

The Lawrenceville School



- ▶ **350-ton direct-fired natural gas absorption chiller**
- ▶ **Underground water lines serving 18 campus buildings**
- ▶ **Lawrenceville, New Jersey**

Private School's Hybrid Chiller Plant Provides Flexibility and Cost Savings

The Lawrenceville School, a coeducational boarding school for grades 9-12, is considered one of the most prestigious college preparatory schools in the nation. Most of the school's 800 students board on the historic campus, located in Lawrence Township, New Jersey, just south of Princeton.

In 2001, the school undertook construction of a central chiller plant to provide district cooling for 18 campus buildings, including academic, administrative, athletic, support, and dormitory facilities. The buildings, whose combined size is approximately 400,000 to 450,000 sq. ft., are connected to the chiller plant in the Kirby Arts Center by means of underground pipes that supply chilled water to each building's air handlers.

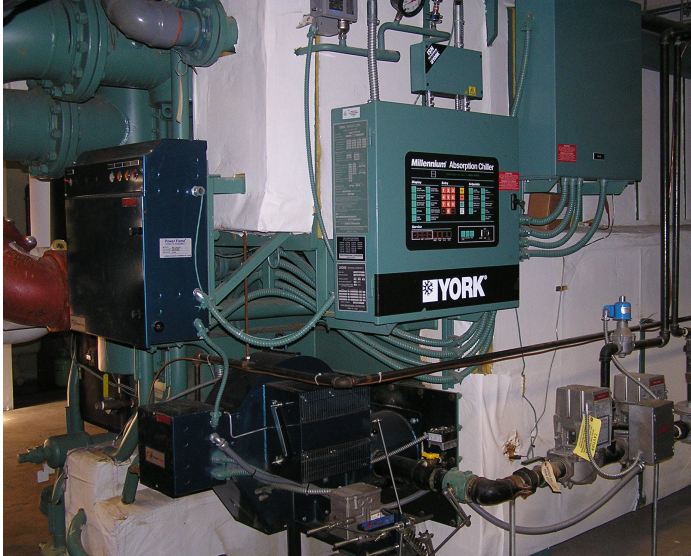
Hybrid system provides choice for best prices

The centerpiece of this chiller plant is a 350-ton York direct-fired absorption chiller that operates on natural gas. The school already had one 300-ton York electric centrifugal chiller. A 150-ton electric centrifugal chiller was also added, creating a 800-ton-capacity hybrid system that gives the school the flexibility it needs to take advantage of optimum utility prices. The school's peak cooling load is 550 tons.

"In order to be able to control the school's energy cost in a deregulated electric and gas marketplace, the best solution is to have choice," explains Darren Cassel, a principal in The Stone House Group, which designed the chiller plant. "We currently base load the

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gas-fired chiller during the day to avoid the high on-peak electric rates, and then run the electric chillers at night when the campus cooling loads are lower and the price of electricity is cheaper.”

Based in Bethlehem, Pennsylvania, The Stone House Group provides the school with a variety of operations support services including energy management planning and construction project management.

Initial annual cost savings were estimated at \$180,000, but because of gas and electric price changes over the past five years, a new energy analysis will have to be conducted to determine current savings, according to Cassel.

“Having this energy flexibility will certainly pay off, considering the volatility of today’s energy market,” says Kenneth Kohr, Product Marketing Engineer with York, A Johnson Controls Company.

School selects York for its good track record

The school selected a York absorption chiller based on good past experience with the manufacturer.

“The existing chillers at the school’s central chiller plant were York chillers, and the service work in the past had been very good,” says Cassel. “The school competitively bid the project and York’s price was very competitive with the other manufacturers.”

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As an additional incentive, The Lawrenceville School received an energy rebate from the New Jersey SmartStart Buildings® program that covered approximately 50% of the capital cost of the direct-fired absorption chiller. The rebate program is administered by the New Jersey Board of Public Utilities’ Office of Clean Energy and is currently delivered in a joint effort by the New Jersey electric and gas utilities.



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