



# Central Elementary School Upgrades Case Study

*Indiana elementary school receives ENERGY STAR® Certification and saves \$164,505 on operational and energy costs with the help of Performance Services*

## Beech Grove, IN

In order to create an optimal learning environment, a school's classrooms must be quiet and comfortable where teachers and students can effectively interact. After 75 years of operation, Central Elementary began to struggle to provide adequate conditions for learning with challenges such as building temperature swings of 10-15 degrees and a ventilation system that forced teachers to shout in order for students to hear them. The school's 32-year-old boiler system was sized for a space three times as large, which resulted in significant building efficiency losses and higher utility bills. To solve their problems, Central Elementary enlisted the help of Performance Services to increase the overall efficiency of the building and enhance the school's learning environment.

## Aims & Objectives

In order to meet the school's energy and learning environment needs, Performance Services installed a variety of measures to improve performance and lower costs. Efforts included a high efficiency boiler and hot water pump equipped with a web-based control system that helps maintain room temperatures within two degrees of the desired level. Humidity levels were also controlled using in-room sensors. In order to further improve indoor air quality, the ventilation systems were programmed to ensure that a minimum of 15 CFM of fresh air is added to match each additional room occupant. Other changes to the air system included vertical units that lowered classroom noise levels while still providing increased air distribution.

## Partnership

The improved learning environment was made possible by Performance Services, a leading design-build engineering and construction company. Performance Services guaranteed Central Elementary a minimum of 15,345 kWh and 13,314 Therms in energy savings.

## Implementation

The recommended solutions created a quiet and comfortable learning environment while simultaneously achieving significant cost and energy savings. Utility bill savings topped \$24,000 a year along with an additional operation savings of \$140,429 annually. The 2011 ENERGY STAR certification also achieved 45,920 kWh savings, triple the Performance Service guaranteed minimum.

Operation & Utility Bill Savings  
**\$164,505 Annually**

Energy Savings  
**Year 1: 45,920 kWh & 14,898 Therms**

**“Earning ENERGY STAR [certification] is very exciting and demonstrates our commitment to savings and reducing cost. Every dollar we save is critically important... The ENERGY STAR® recognition is a tangible symbol of our commitment to our fiduciary duty that does not come at the expense of a quality learning environment for our students and staff.**

*-Dr. Paul Kaiser,  
Beech Grove Superintendent*

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