

MSD OF SOUTHWEST ALLEN COUNTY

40% More Energy Efficient

CHALLENGE

In 2005, Haverhill Elementary was the least energy efficient out of 10 buildings at Southwest Allen County Schools based on a cost of \$1.26 per square foot. Originally built in 1981 with a traditional central plant, it had a water cooled chiller and inefficient and oversized boilers. The chiller/cooling tower combination was expensive to operate, had outlived its usefulness, and was in dire need of replacement.

SUSTAINABLE SOLUTION

After reviewing multiple options from different providers, a unique and innovative geothermal system proposed by Performance Services was clearly the best overall solution. The hybrid design utilizes much of the existing air and water distribution-saving significant dollars. The geothermal system relies on a heat recovery chiller (rather than heat pumps) and a vertical well field for central plant heating and cooling needs.

RESULTS

Haverhill Elementary is now the most energy efficient school in the district and has achieved a 40% reduction in energy usage. The school was awarded the ENERGY STAR in 2009.

ENERGY AND LEARNING ENVIRONMENT NEEDS

INTEGRATED SOLUTIONS

ENERGY EFFICIENCY

Installed heat recovery chiller and geothermal well field that utilizes the earth to naturally heat and cool the building. Installed high efficiency auxiliary boiler, supplemental chiller and 6 variable speed hydronic pumps. Replaced high temp terminal heating units with new low-temp terminal heating units. A web-based digital controls system maintains temperature within one degree of set point.

TEMPERATURE

Replaced 4 original multi-zone air handling units with 3 new variable air volume units. Converted constant speed to variable speed air handling units.

AIR DISTRIBUTION

Modified supply air ductwork and installed 46 VAV reheat boxes.



HAVERHILL ELEMENTARY - MSD SOUTHWEST ALLEN COUNTY

GEOHERMAL SYSTEM

CONTRACT TOTAL:
\$2,398,000

COMPLETION YEAR:
2007

SAVINGS TO DATE:
THRU JAN 2011

ENERGY SAVINGS:
\$57,745 FOR A TWO-YEAR PERIOD

AWARDED
ENERGY STAR 2009

- GREENHOUSE GAS ELIMINATED
195 METRIC TONS

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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.

