

Comfortable Kids, Higher Efficiency, Lower Bills

BUILDING TUNE-UPS HELP DENVER PUBLIC SCHOOLS



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JIM FAES
Director of Sustainability,
Denver Public Schools

Comfort is key

Comfortable kids make better students. When Jim Faes, Director of Sustainability for Denver Public Schools heard that the students and staff at Castro Elementary School were sometimes too hot and sometimes too cold, he knew the building systems weren't working the way they should. The building was too new to have problems, so he was determined to figure it out.

“The building had good bones,” Faes says. “We knew something could be done that wouldn't have huge capital costs because the equipment wasn't old enough to need replacing.”

With that, he set out to determine the best route to make his building perform at optimum levels.

Constant contact

He started with his Xcel Energy account representative, Melanie Gavin.

“We meet at least once a month to talk about different ways they can operate more efficiently,” explains Gavin. “In this case, it was obvious that a Recommissioning of the building was in order.”

With 150 schools in the Denver area, the school system is the largest in Colorado. Faes had worked with Gavin for years on various energy efficiency projects, including lighting, motors and heating and cooling equipment. When one project is completed, they use the rebates paid to invest in the next project, buying down the cost and improving the efficiency.

“Recommissioning is basically a tune-up of a building,” explained Gavin. “Many of the things we find are low-cost and no-cost fixes that will help bring the building back to an optimum performance level.”



The two-step process starts with a study of the building to determine where improvements can be made. The list of suggested measures is then given to the building manager, who chooses which items to implement. Xcel Energy funds a portion of the study to help offset the cost.

“The payback term for those low and no-cost measures is often less than five years,” Gavin explains. “We also offer rebates if they purchase new, higher-efficiency equipment, which further reduce their investment.”

Common areas reviewed in a typical Recommissioning study include:

Chilled Water Reset	Temperature Resets
DDC Controller Retrofit	VAV/VFD Retrofit
Airside Economizer	Lighting Control
Night Setback & Setup	Time of Day Scheduling
OSA Demand Ventilation	Pump VFD Retrofit
Supply Static Reset	Occupancy Scheduling
HVAC Equipment retrofits	Adaptive Controls
Energy Efficient Electric Motors	EMCS Control Strategies
Start Stop Optimization	Sub-Metering

At Castro elementary, the study identified several opportunities for energy savings including: a variable frequency drive retrofit and tune-ups for the chiller and air handling unit.

The energy savings in implementing these measures adds up to \$23,000 per year in electric savings and over \$1,000 per year in gas savings.

“It’s hard to argue against it because it makes good economic sense,” Faes says. “We’re the beneficiary of a higher performing building, a more comfortable building and reduced utility cost.”

The Castro elementary project received a rebate of \$10,900 for the study alone. If they choose to implement all of the recommended measures, they’ll get another \$37,095 in rebates. Another important factor Faes points out is the reduction in maintenance costs. He says that was just as important as the reduced energy use and operating costs.

Grow more but use less

Faes is proud to report that though DPS is the fastest growing school district in the state of Colorado, with more students and more schools added over the last five years than other districts, their energy use has gone down. Gas consumption is down 16% and electricity use is down 3%. It’s all due to conservation initiatives and efficiency work.

Faes plans to continue to systematically identify and implement the Recommissioning process in the remaining buildings that perform poorly. His goal is to keep everyone comfortable, productive and focused on the primary purpose: education.



For more on Xcel Energy’s energy efficiency and rebate programs, please visit xcelenergy.com/Recomm.