



Birch Grove Elementary School for the Arts

Small tune-ups for big savings



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Jeff Arthurs

Coordinator of Custodial/Maintenance Services, Osseo Area Schools

Jeff Arthurs is no stranger to energy efficiency.

As Coordinator of Custodial/Maintenance Services, Osseo Area Schools in Maple Grove, Minnesota, Arthurs has worked with Xcel Energy to take advantage of rebates and incentives on motors, heating, cooling, lighting, controls and other equipment over the years.

He knew there were some issues to be managed at Birch Grove Elementary School for the Arts, so he worked with Xcel Energy and an outside commissioning agent to determine how to get his building running as efficiently and cost effectively as possible.

Forming a plan

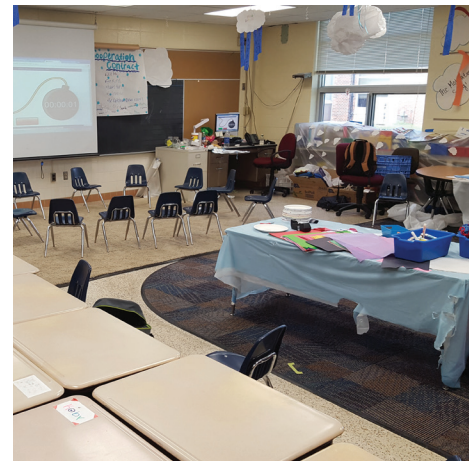
Arthurs knew he had temperature issues. The building was hot in some places and cold in others but he wasn't sure if it was the result of low airflow or a temperature discharge issue, the run time, or a combination of all of them.

"We had pressurization issues, too, which caused the exterior doors to stand open," explains Arthurs. "I knew a recommissioning study would help us figure out what needed to be adjusted."

Recommissioning, or a building tune-up, helps improve the overall efficiency of the systems within a building. Xcel Energy's program involves a two-step process: a study to uncover energy saving opportunities and an implementation plan.

"Most recommissioning measures are low or no-cost measures that focus on equipment tune-ups and adjustments rather than upgrades," explains Xcel Energy program manager Renae Wrich. "Studies show typical energy savings up to 20 percent, with a simple payback of less than one year, making the work well worth the effort."

Arthurs adds that schools are different than other commercial or industrial buildings. He points out that using public funds means making sure they're good stewards of community assets.



Xcel energy rebates help offset recommissioning costs

Study Rebates: Xcel Energy helps pay for upfront recommissioning study costs—up to 75 percent of the study cost (not to exceed \$25,000).

Implementation Rebates:

Xcel Energy provides rebates up to 60 percent of the measure cost for implementing the energy-efficiency recommendations in the study.

"It's really a no brainer to take advantage of this program," Arthurs says. "I don't pretend to be the expert and appreciate having the right people in to look at the building. We were surprised at the number of issues we needed to resolve."

Time to save

Once the report was complete and measures identified, Arthurs and his Xcel Energy representative Albert Joe went to work. **The study identified a potential to reduce annual energy usage by an impressive 37 percent**, which could save the school over \$23,000 in energy costs annually. Ultimately, there were 20 energy saving measures implemented, including:

- Reducing runtime on air handling units. This was the top energy saver. This measure alone is estimated to save Birch Grove \$15,000 annually.
- Adding optimal start: the HVAC system went from turning on automatically at 2:00 am to turning on when needed based on outside air temperature to ensure warm classrooms by the time school starts in the morning.
- Adding Variable Frequency Drives (VFDs) to Air Handling Units
- Changing the control strategy on units for single zone applications: Adding space CO₂ sensors and modulating fan speed based on CO₂ levels.
- Adding a control strategy to allow boiler heating set points to reset based on outside air temperature
- Adjusting outside lighting schedules
- Balancing classroom airflow
- Reducing valve leakage to eliminate simultaneous heating and cooling

"I have been working with this Xcel Energy program for several years," explains Arthurs. "We have huge incentives to use this program to help reduce our operating costs and reap savings for years to come."

In addition, he says students, staff and faculty at the school are much more comfortable.

Next steps

Arthurs doesn't plan to slow down. He's got seven more projects to work on this year alone that involve recommissioning studies and recommendations at several local schools and administration buildings.

"The process of working with Xcel is great," Arthurs says. "They help me figure out a priority list and even help me with the paperwork."

He'll continue looking for ways to save energy and money throughout the district for years to come.

Project highlights

Project	Recommissioning of Birch Grove Elementary School for the Arts
Study cost	\$19,750
Cost to implement all measures	\$28,160
Xcel Energy rebates for study and implementing recommendations	\$17,325 (36 percent of costs)
Annual energy savings	291,584 kWh or \$23,145
Payback term	1.5 years



For more information about Xcel Energy's Recommissioning program, please visit xcelenergy.com/Recomm.