



FOCUS ON HVAC AND CONTROLS

The Problem

The Kettle Moraine School District identified critical facility and technology infrastructure needs as part of a comprehensive long-term master plan to repair and revitalize their aging schools. In order to address these needs, they passed a referendum to improve occupant comfort and save energy district-wide. The District was interested in leveraging the technical expertise and financial incentives available from FOCUS ON ENERGY® to provide not only new insights, but free up their staff's time for other tasks

The Solution

In spring 2015, the Kettle Moraine School District contacted Focus on Energy about upgrading the HVAC systems with digital controls in four of their schools. The HVAC system was identified as an area in need of improvement. The existing constant volume (CV) HVAC system was not providing consistent temperatures. A variable air volume (VAV) HVAC system was proposed as a solution to address this issue. A VAV air distribution system combined with building automation controls can vary the volume of air delivered to the space based on the heating or cooling needed per a specific thermostat, providing greater control over the conditioning in each space. The proposed solution also included utilizing outside air for "free cooling" which uses outside air in the right temperature zone to cool an indoor space.

Improving the HVAC system will:

- Keep temperature more consistent leading to more comfortable students and staff.
- Optimize fresh air being delivered to classrooms which can reduce energy consumption.

The District's Energy Advisor and mechanical contractor combined upgrades at the four schools into one custom project, making participation in Focus on Energy even easier. As a result of this upgrade, the District benefited from more control of their buildings and met its goal of increasing occupant comfort. The energy savings also provided a payback and financial benefit to taxpayers of the District.

Project Breakdown:

- **Equipment Installed:**
Replaced constant volume air delivery controls with variable air volume boxes and building automation controls
- **Benefits:**
Improved occupant comfort and more control over building operation
- **Annual Energy Savings:**
337,949 kWh
56 kW
- **Focus on Energy Incentive:**
\$41,606
- **Payback:**
4 Years



The application process was simple enough as our Energy Advisor guided and offered assistance as needed. Chris followed up in a timely manner to keep the process moving.

Dale Zabel
Director of Facility Services/Safety
Kettle Moraine School District

REDUCING ENERGY WASTE ACROSS WISCONSIN

Focus on Energy, Wisconsin utilities' statewide program for energy efficiency and renewable energy, helps eligible residents and businesses save energy and money while protecting the environment. Focus on Energy information, resources, and financial incentives help to implement energy efficiency and renewable energy projects that otherwise would not be completed.

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