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GREEN SCENE

Profitable Partnership

BY BENDIX ANDERSON

TRENTON, N.J.

BTC Management Corp., a nonprofit affordable housing owner and manager, didn't spend a dime from its reserve accounts to upgrade all of the central heating and cooling equipment at Trent Center East with new energy-efficient machines.

It was a good thing, too. Trent Center East, a 42-year-old high-rise for very low income seniors, only had about \$500,000 in reserves when its physical plant began to break down. The new equipment, including a co-generation plant that produces both electricity and domestic hot water, plus two boilers and a chiller, would have cost more than \$1 million to purchase.

The new equipment helps protect the building from rising energy costs. "Buildings like ours have to take advantage of technology to survive," said Lionel Kier, executive director of BTC.

Workers installed the new green energy-saving equipment after BTC signed 10-year agreements with two affiliated vendors to supply heat, cooling, and hot water to the building.

The vendors, AES Cogen, Inc., and American DG Energy, maintain the equipment themselves. The only costs BTC pays are the monthly bills for the heating and cooling produced by the machines. These are a quarter less than the cost would have been to continue to fuel and maintain BTC's own aging and less-efficient equipment, and much less than the cost to purchase new equipment, said Kier.

The 229 apartments at the 14-story tower were originally built in 1965 under the federal Sec. 202 seniors housing program, using low-interest financing from the Department of Housing and Urban Development.

For decades, a massive boiler provided heat, domestic hot water, and air conditioning with the help of another aging, inefficient machine: a steam absorption chiller.



This old high-rise might not look like a modern energy-efficient building, but Trent Center East has cut its energy use by a quarter.

BTC began to replace the equipment in 2000 when it signed a 10-year contract with AES Cogen to bring two 70-kilowatt co-generation turbines into the building. The turbines provide half of the master-metered building's electricity and most of its domestic hot water. They can also heat the building without help from the boiler if it's not too cold outside.

Last June, just in time to provide air conditioning for summer, a new chiller arrived as part of another energy contract with American DG Energy, based in Waltham, Mass. In October, American DG Energy also installed two new boilers to heat the building.

American DG Energy maintains the new equipment, creating a big savings for BTC, which had been paying \$20,000 a year just to keep the old chiller working.

Since the improvements were made, total energy costs have risen only moderately at the building even as the cost of commodities like gas have more than doubled, Kier said. That's because BTC has cut its energy use at the building drastically.

The building used 18,572 decatherms of gas over the year ending in September 2007, down from about 22,000 decatherms seven years before, when the first new equipment arrived. Over the same period, the electricity the building used from the power grid dropped to nearly 400,000 kilowatt hours from more than 1 million, thanks largely to the co-generation plant.

And BTC expects its energy costs to drop even further now that the new boilers are in place. ■

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