



Nature as a Path to Place – Blakely Elementary School

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A4LE ConnectED June 2022

Blakely Elementary School, the 2021 A4LE MacConnell award winner, is a 400 student K-4 replacement school for the Bainbridge Island School district that grew out of a community vision for a school unique to their site and community. A vision evolved of a seamlessly integrated landscape of shared collaborative learning experiences that amplify strong student achievement and empower their ever-innovating teaching culture through the transformation of the school's relationship with the surrounding mixed coniferous forest.

The educational benefits of daylight and improved educational environments has been well documented. But as we raise the bar, what are the next levels of higher performing schools where children can connect to nature and bring biophilic geometries and indoor – outdoor design elements into learning environments?

An engaged co-creating process with teachers was essential for the design process of the circulation framework and the relationship of classrooms to shared learning. Through workshops with teachers and staff, a design parti emerged that celebrated the rising topography of the site, centered learning communities within a framework for collaboration, created a quilt of indoor and outdoor experiences and connected sustainable performance with environmental education curriculum.

Multiple sustainability strategies include all electric systems, geothermal wells, over 20,000 plants and extensive stormwater infrastructure for filtration and retention. Biophilic design strategies from natural design geometries, structural 'whole trees' and connections to exterior landscapes are core to the project design.

1. *Learning Objectives:* Presentation will present **detailed strategies for optimizing educational spaces for learning and community inclusion.**
2. Sustainability strategies for **energy, natural ventilation, ground source geothermal and reduced embodied carbon** will be reviewed.
3. Landscape integration for **biodiversity, stormwater treatment and retention** will be presented.
4. **Technical integration of Structural 'Whole Tree' columns.**





**"There are three teachers
of children: adults, other
children, and their physical
environment."**

– Loris Malaguzzi

**The environment is
The Third Teacher.**

Disciplines—

Architecture

Interior Design

Landscape Architecture

Planning

Urban Design

Discipline—

Integrated Design

Path to Place

Site and Ecosystem

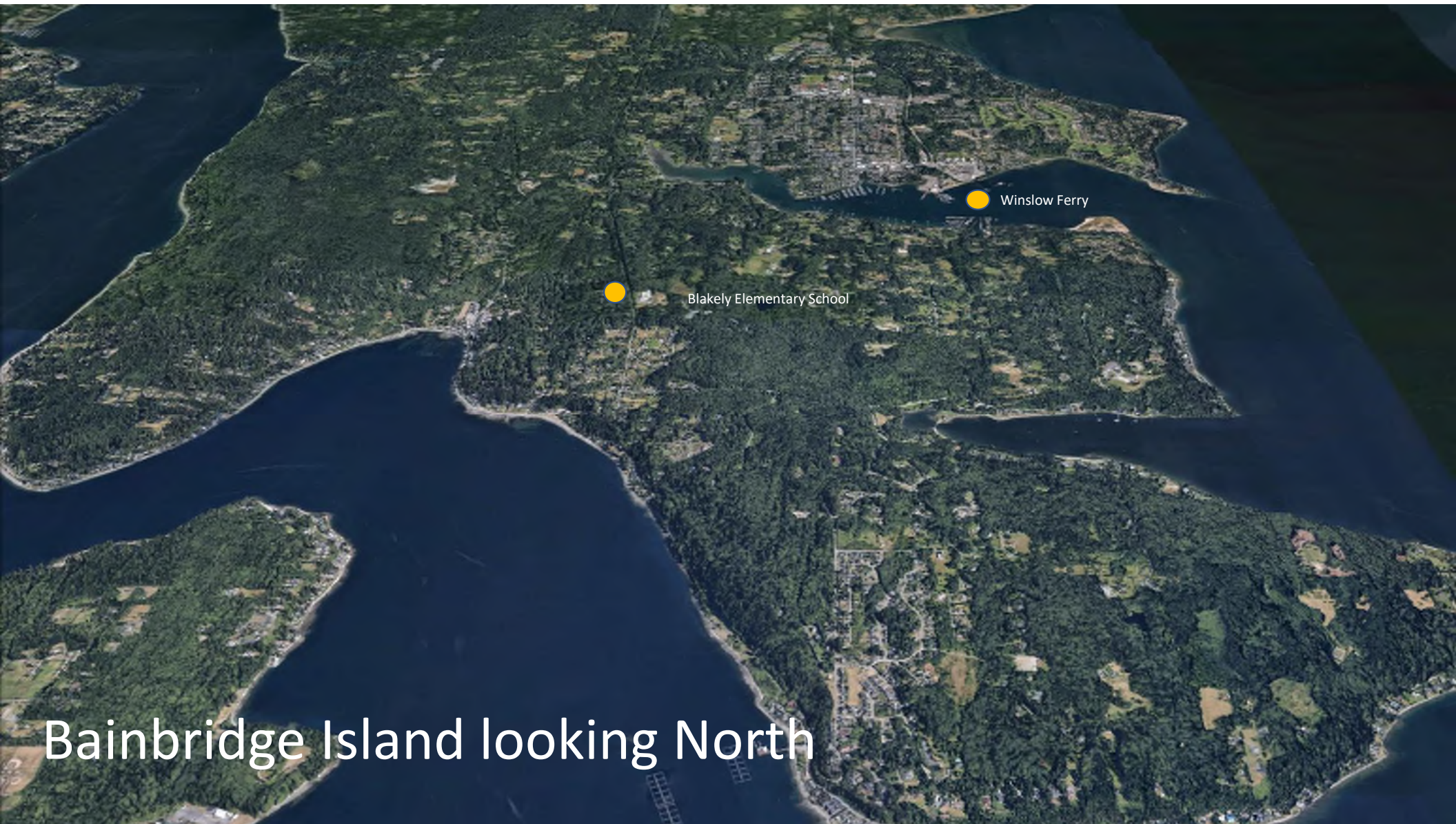
Community Engagement

Choreography of Experience

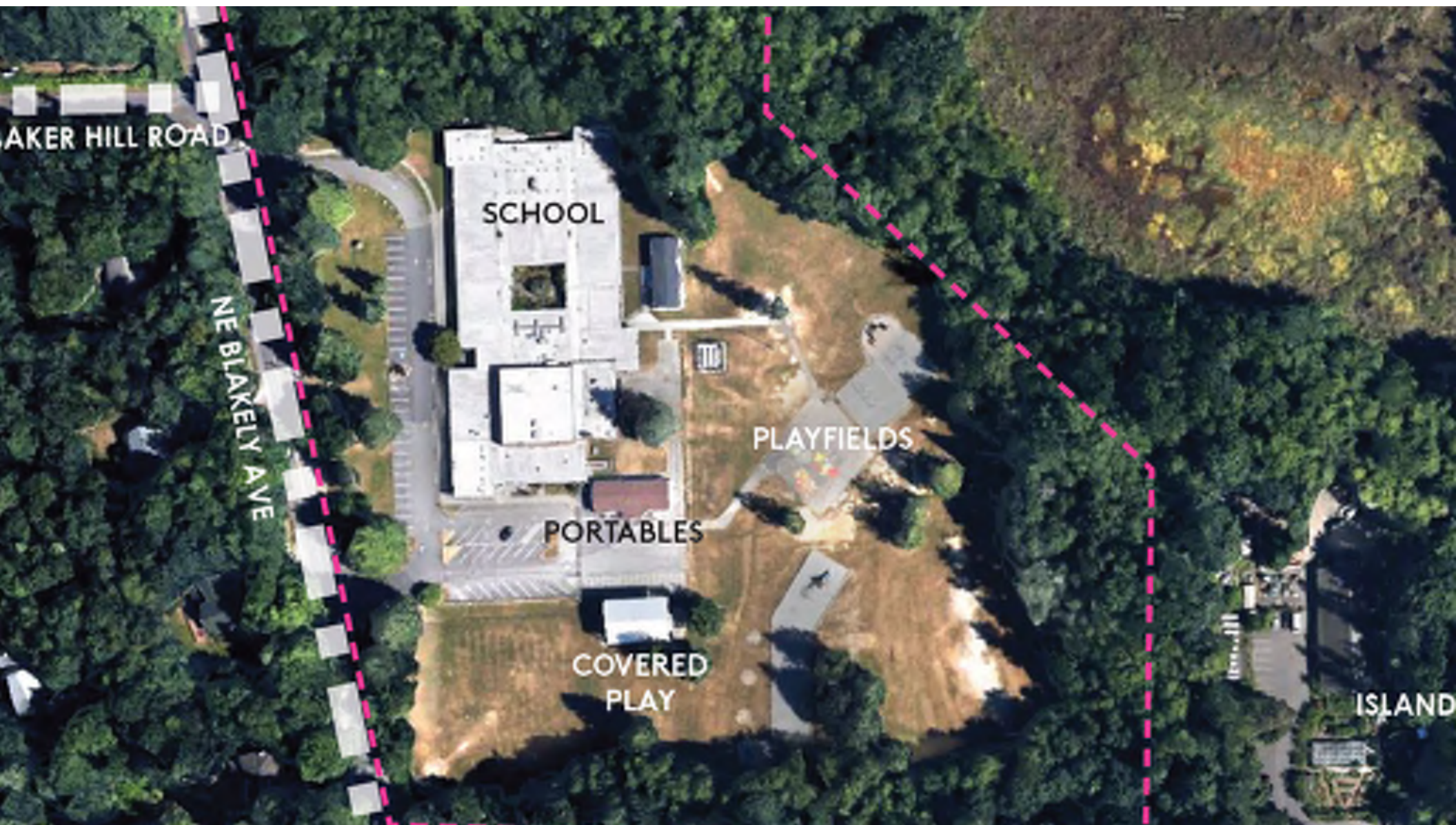
Bioclimatic Response

Tectonics of place





Bainbridge Island looking North



AKER HILL ROAD

NE BLAKELY AVE

SCHOOL

PLAYFIELDS

PORTABLES

COVERED
PLAY

ISLAND



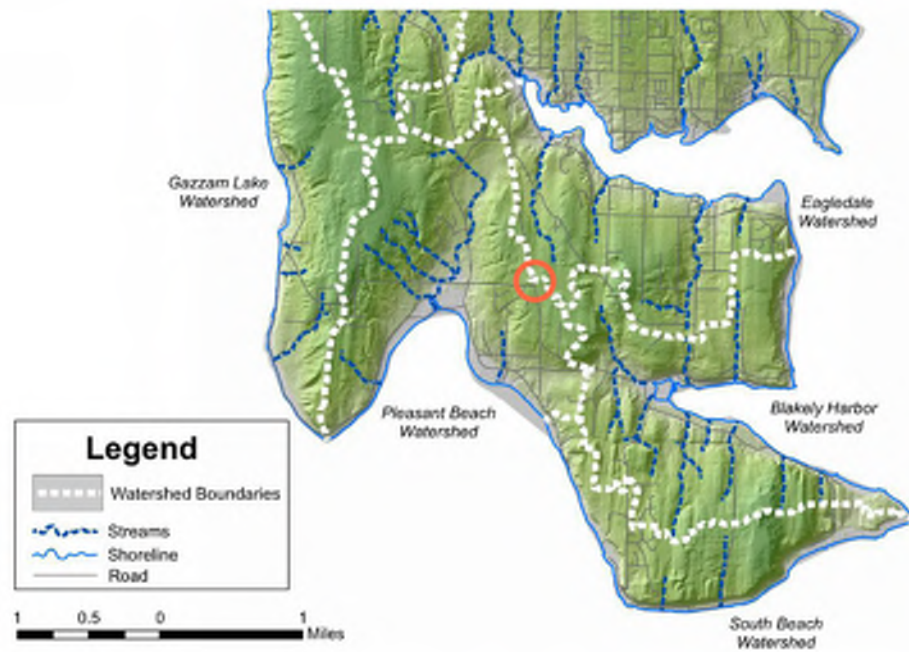


This is the third Rolling Bay School located on "School Hill." It was eventually abandoned in 1929 and demolished in 1941.





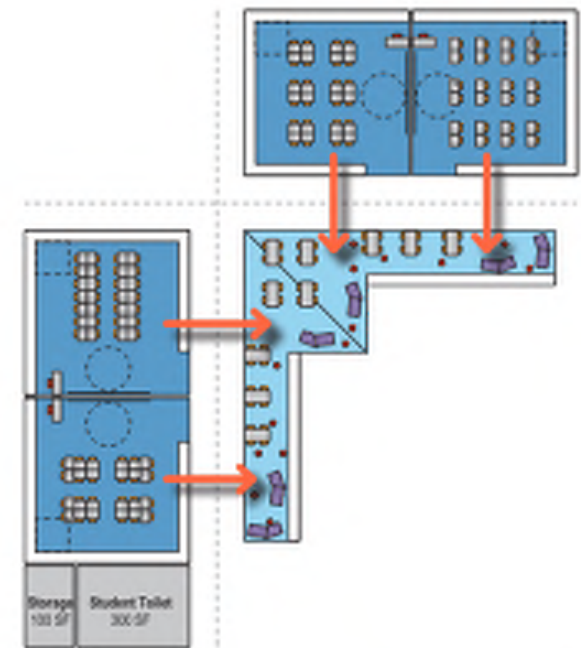
Source: <http://www.ci.blainbridge-id.us/195/GIS-Mapping-Map-Galle>





Programming
Phase





- CONSIDERATIONS
- GENERALLY, REALLY LIKE THE 'L' SHAPED ARRANGEMENT
 - LIKE THAT THE SHARED LEARNING IS STRETCHED OUT, SO THAT EACH CLASS HAS DIRECT ACCESS
 - LIKE HAVING ONE SLIGHTLY LARGER PORTION OF THE SHARED LEARNING
 - NO SMALL GROUP BREAKOUT SPACES - COULD BE PROBLEMATIC
 - LIKE POTENTIAL INTEGRATION OF LANDSCAPE
 - POTENTIAL FOR OPERABLE PARTITIONS BETWEEN CLASSROOMS

'L' – Flip Chart Diagram



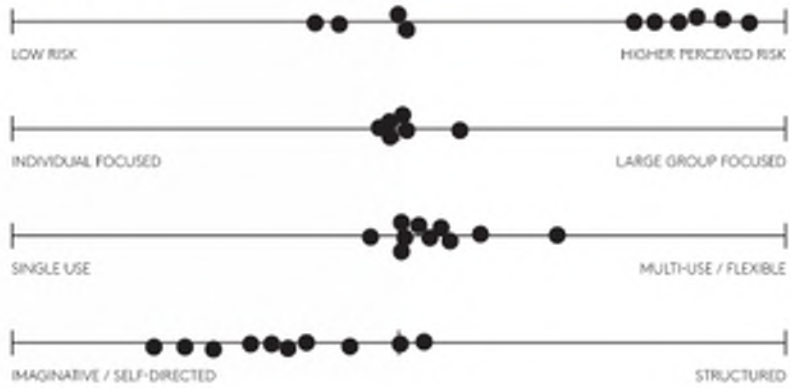
A Kiss Goodbye







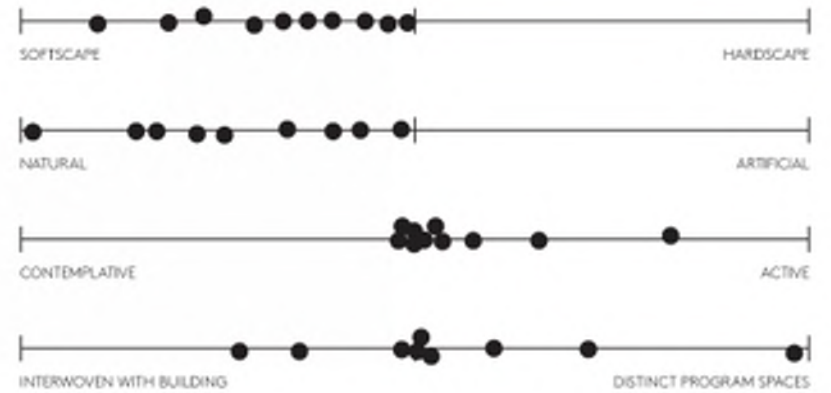
PLAY SHOULD BE:



BLAKELY ELEMENTARY SCHOOL / EDUCATION SPECIFICATION / AUGUST 18, 2016



OUTDOOR SPACES SHOULD BE:

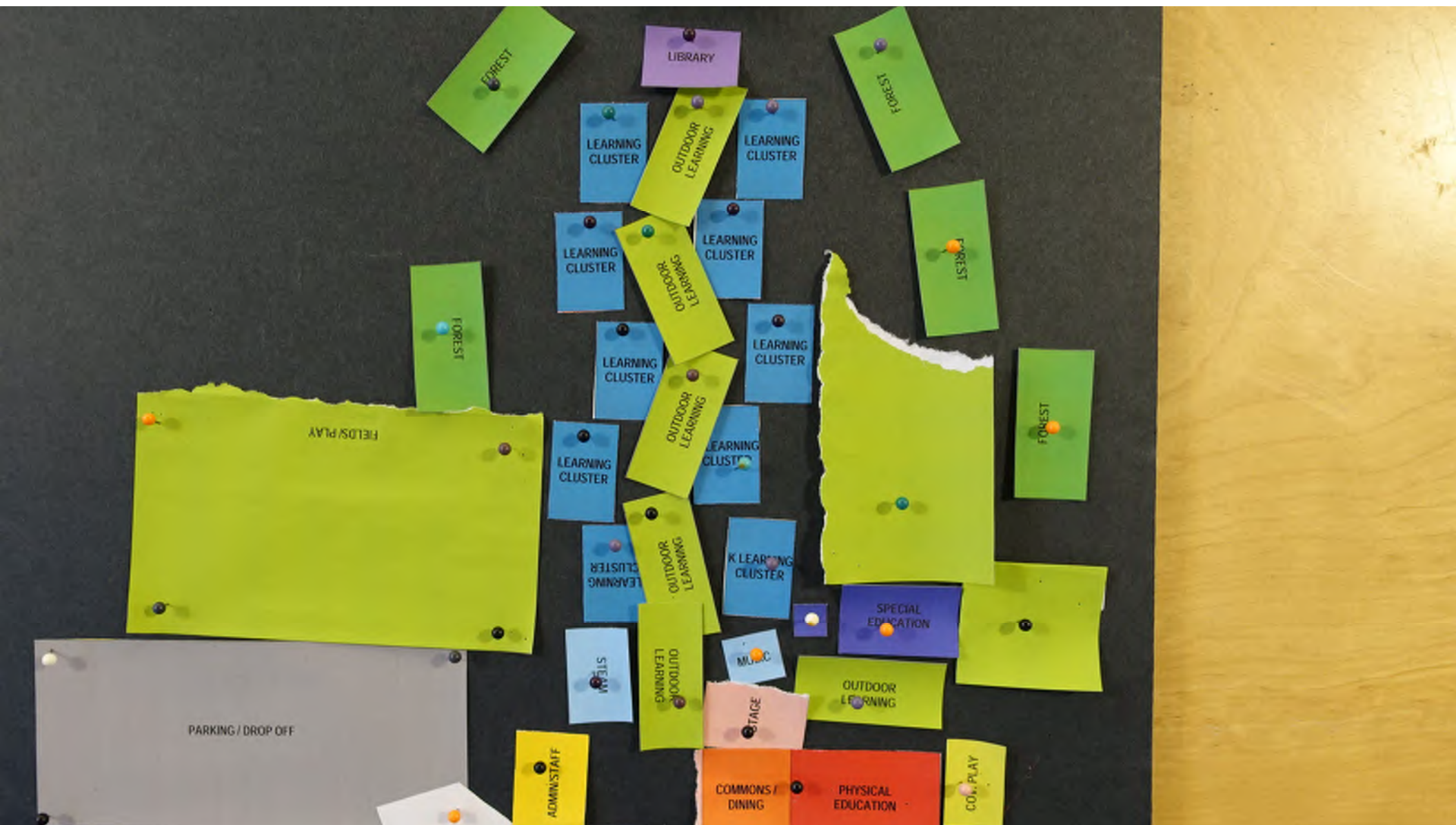


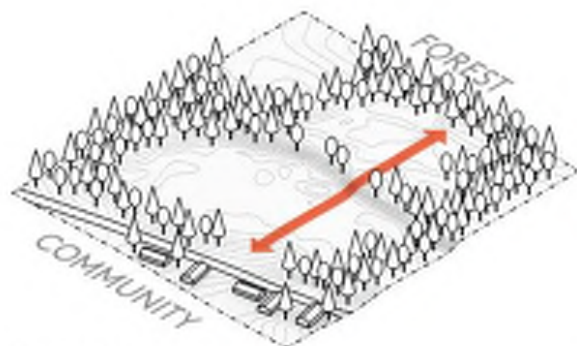
MITHÜN



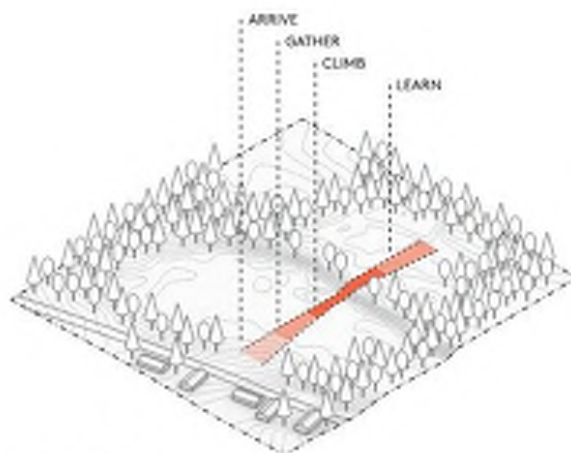




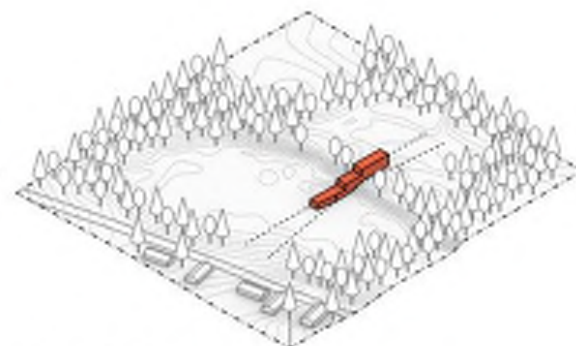




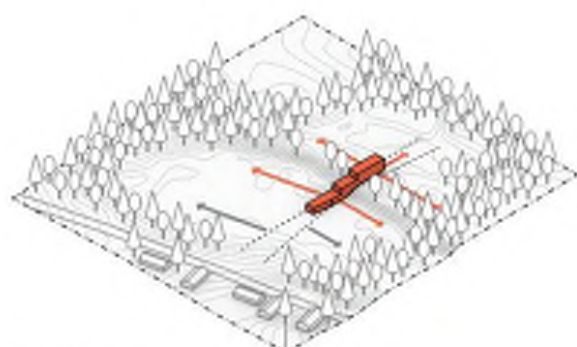
CONNECTOR



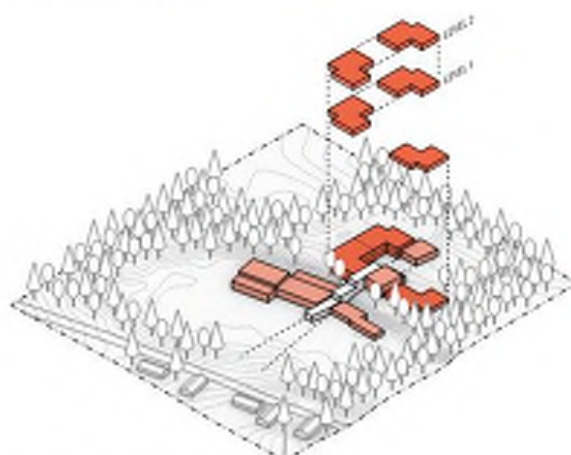
CIRCULATION SPINE



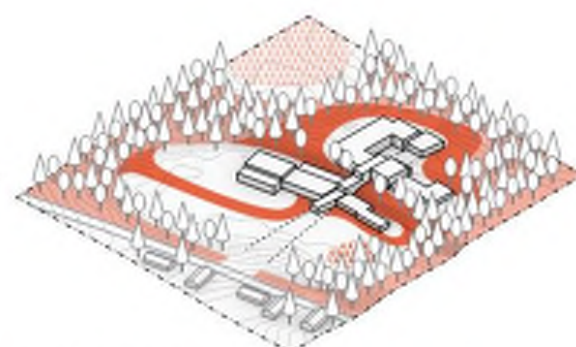
CLIMBING THE HILL



PROGRAMMATIC WINGS



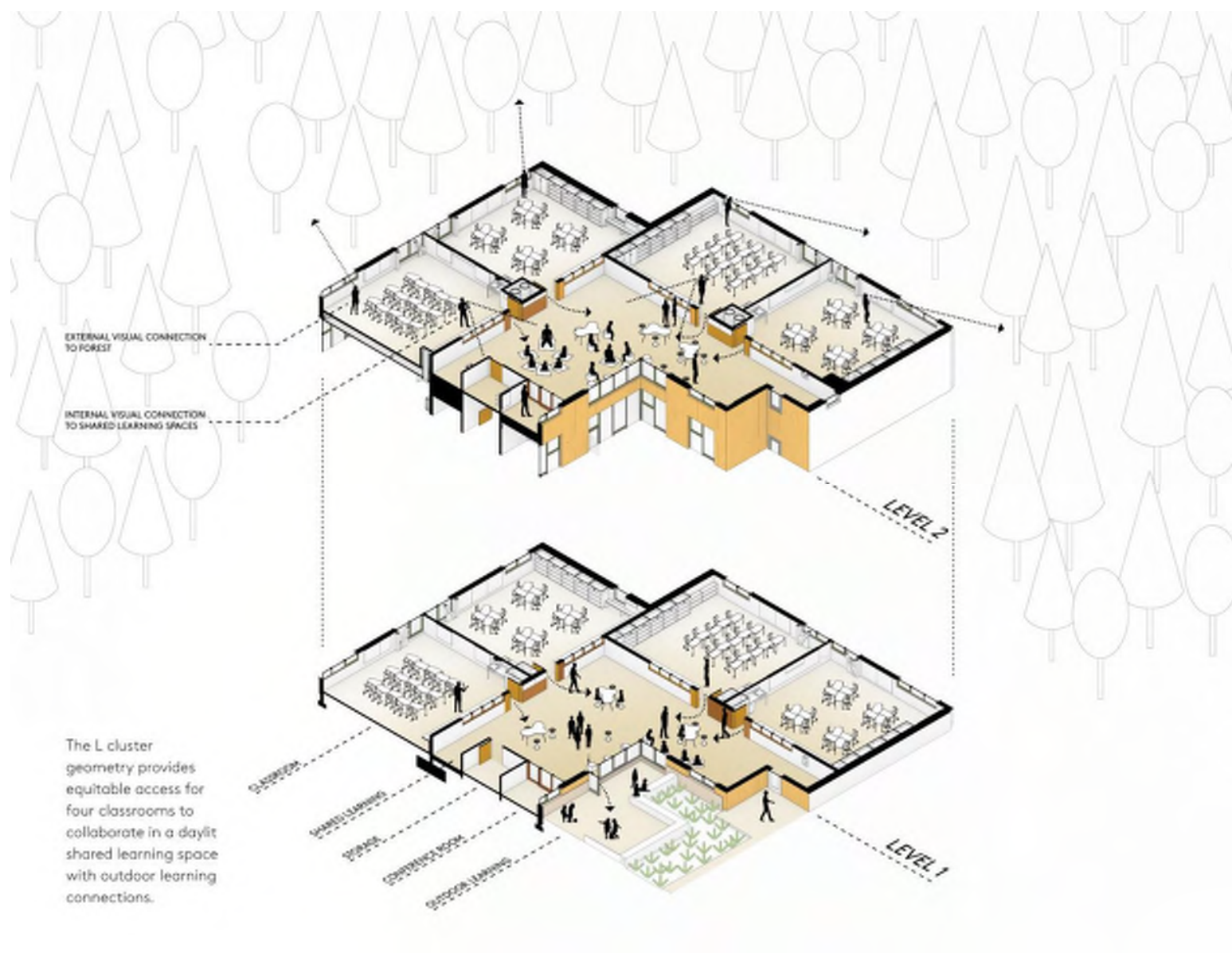
SHARED LEARNING CLUSTERS

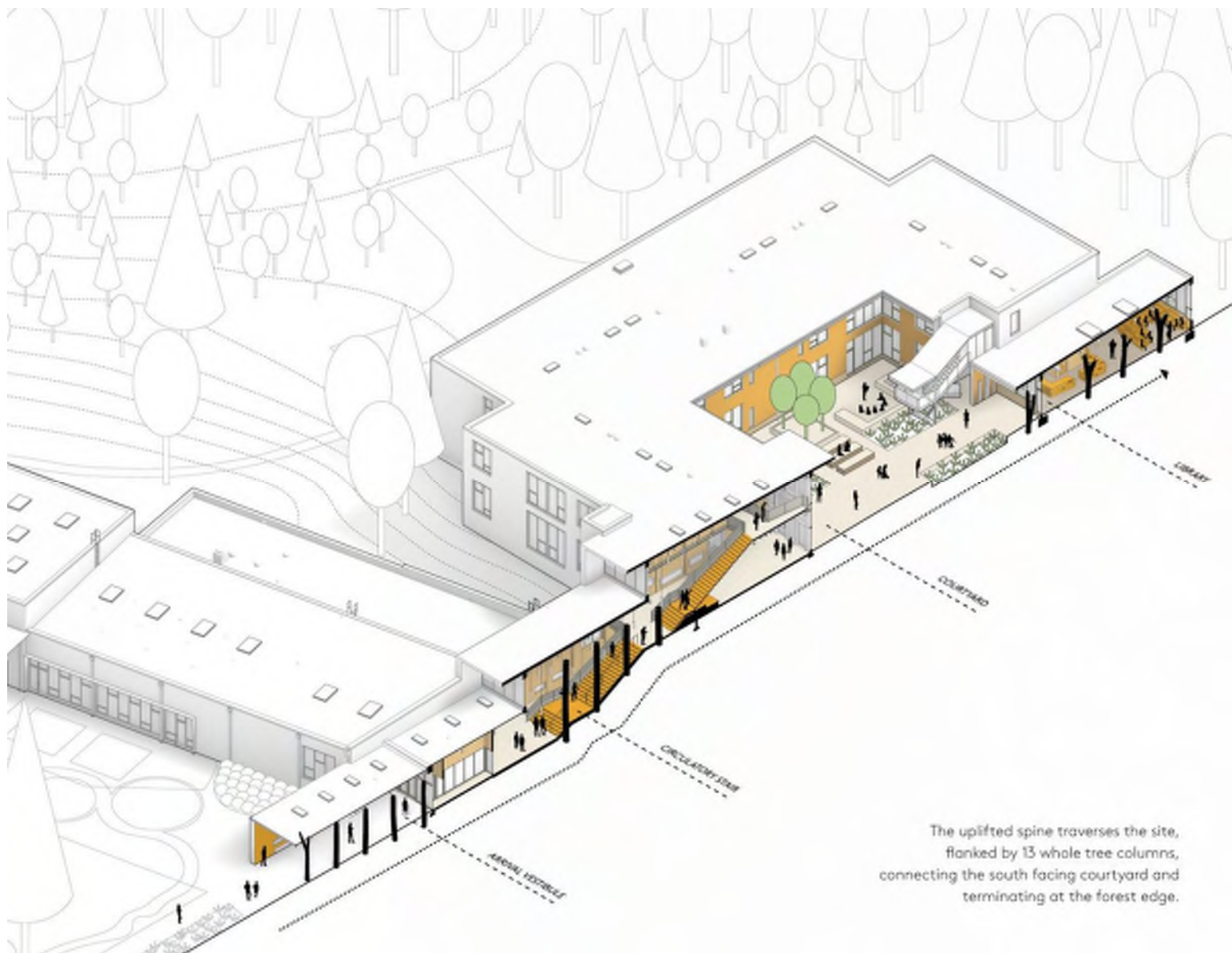


RECONNECTED FOREST LANDSCAPE

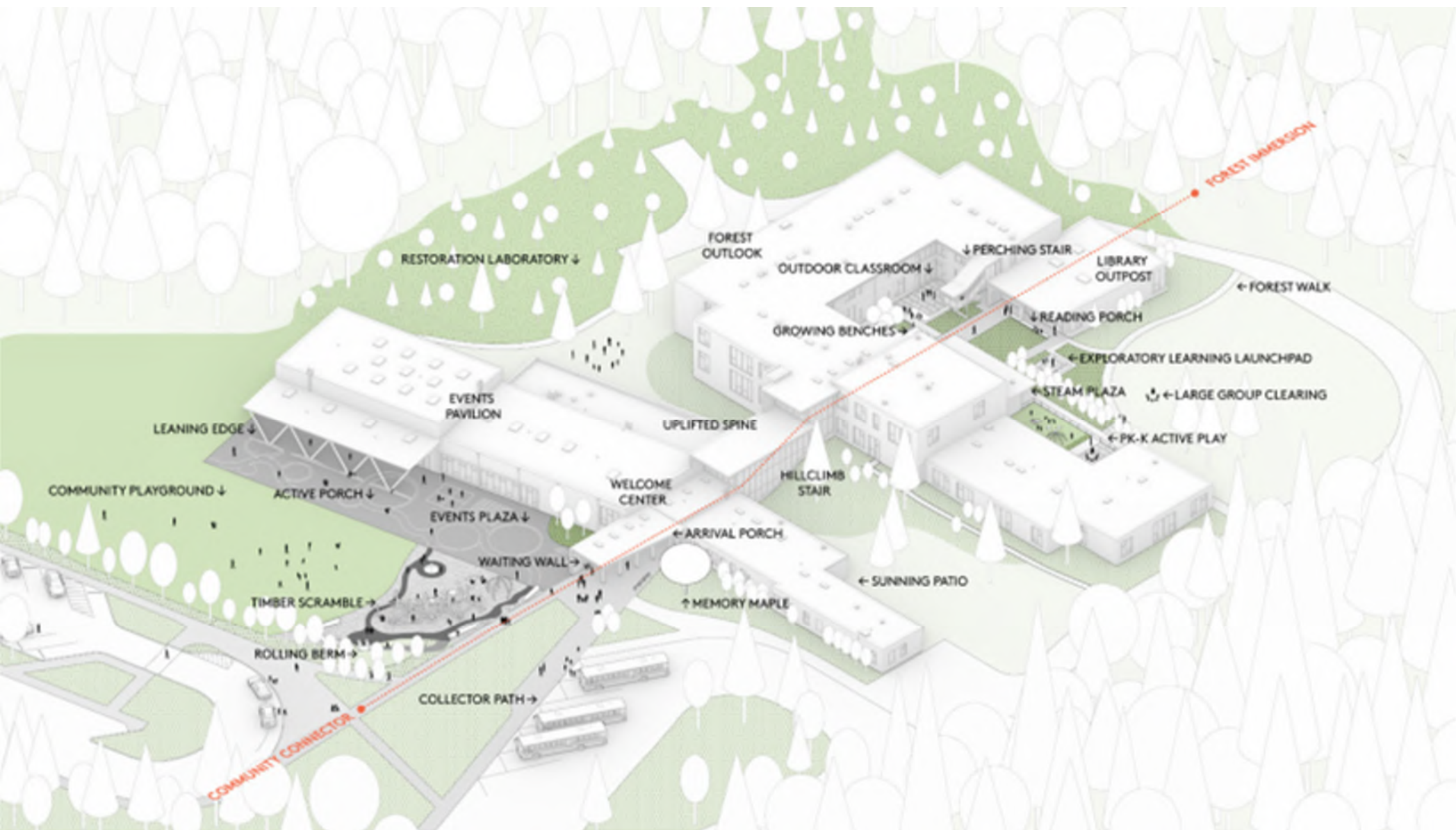
How do you find place ?
What is nature on an urban site?









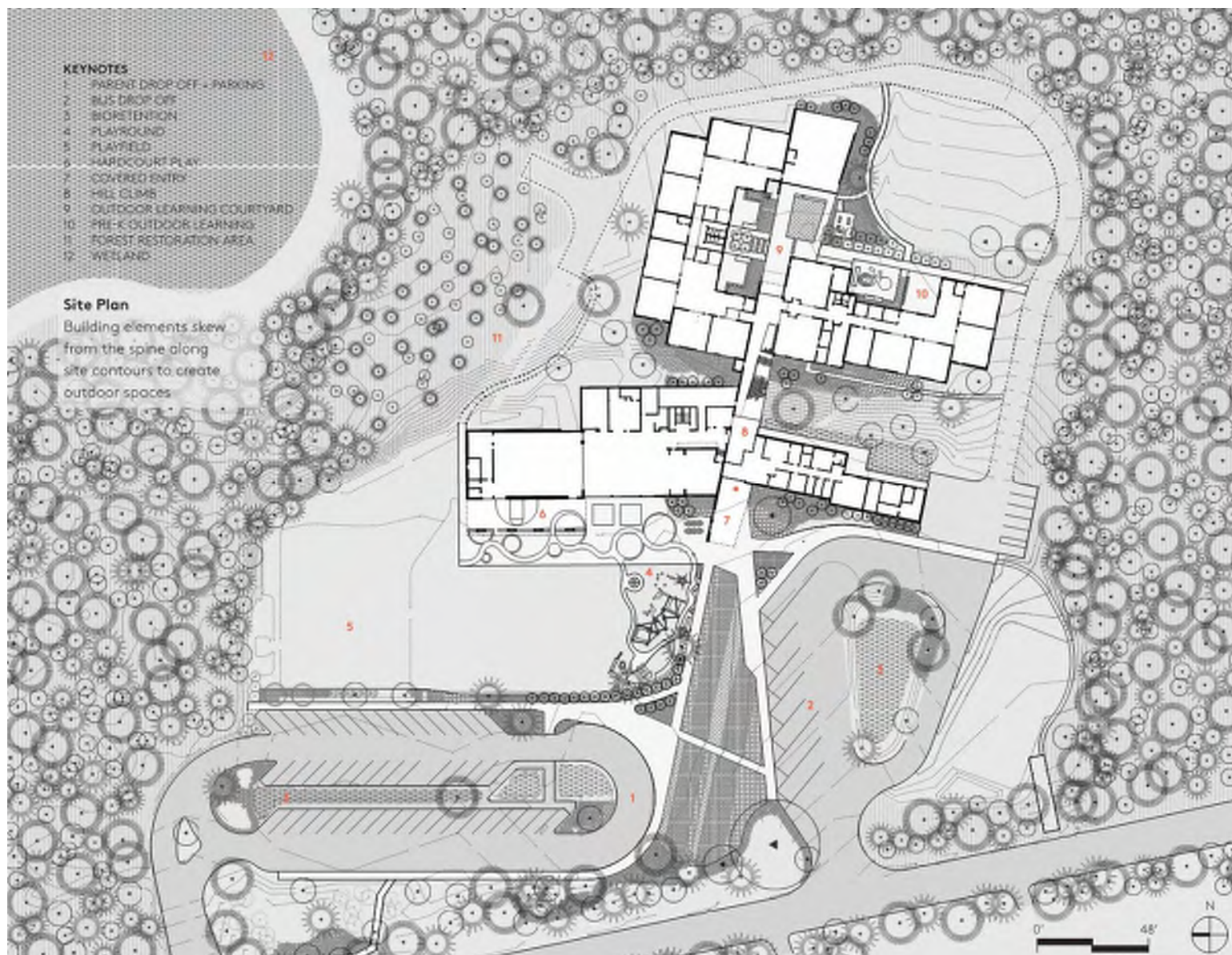


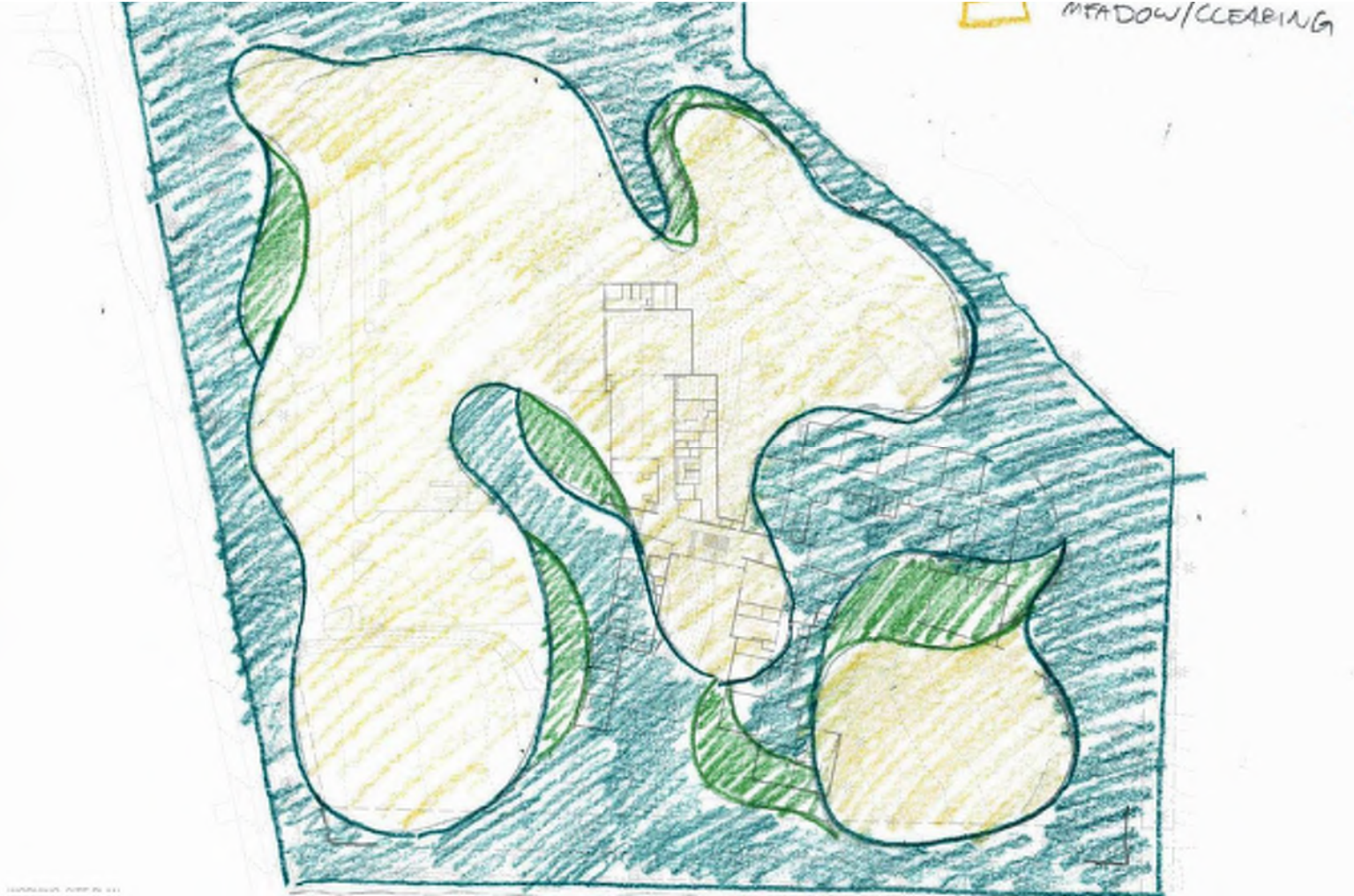
KEYNOTES

1. PARENT DROP-OFF + PARKING
2. BUS DROP-OFF
3. BIOPRETENSION
4. PLAYGROUND
5. PLAYFIELD
6. HARKCOURT PLAY
7. COVERED ENTRY
8. FREE CLIMB
9. OUTDOOR LEARNING COURTYARD
10. PRE-K OUTDOOR LEARNING
11. FOREST RESTORATION AREA
12. WETLAND

Site Plan

Building elements skew from the spine along site contours to create outdoor spaces





B - STEAM

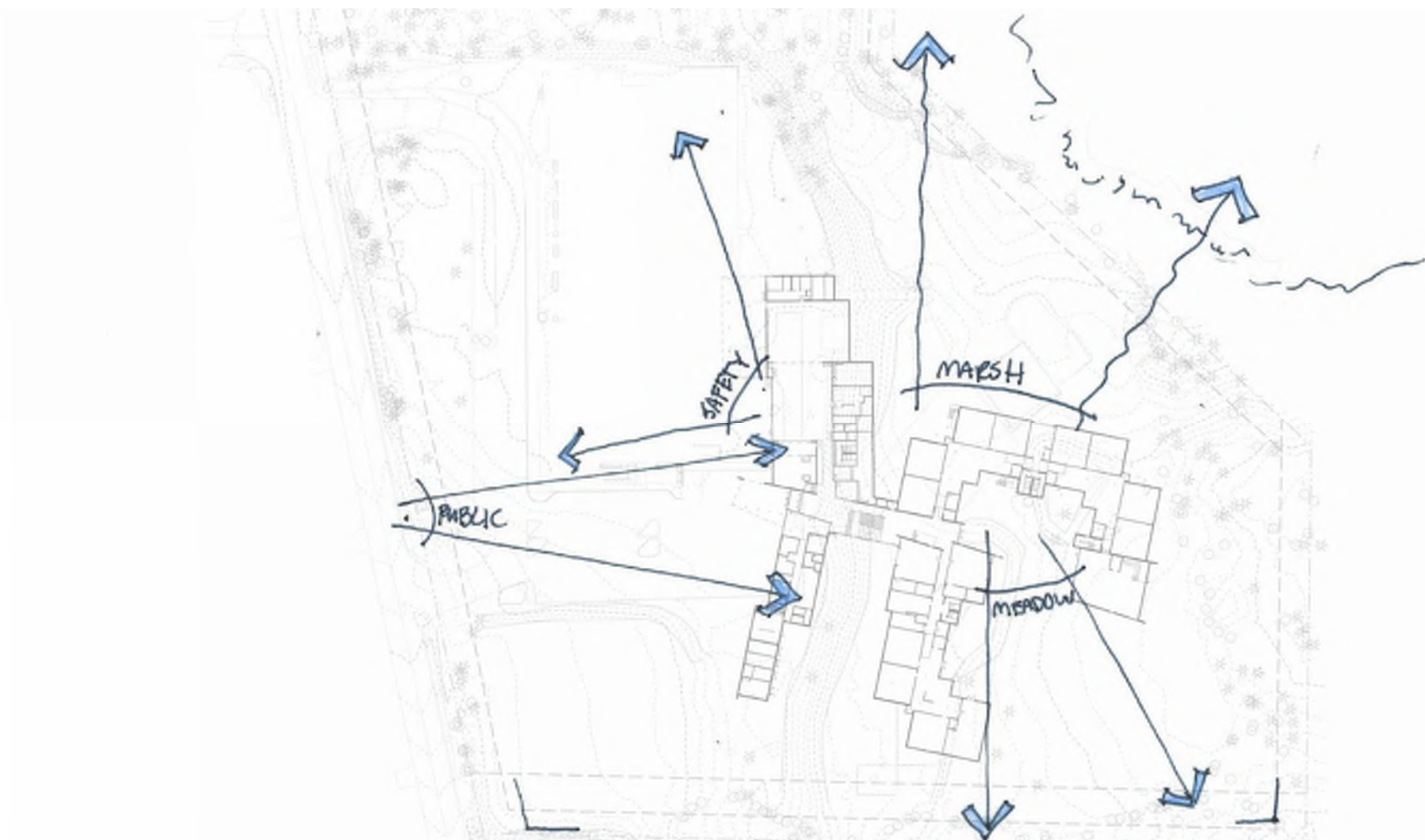
C - SCHOOL GATHERING

D - PLAY/EAT

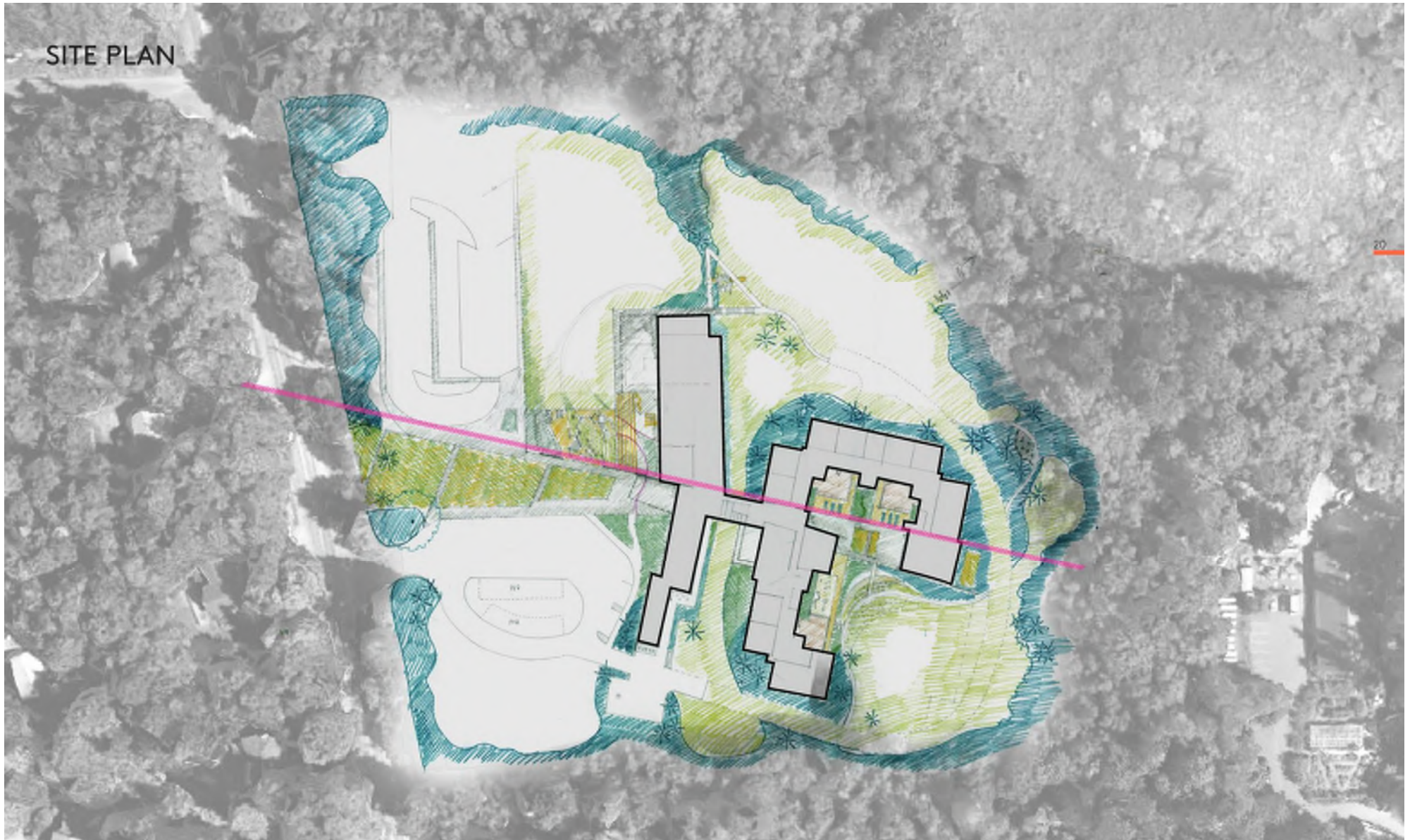
E - ADMW







SITE PLAN





LEGEND

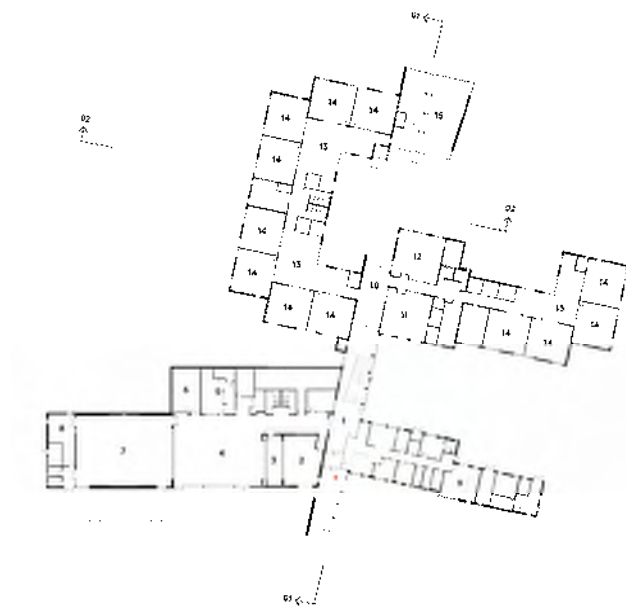
- NATIVE ECO LAWN
- RESTORATION AREA
- LAWN
- MEADOW
- BIORETENTION PLANTER
- NATIVE NORTHWEST FOREST UNDERSTORY





BLAKELY ELEMENTARY SCHOOL





Floor Plans

Level 1

KEYNOTES

- 1 LOBBY
- 2 MUSIC
- 3 STAGE
- 4 COMMONS
- 5 KITCHEN
- 6 STORAGE
- 7 GYM
- 8 GYM ADMINISTRATION
- 9 FACULTY ADMINISTRATION
- 10 CIRCULATION
- 11 ART ROOM
- 12 STEM ROOM
- 13 SHARED LEARNING SPACE
- 14 CLASSROOM
- 15 LIBRARY

Level 2

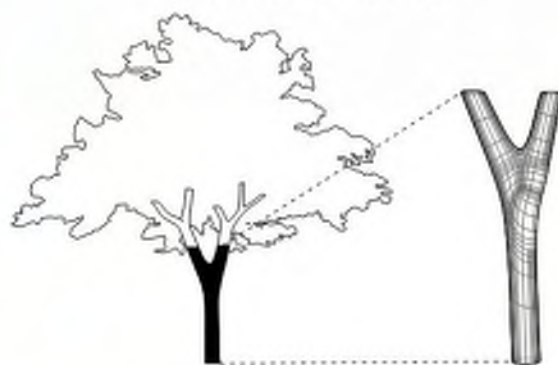
KEYNOTES

- 1 RESOURCE ROOM
- 2 INDEPENDENT LEARNING CLASSROOM
- 3 OCCUPATIONAL THERAPY/ PHYSICAL THERAPY ROOM
- 4 CLASSROOM
- 5 SHARED LEARNING SPACE





TREE SELECTION AND EXTRACTION



STRUCTURAL LOADING



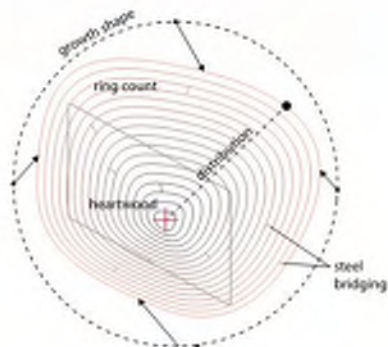
Whole-tree Structure

24 white oak trees were scouted and laser scanned in the forest. The selected trees were felled, cleaned, and graded to be used throughout the interior and exterior of the project as load bearing wood columns connected with steel plates to slab and steel beams.

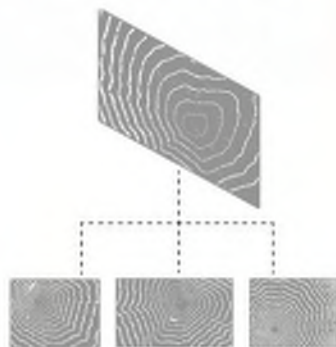
PATTERN INSPIRATION



PARAMETRIC DEFINITION VARIABLES



CUSTOM PATTERN CREATION



Tree As Pattern

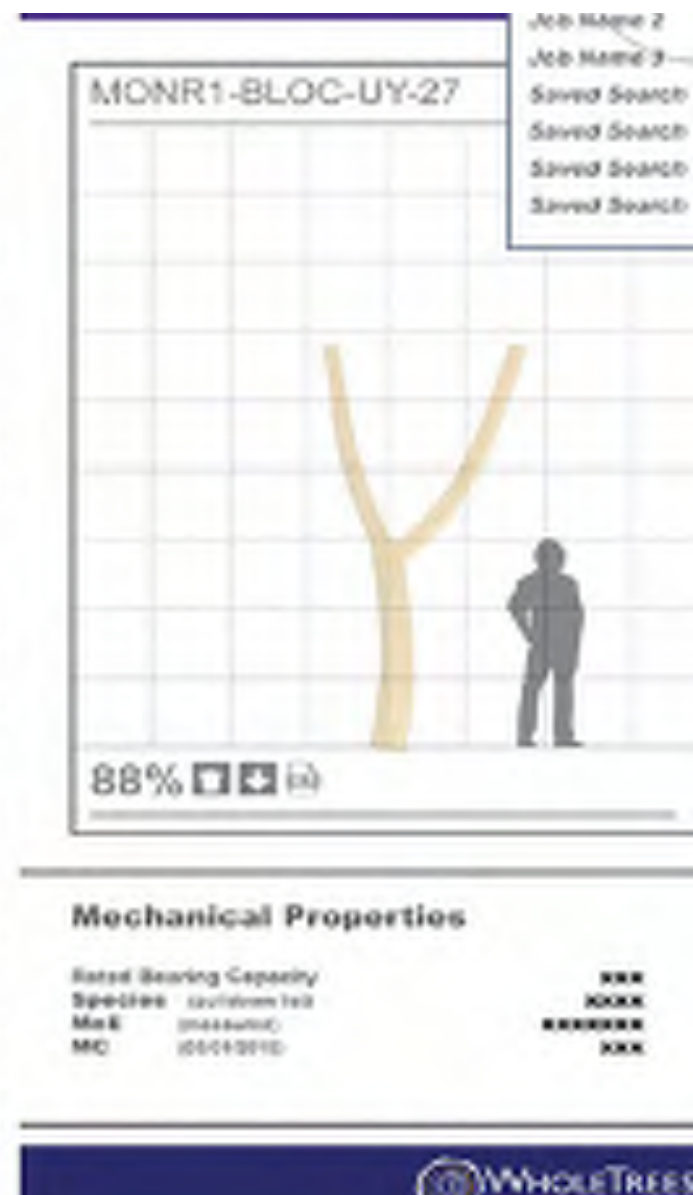
Using timber growth rings as inspiration, a computer script was developed to laser cut a custom pattern into 32 steel guardrail panels. The script used several control parameters including: 'growth ring' size, count, and shape to precisely generate the custom patterns.





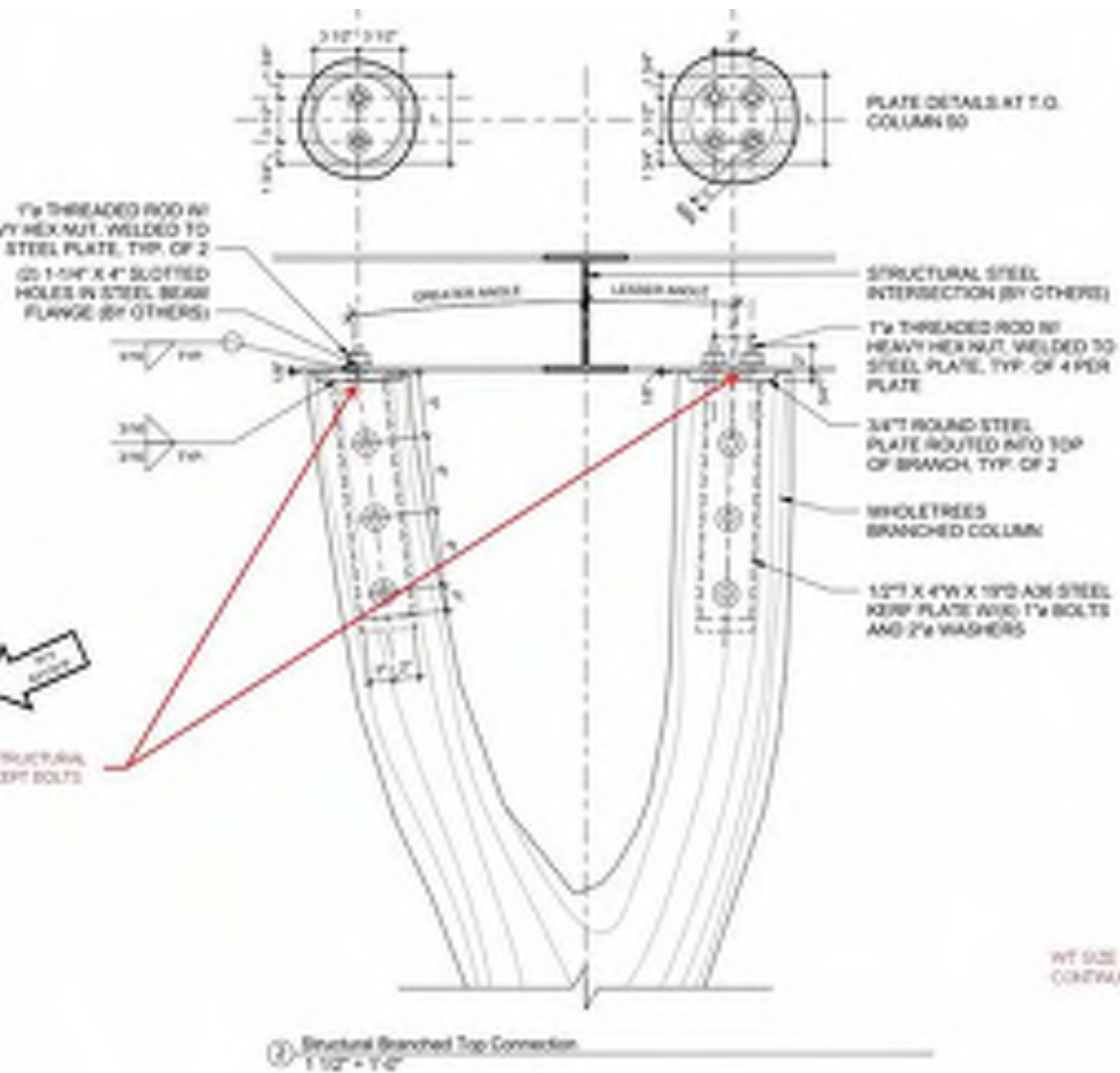






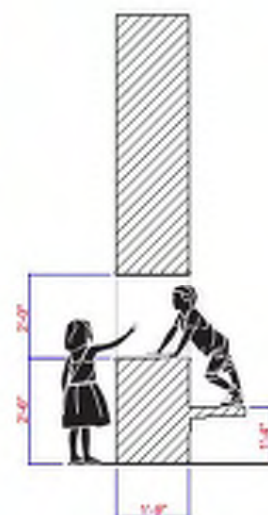
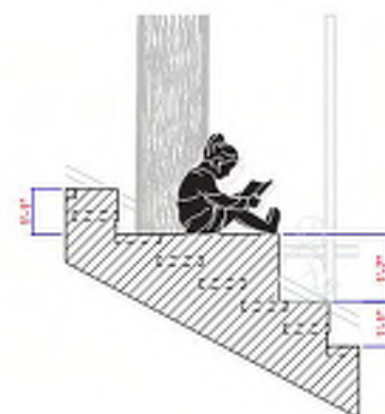
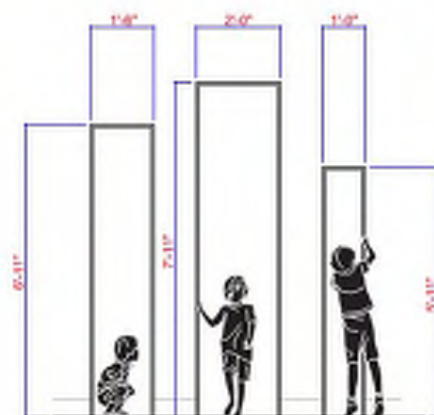
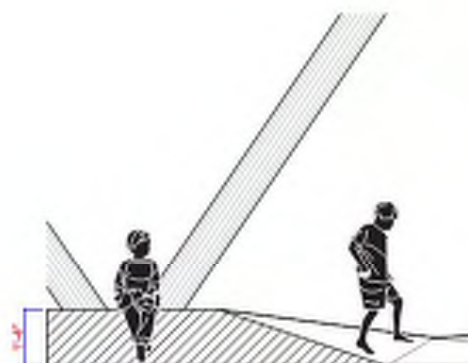










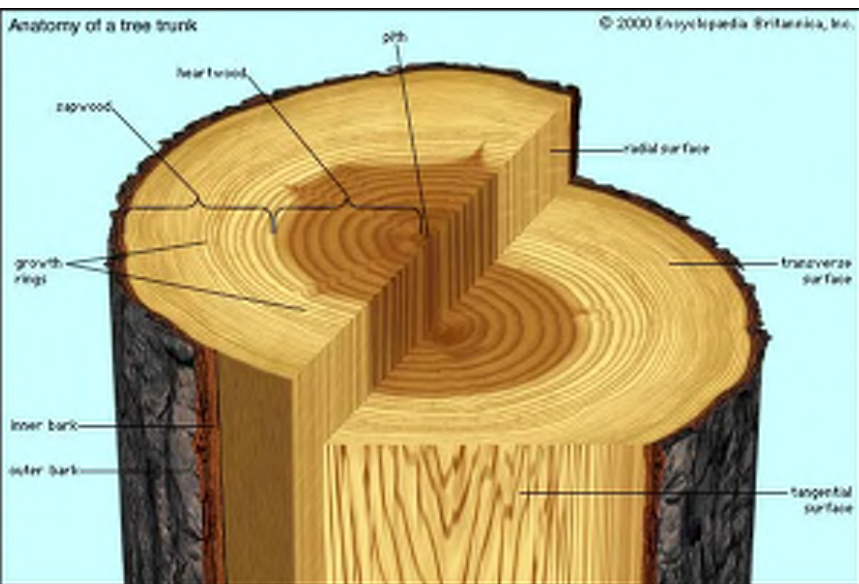




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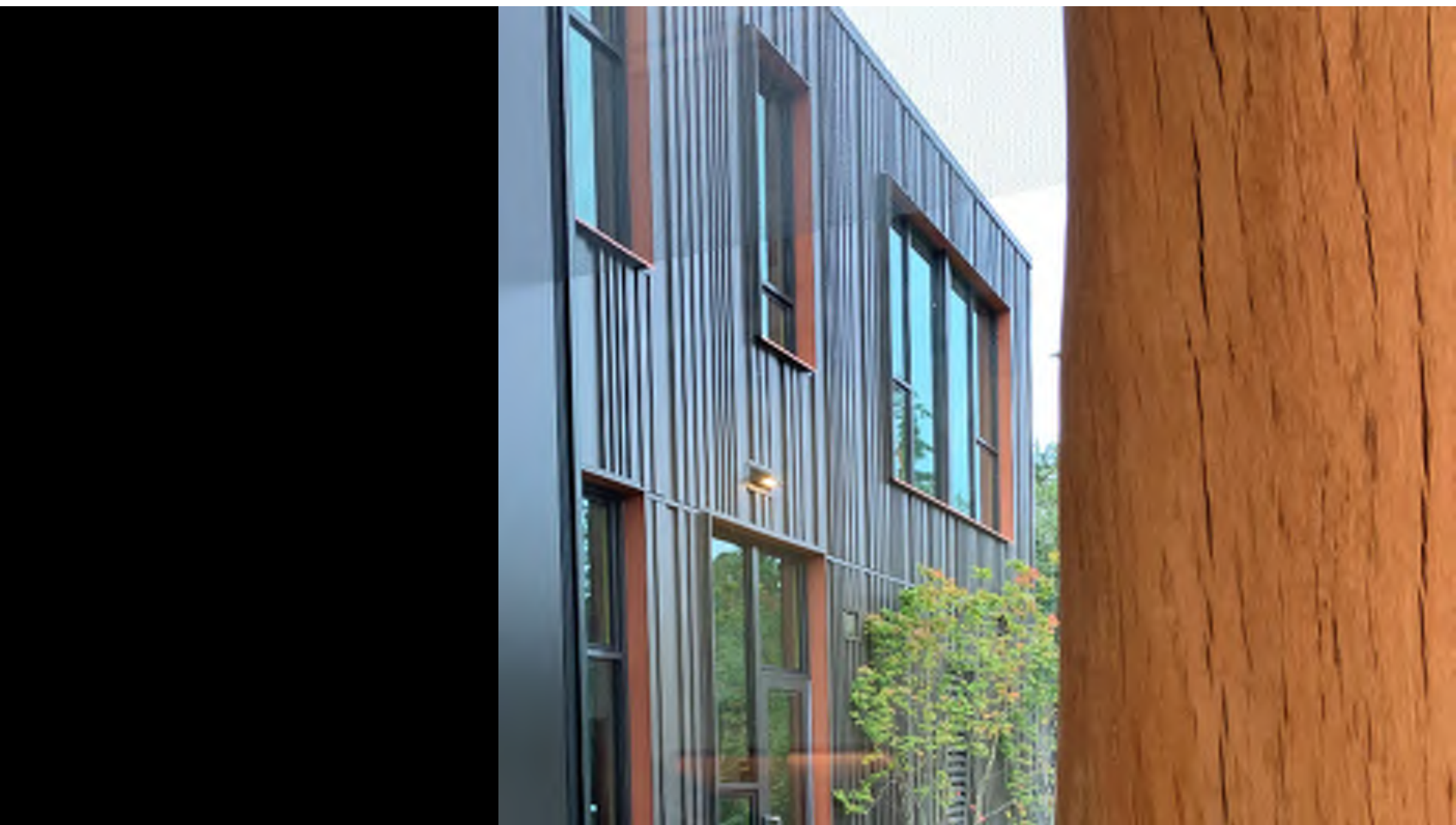
CAPTAIN JOHNSTON
BLAKELY
ELEMENTARY
SCHOOL





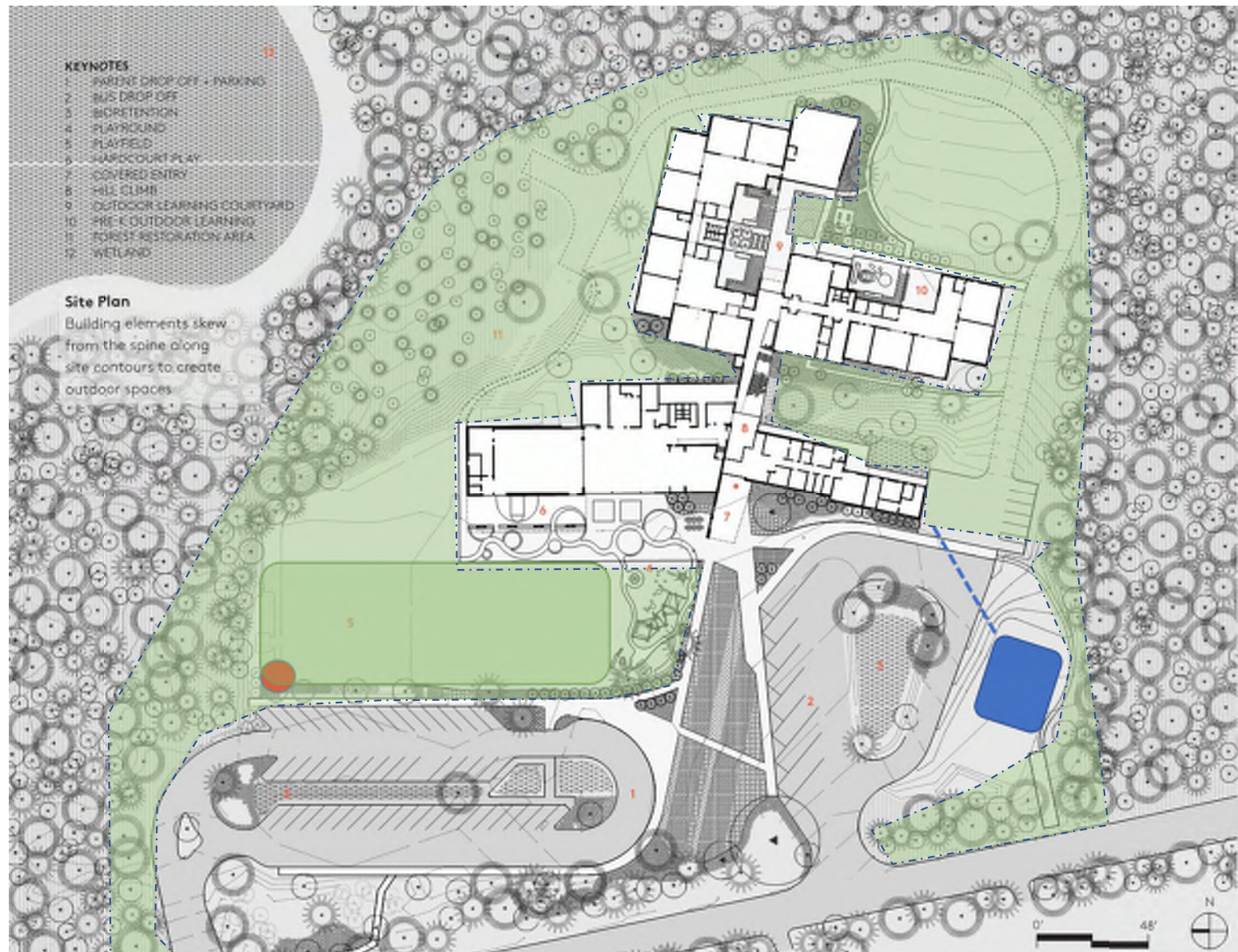


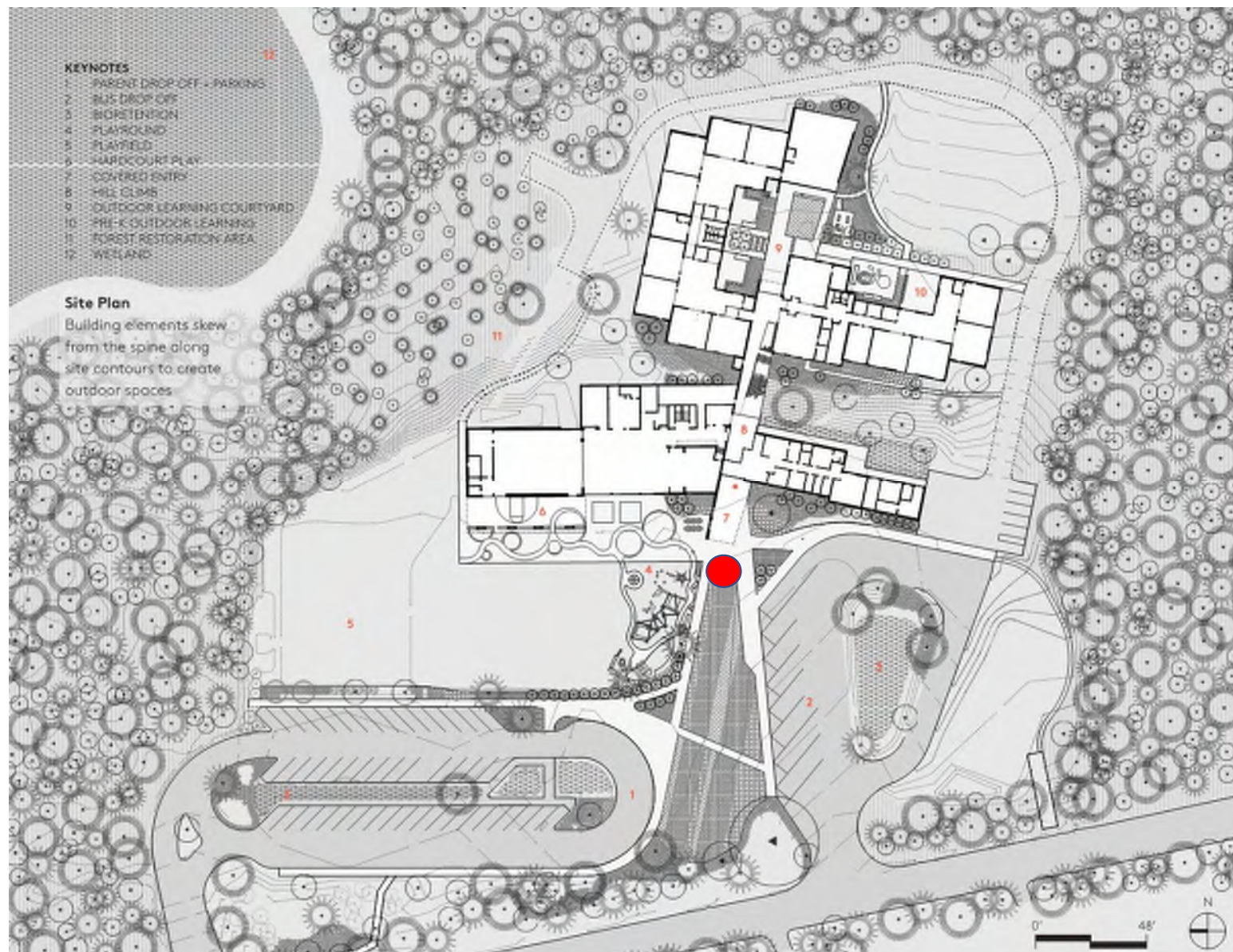






- 20,000 native and drought tolerant shrubs, perennials and grasses
- 300 Native Trees
- 160,000 gallon underground cistern







BAINBRIDGE ISLANDER

Bainbridge group rallies to save Japanese maple tree at Blakely Elementary



Nathan Pilling

Kitsap

Published 11:47 a.m. PT Feb. 1, 2019 | Updated 11:50 a.m. PT Feb. 1, 2019

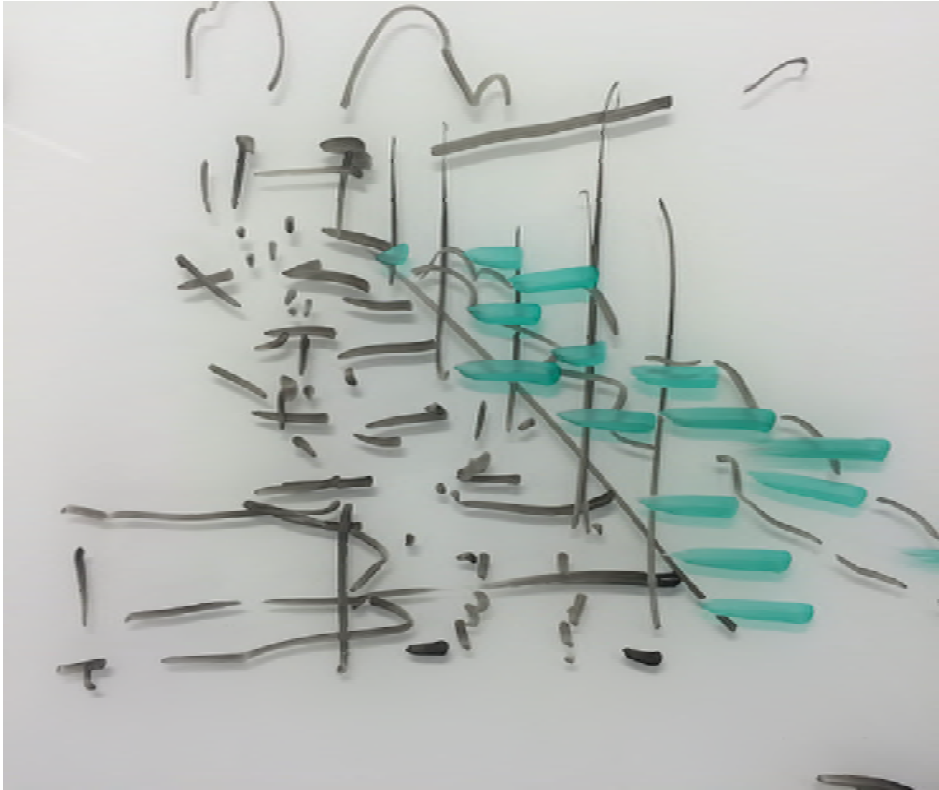
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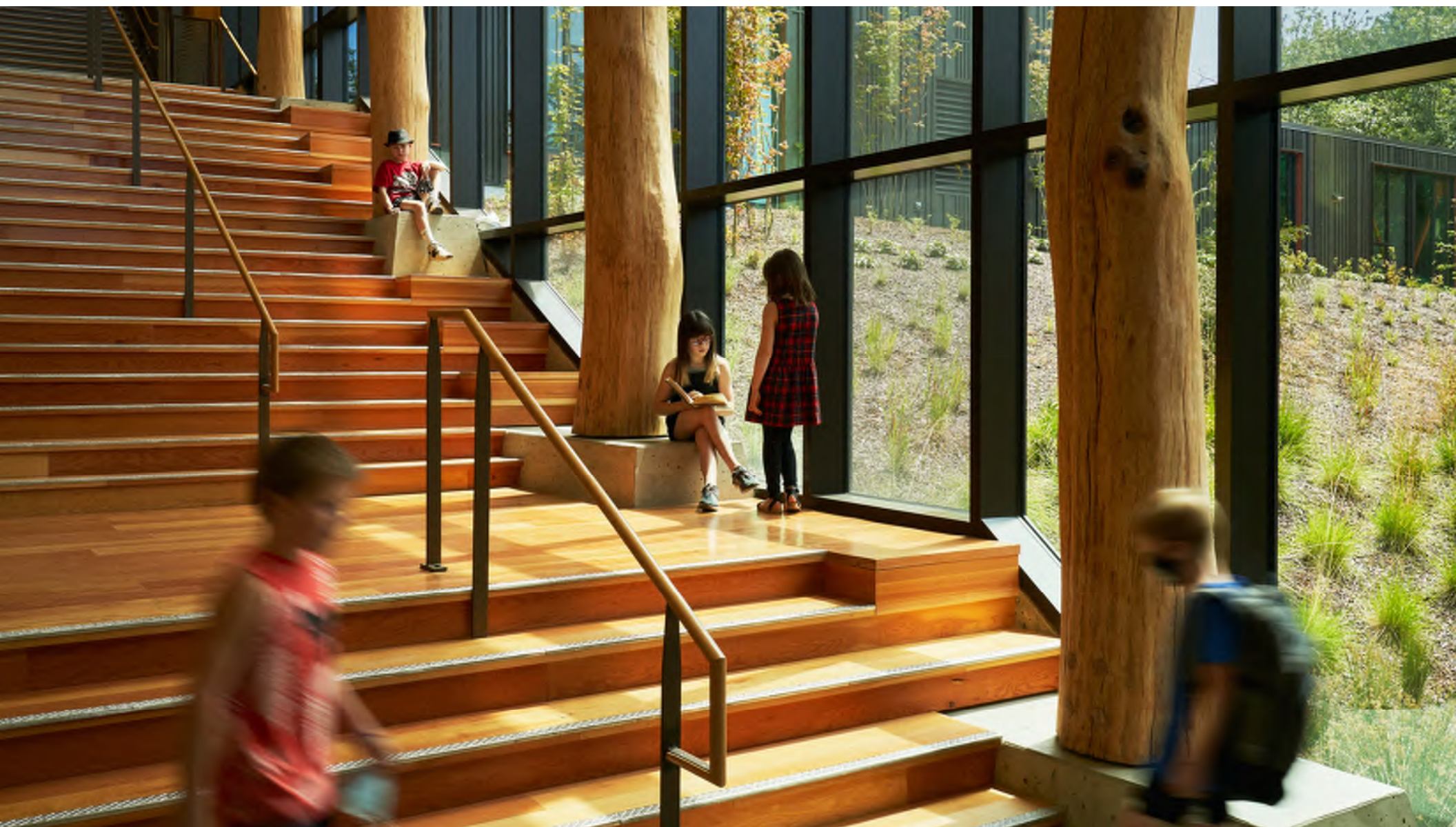
Bainbridge group rallies to save Blakely Elementary tree

Tree was planted outside the Bainbridge school in 1967. *Nathan Pilling, Kitsap Sun*



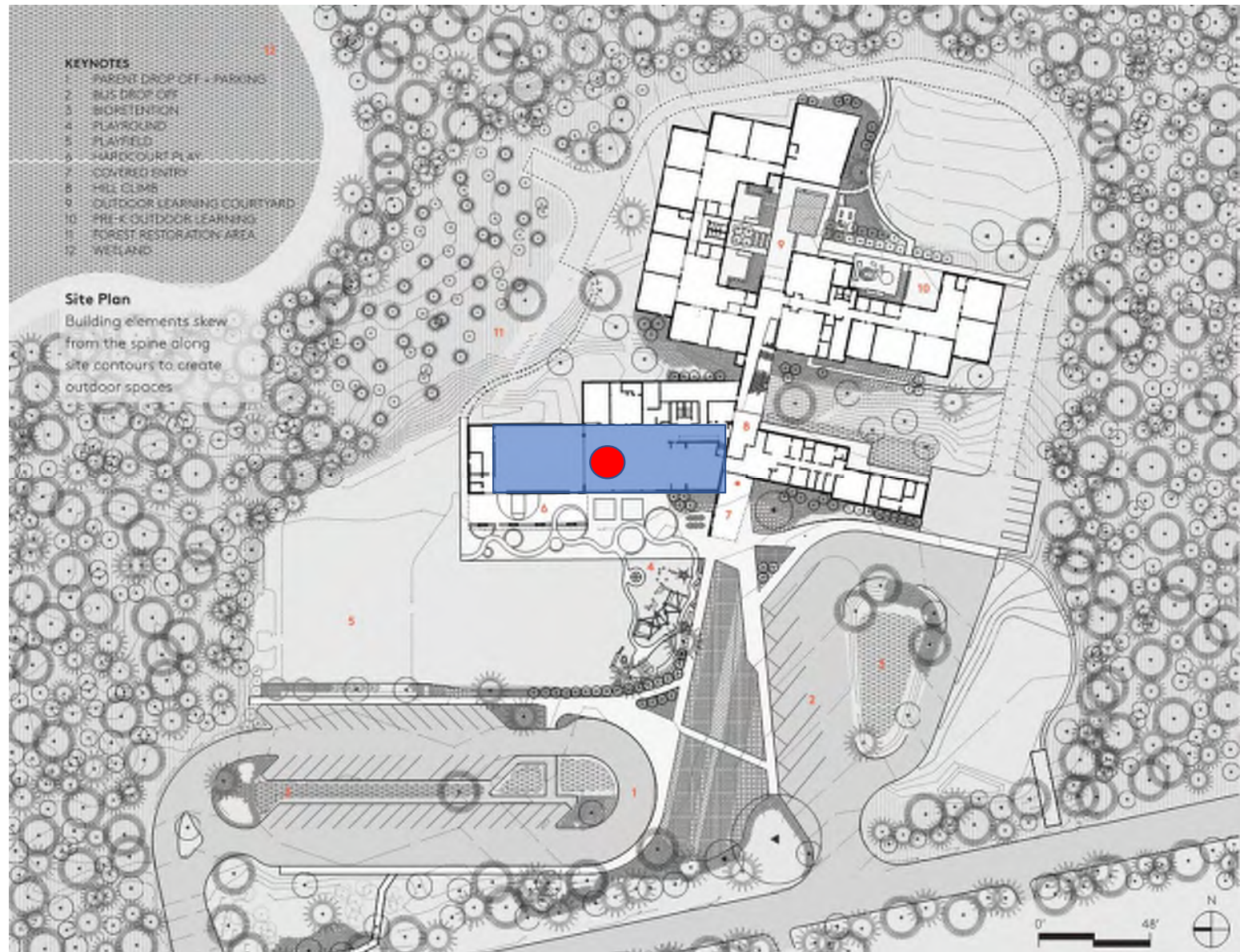








Gym
Commons
Music

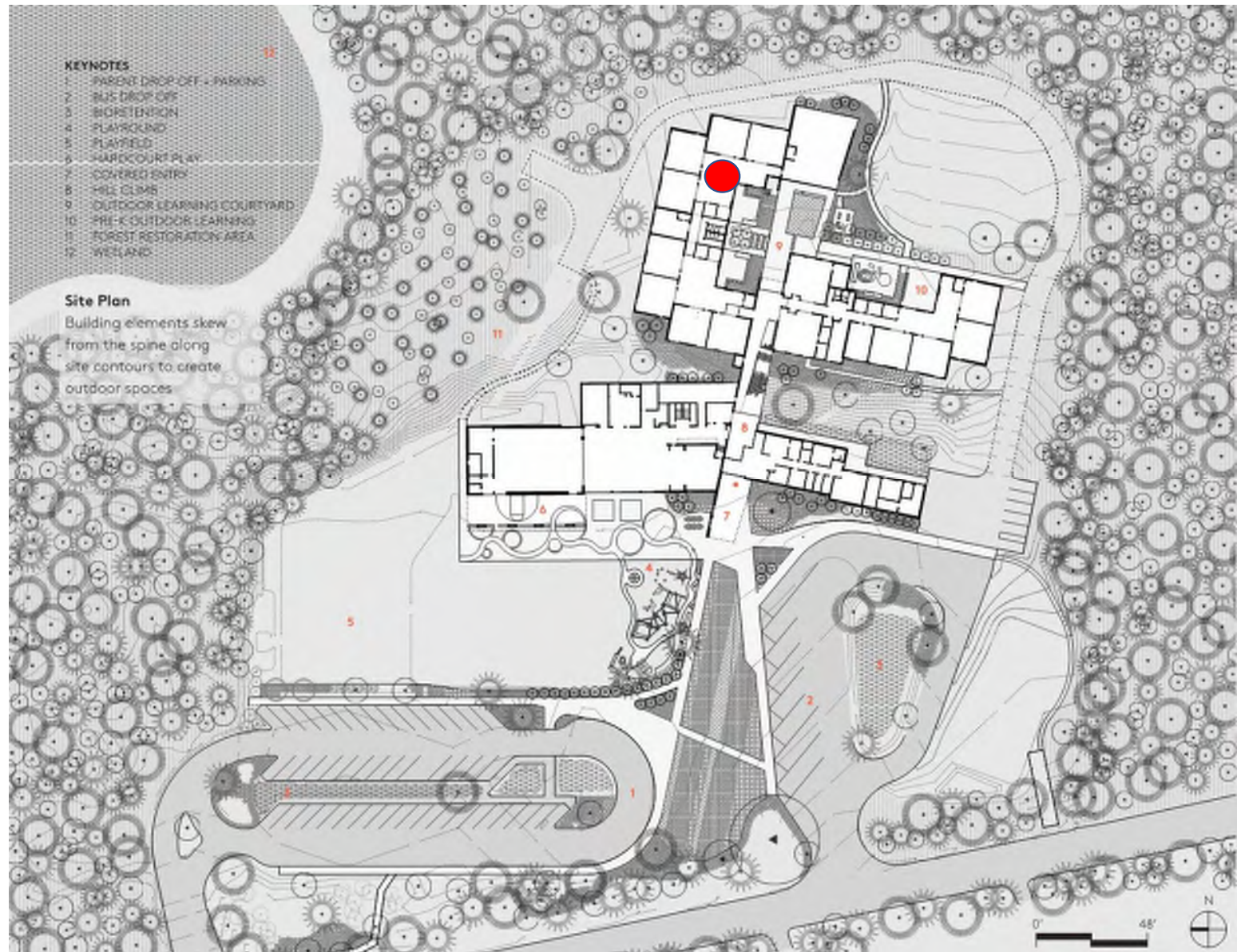






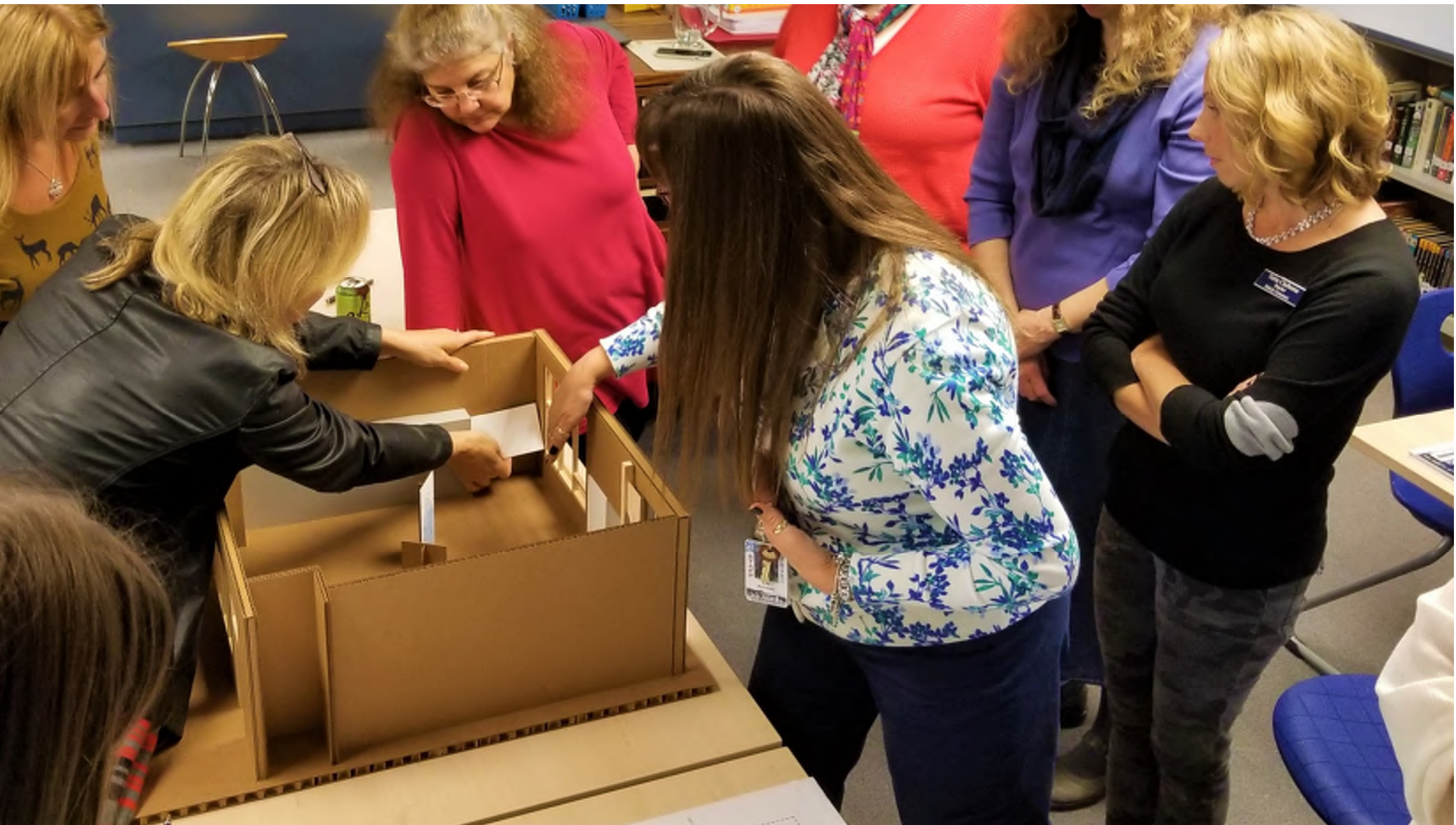


Classroom Cluster 5 total



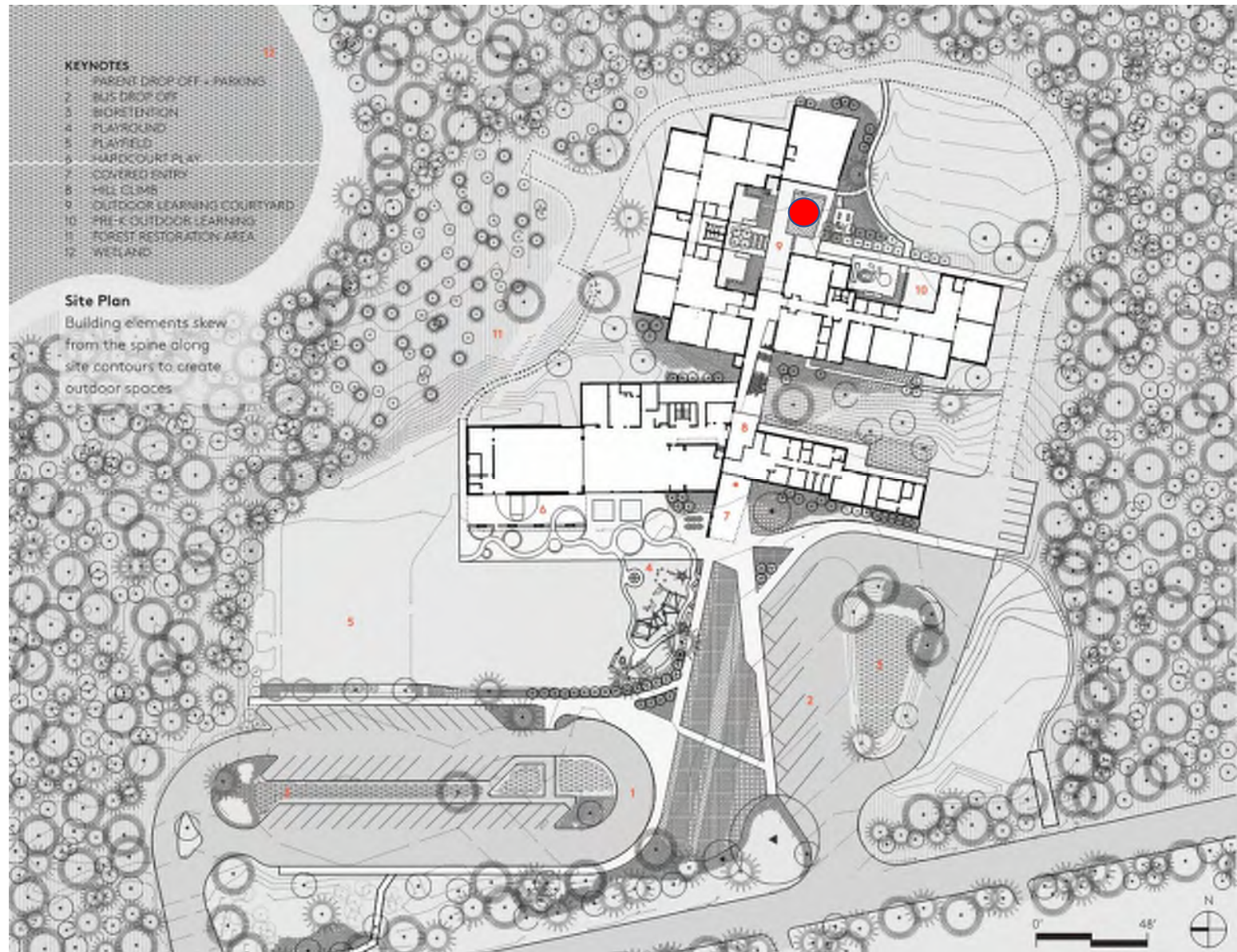








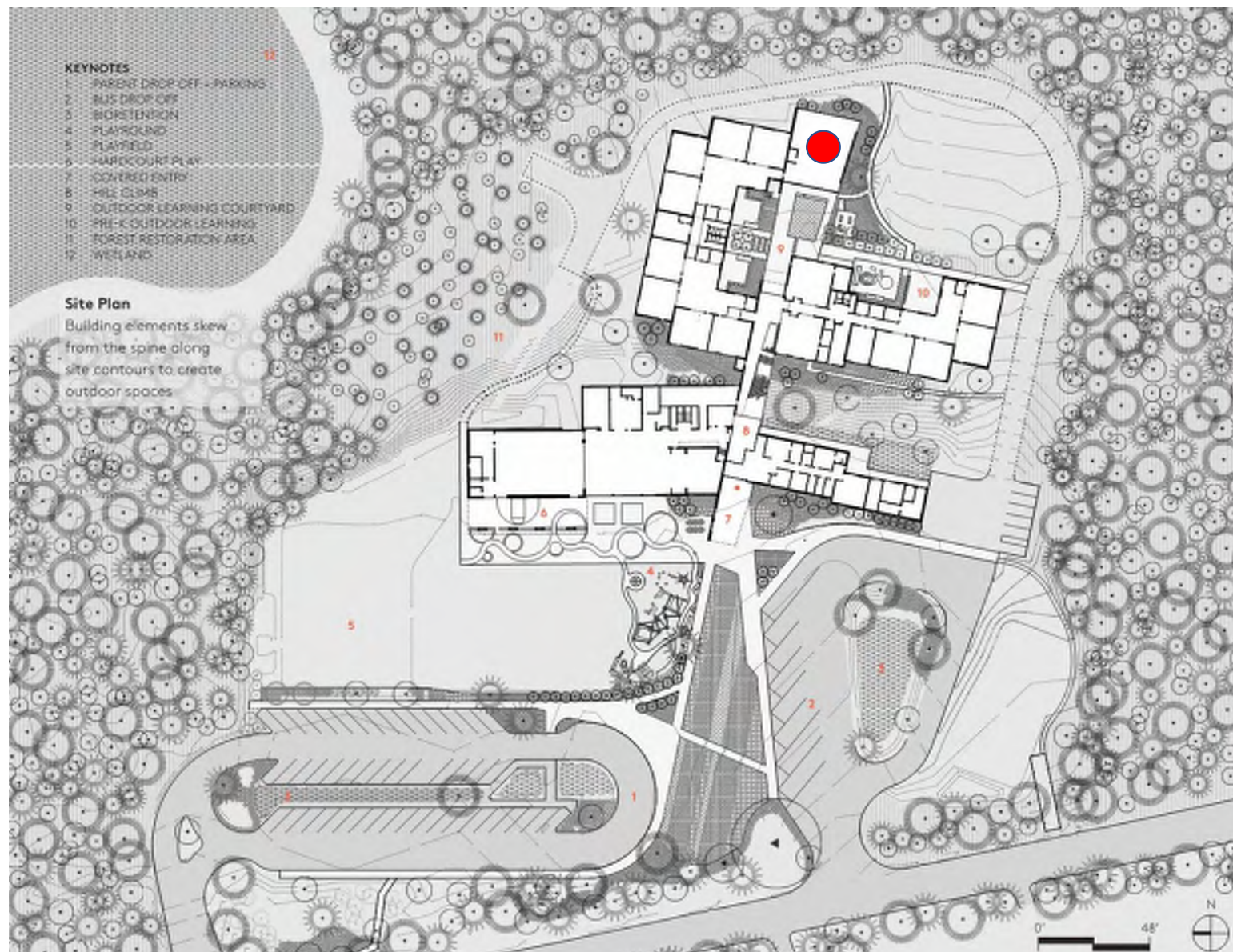




Classroom
Courtyard



Learning Courtyard connects to shared learning areas and creates multiple opportunities for outdoor education.



Library

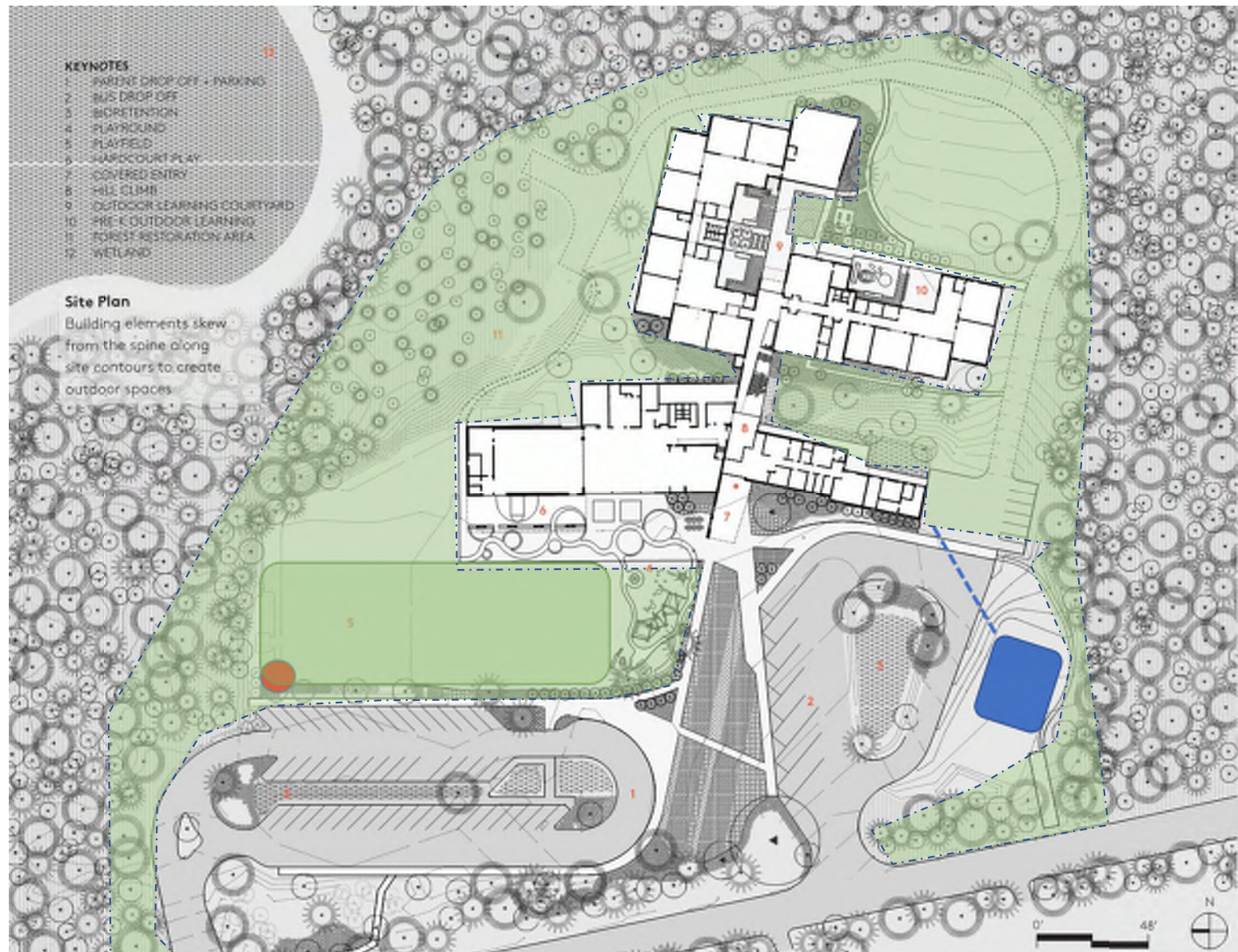


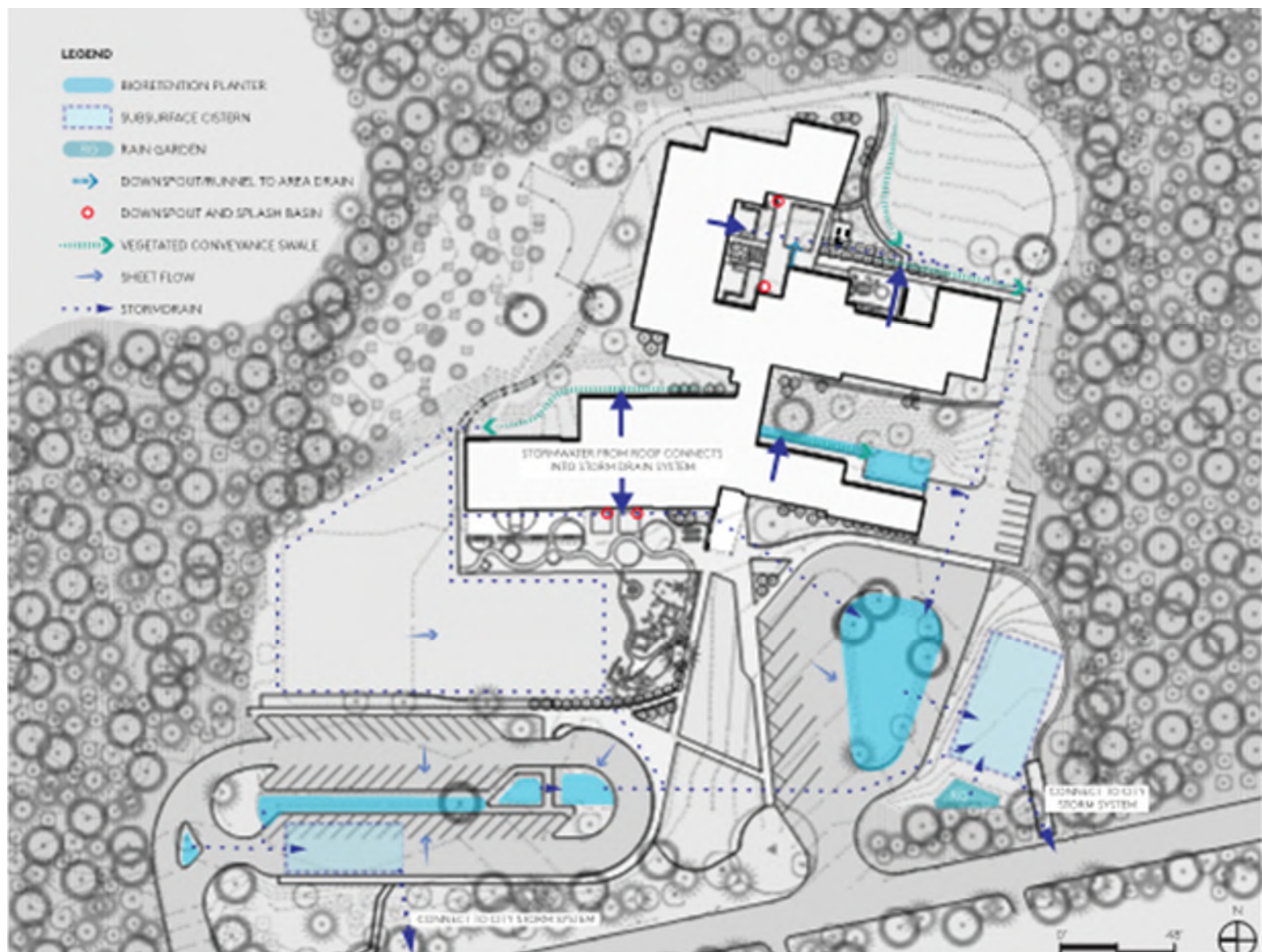






- 20,000 native and drought tolerant shrubs, perennials and grasses
- 300 Native Trees
- 160,000 gallon underground cistern







BLAKELY PLANT GUIDE

UPLIFT MEADOW



Carex testacea /
Orange Sedge



Panicum virgatum /
"Heavy Metal" Switchgrass



Deschampsia cespitosa /
Tufted Hairgrass



Pennisetum elegans /
Fountain Grass "Moulin"



Miscanthus sinensis /
Maiden Grass



Juncus patens /
Screedina Rush

Planting Guide

LOWLAND FOREST



Tsuga heterophylla /
Western Hemlock



Pseudotsuga menziesii /
Douglas Fir



Acer circinnatum /
Vine Maple



Thuja plicata /
Western Red Cedar



Gaultheria shallon /
Salal



Mahonia sp. /
Oregon Grape



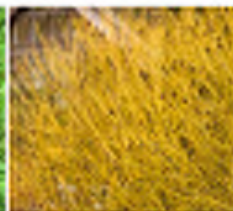
Rosa nutkana /
Nootka Rose



Symphoricarpos sp. /
Snowberry



Polystichum munitum /
Western Sword Fern



Cornus sericea /
Yellowtwig Dogwood



Cornus sanguinea /
Bloodtwig Dogwood



Physocarpus opulifolius /
Ninebark "Diablo"









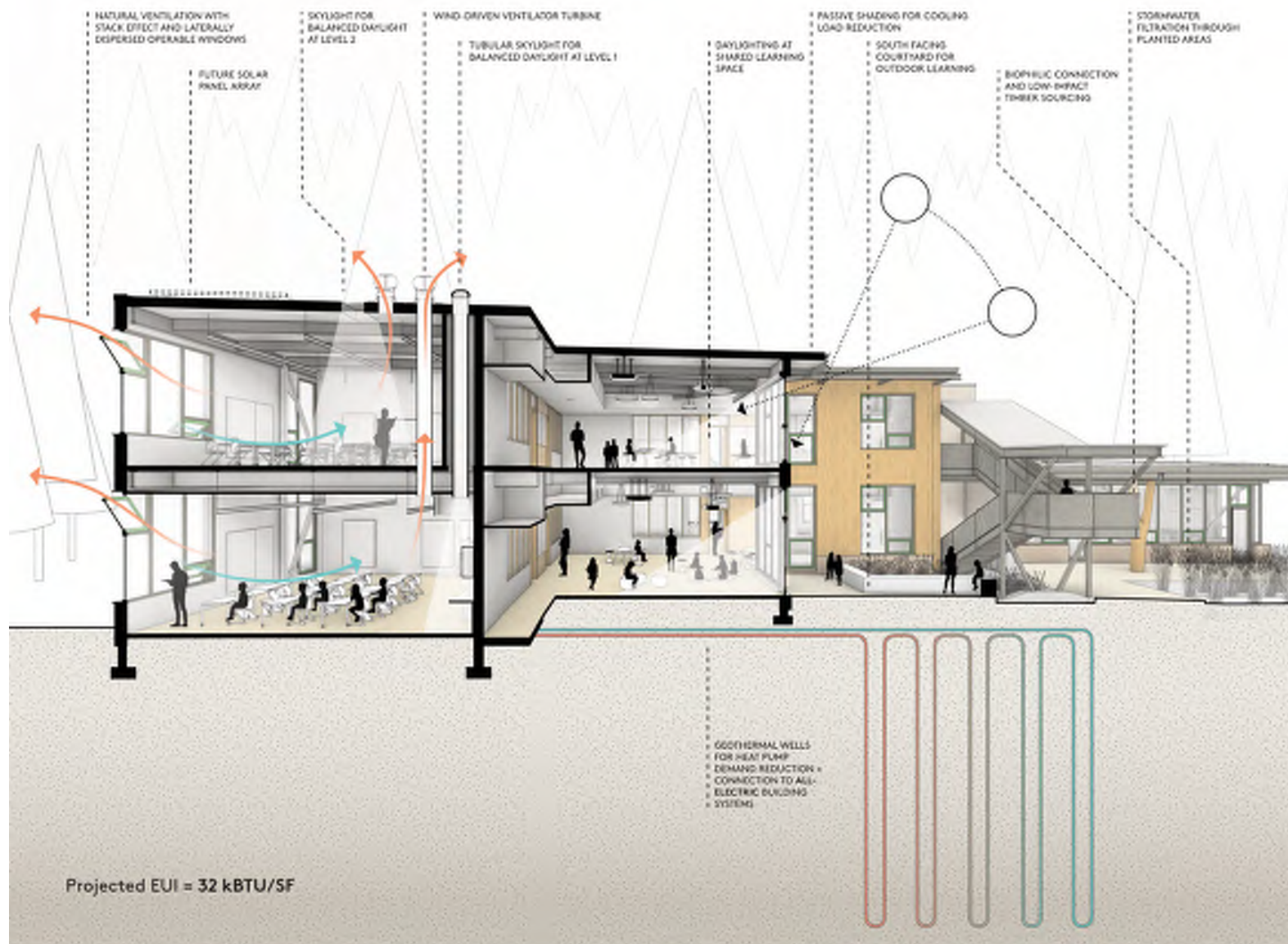






Embodied Carbon
539 – approx.

Actual EUI 25
Design EUI 32
63% Reduction







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