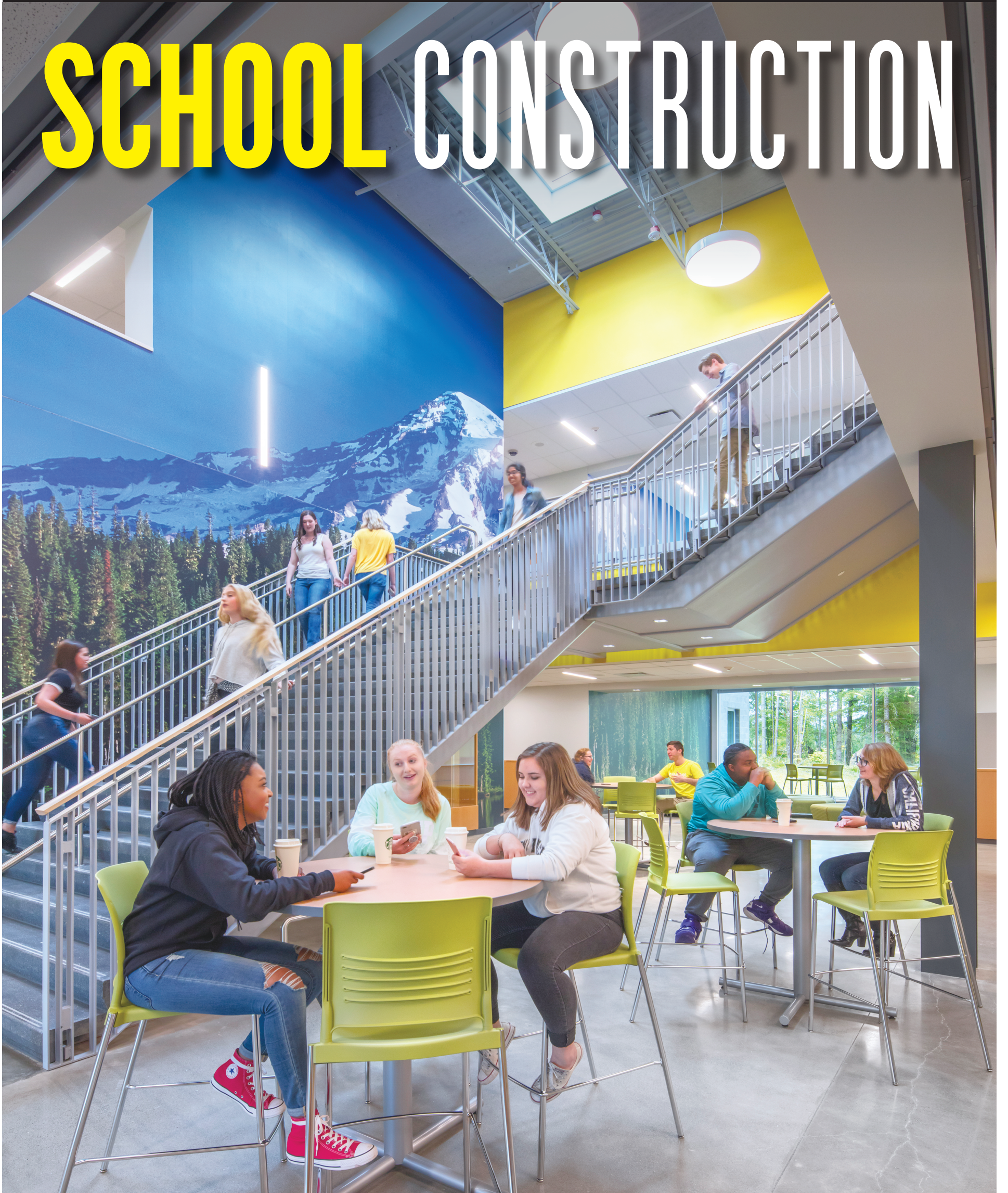


SCHOOL CONSTRUCTION



GIANT MURALS GIVE STUDENTS 'SOMETHING TO LOOK AT AND FEEL PROUD'

The murals were painted by Native American artist Andrew Morrison for Seattle's Wilson-Pacific School campus, and preserved in a replacement project.



BY CORY HITZMAN & ALAN JACOBSON
COUGHLIN PORTER LUNDEEN

impressive campus includes playfields, child care facilities and modern classroom amenities.

The campus also includes a few nontraditional school elements, such as the 25-foot Native American murals and a dramatically improved neighborhood storm drainage conveyance system. Both are the result of the project team's dedication to understanding and adapting to the needs of the community.

The final buildings are uniquely positioned to serve their students, establish goodwill with neighbors, and honor the history of the site and community.

The school buildings presented a twofold challenge: first, marrying the three schools and their distinct programs, needs and grade levels; and second, satisfy-



The 25-foot murals were integrated into the new buildings as part of the structural system.

Three schools in Seattle's Licton Springs neighborhood — Cascadia Elementary School, Licton Springs K-8 and Robert Eagle Staff Middle School — will open their doors to more than 1,660 students next month.

The schools share a campus and replace the former Wilson-Pacific School building. The

MURALS — PAGE 10

PHOTO COURTESY OF COUGHLIN PORTER LUNDEEN

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A new glass enclosure between the north and central wings will serve as the main entry.

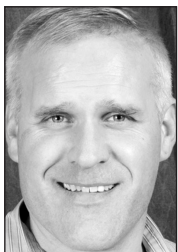


IMAGE COURTESY OF BASSETTI ARCHITECTS

SEATTLE'S LINCOLN HIGH TO REOPEN 38 YEARS AFTER CLOSING

Buildings on the century-old campus in Wallingford will be restored and updated for the digital age.

Rarely does a high school open in the middle of an established residential neighborhood of a major city like Seattle.



BY STEVEN MOORE
HEERY
INTERNATIONAL

The costs of finding space for the school and integrating it within the existing suburban fabric is generally prohibitive.

Seattle's Lincoln High School, one of the oldest in the city, is conveniently located in the Wallingford neighborhood and will be one exception when it reopens in 2019 as part of Seattle Public Schools' Building Excellence IV capital program.

Lincoln High was originally built in 1906. It served Seattle for 75 years before closing in 1981. Since then, the school's buildings occasionally served students when other schools underwent renovations or major construction programs, and the students of those schools needed a place to learn in the interim.

Lincoln High has had 42 remodeling efforts or additions over the years on its 6.8-acre site. This staggering amount of expansion and renovation work was driven largely by population growth in the early-to-mid-1900s.

At its peak, Lincoln served 2,500 students annually. After a brief decline, and the subsequent closing of the school, the Wallingford area is experiencing a resurgence. When it opens in September 2019, the new

Lincoln High will serve approximately 1,600 students.

The renovation project is being managed by Heery International, a professional services firm with a specialty in ensuring that school renovation and construction projects, and particularly those with complex requirements like historic preservation, are delivered within budget, on-time, and meet or exceed modern standards for the design of education facilities.

Updating the campus

In working with older buildings like those at Lincoln High, which date from 1906 and include additions from 1914, 1931 and the 1950s, renovation teams can often discover unexpected elements of a building that require costly or time-consuming attention.

Heery is addressing the unknowns at Lincoln High by conducting a discovery assessment and then planning the budget and schedule around the likelihood of mitigating risks that might not be shown on the original construction documents.

The total renovation covers 194,000 square feet and seeks to retain the historical characteristics. At the same time, the project will bring the campus up to current standards for learning environments, accessibility and technology, among other considerations.

Much has changed in public building codes, education policies and the way buildings serve the educational needs of the public since the school was originally designed, or even since its

last significant renovation.

Libraries, for example, are now modern media centers with computers, tablets and internet connectivity. The new Lincoln High library, converted from an old auditorium, will be wired for modern technology and capable as a portal for research and accessing collections of digital media.

Because technology is now regularly integrated into the curriculum and teaching methods, the library and the school classrooms are redesigned with spaces for digital presentations.

Another of the requirements to be incorporated involves accessibility to all areas of the building, in compliance with the Americans with Disabilities Act of 1990. This law ensures that areas of public buildings are accessible to persons with disabilities.

Adaptive reuse

Some elements of the school, such as the main stairs and fountain, are considered landmarks and must be carefully preserved. Other historical architectural elements that were covered by previous renovations are being restored.

Additionally, the team is going to great lengths to ensure that non-historical areas being renovated have the discarded original materials reused for other applications. For instance, the benches to be distributed across campus will be crafted from old balusters of the gymnasium track railing.

Balancing the preservation of the architectural history and characteristics with the need for

a modern school is critical to this project. How the project's renovation requirements are being designed and integrated into the historic campus buildings was influenced by a high level of public input. Seattle Public Schools, Heery and the design team from Bassetti Architects conducted public meetings to collaborate with neighbors and stakeholders.

The project also involves some

adaptive reuse such as the conversion of old gymnasiums to new, larger classrooms, according to Michael Davis of Bassetti Architects.

Perhaps the most important components of the renovated school are the new primary entryway and the new two-story learning commons, which Davis calls the new heart of the campus.

LINCOLN — PAGE 11

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ON THE COVER

The new Tahoma High School and Regional Learning Center in Maple Valley opens its doors on Sept. 6. DLR Group is the architect and Skanska USA Building is the general contractor/construction manager.

PHOTO BY CHRIS J. ROBERTS PHOTOGRAPHY, COURTESY OF DLR GROUP

DJC TEAM

SECTION EDITOR: JON SILVER • SECTION DESIGN: JEFFREY MILLER
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OUTDOOR LEARNING LABS LET CHILDREN CONNECT TO NATURE

Salish Coast Elementary will open to a central courtyard where teachers can hold class in sheltered spaces that have seating walls for students.

At the narrow passage into the Puget Sound is a small maritime community that is using the school design and construction process as an opportunity to reinvigorate the aspirations of the local community.

Voters in the Port Townsend School District approved a \$40.9 million bond in 2016 to replace Grant Street Elementary School.



BY SHANNON
PAYTON
INTEGRUS
ARCHITECTURE

The school will also get a new name: Salish Coast Elementary School.

Well before the design team was selected and the bond was brought to the voters, key community stakeholders recognized that the prospects of the community were directly tied to how well its young people were educated and prepared for their futures there.

This dedicated group of local leaders met monthly for two years, distilling project goals and laying the groundwork for a school



Sheltered outdoor learning labs will be situated around the courtyard.

IMAGES COURTESY OF INTEGRUS ARCHITECTURE

that would be fully integrated into the life of the community. The district was also expanding school programs such as the community and school vegetable garden, wellness and nutrition

programs, and a bikeable/walkable schools initiative.

These programs were developed to nurture students' growth in a learning culture designed to serve as an example of how best

to live as a citizen of the world.

A civic resource

Once the design team, led by Integrus Architecture, was selected, a series of workshops were held to further articulate and define how the new school would support a culture where students thrive.

District staff envisioned the school should:

- Foster deep collaboration between students, teachers, school staff and community.
- Be a safe, secure and welcoming environment where students are encouraged to take risks, and mistakes are appreciated.
- Create a seamless connec-

tion to nature with easy access to outdoor learning and playing.

Together, community stakeholders, district leadership, teaching staff and the design team challenged each other to explore what it means to collaborate deeply in teaching and learning, reimagining the classroom as a safe launching pad for elementary students as they explore their community and the world around them.

Regularly teaming with local leaders in maritime and marine biology fields rigorously engages students in hands-on math and science education. Students of the Maritime Discovery program are often found outdoors, crafting sails for a historic wooden ship or collecting water samples

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Project manager:
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Architect:
Integrus Architecture

General contractor:
Absher Construction Co.

Structural engineer:
Integrus Architecture

Civil engineer:
LPD Engineering

Mechanical engineer:
Metrix Engineering

Electrical engineer:
Travis, Fitzmaurice &
Associates

Acoustic engineer:
Stantec Consulting Services

Landscape architect:
Cascade Design
Collaborative

Geotechnical engineer:
Northwestern Territories

Food service:
Halliday Associates

Estimator:
C&N Consultants

from a stream swimming with salmon.

Just as the education model depends on its community to engage in real-world problem-solving experiences for students, Salish Coast Elementary was conceived to support and serve its community as an important civic amenity. The dual use of the new school's library as a branch location for the city's public library system is an example of this school-community synergy.

Central courtyard

Fostering a concept of "no child left indoors," Salish Coast Elementary is designed to encourage outdoor learning.

Key to this ideal is the creation of a central courtyard where teachers and students, within a protected environment, are directly connected to the outdoors in their daily routines.

The courtyard is programmed as a dynamic and living learning environment to host and inspire daily lessons. Its design also prioritizes pedestrian access to the site.

The entry sequence is characterized by a series of courtyards and gardens that lead students and community members from the lower level, which is zoned for public spaces and amenities, into the intimately scaled upper level and interior learning courtyard.

In a school where learning hap-



The school will have a community vegetable garden.

pens everywhere, creating a seamless connection to nature means promoting easy access to the outdoors. This is done by extending the transition between indoor and outdoor spaces.

Punctuated by a rhythm of covered, outdoor nature labs, the interior courtyard was integrated with the building mass to maximize daylight and break up the space into a series of smaller learning and socializing zones.

Hugged by an existing forest of evergreens, the uniquely Pacific Northwest site is honored through the celebration of the water cycle, use of native plantings, broad overhangs and other environmental considerations, including a photovoltaics-ready

roof.

Flexible spaces

Through an iterative design discovery process, stakeholders learned to accept a level of trust around embracing change and fostering a deep collaboration among students, teachers, school staff and community.

With the basic classroom unit and square footage still in flux, the planning team explored several configurations of space and learning blocks that support both collaborative teaching and lower teacher-student ratios. Variations of these include parallel teaching, lead and support, station teaching, and teaming,

all of which require highly adaptable learning settings to be successful.

To support this, architectural features were developed to imply different zones for multiple concurrent activity settings. Using "T"-shape and "L"-shape classrooms — ideal layouts to encourage a wide range of learning — the design team arrived at a solution for flexible learning settings defined by a variety of ceiling heights and slopes that create subspaces within each room.

Openings between classrooms expand and contract the learning unit, reinforcing collaboration on a grade-level basis, as well as supporting changing

student populations and curriculums over time. Strategic use of flexible and movable furniture and casework contributes to the speed and ease of changing activities and learning needs.

An exceptional client with a clear vision and uniquely engaged community planning process has resulted in a new facility that is a welcoming, nurturing and lasting amenity to the community as it serves to educate and transform elementary school students for generations to come.

Shannon Payton is an associate with Integrus Architecture and the project designer for Salish Coast Elementary School.



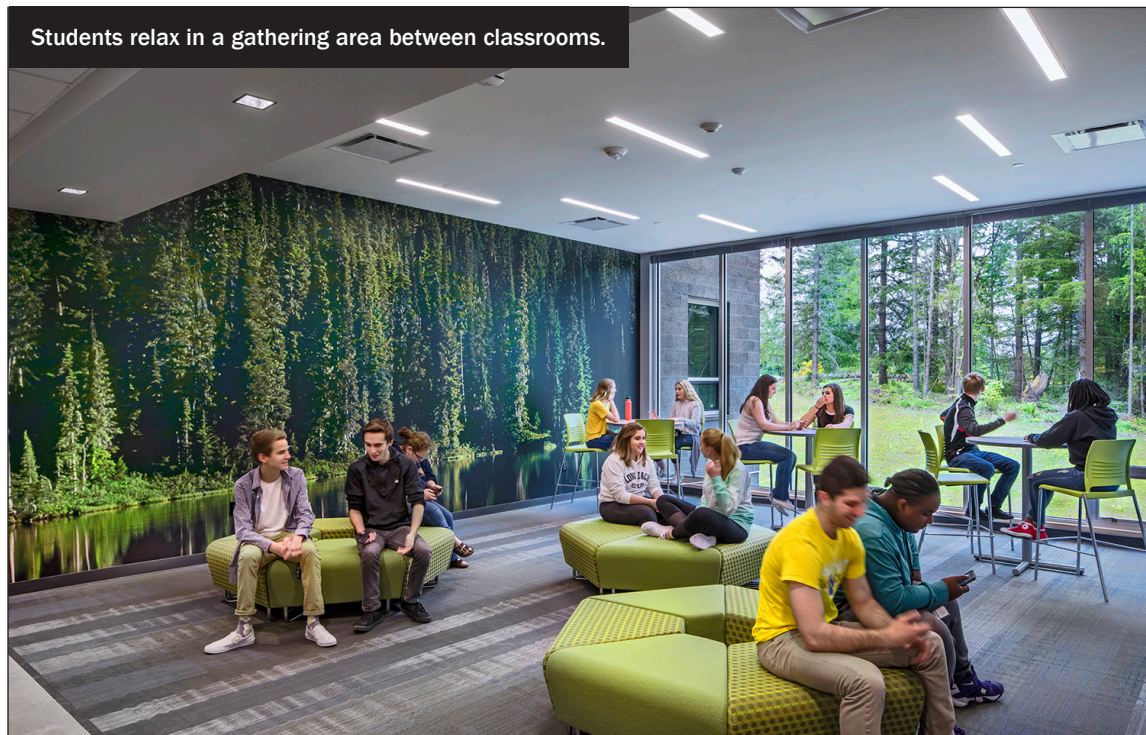
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TAHOMA HIGH PROJECT MAKES THE BEST OF A HILLY SITE ON FORMER GOLF COURSE

The team found creative and cost-effective ways to overcome the site's physical challenges.



Students relax in a gathering area between classrooms.

PHOTOS BY CHRIS J. ROBERTS PHOTOGRAPHY, COURTESY DLR GROUP

In the fall of 2013, the Maple Valley community approved a \$195 million construction bond measure that included the design and construction of the new Tahoma High School and Regional Learning Center.

As with many bond measures, the primary objective was to address an increasing student population and reduce or eliminate the use of portable classrooms. The measure also offered an opportunity to construct a new high school within the city limits.



BY MIKE JANES
DLR GROUP

The previous Tahoma High (now Maple View Middle School) is in neighboring Covington, along the western border of the district. The new high school is closer to Maple Valley's commercial core and would serve both students and the wider community.

Prior to the passage of the bond, DLR Group and Tahoma School District worked to develop the educational specifications and program of the new high school. The district was also promoting a district-wide educational initiative that centered on the notion of developing "future-ready" students — the primary tenet being that each student would develop and work towards a viable post-graduation plan. Such a plan could include job-ready technical skills, a two- or four-year degree, military employment or any number of less traditional paths.

As the educational specifications progressed into the design of the new building, the district's community focus and future-ready initiative began to inform how challenges were met and design decisions were made.

The project team, including Tahoma School District, OAC Services (project management), Skanska USA Building (general contractor/construction manager) and DLR Group (integrated design services), worked collaboratively to meet these challenges and make design decisions that aligned with the district's goals.

Site challenges

As design began in earnest, the team was immediately confronted with the challenge of

the site, known as the "doughnut hole." The new high school would occupy land at the former Elk Run Golf Course, part of unincorporated King County and surrounded on all sides by the city of Maple Valley.

The project team was presented with unique challenges, including the rolling topography of the golf course, provision for continued access by King County, and Bonneville Power Administration easements. Initial schematic designs exceeded the district's budget, so the project scope and budget were realigned. A simplified design began to emerge that yielded a fully balanced site and further cost savings.

"The district started out with some very ambitious goals that we were able to achieve as a result of the collaboration," said Lori Cloud, the assistant superintendent. "Our team of designers and contractors found creative and cost-effective ways to overcome the site's physical challenges."

More than 150,000 cubic yards of earth was moved onsite, requiring no offsite fill, she said.

Cost estimating and value engineering review continued in weekly meetings throughout design with the owner, architect and contractor. The partnership among the project team yielded solutions that provided cost and, eventually, construction time savings.

A senior superintendent with Skanska said he recalled an example in which the design team revised portions of the envelope to reduce construction time, cost and complexity. Further, anticipated steel procurement and erection estimates yielded alternate framing methods used to stay ahead of construction deadlines.

Ultimately, the team's efforts during design led to buyout savings during bidding that returned money to the district and allowed it to further invest in the bond promises made in 2013.

Kasey Wyatt, a senior associate at OAC Services, said, "The level of true collaboration amongst the team resulted in a project that exceeded program expectations while remaining pragmatic, which in turn resulted in the ability to over-deliver on the promises made during the bond campaign, such as the full replacement of Lake Wilderness Elementary School and more robust improvements to each school as part of the 'Warm, Safe, Dry' initiative.

"From day one, the district held each team member accountable

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Northwood Elementary School, Mercer Island School District
Photo Credit: Benjamin Benschneider



to deliver the project better and faster by challenging us to think outside the box of how traditional public works project are typically delivered. There was continual dialogue on how the project could better support the others resulting in a broader success program-wide.”

A community impact

In 2013, the residents of Maple Valley made an investment in Tahoma School District and their community. Perhaps less obvious, the construction of the new school has likewise provided direct investments in the community.

Margot van Swearingen, a project manager with Skanska, witnessed that reality during the construction process.

“The project tracked our local spend, including subcontracts for companies based in the Tahoma area, material purchases from local hardware and lumber supply stores, fuel purchased locally for equipment, and employee personal spending,” she said. “In total, the project spent over \$10.2 million locally.”

The team engaged with local students and graduates in offering job shadow opportunities, internships and site visits. Van Swearingen also pointed out that the jobsite regularly supported local charities, including the Maple Valley Food Bank and

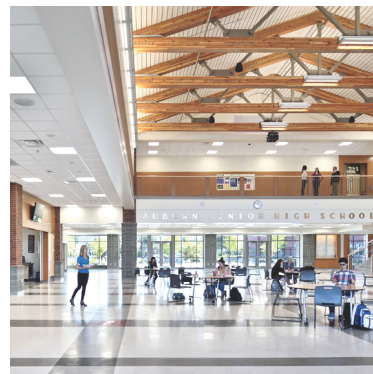
Vine Maple Place, contributing toys and food for holiday drives and over \$10,000 towards preventing local homelessness.

As the promises of the 2013 bond come full circle, the new Tahoma High School and Regional Learning Center will open for its first day of school on Sept. 6. The 312,300-square-foot building will have room for 2,400 students.

Reinforcing Tahoma’s future-ready initiatives, the building provides a robust career and technical education program, allowing the district to continue to explore and develop community partnerships with area colleges such as Green River Community College and Renton Technical College. Likewise, athletics and performing arts facilities offer amenities the community previously lacked.

Reflecting on the successes and challenges of this high school, it wouldn’t have been possible without dedicated commitment from the community and project team. As education continues to shift towards flexible space for project-based learning, and opportunities for partnerships with higher education providers and industry partners, Tahoma High is prepared for the challenge.

Mike Janes is a senior associate at DLR Group and the project architect for Tahoma High School and Regional Learning Center.



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NORTH SEATTLE ELEMENTARY SUPPORTS STUDENTS BY OPENING ITS DOORS TO FAMILIES

Olympic Hills has a community clinic, welcome center and full-size gym for after-hours events.

For every school design, there should be a fit between the culture of teaching and learning and the environment we design to support it. When a school has a strong and identifiable culture, the design can be more responsive and rich.



BY MICHAEL MCGAVOCK
MCGRANAHAN ARCHITECTS

Olympic Hills Elementary has a long history of serving its families through well-developed educational and social strategies for inviting parents in and for nurturing

their children. But the existing school building was past its prime and didn't fit the school's culture.

As part of the Building Excellence IV levy, Seattle Public Schools chose to replace the school with a new building. Designing a new place to fit their engaging culture was the primary goal of the project.

Responding to students

Situated in North Seattle, Olym-



Classrooms suites are organized around central common areas.

IMAGE BY MCGRANAHAN ARCHITECTS

pic Hills Elementary has a high degree of socioeconomic and cultural diversity.

A growing body of evidence shows that parent engagement

is a huge factor in the success of students, particularly for children living in poverty. Engaging families is an integral component of this school's approach, such as by hosting a variety of cultural events and activities around food, art, performance and storytelling.

The essence of Olympic Hills' culture is to develop the interests, aptitudes and abilities of each child uniquely. Teachers acknowledge and respond to different cultural practices and the limited support that many children have at home.

The impact of the great diversity in the student culture means that children must be engaged in accord with their individual characteristics. Differentiated instruction is Olympic Hills' educational approach.

An instructional dance

Helen Joung was the principal at Olympic Hills during the design process, and led the staff in implementing differentiated instruction there.

The school has become a center for professional development on the approach district-wide. Student are addressed differently through the learning activities they are engaged in, the groups they work within, the attention they receive, and the variety of settings that are made available.

Teacher teams and related specialists are arranged in suites

of classrooms, with a central shared space to work together. They tailor activities and support to the particular needs of students, individually and in carefully crafted groups.

Students move between "centers" within the classroom and within the suite. It's a "dance" among the teacher, students and learning activities they are engaged in. The building supports the dance.

5 teaching modalities

Five modalities of teaching and learning in the classroom are the essence of the approach at Olympic Hills. Teachers conduct the dance with their students individually, in groups and collectively in the way they organize learning activities throughout the day.

In the first modality, teachers organize students in small groups by similar aptitude or ability, working with each group according to their needs.

In another modality, they will arrange students in groups by different ability, so that a student strong in one area, such as writing, can support a student who needs help from a peer. And that student receiving assistance may lend support to another in a different group.

In a third modality, time is given to independent study.

The whole-group orientation/instruction modality is for a lim-

ited time but essential for creating a sense of community and context for the other learning activities.

The fifth modality offers students experiences with hands-on "making" activities.

Close-knit community

The unique culture of Olympic Hills — the way they engage students, involve families and create a close-knit community — inspired the design of the new school.

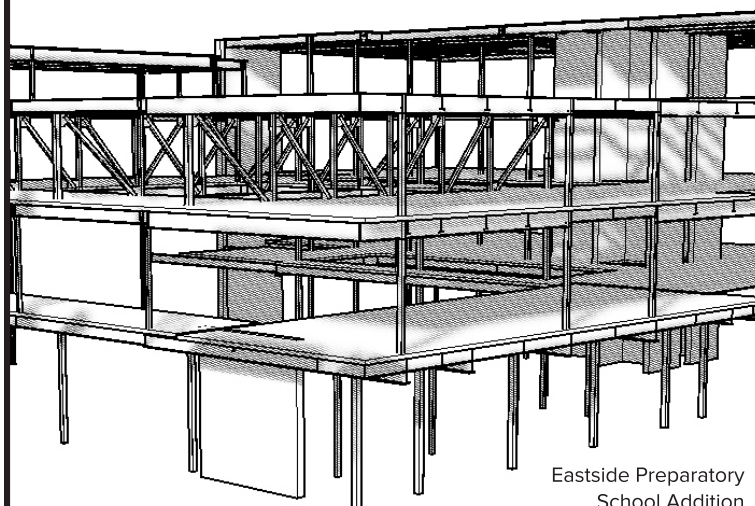
Classroom suites are designed to be agile in supporting all these modes of differentiated teaching and learning. Surfaces in the rooms allow students to brainstorm, demonstrate, display, critique or imagine. Classrooms include sliding whiteboard and tackboard surfaces in front of the cubbies to provide additional active learning surfaces in the room and reduce the visual clutter and distraction of cubbies.

Each classroom houses an integrated reading library with material for a wide range of abilities. Classrooms also include a place for quiet reflection and a sense of refuge for students to calm themselves, contemplate and reflect.

Each suite of classrooms provides a central common area that acts as an extension of the classroom, to provide another

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MURALS

CONTINUED FROM PAGE 2

ing a diverse, invested community of stakeholders. Understanding the needs of the community took time.

The project team carefully considered the input and feedback from all stakeholders, including the Native American community.

Preserved murals

The previous school on the site, Wilson-Pacific School, was constructed in the 1950s on the site where Licton Springs is located. The springs are still regarded as a part of a sacred religious site by the Duwamish people, and until demolition the school regularly held cultural events, such as powwows and meetings of Native American organizations.

The campus has been reborn as a place for Native American pride to be cultivated and legacies to be preserved. Legacies like that of Robert Eagle Staff of the Minneconjou Lakota. Under his guidance as principal of Indian Heritage School from 1989-1996, students achieved a nearly 100 percent graduation rate, and now the new middle school building bears his name.

Interpretive wall panels in each of the school buildings explain the significance of the mural preservation and share the campus story, including its life as the former Indian Heritage School and the relationship of Licton

Springs to native people.

An honoring circle just outside the middle school entrance features quotes from each of four chiefs — Chief Seattle, Chief Joseph, Geronimo and Sitting Bull — and serves as a place of peace, meditation and introspection.

Most obvious to visitors are the murals. Called the “Great Walls of Indian Heritage,” the eight reclaimed murals are up to 25 feet high and displayed prominently around the exterior of both school buildings.

All artwork was created by Andrew Morrison, an Apache/Haida artist who attended Indian Heritage School. Saving the murals is a testament to community efforts, as Native Americans around the country and supporting community groups asked the school district to preserve them.

Special care by the design and construction teams protected them during the removal, storage and reinstallation.

The murals had to be carefully cut from existing buildings, as each one was painted on load-bearing walls. They then had to be safely stored while the rest of the site underwent construction, then installed at their new locations.

Our engineers were instrumental in providing oversight throughout the process to ensure the murals were safely preserved

and incorporated onto the new structures.

Special consultants, including Johnpaul Jones of Jones & Jones Architects and Landscape Architects, and moving specialist Nickel Bros., were key partners in designing the preservation and relocation plans.

The larger of the murals were integrated as key shear wall elements into the new buildings. Utilizing the murals as part of the structural system provided them the opportunity to serve a key role in their new locations.

The murals are now a centerpiece of the schools’ designs, and are sure to achieve Morrison’s original vision of giving students “something to look at and feel proud.”

A cherished pond

The campus project had a couple other nontraditional considerations: Pilling’s Pond and Licton Springs. The project team was careful to understand how decisions made regarding the site would affect the neighbors.

Pilling’s Pond is a privately maintained waterfowl sanctuary that is cherished by the community. What began as a 12-year-old’s project to rehabilitate three injured ducks grew to an award-winning, internationally recognized habitat.

Founder Charles Pilling was

inducted into the International Wild Waterfowl Association Hall of Fame in 1990 and was praised for his ability to raise three unique duck breeds in captivity. After Pilling’s passing in 2001, family friends and neighbors organized under the nonprofit corporation Pilling’s Pond Preservation Society to maintain the pond.

It was important that the project recognize the Pilling’s Pond story and respect its worth to the community. Ultimately, the project ensured that water supply to the pond was maintained and physically secured, safely preserving the waterfowl sanctuary.

A more complicated consideration for the neighborhood was Licton Springs. Running deep under the project site and upstream to Licton Springs Park, the neighborhood had been subject to catastrophic flooding during the winters, partially submerging cars and damaging homes.

The team debated daylighting the stream, but leaving such a deep ravine open posed a safety issue for students. So the group opted to improve the underground storm conveyance system, navigating a congested street to add an additional storm drainage pipe. The solution reduced flooding while keeping students, neighbors and property safe.

The new storm conveyance

system required coordination with both Seattle Public Utilities and Seattle Public Schools, and as well as an accelerated timeline, since the system needed to be installed before major onsite construction could begin. Coordinated by Coughlin Porter Lundeen’s civil team, SPU calculated the required pipe size and designed the underground routing, new inlet and oversized manhole installations. The project was designed, permitted and constructed in under a year — one-third of the time that would be typical of a municipal design and construction contract of this type.

Cascadia Elementary School, Licton Springs K-8 and Robert Eagle Staff Middle School benefited greatly from the project team’s ability to look beyond the site boundaries. The schools have created goodwill with invested parties and consequently will fit seamlessly into the neighborhood.

The campus celebrates Native American history and culture, aligns with the needs of its neighbors, and provides a beautiful, functional space for teaching and learning.

Alan Jacobson is a senior civil project manager at Coughlin Porter Lundeen. Cory Hitzemann is a structural associate principal at the company.

NORTH SEATTLE

CONTINUED FROM PAGE 8

setting for engaging each student. Additional learning support services can be brought to students within their learning community.

A high degree of transparency and visual connection unites all of the spaces within a suite and creates a sense of community, balanced with surfaces to support active learning. The learning community suites include shared storage for the materials that support differentiated instruction, so that they can be shared between teachers throughout the school year and free up space in the classrooms and common area for learning activities.

To support families and partners of the school, Olympic Hills includes a community welcome center for parents that doubles as a professional development center for teachers. The health room is designed to serve as a community clinic.

A full-size gym encourages family fitness and houses com-

munity events. Olympic Hills is designed for community use with the ability to close off academic areas after hours, leaving the rest of the building open.

Different accent colors were chosen for each grade-level learning community to give the classroom suites individual identity and a sense of progression as students matriculate through the school. The colors are collected together in community areas like the library and commons. This color strategy also signifies the individual within a whole community.

Olympic Hills has a culture that is predicated on the deep understanding that children are different and family support makes a difference.

To fit that culture, the design of the new Olympic Hills Elementary provides a diversity of settings and experiences for students. To extend learning beyond school and provide continuity between school and home, the design of

Olympic Hills creates places that welcome families and offers support and a sense of belonging.

For some time, schools have been serving many aspects of society beyond learning, and those supports benefit learning. We must acknowledge schools as the family resource centers that they are and design them to engage each child differently, for the unique wonder that they are.

Michael McGavock is the principal for Learning Environments at McGranahan Architects, leading the engagement, inquiry and planning of meaningful places for learning.



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LINCOLN

CONTINUED FROM PAGE 3

The entry is a glass enclosure between the school's north and central wings. The learning commons also serves as the cafeteria and connects directly to the exterior courtyard.

To address the ambitious schedule of this complex project, the team is using various strategies, including early involvement of the mechanical contractor. This will help coordinate the design and installation plans for the new mechanical systems in the building.

Using the mechanical contractor/construction manager method of delivery also promises to save costs by allowing for collaboration with the design team in choosing the most cost-effective building systems. This effort also allows the project team to purchase related equipment early, ensuring that it is ready on site when needed, and the team has a plan in place for staging and installation.

Currently, the project is tracking on budget and on schedule, with the balance of the bid packages opening this September for construction to begin in October.

Steven Moore is a senior project manager at Heery International focused on the management of planning, design and construction projects for K-12 schools.



The two-story learning commons will double as the cafeteria and open to an outdoor courtyard.

IMAGE COURTESY OF BASSETTI ARCHITECTS



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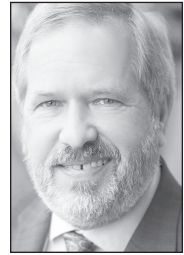
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DESIGNERS STUDY TINKERTOY-INSPIRED SCHOOL 20 YEARS LATER TO SEE WHAT WORKED

The flexible hub-and-spoke layout at Redmond Elementary allowed architects to “plug” a new wing into the central core.

It's the early 1990s and Microsoft is experiencing exponential success, leading to significant growth throughout the region, including around the company's headquarters in Redmond.



BY DENNIS ERWOOD
STUDIO MENG STRAZZARA

To respond to growing enrollment, Lake Washington School District holds a design competition to create adaptable schools that will meet immediate capacity needs and accommodate future growth. Fast forward 20 years, in another time of tech-fueled prosperity, and the original design concept is put to the test to prove just how future-ready it actually was.

Hub-and-spoke design

Studio Meng Strazzara designed the competition winner in 1991. The school concept was based loosely on the idea of a Tinkertoy: a round, central library and administration core with the ability to plug in one-, two- or three-story wings at any point.

The flexible location and orientation of the wings allowed the building to fit various sites. The concept was used in differing configurations at Redmond, Blackwell and Einstein elementary schools.

At Redmond Elementary there were three wings: one with the gymnasium, commons, music and kindergarten; a second wing with seven classrooms, a shared learning area and teacher planning space; and a third wing with two-stories, 14 classrooms, shared learning areas and teacher planning spaces.



The new wing has seven classrooms, a large shared learning area and two small-group rooms.

PHOTO COURTESY OF STUDIO MENG STRAZZARA

The arrangement of the wings around the core allowed for separated bus and parent drop-off entrances, with storefront windows all the way around to allow visibility in multiple directions.

In 2014, rapid growth prompted the district to consider expanding the building. Almost 20 years after the opening, the design team had the opportunity to do an in-depth analysis of how the facility performed long-term, as

well as build upon the original concept.

Shared areas

The team kicked off the design process with tours of several Lake Washington School District elementary schools, including Redmond Elementary. The team explored exactly what worked and what didn't in the schools, particularly in regards to the

classrooms and shared learning areas. We found three major indicators of a successful classroom grouping around a shared learning area:

- Classrooms should have an equitable adjacency and presence to the shared learning area. This is most important as classrooms that are “down the hall” or “around the corner” do not

TINKERTOY — PAGE 19



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HIGH SCHOOLERS GET REAL-LIFE WORK EXPERIENCE IN HEALTH SCIENCES BUILDING

Puget Sound Skills Center students in Burien will train in a dental lab that looks like a professional dentist's office, and in a nursing lab with eight hospital beds and a bathroom.



BY BILL
CHAPUT

& CALVIN
TAM

HUTTEBALL & OREMUS ARCHITECTURE

Students usually have to wait until after high school to start gaining hands-on learning experiences for their future careers. At the Puget Sound Skills Center in Burien, students are given the opportunity to start learning these skills in high school through one of the specialized program offerings.

Since 1966 the Puget Sound Skills Center, the first skills center in Washington state, has

been preparing high school students to be career-ready or college-bound upon graduation. With Highline School District as the host district, the skills center partners with four other school districts — Federal Way, Fife, Tahoma and Tukwila — to offer 18 distinct career programs with certifications or college credits.

Real-world environments

Puget Sound Skills Center will open a new two-story, 26,500-square-foot Health Sciences Building in September. It will house a dental assistant program, nursing assistant program, a new biomedical program and the SeaMar Dental Clinic.

The new building is located in the heart of campus, just south of the original main building. Separated by a connective courtyard that will serve as a gathering space for students and the community, it augments existing

programs by utilizing that space for outdoor training for emergency responders.

The Health Sciences Building can be seen along Des Moines Memorial Drive. Its contemporary design, expressive use of angles and volumetric forms gives the building a distinct presence on campus.

Although modern in design, the building pays homage to the original building in its use of colors and materials, seamlessly connecting the buildings into a unified campus. The interior materials, colors and finishes are all consistent with those found in current medical and health care facilities, helping to create the feel of a professional work environment.

One key success was the extensive programming with industry partners and professional experts, who provided valuable input and feedback from the beginning stages of the design

The dental lab has professional-grade equipment, including four patient chairs and an X-ray room.



PHOTO BY HUTTEBALL & OREMUS ARCHITECTURE

process. Their feedback provided insight into the professional needs of each of the programs and the work environments found in their industries.

From early design consider-

ation, it was important to provide real, professional settings for the students to learn and develop potential career paths. The

HEALTH SCIENCES — PAGE 19

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2 NEW BUILDINGS THAT PUSH STUDENTS TO BECOME MORE ENGAGED LEARNERS

Both have a mix of large, flexible spaces for group activities and smaller, quiet rooms where students can study alone or work in small groups.

Imagine a school where, instead of sitting in rows listening to a teacher, students are clustered around a whiteboard solving an engineering problem, or around a table outlining a group presentation. They are concentrating and working together.



BY PHILIP RIEDEL
NAC ARCHITECTURE

This is called active learning, simply defined by researchers Charles Bonwell and Jim Eison as “involving students in doing things and thinking about the things they are doing.”

Now envision the buildings, spaces and furnishings that support this style of learning: facilities that are inviting, flexible and student-centered.

Active learning

As educators look for effective ways to engage and prepare students for today’s world, many of the best are finding that active learning techniques provide a critical connection between the students, the material and the tools that will help them succeed: collaboration, creativity and critical thinking.

Active learning involves students in their own education. It encourages tinkering, problem solving, asking questions, discussing, writing, presenting and other activities in service to the lesson.

These are not new educational techniques, but as their combined effectiveness is becoming realized, their implementation becomes more widespread. When students actively participate and feel ownership of their education, they become lifelong learners with the cognitive skills needed to thrive in a changing world.

As educators continue to integrate active learning into their curriculum, the way we design schools is changing. An educational space that inspires learning and cultivates collaboration encourages less lecturing and puts an emphasis on student participation. Students are in turn far more engaged and more apt to retain information.

So what do these schools look like? Two Western Washington high schools — Wilson High School in Tacoma and Summit Sierra in Seattle — are both optimized to accommodate active learning.

Wilson High School

Tacoma Public Schools has been recognized by the state Office of the Superintendent of Public Instruction as an “innovation zone” that provides a varied portfolio of educational choices to their students, supported by a strong infrastructure to promote ongoing innovation initiatives.

The continuing academic success of Wilson High School has demonstrated the effectiveness of this approach. Under the leadership of Principal Dan Besett, Wilson has won a statewide “school of distinction” award six years in a row.

During design of Wilson’s new academic building, an array of learning space arrangements were presented and reviewed with the teachers, ranging from traditional closed classrooms to flexible open environments.

The design for the academic building includes a lot of flexibility, allowing teachers to easily reconfigure an open learning environment into areas that support small-group work when appropriate. Classroom-sized spaces that accommodate up to 30 students feature opaque operable partitions that can be opened to a flexible common space to support team teaching or even larger group activities.

A large, informal “learning stair” can be used by individuals, small groups and large groups of up to 75 people. Colorful small breakout rooms accommodate groups of two to six people working together, acoustically separate but with plenty of visibility to other areas.

Large markerboard panel walls and mobile touchscreen displays are located throughout the building to facilitate spontaneous group work and presentations. Flexible furniture can be easily reconfigured and soft seating in collaborative areas encourages informal learning and discussions.

Summit Sierra

Summit Sierra, located in Seattle’s Little Saigon neighborhood, is a high school operated by the nonprofit Summit Public Schools.

Summit’s educational program focuses on high-impact teaching that personalizes learning for every student. Through project-based learning, Summit educators help students develop the cognitive skills needed to succeed. Their new facility is an adaptive reuse of a pre-engineered metal building where the infill was

maximized to create a variety of flexible educational spaces and lots of open learning area.

The self-paced, student-directed learning is supported by the openness and flexibility of the learning spaces. Similar to Wilson High School, seminar rooms open onto the larger collaborative space, and smaller quiet rooms are available for individuals to concentrate or small groups to discuss projects.

Glass garage doors provide transparency and flexibility between the seminar rooms and open learning areas. Whiteboard paint was used to turn wall surfaces into working surfaces, and even the windows are used as markerboards. Laptops are plugged into projectors on carts, which can be pointed at any wall to display content.

The school was intentionally designed to spark creativity and support impromptu collaboration everywhere, allowing students to take control of their education.

Rethinking school spaces

Active learning is a pedagogical strategy based on our growing understanding of the value that a collaborative, project-based curriculum provides. Studies show that active learning encourages student engagement, builds self-esteem and ownership of learning, and creates a sense of community in the classroom through collaboration and partnership.

Designing a new school building is an opportunity to rethink traditional programming and create a facility that supports the important educational work that the students and teachers are doing, both now and into the future.

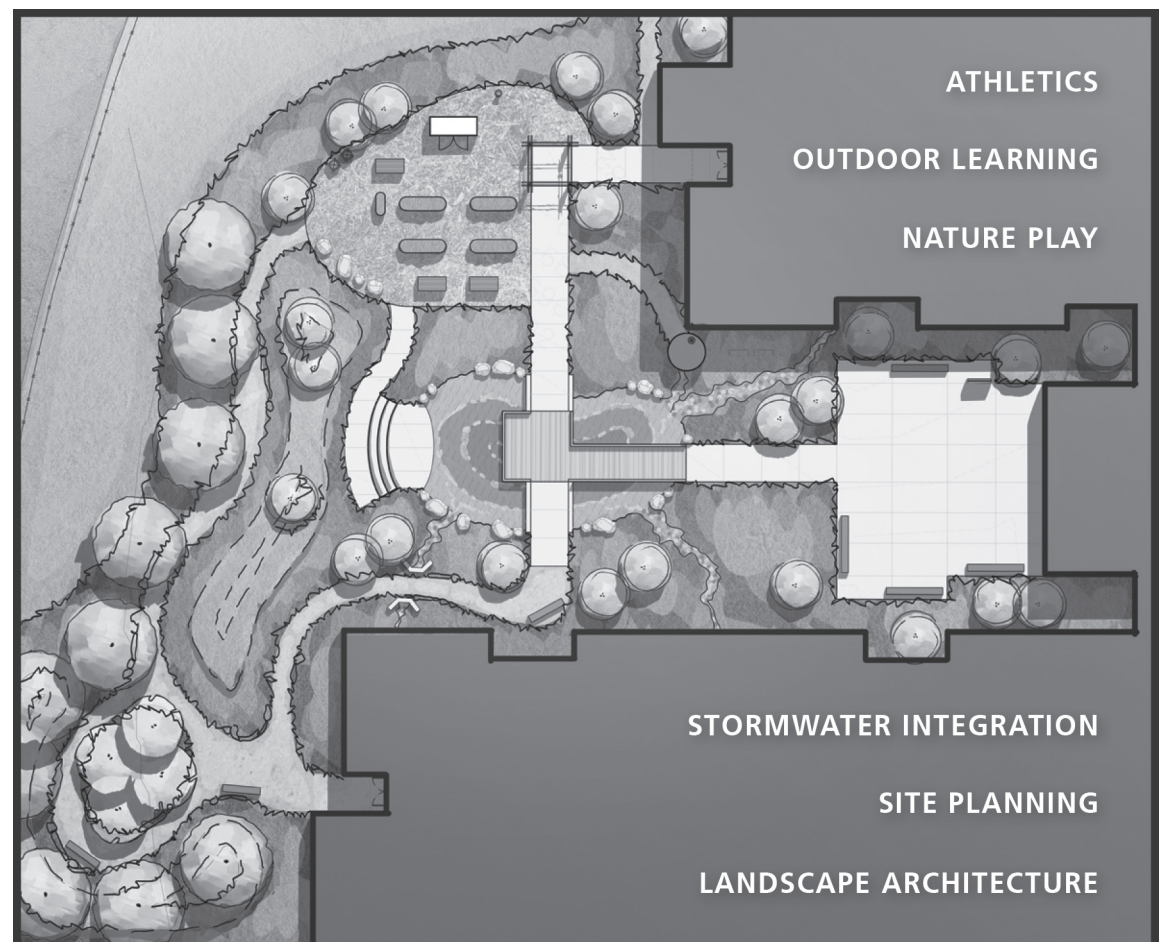
Rather than limit educational delivery, architecture must get out of the way, providing the right combination of connection, separation and flexibility to accommodate a large variety of educational activities. When it is done right, it can help empower young people

to realize their own futures.

Malia Burns, executive director at Summit Sierra, describes the vision that drove the design of their new school: “What kind of thinking do we want our students doing? What kind of collaborating do we need to be doing? How can they make choices about how they are using their space based on what their learning needs are?”

“Our hope is that by senior year our students are able to do a lot more of that decision making for themselves, very thoughtfully and strategically aligned with their learning goals.”

Philip Riedel is a principal at NAC Architecture who has spent the last 18 years researching and creating innovative pre-kindergarten-12 learning environments. Riedel was recently appointed the 2017 president-elect by the Association for Learning Environments, Pacific Northwest Region.



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CLASSROOM WING PROVIDES WEST SOUND'S FIRST NEW STEM SPACE

The 14,000-square-foot addition offers an open, flexible space where middle schoolers in a struggling community can prepare to get ahead.

In a school district where over 60 percent of the student population is on free or reduced-price lunch and less than 60 percent meet national testing standards, a STEM school is a definite lifeline for its students.



BY IVI GABALES
RICE FERGUS
MILLER

The West Hills STEM Academy in Bremerton, which serves students in preschool through 8th grade, is the first new space dedicated to public STEM education west of Puget Sound.

STEM programs focus on science, technology, engineering and mathematics.

The Bremerton School District bond project, completed in 2016, included a new 14,000-square-foot classroom wing for students in grades six through eight. (The

Classrooms have garage doors that open into a big, flexible activity space.



PHOTOS COURTESY OF RICE FERGUS MILLER VIZLAB

school has been a STEM academy since 2011.) It was clear to the school district and Rice

Fergus Miller that the addition presented an amazing opportunity for students, the district and

the greater Kitsap community.

Each community has its own values, its own story. A design that captures the essence of the community, embraces it, celebrates it and makes possible its continuation, goes beyond simply being meaningful — it becomes a natural extension, building off of what is already there.

Knowing the importance of this project, and making sure that each project dollar was maximized for best value, it was clear that its design needed to be so much more than a standard school building.

Hands-on learning

High on the list of design goals was to have a space that integrated real-life teaching and hands-on learning.

"Being a STEM school, we knew it needed to be a highly energy efficient, sustainable building," says Steve Rice, principal at Rice Fergus Miller and architect of record for this project.

"More than that, we wanted it to teach students about the science that makes a building work sustainably, and to be able control how their building performs."

What better way to learn science, technology and sustainability than a hands-on approach that uses the school building as a live experiment and teaching tool.

The addition was designed to be a high-performance building. It uses passive means to heat and cool the interior spaces, and the students are active participants in achieving thermal comfort for themselves.

The central open space, or flex space, is lighted primarily by large clerestory windows in the "chimney." Natural light suffuses the interior space giving it a bright and airy feel.

Some of these windows are operable by the building occupants. They are guided by a thermometer set outside the building. When it gets too warm or cold a guide light turns red or green, alerting users that the windows can be opened or closed. Opening classroom windows, vents between the rooms and the commons, and the clerestory windows will create a movement of air out through the chimney as warm air rises.

Not only can students within the classroom control the temperature within their space, but they can also learn the scientific basis behind it.

Flexible spaces

The building program called for four classrooms, a flexible space in the center, ancillary spaces and a connection to the existing school.

By creating a big, multi-use flex space that all the classrooms could open to, the design not only minimized circulation space but maximized the square footage for learning. The garage doors that open between the classrooms and the commons allow teachers to expand the classroom when bigger space is needed. Large, noise-mitigating curtains on tracks crisscross the commons, creating smaller rooms within the space for group activities without interfering with

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Bremerton School District

Architect:
Rice Fergus Miller

General contractor:
Pease & Sons

Structural engineer:
PCS Structural Solutions

Civil engineer:
N.L. Olson & Associates

Mechanical engineer:
Ecotope

Electrical engineer:
Tres West Engineers

Landscape architect:
Murase Associates

and into the flex space or even to the outdoors. In addition, the rolling and adjustable furniture contributes to the ever-changing learning environment. A space can be converted in a matter of minutes to meet the needs of a lesson.”

The courtyard between the new wing and the existing school also provides an outdoor space for teaching, learning and play.

An energy saver

The project is targeting an Energy Use Intensity (EUI) of 18 kilo-British thermal units per square foot annually. The national average EUI for schools is 68, according to Commercial Buildings Energy Consumption Survey (CBECS) data.

Schools in Seattle operate at an EUI of 43.5 on average. The STEM wing will use 74 percent less energy than the CBECS national average and 58 percent less than the Seattle schools average.

Assuming a base EUI of around 43.5, the STEM expansion will save 77,112 kilowatt hours a year.

Where students can thrive

The neighborhood surrounding West Hills STEM Academy has embraced its new school.

“The innovative addition to the

West Hills STEM Academy in the Bremerton School District was the perfect collaborative design that encourages students to thrive in their learning, preparing them to explore, engage, explain, elaborate and evaluate in a hands-on, educational environment,” says Bremerton School District Superintendent Aaron Leavell.

“The architectural design team from Rice Fergus Miller, coupled with our school professionals, was forward-thinking and incorporated many sustainable strategies for energy savings, making this building not only a model of efficiency in the Bremerton School District, but also in our surrounding school communities.”

Rice Fergus Miller is celebrating their 30th year practicing and building community in Bremerton.

Ivi Gabales, business development manager and associate at Rice Fergus Miller, and has over 25 years of architectural design, construction and marketing experience in several markets.

other classes.

Principal Lisa Heaman says, “What we enjoy most about the design of the STEM wing at West Hills are the endless possibilities for collaborative, hands-on, problem-based learning. Teaching and learning can easily transition outside of the classroom



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WHY AN OLD CHURCH COULD MAKE A GOOD PLACE FOR A CHARTER SCHOOL

With limited access to public funding, charter school builders must make the most of tight budgets. Some are doing this by opening schools in existing buildings.



BY ZANE
KANYER

BRIAN
RITTEREISER

SWENSON SAY FAGET

Eight charter schools were affected by the ruling.

For the 2015-2016 school year, these eight schools got creative and either regrouped under school districts' alternative learning programs or as home school centers, or they transitioned to private schools. The Washington State Charter Schools Association raised \$4.5 million and used this for bridge grants to help charter schools through the year, and it raised \$2 million to kick start more new schools.

In 2016 the state Legislature passed a new law that kept most of the initial 2012 charter school initiative intact, but changed the source of funding.

Charter schools may receive public funding for school construction from state lottery revenue, but not through school district levy funds. They may also receive federal funding. Local school districts may use their apportionment funds to maintain and operate charter schools, but not make improvements to or build new charter schools.

Last September, Washington received a \$6.9 million federal grant from the U.S. Department

In 2012 Washington state voters approved Initiative 1240, allowing up to 40 charter schools to open in five years. The first charter school opened in 2014 for 96 students: First Place Scholars, located in Seattle's Central District.

In 2015, the Washington Supreme Court ruled that Initiative 1240 was unconstitutional. Charter schools are ruled by a charter school board and not by the local voters. Because of this, the court stated that charter schools do not qualify as "common" schools under Washington's constitution and therefore cannot receive public funding.

A new charter school in Bothell will have wood framing to limit construction costs.



IMAGE BY DAVID LEE ARCHITECTS AND DUNCAN MCROBERTS ASSOCIATES

of Education's Charter Schools Program for three school years, starting with 2016-2017. This public funding is administered by the state Office of Superintendent of Public Instruction.

Currently there are eight charter schools in operation with two more set to open next month, and another two in 2018. Some are managed independently and others are run by charter programs such as Summit Public Schools and Green Dot Public Schools.

Tight budgets

Because public funding does not completely cover the construction costs of charter schools, public-private partnerships are formed to build these schools. Private money comes from entities such as the Charter School Growth Fund, Bill and Melinda Gates Foundation, Charles and Helen Schwab Foundation and many, many others.

Due to the multi-faceted financing aspect, budgets for charter schools are incredibly tight — even tighter than for a typical public school. As a design team, it is our challenge to provide first-class facilities within these constraints. From a structural perspective, that often means repurposing existing buildings and using lower cost materials.

Using existing buildings

One way charter schools have helped mitigate initial construction costs is to repurpose existing buildings. It takes a significant effort by the charter school's staff or consultants to identify buildings that can potentially be renovated to house classrooms and school support spaces.

Once viable buildings have been identified, building evaluations should be performed to determine if the change of occu-

pancy requires mitigation of any seismic deficiencies. Depending on the building type, retrofit requirements may add significant costs to the renovation.

An accurate building study is directly dependent upon a design team's adaptive reuse experience and their evaluation techniques. Existing sites could include an unused school district facility, former religious building, warehouse or commercial space.

Once a site is selected, the team may move forward with the most efficient solutions for the owner's program.

Wood framing

Lower-cost material in the Pacific Northwest means timber. With engineered lumber, a wood-framed structure is a 50-plus-year building — the target for most school districts.

It is important to note that timber does not mean lower quality. It does, however, take early buy-in from the architect and engineer. Wood framing can be type III, IV or V depending on the jurisdiction. (The types identify building materials, combustibility and fire-resistance ratings.)

With careful considerations of the behavior of wood-framed buildings, timber can often be a great solution for both cost and construction timelines. Timber provides flexibility in the field for quick modifications if necessary, but also allows for prefabrication of wall assemblies that can be shipped directly to the site and erected the same day. This can help with quality control during construction as well as provide uniform construction across the entire project.

Bothell charter school

Washington College Prep is an independent charter school slated to open next year in Bothell.

The newly built school will ultimately serve students in grades six through 12.

David Lee Architects and Duncan McRoberts Associates are the architects.

The building's program required three levels with approximately 13,000-square-foot floor plates. In order to utilize wood framing, the design team could use type III, or type IV construction.

The design team ultimately decided to use construction type IIIB (which allows a mix of non-combustible and combustible materials) fully sprinklered with two-hour fire-rated exterior walls. This was a cost and material savings over type IV construction (with heavy timber framing requirements) due to simplified connection details and easily sourced materials.

With early research and careful planning by the owner and architect, the decision to use type IIIB construction allowed the design team to take full advantage of wood-framed construction and allocate the money saved toward the exterior cladding system. Delicate stone detailing at the exterior loggia and a deliberate layout to the brick veneer achieved the owner's goal of creating a classic academic structure for the community.

Charter school construction provides a unique opportunity for design teams to create outstanding and cost-efficient educational spaces for each charter's specific curriculum. By using an out-to-in approach with existing buildings to determine how to fit the program into the structure, and using creative construction techniques in new construction, multiple solutions can be developed to determine the viability of a project.

Zane Kanyer and Brian Rittreiser are associate principals at Swenson Say Faget.

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HEALTH SCIENCES

CONTINUED FROM PAGE 14

classrooms and lab spaces were designed to enhance and facilitate the teaching methodologies for the students and staff alike.

By juxtaposing the lab and classroom spaces, the teaching and learning process allows a seamless transition from lecture to hands-on learning. The idea of merging a professional, hands-on practice within an educational environment has been a major influence on how the building functions and feels.

TINKERTOY

CONTINUED FROM PAGE 13

take on similar "ownership" of the shared area, and teachers and students from those classrooms will use the space less frequently.

- There should be transparency and easy access between the classrooms and shared learning areas so that students can be supervised, while allowing teachers and students to create varied, flexible learning settings.

- Ideally the shared learning areas should have windows that provide natural light and outdoor views. Spaces with views and natural light are more enjoyable to be in, so they get used more often.

A seamless addition

Attempting to blend the old and the new, the addition needed to rectify any challenges with the original design while still feeling like a part of the greater whole.

The central administration and library core at Redmond Elementary is easily and quickly accessed from all wings of the school. The new addition wing was simply plugged into the core like the existing wings. The new wing was programmed similarly to the existing one-story wing: seven classrooms and a teacher planning space, but with a much larger shared learning area and two small-group rooms.

In the original design, the classrooms were not evenly distributed around the shared learning area. While each classroom had large exterior windows with window seats, the small interior windows limit visibility and bring little natural light into the shared learning areas.

In the new addition, the layout of the classrooms promotes equitable visibility, presence and access from every classroom. By providing large interior windows between the shared learning area and the classrooms, visibility is maximized — natural light and views are available, creating a bright and welcoming environment.

A next-door clinic

The design of the new dental lab doubles the capacity of the program to provide space for students interested in the dental industry.

The dental lab mimics the environment found in a professional dentist office, including a reception desk for students to thoroughly learn the process of interacting with a patient from greeting through checkout. The program offers real professional-grade equipment, including

four professional patient dental chairs, a stone lab for castings, dedicated panoramic X-ray room, sterilization station and laundry facility.

An important aspect of the Health Sciences Building is the relationship of a professional dental practice within the building and its proximity to the instructional spaces of the dental lab.

SeaMar Dental Clinic leases space from the skills center and operates as a not-for-profit organization providing dental care to low-income patients and families. The connection of the clinic and instructional areas allows students to work side-by-side with dental assistants and observe actual dental treatment.

Just as the dental lab emulates the environment of a dental office, the nursing lab simulates the environment of a hospital for the nursing assistant program.

When students arrive at the nursing lab, they will enter a changing room where they transition from their street clothes into scrubs, as they would at a clinic or hospital. There are eight hospital beds with a nursing head wall, where students can learn and practice proper patient care. As a part of the nursing lab, there is an instructional bathroom where students learn the

proper way to assist a disabled or injured patient.

Even the elevators found in the Health Sciences Building are sized for gurneys to move from one floor to another with ease.

The newest program at the skills center is the biomedical program, which was added through the design of the new Health Sciences Building. The program will allow students the opportunity to learn how biological and physiological sciences apply to clinical medicine with the use of professional lab equipment such as carbon-dioxide incubators to grow cultured cells, a minus-20-degrees-Celsius freezer for storing enzymes and chemicals, an incubator for bacterial plates, and a refrigerated centrifuge to separate fluids, solids and gases.

At the heart of the Health Sciences Building is a flexible lecture hall large enough to accommodate the entire student body of the Puget Sound Skills Center. The design utilizes a vertically folding, operable glass wall to integrate the multipurpose space and the second-floor walkway for community lectures or events. By providing the flexible space, students in the culinary arts program are given the exciting opportunity to prepare and

HEALTH SCIENCES BUILDING

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Highline School District

Prime consultant:

Hutteball & Oremus Architecture

General contractor:

Forma Construction

Civil/structural engineer:

Coughlin Porter Lundeen

Mechanical engineer:

Metrix Engineers

Electrical engineer:

Hargis Engineers

Landscape architect:

Thomas Rengstorf Associates

execute professional catering services.

Bill Chaput is a principal at Hutteball & Oremus Architecture. Calvin Tam is an intern architect at the firm.

In keeping with the original expandable design concept and mechanical system, individual furnaces feed each classroom from a mechanical mezzanine, meaning no central heating system needed to be expanded to meet the new capacity.

The original design also used locally manufactured brick in a standard color, which resulted in the team being able to source an exact match for the new addition. Similarly, standard roofing and window colors were used in both the original school and new addition, resulting in a seamless addition.

Lessons learned

Our team's original concept was highly successful in its ability to add additional classrooms, and we made improvements to the new classrooms and shared learning area with the knowledge gained from the series of assessments.

The largest challenge at the school is that the central core library and administration are surrounded on all sides by circulation. Serving four wings and two entrances, the circulation corridor has no areas in which either the library or administration can effectively expand. If we were to take this Tinkertoy approach again on another school, we would enlarge the central core and provide additional circulation paths beyond that contained in the perimeter ring so that expansion could still occur between the wings.

This addition project, which opened in September 2016, gave our design team the unique experience of continuing our collaboration with the Lake Washington School District, learning and improving upon our original design for the next generation of students and educators.

Dennis Erwood is a principal leading the education studio at the Seattle-based architectural firm Studio Meng Strazzara.

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Alderwood Middle School
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