

RED HAWK ELEMENTARY :

A SCHOOL LIKE YOU'VE NEVER SEEN – CREATING THE SPACE FOR MOVEMENT AND INTERACTION



By Corky Bradley

How do you create a school that encourages students and staff to interact in a positive and collaborative way? Can that be done, and still implement a Core Knowledge curriculum? Can fitness be integrated into the daily lives of everyone in the facility? In short---YES!

The design of Red Hawk Elementary stemmed from the desire to create a vibrant place for kids to learn. RB+B Architects' approach to creating this environment revolved around a central space connected to all parts of the school. This allows for multiple ways of interaction among and between students and teachers.

As inspiration, the design team studied scenes of urban areas during street festivals. During these festivals, buildings on each side of the street frame the central space where multiple pavilions of different colors and shapes are set up. The most important aspect of this scene is the movement of people. Their ability to go in and out of the buildings and weave in and around the pavilions is a joyful part of experiencing the festival. This is the pleasurable experience captured in the layout of Red Hawk's "Living Room." By separating the classroom blocks and then inserting multi-use flex rooms and spaces within the resultant space, everyone can experience the festive



Red Hawk Elementary students on the move

interaction. This encourages students to learn and socialize in the 'street' that runs through the center of the school.

Early in the design of Red Hawk, the primary consideration was to eliminate traditional school hallways, allowing for the insertion of unique and creative learning environments. Breakout areas are located adjacent to classrooms, allowing for one-on-one time. Highly visible flex spaces throughout the school allow for interaction between grades, as well as multiple learning uses.

There are many elements in and around the building that allow the teachers and students to learn from their surroundings, from the 'Plains to Peak Eco-trail' and the 'interpretive wall' on the site, to the 'Mineral Garden' and the 'Weather Funnel' on the interior of the building.

The building also provides a number of passive elements that encourage better learning. The daylighting and views throughout the building keep its occupants connected to the outside and the natural cycle of the sun throughout the day and seasons through the year. Displacement ventilation- air delivered low in the room- is used in the entire building to deliver air from ground source heat pumps into the occupied zone of each space. This type of air delivery achieves a much better comfort level due to less fluctuation in room temperatures and does it in a way that reduces noise and increases indoor air quality, compared to conventional air delivery methods. All of these elements, along with many others have allowed Red Hawk to achieve a LEED Gold Certification and a "Designed to Earn ENERGY STAR" award.

Site Constraints and Opportunities

The primary site constraint for the project was the presence of old, inactive mine shafts located deep below the surface of the



Red Hawk Elementary School

site. The environmental engineer determined that the building had to be at least 50-60 feet from the edge of the mine workings, known as the site “strain line.”

While the site encompassed a generous 12 acres, the presence of these mines limited the buildable area to only 3 acres. Other constraints included:

- irregular shape of the actual strain line;
- proximity of residential neighborhood to the south of the site;
- vehicular access limited to the north and east only.

The building program required 70,000 square feet. The design solution included:

- two-story building to minimize building footprint -the district’s elementary schools are typically only one story;
- locating the building towards the south where buildable area is wider to allow for east/west orientation, the optimal orientation for daylighting;
- slight rotation of the building to allow for a buffer between the building and the residential neighborhood, while maintaining the proximity of the main entry towards Miller Street to the east;
- taking advantage of the wonderful views towards the Rocky Mountains.

Opportunities around every corner (oh, we don’t have any corners!)

With the open circulation, flex education spaces, wide-open, Solatube-lit main stair shaft, students and staff have clear views of most activities occurring in these spaces. This also provides for excellent supervision by staff. With views to the exterior via windows and clerestories, one is always ‘connected’ to the outdoors and weather conditions.

Flex spaces are enclosed for activities like computer learning or quiet study, and several are completely open to the main circulation space. One of the larger flex rooms has 3 garage doors that can be opened to allow presentations to spill out into the circulation space, and can even allow observers to sit on the main stairs and view the presentation.

Core Knowledge + collaborative learning?

There was a desire for ‘standard’ classrooms to be able to present Core Knowledge curriculum, yet arranged to encourage interaction for collaborative learning. Thus the well day-lit classrooms are arranged in such a way as to spread the main circulation space wide, and then incorporate the flex spaces out in that space.

Outdoor learning

Since there are many days when Colorado's weather is quite pleasant, the designers created several opportunities for outdoor education. From the covered stage at the inviting main entry to the 'rocks to the future' seating area, to the patios off of the music and art classrooms, every opportunity was taken for multi-use and multi-function teaching and presentations. Several of these also act as gathering spaces for students before and after school, some while 'waiting for mom (or dad)'.

Connection with the Community

Red Hawk was built next to an adjacent community and neighborhood park. In polling the residents, a strong connection between the school and neighborhood activities was desired. Through a joint-use agreement, the school can take advantage of the existing softball field and the neighbors can use the new basketball courts. Additionally, the school set aside land for a community garden. Educational programs will use this as well, implementing the 'farm-to-table' idea by having the students grow vegetables that can be served in the cafeteria.

Making it Easy

Simple, easily maintained surfaces are found throughout the school. The cafeteria/stage is polished concrete (that almost looks like terrazzo!), the gym is poured rubber, and classrooms, offices and circulation areas carpet. Wet areas are poured acrylic. Translucent glass block (double layers for thermal isolation) line the exterior walls of restrooms to flood them with daylight while providing privacy.

Get Moving!!

Another exciting facet to this school is that the entire school population (led by Principal Cyrus Weinberger) has embarked on a program to get everyone on their feet and moving! This includes the "Red Hawk Walk" where students fast walk laps around the school's interior every morning. Using a rotating daily "movement calendar," students get 40 minutes of moderate to vigorous physical activity on a daily basis, in addition to scheduled PE class and recess. These structured routines are taught by the professional PE staff outdoors or in the gym, and can be repeated in the classroom with student leaders taking charge. Strategically placed 20-minute blocks occur once in the morning to increase energy and attentiveness at the start of the day, and once in the afternoon immediately before math and science, the most challenging academic subjects. Each Friday the week ends with "All-School Movement," when all 460 students, faculty and staff head outside to participate in a coordinated fitness routine set to popular music.

This program has been nationally recognized by the Active Schools Acceleration Project, with a wonderful video:

http://www.youtube.com/watch?feature=player_embedded&v=mZKWh9Uk5kY

Results?" We deliberately schedule movement before our hardest academic tasks," says Principal Cyrus Weinberger, "This approach has produced powerful learning results for our students." Red Hawk was accredited with distinction and had the 2nd highest growth scores in the district at the elementary level for writing. 40% of 3rd graders, 30% of 4th graders, and 25% of 5th graders scored advanced in mathematics. Student surveys of 3rd - 5th graders indicate that 96% of students look forward to coming to school. Teachers report increased focus and less behavior issues. Parents report that their children are more excited and ready to learn.

Red Hawk is proving to be not only a model for fit and healthy students and staff, but a success in academics. Not to mention a very nice place to go to school!

About Corky Bradley, AIA, LEED AP

Principal, RB+B Architects, Inc. Corky Bradley has over 32 years' experience in project management, programming, design, contract document preparation and construction administration for public and private clients. Corky joined RB+B in 1993 and was project architect for the new Fossil Ridge High School (LEED Silver), in Fort Collins. He has led many of RB+B's sustainable projects including LEED Gold Red Hawk Elementary School, LEED Gold Bethke Elementary School, LEED Gold Lincoln Elementary School, Gering, NE., and LEED Platinum Colorado Army National Guard's Windsor Readiness Center. The most recently completed Poudre School District's elementary, Bethke, is the first elementary school in the nation to be certified to achieve 3 of 4 Green Globes through the Green Building Initiative. A 1975 graduate of Cal Poly University with a Bachelor of Architecture, Corky is the co-author of Solar Primer One – A Guide for the Designer (1975 by Solarc), Corky is a member of the Colorado North Chapter of the AIA, and was part of a committee for the Governor's Energy Office writing the Colorado Collaborative for High Performance Schools (CO-CHPS) criteria.