Workbook, we expand on our work in schools to explore Guiding Principles, design characteristics and spaces that integrate TID into any project type.

In addition, version five of the TID Workbook will take a deeper look at how trauma affects the senses. Sight, sound, touch, taste and smell all play an integral role in how we experience space, with no two people having the same experience. Proprioception, often considered the sixth sense, is as equally affected by our own bodies as it is by our environments. Guiding principles, design characteristics, and spaces need to acknowledge that color, sounds and textures, for example, may not play a role in everyone's experience of a space. How, then, can Healing-Centered Environments be developed when each person's experience is unique?

Meant to be an open resource for design professionals, through the encompassing engagement of our senses and acknowledgement of relevant challenges facing our students, we can explore timely addressment of these issues through TID and how its principles can be applied through a wider lens of project type.

*Dena Eaton-Colles, a planner & programmer at Bassetti Architects, champions the firm's Trauma-Informed Design initiative, advancing TID research through white papers, the firm's TID Workbook, and presentations, including at the 2024 AIA National Conference in Washington, DC.*

The entrance at First United Methodist Church in Seattle's Uptown neighborhood allows eyes on the street from the administration offices to ensure safety and security.

PHOTO BY MICHAEL COLE

A nook at Mountlake Terrace Elementary School gives students a quiet, out-of-the-way space of refuge.

PHOTO BY JEFF AMRAM



## Where should the DJC go next?

We are working on scheduling next year's special sections / feature pages and we want to hear from you! What topics should the DJC take on in 2025? Which projects would you like to see profiled? Which A/E/C sectors deserve more ink?

Contact Matt Brown at matt.brown@djc.com with your thoughts.

# BUILDING EXCELLENCE ON AN OCCUPIED CAMPUS

**Focusing on careful planning, efficient construction practices, and strategies that limit the need for temporary facilities or portables allows builders to deliver high-quality projects without disrupting a school's daily operations.**

Building a school on an occupied campus is a unique challenge that demands a balance between construction efficiency and the safety and uninterrupted education of students. After 21 years with Cornerstone General Contractors, I have seen firsthand how essential it is to maintain this balance.

**BY SAM COMER**
CORNERSTONE

Our primary focus when working on an occupied campus is to ensure the safety of students and staff while maintaining the educational experience. We achieve this through careful planning, efficient construction practices, and strategies that limit the need for temporary facilities or portables. By focusing on these areas, we can deliver high-quality projects that meet the needs of the school community without disrupting the daily operations of the campus.


Using a "build-demo-build" phasing plan allowed Cornerstone to construct Ferndale High School's new building without encroaching on required buffers. The builder also engaged with the student body, integrating the project into their learning experience.

PHOTOS COURTESY OF CORNERSTONE

## PRIORITIZING SAFETY AND EDUCATION

Safety is non-negotiable in any construction project, and it takes on an added dimension when working on an occupied campus. Our approach begins with developing an extensive safety-and-access plan tailored to each specific project and the unique needs of how the campus operates. This plan is designed to protect students, staff, workers and the general public.

For example, at Lake Stevens High School, we planned and implemented construction over multiple phases to complete their modernization and addition project. This involved constructing a new three-story addition, new athletics wing, and significant existing building renovations, all while ensuring that school operations continued smoothly. Our detailed logistics plan maintained safe travel paths and minimized disruptions, allowing the educational process to proceed without significant interruptions.

## ENHANCING CONSTRUCTION EFFICIENCY

Efficiency in construction is not just about speed; it's about smart planning and execution. On an occupied campus, this means carefully coordinating construction activities to align with the school's schedule and operations. Our experience with phased construction projects has taught us the importance of planning ahead and anticipating challenges.

At Woodinville High School, we executed a three-phase project that included renovation, modernization and expansion on an occupied campus. By working closely with the Northshore School District and school staff, we minimized disruption and ensured that the project was completed efficiently. This included prioritizing the main electrical room, boiler room, and other critical infrastructure in the early phases to support existing facilities while facilitating the construction of future phases. Careful planning of utility upgrades and structural retrofits was integrated into the design from the start.

## LIMITING SPENDING ON TEMPORARY FACILITIES

One of the significant challenges of building on an occupied campus is the potential need for temporary facilities, which can be costly to implement as well as disruptive. At Cornerstone, we strive to limit this need through strategic planning and innovative construction methods.

During the Juanita High School project, we analyzed several approaches and ultimately implemented an alternative phasing plan that allowed students to remain in the existing building while construction was underway. This approach eliminated the need for a larger temporary camp of portable classrooms, saving the Lake Washington School District approximately $5 million. These savings were redirected to enhance the project's program scope, which ultimately benefited the educational environment for both the students and staff.

## COMMUNICATION AND COMMUNITY ENGAGEMENT

Effective communication is critical in any construction project, but it is particularly vital when working on an occupied campus. We maintain two-way communication with district staff, ensuring that everyone is informed about construction activities and their potential impact. This includes clear communication of bell schedules, restricted delivery times and changes in access routes.

Moreover, we believe in being a positive presence in the community. This involves planning for critical campus activities, such as testing,

parent-teacher conferences, and student events, to ensure they are not disrupted by ongoing construction. By engaging with the school administration and local community, we can align our construction activities with the school's needs and priorities.

A great example of Cornerstone's approach to community engagement is our work at Ferndale High School. We faced the challenge of constructing a new 212,000-square-foot building on a fully operational campus. Our creative "build-demo-build" phasing plan allowed us to place the new building in the desired location without encroaching on required buffers.

In addition to addressing these logistical challenges, we saw the construction project as an opportunity to engage with the student body and integrate the project into their learning experience. We organized site tours, presentations, and Q&A sessions where students could learn about various aspects of the construction process, from design and engineering to safety and project management. This hands-on learning approach allowed students to see real-world applications of their classroom lessons, fostering a deeper understanding and appreciation of the skills and knowledge required in the construction industry. We hope to contribute to inspiring the next generation of builders!

Building on occupied campuses requires a unique blend of safety, efficiency and community engagement. We have honed our approach to meet these demands, delivering projects that enhance educational environments while maintaining safety and minimizing disruptions. Our commitment to these principles ensures that we can continue to build impactful community spaces that serve the needs of our clients and the broader community.

By focusing on safety, construction efficiency, and cost-effective solutions, we can achieve exceptional results that benefit everyone involved.

*As one of the company's two vice presidents, Sam Comer has led or contributed to the construction of more than 40 educational facilities during his career at Cornerstone General Contractors. He was also a nominee for this year's Puget Sound Business Journal's 40 Under 40.*

## SAFER SCHOOLS

CONTINUED FROM PAGE 12

are tested as a complete system. Doing so will provide confidence that the system will perform as intended, whether that's in a fire, lockdown, active shooter or other emergency event.

Although enhanced security is not currently required within model building codes, many states are pushing for school security standards. In fact, since 2023, over 380 bills related to school safety and security have been introduced, according to the National Conference of State Legislatures. As schools modernize their buildings, addressing school security may help them stay ahead of future building requirements.

*Devin Bowman is General Manager of Technical Glass Products (TGP) and AD Systems, has over 20 years of industry experience, and sits on the Glazing Industry Code Committee.*

## RADICAL WELCOME

CONTINUED FROM PAGE 17

ing is conceived as an extension of the campus quad, inviting students in with an open, two-story lobby and maker demonstration area that connects with the outdoor environment. A glass-enclosed stairwell visible from the quad activates the building's façade with movement throughout the day. The design encourages the use of stairs over elevators and acts as a visual invitation to science activities. A mural inspired by the brilliant colors and the center of petrified wood samples traces up the wall of the stair and informs the interior color scheme. This integration of indoor and outdoor spaces not only leverages the campus's natural beauty but reinforces that science is a part of everyday life.

The opening of the Johnson Science Building this fall marks the beginning of a new chapter for STEM education at Pierce College, especially for students who accept the 'radical welcome.' This building is more than just a place to learn; it's a place to belong, explore, and grow in a space open and available to all.

*Matthew Bissen is a principal and senior design leader at Integrus.*

# DESIGN STRATEGIES SHAPING EDUCATION

## A look at trends shaping the next generation of campus environments offers strategies for addressing pressing issues through the power of design.

Parkside Student Amenities at California State University Long Beach were designed to target student wellness and build community.

PHOTO BY RYAN GOBUTY

Pacific Northwest education institutions today are faced with a range of pressing issues impacting their ability to deliver high-quality education, foster innovation and support each student's personal development. Many institutions are grappling with declining enrollment, population disparities, the rising cost of millions in deferred maintenance and regulatory pressures to meet the state's energy efficiency targets. Gensler's Education Design Forecast, published annually, identifies the top trends shaping the next generation of campus environments. Our top three trends for 2024 offer strategies in how higher education institutions can navigate pressing issues through the power of design.

BY FRANCESLY SIERRA
GENSLER

### BUILDING RENOVATIONS AND ADAPTIVE REUSE

As higher education institutions strive to stay relevant and reduce operating costs, they must focus on the best use of their physical assets. Data-informed strategies can help colleges and universities right-size their infrastructure, lower embodied carbon and optimize campus space use, such as converting aging classroom buildings into STEM, student services, and collaboration spaces rather than new construction.

In the case of Washington State University and in collaboration with WSU leadership, Gensler identified the desired program for a new integrated sciences building and established a roadmap of enabling projects in the pre-design phase to support it. These projects were categorized as sustained investments to meet program needs and tackle deferred maintenance. Andersen Construction and Gensler then partnered with WSU's steering committee on the Eastlick Abelson Bustad Lab Renovations to initiate strategies to maximize budget, while providing inspiring and flexible spaces which reduce deferred maintenance and serve as recruitment and retention tools for students and staff.

By planning early and strategically for capital improvements within existing assets, institutions can identify opportunities to reduce operational costs through targeted investments while still meeting programmatic needs.

### FINDING NEW WAYS TO SUPPORT DIFFERENT METHODS OF LEARNING

Hybrid learning is here to stay, and developing the right learning models, technologies and physical environments will remain a priority. In 2024, we're seeing educational institutions invest in the spaces, technologies, faculty, and staff to support different hybrid approaches — whether activity-based, schedule-based, or HyFlex (where students can choose to attend in-person, online, or both).

At Gensler, we deployed the Education Engagement Index, an online survey to an anonymous panel of 2,470 students, educators, and staff members at U.S.-based colleges and universities to understand their experiences and perceptions of expectations. The findings from this year's survey reflected three themes:

Students' on-campus presence is increasing, and sense of learning effectiveness is decreasing for virtual activities. Educators and staff continue to have a high sense of effectiveness, whether working virtually or on campus, while the majority feel most effective spending three to four days on campus.

Students have a similar sense of motivation and wellbeing across modalities. However, there is inequity in support for the learning experience for hybrid and virtual modalities. For educators, the sense of satisfaction and success has dipped, but has risen for staff.

Students have a growing preference for being fully on-campus and preference for choice of hybrid environments, be that library, café, or other collaborative spaces. Educators and staff continue to have a strong preference for hybrid and indicate being open to shared and unassigned officing models.

Survey findings should

encourage institutions to seek data-driven solutions in which campuses can support a mix of hybrid, virtual and in-person learning. The support of providing choices in learning is a powerful tool for recruitment and retention of a diverse student population.

## NEW AMENITIES TARGET SOCIAL CONNECTION AND WELL-BEING

In higher education, it is crucial to design places on campus that facilitate community and promote physical, social, and emotional well-being for students. Collaboration spaces, student success centers and residence halls are vessels for cultivating a sense of belonging. Colleges and universities are supporting "the whole student" and often provide non-academic support services, from affordable meals and housing to mental health and other wraparound services.

For the Western Oregon University Student Success Center, Gensler worked with the university to evaluate their existing program and design a new center to better serve its population. Western's strategic goal is to increase graduation rates of underserved students through the consolidation of services in under-utilized campus buildings. Gensler worked with the steering committee to implement inclusive design practices which cultivate a sense of belonging and well-being by supporting deafness, blind and low vision, neurodiversity and accessibility through spatial and textural design solutions beyond code minimums.

When institutions evaluate barriers to service and ask themselves how they can better support the well-being of individuals from diverse populations, they are more successful in increasing recruitment and improving outcomes in graduation rates.

While higher education institutions and their leaders continue to address pressing challenges, keeping student experience at the forefront in exploring design opportunities can lend way to the creation of spatial environments that set up students for success academically and holistically. What's good for student well-being can also be good for the bottom line.

*As Gensler's Seattle Education Practice Area Leader, Francesly Sierra focuses on creating new models that support the student experience and inspire the next generation of innovators.*

Renovating Washington State University's existing Eastlick Abelson Bustad Lab maximized the budget while providing inspiring and flexible spaces for students and staff.

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