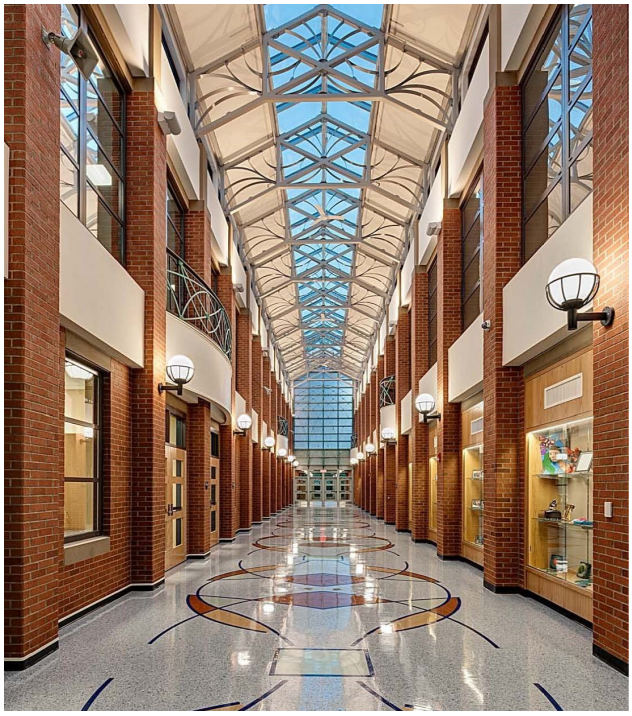
HILL CENTRAL SCHOOL/ CENTRAL UTILITY PLANT/ ROBERTO CLEMENTE SCHOOL

New Haven, Connecticut

Project Description

Hill Central School Pre-K-8 was the thirty-sixth project in New Haven's $1.5 billion school construction initiative and Giordano's eighth CM assignment in the program. Designed to meet State of Connecticut High Performance Building Guidelines (comparable to LEED Silver certification), energy efficiency features were primary objectives. The interior spaces are flooded with natural light so as to minimize the use of high-efficiency fluorescent lighting, and rainwater is collected to irrigate lawns. The tight envelope building meets strict air change and blower door testing requirements, and various sustainable systems and materials (such as low-e insulated glass windows and chilled beams that use less energy to heat and cool classrooms while reducing the amount of ductwork needed and maintenance required) are also incorporated. The City also made history when it became the first district in the state to invest 2.8 million in a 400-kilowatt fuel cell that services both Hill and adjacent Roberto Clemente School. The two schools share electricity generated from the natural-gas powered fuel cell, which supplies the two schools with supplemental power to help cover electricty, heat and hot water needs. The fuel cell also has the ability to provide grid independent power to both. The highlight of the design is the three-story 'Main Street' inspired entrance corridor that acts as a separation between classrooms and common spaces. With an expansive glass skylight and exposed ornamental metal trusses above, its decorative architectural balconies and street lamp-styled lighting fixtures create the feeling of an outdoor promenade. The school is built around a central courtyard with playscapes, and features a modern science lab complete with an active weather station, a media center, a Mac lab and interactive smart boards in every classroom. Giordano and Kenneth Borosn Architects introduced Building Information Technology (BIM) for the first time to New Haven Public School's building program. The process produces three dimensional coordination drawings that eliminate construction delays and extra costs typically caused by spatial conficts and unforeseem field conditions. BIM greatly expedited the installation schedule which in turn contributed greatly to the delivering the project ahead of anticipated completion date and under budget.

The previously cited Central Utility Plant (CUP), constructed to serve both Hill Central School and Roberto Clemente School, is a $2.8 million 3000 sf project that houses equipment to provide both heating and cooling to both schools.By serving two major structures with one facility, the CUP maximizes efficiencies and economy. The project required the installation of over 2,000 feet of underground piping throughout the site. The plant includes three boilers, one electric chiller unit, one absorption chiller unit, two



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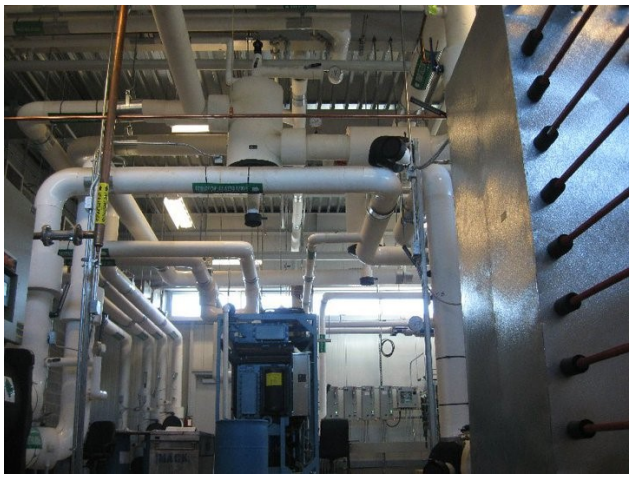
New Haven, Connecticut

Project Description, continued

cooling towers, and the ability to make and store ice in off peak hours to be used for cooling purposes during peak hours. The most impressive feature of the CUP is a 400kw fuel cell that produces electricity by combining natural gas with oxygen. In this reaction, electrons are freed from the hydrogen in the fuel cell by a catalyst, and gain energy from the chemical reaction binding hydrogen and oxygen to provide a source for electric current. The exhaust of hydrogen fuel cells consists simply of hot water. This hot water is piped to the absorption chiller and reused during either the heating or cooling seasons. Since the only by-product of the fuel cell is usable hot water, this technology is considered one of the most efficient and green ways to provide power. The CUP's fuel cell provides enough power to sustain both schools during peak usage, and has the ability to grid independent power to both schools in the event of outages.



The Roberto Clemente Leadership Academy project originally called for renovating an existing school as new, increasing its natural light, fixing mechanical systems, and updating an outdated high school into a Pre-K-8 facility. When it was determined that building conditions made it impractical to do so, the decision was made to rebuild. The new 75,600 sf school features a central courtyard. It contains a state-of-the-art library/ media center, computer labs, science labs, art and music rooms, and a gymnasium/ cafetorium with a convertible separating wall that can open the space up for use as a very large auditorium. The school was designed by Kagan Architecture and Planning.

Services Provided
Construction Management

Architects
Kenneth Boroson Architects
315 Peck Street, Suite B2
New Haven, Connecticut 06513
203.624.0662

Kagan Architecture and Planning
370 James Street, Suite 401
New Haven, Connecticut 06513
203.789.1890

Owner
City of New Haven Public Schools
165 Main Street
New Haven, Connecticut 06510
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Mayor John DeStefano *jdestefano@startbank.com*

Contract Amount
$50 Million, combined

Construction Dates
2008– 2014

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