

# LACAMAS LAKE ELEMENTARY SCHOOL

CAMAS SCHOOL DISTRICT  
CAMAS, WASHINGTON



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## EXECUTIVE SUMMARY

Richard Louv, the author of *Last Child in the Woods*, warned us 12 years ago that a lack of firsthand experience with nature will result in the loss of genuine concern and sustained involvement in environmental protection. This is notable because leaders in the environmental protection movement have generally had one thing in common – their desire to protect the earth was grounded in their love of the outdoors, developed during a childhood full of rich nature play.

In addition, growing scientific evidence reveals our biologically grounded dependence on nature. Author Sarah Williams Goldhagen points out that for the majority of human evolution, we adapted biologically for survival in natural, non-urban environments, and that we are still a biophilic species.

**We are drawn to, and seek out, connections to nature, and our emotional wellbeing is genetically linked to the level at which we can sustain an intimate connection with the natural world.**

During the listening phase of design development, the learners and educators of Lacamas Lake Elementary professed their love of nature and their desire to continue to run amongst trees, collect leaves, and observe wildlife, even after their 1960s open school campus was replaced by a new, more secure building. The principal advocated throughout the design for a learning environment that functions and feels like a “country school,” and supports healthy, productive growth for young learners from all backgrounds. **The design supports this vision two-fold:**

## INSPIRE EDUCATORS TO LET NATURE INFORM THE CURRICULUM

Multiple points of transition between indoors and outdoors create a fluid learning-scape that enables students to experience the emotional richness of nature play and stimulating adventure of exploring and observing the complexity of ecosystems. Measuring the rain, watching birds, and visiting the creek have become an integral part of the school day.

As a result, the nature-centric learning environment of Lacamas Lake enables children to collect formative biophilic memories while playing, learning, and growing up in nature. This immersive learning style follows the example set by Dennis Hayes, founder of Earth Day and a Camas, Washington native.

## EMPLOY BIOPHILIC DESIGN STRATEGIES TO INFORM DECISIONS

Based on recent scientific findings that confirm the neurological impacts of material surfaces and form, the building’s interior promotes emotional well-being and positive behavior. The careful selection of real wood elements, the use of daylight, and broad views into nature from all learning spaces provide rich cognitive stimulation that primes students to face daily academic challenges from a baseline of mindfulness. Interviews with learners, educators, and even short-term visitors confirm the positive impact of satisfying our biological desire to connect with the natural world through biophilic design.

## SCOPE OF WORK AND BUDGET



**OWNER**  
Camas  
School District

**SITE AREA**  
40 acres

**BUILDING AREA**  
74,615 SF

**GRADES HOUSED**  
K-5

**STUDENT CAPACITY**  
650

**SQUARE FEET PER PUPIL**  
124 SF

**OCCUPANCY DATE**  
Sept 2018

**CONSTRUCTION COST**  
**BUDGET:** \$31.00 M  
**BID:** \$29.98 M  
**FINAL COST:** \$29.98 M

**BUILDING CONSTRUCTION COST PER SQUARE FOOT**  
\$442/SF







# SCHOOL & COMMUNITY ENGAGEMENT

## THE CAMAS COMMUNITY

Camas, Washington residents were supported by logging, milling, and farming economies until a couple decades ago when high-tech became their primary industry. While many residents both live and work in Camas, the area's affordable housing is also attractive to those working in Portland, Oregon and Vancouver, Washington, located 20 miles to the west.

The natural beauty of the area has invited outdoor enthusiasts who value the natural environment. But additional housing and new residents in this growing community is transforming the once rural land to suburban, meaning the natural environment is rapidly disappearing with their arrival.

## A RAPIDLY GROWING COMMUNITY

While the suburbs expand, the district realized they needed to develop a site in a future community growth zone to prepare for enrollment numbers that

continue to rise. Unexpectedly, the 40-acre site that was selected dictated that planning include protecting a fish-bearing creek, groves of mature white oaks, seven wetlands, and an archaeologically sensitive area, while also respecting power line setbacks and future arterial road adjustments.

With these unexpected constraints, fitting the school building, playgrounds, bus and parent drop-off, and event parking prevented a previously envisioned partnership with the City's Parks Department. It did, however, provide open space to be maintained as wild and lush, which afforded **the opportunity to create natural habitat with educational program elements and infrastructure woven into the site assets, resulting in a nature-focused learning environment.**

## DESIGN ADVISORY TEAM

Kicking off the visioning and design process, we engaged students, educators, parents, school and district administrators, and community members.

Special attention was paid to the natural plant and animal communities which would continue to inhabit the site. Engaged teachers from the school were committed to creating settings for learning in groups sizes ranging from two to 50 students. Placing high value on the developmental benefits of nature play and outdoor learning, the design advisory team encouraged the district to make this a priority in the design of the new facility.

Through our stakeholder discussions, we also identified the teachers' desire to continue their team-teaching practices. Team-teaching was originally developed in response to their 1960s classrooms' malfunctioning operable partitions, but then became an integral part of their culture. We also tackled the challenge of translating the beloved aspects of the nature-centric 1960s open campus into a secure learning environment that would maintain the benefits of nature play and nature learning.

Community members from the design advisory team shared the predesign goals and vision during community events which created pre-bond excitement around the project and an overwhelming passage of the school bond to support the construction.

## A REVITALIZED CENTER OF COMMUNITY

Ultimately, the community developed and embraced a flagship elementary school – attractive to families because it maintained the spirit of the previous 1960s building while progressing the community's history and protecting their future with a fresh style and modern safety features. The school now serves as a space for performance and celebration. The commons area can seat up to 650 people, supports indoor-outdoor festivals, and can hosts a variety of community meetings, plays, and learning needs.

CAMAS,  
WASHINGTON  
(2017 DATA)



POPULATION  
22,100  
MEDIAN AGE  
39.4

AVERAGE  
MALE  
SALARY  
\$73,040

AVERAGE  
FEMALE  
SALARY  
\$53,882

MEDIAN  
HOUSEHOLD  
INCOME  
\$101,170

MEDIAN  
PROPERTY  
VALUE  
\$381,500

POVERTY  
RATE  
3.66%

HOME  
OWNERSHIP  
75.2%

### RACE

WHITE: 82.3%

ASIAN: 7.48%

HISPANIC  
OR LATINO: 4.98%

2+ RACES: 3.18%

BLACK OR  
AFRICAN  
AMERICAN:

1.29%

AMERICAN  
INDIAN OR  
ALASKA NATIVE:

0.76%

**THE GREAT OUTDOORS**

Integrated into wildlife habitats, watersheds, and parks, the site connects to neighboring natural recreational community resources. Direct access to walking and biking trails encourages children and families to experience the natural world and develop a healthy lifestyle.



**LEGEND**

- Future Pedestrian & Bike Trails
- Lacamas Heritage Trail
- Parking

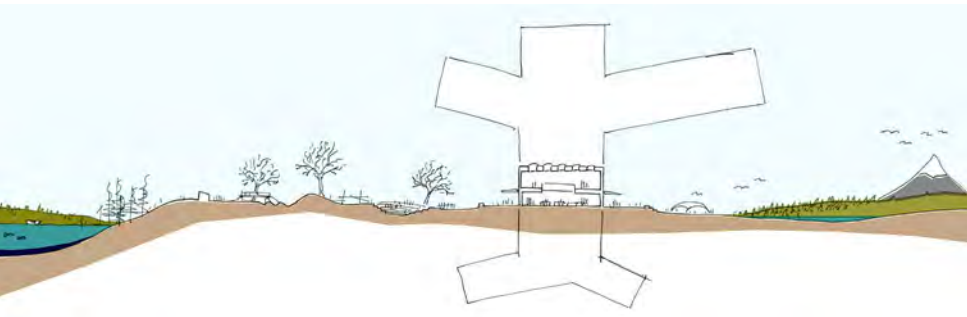
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## A CAMPUS IN THE COUNTRY

Student play areas weave together around the building, ranging from structured and nature play nearest to the school and wilder places for on-site “field trips” outside the fenced play yard, including wetlands, streams and stands of ancient trees.



### SITE PLAN LEGEND

- |                   |                       |                               |
|-------------------|-----------------------|-------------------------------|
| 1 Wetland         | 5 Garden              | 9 Stormwater Education Garden |
| 2 Open Playfield  | 6 Covered Play        | 10 Main Entry                 |
| 3 Amphitheater    | 7 Fish-bearing Stream | 11 Bus Drop-off               |
| 4 Play Structures | 8 Courtyard           | 12 Parent Drop-off/Parking    |





**NATURE PLAY** Preserving an oak tree and wrapping it with 360-degree decking gives solace to students who require a quieter space during recess, but it also creates a stage for outdoor performances.





# EDUCATIONAL ENVIRONMENT

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## STUDENT AT THE CENTER

The vision and goals for the project were consistently aimed at **putting the student at the center** – focusing on the needs and accomplishments of each individual learner. To accomplish this, we employed numerous educational environment options:

- Extended learning spaces located outside each classroom allow students to break-out and work individually or in groups while teachers still supervise through large classroom windows.
- Built-in window seats are provided in all classrooms, providing cozy nooks for quiet study and views to nature.
- Movable, soft seating options allow students to individualize their educational experience.
- Bookcases scaled for the younger learner encourage initiative in learning.
- Hallway cubbies and coat hooks promote independence and responsibility.
- The library and academic support spaces cluster near the heart of the building, offering assistance for

students with different learning needs in such a way as to normalize and even celebrate cognitive diversity.

## A CULTURE OF TEAM-TEACHING

We learned during the listening phase of the visioning process that the smallest learning unit would not be a single teaching space for 25 students but a pair of teaching spaces that could be combined for team-teaching to support 50 students. By pairing all core classrooms with high-quality operable partitions, we supported both individual and team teaching – an attribute that was important to the teachers.

In addition to pairing the classrooms, each room is supplied with multiple teaching walls and movable monitors to keep surfaces flexible so that classrooms may be oriented in a variety of ways. Classroom storage is hidden to maximize wall space, reduce visual clutter, and keep teaching tools close to hand.

## ONE SIZE DOES NOT FIT ALL

Within the variety of classrooms, breakout areas, and support spaces such as the library and resource rooms, students can find cozy nooks that fit one or two, window seats that fit one to four, small group tables for four to six,

break-out project spaces for four to 12, and support spaces for two to 10. These options give students the opportunity to find individual and small group settings within the 25 to 50 person learning units, while a high degree of internal transparency ensures active and passive supervision of all learning environments.

Tucked underneath two sets of stairs leading out of the commons are oversized forum steps for groups of two to 12 students to hang out, feel protected, but also supervised.

## NATURAL ENVIRONMENT

The school utilizes its natural surroundings to influence well-being, mindfulness, calmness, and environmental awareness, and inspires educators to let nature inform the curriculum and integrate active outdoor play into every school day. By supplementing every indoor extended learning space with a covered outdoor area with water and power for project work, the classroom stretches between indoors and out seamlessly.

## IDEA LAB

A prominent Idea Lab adjacent to the main entry greets all who come into the school. The space supports art, home economics, science, and invention. One

day students might be taking a cooking class cooking in the Idea Lab and the next day firing up a kiln for their pottery. Large double doors lead from the Idea Lab to an exterior courtyard, just in case an art project get a little messy.

## LARGE GATHERINGS

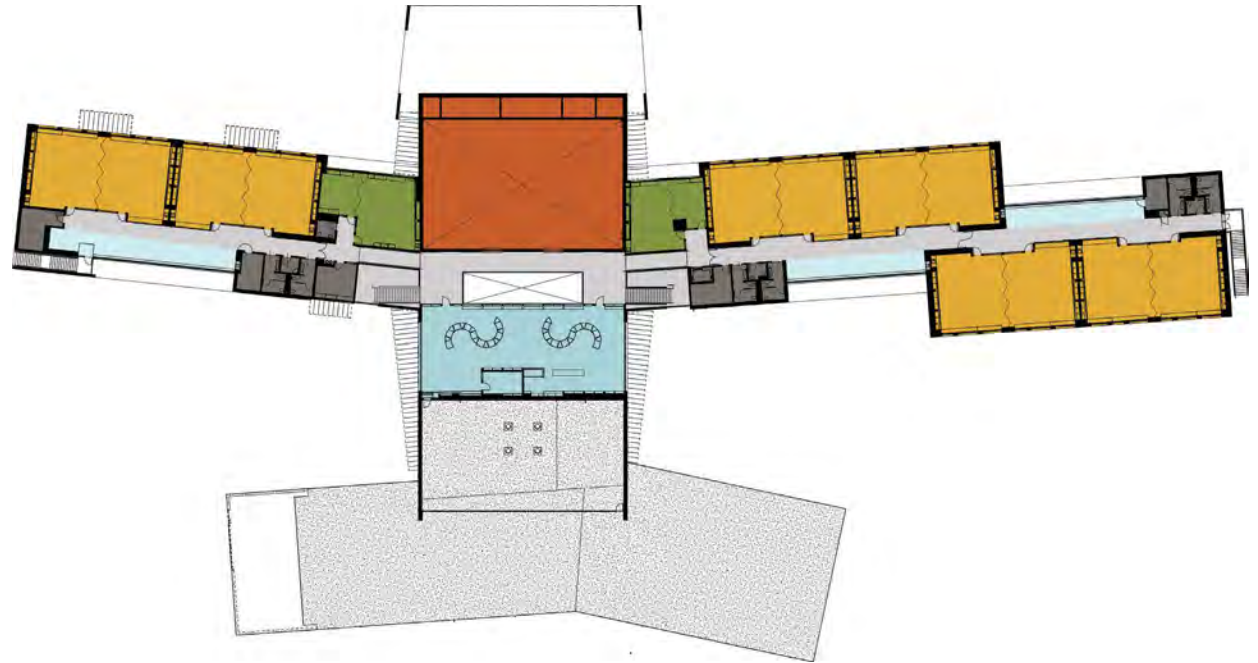
At the heart of the school, the gymnasium, commons, stage and music room can be combined into one large venue to be used for a variety of school functions. The school improves opportunities for community involvement by encouraging parent volunteers and mentors to host student performances and after-hour community events. Music is central in the building, so that this modality of learning can enrich students both in class time or during performances as the space opens to support the stage.

The adjacent outdoor space is also used to accommodate a wide range of uses and provide a location for students to learn social skills. Floor to ceiling windows line the wall of the commons with views to the exterior courtyard, allowing for students to make their own choices and safely negotiate social situations while being well supervised.



### UPPER LEVEL FLOOR PLAN

- Gymnasium
- Classrooms
- Academic Support
- Breakout Space
- Library
- Service



### LOWER LEVEL FLOOR PLAN

- Gymnasium
- Classrooms
- Special Education
- Administration
- Idea
- Academic Support
- Breakout Space
- Commons
- Kitchen
- Music/Art
- Service





**EXPANDABLE SPACE** Adjoining classrooms can be modified with a folding partition to support a variety of teaching styles. Window seats with views to the natural landscape provide areas for reading and other quiet activities.





**FLEXIBLE LEARNING** Breaking out into small groups for personalized learning – or coming together as a community – by expanding the learning environment to a variety of interior and exterior spaces, each student has the opportunity to discover and apply their unique set of skills to any task.









**A ROOM WITH A VIEW** Located on the second level, the library boasts cozy reading nooks, flexible furniture, and floor-to-ceiling windows that are placed to take advantage of the view to the wetlands, pasture, and on a cloudless day, Mt Hood lies in the distance.





**MYRIAD OF SPACES** A small scale counseling office is tucked neatly into a transitional corridor so staff can see the comings and goings from the main entry into the commons. Layers of transparency provide the ability to have eyes on all activities occurring in the environment.





**GATHER** The gymnasium and commons become one large space for students to play and eat lunch in an abundance of natural daylight. After hours, the space is available for community gatherings.





# PHYSICAL ENVIRONMENT

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## COMMUNING WITH NATURE

Integrated into the regional wildlife habitats, watersheds, and parks, the site has been enhanced with walking and biking trails connecting it to neighboring natural and recreational community resources. Wetlands, fields, and a grove of ancient trees greet visitors upon arrival and make the school truly feel like it is in the country, while performing ecological functions and providing for community recreation. To compensate for the development impact on natural habitats, the wetlands were upgraded from level 1 to level 3 by planting 1,500 trees.

## HEALTHY CHOICES

Allowing children to experience the natural world and preparing them to develop a healthy lifestyle that includes outdoor activities, student play areas link active play, nature learning, and

outdoor dining with walking and running paths. Nature play areas like balancing logs, jumping stumps, garden beds, a landscape slide, the oak tree deck, and a natural amphitheater are supported by a walking path that disguises a fire lane. In addition, outdoor restrooms, access to power and water, innovative play structures, and covered areas of multiple scales have been provided to support more structured outdoor activities.

The building's classroom wings extend into this landscape to maximize calming tree views from teaching spaces and to form community courtyards with views to Mt. Hood and nearby fields from the central community spaces. The narrow floor plates place a single row of classroom pairs facing onto extended learning areas which afford 180-degree views of nature from most every educational space.

## NATURAL MATERIALS

By integrating wood in a variety of sizes and patterns to the interior palette, the environment aims to stimulate brain function through the biophilic response. Acoustical ceilings with random hole patterns host lights which are sprinkled around like stars in a sky and slope to meet skylights, simulating the feeling of light coming through the leaves of a tree canopy.

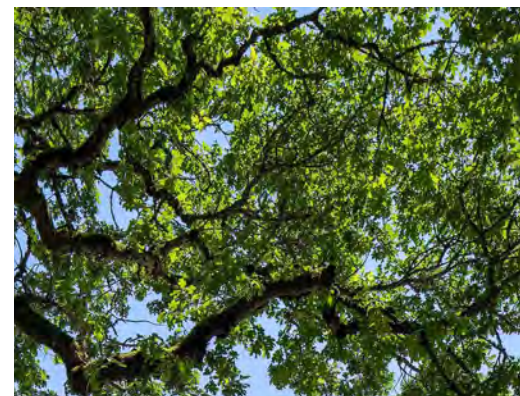
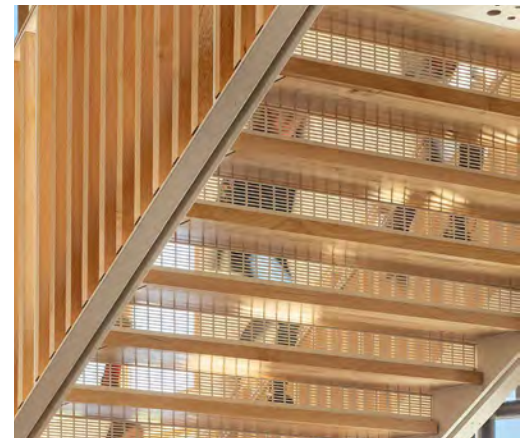
The exterior palette centers on patterned brick that provides texture to the walls of the building while recalling the geological layers of the land on which it resides. Recessed into the brick facades, rice-fiber-based plank cladding recalls the heartwood of a tree. Windows alternate along the brick façade to bring variety to these walls, while at the recesses, ribbons of window act as a counterpoint.

## A BREATH OF FRESH AIR

Displacement ventilation hidden in the teaching wall provides ultra-quiet super high-quality indoor air, heated silently by radiators tucked into the window-wall casework. Mechanical equipment is hidden in a second story well to reduce its sound impact to outdoor teaching areas, and carefully stacked over toilet areas to minimize sound transfer to indoor teaching zones.



**A NATURAL PALETTE** The environment is designed to stimulate brain function. From the exterior brick pattern and meandering fire lane disguised as a play area, to the vertical wood slats and transparent staircases, the eye is continually taking in new experiences.





**OUTDOOR DINING** Students spill out from the commons onto the west lawn to eat lunch, socialize, and commune with nature.





# RESULTS OF THE PROJECT



**In February 2020, the design team returned to Lacamas Lake Elementary to explore how the new building is facilitating student connections to the school's natural setting. Here are some excerpts from what the fourth and fifth grade students shared with us:**

"Learning can take place anywhere in Lacamas, and you can feel free and feel comfortable wherever you're deciding to stay – and you can just feel really free."

"All the wood and light colors just makes me feel very warm inside."

"I really like all the natural light....it makes everything so airy, and you don't have to have the lights on all the time."

"The natural materials make me feel like I'm sitting outside, and sitting outside...makes me feel calm and less stressed."

"I notice how open the area is, and how natural it is, and it makes me feel calm."

"It makes me feel like I'm outside in nature."

"It's just a fun place."

**Administrators are also pleased with how the new building functions:**

"This is a superb building."

**DR. JEFF SNELL, SUPERINTENDENT  
CAMAS SCHOOL DISTRICT**

"My heart rate goes down every time I enter the building. My students and I feel very calm here."

**TEACHER,  
LACAMAS LAKE ELEMENTARY SCHOOL**



