

Gardner Elementary School

A4LE Project Awards

Type: New Construction/Consolidation

Grades: PreK-4th

Location: Gardner, MA

Size: 145,700 sf

Year of Completion: 2022

Cost: \$89 M

Construction cost per sf: \$421/sf

Gardner, Massachusetts, a chair manufacturing mill town, sought to replace two aging schools that dated from 1926 and 1951 into a single building suitable to meet the District's educational needs for 1000 students from Pre-K to 4th Grade. The new school is the first purpose-built elementary school in the community's history. It offered an opportunity to support an increasingly diverse student population with high quality learning environments capable of supporting inclusion and strengthening team taught learning communities.

After a highly transparent feasibility study, the District decided to build its new school on a wooded hilltop site adjoining its existing middle and high school campus. While the site's wetlands and grade changes posed challenges to construction, it also inspired the Design Team's material decisions. The result is a school that embraces the universal language of nature to create an inspiring and welcoming community primary school.

The school is made up of three distinct masses connected by light-filled "bridges" that look out over the surrounding woodlands. The Pre-K/Kindergarten wing has its own drop-off, administrative offices, planning rooms and common spaces. The center wing houses larger community spaces, including the cafetorium, gymnasium, media center, and a fourth grade learning neighborhood. The northern wing supports the 1st, 2nd and 3rd grade learning neighborhoods.

After school release the facility remains active, offering enrichment programs and hosting community arts and recreational programs.



2 SCOPE OF WORK AND BUDGET

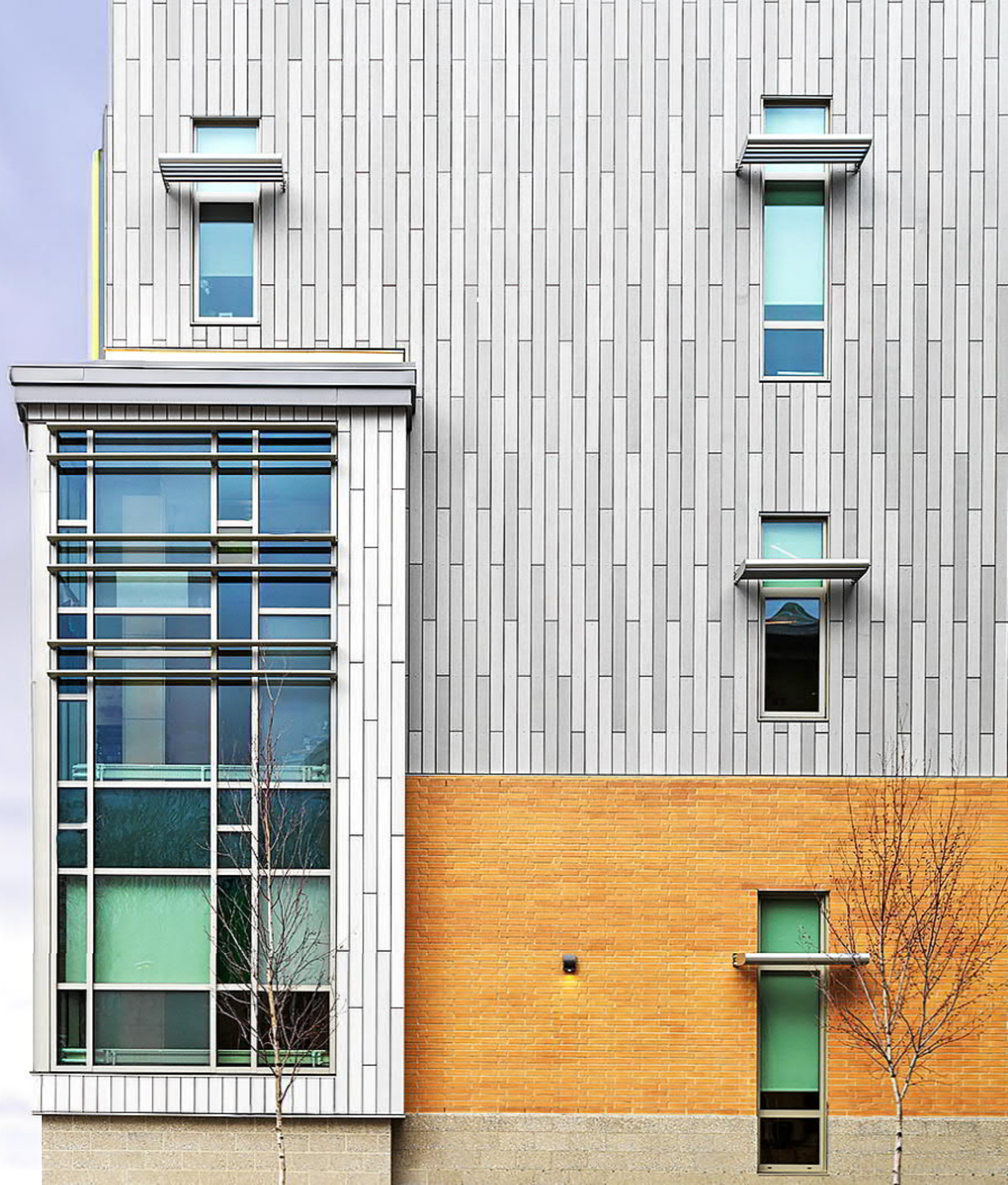
Gardner Elementary School is a Massachusetts public school funded by local property taxes and a grant from the Massachusetts School Building Authority. The Design Team was responsible for educational visioning, feasibility study, siting, schematic design, materials specifications and cost estimates, construction documents, construction administration, and sustainability certification.

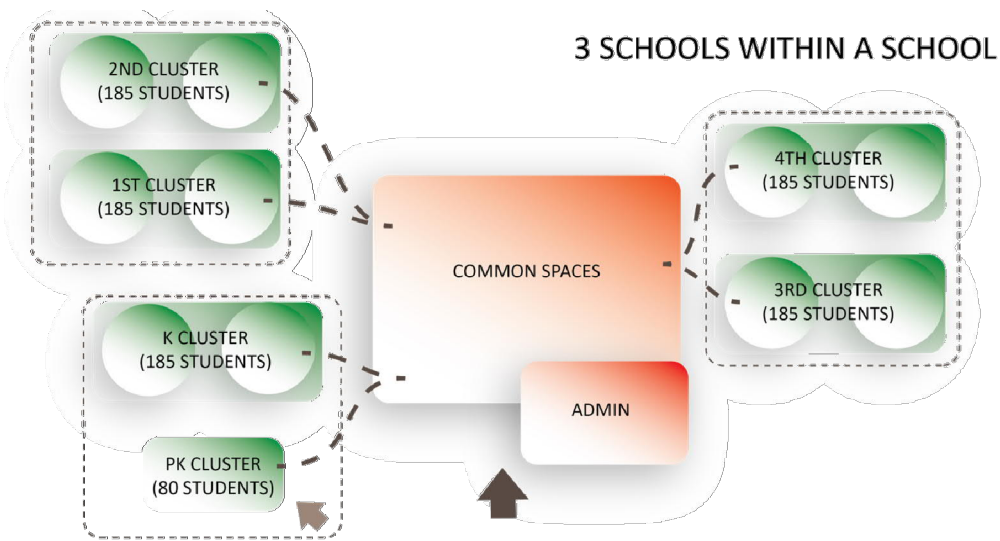
The Design Team included planning, architectural design, structural, civil, landscape, plumbing, mechanical, fire protection, electrical, security, lighting design, cost estimating, code and accessibility review, food services, instructional technology, sustainability certification, furniture, finishes and equipment.

The final 145,700 gsf project had a total budget of \$89.5 million including design costs, soft costs and owner's project manager fees for all phases including a post-occupancy commissioning phase. Construction cost was \$70.9 million or \$421/sf. The project delivery method was design-bid-build.

Aligning with the district and state sustainable goals, Gardner Elementary achieved NE-CHPS-Verified certification from the New England Collaborative for High Performance Schools (NE-CHPS).

In keeping with the student-centered goals determined by the educational visioning process, the design emphasizes a healthy, high-quality indoor environment with high ventilation rates, abundant daylight and views, durable, non-toxic finishes, excellent acoustics, thermal control and biophilic interior treatments in order to maximize the potential of the building to support learning outcomes.





As a working class mill town of 21,280 people tucked away in the north-central part of Massachusetts, Gardner had a long history of voting against tax increases for public school and municipal building projects. In 2020 the community’s per capita income was just \$32,240. Demographically, it was changing rapidly as a new generation of Americans arrived in the City. Young Latino families were moving to Gardner in large numbers in search of stable jobs, affordable housing and public schools for their children.

The Gardner Public School District had been struggling to address the demand for English Language Learner programs and, like many schools in Massachusetts, also struggled to provide effective special education services within its aging facilities. This surge of needs propelled the District’s call for a new Gardner Elementary to replace two existing elementary schools into a consolidated addition-renovation or a wholly new school.

The Design Team initially conducted four workshops with faculty and staff from the District’s two existing elementary schools to establish the educational vision and priorities for the project.

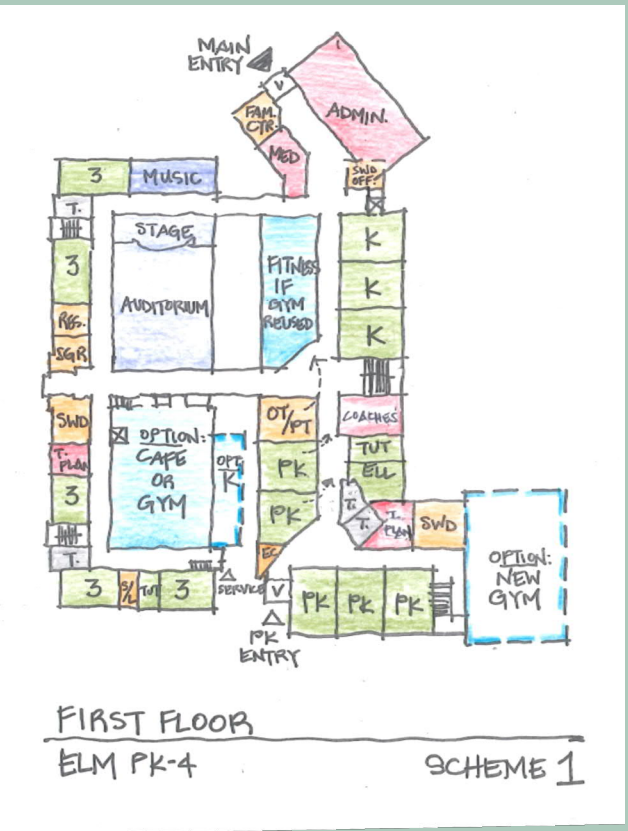


A chance to move away from making-do !

The initial feasibility study explored six options including three addition-renovation options. The Design Team shared massing, site plans and floor plans for the various options and facilitated small group and large group discussions.

While initially it was assumed that an addition-renovation option would be preferred, it became clear that the community saw little benefit in adapting the existing Elm Street School, built in 1926, to support the District’s educational goals. The rigid layout of the historic high school simply did not provide the variety of spaces needed for 21st century learning.

After several rounds of public meetings and a feasibility study, the School Building Committee voted to build new on the undeveloped Pearl Street site, next to the current middle and high schools.





A woodland site with boundless possibilities for enrichment

The selected site for the new school was a 16 acre woodland of recently logged mixed hardwoods located up hill from the Gardner High School and across Pearl Street from a popular state park. While challenging to develop, the Design Team embraced the positives of the undeveloped site, including the opportunity to be inspired by the biodiversity of the site when crafting an identity for the new school. To the left, three early site options explore ways of organizing the school while accomodating the desired 200 parking spaces, maximizing solar exposure and steering clear of wetland boundaries.

Key Priorities:

- To strengthen the school as a community resource
- To provide 21st century learning environments
- To create learning communities within a larger school
- To construct the school from healthy materials
- To connect the achool to the outdoors while remaining energy efficient (*Not an easy thing to do in the northern most city in Massachusetts!*)

Early programming studies and existing condition reports documented the spatial, mechanical, life safety and accessibility constraints of the existing schools.

After an extensive visioning process, the Design Team and

School Building Committee held several public forums with City residents to present options including three renovation options and three options for new construction.

The final decision was not driven by administrators. It was a solution that percolated up through the faculty and staff, concerned families, and community leaders. The benefits of the visioning and engagement process were felt throughout the rest of the process in the trust the Design Team enjoyed with the community as it worked through complex site challenges and bold interior design decisions.

To maintain this trust, the Design Team conducted repeated public forums throughout construction, even conducting online sessions to update the community during the challenging months of the COVID pandemic's lock down.



Faculty visioning session at Elm Street Elementary School



Design Team investigation of undeveloped Pearl Street site

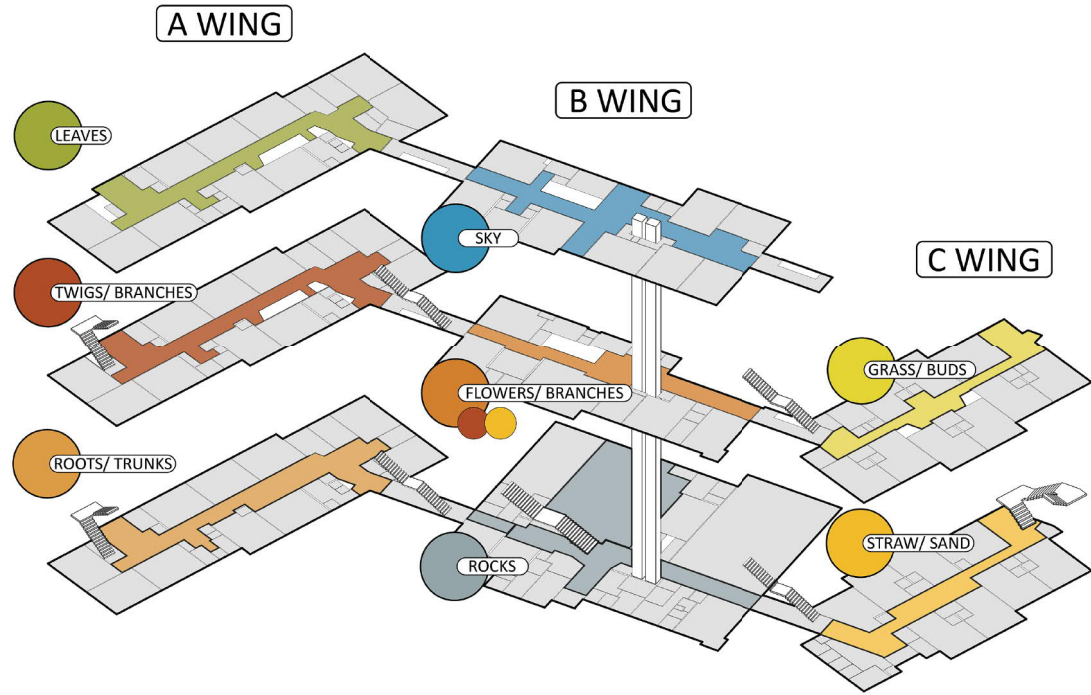


PHOTOGRAPH BY LEIGH CHODOS

The Design Team worked collaboratively with City departments and consulting engineers to solve the practical challenges the site posed. Chief among the challenges was how to get busses, cars, walkers and bikers past strictly protected wetlands to the dry upper site. Whenever stumped, the Team looked to nature for inspiration, developing rockgabion walls, bridges and view sheds to enliven the complex civil plan.

The Design Team also let the site inspire material decisions. The golden embers of seasonal foliage next to the grays of wood bark and stone inspired the brick and gray cladding seen at the entry. Pops of colored glass and glazed block mimic the surprise of vivid berries and light streaming through foliage throughout the deciduous forest.

4 PHYSICAL ENVIRONMENT



The school is designed as three separate but connected structures, reducing the perceived size to make it “homier” for young students. Each academic wing contains groups of classrooms organized in learning communities, and oriented so that most have a long wall to the north or south. Windows are slightly taller on the north elevation — to allow daylight deeper into the classroom.

Expansive views from the classrooms, light bridges and community spaces maintain connection to the site. The final “Z” shaped floor plan allows space for a series of nature-based play areas to the south of A-wing and behind the school.

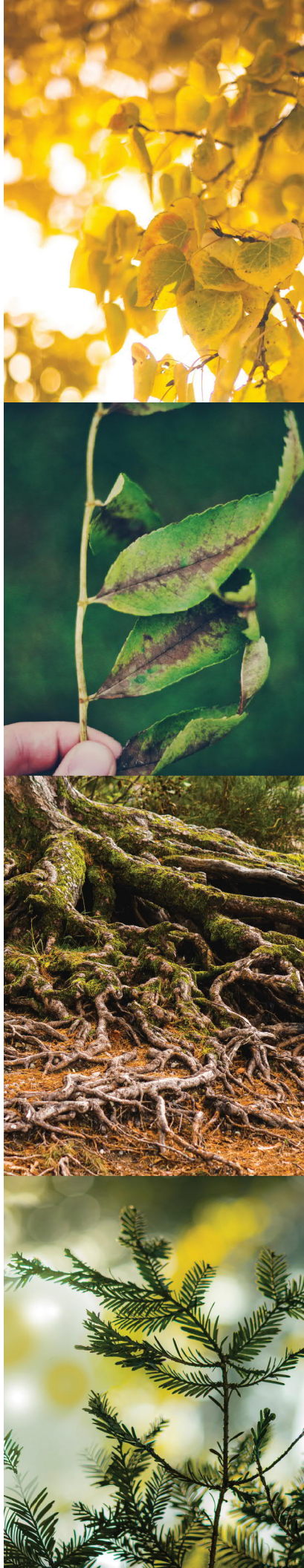
Sustainable excavation efforts were prioritized and earthwork cut/fill plans were balanced. On-site rain gardens and underground infiltration systems manage stormwater. Boulders and logs from the excavation process were salvaged and incorporated in playgrounds and exterior seating areas.



OVERALL PLANS FLOOR 2



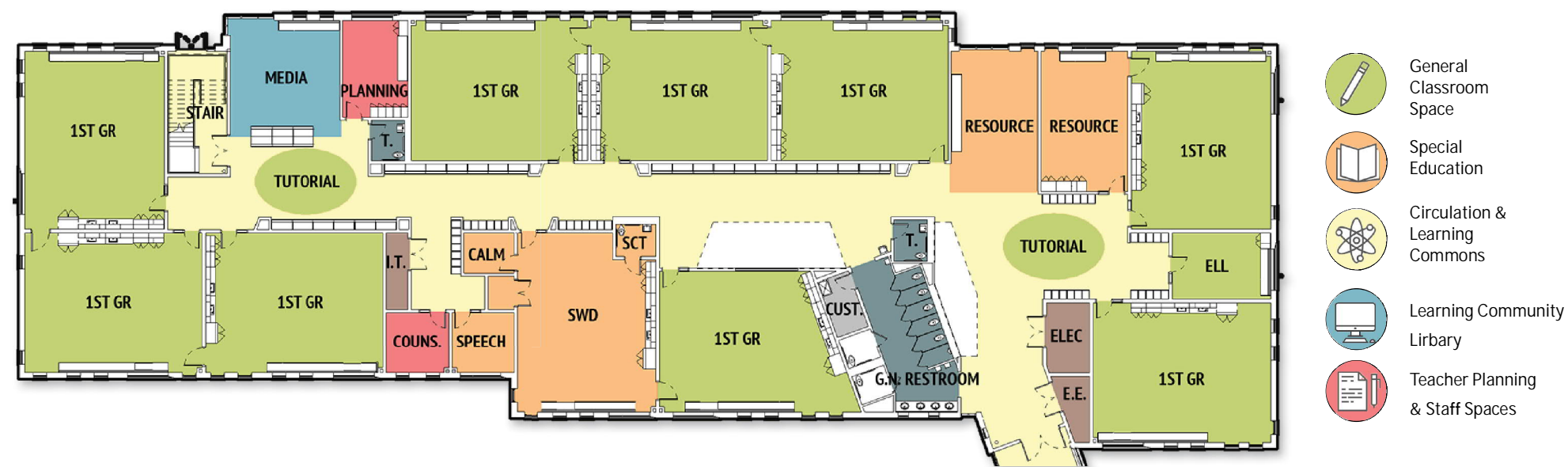
OVERALL PLANS FLOOR 3



The proximity to wetlands and woods offered an opportunity to integrate ecological stewardship into the site design and curriculum. Play areas are clustered near each wing and include a “Summit Garden”, “Hemlock Bowl”, and an “Oak Knoll” to the north.

Swings, climbing structures, performance platforms, and slides are integrated into the landforms — saving cost on play structures while providing an engaging and tactile environment for students to discover.





The interior design of Gardner Elementary also draws from the school's natural context, prioritizing the universal appeal of nature to student well-being.

Classrooms are arranged in clusters near shared breakout spaces and wide, cubby-lined corridors.

Classrooms are infused with natural light and the colors one finds looking at the treetops of the surrounding maple and birch forest.

The exposed structural system and acoustic metal deck maximize ceiling height and contribute to a sense of openness.

Circulation is designed with intention—light filled stair towers replace enclosed stairwells, connecting building volumes while offering panoramic views of the landscape.

Community access is a central part of the school's identity. Facilities like the cafetorium, gym, and playground are open after school hours, with secure design solutions ensuring safety while supporting public use.

Directly adjacent to the main entry is a Family Center, which helps parents and other adults connect with school services to better support their students.

Throughout the building, design details surprise and delight students—from the colorful curtainwall "lantern" at the main entry to the color-shifting dimensional walls panels in the clerestories. Every element contributes to a dynamic, ever-changing experience that reflects the rhythms of nature and the energy of learning.

A highly insulated envelope reduces energy use, while water-efficient systems and healthy, durable materials contribute to a high-performing, comfortable learning environment. Natural light, acoustics, and thermal comfort are all carefully calibrated to support concentration and student success.



ABOVE - A Resource Room supporting a special education teacher is adjacent to a pod of two classrooms, an ELL room, and an additional special education room



PHOTOGRAPH BY LEIGH CHODOS

The “light bridges” link the learning neighborhoods and give students that move up from one grade to another a physical change from one year to another. Gently sloping floors create an experience of transition from one wing to the next while also responding to the grades of the site. Ergonomic benches

allow students to sit in a variety of positions, activating opportunities for different kinesthetic experiences while waiting for classmates to pass by before and after lunch hour and recess.

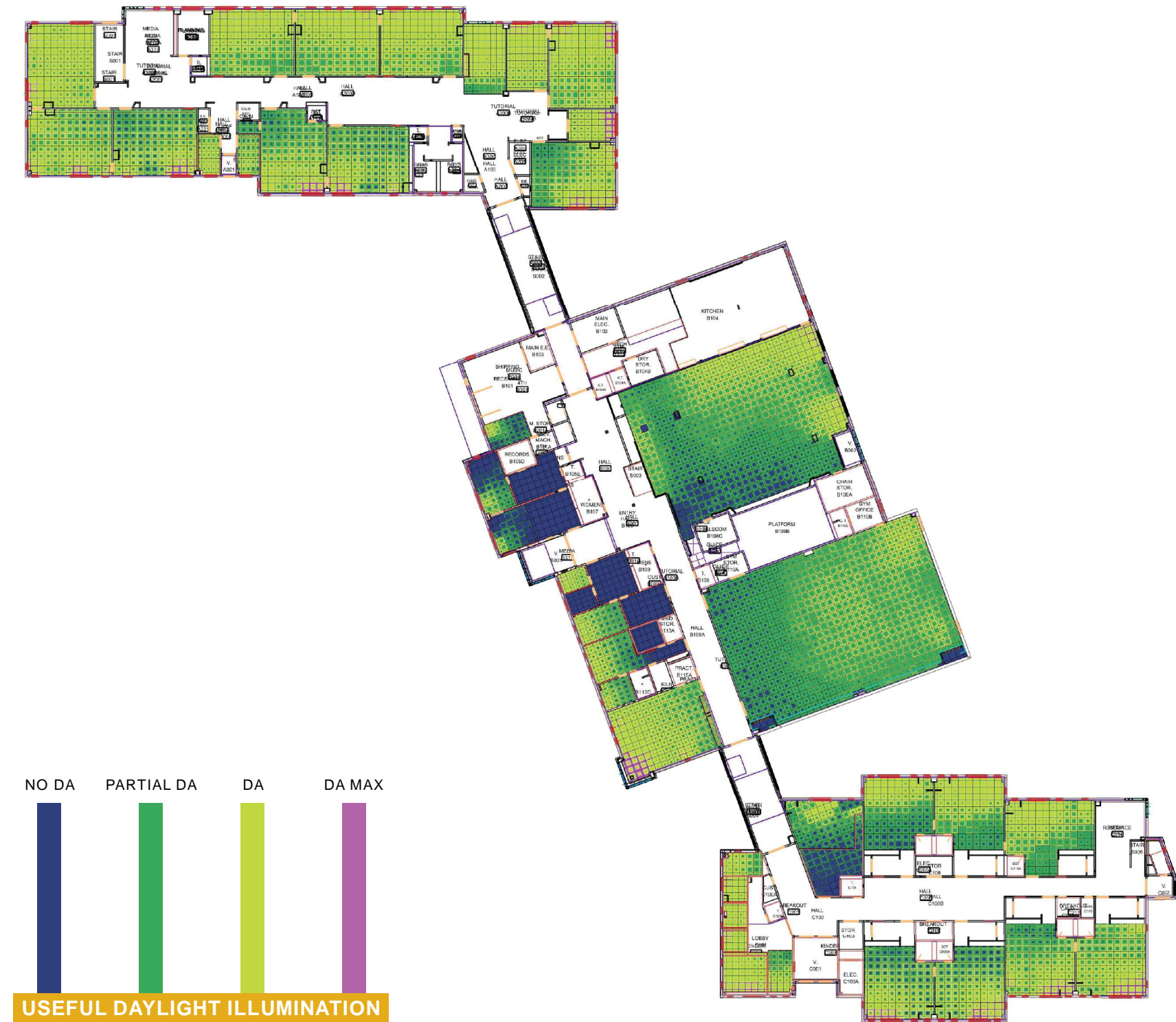


The Media Center features colorful glazing, structural “trees”, soft seating, and flexible furniture — helping it adapt to the school’s needs over the coming years and decades. A two-story glazed “lantern” sits above the main entrance, connecting the media center and the third floor above. The large spans of glazing take advantage of sunlight and create joyful and playful patterns in the room throughout the day, while areas of fritted glass and motorized shades control for glare.



PHOTOGRAPH BY PETER VANDERWALKER

The project architect partnered with a daylight consultant to run sophisticated models to fine-tune the design. Extensive studies were performed on the 3D model to ensure all classrooms were appropriately lit to create a positive learning environment for both the teachers and the students. Control of lighting is provided via networked panels and occupancy daylight sensors, allowing teachers to maximize the benefit that natural light provides within a classroom teaching setting.



5 EDUCATIONAL ENVIRONMENT

A typical classroom shows exposed structure, controlled daylight, natural materials, varied seating and active learning spaces. The Design Team selected six colors to use throughout the entire building to unify the school and simplify future maintenance.



5 EDUCATIONAL ENVIRONMENT

Colorful, iridescent panels are positioned to help reflect sunlight gathered from the south facing clerestory windows. The panels serve as an art installation inside the building, and are used as a teaching tool relating to

sun angles and cardinal directions. Custom graphics with playful trees, fauna and woodland critters add whimsy and tie the multi-story spaces together. Neutral floors and finishes, light in value, maximize daylight reflection.





PHOTOGRAPH BY LEIGH CHODOS

The cafetorium was designed for centrality and easy access to the outdoor play areas to alleviate transitions for the staff. A metal perforated accent wall provides a pop of color within the warm wood finishes. Both metal and wood panels provide important

acoustic treatment within one of the noisiest spaces of the building. An organically shaped custom light fixture adds additional playfulness to the space.



PHOTOGRAPH BY LEIGH CHODOS

The shared community spaces are centrally located in the B-wing of the school. At the second floor, near the media center, students can look down into the gymnasium. A key draw of the consolidation plan was that it would allow the District to build a

larger gymnasium capable of supporting a broader array of physical education offerings and could also support after school sports and recreation programs.

5 EDUCATIONAL ENVIRONMENT

All intersections are designed to provide long views for security and social connection. Here the central stairs in the B-wing at the first floor level are flooded with natural light from a third story skylight. A colorful storefront system allows the cafeteria to remain acoustically isolated from the corridor.

Below the main stairs, a bench creates a waiting area in front of an abstracted view of a nearby grove—one of many examples of biophilic strategies utilized in the design.



SUSTAINABILITY

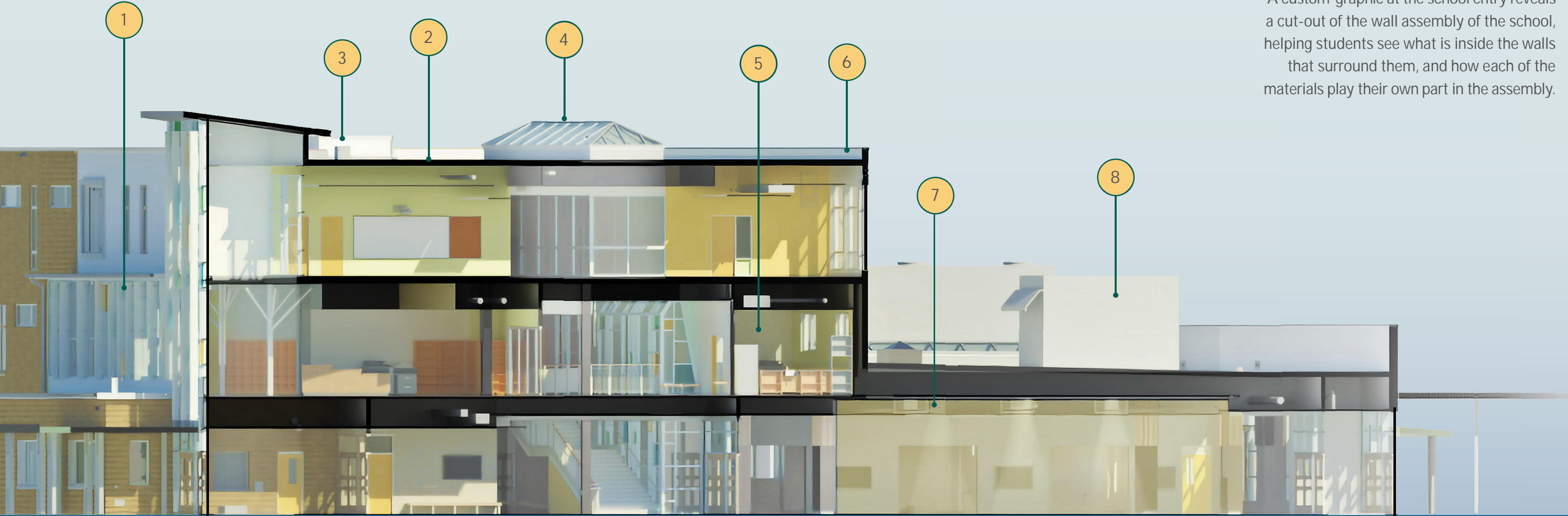
The school has recently completed the NE-CHPS “Verified Leader” certification process.

From the earliest phases of design, the District and Design Team used the NE-CHPS tool to focus on sustainable priorities, including energy performance, biophilic design, environmental education and occupant health and well-being. Care was taken to ensure that sustainability could be as core to the teaching goals of the staff as it was to the designers of the building. Some of the key sustainability objectives were:

- 1 | **VIEWS** Views are provided from 90% of the classrooms and administrative areas. Access to natural views is shown to improve student concentration and retention.
- 2 | **SOLAR-READY ROOF** The flat and south facing roof has no penetrations and is structurally designed to support solar panels.

- 3 | **100% OUTDOOR AIR VENTILATION** Each classroom has ventilation controlled by individual room sensors. Ventilation is 100% outdoor air, and no air is exchanged between classrooms.
- 4 | **DAYLIGHTING** Computer simulations were conducted to optimize natural daylight while minimizing glare.

- 5 | **BUILDING ENCLOSURE** Roofs have R-32 continuous insulation or better, and walls R-10 stud cavities with R-13 continuous exterior insulation.
- 6 | **ACOUSTIC PERFORMANCE** Additional wall thickness, floor underlayment, and acoustic tack surfaces all serve to reduce noise transmission between rooms.
- 7 | **HIGH EFFICIENCY LIGHTING** LED lighting with multiple dimmer settings were used throughout the building.
- 8 | **EFFICIENT MECHANICAL SYSTEMS** Design energy use 27% better than base code.



A custom-graphic at the school entry reveals a cut-out of the wall assembly of the school, helping students see what is inside the walls that surround them, and how each of the materials play their own part in the assembly.

6 RESULTS

Gardner Elementary achieved the District's goal of establishing a more effective, inclusive elementary school for all families. The school succeeded in the eyes of the community by establishing a welcoming place for public and recreational after school events. The glazed "lantern" within the media center acts as a beacon of light drawing students and visitors to the school on the hill.

Gardner's "School in the Woods" is already surpassing expectations. With district enrollment on the rise, the new school has proven itself a vibrant and welcoming place for young learners of all backgrounds and learning styles. The New England woodland surrounding the school continues to anchor the design in a unifying concept that has become a symbol of Gardner's commitment to education for all.

