



KALAMA ELEMENTARY SCHOOL

Home of the Chinooks

**Kalama School District
Kalama, Washington**

EXECUTIVE SUMMARY

Nestled in the hillside of its community, Kalama Elementary School is a new K-5 replacement elementary school that attempts to answer the question, “How do you create a new contemporary learning environment that has a story to tell?” For over 80 years, there has been a reverence and love for the historic high school in Kalama. For the District and community, it was important that the replacement elementary school had a similar sense of belonging to the community while having its own unique identity. Kalama is steeped in a history intertwined with shipping, logging, and the railway. One of our primary goals was creating a sense of place, pride, and belonging by infusing that history into the site, architecture, interiors, and wayfinding.

Another overarching goal was creating a contemporary learning environment that could support multiple modalities of learning, effectively becoming a third teacher to the student population. In order for this to occur, the schools had to be flexible, adaptable, and agile. This was a key component to future proofing the building as well, allowing the building to adapt to an educational environment that is constantly evolving. It is because of this flexibility that the school performed extremely well under a truly unforeseen condition, COVID, and was able to adapt for in-person learning while at full capacity.



Owner Kalama School District	Site 7.05 Acres	Grades K-5	Occupancy December 2020* October 2020 partial occupancy	Total Construction Cost Bid \$34,630,000 Final \$33,790,000* with add alternates	Cost/Square Foot \$376/sf Building \$422/sf Building + Site
Scope New Elementary School	Building Area 80,000 sf	Student Capacity 560 Students	Construction Delivery Method GC/CM		

COMMUNITY & ASSETS

Community

The Kalama School District located in Kalama, Washington, is part of Cowlitz County, named after a Cowlitz Indian term meaning “river of shifting sand.” Kalama developed as a railroad town as the original terminus of the Northern Pacific Railway (later moved to Tacoma, WA). A rail ferry brought trains across the Columbia River to Oregon. Serving students living in the town of Kalama, the School District sits at the top of a hill overlooking the town and Columbia River to the west with the town separated from the river by Interstate 5, train tracks, and industrial development. Kalama has a population of 2,500 and an incorporated area of 3.5 miles. The community is economically tied to several major industries located along the river including the local port which accommodates ocean-going vessels. A conscious effort to increase tourism is linked to several antique shops in town, a cruise ship stop with a bus tour to Mt. St. Helens, and a future public market.

Assets

The school sits within a neighborhood setting allowing some students the ability to walk or bike to school.

Having an undeveloped site available (play field and tennis courts) allowed for the school to be constructed without the need for temporary swing space and freed up space on the main campus for green space, improved site circulation, and visual connections between all three schools. The open site also allowed for orienting the building and spaces for an east-west solar orientation which reduced loads on the building in order to eliminate cooling.

A tall grove of trees on the west side of the site provide a buffer from some neighboring residences and allow filtered views to the Columbia River. A nearby wetland was preserved and a forest up the road which are owned by the district are available for student learning opportunities.



STAKEHOLDERS & CHALLENGES

Stakeholders

In order to plan for a facility that served the community at large, it was vital that there was broad representation at the stakeholder level. A 20 member Design Advisory Committee was formed of District Administration, School Board Members, teachers, representatives from the City of Kalama, Kalama City Council, Port of Kalama, and family members who can trace their ancestry to Kalama’s inception. What bound this group together was a love for their community.

Challenges

Maintaining the vision of the school district while being cognizant of the budget was one of the biggest challenges. There was a time when the project was significantly over budget

and the dilemma was how to reduce costs without cutting program, without cutting the needs for the school district, but also delivering a quality building that would last at least as long as the historic high school building. We listened.

During construction, team members experienced challenges that many had never seen in their careers - from the design team, contractors, to the stakeholders. Wildfires that created hazardous air conditions made construction difficult or impossible for at least a week while the pandemic brought on another level of uncertainty. Everyone worked together during this time and we took the lead helping the district establish revised furniture

layouts and phased procurement schedules in order to meet social distancing requirements and to enable school to partially resume in-person learning.

With value engineering being necessary to bring the project within budget, the GCCM process was utilized to enable more direct feedback from the Contractor on cost effective decisions and we reached out to the community for help and ideas.

We included the City of Kalama in our pre-bond planning which really helped us significantly when the bond passed. We worked with the City to help facilitate and push for several code amendments in Kalama’s municipal code. The

most significant code amendment was changing the height limitations. The relatively small site footprint necessitated a three-story solution in which it became even more important to maintain connections between floors and spaces to create the feeling of a smaller building. The city had no mechanism to which we could get a variance or deviation to go three stories but with a lot of collaboration with the city council we were able to amend that portion of the code.

The executive director at the Port of Kalama was also a strong voice during our pre-bond planning and throughout the design phases. They helped our budget challenges by entering into an interlocal agreement with the school

district to allow for athletic use of Haydu Park and we expanded one of their softball fields to allow for high school baseball. The upgraded field is shared between the district and the community.

Other constraints on the site included heavy rock which required costly excavation as well as sloping topography around the site.

Despite all of these challenges, the school opened for in-person learning two months ahead of schedule. We also were able to give \$840,000 in construction contingency back to the Owner because of our low change order rate.

Value of the process and the project to the community at large

The positive contributions from the involvement of the community in the planning and design of the new elementary school cannot be measured. Through the community meetings, eco charette, aesthetic visioning, active listening and research, the design of the school features contextual and historical design references, shared community spaces, flexible and adaptable spaces, and elements of community pride throughout.

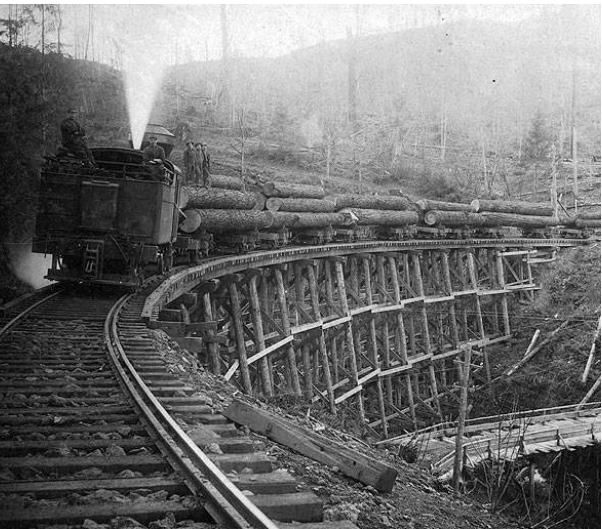
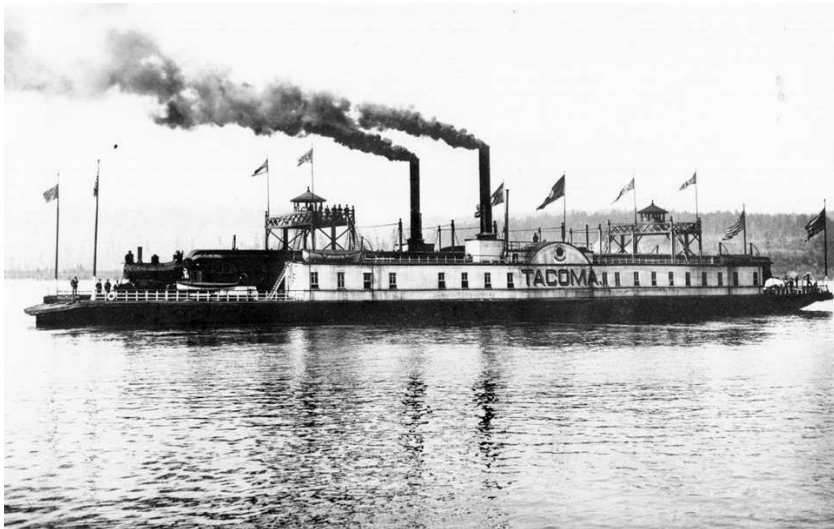


CONTEXT

Our reciprocal planning process was essential to understanding the vision of the district and informed every decision that was made through design and construction. There was a strong desire to integrate local history into the project. The existing high school has been around for over 80 years and has the embedded community and stories that history brings with it. It was important to the principal and to the district that this project feel like it has been part of the Kalama community.

One of the charettes conducted during the programming and planning phase included exploring imagery from Kalama’s industrial inception and beginnings. What kept constant while doing our research was the intersection of the Columbia River, the Northern Pacific Railway, and the timber industry. Before Tacoma, Kalama was the original location where the **“Rails met Sails”** as the railroad made its intercontinental journey.

The round windows at the kindergarten classrooms are reminiscent of ships that have called into the Port. The diagonal steel at the entry canopy and the covered play is an abstract expression of old railroad trellises and the sides of old boxcars. Even the bench seating at the front and covered play evokes a cast mooring post or the profile of a ship. The materiality was derived from the historic high school with the introduction of brick at the first floor; of the timber industry with exposed wood at the entry canopy; and of industries with metal panel and exposed structural steel. One of the challenges was how to scale a three story program against a one story program. The mono-slope roof solution helps to connect to the building to the landscape while grouping the forms under one roof.



EDUCATIONAL ENVIRONMENT

GUIDING PLANNING PRINCIPLES

A learner-focused campus

The major program spaces and learning communities were designed to be efficient, multi-functional and flexible spaces that enhance learning, enrich education, and improve student achievement, encouraging multiple learning modalities - featuring tackable surfaces, white boards, interactive flat panel displays, sinks, drinking fountains, storage cabinets and a mix of hard and soft movable furniture. A small group room off of the space provides more intimate, quiet, or dedicated space.

Small school environment that promotes meaningful collaboration

While a three-story building can appear intimidating to young students, special care and attention was given to break down the scale of spaces and features for children while visually connecting spaces with glass walls to allow students and faculty to see each other throughout the building.

Within each learning community, the various elements and rooms support different learning modalities and collaboration.

While student collaboration is the primary objective, it is equally important that faculty are provided space to collaborate to continually improve instruction via the teacher prep room which also allows for passive supervision.



Level 1 Floor Plan



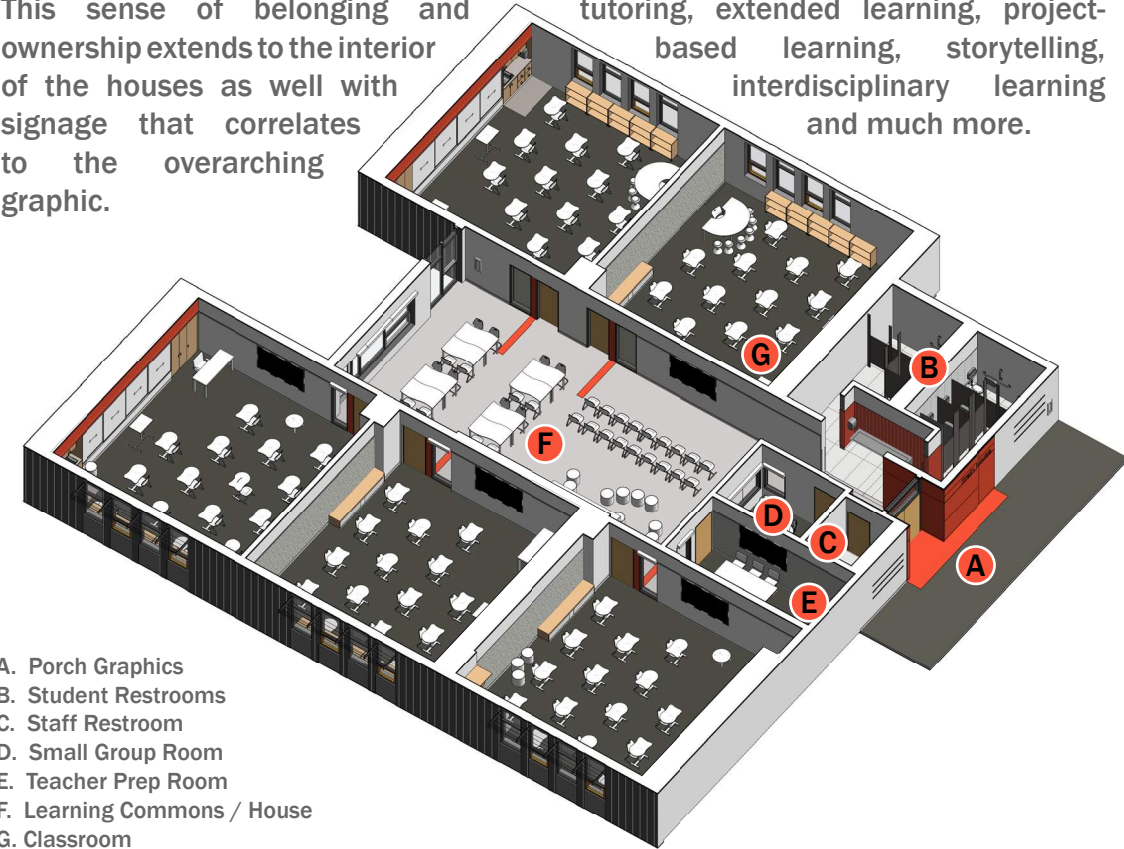
Level 2 Floor Plan (Level 3 Similar)

- Classroom
- Classroom Support
- Learning Commons / Commons
- Administration
- Gymnasium
- Music Room / Stage
- Media Center
- Specialized Classroom / STEM Lab
- Kitchen
- Restrooms / Building Support

THE LEARNING COMMUNITIES

The Rails Meet Sails concept extends to the interior and at the entry of each small learning community to facilitate wayfinding and to give a sense of ownership and identity. Dr. Loughheed was interested in tactile materials to help students with sensory issues have more of a physical connection to the building. We introduced engraved MDF panels that are affectionately called the Porch Graphics.

All of these graphics have a brief history lesson that pertains to the identity of the house. As an example, the Porch Graphic for the Train House was literally traced from the as-builts of the Minnetonka which was an engine used in construction services from Kalama to Tacoma. All of these panels have simple lesson plans incorporated into them. The train graphic is a maze that introduces cognitive problem solving and spatial awareness. Others teach scale, geography, solar orientation, shape recognition, and abstraction. This sense of belonging and ownership extends to the interior of the houses as well with signage that correlates to the overarching graphic.

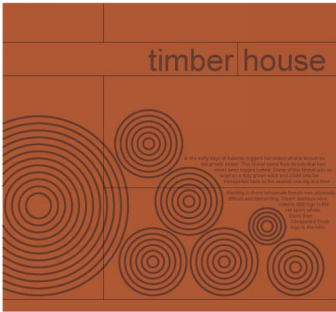


- A. Porch Graphics
- B. Student Restrooms
- C. Staff Restroom
- D. Small Group Room
- E. Teacher Prep Room
- F. Learning Commons / House
- G. Classroom

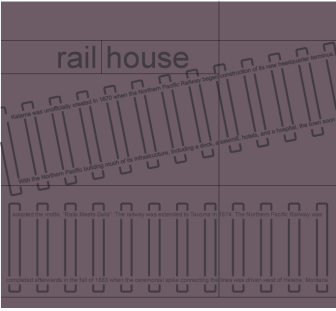
Each Porch Graphic has a unique color that extends into these small learning communities in a variety of ways, whether it's select soffit walls in the classrooms, bathroom tile, exposed beams in the learning commons, or the demarcation at the entry of each classroom.

More important than wayfinding, legacy, and identity, was the need to create learning environments that are student centered and support teaching and learning. We worked very closely with the District, the principal and teachers, and with our design advisory committee to conceptualize an ideal learning environment that could be as future proof as possible. That's where these grade level groupings really come into play at each small learning community. It was important that these small learning communities adapt to multiple learning modalities since we all learn very differently. There are opportunities for small group instruction, one on one tutoring, extended learning, project-based learning, storytelling, interdisciplinary learning and much more.

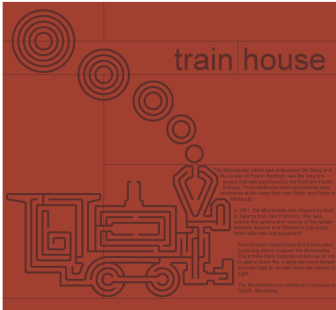
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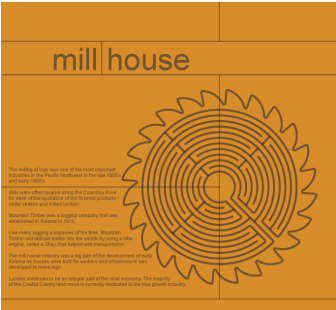
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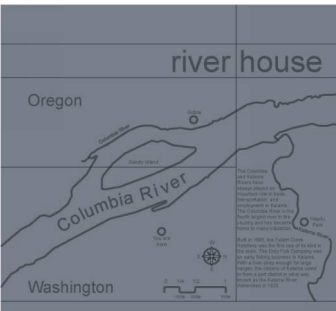
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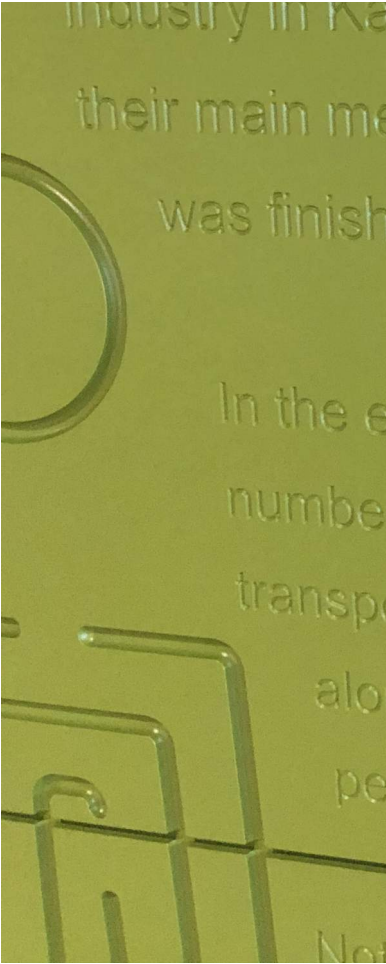
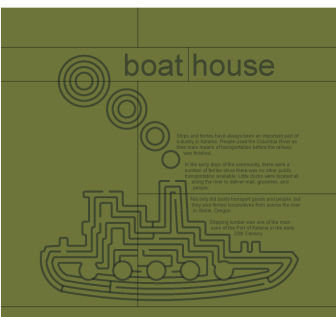
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EDUCATIONAL ENVIRONMENT

The activities of the District are guided by its **Mission Statement**:

Kalama School District, in partnership with family and community, cultivates skills and knowledge to prepare each student for responsible citizenship and continued learning.

The mission statement is further supported by the **District’s Vision Statement**:

- Kalama will provide an educational program that fosters individual student excellence by:
- Supporting student in developing and implementing a personalized vision
 - Developing the ability to success in an ever-changing world
 - Increasing and enhancing community, educator and family involvement

These outcomes are defined in the **District’s Strategic Plan**:

- **Staff Excellence:** Our schools provide highly qualified and accountable staff equipped with the tools and training necessary to excel.
- **Climate and Culture:** We provide a safe, respectful and inspiring place to teach, to work and to learn.
- **Collaboration with the Community/Community Involvement:** School and community collaboration and communication creates an outstanding learning experience for all kids.
- **Student Achievement/Student Performance:** All students are prepared for responsible citizenship

- and success in their post high vocations, training, and education.
- **Curriculum:** Provide curriculum opportunities that address each student’s academic, creative and physical potential.
 - **Technology:** Technology supports student learning and is integrated at all levels.
 - **Facilities/Stewardship:** Develop and maintain functional facilities that meet the needs of students, staff and the community.
 - **Fiscal Responsibility/Resource Management:** To provide sufficient school funding to meet the educational needs of all students

GUIDING PLANNING PRINCIPLES

Our reciprocal planning process led to establishing the following planning principles:

- **The heart of the community**
- **A learner-focused campus**
- **A safe environment**
- **Small school environment that promotes meaningful collaboration**
- **Practical/cost-effective/sustainable**
- **STEM focus**
- **Flexible, adaptable, agile**
- **Contextual Aesthetics**



Color Palette
Each house or learning community is identified by both a color and an icon. Key program spaces are also identified with a corresponding color depending on the floor level that it coexists with a house. The principal sought tones inspired by nature, represented by this image of leaves changing through the seasons. We took inspiration from the changing foliage as well as shades of blue and purple from Columbia River to establish this biophilic color palette. We also incorporated Kalama orange school color in select locations throughout the building.

FLEXIBLE LEARNING

GUIDING PLANNING PRINCIPLES

Flexible, adaptable, and agile
Designed as a four-track school with a flexible classroom added at each learning community, there are a total of five classrooms per house. Each learning commons serves as flexible space which can support a multitude of learning modalities with hard and soft seating, flexible tables that can be joined together, storage drawers for student materials, an interactive flat panel display, tackable wall surfaces, and white boards for a variety of presentation and display options.

Operable partitions are located at some of the flex classrooms to break them down into smaller learning spaces while large partitions between the gymnasium and commons/cafeteria and at the music room/stage offer flexibility at a larger scale.

We utilized a system known as a Gigabit Passive Optical Networks (GPON) to centralize the District’s data infrastructure. The system offers more flexibility, scalability and future-proofing as well as less dedicated space for components.



FLEXIBLE LEARNING



GUIDING PLANNING PRINCIPLES

STEM focus

A dedicated STEM Lab was provided at the heart of the building and features space for project-based learning. A kitchen, kiln, white boards, tackable surfaces display cases, green screen, an interactive flat panel, and durable worktops provide plentiful opportunities and flexibility for a variety of programs.

A safe environment

Aside from the visible safety features such as cameras and locked doors, placement of program on the site and within the building was intentional to enhance supervision and visibility. Spaces are all visually connected with glass walls for enhanced passive supervision.



OUTDOOR PLAY & LEARNING

Dedicated outdoor play areas are located on both the east and west sides of the building. The bus loop was conceived of as a multi-use space for students and vehicles. Kindergarten students have an area for pavement games, a soft surface area at the center called Kinder Island with playground equipment, and grassy areas around the bus loop for a variety of play and outdoor learning space.

On the east side, students can access the partially covered hard surface play areas via a large overhead sectional glass door off of the commons / cafeteria space or the gymnasium. Soft surface play areas include the playground and soccer field. An area was designated for a garden or greenhouse as another outdoor learning space.

The wetlands across the street have been preserved and provide a learning opportunity. Just up the road from the main campus sits a growing forest, once logged for timber, and now owned by the District. A former logging road is being developed into a road and an area within the forest will be used for student day trips as an educational opportunity.



PHYSICAL ENVIRONMENT

GUIDING PLANNING PRINCIPLES

Practical, cost-effective, sustainable

The project followed the Washington Sustainable Schools Protocol. One of the main goals from the Eco Charette was to maximize all resources (financial and otherwise) while providing the best possible learning environments within the budget.

We reduced the total cost of building ownership (design on the basis of life-cycle cost analysis) by eliminating mechanical cooling and focusing on proper solar orientation and displacement ventilation. Additional daylight and occupancy sensors on all LED lighting reduces the need for electric lighting due to strategically placed and sized window openings which maximize natural daylight, views, and vistas.

Interior and exterior materials and products were selected for durability and ease of maintenance.

Key features and strategies

- ELCCA: EUI Baseline 35; Actual 31.5
- East-West Solar Orientation for classroom wings
- No air conditioning
- Sunshades on south side spaces
- Displacement ventilation at classrooms
- LED lighting
- Low-VOC materials / indoor air quality
- Daylighting and views
- Water feature
- Acoustics
- MERV 13 filters
- Durable, easy to maintain finishes
- Linoleum Flooring – no wax required
- Long-term exterior finishes - brick, metal panel

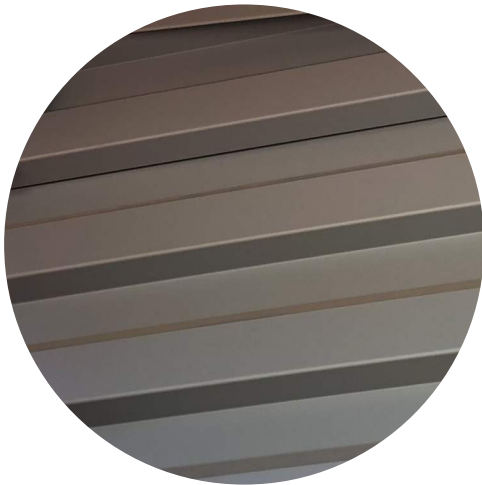
Primary Materials



Brick Veneer

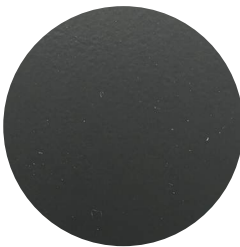


Glass & Metal Panel

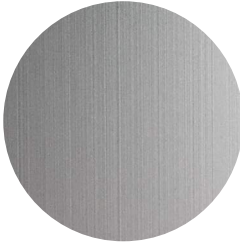


Metal Panel Accent

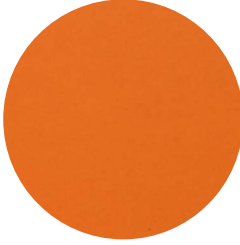
Secondary Materials & Finishes



Charcoal Grey Window Framing



Anodized Aluminum Doors



Orange Metal Panel



Wood Deck



Concrete Masonry Unit



COMMUNITY

GUIDING PLANNING PRINCIPLES

The heart of the community

The school was designed as the “Center of Community” and is a fully accessible community asset. At the site level, a soccer field, softball and baseball field are open to residents. The building welcomes visitors with its sloping canopy that directs water into a biovention pond, its design inspired by the boxcars and ships that were integral to the town’s formation. The interior features a full-size gymnasium, commons, full-service kitchen, and performance stage that are available for community events. When operable partitions are opened, the spaces become one and provide for a large community gathering place. Learning spaces can be locked and access restricted to the first floor of the building during these community events.

The building design is a reflection of the community itself with elements referencing elements of Kalama’s beginnings while looking towards the future. These elements are found on both the exterior and interior and provide educational opportunities for all ages.

* Through a partnership with the Port of Kalama, the baseball field was located off-site as a means to reduce project costs and create an upgraded facility that could be used by both the district and the community.



INSPIRATIONAL SPACES



“NOOKS”

Numerous kid-sized places to read a book are scattered throughout the building. The nooks at the media center provide a playful spot to read.



Internal Streets

Main corridors were thought of as “streets” with inspired contemporary lighting that brings down the scale to human level. Major program spaces and the Houses are all identified with a nature-inspired color.



Daylight and Views

The media center and learning commons offer stunning views to the Columbia River and a large grove of trees.



Transparency and Views

An intentional use of glass walls offers visual connections to major public spaces from corridors while glass sidelights connect classrooms with learning commons



Benches

Cast-in-place concrete footings for diagonal columns become durable and playful seating inspired by cast moorings and boats.



House Graphics – Rails meets Sails

The engraved tactile MDF panels are a teaching tool for history, community, and sense of place. They are linked with each grade, give identity and reinforce a students unique journey throughout their education.



STEM Lab

Display Cases, display shelving, and built-in benches offer places for students to display their work and take a short break.



School Color

The use of the Orange at key locations at the exterior and interior reinforces the community pride and school support.

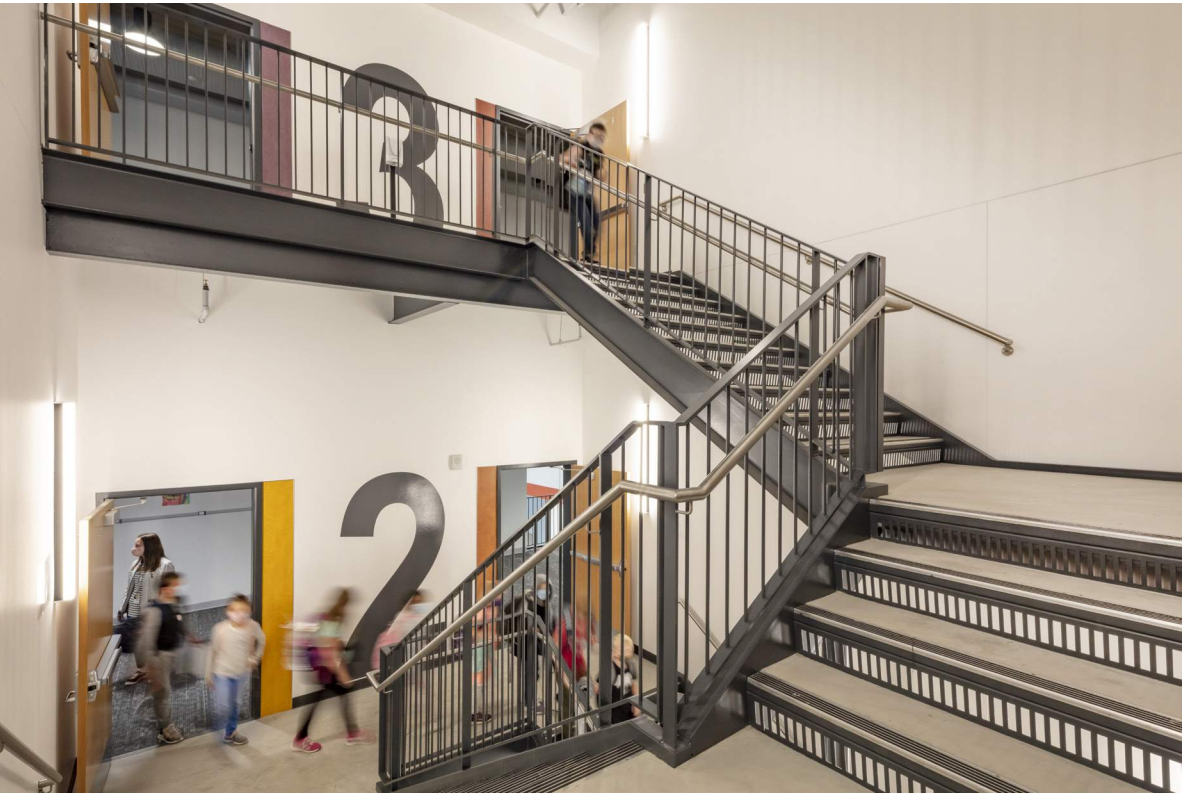
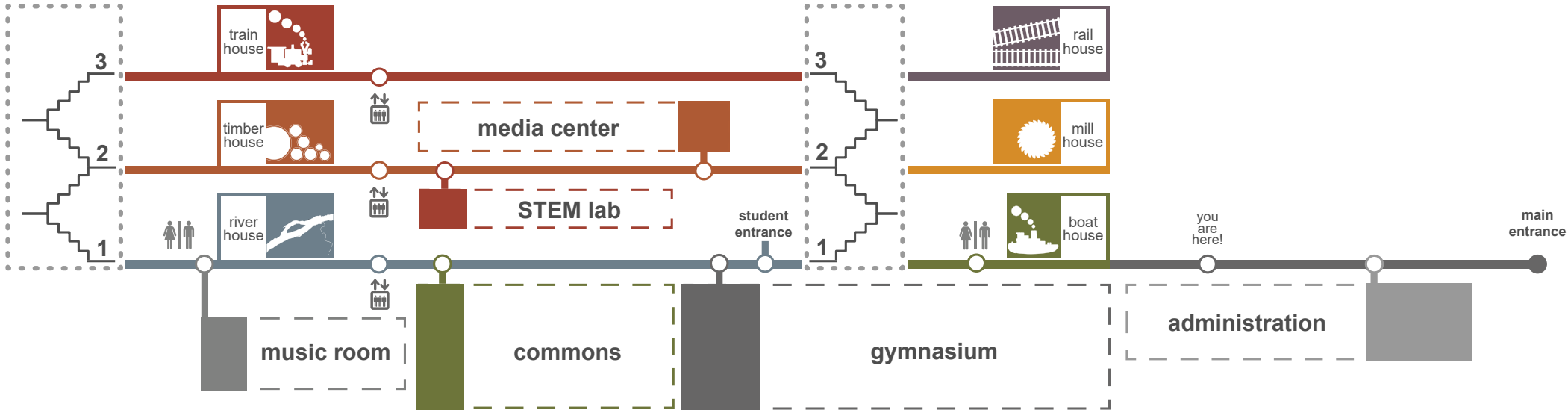
AN EDUCATIONAL JOURNEY / WAYFINDING

Train stop graphic
While the building design is not complicated, we wanted to graphically convey the design concept and building layout with the use of this diagram which is located at the main entrance of the building.

The wayfinding graphic in the lobby was created from a section through the building. The train stops recall the history of the place linking the significant features of Kalama to the building program, representing a child's exciting journey through the building and throughout their education.



Not just another stairway
Another way that we enhanced wayfinding was at the stairways. The bands of color corresponding to each house run from the floor up the wall leading to each level and are supplemented by large super graphic numbers. Open stair risers increase openness and passive supervision.



ACHIEVEMENTS

Adaptability for a pandemic

During our reciprocal planning process we didn't scenario plan for a pandemic but the flexibility of these environments has allowed for that extended learning to become additional core curriculum teaching spaces. We had to scenario plan in real time and even delayed the procurement of the FFE package to allow for adequate in person social distance learning.

- Opened early in October 2020 for partial in-person learning
- The bus loop and vehicle drop-off areas were reversed to aid in increased vehicular traffic.
- Operable windows and displacement ventilation with MERV 13 filters allowed for in-person learning
- Learning Commons that serve classrooms in lieu of corridors allowed flexibility for shared learning opportunities.
- Door-less student restrooms at each small learning community were critical for easy supervision, minimized hand to surface contact, and more frequent sanitation.
- Flex classrooms originally designed for future growth were used to expand teaching areas to meet social distancing requirements
- The high-school sized gymnasium was used as temporary additional classroom space to meet social distancing requirements.
- Extra room in the lobby was extremely helpful as it allowed for temperature check and sign in stations while allowing for appropriate social distancing.



The building was really personalized to our identity and our community in a lot of ways - everything from the physical design, to the elements that we put inside, to the programming that we're delivering inside of it. The design team and our long range process really helped us go slow to go fast and was really thorough and thoughtful in figuring out what we wanted to do and how we wanted the building to represent the community. It really represents what Kalama is, where Kalama has been, and where it's going – all of those things are really meant to serve a purpose and they came with a lot of really thoughtful and purposeful decision making.

- Dr. Kala Lougheed, Principal