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Denver's School for the 21st Century

At a new public charter school focused on science and technology, the building earns an A

by [Joann Gonchar, AIA](#)

On a 10-acre parcel at the southern edge of the master-planned community that is emerging on the site of Denver's former Stapleton International Airport, educators at an unusual high school are working to provide its diverse student body with a rigorous science, math, and technology focused liberal arts education.

The Denver School of Science & Technology (DSST) is not a neighborhood school, however. Few of its 400 students are Stapleton residents. DSST is a public charter school that admits students from the entire metropolitan area by lottery only. Low-income students make up at least 40 percent of each class, and at least 45 percent are girls. All are expected to attend four-year colleges, despite varying degrees of academic preparation before high school.

To house the ambitious program, officials imagined a building "where kids could feel good about coming to school and about being involved in the sciences," says David Ethan Greenberg, DSST founder and member of its board of directors. The school's architect, Klipp, responded with a colorful building made up of a pleasing collection of different sized volumes clad in brick, stucco, and metal. The facility opened in January 2005, after DSST spent its first semester of operation in temporary quarters at a parochial school.

The \$9.9 million project was funded through several sources, including the Bill and Melinda Gates Foundation and the Colorado Small Schools Initiative. Denver Public Schools contributed \$5 million in bond funds, and Stapleton's developer donated the site.

The 65,883-square-foot, two-story building is organized along a double-height east-west circulation spine and gathering space called the "galleria." The cafeteria and gymnasium are at the eastern terminus of this spine with a dedicated entrance, allowing use of these facilities during non-school hours.

Along the galleria, on the first floor, are administrative offices, science labs, project rooms, and three classroom clusters. Each cluster contains a faculty office and a "studio"

for individual or group study. The proximity and a visual connection between the classrooms and the studio allow teachers to supervise both spaces simultaneously, points out Sam Miller, AIA, Klipp associate principal.

The classrooms are designed for adaptability, with moveable furniture and operable walls. The instructional space even extends to the exterior of the building: each classroom has direct access to south-facing courtyards where the building's wireless network can also be used. The school can accommodate "project-based learning with a variety of flexible environments," says Miller.

On the second floor, overlooking the galleria, are seminar rooms, additional faculty offices, and project rooms. Throughout the school, bright colors and materials that deviate from the district's standard specifications, such as carpeting and drywall, contribute to the warm, almost domestic feel.

The school uses about 50 percent of the energy of a similar code-compliant building, according to Kris Leaf, senior project manager for the Weidt Group. Weidt performed energy modeling for the project as part of a utility-sponsored design assistance program.

A number of strategies helped the building achieve these savings. The building's east-west orientation minimizes solar gain. Because use of daylight is maximized, little lighting is needed during regular school hours in spaces such as the galleria. Features like a high-performance building envelope and a carbon dioxide monitoring system reduce the need for heating and cooling, explains Leaf.

The building itself serves as a learning tool. Dropped ceilings are eliminated wherever possible to reveal structure and ducts. Polycarbonate is substituted for drywall in some places to reveal normally hidden components. "The studs, the steel deck, the bracing—everything is exposed," says Miller.

The school's designers and planners were a little ahead of their time in some respects. For example, the school first opened without lockers because they had envisioned that all textbooks would be digital, making storage space unnecessary. However, all the required educational material is still not available online, and lockers have since been installed.

On the whole, however, the building seems perfectly suited to its purpose. It provides a safe, comfortable, and even inspiring environment where kids of all backgrounds can focus on academics. The Head of School, Bill Kurtz, points to DSST's very rare incidence of vandalism as one measure of students' appreciation for their building. "Great school cultures take care of buildings, and great buildings take care of school cultures," he says.

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