VAN ASSELT SCHOOL

SEATTLE, WA

EXECUTIVE SUMMARY

Educational Excellence, Sustainability, and Community

The Van Asselt School project represents a transformative endeavor aimed at enhancing educational, community, and environmental outcomes. Situated in the heart of the Beacon Hill neighborhood in Seattle, Washington, Van Asselt encompasses the renovation of the historic 1909 landmark schoolhouse, the addition of modern classrooms and community spaces, and the implementation of sustainable design practices.

HISTORIC RESTORATION AND ADAPTIVE REUSE

The Van Asselt School project embarks on a journey of historic restoration and adaptive reuse, breathing new life into the original 1909 school building. Through adaptive reuse principles, the project preserves the cultural heritage and architectural significance of the landmark, ensuring its legacy endures for future generations while conserving embodied energy and reducing carbon emissions associated with demolition.

Through adaptive reuse, community impact, and educational enhancement, Van Asselt School exemplifies a holistic approach to sustainability, fostering pride, connectivity, and academic excellence within the Beacon Hill neighborhood.

INNOVATIVE SUSTAINABLE DESIGN

Incorporating cutting-edge sustainable design practices, the project integrates innovative features such as Cross Laminated Timber (CLT), energy-efficient systems, and low-carbon materials. These elements not only minimize environmental impact but also create a healthy and inspiring learning environment for students and faculty.

COMMUNITY IMPACT

The Van Asselt School project serves as a catalyst for community revitalization, fostering pride, connectivity, and social cohesion within the Beacon Hill neighborhood. Through the restoration of a cherished landmark and the creation of modern educational facilities, the project strengthens community ties and enhances quality of life for residents.

EDUCATIONAL ENHANCEMENT

By creating dynamic and functional learning spaces with abundant natural daylighting, biophilic design elements, and flexible classroom configurations, the project aims to enhance student well-being, academic performance, and engagement. Through its commitment to educational excellence and environmental stewardship, the project empowers students to thrive in a sustainable and supportive learning environment.

Each learning wing displays imagery representing the elements of earth, wind, and fire using stippled patterns etched into the wall finish.

The renovated 1909 building can be observed while walking through the halls of the new addition.

SCOPE OF WORK AND BUDGET

OWNER
Seattle Public Schools

LOCATION
Seattle, WA

STUDENT CAPACITY
1,000

BUILDING SIZE
51,700 (new); 10,500 (renovation)

COMPLETION
September 2023

CONSTRUCTION COST
$44,200,000

SCHOOL & COMMUNITY ENGAGEMENT

Preserving Community Legacy while Embracing Adaptability

Van Asselt School, nestled in the culturally diverse Beacon Hill neighborhood of southeast Seattle, stands as a beacon of heritage and community cohesion. With a significant population of Asian Americans and African Americans, the school holds deep cultural importance, serving as a unifying hub for residents of all backgrounds. By preserving the historic landmark schoolhouse and seamlessly integrating it with modern additions, the project pays homage to the area's history while fostering a sense of pride and belonging among its diverse residents.

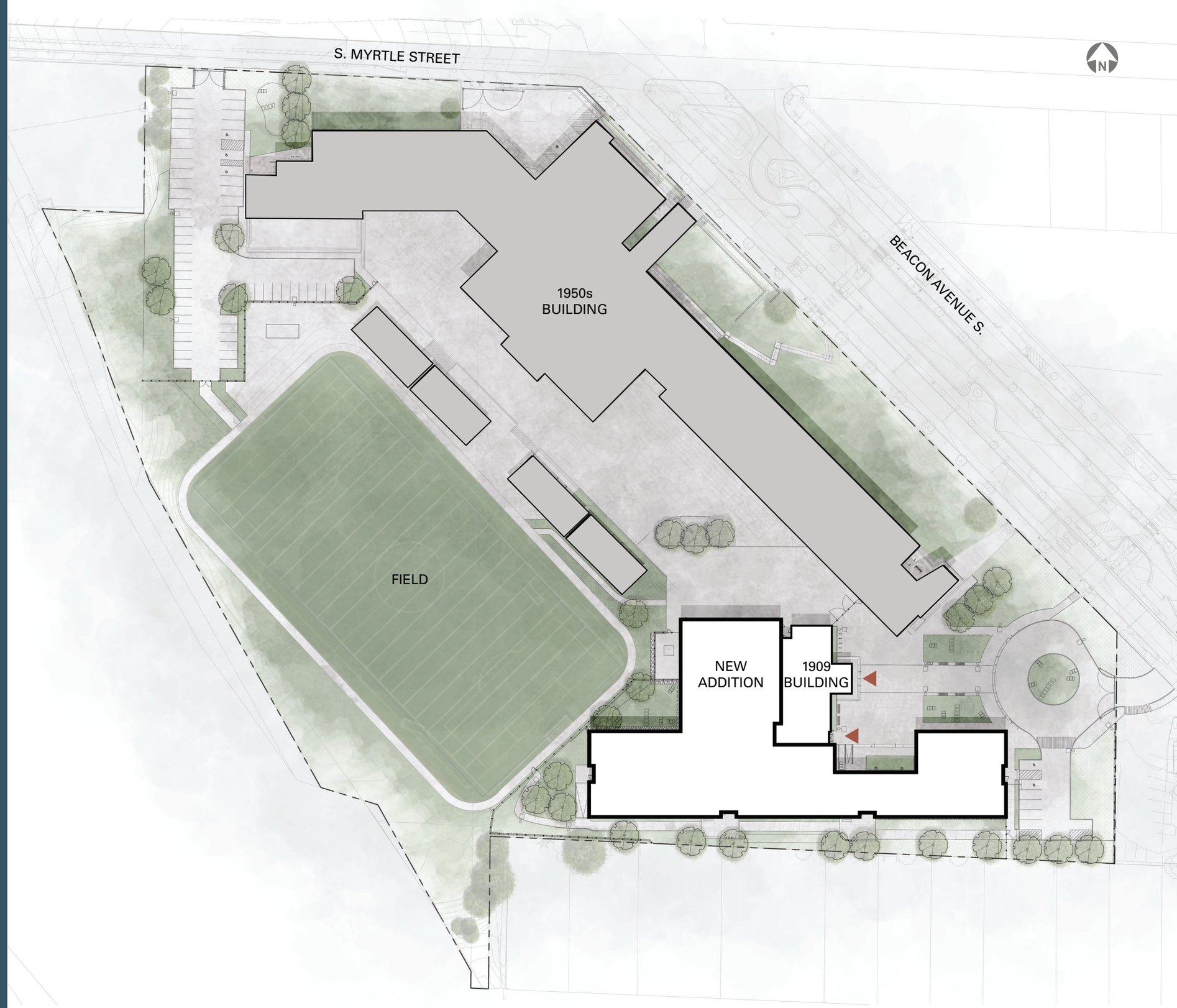
One notable aspect of the project is the incorporation of graphics throughout the school, depicting imagery that reflects the local landscape and cultural heritage. These graphics enhance the building's aesthetic and create a sense of universality and connection to the land and its users. From murals celebrating the watershed to abstract patterns representing the elements of nature, these graphics infuse the school with a sense of identity and belonging that resonates with students, faculty, and the broader community.

In terms of stakeholder engagement, the project involved discussions within the School Design Advisory Team (SDAT), comprising representatives from the design team and the school district. The SDAT meetings focused on formulating a solution adaptable to various temporary school sites utilizing the school over the coming years. Flexibility and adaptability emerged as crucial themes, alongside diversity, inclusion, and sustainability in teaching and learning practices.

Students gather below a custom wall mural that was inspired by multicultural textiles, representing the diverse Beacon Hill and Southeast Seattle community.

PHYSICAL ENVIRONMENT

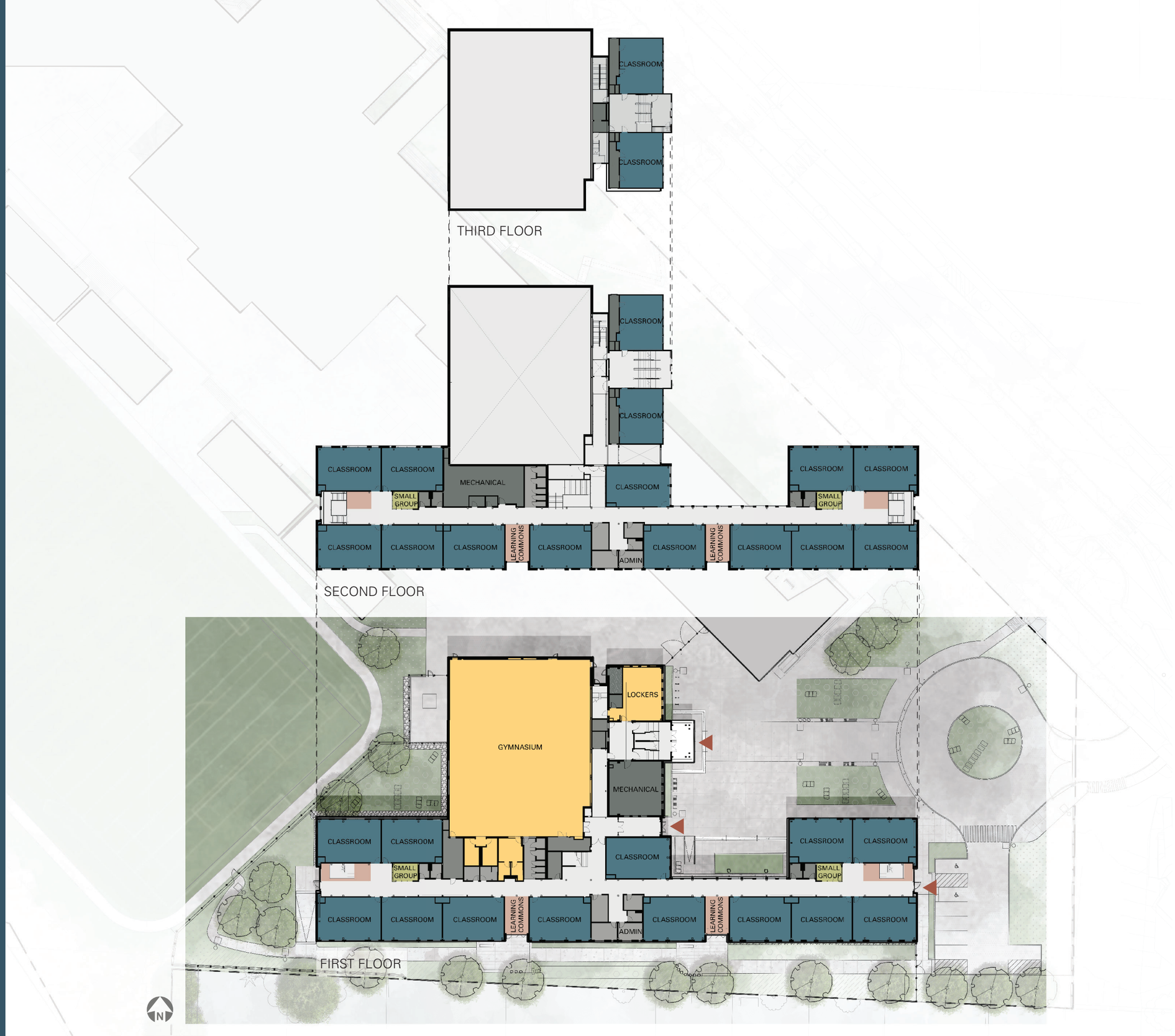
The physical attributes of the Van Asselt environment seamlessly integrate with its role within the broader Beacon Hill community. Nestled within this vibrant neighborhood of southeast Seattle, the school's campus comprises both historical charm and modern functionality. Surrounded by residential homes and accessible from Beacon Avenue South and I-5, the facility serves as a central hub for community activities and gatherings. Its well-maintained grounds and inviting exterior provide a welcoming atmosphere for residents and students alike, fostering a sense of belonging and inclusion within the neighborhood. Inside, bright and airy classrooms flooded with natural light, alongside nature-inspired graphics and biophilic design elements, create a stimulating and inviting environment for learning and collaboration.




VAN ASSELT PUBLIC SCHOOL

Building Layout

The 1909 building comprises four classrooms, along with a basement housing a boiler room and a locker/storage area. Adjacent to this landmark structure, the new addition is a two-story CLT (Cross Laminated Timber) building, featuring 30 classrooms and four learning commons. These flexible spaces cater to various educational needs, while small group rooms provide settings for personalized counseling, mentoring, or quiet study sessions. Downstairs, two learning commons areas open up to an outdoor courtyard, enhancing opportunities for outdoor learning and recreation. Additionally, the gymnasium, constructed with a steel frame, provides a dedicated space for physical education and indoor activities.



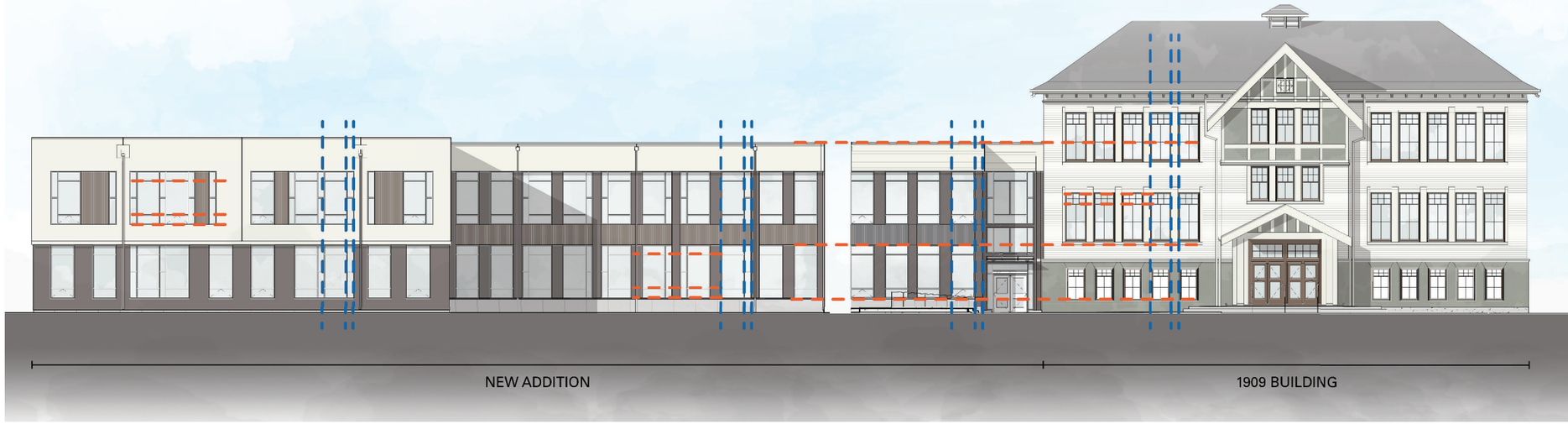
A Legacy Restored

The Original Van Asselt School building, designed by renowned architect Edgar Blair in 1909, was one of the first elementary grade schools in south Seattle. Featuring four classrooms organized around a central stair, the two-story wood-framed structure was characterized by a "free interpretation of the Tudor Style", boasting a heavy timber porch and decorative half-timbering at the central gabled bay.

Despite sitting vacant and boarded up since 2016, the building's potential was recognized. In May 2019, it was designated a City of Seattle Landmark, with both its exterior and interior considered significant contributing elements. The restoration effort preserved the original plaster walls and black slate chalkboards in the classrooms while integrating modern mechanical, electrical, fire safety, and technology systems to meet contemporary learning environment standards. Upgrades to the main central stair ensured code compliance and safety, including the restoration of original plaster and installation of new automatic sprinkler systems.

What sets this project apart is its successful transformation of an abandoned centenary schoolhouse into a modern learning environment while preserving its historic integrity. Such endeavors are often challenging due to the limitations of older structures in accommodating modern classroom requirements. The restoration of Van Asselt schoolhouse to its original purpose, while meeting the district's needs, garnered praise from the Seattle Landmarks Preservation Board, School District staff, and the neighboring community alike.

The color palette of the 1909 building accentuates its architectural features, while the exterior finishes of the new classroom addition complement the original schoolhouse, creating a cohesive composition within the campus. The design team emphasized simplicity in the design of the addition, ensuring that the restored 1909 building remains the focal point of the site, standing tall as the most ornate structure.



Top, clockwise: Careful attention was paid to the fenestration as the new building was attached to the historic schoolhouse. The entry between the historic building and the new structure contrasts yet remains cohesive. The new building seamlessly integrates with the old, creating a smooth transition between the two structures on the second floor.

EXTERIOR

Before

After

CLASSROOM

Before

After

HISTORIC BUILDING AND NEW WING CONNECTION

Before

After

STAIRWELL

Before

After

The Value of Mass Timber

Cross Laminated Timber (CLT) and Glued laminated timber (glulam) play a pivotal role in the transformative journey of Van Asselt School, infusing innovation and sustainability into the heart of its expansion project. As a beacon of progressive design, the addition of a CLT structure represents a bold step towards a greener, more environmentally conscious future.

CLT, renowned for its strength, durability, and sustainability, serves as the cornerstone of Van Asselt's commitment to sustainable construction practices. By opting for CLT, the project embraces a renewable and low-carbon material, contributing to a reduction in greenhouse gas emissions and promoting the responsible stewardship of our natural resources.

Beyond its environmental benefits, CLT embodies versatility and adaptability, enabling the design team to create dynamic and functional spaces that meet the evolving needs of the school community. Moreover, CLT and glulam's natural wood aesthetics promote biophilic benefits, fostering connections with nature and enhancing the overall well-being of students and staff alike.

Moreover, the use of CLT and glulam aligns with Seattle Public School's vision for a cleaner, more sustainable future, as evidenced by the unanimous resolution to transition the district to 100% clean and renewable energy by 2040. Van Asselt School exemplifies its dedication to shaping the next generation of educational spaces, ones that prioritize environmental responsibility and promote a culture of sustainability.

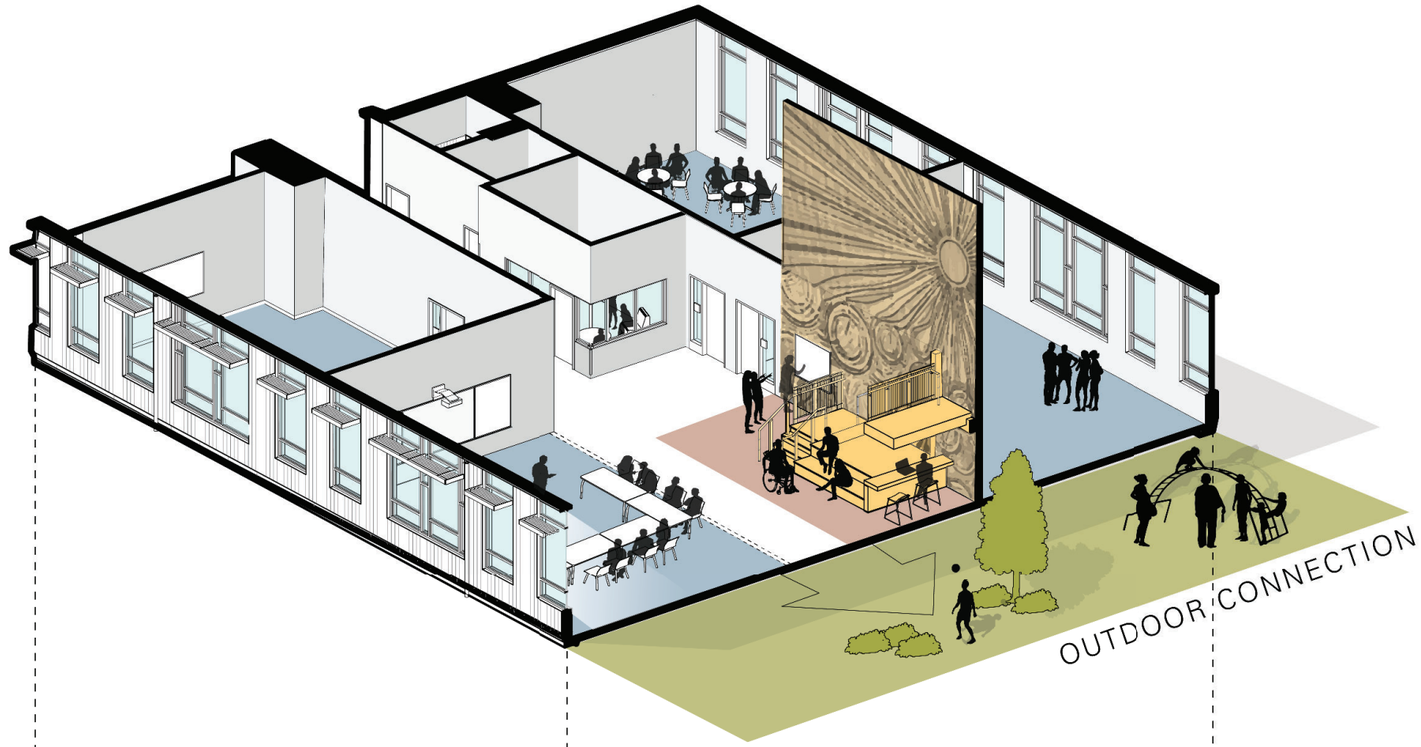
The CLT and glulam throughout exemplifies eco-conscious construction, showcasing its structural strength and environmental benefits in this modern building.

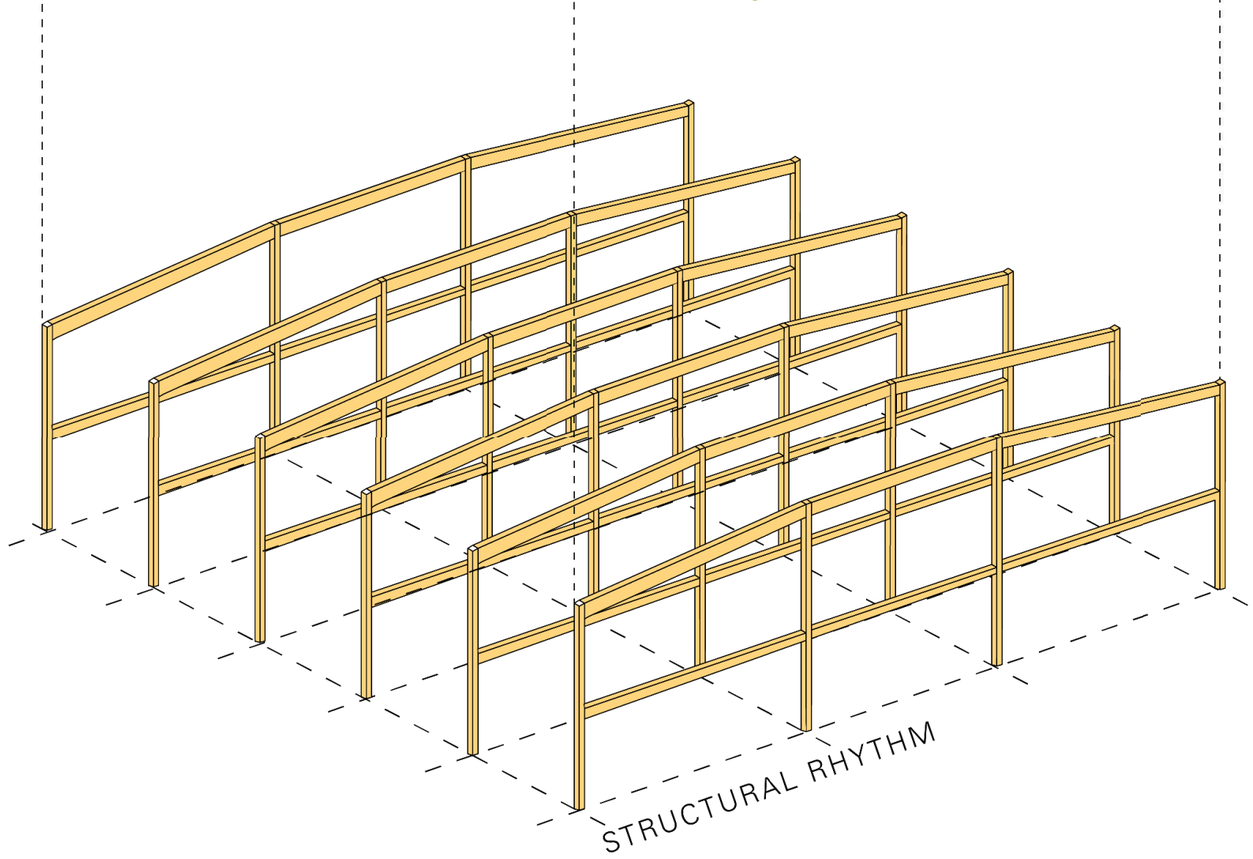
Simplicity, Beauty, and Rigor

Using mass timber as a system is generally more expensive than conventional steel and concrete, surpassing typical K-12 school budgets when compared on an apples-to-apples basis with steel. This necessitated a shift in our approach, prompting us to challenge traditional cost drivers. During the conceptual design phase, we diligently analyzed the factors influencing costs in school projects, focusing on form and function. Through this process, we identified an optimal ratio of envelope to gross floor area, enabling us to maximize program delivery while achieving project goals.

Our strategy involved utilizing a simple form with a repetitive 1-way beam structural system, minimizing the amount of wood fiber used and facilitating rapid construction. This approach not only showcased the structure but also made it the focal point of the design, seamlessly integrating with the program. The symbiotic relationship between structure and program allowed us to progress both simultaneously, ensuring cost-effectiveness.

Key project goals included reducing the carbon footprint, fostering biophilic connections, enhancing interim learning environments at multiple scales, and celebrating mass timber. Our rigorous structural approach seamlessly intertwined with these objectives, enabling us to create a multifaceted, flexible, and adaptable academic neighborhood supporting 21st-century learning across various scales and providing immediate support to students.





Embracing Site History Through Graphic Storytelling

Experiential graphics adorn the learning wings, depicting imagery symbolizing the elements of fire, wind, and earth against stippled patterns within the wood wall panels. Additionally, wall murals throughout the school celebrate the watershed and narrate the captivating tale of the "Neighborhood of Nations." These artistic elements not only contribute to the aesthetic appeal of the environment but also fulfill the Department of Archaeology and Historic Preservation (DAHP) requirements by paying homage to the rich history of the land upon which the addition was constructed. This alignment of learning and place exemplifies the principle that place matters, recognizing the value of place in education and creating better environments that strengthen learning for all students.

Right: A custom graphic details the history of the land on which the new building resides, illustrating its location between two watersheds.

> [The architect] did an excellent job coming up with several thoughtful and well-conceived options that could meet the State's requirements for historical information. The presentation of options included clear imagery and accurate cost estimates, which made the decision-making process easy for the owner.

Ethan Bernau
Partner & Sr. Project Manager
SOJ

The sun and wind elements are depicted in a dappled pattern within the wood wall panels. Top right: The wall mural with the quilted design is complete with an interpretive panel to inform staff and students about the murals purpose and how it connects to the 'Neighborhood of Nations.' Bottom right: The history of the 1909 schoolhouse is displayed in the walkway that connects the historic school with the new addition.

EDUCATIONAL ENVIRONMENT

Cirriculum Support and Community Integration

Van Asselt School embodies a commitment to providing an inclusive and innovative educational experience that fosters academic excellence and personal growth. Our vision was to cultivate a supportive learning environment where every student feels valued, empowered, and inspired to reach their full potential. Our goals were centered around promoting equity, diversity, and sustainability while nurturing a culture of collaboration, creativity, and lifelong learning.

Seattle Public Schools has developed district-wide attributes for high-achieving schools, which are integrated into this project. Throughout the SDAT process, the impact of these goals on the Van Asselt School addition project was discussed, and the design team received guidance to establish additional project-specific design guiding principles. Below is a comprehensive list of these design guiding principles and how the project addresses each one:

LEARNER-CENTERED ENVIRONMENT

Van Asselt provides a variety of spaces so different types of learners can find a comfortable place to learn, socialize, and rejuvenate: learning stair, flex spaces, small group learning areas, and outdoor spaces such as the learning courtyard and the front entry plaza.

PROGRAM ADAPTABILITY

The design is set around creating regular classroom spaces. Those spaces can be interchangeable and adaptable to the curriculum of the schools that will call this campus home while their new school is being built. Each classroom space is equipped with a sink so the use of the space can be flexible and adaptable to the curriculum. The post and beam structure of the building is set on a regular grid with limited seismic walls and allows for future modification of space with minimal effort and cost.

COMMUNITY CONNECTIONS

The new addition creates a heart to the campus of Van Asselt which, in turn, is inviting to the community members. The project also provides, as part of the program, spaces for community partners (offices and available conference rooms) in order to promote community connections.

COLLABORATION

Collaborative spaces are provided throughout the new addition in the form of small group rooms, medium sized meeting rooms, flex spaces, and the larger gathering spaces at the learning stair.

AESTHETIC

The building is designed to complement and highlight the 1909 landmark building to which it connects. The mass timber structure was left exposed and offers warmth from the wood ceilings, structure, and walls. The exterior openings are strategically placed to provide excellent daylighting to each space and a relationship to the outdoors where landscaped buffers are adjoining the building to maximize the connection to nature.

PERSONALIZING ENVIRONMENT

Biophilia is a major component of the personalized environments. Connection to nature is felt all around the building and the exploration of nature is possible through rain gardens, exposed water features, and places to sit and rest within the landscape. The scale of spaces in the building are adequate for one-on-one interaction, and small, medium, and large group gatherings.

The top image shows the restored 1909 classroom with views of the new CLT classroom addition. The bottom image shows the new classroom with CLT ceilings and views of the restored schoolhouse.

SAFETY

The project improved on-site security by adding fencing to limit access after school hours. Firetruck access was also provided to the back side of the school for increased responsiveness both from the north and the south end of the site.

SUSTAINABILITY

By utilizing Mass Timber and wood for the structure and major components of the building, along with an all-electric ventilation and heating system, the project embraces a core sustainability approach. Additionally, being future-ready for Photo Voltaic and ground source heat further enhances its sustainability credentials.

CULTURAL RESPONSIVENESS

This facility will be the home of several schools for many years in the future. While the architecture provides an environment for learning that is adaptable the specific school program and curriculum, elements of the building provide spaces for each school to show their unique culture through display and graphic opportunities.

RACIAL EQUITY

While racial equity is addressed at the curriculum and pedagogy levels, the architecture also thrives to provide a place that promotes racial equity. This starts by providing the community and neighborhood with a design that has all the hallmarks of a successful school, a project that the entire community can be proud of and where the students feel valued and find all the opportunities and support required to develop their skills as critical thinkers. As a result, the school is an inviting place for individuals to gather, celebrate, and strengthen their bond and values.

Warm wood tones, ample daylight, and nature-inspired graphics created robust biophilic connections.

RESULTS OF THE PROJECT

The project at Van Asselt School has successfully realized several educational goals and objectives. By incorporating modern amenities and flexible learning spaces, the project enhances the learning environment, providing students with innovative facilities that support diverse teaching methods and cater to individual learning styles. The integration of sustainable design elements not only promotes environmental stewardship but also fosters an understanding of sustainability among students, aligning with the school's educational mission to cultivate responsible global citizens.

The project aligns with Seattle Public School District's broader goals, particularly in terms of sustainability and community engagement. By utilizing mass timber and implementing energy-efficient systems, the project contributes to the district's commitment to environmental sustainability and the transition to renewable energy sources. Furthermore, the inclusion of community spaces within the campus promotes collaboration between the school and the surrounding community, enhancing social cohesion and neighborhood connectivity.

The Van Asselt project has positively impacted the surrounding community in several ways. The preservation of the historic landmark schoolhouse and the addition of community spaces underscore the project's commitment to honoring the neighborhood's history and fostering community engagement. Additionally, the project provides opportunities for community members to access shared facilities and participate in school events, strengthening bonds and promoting a sense of belonging among residents.

One unintended yet significant result of the project is its role in revitalizing the Beacon Hill neighborhood. Beyond its educational and community benefits, the project has sparked broader economic development and increased property values in the area. Furthermore, the project has served as a model for sustainable construction practices and community-centered design, inspiring similar initiatives across the region. Overall, the Van Asselt project stands as a testament to the transformative power of collaborative efforts in shaping vibrant, sustainable, and inclusive communities.

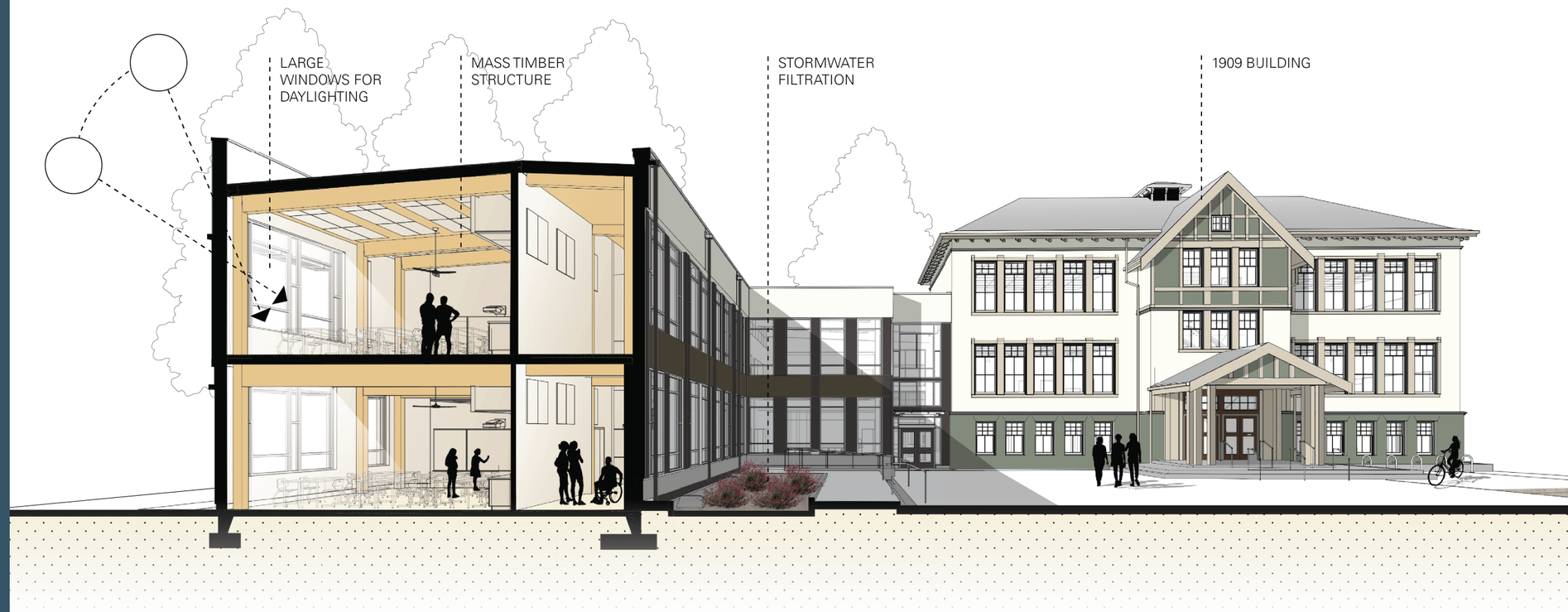
Sustainability

Sustainability is woven into the very fabric of the Van Asselt School project, shaping its design, construction, and operation to promote environmental stewardship, student well-being, and community resilience. From maximizing natural daylight to reducing embodied carbon emissions, the school embodies a commitment to sustainable practices that benefit both present and future generations.

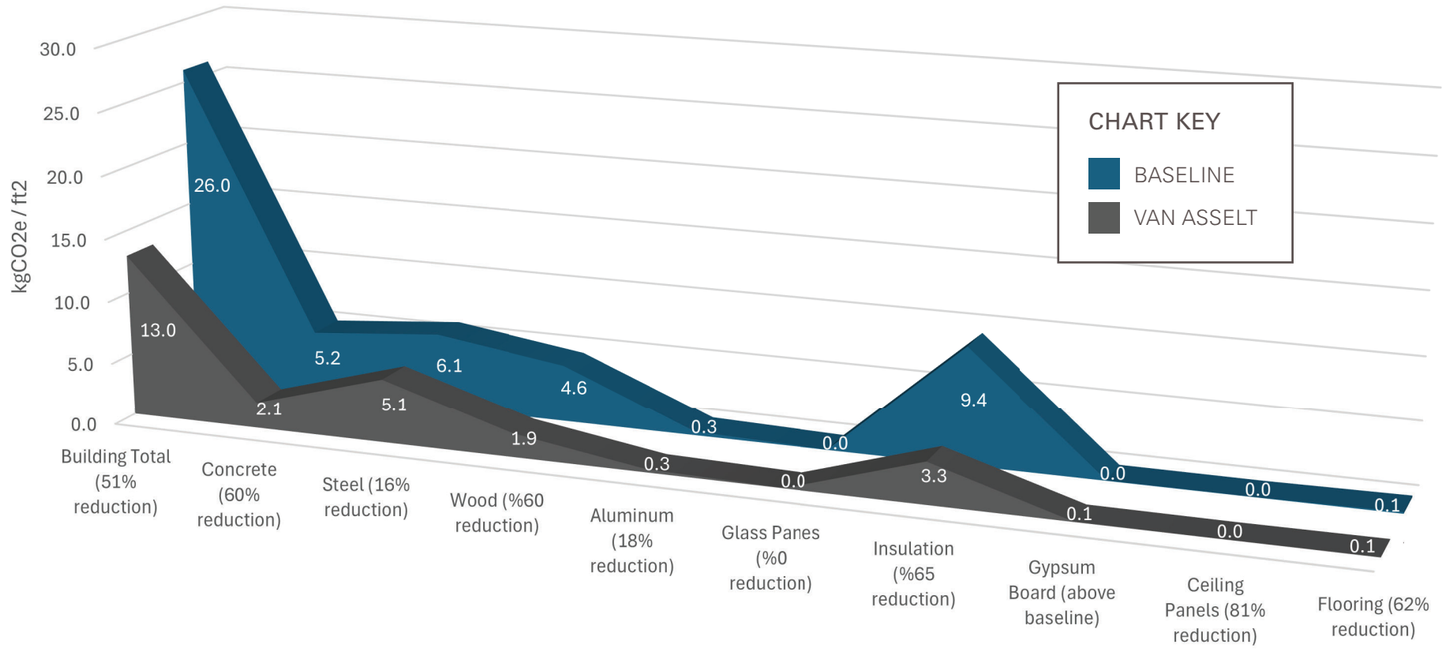
Natural daylight fills all the classrooms in the Van Asselt School addition. Daylight simulation and analysis during design allowed the team to use exterior sun shades and varying transparency of the glass to optimize the daylight in the classrooms and reduce direct glare from the sun. This abundant daylight not only creates a visually pleasing environment but also regulates occupants' circadian systems, contributing to improved physiological health and higher cognitive performance among students. The project's emphasis on daylighting reflects a recognition of its profound impact on student learning outcomes and underscores the importance of incorporating biophilic elements into educational spaces. Throughout the project, preference is given to healthy, low-emitting products and natural materials that enhance the indoor environment and contribute the biophilic design approach.

Moreover, the project demonstrates a significant reduction in embodied carbon emissions, with an overall 51% reduction from the 2019 Carbon Leadership Forum baseline. The design team collaborated with the structural engineers to develop low-carbon specifications for concrete and responsibly sourced wood, resulting in substantial reductions without compromising cost or constructability. By prioritizing materials with lower embodied carbon, such as Mass Timber, the project underscores its commitment to sustainable forestry practices and environmental conservation.

Biophilia is another integral aspect of the project's design, with a color palette inspired by the four classical elements: water, earth, fire, and air. Abstract perforated patterns in wood wall panels represent these elements in the learning



Output from the Embodied Carbon in Construction Calculator (EC3) tracks the embodied carbon reductions the project achieved across various categories such as concrete, steel, and wood.



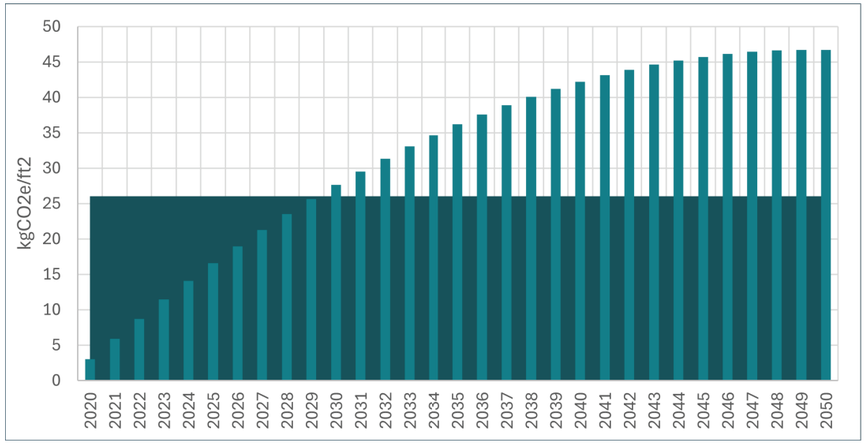
commons, fostering a connection to nature and promoting student well-being. Wood products are used extensively throughout the project to bring natural materials back to the site, creating a warm and inviting atmosphere conducive to learning and creativity.

Operational carbon reduction and energy efficiency are also paramount considerations in the project's design. The design team optimized the insulation levels in walls, roofs, and windows for the most effective performance. Careful detailing of the exterior envelope resulted in a high performance reduction of air infiltration. The building operates on low-carbon electricity, with 91% sourced from hydro and wind power. The high-performance HVAC system, featuring air handling units with heat recovery and electric boilers, is projected to achieve a 13-14% reduction in total net energy use compared to the Washington State Energy Code (WSEC) baseline. The system is designed for the future installation of a ground-source heat pump, greatly improving operational efficiency even further.

In addition to its innovative design and sustainable features, the Van Asselt School project stands out for its restoration of the existing 1909 school building. This adaptive reuse approach is inherently more sustainable than new construction, as it preserves embodied energy and minimizes environmental impact. By revitalizing the historic landmark schoolhouse, the project honors the site's cultural heritage while conserving valuable resources and reducing carbon emissions. This commitment to adaptive reuse demonstrates a holistic approach to sustainability, setting a precedent for responsible development in the education sector and beyond.

In summary, the Van Asselt School project exemplifies a holistic approach to sustainability, integrating environmental, social, and economic considerations to create a vibrant, healthy, and resilient learning environment. By prioritizing natural daylight, reducing embodied carbon emissions, and promoting biophilic design principles, the project sets a new standard for sustainable school construction, inspiring future generations to embrace sustainability in all its forms.

Baseline



Van Asselt School

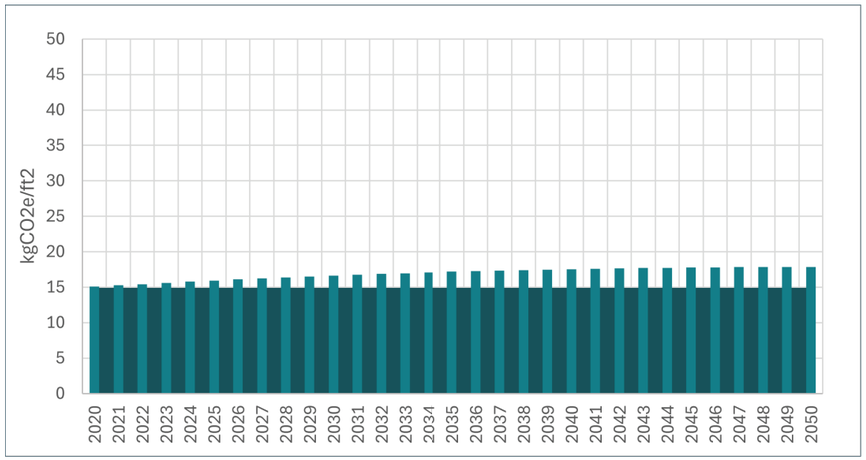


CHART KEY

- EMBODIED CARBON
- OPERATING CARBON

Water Use

26%

WATER REDUCTION

Efficient plumbing fixtures reduce potable water consumption across the building

Carbon Reduction

94%

OPERATIONAL CARBON REDUCTION

Energy efficiency and fossil-free clean power reduce Operational Carbon over the next 30 years

51%

EMBODIED CARBON REDUCTION

Overall Reduction in Embodied Carbon from 2019 CLF Baseline

Daylighting

80%

REGULARLY OCCUPIED SPACES

Optimal daylight levels

93%

CLASSROOM SPACES

Optimal daylight levels

62%

NON- REGULARLY OCCUPIED SPACES

Optimal daylight levels


VAN ASSELT PUBLIC SCHOOL