



practical  
energy  
solutions

## case study Westtown School

### **Conservation Measures Provide Foundation of Comprehensive Energy Program, Produce Energy Savings 8 Times That of School's Solar Array Output**

#### Project Description/Services:

- Two-year agreement for benchmarking, utility rate analysis, education & awareness, equipment monitoring & optimization, data logging, and measurement & verification of energy conservation measures for Westtown School's 9-building "top of campus."
- Prioritization of efficiency upgrades for HVAC systems, building envelopes, lighting systems, and controls.
- Review of purchasing decisions that impact energy costs, including demand response programs, steam system control upgrades, lighting retrofits, and installation of wireless dimmable lighting controls/fixtures.
- Education & awareness campaigns, providing instruction to the faculty, staff, and students in how they can contribute to the campus-wide energy conservation initiative. Done in cooperation with the school's Sustainability Coordinator.
- Tracking of energy savings against a baseline established early in the program.



#### Outcomes:

- PES identified malfunctioning control points in the HVAC system that were allowing individual components to run 24 hours per day, 7 days per week, despite global commands intended to put the system in unoccupied mode. Correction of this problem stopped these components from running unnecessarily, saving more than 100 "on time" hours per week.
- Analysis after 2 years shows an 11.5% cost savings and 12% kWh reduction, due primarily to conservation measures like turning out lights, hibernating computers, and monitoring/refining heating and ventilation systems. This translates to a savings of more than 410,000 kWh per year, or nearly 8 times the electricity being generated by the school's new 44 kW solar array. This underscores the significance of energy conservation and efficiency as a foundation of any energy management program.
- Further improvements are expected.

#### Project Stats:

- July 2007 – December 2009
- Target 5-Year Savings: \$200,000

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