Dena'ina Elementary School

Matanuska-Susitna Borough School District





Dena'ina Elementary School is a collaborative design solution, developed by key members of the Matanuska-Susitna Borough, Matanuska-Susitna Borough School District (MSBSD), and the design and planning team to produce a new elementary school prototype for the district. The integrated approach, incorporates local knowledge, Alaska sensitivity, and national education trend expertise. The primary focus of the facility design is to provide an appropriate, flexible environment to facilitate the learning needs of the students now and well into the future. The design solution emphasizes current best practices and plans forward to allow for future trends, technology, and education. Efficiency and maintainability drove operational design considerations. A series of intensive workshops and listening sessions with the school district, maintenance staff, school district staff, and community produced a collection of renewed typologies for this 21st Century learning environment. The school was designed to serve as a model for new schools.

Community

Dena'ina Elementary is a community school and a community center for the fastest growing area in the nation. The design began with a thorough analysis of community and neighborhood context and characteristics, coupled with the School District's desire to create a gathering place for learning. The school allows for community use, provides after-hour use of select areas, and integrates with the new middle/high school to bring the community together around its children. Spaces are designed for multiple uses, adaptability and functionality, promoting involvement from families and the community.

Healthy Learning Environment

Students excel in spaces that are comfortable, flexible, inclusive, and adaptable to each learner's needs. Creating both indoor and outdoor learning spaces, providing access to daylight and views in every space, and allowing for collaborative and independent learning spaces provide appropriate learning opportunities for all.

Safety and Security

The site provides clear, separate site circulation for vehicles, buses and pedestrians. A welcoming Administrative Center, with clear sight lines through the building and overall building security systems, provide active and passive security while creating a safe, inviting environment. Simple, clear building circulation avoids alcoves and promotes visual connection throughout the facility.

Efficient and Maintainable

Materials, building systems, and design solutions are based on evaluation of energy efficiency, maintenance, and operations cost through a whole-systems design approach. Goal-setting during the planning phase allowed for systems innovations to promote efficiency, reduce the spread of illnesses, and create a healthy environment.

The Environment

The site and building are designed to respond to their unique environment, preserving and enhancing the relationship of the natural site with the building and developed landscape. Driving elements include connection to the land and its unique history, views to and from the site, buffers of undisturbed site where possible, connection to adjacent sites with safe trails and vehicle circulation, outdoor learning and activity space, an inclusive playground, snow removal and storage, protection from prevailing Matanuska winds, and planning for future neighborhood and facility development.

The Future

Dena'ina is an adaptation of a prototype into 21st Century School proto-parts that fit the land, learning outcome goals, and community. Knowing the area is continuing to grow, the school and site are designed with expandable components. The design theme was adaptable and flexible to allow for growth, evolution of educational methodology, and unique learner needs to serve this blossoming community and foster its youth far into the future.



Community Engagement



The Site

Set in a beautiful, boreal birch forest and drawing from the color and natural materials of its raw surroundings, Dena'ina Elementary is aptly named for the indigenous Dena people of nearby Cook Inlet. The design began with a thorough analysis of community, neighborhood context, and the natural environment and climate. Site planning prioritized the School District's intent to create a gathering place for learning, indoors and out. Innovation also reaches beyond the classroom walls, with an inclusive playground for all abilities, located where the public can enjoy it after hours and designed with ease of maintenance in mind.

Project Team Matanuska-Susitna Borough School District, Owner Gene Stone, Superintendent

Dr. Deena Paramo, previous Superintendent

Architect of Record

Design Architect

Landscape Architects

Bettisworth North

Perkins+Will

BrainSpaces **BBFM Engineers** HDR Alaska, Inc. HMS, Inc. PDC, Inc. Engineers Shannon & Wilson Stafford Design Group Lounsbury & Associates Inc. F-E Contracting Artist Installations

Educational Programming Structural Engineering Civil Engineering Cost Estimators Mechanical + Electrical Engineering Geotechnical Engineering Food Service Design Survey

General Contractor Kevin G. Smith, Rachelle Dowdy, Michael Anderson

By meeting the community's needs, upgrading the prototypical learning environment for contemporary Alaska schools, and integrating building and site into a seamless community campus, Dena'ina Elementary marries student-centered learning with northern design.





Features and Layout

The school is organized into three general zones: an academic zone with southern exposure, a shared program zone bordering the northern edge, and a multi-use social gathering zone in between. Flexibility is built into every room-doing more with less spaceand making the space work harder. Common areas allow for customized learning and community gatherings.

Detailed elements are kid-friendly and offer exploration of scale, natural light, color, and transparency. The simple primary color palette carries through from the playground equipment to the windows, carpet, furniture, collaborative learning nooks, and artwork. The colored glass and clerestory windows add brightness and fun for students, even during the dark winter days.

Floor Plan Key

- 02 Bus Entry 03 Loading Dock / Receiving 04 Playground Entry 05 Food Service Kitchen 06 Gymnasium 07 Music Room / Platform 08 Work Room Conference Room Principal **12** Administrative Assistant **13** Reception 15 Classroom **16** Commons **17** Media Center



Functional, Sustainable Design

The design team prioritized a high-performance, energy-conscious, sustainable school. The energy services team helped set energy goals, provided an energy model of the existing prototype school and recorded the energy use. To inform the design, the engineers and architects worked with staff to learn about energy-efficiency and building performance objectives.

The building is oriented east-west on the site, with the main entry and administrative areas at the east end of the facility to safely accommodate arriving students, visitors, and staff. Careful consideration was given to the orientation's response to seasonal extreme north-northeast wind events, including adjustments in the architecture to provide protection at the main entry. All students, visitors, and staff enter through the main entry at the east end within full view of the administrative suite at the northeast corner of the facility, providing for passive surveillance of student activity and added security at the facility. The instructional areas of the facility are located along the entire south face, providing for solar access and improved daylighting. Outdoor play areas are located to the south for year round solar access, and protection from the north-northeast winds.







" I think that the design of our school helps kids feel welcomed and comfortable. Everyone notices the dramatic difference in light and it has made the impending winter darkness easier to handle."

- Andrea Everett, Dena'ina Elementary Principal

"We were impressed by [the] overall design as well as thoughtful consideration that went into some of the finest details or elements of design."

> - Luke Fulp, Assistant Superintendent of Business & Operations

"The Dena'ina Elementary School project was incredibly crafted to meet the specific needs of our growing Knik Goose Bay Community. The work of Bettisworth North will serve our next

generation well."

- John Moosey, Matanuska-Susitna Borough Manager



Learning Environment