

ARLINGTON ELEMENTARY SCHOOL

Tacoma Public Schools
Tacoma, Washington



ARLINGTON ELEMENTARY SCHOOL

EXECUTIVE SUMMARY

Arlington is an exploration of what spatial possibilities emerge for schools when education is considered a living, breathing organism – that requires facilities be evolutionary.

Like many districts across the country, Tacoma Public Schools has experienced declining graduation rates, hitting a low in 2010 at 55 percent matriculation. In 2011, the state legislature created the Innovation Schools and Zones program to encourage districts to create new, innovative programs. In 2012 Tacoma Public Schools was selected as the first Innovation Zone catalyzing their commitment to educational innovation that empowers student achievement. They analyzed the data and found that two factors, socioeconomics and peer relationships, account for 85% of their students’ success. The District recognized that the rate of students who qualify for free or reduced lunch is a statistic associated

for lower test scores, and that in 17 of their 35 elementary schools, more than 80% of their students qualify for the free or reduced lunch program. Put simply, the data showed them that their influence would be limited if they continued to think of schools in the traditional way. The District recognized that to accept the challenge for their schools to be an agent for serious change, work must happen that touches these deeper levels by rethinking the concept of school, empowering community partners and establishing a positive culture.

To begin, Tacoma Public Schools developed a robust framework of inquiry towards “A New Vision for the Elementary Learning Environment” that asked a series of provocative questions rather than providing concrete solutions. The result is a non-traditional educational specification that allows new interpretations to be created while providing the District with guidelines

for building planning and design that stipulates relentless reinterpretation, deep analysis, creative synthesis and meaningful reinvention at every turn.

Arlington is the first ground-up elementary school constructed since this framework was published. It is a case study of what can happen in school design when you explore the spatial possibilities that emerge when a community sets out to totally rethink the basic assumptions behind traditional elementary schools in order to build a culture that wraps around kids.

This culture allows them to learn all day, every day, and throughout the year in environments where learners are continuously challenged, relentlessly supported, and engaged in a way that is both safe and healthy.

To understand the context of this community in need, the team embraced a collaborative, immersive approach with broad user engagement. Each participant provided unique understanding into design opportunities. By drawing on individual strengths of all participants, the community of practice surrounding the Arlington Elementary School project has kindled innovation from initiation into completion.

Designing for the myriad of ways in which students learn necessitated that we challenge the basic givens in schools: do we need classrooms; do we know how to program for learning and not numbers; can we fully integrate furnishings that support a rapidly variable and flexible instruction space; do we understand the impact of transparency? The response at Arlington is a collaboration between the design of learning programs, the design process and a design result that moves the needle away from traditional cells and bells.

SCOPE OF WORK AND BUDGET



OWNER	SITE AREA	BUILDING AREA	GRADES HOUSED	STUDENT CAPACITY	SQUARE FEET PER PUPIL	OCCUPANCY DATE	CONSTRUCTION COST	BUILDING CONSTRUCTION COST PER SQUARE FOOT
Tacoma Public Schools	5.9 acres	54,000 SF	K-5	450	120 SF	06 Sept 2017	BUDGET: \$18.0 M BID: \$16.9 M FINAL COST: \$17.8 M	\$283/SF



SCHOOL & COMMUNITY ENGAGEMENT

Arlington is designed to be the center of gravity for the whole community, not just their children. To help break the cycle of poverty, education at Arlington fundamentally redefines who the student is; assuming we are all learners.

COMMUNITY ENGAGEMENT

Tacoma Public Schools believes that the key to success for every student can be found in innovation that empowers student achievement, and the District is striving to be on the cutting edge of educational practice and school design. As a result of their focus on experiential learning, we were asked to explore what spatial possibilities might emerge if we rethought the basic assumptions behind traditional schools.

Achieving this audacious goal meant that we had to begin to address collaboration in the earliest stages of the project. So we designed an interactive and immersive process to get to issues at the heart of the matter:

- :: Do we need classrooms?
- :: Can we overcome ownership?
- :: How can building organization foster collaboration?
- :: What are the true impacts of transparency?
- :: Can we program for learning activities instead of the number of students?
- :: Can we integrate technology and furnishings to create flexibility?

Building on our successful data-driven design process, we created custom programming tools that looked at experiential, engaged, and interdisciplinary learning activities, not just capacity. We built simple design frameworks for educators to interactively test design concepts against their pedagogical goals. We collaborated with visionaries and students, and we invited them to dream big and be bold. We put educators in the driver's seat throughout the

design process, and as a result, Arlington is now an ecosystem of flexible and fluidly connected spaces that promote a new model of civic practice in education.

CHALLENGES

During the process we learned of three main challenges that the design had to address:

Flexibility

The District's vision challenged the design team to consider: if education is a living, breathing organism, how can a facility be evolutionary? Flexibility is incorporated from the basic structural system down to the furnishings and technology. Mobile teaching stations liberate teachers from their teaching wall enabling transitions between spaces without the need to boot up a different station. Moveable and stackable furniture create soft, student enabled divisions of space. Walls and surfaces are writable and moveable, allowing spontaneous fits of creativity while color installations inspire and cheer kids to chart their own path and encourage positive learning to happen here.

Budget

To meet the aggressive budget goals without compromising the program, our team employed a modular configuration to optimize constructability and conducted design research to select appropriate, cost-effective products and assemblies (acoustic paneling, ceiling treatments, operable glass sliders, VRF mechanical system with cooling throughout).

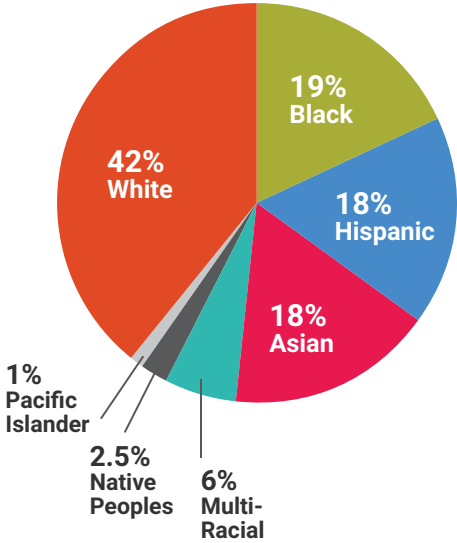
Safety & Security

Arlington Elementary school serves a community that faces the very real challenge of crime in the neighborhood. During our initial research for the project we heard from students, families and staff that about drug use and other crime that frequently occurs around the school and even on the site after hours. To address these concerns we created a large fence around the perimeter of the school. Though it functions as a barrier to keep students safe, the fence doesn't seem intrusive as it playfully integrates the metaphor for the power of each student to rise up.

COMMUNITY CONTEXT Arlington is located in an urban, single-family neighborhood with minimal greenspace in south Tacoma. The neighborhood is cut-off to the east by Interstate-5 and large, big-box retail, to the west by Tacoma's Auto Row and industrial sites, and sits in the flight path of the nearby Lewis-McChord military air base.



TACOMA PUBLIC SCHOOL STUDENT DEMOGRAPHICS



"The City of Tacoma has prioritized youth in its human services funding priorities: identifying child, youth and family development as one of four top funding priorities."

City of Tacoma, 2015-2019, Human Services, Funding Priorities

TACOMA PUBLIC SCHOOL GRADUATION RATES

58%
2010-2011

83%
2014-2015



COMMUNITY ASSETS The site organizes itself from north to south, increasing the opportunity for physical activity as the site opens up to the school playground and the future public park located across the street – although supervision will be required at all times as the larger park located to the south is known for illicit uses.

CITY OF TACOMA DEMOGRAPHICS

POPULATION	FAMILIES IN POVERTY WITH CHILDREN	SINGLE PARENT HOUSEHOLDS	ADULTS WITH COLLEGE DEGREES (AGE 25+)	4-YEAR COHORT ENROLLING INTO COLLEGE
205,000	21.1%	10.3%	25.5%	43%
MEDIAN AGE				
35.7 years				

SOUTH TACOMA NEIGHBORHOOD DEMOGRAPHICS


POPULATION	AVERAGE HOUSEHOLD INCOME	LIVABILITY SCORE	CRIME	FOOD STAMP ASSISTANCE
25,639	\$52,000	56	22% higher than City of Tacoma	Ranks #4 out of eight Tacoma neighborhoods
MEDIAN AGE				
35.7 years				

PLANNING PROCESS The planning process revealed that 77% of the time, learning ideally occurred with groups of 15 students or less. This challenges a spatial program assigned as groups of +/-30 students in a single classroom, geared towards direct instruction. For Arlington, we utilized a functional programming process to understand their spatial needs. This led to an agile learning model, where each learner/teacher is given a core instruction space, a shared learning project lab, a flexible shared learning area, multiple small group rooms and a secure outdoor learning space, in the same (or less) square foot per student as the traditional mode.


TARGET USAGE BY TIME

23%

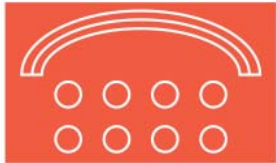
OF A STUDENT'S DAY IS SPENT IN LARGE GROUP LEARNING.



LARGE GROUP
FORUM /
PRESENTATION
25-50 PARTICIPANTS
1600 SF




LARGE GROUP
EXPERIMENT /
CREATE
25-50 PARTICIPANTS
1400-1600 SF




LARGE GROUP
COLLABORATE /
GATHER
25-50 PARTICIPANTS
1600 SF

77%


OF A STUDENT'S DAY IS SPENT IN SMALL GROUP LEARNING.




LARGE FLEX
15
PARTICIPANTS
600-800 SF



SMALL FLEX
10
PARTICIPANTS
200-300 SF



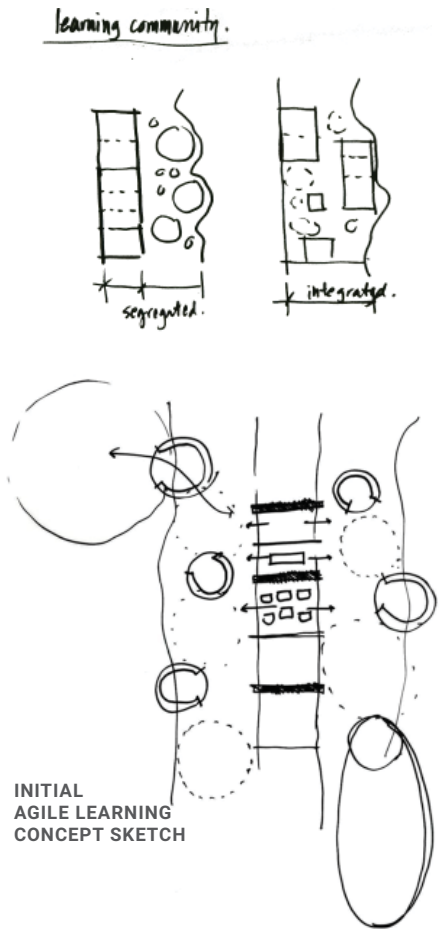
SMALL GROUP
5
PARTICIPANTS
120-150 SF



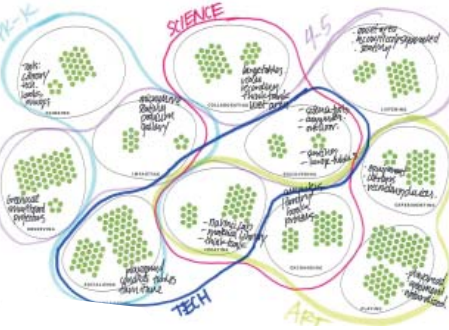
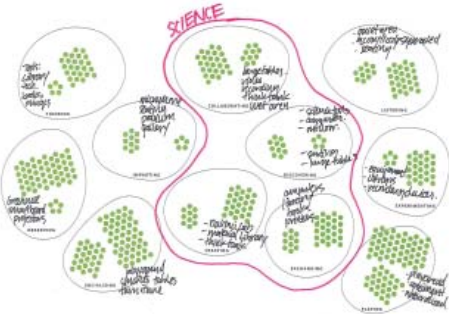
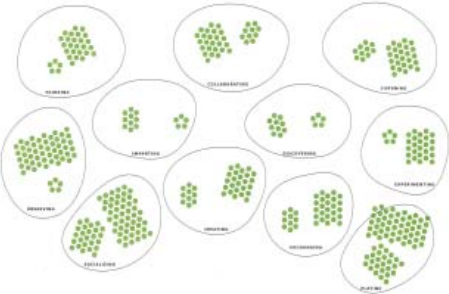
INDIVIDUAL STUDY
1
PARTICIPANT
ANYWHERE



FUTURE PROOFING Arlington is designed to be responsive to learners needs and can support multiple education models.



DESIGN TEAM Each part of the stakeholder team provides unique understanding into design opportunities. By drawing on individual strengths of all participants, the community of practice surrounding Arlington has kindled innovation from initiation into completion.



FACULTY



TEACHERS, DISTRICT LEADERSHIP, CITY OF TACOMA



DESIGN TEAM



STUDENTS, PARENTS, NEIGHBORHOOD

EDUCATIONAL ENVIRONMENT

There are no classrooms at Arlington. There are only spaces for learners and learning activities. The planning process discovered that more than three quarters of the time, learning would ideally occur in groups of 15 students or less, and that direct instruction time is decreasing.

EDUCATIONAL VISION

The new elementary school emerged from rethinking the concept of school, empowering community partners and establishing a positive culture. In addition to serving 450 elementary students, Arlington is a resource for adult education, a variety of community services, and will be a regional hub for preschool.

For Arlington, we utilized a functional programming process to understand their spatial needs in terms of learning activities and student group sizes that maximize learning outcomes. This led to an agile learning model, where each learner/

teacher is given a core instruction space, a shared learning project lab, a flexible shared learning area, multiple small group rooms and a secure outdoor learning space, in the same (or less) square foot per student as the traditional mode.

Core learning support is equally transformable. An open library, dining, gym and specialized learning spaces form the center of the school, allowing ebb and flow throughout the day to support research, discovery, making, gathering and celebration.

INDOOR & OUTDOOR LEARNING

A central goal behind the design of Arlington was to strengthen the relationship between indoor and outdoor learning. Covered outdoor areas allow kids to be outside even when it rains. Fencing provides a protected and safe outdoor space for student work and exploration, while the water tables provide hands-on discovery with fluid-dynamics, as well as a bit of whimsy.

The sawtooth roof is employed to flood interior learning spaces that would otherwise be the darkest place in the building with natural light. Views to green spaces and the sky thereby dominate the interior environment, according to both student and staff desires to "learn outdoors," while the material character of the physical environment is student centered.

ADAPTABLE & FLEXIBLE

The District's vision challenged the design team to consider: if education is a living, breathing organism, how can a facility be evolutionary? Flexibility is incorporated from the basic structural system down to the furnishings and technology. Mobile teaching stations liberate teachers from their teaching wall, enabling transitions between spaces without the need to boot up a different station. Moveable and stackable furniture create flexible and soft divisions of space. Walls and surfaces are writable and moveable, allowing students the space and opportunity to explore and get creative.

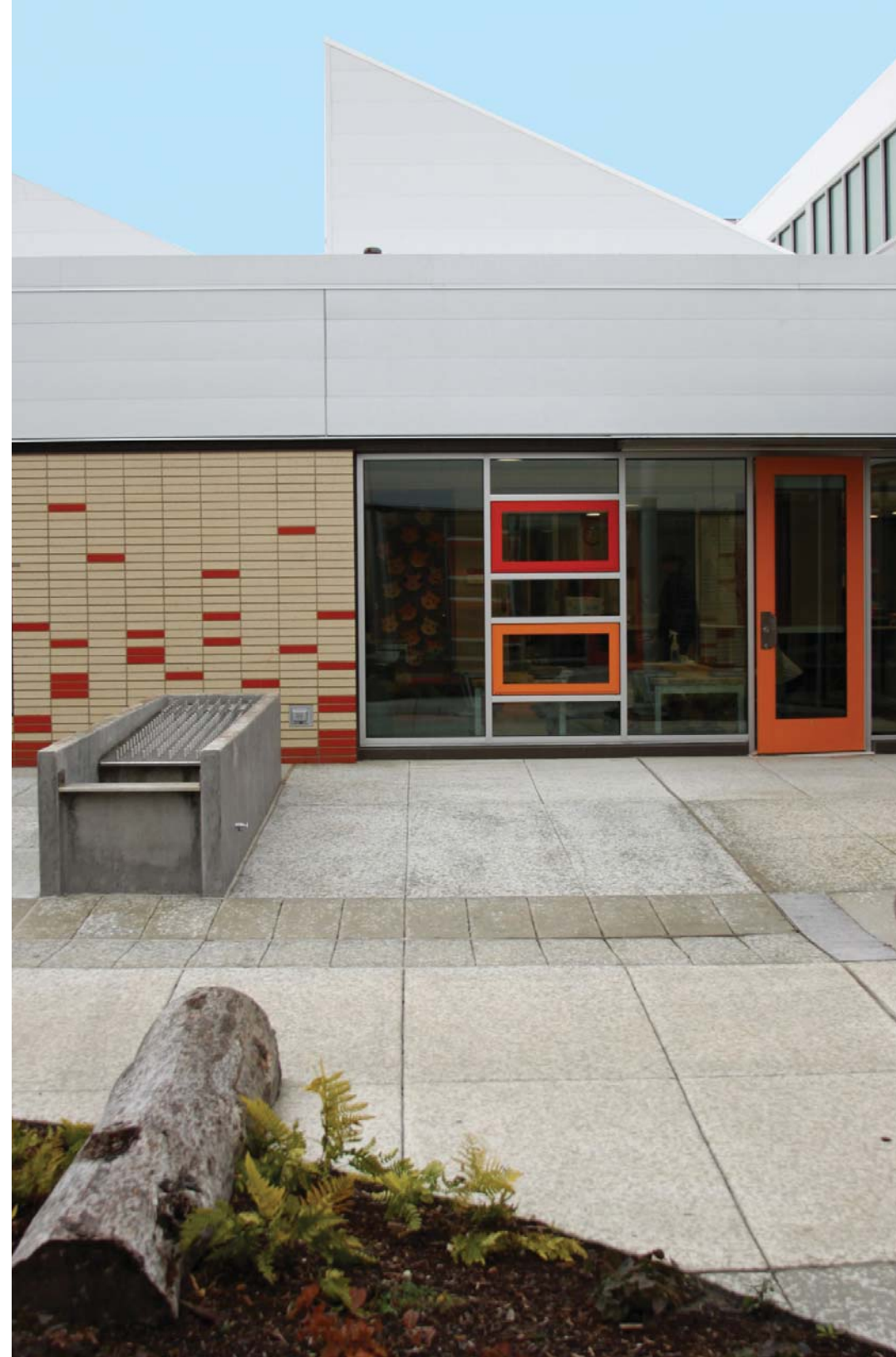
SELF-EMPOWERMENT

Neuroscience shows that repetition forms deeper memory of academic content and fosters our ability to cultivate emotions like pride and self-empowerment. During their morning assembly, Arlington students recite a powerful statement by Rita Pierson. "I am somebody. I was somebody when I came. I'll be a better somebody when I leave. I am powerful, and I am strong. I deserve the education that I get here. I have things to do, people to impress and places to go!" That quote, and 55 aspirational words that complete the statement "I AM ____" are incorporated within Arlington, reinforcing every student's self-esteem.

INDOOR & OUTDOOR LEARNING The direct flow of spaces from Core Instruction through the Exploration Porches to the courtyards provides every student with direct access to a wide variety of spaces to best support the full spectrum of learning activities necessary for ability based, differentiated learning.



ARLINGTON ELEMENTARY SCHOOL



FLEXIBILITY & MOBILITY Mobile teaching stations liberate teachers from their teaching wall, enabling transitions between spaces without the need to boot up a different station. Moveable and stackable furniture create soft, student enabled divisions of space. Walls and surfaces are writable and moveable, allowing spontaneous fits of creativity while color installations inspire and cheer kids to chart their own path and encourage positive learning to happen everywhere.



SELF-EMPOWERMENT Neuroscience shows that repetition forms deeper memory of academic content and fosters our ability to cultivate emotions like pride and self-empowerment. Each morning, the students gather and recite a powerful statement by Rita Pierson. That quote, and 55 aspirational words that complete the statement “I am _____” are located around Arlington to reinforce every students self-esteem.

I am...

Agile, Alive, Audacious,
Aware, Bold, Brave,
Caring, Creative,
Compassionate,
Confident, Courageous,
Curious, Composed,
Considerate, Determined,
Diligent, Dedicated,
Dynamic, Engaged,
Earnest, Free, Fearless,
Gentle, Genuine, Honest,
Intelligent, Intuitive,
Joyful, Kind, Loyal,
Loving, Motivated,
Mindful, Passionate,
Perceptive, Persistent,
Powerful, Proactive,
Patient, Proud,
Respectful, Radiant,
Reliable, Resourceful,
Resilient, Skilled, Spirited,
Strong, Spontaneous,
Thankful, Unique,
Victorious, Vibrant,
Wonderful, Worthy

“I am somebody.

I was somebody when I came.

I’ll be a better somebody when I leave.

I am powerful, and I am strong.

I deserve the education that I get here.

I have things to do, people to impress
and places to go!”

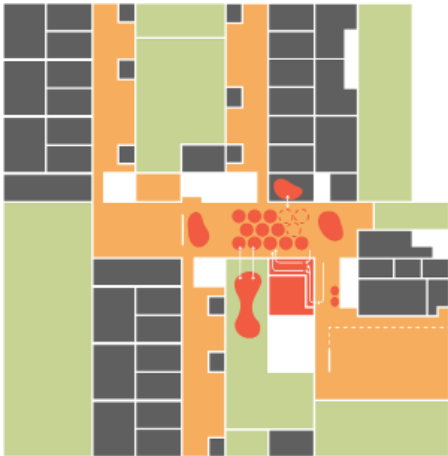
RITA F. PIERSON, EDUCATOR



MEALTIME WITH STUDENTS & FAMILY The majority of Arlington students eat breakfast and lunch at school. For some, these meals are their primary source of daily nutrition. Mealtime is not only a time to eat but also to bond with others. Family are invited and encouraged to participate.

The kitchen is central and food preparation is made visible to the students. Dining options were planned to allow for a centralized configuration as well as smaller-scale dining spaces that more closely resemble a family meal and allow for important interpersonal interactions. Respect and tolerance increase as students get to know each other in a more intimate setting.

CENTRALIZED DINING



AGILE DINING



ARLINGTON ELEMENTARY SCHOOL





PHYSICAL ENVIRONMENT

Built as a replacement school on the original play fields, the new school sits sandwiched between protected wetlands to the west and the existing school site to the east.

The building form resulted from a clear structural grid overlaid on an efficient volume, divided into three learning communities; each married to an active exterior learning space, and connected at the core and to the street by assembly spaces. Efficiency is paramount, as is connectivity and future transformability.

The architectural expression is simple, but intended to emanate transcendence – a formative quality of Arlington’s students despite their economic circumstance. Exterior permanence and solidity give way to interior flexibility – but both are characterized by color and light. Exterior brick and metal enclosures integrate color and materials in patterns that create a balance between the ideals of education as the path toward both foundation and uprising. The white sawtooth roofline dissipates into the Washington cloudscape on the exterior.

SUSTAINABILITY

The sustainable story of Arlington is dominated by these themes:

- :: **Reduce**
More learning in less built space
- :: **Integrate**
Embrace nature (school without walls)
- :: **Practice**
Simplicity in maintainability
- :: **Return**
Bring sustainability to the community and give back

Efficiency and simplicity paired with health and inspiration define the sustainable approach to Arlington. Making the most with a limited construction budget, the building form follows a regular structural grid overlaid on an efficient volume with carefully integrated systems. The compact plan results in a SF per student 25% less than average elementary schools in the region. Daylighting options were modeled to optimize the configuration of the overhead clerestory windows that provide balanced daylight throughout the efficient

floor plate. While direct views and immediate access to outdoor learning environments give students opportunities to connect with nature.

SAFETY

To draw a positive influence back to the site and discourage drug trafficking that occurs there now, an enlarged gymnasium, naturalized playground, basketball courts and play fields push out to the street and connect to a through-valley public bike path on site, inviting after-hours recreational use by families. Gardens at the edges to the neighborhood will be available to grow food for the families most in need. The covered play space is also an outdoor theater. At the heart of the site, a naturalized playground and amphitheater draws the community together so that they can rally around the school, and each other.

OUTDOOR PLAY

Working with groups of students, we asked them to draw fun places to play. Themes and ideas emerged that a small slope on site could be the playground itself. Hill-slides, rock-scrambles, and climbing nets transform what was originally seen as an obstacle into a landscape of imagination.



- | | |
|---|-------------------------------------|
| A CORE LEARNING | F LIBRARY |
| B SHARED LEARNING | G COMMUNITY GATHERING/DINING |
| C SHARED LEARNING, "EXPLORATION PORCH" | H GYMNASIUM/PERFORMING |
| D OUTDOOR LEARNING | I TEACHER COLLABORATION |
| E LEARNING SUPPORT/ SMALL GROUP FLEX | J PROFESSIONAL DEVELOPMENT |
| | K ENTRY/ADMINISTRATION |

SAFETY Durable and simple materials such as the glazed brick and steel panels playfully integrate the metaphor for the power of each student to rise up. Securely fenced courtyards offer students an opportunity to engage with nature in a safe, nurturing setting.



ARLINGTON ELEMENTARY SCHOOL



OUTDOOR PLAY Working with groups of students, we asked them to draw fun places to play. Themes and ideas emerged that a small slope on site could be the playground itself. Hill slides, rock-scrambles, and climbing nets transform what was originally seen as an obstacle into a landscape of imagination.



ARLINGTON ELEMENTARY SCHOOL



RESULTS OF THE PROJECT



"At our open house I said, 'The community deserves this. This neighborhood deserves this building.' And everybody around me who heard that, nodded and said, 'we do.' So that was pretty fantastic."

"One thing that has been so positive for me to see, is that the teachers don't pull the curtains across the glass door. The teachers are just loving the spaces. They're talking about how they're using the different spaces."

Emily Bannon
Instructional Facilitator, New Schools Planning & Construction, Arlington Elementary

"Arlington, the first school in Tacoma with wireless display screens, allows teachers to go mobile, moving their lesson into shared spaces outside their classrooms or moving themselves around the classroom."

<https://www.tacomaschools.org/news/Pages/Arlington-tech.aspx>



ARLINGTON ELEMENTARY SCHOOL