



Control Over Energy Use Helps School District Protect its Core Mission

In the suburbs north of Philadelphia, the Central Bucks School District takes seriously its commitment to academic achievement. As the third largest district in the state, Central Bucks serves 20,000 students across nine municipalities, yet its high schools are consistently ranked among America's best by Newsweek Magazine and US News and World Report. Student SAT scores rank in the top 5% of all Pennsylvania high schools and more than 90 percent of its students go on to post-secondary education.

The academic record of Central Bucks is impressive, in part, because administrators say they're determined to protect the core mission of providing optimal learning environments and preserving student-teacher ratios. So when Central Bucks Director of Operations Scott Kennedy began to look for ways to cut costs in 2007, he knew he couldn't consider any solution that would negatively impact instruction. Instead, he focused on improving the efficiency of the district's 27 buildings. "We knew we'd have to dig deep to find places to save; our buildings were already in good shape and our energy cost per square foot was fairly reasonable," said Kennedy. "But we were growing. We knew our budgets would get tighter over time and we expected rate increases. So we were hoping to find ways to proactively create even greater energy efficiencies."

Advanced Technologies Lead the Way to Savings

Kennedy turned to Johnson Controls to help meet the challenge. And the following year, Central Bucks entered into a **performance contract** with Johnson Controls designed to create \$24 million in guaranteed energy savings over 15 years. The plan included the addition of occupancy sensors, the replacement of underperforming equipment and the addition of two of Johnson Controls flagship solutions: Metasys® and Panoptix®.

K-12 Project AT-A-GLANCE:

Central Bucks School District
Location: Doylestown, PA
Enrollment: 20,000
Buildings: 27

\$24 million over 15 years, from:

- Reduced energy use
- Utility rebates
- Demand-response revenue





The **Metasys building management system** ensures all the district's building systems operate together in harmony. It provides real-time monitoring and control of building and system infrastructure, delivering performance data when and where the Central Bucks HVAC team needs it. "Metasys is our complete head end for the entire district, so now we have a unified structure that allows us to look at everything at once," said Central Bucks Facility Manager Bill Slawter.

While Metasys mines the data, Panoptix turns it into actionable insight. The **Panoptix building efficiency platform** collects data from buildings district wide and transmits it to the cloud where it can be used with a range of applications to deliver better control over energy use, equipment operation and occupant comfort.

"With these advanced tools, the amount of knowledge we have now is incredible," said Kennedy. "And because we can access real-time performance data any time of the day or night, we can quickly detect, diagnose and resolve issues before they become serious problems." Plus, because the team is able to stay ahead of the curve, Slawter says they are freed to focus on providing value. "When we get a request to add an air conditioner to one room, or to upgrade a piece of equipment, we can say 'yes' because we're not chasing heating or cooling complaints."

"We've exceeded our goals, easily."

At the outset of the project, the Central Bucks team expected to see annual energy savings of about \$1.5 million. In its first five years, however, the project generated savings of \$12.3 million, nearly twice what had been estimated. "Some of the additional savings have come from the fact that, with Metasys, we can now participate in the utility's demand response program," said Kennedy. "It gives us much more control to power our buildings down in the summer, and that alone is generating over \$300 thousand dollars each year in revenue."

Also contributing to better-than-expected savings was a one-time bonus of rebates from the local utility. "We hadn't even considered utility rebates as part of the original performance contract, but we became eligible for them after implementing our efficiency initiatives," he said. "So our partners at Johnson Controls helped us complete the lengthy application process and we ended up getting close to \$800,000 in rebates."

Dollars saved through the efficiency initiatives are being rolled back into the district's general fund. With the windfall, Central Bucks has been able to:

- Pay down some of its construction debt
- Accelerate its investment in classroom computers, smart boards and wireless access points
- Hold the line on property taxes
- Invest in teacher training

For Central Bucks, gaining greater control over energy use does more than help the school district control utility costs. It allows the facility team to be proactive, better predict energy spend, and contribute to the district's mission to provide optimal learning environments.

To learn more about how Central Bucks School District is controlling their energy use, visit <http://on.jci.com/CentralBucks>

Photos courtesy of Central Bucks School District.

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