

Feature Story - February 2009

Super-Sized Schoolhouse

The Mammoth \$185 Million New Brunswick High School is Ahead of Schedule and Under Budget.

By Diane Greer

In 2004, soaring enrollments and antiquated facilities drove the development of a new 400,000-sq-ft high school in New Brunswick, New Jersey. Almost five years later, after having overcome a shaky start, the massive facility is well under construction and is shocking the project's early skeptics as it is on its way to finish both earlier and cheaper than originally planned.

The new facility will consolidate the existing New Brunswick High School on Livingston Avenue and two satellite campuses. When the school is completed in fall 2010, the Livingston Avenue facility will be converted into a middle school.

Located on a 26-acre site along Route 27, the new high school will accommodate 2,000 students in four, three-story educational wings connected to a central structure housing a gymnasium, cafeteria, library, auditorium and administrative wing. Additional facilities include a health center; day-care facility; media center; and fields for soccer, baseball, softball and football.

The project is the last of the six demonstration projects funded in 2004 by the New Jersey Schools Development Authority's predecessor, the New Jersey Schools Construction Corporation. Demonstration projects leverage public-private partnerships to incorporate community components into school design and spur neighborhood revitalization efforts.

The New Brunswick Housing and Redevelopment Authority is the redevelopment entity managing the project, and the New Brunswick Development Corp is the redeveloper. DEVCO enlisted Vitetta Architects of Philadelphia to design the project and Joseph Jingoli & Son Inc. of Lawrenceville, N.J., to provide general contracting and construction management services.

Developing the facility under a public-private partnership offers several advantages. "It relies upon partners that are experienced in their fields, and that ensures that you get the best project," says Sarah Clarke, DEVCO's executive vice president.



The Board of Education understands the school's needs and provides guidance in programming the facility. DEVCO knows how to design and construct buildings that will work within the community. DEVCO's contractor then constructs the facility under a guaranteed maximum price.

Located on a 26-acre site along Route 27, the new high school will accommodate 2,000 students in four, three-story wings connected to a central structure housing a gymnasium, cafeteria, library, auditorium and administrative wing. (Photo courtesy of Vitetta Architects)

The arrangement alleviates some of the risk of cost exposure to the district because public sector projects often suffer cost

overruns driven by change orders, Clarke says. "Under our structure we shift the burden of that cost exposure onto the private developer and the contractor," she adds. "This delivery method gets the district what it needs to address its programming requirements in the most cost-effective manner."

Project Delays

Getting the project started wasn't easy. The school was originally planned to accommodate 2,400 students, based on 2004 enrollment projections. But revised 2005 projections scaled back enrollment to 2,000, and that required design modifications.



The site was occupied by New Jersey Precast, a manufacturer of concrete barriers; a supermarket; and three smaller businesses. The time required to purchase the properties and relocate the existing tenants impacted the construction schedule.

"Logistically, we figured on starting the whole job at once," says Dennis Mockaitis, senior vice president, Joseph Jingoli & Sons. But existing tenants were permitted to remain in their locations until their new facilities were ready, and "we had to work around owners that were still onsite," Mochaitis adds.



Prior to the start of construction, the concrete structures on the property needed to be demolished and the site remediated. Soil samples determined that the site was polluted with lead and other contaminants. The impacted soil, which lay 5 to 6 ft deep upon shallow bedrock, was scraped from

the rock. "We ended up pulling out 85,000 tons of soil," says William Call, project director of environmental consultant PMK Group of Cranford, N.J.

Land purchases, remediation and site development added significant costs to the project. When the site was first selected, New Jersey Precast was expected to go out of business. But in the wake of Sept. 11, the demand for concrete barriers increased and gave the business new life, which in turn sent property values skyrocketing, says Larry Hanover, the Schools Development Authority's senior information manager.

In total, acquisition costs increased by \$4 million, remediation expenses were \$4.3 million higher and demolition costs \$3.4 million more, Hanover says.

Project Design

Construction of the steel-framed structure started in March. The classroom portion of the structure is three stories tall. The main entrance, adjacent auditorium and arts wing are two stories and the remaining space, including the cafeteria, library and physical education wing, are one story.



Preplanning and prepurchasing of materials - namely steel and concrete - has helped the project to stay significantly ahead of schedule and quite a bit under budget. (Photo courtesy of Joseph Jingoli & Son)

Four courtyards separate the cafeteria, library and auditorium from the classrooms, bringing natural light into the classrooms and acting as extensions to the public spaces. There is also a large outdoor plaza area between the cafeteria and gymnasium.

The four, three-story classroom wings, or pods, are designed to house four grade levels in a traditional departmentalized educational program but also provide the flexibility for reconfiguring into smaller learning academies, says Mark Johannesen, Vitetta's project manager.



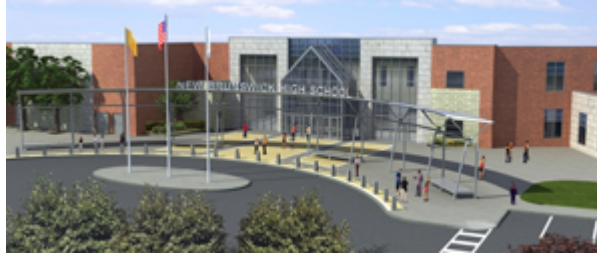
"It is really smaller schools within a school," Clarke says. "The design goes a long way in creating small learning communities while being as efficient as possible in the layout of the space."

At the center of each pod is a common area, called a student learning center. Classrooms adjacent to the

learning center have operable partitions opening onto the common area. Operable partitions also separate adjacent classrooms. Classrooms and/or common area can be either standalone or combined for larger group instruction.

"The design creates a diverse range of learning environments to support a broad range of curriculums and content areas," Johannesen says.

The design includes a media center, culinary arts academy, black box theater and various laboratory rooms. These special spaces permit students to learn how behind-the-scenes technical components work, Clarke says. For example the theater provides a learning facility for students interested in pursuing lighting and other technical production components of the performing arts.



The facility's facade is composed of brick, decorative concrete masonry, cast stone and a glass curtain wall. (Rendering courtesy of Vitetta Architects)

In addition to the core educational facilities, the school will provide a range of social services to the students and community, including educational counseling and health and career centers.

The facility's facade is brick, decorative concrete masonry, cast stone and a glass curtain wall, which help break down the massive building into manageable elements. "These smaller elements are more in keeping with the scale of the surrounding neighborhood," Johannesen says. "The building exterior is structured so that you are not overwhelmed by it."

Related Links:

- [Learning Curve](#)
- [No Looking Back](#)
- [Urban Evolution](#)

Mockaitis attributes preplanning and prepurchasing of materials for keeping the project ahead of schedule and under budget. Advanced material purchase protected the project against cost inflation. "The structural steel was purchased well in advance, and that contributed significantly to where we are today," Mockaitis says.

Being in a redevelopment area also gave Mockaitis more flexibility for purchasing materials and hiring contractors. "Under the redevelopment laws, we do not need to subscribe to the public contracting laws," he adds. "That does not mean that is it not a competitive and open bidding process, but it does give us the opportunity to utilize local contractors, minority contractors and small business to a much greater extent."

Team List:

Owner: New Brunswick Board of Education, New Brunswick, N.J.

Redevelopment Entity: New Brunswick Housing and Redevelopment Authority, New Brunswick, N.J.

Redeveloper: New Brunswick Development Corp, New Brunswick, N.J.

Construction Manager and General Contractor: Joseph Jingoli & Son of Lawrenceville, N.J.

Architect: Vitetta Architects, Philadelphia

Civil Engineer: RBA Group, Morristown, N.J.

Environmental Consultant: PMK Group, Cranford, N.J.