

## NOBLESVILLE HIGH SCHOOL

# \$2,013,624 Actual Energy Savings to Date

Just a few years after construction of the new high school was completed, musical instruments in the band room could not be kept in tune and foreign language classes located near the mechanical room had to move when the noise level made it difficult to hear instruction. Temperature, humidity and noise were frequent complaints.

Performance Services investigated the trouble and soon discovered multiple issues with energy and equipment design. Solutions implemented have resulted in dramatic improvement for both the learning environment and a significant reduction in energy operating costs. Utility bills over a four-year period reduced by \$1.5 million dollars as compared to utility costs before the renovation project. Music to the ears of both students and taxpayers. The changes are better for the environment too. The greenhouse gas eliminated to date is equivalent to 20,857 metric tons.

### ENERGY AND LEARNING ENVIRONMENT NEEDS

### INTEGRATED SOLUTIONS

#### TEMPERATURE

Comfort: every room is within 1 degree F of set point during the day throughout the year

Design: redesigned HVAC system to maximize energy savings and improve temperature and humidity control and noise issues.

Heating: installed high efficiency gas fired boiler to existing boiler plant.

Controls: installed digital controls on HVAC system

#### HUMIDITY

Levels in Music area are now between 50% and 60%

#### FRESH AIR VENTILATION

CO2 levels in every room measured below 1000 PPM with outside air dampers at minimum position

#### AIR DISTRIBUTION

Return air path: provided new return air path to improve control and comfort and reduce noise

Fans: Change air handling units to VAV from constant volume

#### NOISE

Reduced classroom noise levels in areas below 50 dB

#### OPERATIONAL SAVINGS PROJECTED

\$106,794 per year

|        | PROJECTED | GUARANTEED | ACHIEVED  |           |           |           |           |
|--------|-----------|------------|-----------|-----------|-----------|-----------|-----------|
|        |           |            | YEAR 1    | YEAR 2    | YEAR 3    | YEAR 4    | YEAR 5    |
| KWh    | 2,669,811 | 2,402,830  | 2,703,423 | 2,722,563 | 2,680,735 | 2,637,661 | 2,754,476 |
| Therms | 150,704   | 135,635    | 220,439   | 189,716   | 216,941   | 293,059   | 297,459   |
| KW     |           |            |           |           |           |           |           |



## NOBLESVILLE HIGH SCHOOL

SQUARE FT: 470,000

GESC CONTRACT - MEASURED & VERIFIED  
**\$1,800,000** (10 YR CPF)

MECHANICAL CONTRACTOR:  
Liberty Mechanical

COMPLETION YEAR  
**2005**

SAVINGS TO DATE:  
**THRU APRIL 2010**

GUARANTEED ENERGY SAVINGS:  
**EXCEEDED BY 73%**

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#### ABOUT PERFORMANCE SERVICES

We are a Design Build engineering and construction company specializing in creating optimal learning and working environments. By valuing relationships and workmanship over change orders and shortcuts, Performance Services strives to earn a 100% Customer Satisfaction rating.

