

High Tech, High Touch

A new high-tech high school in Los Angeles offers a prototype for a 21st-century technology-based community school.

With corporate leaders declaring American high schools obsolete, administrators focusing on testing and security requirements, and activists demanding smaller, greener community schools, developers may find ways to address these issues at an experimental high-tech high school in Los Angeles.

Inspired by the first such facility, located in San Diego, High Tech High in Los Angeles (HTH-LA) was developed as a public charter school on a one-acre corner of the Los Angeles Unified School District's 71-acre Birmingham High School in Van Nuys, a suburban neighborhood in San Fernando Valley. Designed to operate throughout the year, HTH-LA is intended to be a prototype for a technology-based community school educating low-income and minority students from across the greater Los Angeles area through new approaches to teaching information and communications technology in a curriculum oriented toward college preparatory work in math and science.

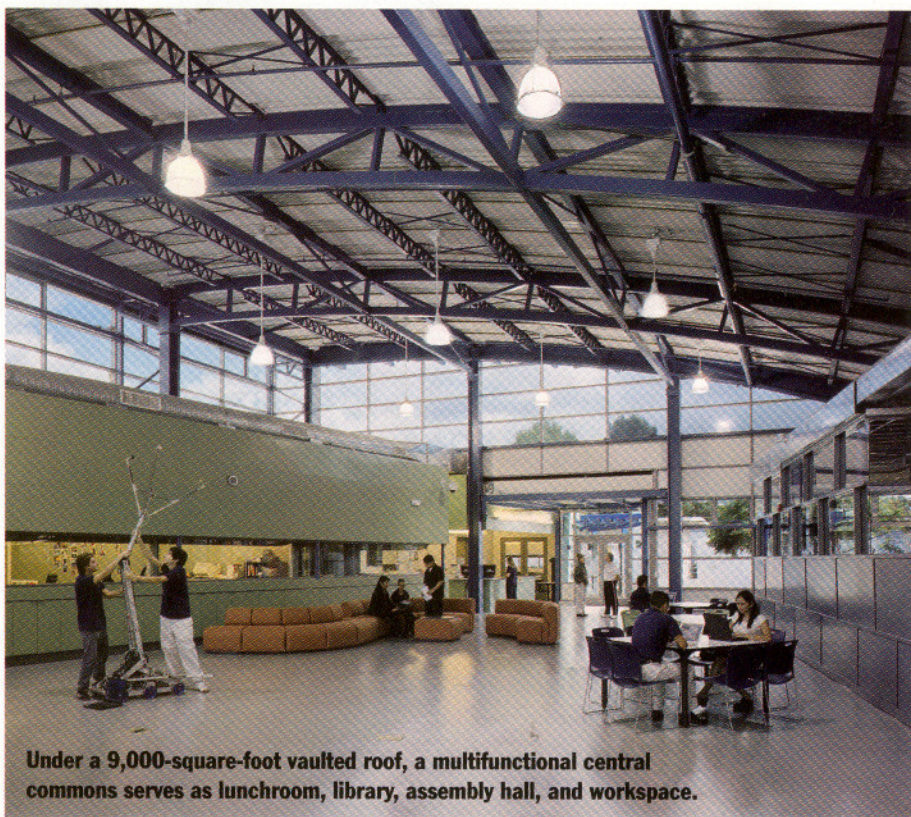
To create the 27,000-square-foot school for 325 students, architect Richard Berliner, head of Los Angeles-based Berliner and Associates, gutted, seismically retrofitted, and redesigned two warehouses—once used for Birmingham High's shop classes and furniture storage—as two wings that now house administrative offices, classrooms, laboratories, outdoor courtyards, and conference rooms. The two wings are bridged by a vaulted roof covering a 9,000-square-foot multifunctional central commons that serves as lunchroom, library, assembly hall, and workspace. The architect created a spatial hierarchy that helps organize the interior. For example, spaces start out large at the school's entrance and become more intimate farther into the interior. Administrative offices are in the center of the school to ensure that students and administrators interact; teachers have of-

fices next to their classrooms. To foster project-based learning, each classroom has a connected room to provide a separate space for ongoing projects, eliminating the need to set up and tear down students' works in progress.

Building systems reinforce the science and math curricula. All data on energy use and conservation are available for student analysis through the school's local area network. Smart

cially equipped classrooms—such as the robotics lab—allow for collaborative and independent endeavors not available in a traditional public school. Instead of just sitting in a classroom and taking notes, HTH-LA students are encouraged to participate in group projects designed to simulate real-life experiences.

Flexibility was paramount to facilitate the school's creative curriculum and teaching meth-



Under a 9,000-square-foot vaulted roof, a multifunctional central commons serves as lunchroom, library, assembly hall, and workspace.

building technology systems are labeled and color coded to illustrate functions. Hardware includes wired and wireless networks, desktop and wireless laptop computers, video editing software, robotics equipment, digital projectors in every room, VCRs, DVD players, and interactive whiteboards. Breakout spaces, adjoining labs, outdoor classrooms, and spe-

ods. Traditional enclosed schoolrooms have been eliminated, glass walls separate classrooms from hallways, and four classrooms have adjoining lab rooms that are also separated by glass partitions. A glass wall in the commons overlooks a learning garden with tables, awnings, and an amphitheater. Each classroom has a view of the outdoors, and most classrooms have win-



A circular classroom is filled with light for students working on collaborative projects on wireless laptop computers (above).

The school has one centralized entry point for pedestrian traffic, enabling HTH-LA to monitor its students and prevent unauthorized access to the school. Walls between the busy street and the campus attenuate the noise (right).



dows looking out into the halls as well. The way spaces flow together, with minimal boundaries, affects the way the school is used. Unlike a traditional school where learning is confined to the classroom, the project-based learning at HTH-LA aims to take advantage of the entire school. The pitched roof, high ceilings, glass enclosures, movable partitions, operable windows, and open doors create a transparent environment in which small group meetings spill into

outdoor areas and tables in the commons. By moving furniture around, teachers and students can reconfigure spaces for a variety of uses. Setting up chairs in the commons creates a place for school assemblies, while the unusual configuration of table clusters provides an environment for collaborative small group projects.

Skylights and roof monitors bring controlled natural light into the school, minimizing the need for artificial light. The use of high

clerestories with light shelves brings natural light deep into the building. The high, north-oriented side lighting and the curving configuration of the roof bring light farther into the commons and adjacent spaces. Automated louvers direct light throughout the day.

A serpentine garden wall provides separation between the busy Victory Boulevard and the campus, and a row of trees is layered to give additional privacy, as well as to buffer students from vehicle noise. The interior flooring is rubber, which is easy and inexpensive to maintain, and also deadens noise.

Smart technologies are used to regulate heating and air-conditioning loads and to adjust lighting in rooms automatically. To promote a healthy school environment, formaldehyde-free products were specified for all interior furnishings, cabinets, and trim materials, and durable and nontoxic paints and coatings were used to reduce the release of volatile organic compounds (VOCs).

Of the \$13.5 million total development cost, with free land and 18,000 square feet of existing warehouse space, construction of HTH-LA accounted for \$11 million, or \$407 per square foot; \$2.5 million was spent for technology and equipment. To pay for the project, an extensive public and private fundraising campaign was conducted. "It has every bell and whistle you could possibly want," says Roberta Weintraub, the former school board president who developed the prototype tech school. "I just hope others will come along and replicate it, even though it's very expensive." About two-thirds of the total cost was funded through private donations and matching federal and state grants, and one-third was funded through the school district.

Other interested educators may find ways to reduce development costs as they examine the HTH-LA model for ideas for similar technology-based community high schools that foster individual attention, collaborative learning, and courses tailored to students' talents and interests. ■

A circular conference room is one of the few isolated areas. It is lit by high clerestories with light shelves that bring natural light deep into the building.



WILLIAM P. MACHT is a professor of urban planning and development at Portland State University in Oregon and a development consultant. Comments about projects profiled in this column, as well as proposals for future articles and profiles, should be directed to the author at willmacht@gorge.net.