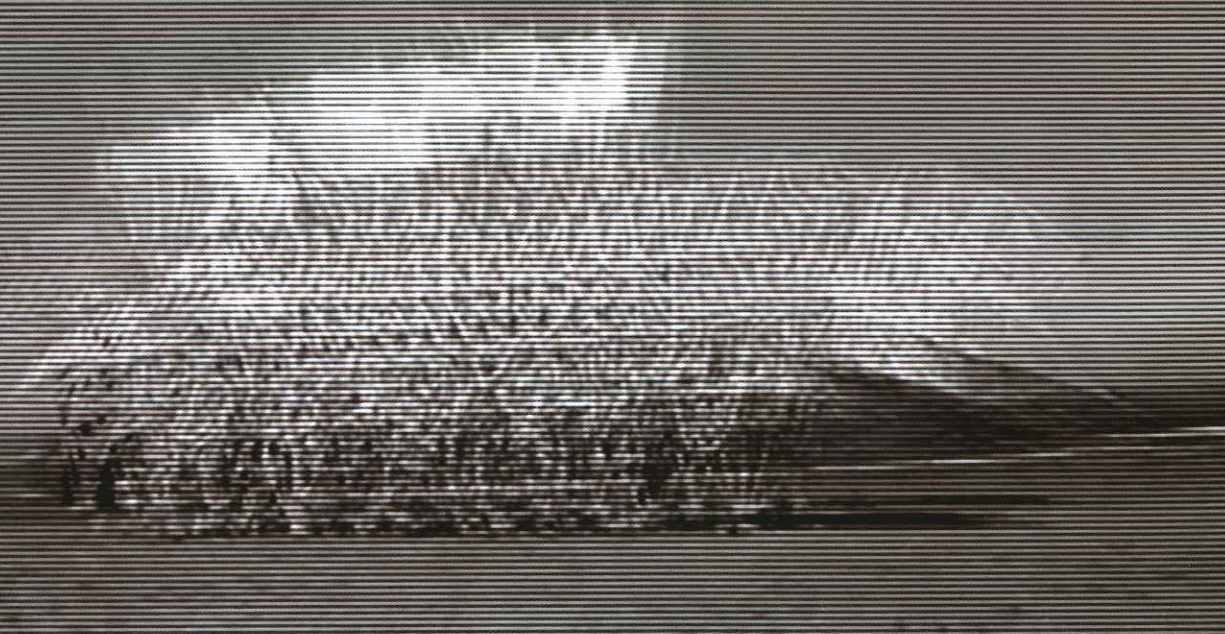


# gb&d

GREEN BUILDING & DESIGN  
JAN 2011

# TOP 10

Our favorite  
creations, concepts,  
and innovators from  
the past year,  
P. 66



## HIGH-PERFORMANCE SCHOOLS

## a client's first words

Kaeyer, Garment & Davidson Architects pulls out all the stops when one school district utters a phrase the firm had never heard before: 'spend more to make it green'

by Anne Dullaghan

**Listen. Design. Build.** That is the cornerstone philosophy behind every project taken on by Kaeyer, Garment & Davidson Architects, PC (KG&D). When the firm's president and managing partner, Russell A. Davidson, AIA, and his team set out to replace the Post Road Elementary School in White Plains, New York, they definitely did a lot of listening—to community residents, to board of education members, and to teachers. And what they heard was, "Spend more to make it green."

"It was the first time that I've ever had a client say that," Davidson notes. "However, after reviewing the studies, the White Plains community knew that a green school would ultimately be more cost effective and better for the children. They pushed the school board, and we were given the go-ahead to increase the budget for what became a \$39 million project."

The Mount Kisco, New York-based KG&D is a mid-sized firm of approximately 30 licensed architects, professional engineers, interior designers, construction inspectors, and support personnel. The firm was first founded nearly 70 years ago and specializes in education and non-profit work.

In 2005, KG&D and the White Plains City School District conducted district-wide, master-planning studies that included careful evaluation of elementary-space needs and the most critical building issues within the district. The study included lifecycle cost analysis and the exploration of multiple design options that would accommodate the elementary-education program. The result became a plan for infrastructure upgrades at several buildings, two athletic stadiums with synthetic turf fields, and replacement of the Post Road Elementary School.

Built in the early 1900s, the classic neighborhood school—to which the majority of students still walk to school every day—had aged into an asbestos-filled, poorly ventilated, energy-inefficient building. After

considering the options, the decision was made to replace the school completely. "People often think a green site is where someone needs a new facility on a brand new lot," Davidson says. "But the greenest thing you can do is renovate on existing land."

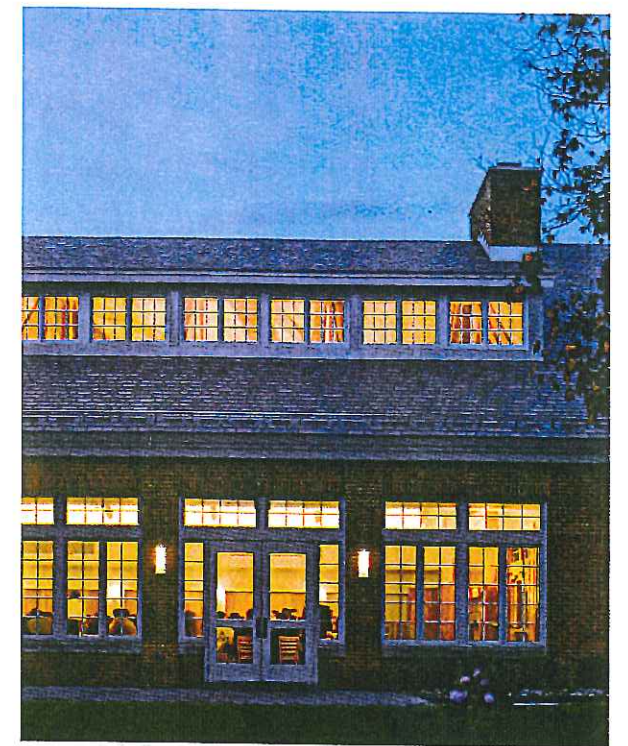
The new Post Road Elementary School is among the first sustainable, high-performance school buildings in the State of New York. Major sustainable elements of the building include a geothermal system, rooftop solar-photovoltaic panels, low-impact plumbing fixtures, and the use of recycled and natural materials. Large windows in every classroom and at the end of every hallway flood the spaces with daylight, making it a cheery, environment conducive to learning. The classrooms step down a hill, so the kids can look out the windows onto the green roof and enjoy a bit of nature.

Davidson notes that the school's underground geothermal system saves more than energy. "With a 90,000-square-foot building to heat and cool, the neighbors would definitely hear a traditional system. The new system is silent. Additionally, the school district was able to save money by consolidating summer school locations from five partially used buildings to holding classes in the updated, air-conditioned school."

According to the school's energy modeling, the building uses 50 percent of a conventionally designed building and is 62 percent more energy efficient than a building designed to meet the baseline energy code. This level of efficiency has translated to approximately \$72,000 savings on current gas and electricity costs since the building opened in September 2009. "The second grade music class even wrote a song saying Post Road Elementary was best school in the world. What could be better feedback than that?" Davidson adds.

A second high-profile green project was the construction of the new 15,000-square-foot Trinity Pawling Prep School dining hall. It's a tradition at the Pawling, New York, all-boys boarding school for students to share their meals together. However, due to the school's increased enrollment over the years, they'd simply outgrown the original dining hall, and the students had to eat in shifts.

"The arrangement affected the unity that the school wanted to achieve," Davidson explains. "We researched renovation options but decided the best decision would be to tear down the existing building and create one large, central dining hall." The laminated timber from upstate New York, combined with the massive banks of windows, create a warm, welcoming environment that encourages lively dinner-table discussions. Like the Post Road Elementary School, KG&D specified a geothermal system for maximum energy efficiency.



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—Russell A. Davidson, President & Managing Partner

A good plan turned into a great one when, after a third party determined that Trinity Pawling's new Scully Hall would be 34 percent more efficient than what is required by the baseline energy code, the school realized an even greater savings, hitting 35 percent and higher. The project is expected to be designated as LEED Silver.

Davidson notes that it's a unique challenge to design for an educational environment versus a business office. "The buildings have different use schedules—office buildings are used evenly throughout the day while schools have a before-school and an after-school life. With the Post Road Elementary School, we placed the gym, cafeteria, and auditorium in one section of the building and the classrooms in another. This way, community groups can use the non-classroom portion of the school after hours or without disrupting the teaching," he says. "Designing for education is very rewarding. To me there's no more important population to teach about green building and sustainability than the children." *gbd&d*

OPPOSITE: Trinity Pawling Prep School's new Scully Hall was designed to meet LEED Silver criteria. This New York school's new dining facility replaced an aging building within the same footprint and yet is more than 30% more energy efficient than the previous structure.

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