



## Partnering for Energy Efficiency Benchmarking in Wisconsin's Schools

In his recently web-published article, *Why we never need to build another polluting power plant*, (www.salon.com), energy-efficiency guru Joseph Romm makes the case that we already have within our means the power to decrease our energy consumption as a nation by using existing systems more competently. He writes, "Economic models greatly overestimate the cost of carbon mitigation because economists simply don't believe that the economy has lot of high-return energy-efficiency opportunities. In their theory, the economy is always operating near efficiency. Reality is very different than economic models."

This message is clear to BOC-trained facilities operators, who recognize that efficient use of energy is the core of the BOC philosophy. Partners and sponsors work to present training and incentive opportunities, and to inform their constituents of ever-improving new technologies.

Wisconsin's Focus on Energy program has been a guiding force in the state for almost a decade. Before its establishment, individual utilities were running their own programs. The state stepped in to consolidate the efforts and created Focus on Energy, an agency that works with both residential and business clients to improve their energy use in cost-effective, easily-achievable ways, via dissemination of tools, information and technical assistance, as well as financial guidance and incentives.

One of the agency's recent success stories has been in working with Wisconsin's school systems on an energy benchmarking database.

In 2005, Wisconsin's Focus on Energy program partnered with the Cooperative Educational Services Agency 10 (CESA 10) to conduct a survey of energy efficiency measures in Wisconsin's public school districts. Schools were asked to participate in the benchmark study on a voluntary basis and by April of 2006, data had been collected from 1,293 schools in 226 districts – more than 60% of the total number of K-12 public schools. Information



Modulating boilers replaced a broken system, saving an estimated \$7,200/year in heating costs.

was collected and ultimately entered into the U.S. EPA's ENERGY STAR® Portfolio Manager national database. Participating schools can now compare themselves to similar buildings and set realistic goals for their facilities based on this comparison.

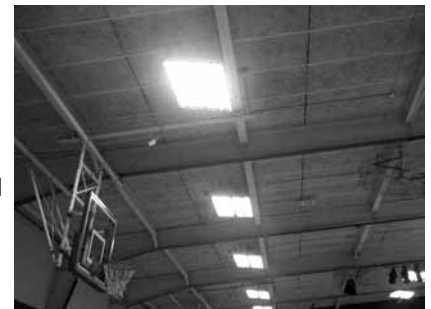
**A big money-saver was a unit ventilator controls modification project in which the unoccupied time was studied and the system adjusted to run as needed. At a project cost of \$5,057, therm use was estimated to be reduced by 65%.**

Certainly the high participation contributes to the growing number of success stories throughout the state's schools, large and small. One such school is the Princeton pre-K-12 facility, a 91,000 square foot facility with a total enrollment of about 430. Troy Holland, the facility's manager and a BOC graduate, has worked with Focus on Energy's energy advisor Don Keck for several years now.

"Working with Don has been great. I tell him, 'This is my project. What can you do for me?' and he investigates any available resources that can help make it happen. It makes a much easier sell to the school board for each project, and I'm lucky I have a board that realizes that sometimes you have to spend money to save it in the long run," says Holland.

In 2004, the school installed five vending misers that Focus on Energy was providing at no cost to facilities. More recently, the school's two gymnasiums have been relamped from 24-400 metal halide to T-8 fluorescent fixtures, all with timed occupancy sensors. Classroom, hallway and bathroom lighting has also been changed out and put on sensors where appropriate, and exit lighting has been switched from a combination of incandescent and fluorescent lighting to LED.

A big money-saver was a unit ventilator controls modification project in which the unoccupied time was studied and the system adjusted to run as needed. The system in one wing of the facility was operating 24/7. Holland determined that the real need was only for 50 hours per week total, thus eliminating 118 hours of runtime. At a project cost of \$5,057, therm use was estimated to be reduced by 65%. Using a therm cost of \$1, the savings amounted to \$6,781, giving the project a payback of 9 months, an impres-



T-8 lighting in Princeton's relamped varsity gymnasium.

sive enough payback on its own but even more so when a Focus on Energy rebate of \$2,632 is factored in.

When a 30-year-old two-boiler system broke down, it was an emergency project and Holland had to look at repair/replace options. The old system had originally run on fuel oil and had been converted to natural gas. The boilers could only be set on high or low and could be cycling as many as 20 times an hour. Holland's analysis determined that the boilers were definitely oversized and he was able to replace two 2.5 million Btu output boilers with Patterson-Kelley modulating boilers, one at a million Btu and one at 750,000. Energy cost savings are estimated to be over \$7,200 per year and again, Focus on Energy offered a rebate of \$4,300 to offset project costs.

The Princeton facility has been under budget in electricity for the past two years as a result of ongoing efficiency projects. Water has been over budget though, so that is Holland's next project. And he will look to Focus on Energy: Here's my project – how can you help me?

These days, when everyone's feeling the economic pinch and energy costs are on the rise, saving energy is more important than ever. Working together and exploring the options is a winning strategy.