



Bennett Elementary School



Balancing Community Presence and Natural Context

Located in a district recognized for academic success, the goal for the new Bennett Elementary School was to create a world-class 21st Century learning environment. The original 1970s school reflected the design standard of its time, situated at the bottom of a wooded hillside with no connection to its natural site. Additionally, the original single-story school was set back from the street and obscured by landscaping, diminishing the building's community presence in the neighborhood. By contrast, the new school puts students directly in touch with the outdoors, engaging them in nature near and far. The new school welcomes the community to the site with public gathering space and the design of the building's materials and glazing. Organized in three "terraces," interaction begins on the ground floor at the communal area, both inside and outside. An experience of discovery then grows as one ascends the building to the two upper terraces, revealing a series of indoor and outdoor spatial surprises.

The design pays special attention to the steering committee's desire to preserve the cozy feeling of the original school albeit in a much larger building. Breaking down the scale in smaller forms and spaces gives each terrace the quality of a one-story building. In turn, a sense of spatial intimacy extends throughout, while the school gently immerses into its natural context.

A Larger School Designed on a Challenging Site

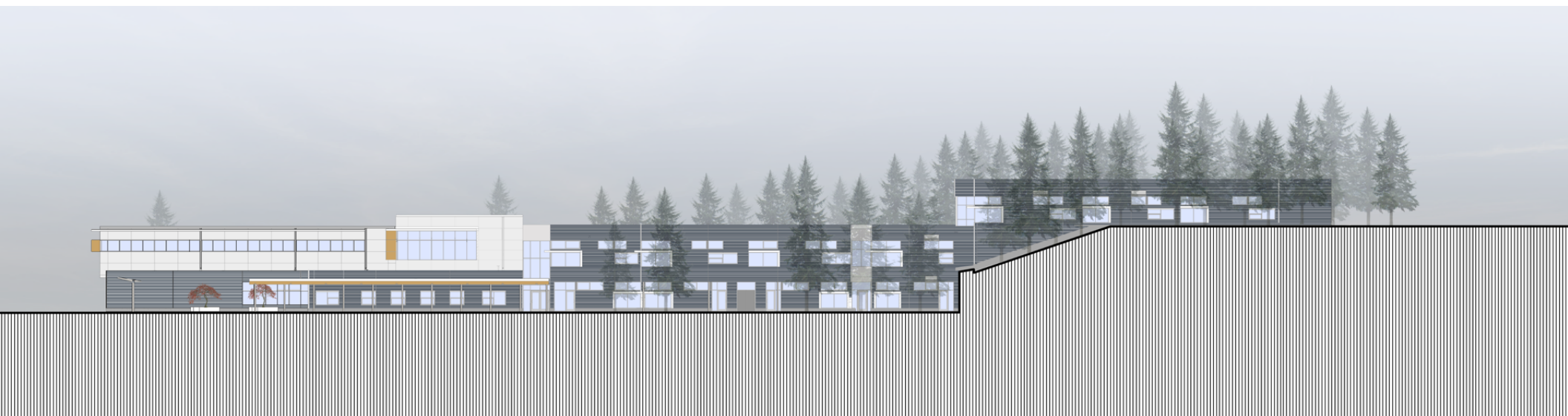
The large driver for this project was to replace an existing school and portables currently serving 480 students with a new school designed to serve 700 students on a topographically challenging site.

Doubling the building size, adding a play area, and increasing parking exceeded the area available in the lower, flat 5-acre part of the site occupied by the existing school. The rest of the site sloped up dramatically to a forested hilltop. The school couldn't be sited entirely on the hillside and forested hilltop without degrading the natural character of the site. The idea of introducing a large, three-story building into a single-family residential neighborhood alarmed the local community.

In response, the design breaks down the project's scale and utilizes the upper 5 acres of hill and forest by stepping the building up the slope. The result is a terraced massing: a school spread across three levels that never appears to be more than two stories tall because it's set into a hillside. This "stepping" solution also allowed visual and physical access to the natural part of the site at every level. The character of the outdoor spaces change at each terrace, giving every classroom access, learning opportunities, and unique perspective on this precious site.

PROJECT DATA

Capacity	700 students
Gross Building Area	96,472 sf
Site Area	9.34 ac
Cost	\$38,520,490
Completion	Fall 2017



Creating a Communal Presence

The physical challenge was to create a new communal presence appropriate in scale to an established neighborhood.

1

The school site is within an established residential neighborhood. Mature trees and wide green lawns separate the private residential environment from the public environment of sidewalks and streets.



2

The existing school had a weak communal presence because it obscured itself from the street with landscaping, just like the houses of the neighborhood. The new school would need a more visible public face and gathering spaces that welcome the community.



3

The existing school lacked screening along shared property lines. This created acoustic, privacy, and security issues. The new school would need vegetative screening along private edges to respect the existing community.



Embracing the Natural Context

The educational challenge was to make all of the site accessible for learning while preserving its natural beauty.

1

The site has a lower flat zone and an upper flat zone separated by 30 feet of steep slope. The existing school stayed on the cleared lower zone, abandoning the learning potential on the upper half of the site. The new school would need to embrace the hill.



2

The upper terrace had undeveloped woods and a clearing. This natural amenity was a natural and community habitat. The new school would need to respect the fragility of this context while connecting it into the educational activities of the rest of the site.

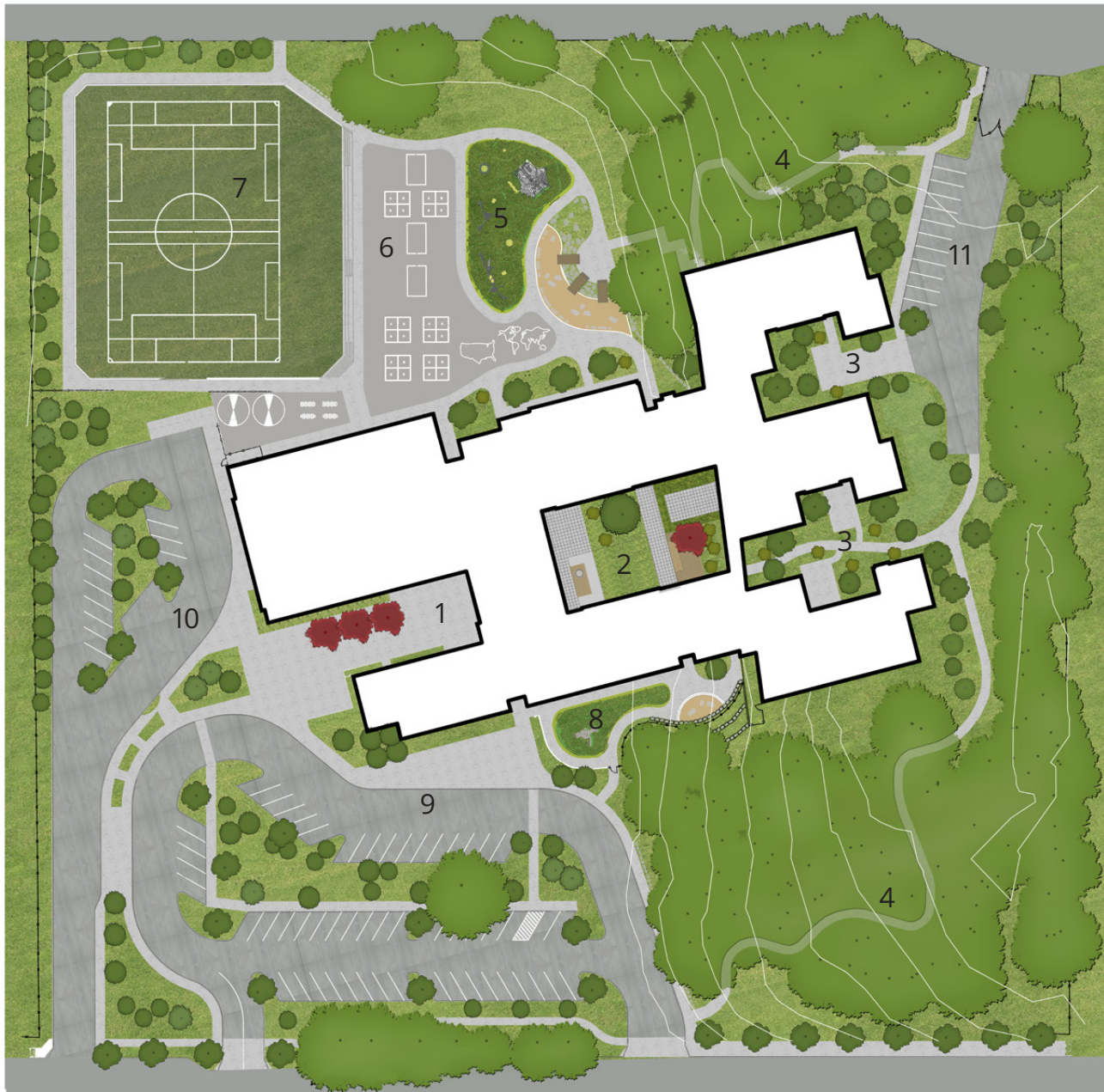


3

The educators worried that a larger school would overwhelm the site and ruin the intimacy of the existing building's scale. The new school would need to subdivide the building into three terraces to foster a smaller sense of scale within the larger building.



Site Plan: Three Terraces



EDUCATIONAL VISION

Located in a district known for academic achievement, the vision for the project was formed with the highest aspirations. It was paramount to provide a learning environment that inspired the students, teachers, and local community equally. Creating a bright, engaging experience throughout the site and building, connecting between indoor and outdoor learning areas.

LEGEND

- 1 Communal Terrace
- 2 Play/Learn Terrace
- 3 Naturalistic Terrace
- 4 Forest Trail
- 5 Elementary Play
- 6 Hard Surface Play
- 7 Field
- 8 Childcare Play
- 9 Parent Drop Off
- 10 Bus Drop Off
- 11 Staff Parking

First Floor | Communal Terrace



LEGEND

- General Classrooms
- Childcare
- Special Ed
- Flexible Learning Area
- Art/Music
- Library
- Gym/Commons
- Administration
- Service

TERRACING SUPPORTS PROBLEM BASED CURRICULUM

The school district promotes “problem-based learning”, a branch of project-based learning where students are challenged with real world problems to address across subjects. The school is organized into three terraces, each with a distinct character that connects students to the real world in unique ways. The lower floor is the communal terrace, connecting students to the concept of community and larger gathering spaces. The middle floor is the play/learn terrace with a central courtyard for active and social learning among students. The upper floor is the naturalistic terrace, granting students access to a forested ecosystem.





First Floor | Communal Terrace

EDUCATIONAL ENVIRONMENT

Second Floor | Play/Learn Terrace



LEGEND

- General Classrooms
- Childcare
- Special Ed
- Flexible Learning Area
- Art/Music
- Library
- Gym/Commons
- Administration
- Service

SPATIAL VARIETY SUPPORTS LEARNING STYLES

This school provides a case study for an educational environment that offers ample spatial choices for extroverts and introverts alike, both inside and outside. Special attention was given to smaller scale, cozy “cave” spaces throughout the circulation areas, as well as in shared areas and in classrooms, where teachers decorate their window nooks to personalize them. The shared spaces have particularly cozy nooks enabling quiet concentration and a strong visual connection to the adjacent natural environment. On the second terrace, the play/learn courtyard’s broad variety of spatial options further invite teaching and socializing outdoors.





Second Floor | Play/Learn Terrace

EDUCATIONAL ENVIRONMENT

Second Floor | Play/Learn Terrace

1

Views from the library's ample windows connect students to the forested context. This strategy used throughout the school creates a bright experience that changes throughout the day and the seasons.



2

Green roofs, immediately adjacent to flexible learning areas and major program encourage passive appreciation of the environment, and allows educators to take learning, play, and social activities outdoors.



Third Floor | Naturalistic Terrace



LEGEND

- General Classrooms
- Childcare
- Special Ed
- Flexible Learning Area
- Art/Music
- Library
- Gym/Commons
- Administration
- Service

CLASSROOM GROUPING PROMOTES FLEXIBILITY + ADAPTABILITY

Pod configurations provide teachers flexible opportunities to organize program adjacencies and modify grade and class locations. These shared spaces vary in shape and configuration, from floor to floor and pod to pod, to simplify adapting to changes in the curriculum. The variety of adjacent exterior spaces on the second and third terraces promote the integration of environmental learning outside the classrooms.





Third Floor | Naturalistic Terrace

EDUCATIONAL ENVIRONMENT

First Floor | Communal Terrace

Organized in three terraces, the new building steps gently into the hillside, transitioning from the welcoming gathering area at the communal terrace, to the student-centric design of the play/learn terrace, and to the surrounding tall trees at the naturalistic terrace.

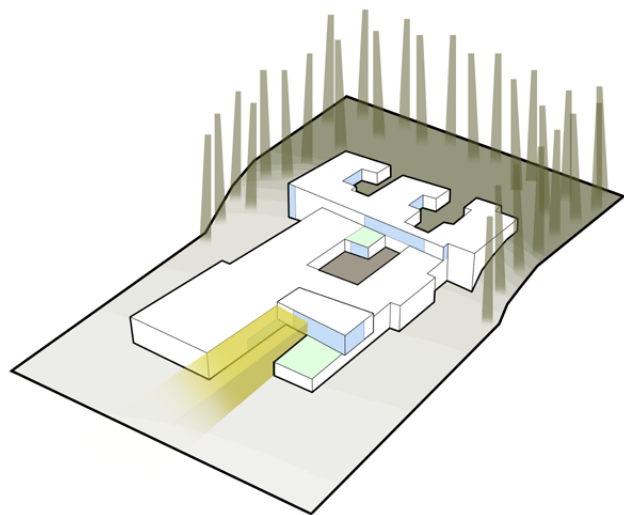
1

The articulation of the massing into smaller volumes, the covered entry, and the larger volume of glazing at the communal terrace conveys a friendly gesture—like a good neighbor.



2

The active play areas North of the building are available for after hours public use, but are screened from neighbors to respect their privacy.



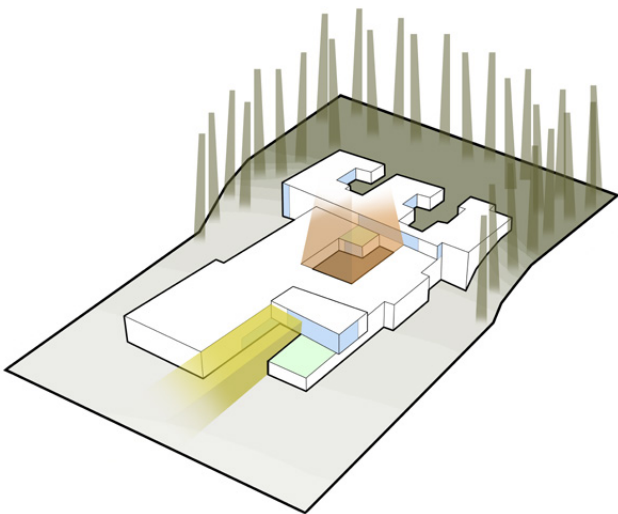
Second Floor | Play/Learn Terrace

1

The project explores and embodies the notion of spatial discovery as you move through the building to a higher level. Unexpected spaces open up in the middle in the form of a play/learn courtyard that also offers ample of spatial variety.

2

This range of spatial experiences allows students to find their own most motivating places.



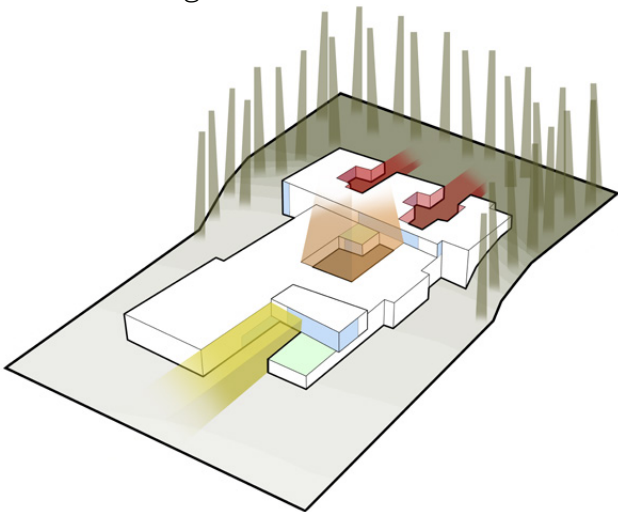
Third Floor | Naturalistic Terrace

1

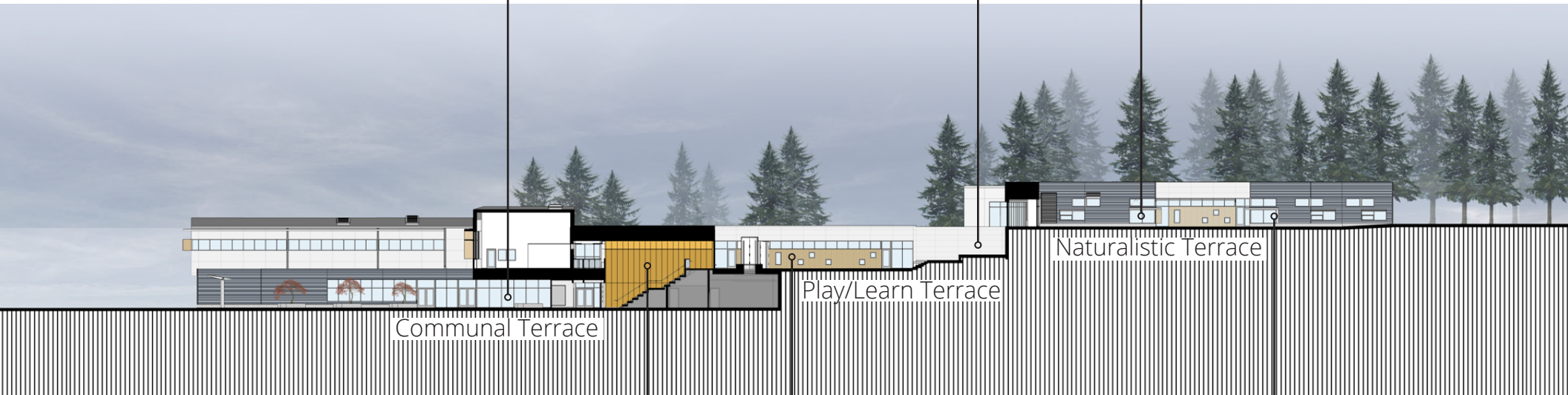
Each classroom provides another surprise as users discover small-scale nooks and visual connections to nature right outside their windows. Even though it is the third level, the building only appears to be one story, reducing the scale of the building compared to the surrounding trees.

2

The building form and color are simple to blend with the trees, but cladding textures create a play of shadows in the filtered light.



PHYSICAL ENVIRONMENT



EDUCATIONAL ENVIRONMENT



Balancing Community Presence and Natural Context

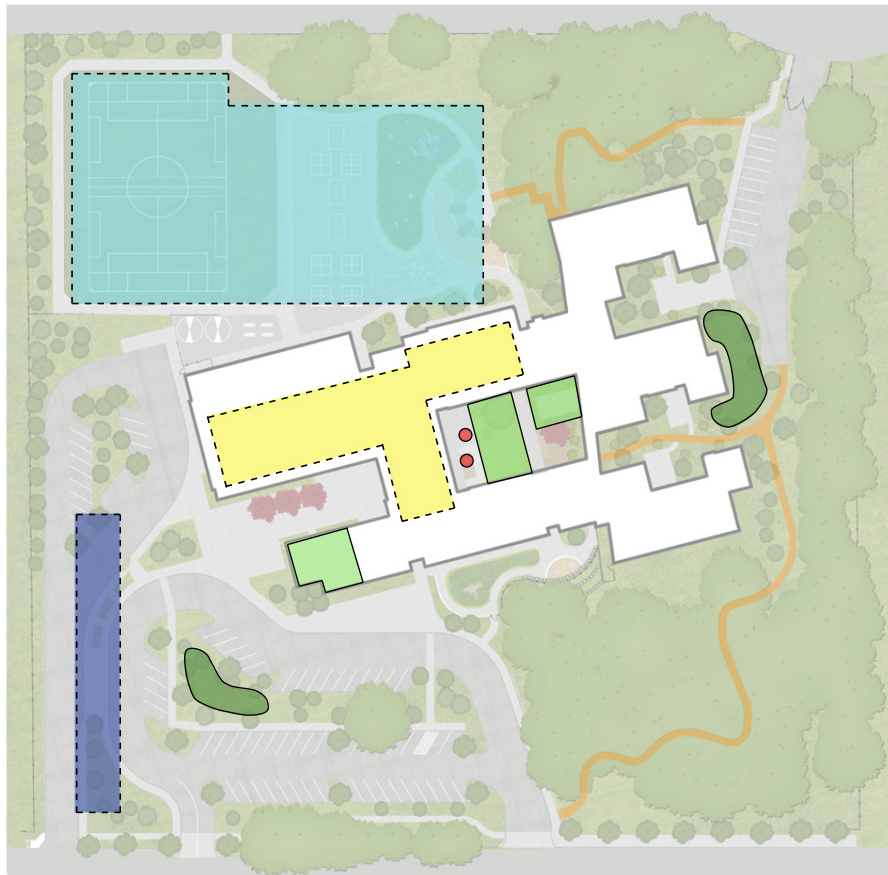
The physical challenge from the community was to establish a stronger community presence in proportion to the suburban community. The educational challenge from the school was to design a much larger school, engage the entire site in learning, and preserve the school's intimate character.

Breaking down the building's scale supported both these goals. The articulated building massing is spread across three levels, but never appears to be taller than two floors. Additionally, the gathering area outside the entry provides ample space for school/community interaction. Learning Stairs at the intersection of both entry points form a true welcoming hub for all students, whether being dropped off by parents, walking to the school, or arriving by bus. The gym and performing space with cafeteria both present opportunities to engage the wider community.

The interior's cozy character fosters positive educational and social relationships for students and teachers. The spatial variety encourages student success for formal or informal, and independent or group learning opportunities. Even though the student capacity has doubled compared to the original building, organizing the building into three terraces preserves the small school feel. The building feels like a series of interlocked communities, each with its own character and opportunities.

Natural Context | Sustainable Features

The school district has high sustainability standards. Bennett has a super-insulated envelope and abundant daylighting with sunshades to prevent glare as well as a host of other sustainable strategies.



- Rain Garden
- Green Roof
- Nature Path



Rain gardens at the top and bottom of the hill address water quality from site and building surfaces

- Geothermal Well Field
- Photovoltaic Array (100 kW)



Solar panels on the second floor roof are visible to students walking down the third floor hallway connector.

- Interactive Roof Hood



A mechanical room below the second floor courtyard helps balance cut and fill on site. The perforated metal shrouds around the roof hoods in the courtyard are lit with LED lights that change color as the hood draws in fresh air and exhales exhaust air.

- Stormwater Detention Vault



A 56,000 cubic foot detention vault capture stormwater from hard surfaces and building roofs.

