



Carlson Elementary School

Renovation/Relocation

Idaho Springs, CO

Executive Summary

After passing a capital construction bond in 2021, Clear Creek School District retained the architect to renovate the former High School/ Middle School building to be used for the relocation of the existing Carlson Elementary School, which was challenged by an aging building and tight site constraints.

In a collaborative effort, the architect worked with the owner's representative, and the district Design Oversight Group (DOG). Comprised of district leadership, staff and community members, the DOG worked with the design team to identify the project goals and vision. Early on, the DOG determined that the design will be based on the concept and practice of Expeditionary Learning, which supports active learning, character growth, and teamwork.

The four-story existing building was reconfigured for elementary school use and features classrooms organized into two Learning Communities. The new elementary school utilizes approximately 71,000 square feet of the existing building and is occupied by 150 students. Additional space within the building provides program opportunities for the community. In line with Expeditionary Learning principles, the classroom and teaching areas incorporate direct access to nature, daylighting, interactive technology, and flexible, collaborative spaces that encourage discovery and provide a safe place for students to innovate. The administration area and entrance were enhanced to improve safety and security. The reception area has direct physical control of the entry through the use of glass and electronically controlled door hardware as well as direct line of site to the entry, parking lot, and drop off areas.

Scope of Work & Budget

Owner: Clear Creek School District

Project Delivery Method: CM/GC

Occupancy Date: August 14, 2024

Scope of Work

Full interior renovation of a former high school into an elementary school 21st Century Learning environments that support experiential learning. A robust community and stakeholder engagement process during the design resulted in a renovated space that reflects the community.

Grades Housed & Capacity: PK-6, 150 students

Project Size: 71,253 sf

Project Cost: \$26.35M, \$370 per square foot





School & Community Research and Engagement

Idaho Springs Community

Founded in 1859 during the Colorado Gold Rush by prospector George A. Jackson, Idaho Springs was where the Colorado Gold Rush began. It was in this spot that the first discovery of gold in the Rocky Mountains was made at the site where Chicago Creek meets Clear Creek.

Since its founding, the town has evolved to become a charming small town and a popular tourist destination known for its history and beautiful natural surroundings.

Idaho Springs is located in Clear Creek County, about 30 miles west of Denver. The town is situated within Clear Creek Canyon and offers stunning mountain views and outdoor activities.

The town has a population of approximately 1,752. The self-described "quirky" members of the community are proud of their mining heritage and the uniqueness of the town.

Stakeholders

Throughout the planning and design, the architect worked with the Clear Creek School District, the owner's representative, and the district Design Oversight Group (DOG) comprised of teachers, parents, community members and district staff. Additionally, town hall meetings were conducted involving over 60 participants throughout the community.

Building History

Originally constructed in 1969, Building 103 was a progressive architectural statement featuring exposed exterior and interior cast-in-place concrete. Designed by well-known Front Range architects Nixon and Jones, the multi-level school is nestled into the rocky hillside and projects outward in a non-orthogonal patterns that recall biophilic relationships to nature.

This brutalist building was initially organized around a four-story open concept “Tower of Learning” concept. The unique form is defined by the triangular waffle slab construction, which provides many unique opportunities for each level to connect to the exterior. The building structure consists of a triangular grid of exposed concrete forming a waffle slab and was exposed in many areas. Exposing this unique structure puts the building systems on display and connects the occupants to the building's history.

Challenges

Site:

- Steeply sloped hillside site with limited buildable area
- Very small area available for parking and vehicular circulation
- Separate bus and parent drop off areas compete for limited site area
- Fire access occurs on a steep switchback road cut into the mountain
- Access from Highway 103 was limited to existing access points

Infrastructure:

All existing building services were in need of replacement and upgrading including :

- HVAC
- Plumbing, Utilities
- Electrical, Lighting
- Fire Alarm, Fire Sprinklers, PA, Security

Architectural:

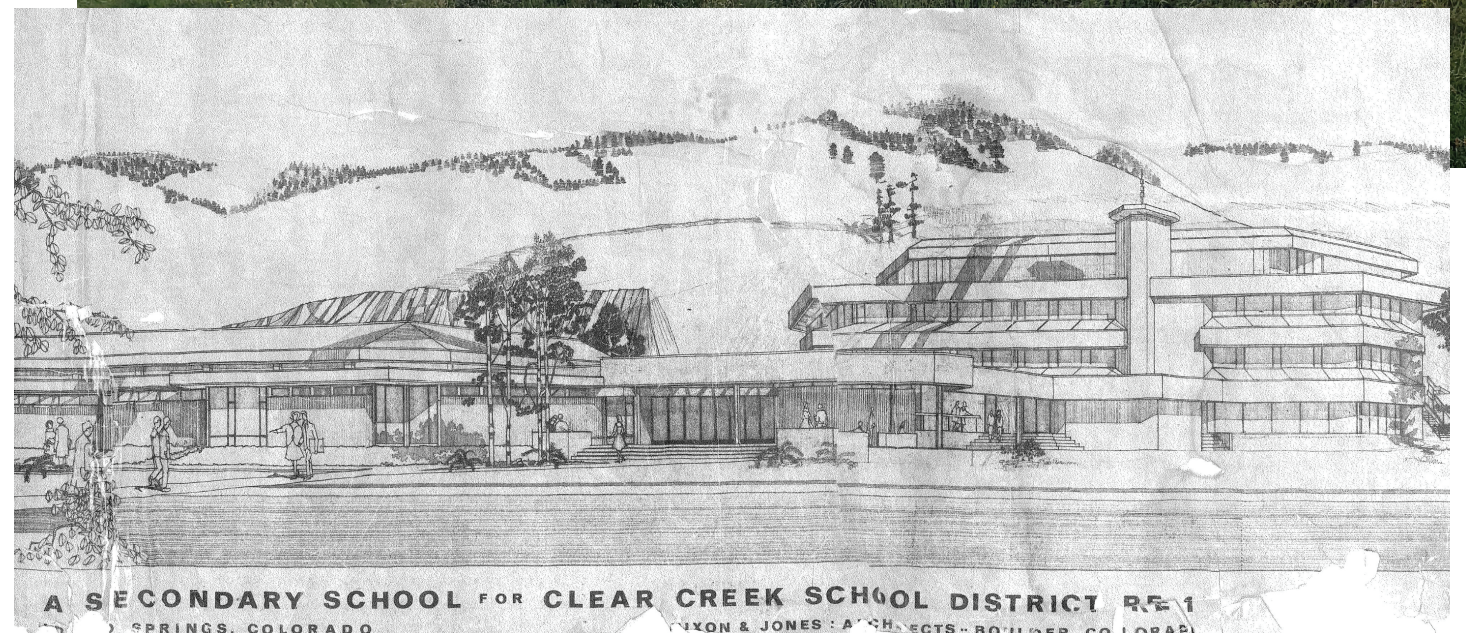
- 10' floor to floor heights mean that existing structure was no higher that 8' high
- Building organized on triangular grid means that there are few orthogonal rooms
- Many current code requirements were challenging including accessibility with many existing ramps
- The design team sought to create spaces that were comfortable and appropriate for elementary age students in the high school sized structure

Opportunities & Assets

After the construction of the new Clear Creek Secondary School in the early 2000’s, Building 103 remained mostly vacant for almost 20 years. The building was put up for sale with little interest and had become a liability for the district. While Building 103 was slowly deteriorating, the community also saw potential in it.

Clear Creek School District saw Building 103 as an excellent opportunity to create exceptional learning environments for Carlson Elementary School.

The previous use of Building 103 as a High School/Middle School guaranteed enough space for the new elementary school with room to spare. Built up a steep hillside in the canyon south of town, the Building 103 setting was seen as an ideal location to reinforce the Experiential Learning program that the school embraced.



Process

As a part of the 2021 capital construction bond, the Clear Creek School District RE-1 set out to create a vision for the site and building program to relocate Carlson Elementary into the former High School/ Middle School building tucked into a canyon on the south side of town now known as Building 103.

Carlson Elementary was previously located in a two-story building in downtown Idaho Springs, Colorado. The existing school site served the needs of Carlson for many years, but its program offerings were challenged by an aging building and tight site constraints devoid of parking. Clear Creek School District saw Building 103 as an excellent opportunity to create exceptional learning environments for Carlson Elementary School.

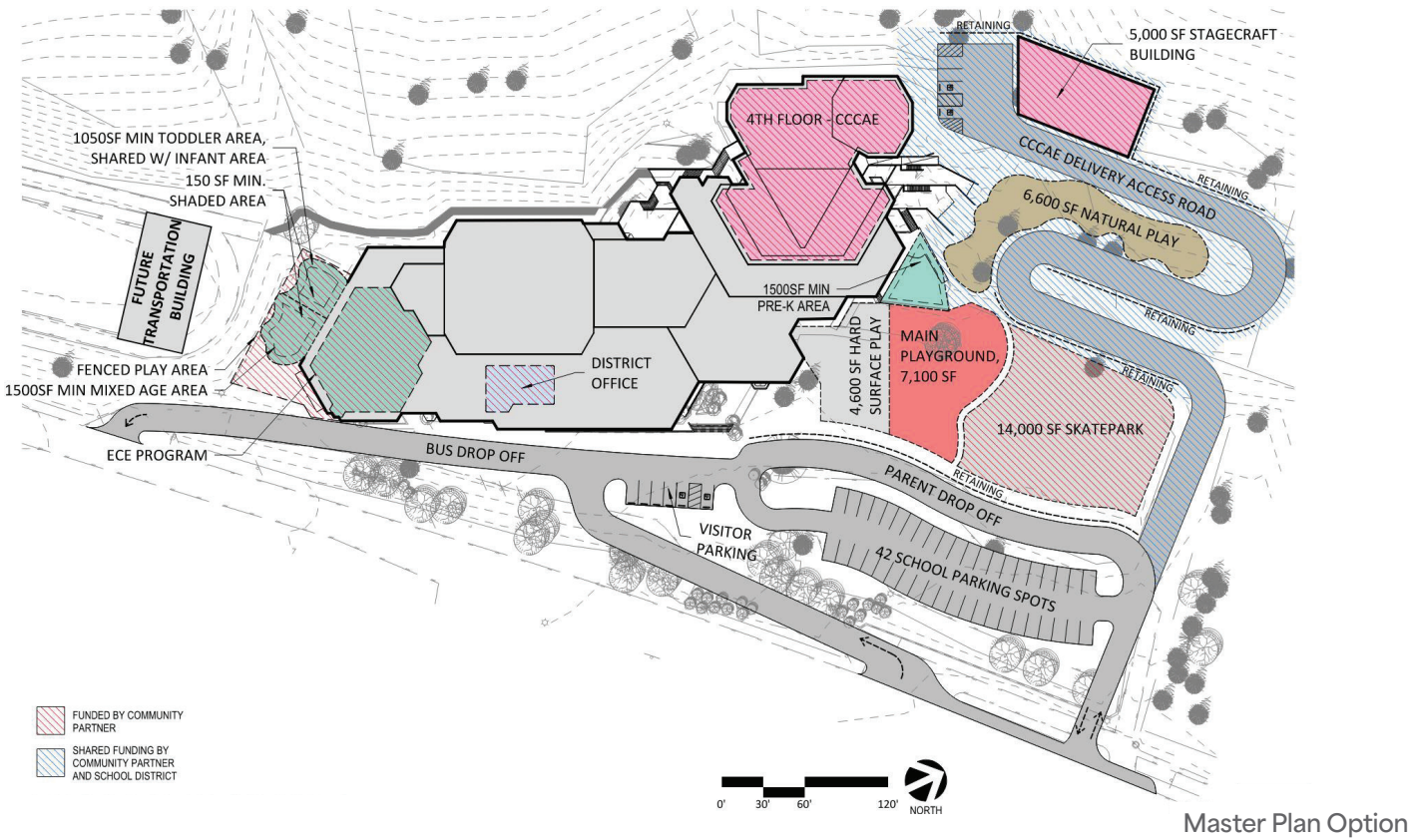
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An Opportunity for Shared Community Use

To begin the process, the design team was asked to create a building master plan to study opportunities for other community partners to share space and programs in the facility. A public Request for Proposals (RFP) was issued to solicit interest from partners who might share space in the building.

A community meeting was then conducted to review a summary of proposals and discuss a short list of partners. The shortlist included an early childhood education center, a community arts and education group, and offices for the town of Idaho Springs. Additionally, the district sought to create spaces to support the Clear Creek School District Offices in the facility.

Following this process, a general building framework was created that identified zones for partnership organizations to backfill surplus building square footage.



Building 103 Renovation Project Goals and Visions

Early in the Pre-Design Phase, the architect developed a list of Project Goals and Visions with the Design Oversight Group (DOG) to help guide the architectural design of the renovated elementary school facility. These goals and visions were derived through, and informed by, round table discussions with the DOG.

- 1 A place where **student-led experiences** are encouraged and fostered.
- 2 A place for **experiential learning** that is authentic and connected to the community.
- 3 A place that feels **friendly and inviting**.
- 4 A place that is **open and inclusive** across all departments (school and community areas).
- 5 A place where kids are **excited to go** each day!
- 6 A place to **celebrate creativity and uniqueness**.
- 7 A place that **reflects our unique community** (let’s own our quirkiness!).
- 8 A place that makes the Clear Creek School District **stand out**.
- 9 A place that is **airy with windows, daylight, views, fresh air, and good indoor air quality**.
- 10 A place that **celebrates and honors our mining heritage**.

Collaboration with the DOG and CAT

In a collaborative effort, the architect worked with the Design Oversight Group (DOG), meeting every three weeks in a series of interactive sessions to establish the design direction of the Carlson Elementary portion of the building. The DOG worked with the design team to identify the project goals and vision. Tours of other area experiential learning schools were conducted with the group and a workshop was conducted exploring design concepts that supported the experiential education mission of the school.

The DOG met four times prior to summer break during the Conceptual and Schematic Design phase and resumed meeting during the Design Development phase for additional verification and feedback on the proposed Schematic Design.

To ensure the final environment aligned with the vision and goals set during the planning process, the architect held user group meetings and DOG meetings to continue to refine the design solution and respond to feedback. The architect used 3D visualization throughout the process to communicate proposed design solutions and to gain alignment with the vision. Continued participation by those stakeholders on the DOG were critical in seeing the vision through completion.

Interestingly, the DOG group would periodically report to the Citizen’s Accountability Team (CAT) who provided high level oversight to assure that the bond measure priorities were being maintained.

A Collaborative Process from Beginning to End

The Design Oversight Group (DOG) remained involved in the process with regular meetings that continued through the Design Development and Construction Document phases. Construction updates occurred with the DOG and CAT groups at regular intervals. At milestone phases cost estimates and design adjustments to align the project with budget often required DOG participation to prioritize decisions and make sure that design goals were maintained.

At completion of construction, the DOG group led community tours through the facility and talked with parents, staff and stakeholders about the design intent of the project. DOG members had discussions with community members who had gone to high school in the building and reflected on the history and unique setting of the school.

Continuous Involvement & Vision Alignment

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During the design process, the Design Oversight Group and members of the design team toured several schools to gain inspiration for the transformation of Building 103.

Physical Environment

Natural Connections & Experiential Learning

A common theme of the project was to have a building that supported the experiential education model that the school embraces. This theme is expressed by the physical access provided to outdoor spaces around the school. The students have access to nature at each level and for each classroom community.

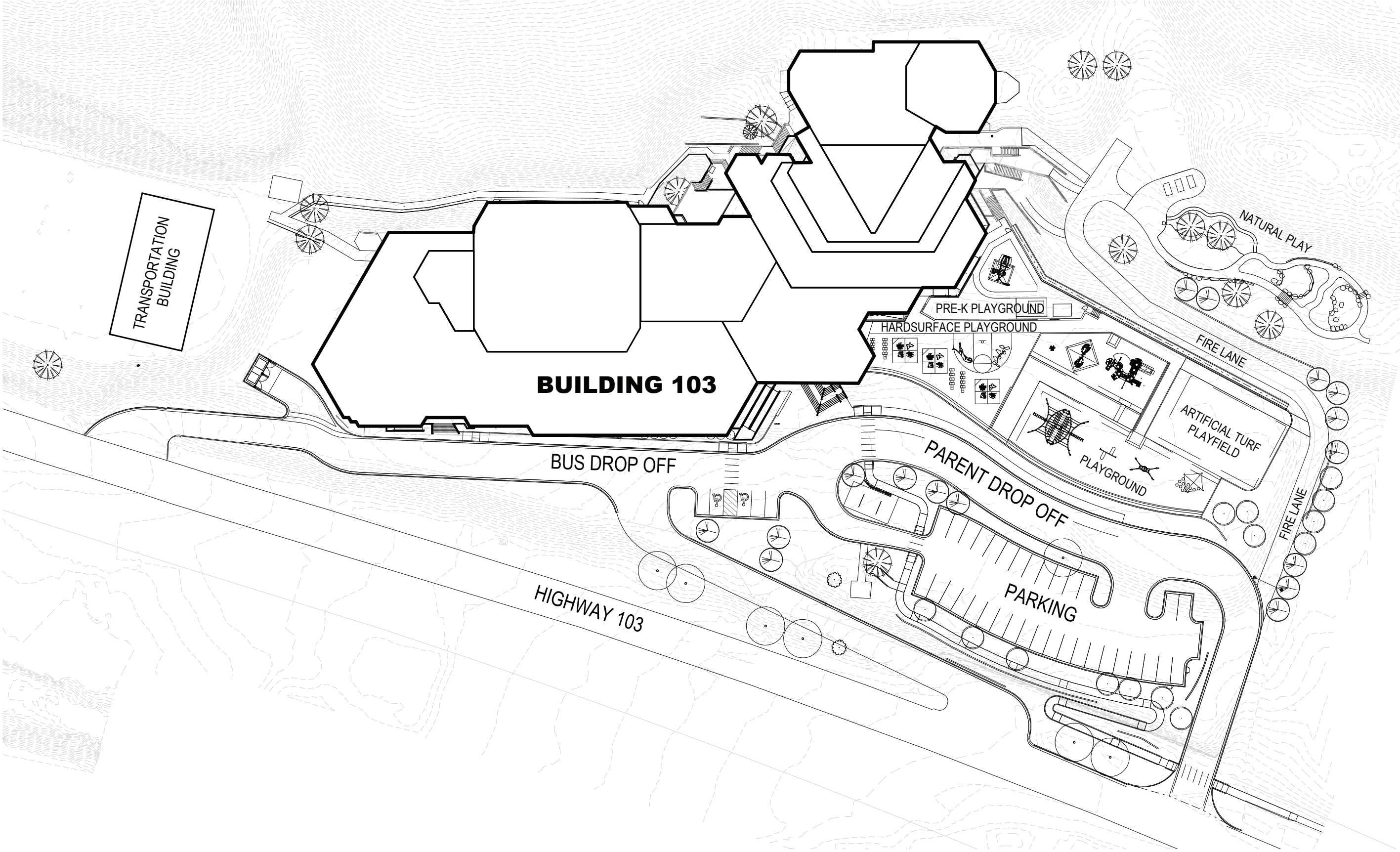
The building is organized in multiple levels that cascade up the hill with site with connectivity at every level. Classrooms are organized around a student commons that provides an extended learning/meeting space that builds a sense of student community.

At the points in the building that have access to outside, the design provides a mini mud room or lab space with room to store supplies, stage for outdoor learning, water for cleanup and a place for boots, hats, nets, bags, and everything else an experiential learning school might need.



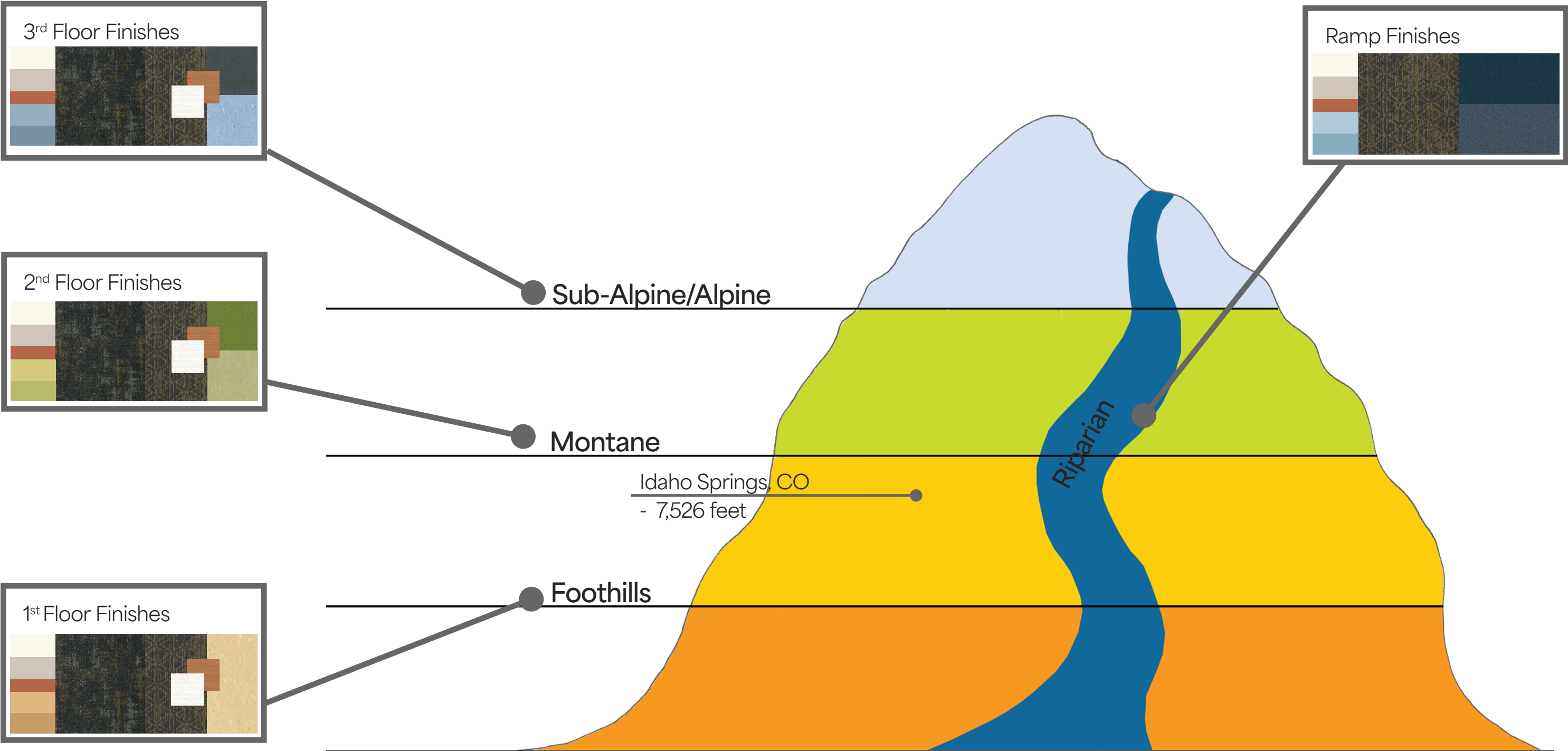
Building 103 Before

Site Plan



Natural Connections Inside & Out

The interior finishes for each floor of the renovated building were inspired by the Colorado Life Zones surrounding Idaho Springs, which not only supports the experiential learning model, but also further reinforces the connections to the outdoors and the local environment.



Sustainable Design

There are a variety of sustainable features supporting this project. The most obvious being the reuse of an existing building (that had been mostly vacant for 20 years) as opposed to constructing a new core and shell building.

Sustainable features include:

- **Building Reuse:** By renovating this building already owned by the school district, the project reduced the overall carbon impact of the project through material conservation and diversion of waste.
- **Efficient Mechanical Systems:** The old mechanical systems were replaced with high-efficiency units that not only consume less energy but also improve indoor air quality by providing better fresh air return.
- **Operable Windows:** Re-establishing operable windows reduces the reliance on mechanical ventilation systems, allowing natural ventilation and fresh air to enter the space, which can improve indoor air quality and occupant comfort.
- **Energy-Efficient Lighting and Appliances:** The project minimizes electrical consumption through the use of LED light fixtures, high-efficiency appliances, and daylight occupancy sensors.
- **Water Conservation:** Low-flow plumbing fixtures are installed to reduce water usage. This includes faucets, toilets, and other fixtures designed to use less water without sacrificing performance.
- **Sustainable Landscaping:** The playground features artificial turf, which eliminates the need for watering and reduces maintenance. Surrounding the building, native plants are used to further reduce watering requirements. The project was built with no need for irrigation systems.

Biophillic elements are incorporated throughout the building to reinforce the connection with nature, explore natural systems, and celebrate the unique setting.



Friendly & Inviting Atmosphere

One of the goals identified during the process was to create a place that feels friendly and inviting. The design achieves this with an inviting entry ample daylighting throughout the building, and bright colors. These features combined create a warm and inviting atmosphere for staff and students.

The design balances an inviting space were students feel welcome and encouraged to explore their creativity and the outdoors with a safe and secure school.

Safety & Security

Clear Creek School District established district-wide safety and security standards that were incorporated into the design. The renovated school design also follows best practices from CPTED (Crime Prevention Through Environmental Design).

- **Natural Surveillance:** Ample windows on the north and east sides provide good natural surveillance of the property and access points. The administration office, located near the main entry, has a strong visual connection to visitor parking and the entrance, allowing staff to monitor and control site access effectively.
- **Natural Access Control:** This limits crime opportunities by clearly differentiating public and private spaces through selective placement of entrances, exits, fencing, lighting, and landscaping. The existing terrain acts as a natural barrier from Highway 103, with the school elevated and clearly marked as private property. The renovation improved site access points and manicured the property, enhancing the school’s presence and deterring unwanted activity.
- **Natural Territorial Reinforcement:** This promotes social control by clearly defining private spaces, creating a sense of ownership. Using buildings, fences, pavement, signs, lighting, and landscaping to express ownership helps identify strangers or intruders. Signage is extremely important for this site because of the shared community use. Building 103 has a very complex geometry, and the renovation ensured that the school entry is clearly visible with welcoming signage that directs visitors toward the main entry point. Signage is also visible in locations where public access is either limited or not intended.

Following Clear Creek District’s final direction for access control measures, the main building entry will be locked and will benefit from electronic door hardware. All exterior doors on the school building were replaced to include electronic hardware with card reader access. This will allow authorized access only





MAIN ENTRANCE

CARLSON
ELEMENTARY

Educational Environment

Experiential Learning

The new Clear Creek Elementary School was designed around the concept and practice of Experiential Learning. Experiential Learning, or EL, is an educational platform that supports active learning, character growth, and teamwork.

Students within an EL curriculum realize academic success and high achievement. It is critical that the building supports flexibility, discovery, collaboration, and nature.

In alignment with EL principles, architectural design of the classroom and ancillary teaching areas incorporated the following attributes:

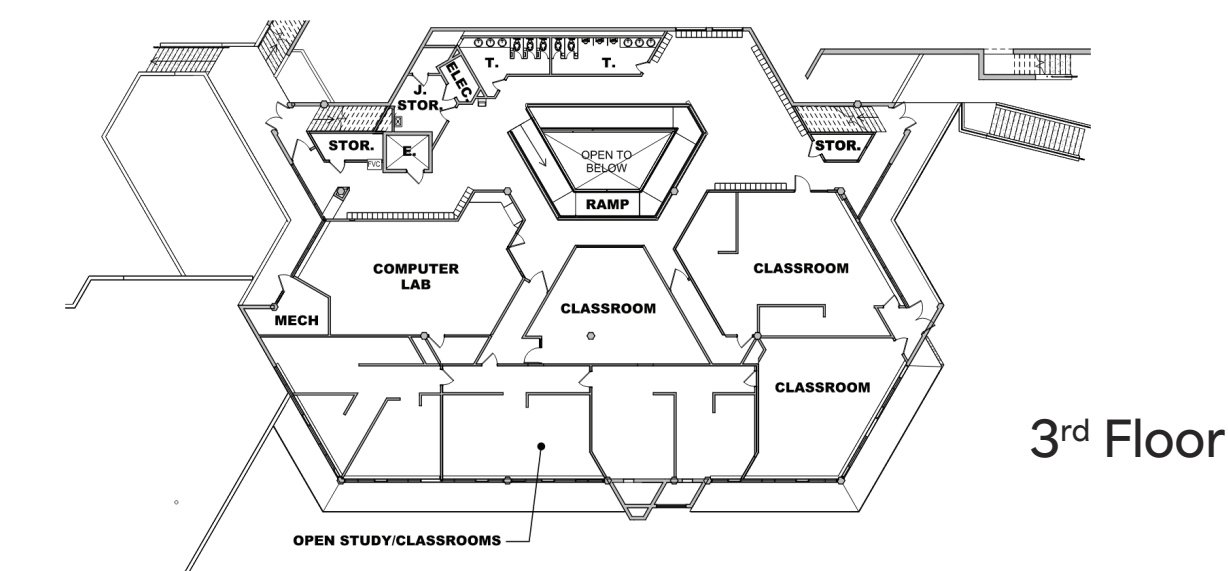
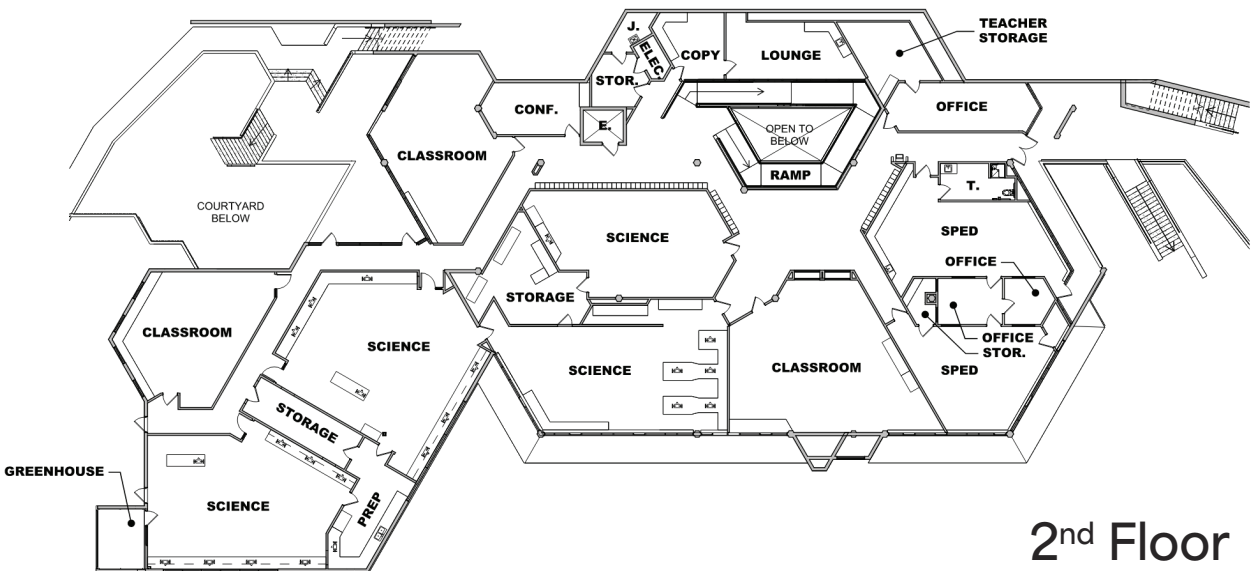
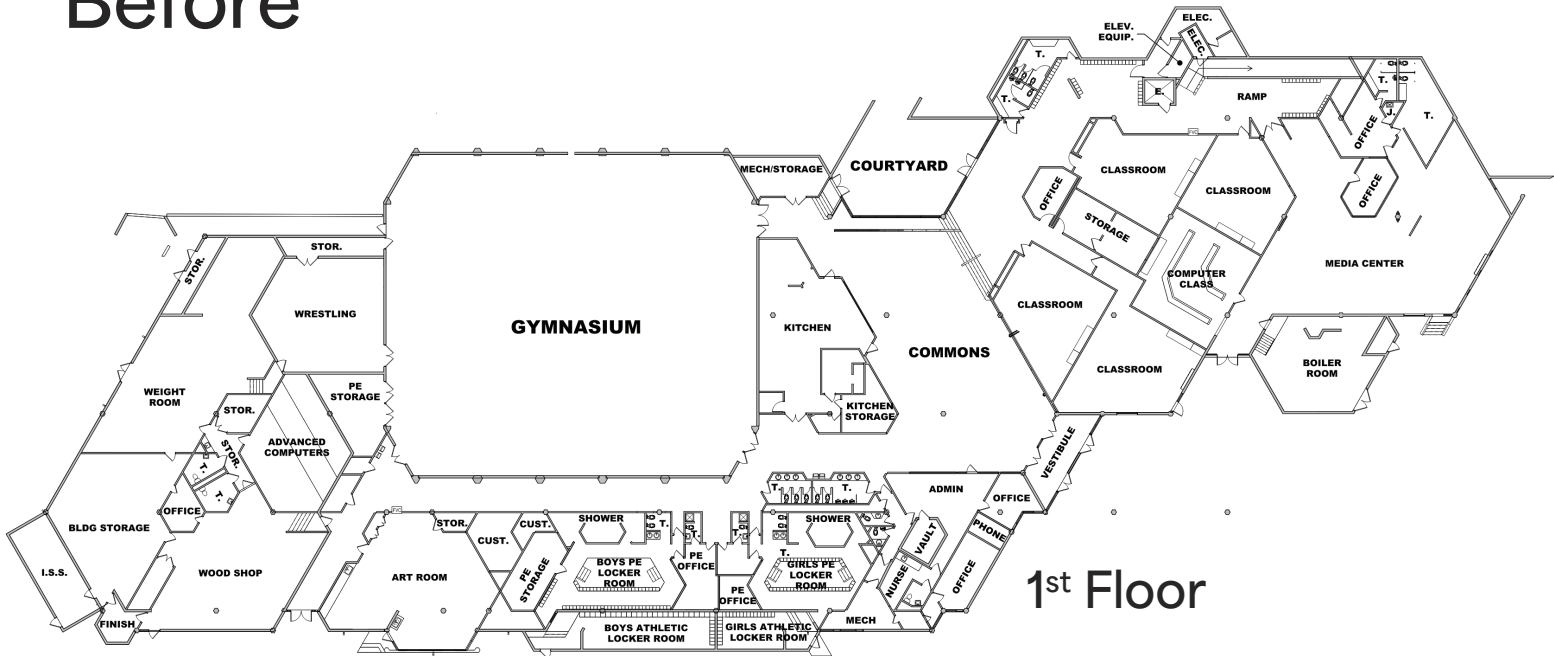
- Enhanced acoustic performance
- Direct access to nature
- Natural daylight / uniform lighting / low glare
- Infused and interactive technology, with a flexible Infrastructure
- Thermal comfort
- Flexible / adaptable spaces that focus on the needs of students
- Collaborative spaces for staff and students
- Encourage discovery and provide for a safe place to innovate

Unique to this building is a ramp that connects students to each other instead of a stairwell, making that transition between floor easy and fun. The interior spaces were updated with colors and textures inspired by nature. Additional lighting on the unique ceiling and ample daylighting creates a warm, inviting environment for students.

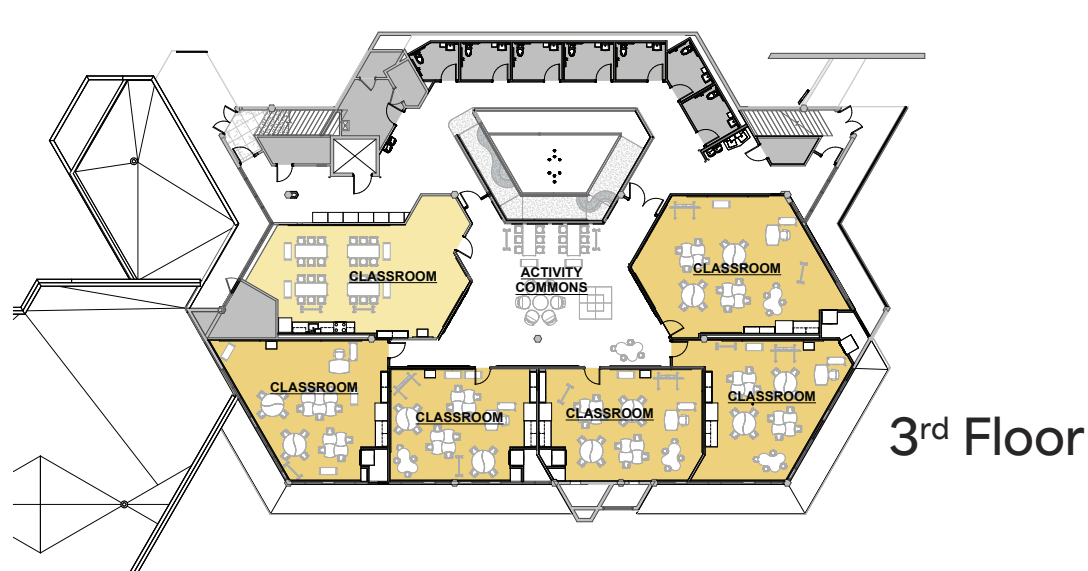
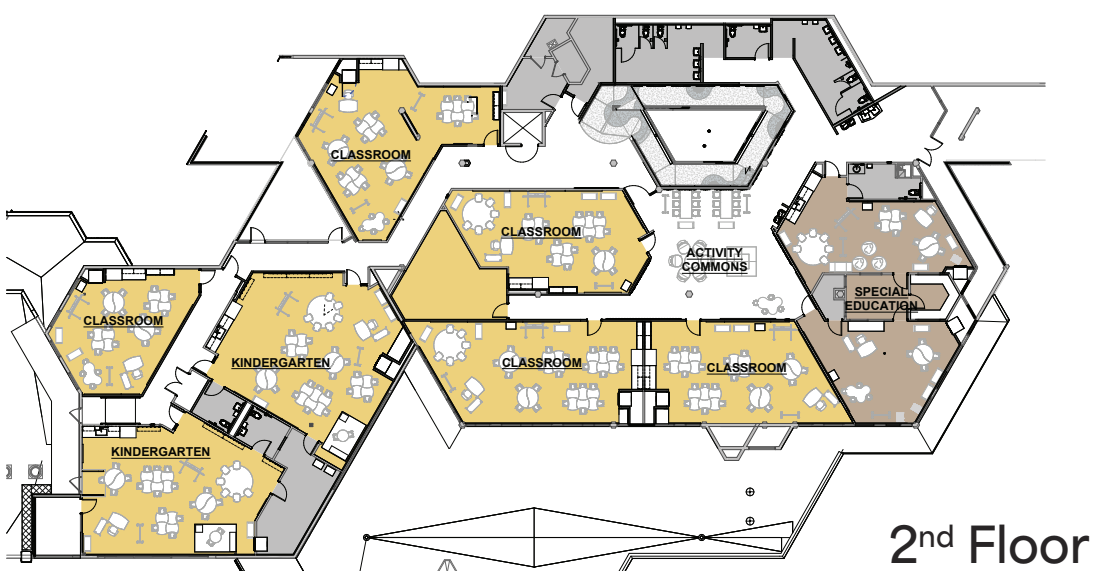
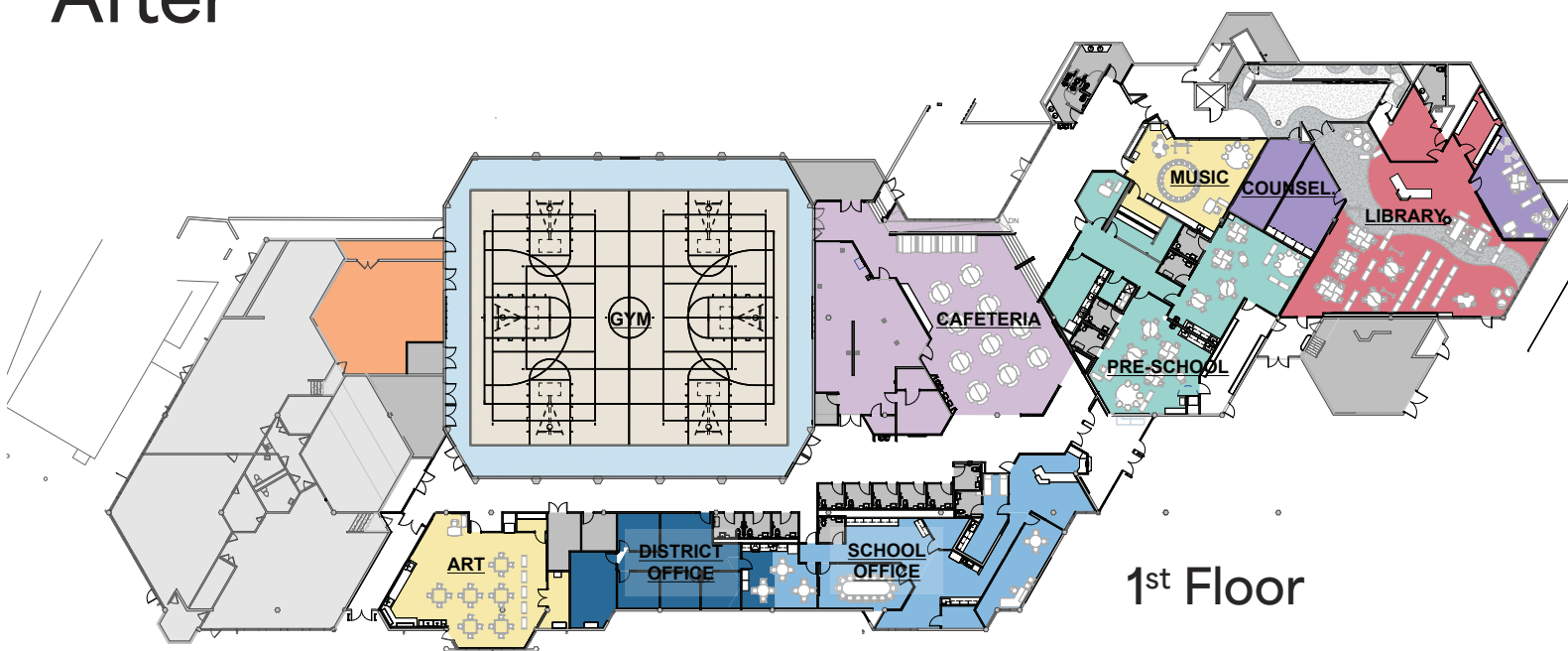


Building 103 Before

Before



After



COLOR LEGEND

- Administration
- Art & Music
- Kitchen & Dining
- District Admin
- Library
- PE/Athletics
- Support
- Counseling
- Instructional Areas
- Special Education



Inclusive, Open & Collaborative Design

The design of the school provides the infrastructure to support a broad range of curricula from physical education, to musical and art programs, and core academics.

Classrooms are organized by grade level on each floor. The clusters of classrooms feature activity commons, small group areas, and flexible classrooms. These flexible, collaborative spaces encourage discovery and provide a safe place for students to innovate.

Grouping similar ages into different floors allows for further flexibility when paraprofessionals work with pull-out groups. For instance, a third grader may be working with fourth and fifth grades on a particular exercise and would have direct proximity to allow this flexibility.



Building 103 Before

A Bright & Exciting Place to Learn

Every floor has direct access to outside spaces that allow students and teachers to quickly and easily take their work outdoors and explore the mountainside. This supports the experiential learning program, encourages students to discover and explore, and takes advantage of the beautiful natural surroundings of Idaho Springs.

In addition, the renovation of Building 103 expanded the existing windows to allow ample daylight to fill the school. The expansive windows and natural light enhance the connection to nature even when indoors and take full advantage of the beautiful views.



Building 103 Before



Adaptable Design that Supports Varied Learning

The learning communities support students and various learning styles by allowing access to a number of learning environments that support each student in different ways. Small groups or individuals can work independently right outside the classrooms. Larger groups can meet in the Activity Commons, Library or the cafeteria. In line with the school curriculum and the goals of the renovation, the variety of spaces to collaborate encourages student-led learning and exploration.

Future-Focused Adaptability: When converting a former high school into an elementary school, planning for the different space needs of an elementary school was crucial. The design thoughtfully addresses the current classroom needs while ensuring flexibility for future growth and changes in the educational environment.

Flexible, multi-use rooms were incorporated to accommodate evolving needs. Spaces currently dedicated to other functions, such as Professional Development, have been designed to easily convert into classrooms if needed. This approach provides the school with adaptable spaces that can be modified to meet future changes.



Building 103 Before

Results

A Bold, Inspiring Building

The Carlson Elementary project inspires students, teachers, and community members alike. The dramatic setting is matched by a bold architectural statement that seeks to integrate building and nature.

The iconic building has been given new life and teams with color, energy, and a new sense of purpose. Community members who went to school in the building 20-40 years ago have marveled at how bright, cheerful, and active the school is.

• *The project has come to symbolize what experiential education is about and forms a model that is both successful and inspiring.*

Despite the visually heavy concrete construction, each area within the school feels open and inviting. Ribbon windows wrap the classroom spaces and provide abundant natural light and mountain valley views, connecting the interiors to the natural setting.

Shared Community Use

The pre-design process identified several areas within the existing building that were not needed for regular use by the elementary school program. Through a concurrent site and building master plan process, these additional spaces were evaluated for use by other district and non-school district entities. The goal of the site master plan was to create a vision for the integration of community partnerships that will collaboratively contribute to the vibrancy of the educational environment of Building 103, the Clear Creek School District, and the community. Space allocated for an Early Childhood Education center is moving forward with fundraising in the final stages. The arts and entertainment group continues to have interest in the facility and now that the school is open, these opportunities are on full display.





Reflecting the Community's Uniqueness & Celebrating the History of Idaho Springs

Two of the goals established at the start of the project were for the design to reflect the unique quirkiness of the community and celebrate the mining heritage of Idaho Springs. The unique architecture certainly reflects the personality of the district and honors a building that is loved in the community.

The project celebrates the unique place that is Idaho Springs through its connection to nature, the unique architecture of this historic building, and incorporation of a mining history exhibit that tells the story of this place in mining history. A historical marker has been maintained on the site celebrating the place where the Colorado Gold rush began. A stone with plaque tells the story of the first big gold discovery in the Rocky Mountains and provides access for the public and visitors to learn the story.

Today the site has a positive presence throughout the year with families coming to use the playgrounds in the summer and after school. The school day activities enliven the canyon and provide a base camp for the entire Clear Creek School District.

Good Value & Stewardship of Resources

The Carlson Elementary move into Building 103 has helped the district to realign facilities and resources in a positive way. The next chapter of the process will involve selling and/or re-purposing the old Carlson Elementary building for commercial and community purposes. The location of that building in the heart of downtown Idaho Springs is ideal for other uses. As the district moves to this last phase of the project, the community looks forward to having an opportunity for growth in the downtown area.

Sustainability & Wellness

Through reuse of the existing structure, the project reduced carbon emissions and environmental impact dramatically. The high efficiency mechanical systems and operable windows will reduce energy use, improve indoor air quality, and provide access to fresh air. Efficient lighting and ample daylighting further reduces energy use and creates a bright, inviting atmosphere. The sustainable landscaping with native plants and artificial turf requires no irrigation, drastically reducing water conservation and maintenance. Low-flow plumbing fixtures further reduce water usage.

Site elements are terraced and integrate playgrounds and outdoor spaces with the natural surroundings. Parking and vehicular access are designed in linear systems that minimize the visual impact of cars on the site and promote the feeling of a "school in the woods."

