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**FOCUS on K-12 SCHOOLS**

**LESSONS LEARNED:**

**Revisiting Three Small Schools**

A SUPPLEMENT TO ARCHITECTURAL RECORD



# Small Schools, No Small Effort

**ALTHOUGH SCHOOL CONSTRUCTION SPENDING IS DOWN FROM AN ALL TIME HIGH, SOME INTERESTING PUBLIC AND PRIVATE SCHOOLS ARE STILL BEING BUILT.**

By Jayne Merkel

**I**n school construction, it seems that when the going gets tough, the tough get going. It has been tough lately, with American students falling behind those in other countries, many school districts seriously overcrowded, and students occupying outmoded buildings in need of repairs. Yet interesting, innovative schools, designed to utilize a wealth of new information and much agreement on what makes a learning environment productive, are being built in some surprising places.

Nationwide, school construction contracts were 5 percent lower last year than in 2002, when they dropped 7 percent below the all-time high of \$44.4 billion and 273 million square feet in 2001. And "recovery is not on the horizon for 2004," according to the 2004 Update of last year's impressively comprehensive Dodge Analysis, the *McGraw-Hill Construction Special Sector Study: The New Heights of Education Construction* by Richard Branch and Kim Kennedy. "The forecast calls for a 6 percent decline," according to the Update, with further drop-off in 2005. School building would have fallen off even further if some of the projects funded in the flush 1990s had started construction before now. But despite the prolonged economic downturn, voters in the Los Angeles Unified School District overwhelmingly approved a \$3.87 billion construction and repair bond levy in the March 2004 elections. As a result, there is a building boom in one of the most overcrowded places in the country. There had not been a new high school built in 20 years here.

The building program in Los Angeles, buoyed by two other recent bond approvals, is not only the largest in the country—with 70 projects under construction—it is becoming one of the most enlightened. Under the leadership of Superintendent of Schools Roy Rohmer, the former governor of Colorado, the schools being created now are small, innovative, and in tune with new educational thinking.

One is High Tech High-Los Angeles, a 325-student, 33,000-square-foot charter school being built on the 60-acre campus of Birmingham High School out of two old, outmoded buildings (see photos). One was formerly the print shop, and the other, the automobile shop. These are tied together by an irregular, metal-paneled structure that enlivens the complex. The old wood stud and plaster buildings have been painted bright orange, and reconfigured with flexible classrooms and adjacent project rooms for collaborative teamwork for ninth and tenth graders, as well as an upper school with a



Kava Massih Architects' gymnasium for the Bently Upper School, Lafayette, Calif., uses a continuous clerestory and deep overhangs to mitigate the monolithic quality of most gyms.





Glass has been extended to the floor in some areas of Kava Massih Architects' Bentley Upper School Gymnasium, Lafayette, Calif. (above and left), in order to break up the building's mass.

project-based "great room" designed to model a workplace environment for independent study.

Technology and science labs are adjacent to a state-of-the-art prototype lab where students can build what they have designed on computers. The classrooms, labs, and group work areas surround a kind of town square in the new building, and there are shaded study gardens where students can gather for individual work or discussions. The new school was designed by Berliner and Associates Architecture of Santa Monica as a part of the High Tech High project put together by Boston-based architect David Stephens. His group has already built three High Tech High schools on the Point Loma Naval base in San Diego, with San Diego architects. He is now working on one in Cambridge, Massachusetts, and at a dozen other sites around the country, including a high school for Camino Nuevo, one of the schools featured in this issue. Like the Los Angeles project, they will use

"cutting-edge mechanical, lighting, electrical, and energy conservation systems, so that the school buildings become," as Richard Berliner puts it, "a hands-on demonstration laboratory for students studying basic physics and environmental design."

Though there is a crushing need for new schools in Los Angeles, the recent funding bonanza has a downside. "Costs are going through the roof," says Thomas Blurock, a Costa Mesa, California, architect who specializes in schools. "Prices of materials are partly to blame, but so are contractors who have so much work they can afford to raise their prices. And the state is in denial about what things cost now." As a result, administrators, whose budgets were geared to earlier prices, have been hiring construction managers to curtail costs. These specialists cost money too, so there is even less to spend on building materials and construction. Architects are under pressure to use very cheap, insubstantial materials and



Weisz + Yoes Architects is transforming warehouse and factory buildings into the colorful public elementary Bronx Charter School for the Arts, with clerestories, low-maintenance materials, and natural ventilation.





St. Mary's Catholic School K-8, in Greeley, Colo., by Falide Architects, uses interior streets to enable children to develop a sense of community. Corner windows (above and right) give each classroom a view of the mountains.

details that will not hold up over time.

Los Angeles, with its burgeoning immigrant population and backlog of postponed repairs, is not the only place where voters have recently decided to fund schools. The state of California passed a \$12.3 billion bond issue for school construction. The Huntington Beach Union High School District, also in California, passed one for \$238 million, and Saddleback Valley Unified School District, which includes several California towns, passed one for \$180 million. Massachusetts Governor Mitt Romney announced a \$4 billion plan to take 420 school projects off the state's waiting list over the next five years. The Cleveland Municipal School District has an 11-year, \$1.5 billion school program to build 51 schools and renovate 59, which will be partially financed by a \$23 billion school construction program recently approved by the Ohio legislature. But growth in school construction will remain centered in the Pacific Southwest, according to the McGraw-Hill Construction *Special Education Sector Update*.

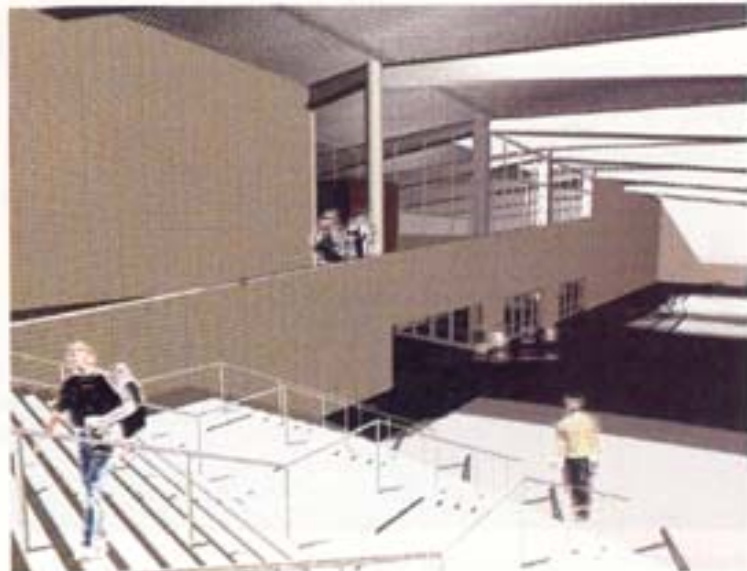
Still, interesting schools are being built—even in the most unlikely places. Bronx Charter School for the Arts, an elementary school for 250-300



students, designed by the New York firm of Weisz + Yoes (see photos), is moving into a former refrigeration warehouse and factory this month. The architects, who worked closely with a grassroots team of educators, parents, and community residents, used brightly colored glazed brick and aluminum storefront windows on the facade. They opened the roof with north-facing clerestory lights to transform a windowless building with only a single exposure into a light-filled and airy one that creates a positive first impression in its Hunts Point neighborhood. Inside, glazed panels and overhead doors make classrooms flexible places for presentations and exhibits.



Architect Thomas Blurock's Prairie Vista Middle School in Hawthorne, Calif. (above and right), is organized in a manner similar to East Valley High School. Its student body is broken into learning communities organized around a courtyard.







Mahlem Architects' Truman Education Complex (above and left) houses two schools of 100 students in an environment modeled on the workplace, for career-oriented study. Richard Berliner Associate's High Tech High-Los Angeles (below) is organized around a town square shared by the entire school community.

In the Seattle area, the Truman Education Complex, designed by Mahlem Architects of Seattle, is both programmatically and architecturally original (see photos). A new warehouse-like space houses two experimental high schools of 100 students. Each of the students works with one teacher for four years pursuing an individual, career-oriented program. As one of the students, Vicky Bracewell, explains: "The architecture of the school reflects a business environment. The classrooms have no doors. The 'Learning Team' areas look more like cubicles in an office than high school classrooms. This structure feels like a real work environment." There is also a "great room" and other open spaces that foster the sense of community that is central to the school's philosophy. Truman is a project of the Seattle-based Architects of Achievement, an organization that "provides support for bridging the worlds of architecture and education," according to Victoria Bergsagel, an educator who was the director of Educational Design at the Federal Way School District, in Federal Way, Washington. She realized she needed to know more about architecture and that architects could also benefit from recent research on learning. Her organization is now funded by the Bill and Melinda Gates Foundation, which is starting new small schools and helping subdivide existing large ones. By working with groups like Architects for Achievement, the Gates Foundation is beginning to make an impact on school design both academically and architecturally.

Ronald Bogle, the director of the American Architectural

Foundation in Washington, D.C., like Bergsagel, became interested in architecture as a client for education. When he was a member of the school board in Oklahoma City, the voters passed a big bond issue, and he realized that he and his colleagues didn't know what to do with it. In his current role at the AIA-affiliated foundation, he is trying to develop a program to determine the things that educators and administrators should be thinking about when designing schools and who should be thinking about what.

Like those featured in this issue of *ARCHITECTURAL RECORD REVIEW*, many schools being built today are geared to specific, pioneering educational philosophies. Many are being built bit by bit, over time, with direct involvement of the school community. And in many cases, they are physically connected to—or thrust into—their neighborhoods, rather than set off by schoolyards or campuses. This integration enables them to affect neighborhoods, as well as the students they serve.

School construction not only has a significant effect on community consciousness, but it also plays an important role in the economy. Roughly 70 percent of the construction in the *Special Sector Study*, which includes college buildings, libraries, and museums, is for K-12 schools. Even in this economic downturn, school construction constitutes a significant portion of the overall construction economy. In 2002, schools comprised 18 percent of total nonresidential building—the second largest segment after stores. ■



Models of Berliner Associates High Tech High.