WILBURTON ELEMENTARY

EXECUTIVE SUMMARY

Conceived as the school in the Park, Wilburton Elementary is measured not only in the overall architecture but how it fits in within the community and is responsible to the climate, positively utilizing the natural environment to generate power and heat while reducing its overall carbon footprint. The planning and design process established goals and ensured that every decision moved the project in the intended direction bringing it to a cohesive whole.

- Project goals were to create an innovative learning environment that was responsive and responsible for future generations.
- District mission was to provide new high tech and innovative teaching and learning space taking the burden off three surrounding over-crowded Elementary schools.
- Community and neighborhood goals were framed by traffic control to this park like site; Not compromising buffers; Thoughtful site responses and extended on-site vehicle queuing. All were identified and mitigated during the public process.
- City criteria pushed the design to enhance the character of this arboretum district and meet strict tree protection, traffic counts, and safe pedestrian connectivity parameters.

Both the District and the City held community meetings to understand the concerns of the immediate community. The site is one mile from the center of downtown Bellevue. It is in an established residential neighborhood and its empowered citizens were concerned about increased traffic and the safety of the pedestrians.

Two types of visioning occurred at Wilburton Elementary – Architectural and Educational. The Architectural visioning lead through the School District Maintenance and Facilities office together with the Architect, Landscape Architect, Wetlands Biologist, Civil engineer, community members and City planning worked through complex site issues to utilize this complex site to its fullest potential. The architecture maintains the district standards which require innovative ways to harvest and re-distribute energy on a site that was defined by wetlands and buffers. This is the first completely new school on an undeveloped site in the Bellevue School District since the 1970s. As such it required a whole new approach to teaching and learning.

Educational planning was led by a progressive Principal, Beth Hamilton-backed by major tech company (Microsoft)- and her carefully chosen team to broaden educational delivery with progressive space. The early partnership with Microsoft expanded the reach and meaning for BSD administration. The Principal and her team took on the challenge to create a brand-new way of innovative teaching and establish something new where there were no preconceptions. Microsoft employs the most advanced technology throughout the school and sees this as a “lighthouse school” formulating new learning technology and distributing it to the surrounding schools. Wilburton attracts Ministries of Education from around the world to view progressive teaching and learning as it happens.

Other partnerships which enhance learning opportunities are found within the neighborhood – an example, the Bellevue Botanical Gardens, is just South and adjoining the school with unprecedented botanical education both at the gardens and within Wilburton Elementary School’s own walls. Trails, paths and an elevated walk along the wetland provides connectivity to first class athletic facilities at Wilburton Hill Park. Active, healthy choices for children are supported by research data to enhance the cognitive, social and emotional intelligence of early learners.

The campus is set up for learning in flexible and adaptable ways. On entering the school there is a spacious lobby capable of having school gatherings utilizing the multi-level surrounding balconies down to smaller group or community use with flexible furnishings on the ground floor. Each grouping of classrooms surrounds shared learning spaces with flexibility for team teaching, project, and individual instruction. Tackable walls and technology throughout encourage the innovative staff to take full advantage of their surroundings.

The project team was required to design a school which operates at a very low EUI. Typical 80,000 sf. elementary schools in the region operate around an EUI of 28. Wilburton Elementary is operating at approximately 14.4 EUI through an advanced systems utilizing Solar PV to generate energy and a separate system of solar panels to heat the water; Geo-Exchange wells assist to heating and cooling the building; generous natural lighting throughout the building reduces the need for artificial lighting; and reduce heat gain . The AIA 2030 challenge, WSSP milestone and the ethos of reduced total cost to ownership became a metric to frame design decisions.

SCHOOL & COMMUNITY ENGAGEMENT

The Wilburton Elementary site remained undeveloped since the 1970s when the Bellevue School District purchased the land for a future school development. The site is within the city limits of Bellevue and contiguous with the Wilburton Hill Park and Bellevue Botanical Gardens. Zoned within an arboretum district this site lent itself to a very park-like development which required a very dedicated planning effort to realize the potential of this parcel. Within its boundaries are three distinct wetlands limiting developable area and access.

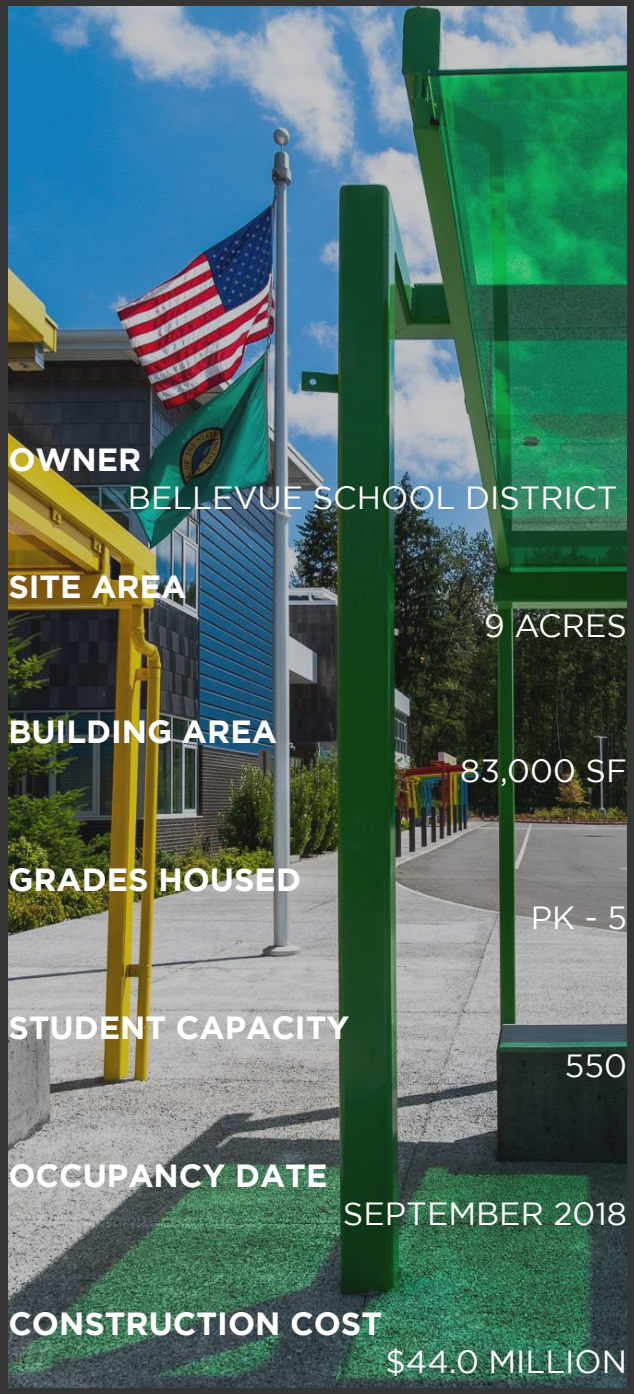
Wilburton is a is a bedroom community within the Bellevue City Limits populated by an ethnic and economically diverse population. Second generation homes are being torn down and redeveloped at a rapid pace. The population is well educated and 25% of the families have children. This community has experienced rapid growth and the resulting increase in traffic. Long time residents of this neighborhood are concerned about this these increases and the impacts of adding a new school to this mix.

Valuable assets on and around this site are the undeveloped site itself, Wetlands as learning opportunities for sustainability, the adjacent Bellevue Botanical gardens and Wilburton Hill park, the immediate access to High Tech resources in and around the neighborhood, and the natural resources available on the site for in-ground heat source wells and ability to harvest the sun for daylighting, power generation and hot water reheat contributing to the ability to lower the EUI of the building and to be responsible for future generations by reducing the carbon footprint of the building.

The Bellevue School District owns and operates the school and solicited input from the surrounding neighbors, the city of Bellevue, and the Design team for expertise in the Ed Spec, planning and design phases. The District, site, City and surrounding environment presented challenges in the design process:

- The Bellevue School District required that the building operate at a very low EUI.
- The usable site area is defined by 3 distinct wetlands – one of which extends the entire length of the East side of the site along 124th Street.
- The City of Bellevue had traffic restrictions including the assurance that no cars back up on the street for drop off or pick up. Pedestrian access onto and around the site over the existing wetlands – the lengthy traffic review and approval for the site delayed the project for a year.
- Construction experienced unprecedented escalation in material costs and labor during the planning and permitting period – maintaining the budget during this time was a major challenge.

The Community members had a voice in bringing a new school into this established neighborhood. Wilburton Elementary, however was a necessary school building to help reduce overpopulation of three surrounding schools, so the value of the process in bringing people together was immense. Each decision was scrutinized and studied by the City and the neighbors bringing together a result that works very well responding to multiple agendas.

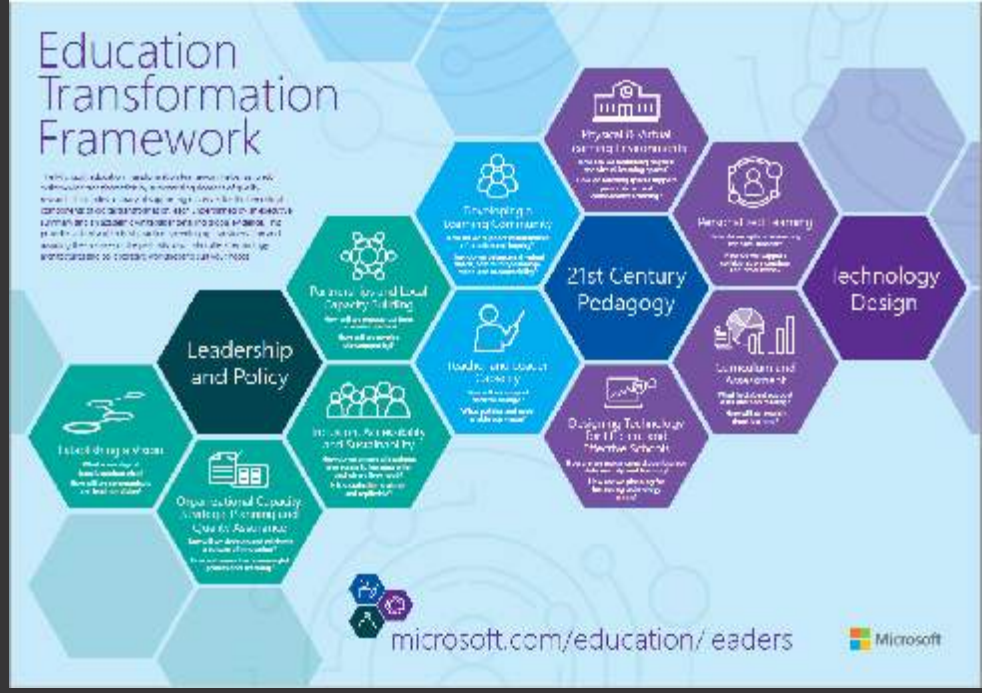


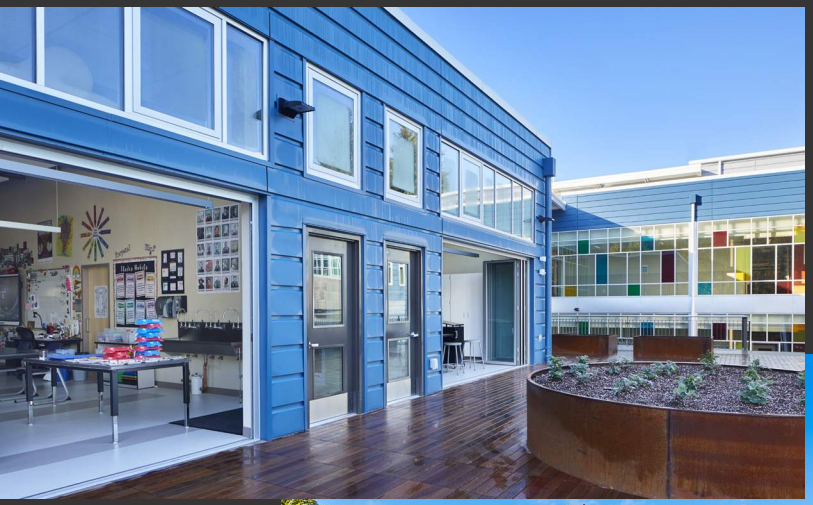
EDUCATIONAL ENVIRONMENT

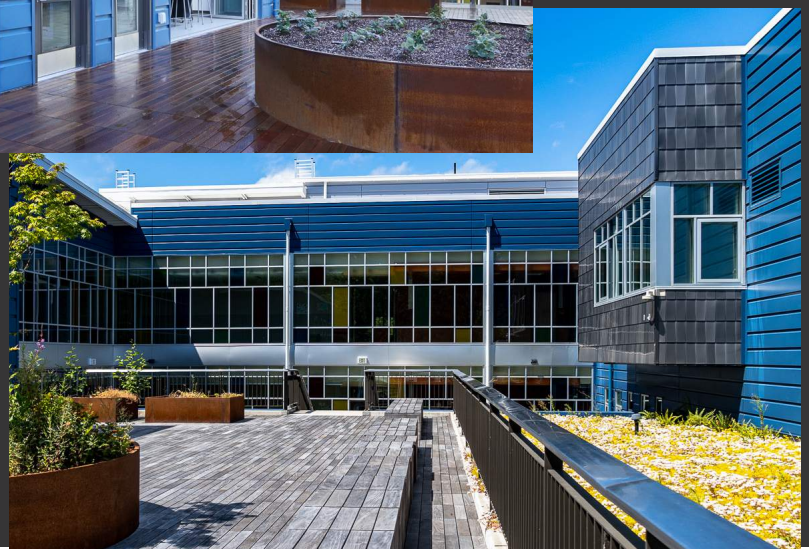
Educational Environment

Being the first all new school on an undeveloped site in the Bellevue School District in decades opened doors to new possibilities for how teaching and learning happens within a building. There are no preconceptions from what has been done before and the School Principal and her new staff took that opportunity to not only move into a new building but also reimagine how teaching is delivered at Wilburton Elementary.

The educational vision and mission of Wilburton Elementary is to be progressive and new. The curriculum is heavily STEAM based which they describe as STEAM for everyone with no gender divide. The intent by the staff is to engage all genders early on and motivate them to continue in the STEAM path all the way through their careers. This vision is seen as an integrated career path for all. Problem solving, project teams and being able to collaborate and work well together are critical to the development of all of the students at Wilburton Elementary. Technology is provided at a very high level by a Microsoft which makes access to the whole world possible throughout the student's career. For this to happen within a set of walls, the building is progressively designed to accommodate an ever changing pedagogy





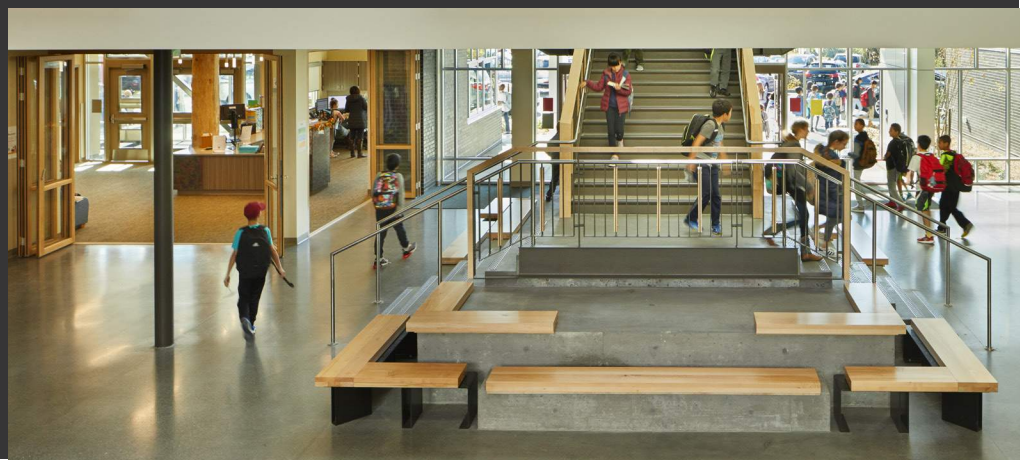


One example of how the environment supports the curriculum is the direct connection through folding Nana Wall doors from the Art classroom and Maker space to a STEAM courtyard. Students can take their projects from inside to real world examples and outdoor project learning. A green roof and student project planter beds help students see how the environment around them thrives and the effects of physical changes to the experimental test beds. Botany-based programs are brought to the school by the Bellevue Botanical Garden. Biologists teach the students both at the school and in the botanical gardens inspiring minds through growing the garden together.

Beyond the botanical experience, Students learn through advanced technology brought to Wilburton Elementary by its partnership with Microsoft. Devices area provided for every student and the staff and students are given access to a whole world of learning. From learning new software and coding skills that will enable the student body to perform in the advanced technological age to classes with students from across the world in real time learning, Wilburton Elementary Students are able to access and take advantage of all that the world has to offer.

ADAPTABILITY & FLEXIBILITY

Adaptability and flexibility features fill the building enabling it to be used in a variety of ways. The main office opens to a spacious lobby though folding panel wall. When closed these panels are made of glass for visibility and control while maintaining privacy; when open the free flow from one space to another is possible. Within the spacious lobby are writable walls and movable furnishings enabling this space to be configured for break out learning, community or parent meetings, school events and more. The balconies above allow this space to be a place of significance where people view the events or presentations from all levels.

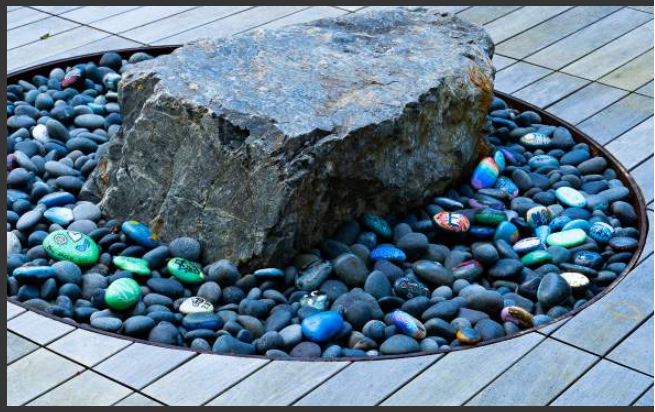


ADAPTABILITY & FLEXIBILITY

Beyond the lobby, classrooms are arranged around shared project space where team teaching, project and individual instruction take place. These learning pods open to private outdoor learning gardens where teachers can bring their students for project or story time.

ADAPTABILITY & FLEXIBILITY

The STEAM classrooms open directly onto an open-air terraced courtyard that connects to a lower level and into the building for further flexibility and use by the teaching staff and learning environments.



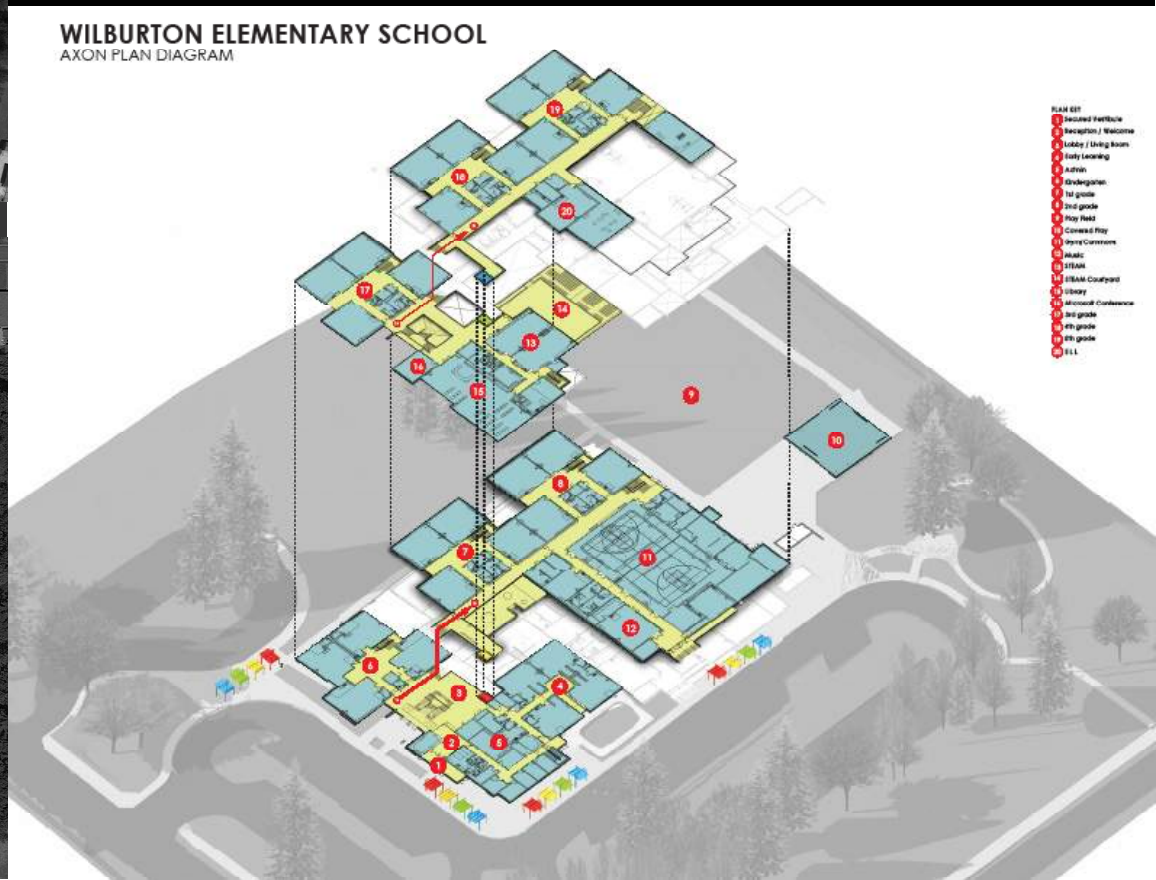
ADAPTABILITY & FLEXIBILITY

The Gym is divided with an operable wall to be used by simultaneous programs or open to larger gatherings with a stage for performances and student assemblies.

Flexibility is brought into the library by ensuring that all bookshelves are on wheels allowing for the space to be reconfigured and used in endless configurations of space and even Community meetings.

PHYSICAL ENVIRONMENT

Extensive site investigation took place early in the process which included tree preservation enhancing the wetlands and their buffers, bringing traffic off the street, and ensuring adequate area for student playgrounds and playfields. Maximizing the allowable site area restricted the available building area which brought about a very compact building plan. The 84,000-sf building provides educational space for Early Learning through fifth grade in a multilevel footprint. The undeveloped Wilburton site sloped 20 feet from the South to the North, so as the building was developed and the site was balanced it became prudent to introduce a 6' offset in the floor plane from the Southern entry level to the Northern end of the building where there was access from the gym to the playfields. This 6' offset enabled the multi-level lobby to bring accessibility to all levels and be filled with daylight by skylights, generous windows and the inclusion of the courtyard that brings light into the center of this compact building footprint.



PHYSICAL ENVIRONMENT

Incorporated into the building is a 4-classroom early childhood preschool which operates independently of Wilburton Elementary school. The courtyard brings light to the back side of classrooms in the preschool and creates the learning terrace for the STEAM class-rooms.

INSPIRES & MOTIVATES

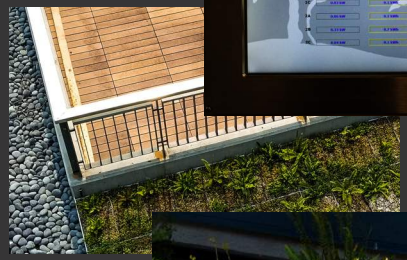
From outside the school, the park like setting is enhanced through a series of primary colored waiting shelters. During the day the colored glass casts hue rich shadows onto the ground bringing creativity and imagination by enabling the student to be enveloped in the experience of color. At night, colorful light is cast through this glass creating a rainbow of effect. Within the building the theme continues, Colorful windows bring interest and diversity into the circulation and lobby. The primary colors of the panes of glass are representative of the creativity and diversity of the education provided at Wilburton elementary and the wonderful color shadows bring imagination and delight to the environment. Natural light and color throughout the entire learning environment offer never ending spectrums of inspiration and motivation to the daily learning.

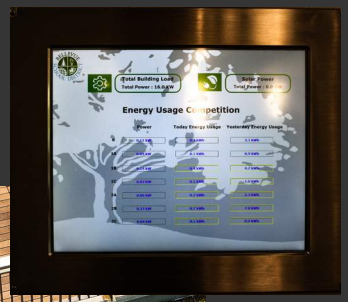
COMMUNITY CONTEXT

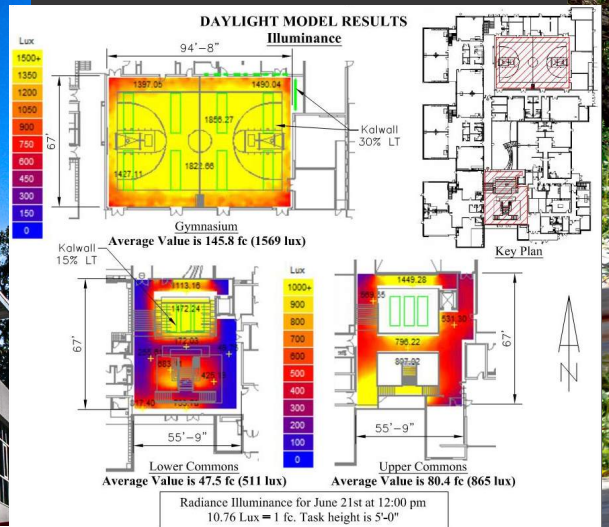
Located only one mile outside of downtown Bellevue, in an established neighborhood, Wilburton Elementary brings together world class teaching and learning in a desirable location. The city of Bellevue classified this area as an arboretum and required the landscaping and pedestrian access meet with the vision of the area. Community partnerships welcomed the school into their reach both through the adjacent Bellevue Botanical Gardens and Microsoft furthering the pedagogical presence of this school.

EMBRACES SUSTAINABILITY

Sustainability of the environment became the critical first step at Wilburton Elementary. Surrounded by three distinct wetlands this site opened the door to outdoor learning and environmental understanding from the moment you walk onto the site. Storm runoff from this site is controlled through two large and buried retention tanks, Pervious pavement and rain gardens protecting the downstream environment which flows into Kelsey Creek – an important habitat for salmon spawning with access to Lake Washington through the Mercer slough. Embracing this opportunity, the building continues its environmental sustainability by harvesting the heat from the earth through 100 vertical geothermal wells providing heating in the winter and cooling in the summer. Solar power and hot water reheat are provided through a 90-kw array of solar panels on the roof together with the solar water reheat panels. Daylighting studies were performed to control optimal lighting to the gym and lobby space through the skylights so artificial Low energy consuming LED lighting is necessary only on the darkest of days or for evening events. The building operation is monitored through a dashboard display in the lobby for every student to understand the impact of energy use and re-charging as it happens. The resulting EUI for Wilburton Elementary is approximately 14.4 – an outstanding example of sustainability within the Bellevue Community and the greater Seattle /Bellevue region.







The mission of the Bellevue School District is “To serve each and every student academically, socially and emotionally, through a rigorous and relevant education that is innovative and individualized. As a learning community that values one another’s humanity, we provide courageous support for an equitable and exceptional education for all students”. Wilburton Elementary achieves this goal by providing its students opportunities for group, project, and individualized learning anywhere within its walls and beyond. The educational experience is tailored to today’s world and opportunities are generated for the students to succeed and excel through life’s challenges.

The community cared deeply about the safety of the students who attend the school and were concerned about increased traffic through the narrow neighborhood streets. The architectural team worked closely with Landscape designers, Civil Engineers, Traffic and Wetland Consultants and the City of Bellevue to mitigate these concerns and arrive at a final design which achieved these goals. Off-site work included new sidewalks beyond the project site property line, new signaled cross walks, reduced speed limits during school hours and a turn lane to help keep traffic from backing up where visibility was low. Site line studies were performed to make sure that there was proper distance for stopping and clear vision at hills that could be perceived as reducing site distance. In the end, the goals for safety and traffic were achieved and the project has a welcoming presence and is a valuable asset to the community.

The Bellevue School District has experienced growth and overcrowding in its existing schools as the expansion of the Tech industry makes Bellevue a desirable place to raise a family. Wilburton elementary was a necessary expansion easing the overcrowding from three surrounding elementary schools. This combined with the district's commitment to environmental stewardship and educational vision enabled Wilburton elementary to showcase and advance the owner's goals. Sustainability is exhibited through the site and its preservation of the wetlands and the building through its comprehensive environmental reduction in off-site power and heat. The educational goals were advanced through a motivated and influential school Principal who took on the challenge of creating an all new highly advanced and innovative teaching and learning experience within the walls of a new school building.

UNINTENDED RESULTS & ACHIEVEMENTS

Unintended results and achievements of the process & project came out from the following.

- Synergy of BSD and Microsoft goals and mission
- Cooperation from neighboring property owners @ north boundary near playfield
- Contractors awareness and respect of the site features and natural setting. Total team commitment to “do well” on this site to assure health and wellness for the next generation
- Powerful presence of undisturbed buffer on the east side of the site
- 20 foot topographic change dictated split level design solution with well-proportioned courtyard.