



Energy Performance Contract helps improve learning environment and generate energy savings for East Syracuse Minoa Central School District

East Syracuse, New York – East Syracuse Minoa Central School District (ESM) is a suburban school district serving a population of 22,000 people. Approximately 3,750 students attend the high school, middle school, four elementary schools, and a pre-kindergarten school. ESM is committed to increasing student achievement through a consistent, comprehensive focus on teaching and learning.

In 2008, ESM engaged Siemens Industry, Inc., to make a variety of building improvements to help reduce energy consumption. The district also wanted the partnership with Siemens to provide energy awareness and education for its students, faculty, and staff, as well as explore alternative energy sources.

Client Objectives

Rising energy costs have caused the school district to seek out energy-efficiency improvements that will help reduce utility costs. The district sought a partner that could design and execute an energy-efficient solution that would also contribute to the overall learning process for ESM students and staff.

In addition to reducing energy costs, ESM had several key objectives for the project:

- Fund building and energy-efficiency improvements through energy savings
- Improve energy conservation efforts throughout the district's eight buildings
- Provide energy awareness and education for the students, faculty, and staff
- Create community awareness of the district's energy and environmentally responsible programs
- Demonstrate the use of alternative energy technologies

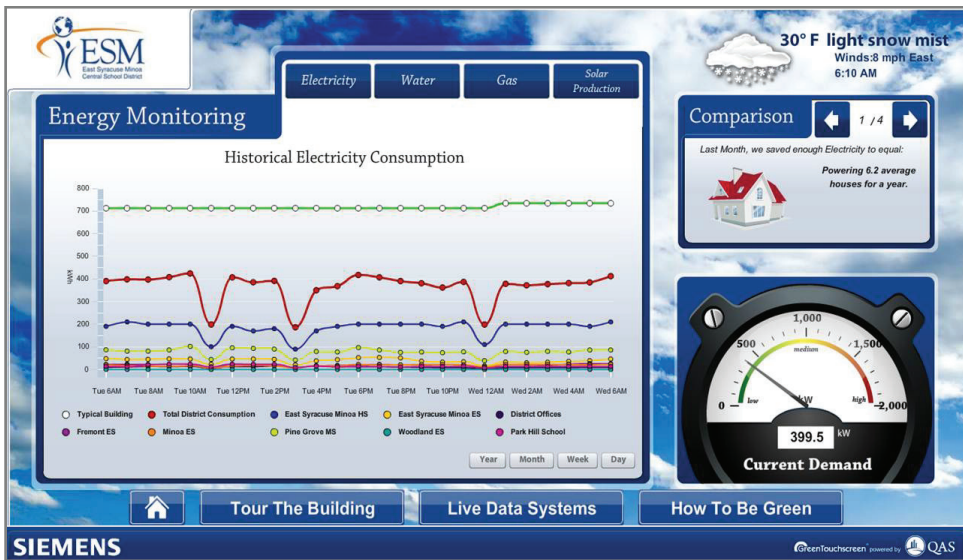
Siemens Solutions

Through an 18-year Energy Performance Contract, Siemens implemented the following facility improvement measures for ESM:

- Lighting retrofits throughout the district, including LED exterior lighting at the high school entrance
- Premium efficiency motors
- Variable frequency drive (VFD) pumps and fans
- Boiler plant replacement in four buildings
- Replacement of steam traps
- Energy management system throughout the district
- Window and door replacements
- Replacement of electric and steam booster heaters with natural gas
- Installation of condensing DHW heater
- Replacement of electric heating and air conditioning equipment
- Personal computer power management system to monitor, control, and optimize energy use of district computers

In addition to the above building improvements, Siemens installed 25kw of solar photovoltaic panels to address the district's goal of demonstrating alternative energy technologies.

Building Technologies



“Our partnership with Siemens provides many exciting advantages for us as a 21st century learning organization. Together, we’re bringing real-world experiences into the schools, so students can learn about real-life situations and applications for new and alternative energy technologies. It’s bringing a higher degree of meaningful understanding to our classrooms.”

Dr. Donna J. DeSiato
 Superintendent
 East Syracuse Minoa Central
 School District

Through Siemens Sustainability Education program, a wall-mounted GreenTouchscreen was installed at the high school. The GreenTouchscreen, which is also available on the web, showcases ESM’s dedication to energy efficiency, and provides live data relative to the buildings’ energy usage for electricity, water, and gas consumption, as well as solar production. Siemens also provided a portable GreenTouchscreen kiosk that can be moved to other buildings as needed. This solution involves the students, faculty, and staff in energy best practices and contributes to the students’ learning: they can see the real-world application and results from the energy performance contract.

Because ESM is a learning organization, enhancing the overall educational environment for the students is a key concern for the district. The GreenTouchscreen technology is a visible, tangible solution that’s helping students understand the sources of energy, how much energy has been utilized at the buildings, and how they could improve conservation efforts. Students, faculty, and staff can quickly and easily see the impact the energy-efficient solutions have throughout the district.

Client Results

By partnering with Siemens to make energy-efficient facility improvements, ESM has been able to develop a premier partnership for a STEM (Science, Technology, Engineering, and Math) education initiative. Together with Siemens Sustainability Education program, ESM is establishing this new, integrated approach to learning wherein students will develop deeper knowledge, skills, and abilities in science, technology, engineering, and math to be better prepared for college and careers. Through consultant support and hosting STEM symposiums, Siemens will champion ESM’s efforts to transform its curriculum, from pre-kindergarten through grade 12, to reflect a true STEM trans-disciplinary project and standards-based curriculum.

Siemens solutions have also allowed ESM to make significant, energy-efficient building improvements funded through energy savings. No additional costs to the local taxpayers have been incurred, and the district has been able to conserve energy and realize an immediate utility cost savings.

In fact, in one month, ESM saved:

- Electricity to power 6.2 average homes for one year
- Natural gas to prevent the equivalent of 566 kg of CO2 being released into the atmosphere

Additionally, the solar panels installed at the high school produce energy equal to planting 141.5 acres of trees and letting them grow for ten years.

Over the 18-year Energy Performance Contract, Siemens estimates ESM will generate guaranteed energy savings of approximately \$500,000 every year. To ensure that energy savings are achieved, a measurement and verification program is in place for the district.

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