

# Wisconsin Schools Improve Energy Efficiency Gains through Education

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Three Wisconsin school districts are on a similar mission: to embrace long-term, sustainable practices that not only save money and benefit the environment, but also improve the health, wellness and safety of their students and staff.

It's proving successful for Colby, Glendale-River Hills and Maple Dale-Indian Hill school districts. In 2014, Maple Dale School, in Fox Point, Wisconsin, was the first school in the world to earn LEED Gold certification under the LEED v4 Operations and Maintenance: Schools rating system; and in 2015, Colby Elementary School received the Green Ribbon Schools award from the U.S. Department of Education which recognizes the highest performing green schools in the nation.

These very different districts are all employing common strategies and organizations to achieve their schools' long-term goals. One of those organizations, the Wisconsin K-12 Energy Education Program (KEEP), facilitates opportunities to pair education for staff and students with facility management practices, a strategy vital to both districts' sustainability initiatives and successes.

Jim Beckmann, director of operations for Glendale-River Hills and Maple Dale-Indian Hill school districts, admits that it is easy to have lofty goals and ideas, but he says the hard work is maintaining the desire and energy to continue those efforts.

Of course, staff members play a major role in integrating and continuing sustainable practices throughout a district's buildings. Teacher professional development courses through KEEP help maintain an

interest in, and ongoing education for, energy efficiency efforts.

In the spring of 2014 about a dozen Glendale-River Hills and Maple Dale-Indian Hill teachers participated in KEEP's School Building Energy Efficiency Education course, which focuses on raising awareness of energy use in school buildings and guiding PK-12 staff towards utilizing the school building as a teaching tool. The course brings together teachers with energy professionals, including the district facility manager, who provide information tailored for classroom application of energy management practices and who emphasize sustainable behaviors which can further reduce consumption of energy and resources.

The course requires teachers to create and implement energy action plans, giving themselves, and their students, ownership of the direction of the school's energy savings projects. Energy action plans developed by Colby Elementary School teachers participating in the course during summer 2014 purposefully built upon the district's sustainability initiatives and allowed their students to investigate energy-efficient practices first-hand. For example, activities planned for Energy Action Month (October), including classroom energy audits and energy saving tips for home, were carried out weekly during Monday morning school-wide assemblies where best practices were shared and classroom behaviors rewarded. Additionally, fourth grade art students created advertisements focusing on the district's energy saving and sustainability initiatives to garner support and recognition from the community at-large.

Collaborations pairing operational and educational services can be very successful. To that end, Colby School District partnered with CESA 10's Sustainability Service for a three-year-long sustainability initiative. Energy was identified as a top priority and school buildings were challenged to reduce their electricity consumption by 5 percent. During the 2012-2013 school year, Colby Elementary School achieved 8.6 percent savings, in part due to energy conservation behavior changes made by staff and students.

Steve Kolden, Colby School District's superintendent who spearheaded the effort, said that fiscal and environmental responsibility and sustainable practices "just make sense." Mr. Kolden believes that being a steward of the district's resources, from tax dollars to students, is the responsibility of the public school system.

The U.S. Green Building Council's Center for Green Schools, U.S. Department of Energy's EnergySmart Schools, and U.S. Environmental Protection Agency all recommend educating and engaging staff and students in school building facility operations and as part of energy efficiency planning processes. An untapped potential, it is widely acknowledged that engaging building occupants in behavior-based strategies can save on average 5-20 percent of energy costs each year.

The following success stories from Colby, Glendale-River Hills and Maple Dale-Indian Hill school districts are examples of energy conservation strategies that KEEP, and other common organizations, help K-12 schools to implement:

## The building as a teaching tool

By following LEED protocol and involving staff and students in building energy efforts, Glen Hills Middle School, located just north of Milwaukee in Glendale, Wisconsin, became the first school to earn LEED Gold certification under the LEED v3 Operations and Maintenance: Existing Buildings rating system.

The sustainable design features of the building provide a learning opportunity for students. Jim Beckmann, director of operations for Glendale–River Hills and Maple Dale–Indian Hill school districts, teaches the school's fifth grade classes about renewable technologies by sharing the basics of how the solar collector, housed on the roof of the building, heats the school's pool saving the district roughly \$5,000 per year.

## Staff and student ownership

By reinforcing the message that 'every little bit helps,' Colby School District buildings and grounds supervisor Dennis Wenzel says the district has saved more than \$16,000 through the combined efforts of staff and students consistently improving their energy-saving behaviors like turning off the lights, closing blinds and doors, and shutting down computers when not being used.

Colby School District teachers recognized a potential energy-saving opportunity and used watt meters to calculate the electricity consumption of their schools' vending machines. They received a small grant from KEEP to purchase three VendingMisers®, and the district expects to see a minimum savings of \$1,400 over the next five years.

## Pairing operational and educational services

CESA 10 Sustainability Service partnered with KEEP and the Wisconsin Center for Environmental Education to offer nine professional development courses (face-to-face

*RIGHT: Dennis Wenzel (third from left), buildings and grounds supervisor for Colby School District, and Luke Schultz (third from right), Focus on Energy, provide school staff with a behind-the-scenes look at how their school uses energy, as part of KEEP's School Building Energy Efficiency Education course.*



and online) during their 2011-2014 relationship with Colby School District. Nineteen teachers received in-depth training in topics such as energy education, renewable energy, energy efficiency, biomass energy, and education for sustainability. As a result, participants developed 30 energy action plans, curriculum units and lesson plans for their students, directly supporting the goals of the district's sustainability plan.

Energy management professionals including CESA 10 staff, Focus on Energy's Agriculture, Schools and Government program Energy Advisors, local Utility representatives and the school district's facility manager all interacted with staff during these courses, by touring the building's energy systems, leading a walkthrough energy audit, discussing the district's energy policy and goals, and explaining how a school's energy bill differs from a residential bill.

## Curriculum integration

The Green & Healthy Schools Wisconsin program, the state conduit for the federal Green Ribbon Schools program, certified Glen Hills Middle School and Maple Dale School for their successes in demonstrating achievement in a number of sustainability areas, including effective environmental and sustainability education.

To fulfill the Environmental and Sustainability Education focus area of the Green & Healthy Schools application, energy action plans developed by Glen Hills Middle School fifth grade teachers, participating in a KEEP course during spring 2014, expanded upon the existing energy unit to address the social, ecologic and economic aspects of various sources of energy.

These stories, and others from more than 230 K-12 schools in Wisconsin registered as a Green & Healthy School, demonstrate that utilizing the school building as a teaching tool, empowering staff and students to take ownership of facility operations, pairing operational and educational services, and integrating environmental and sustainability concepts into the curriculum are all successful strategies for long-term change that saves money and improves the health and wellness of students and staff. Ultimately, the education and training opportunities provided by KEEP, and other common organizations, can raise awareness of the power of no-cost operational adjustments and behavior change and lead to significant savings for Wisconsin. 🇺🇸

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