PROJECT DESCRIPTION

**Energy Savings Performance Contract**

**Challenge:** Several unique obstacles arose during the course of the project with Bluestem Unified School District 205. One of the elementary schools evaluated, though only eight years old, had never had a properly functioning mechanical and controls system. This particular school was costing the district nearly 30% more annually than the other schools. Another issue at Bluestem was the difficulty operating a new control system. Finally, the high school had a failing roof and old inefficient heating and cooling systems that needed to be replaced in the near future.

**PROJECT SCOPE**

**Solution:** Retrocommissioning the new elementary school was the biggest saver for the district. It saved nearly 30% on utilities. The retrocommission also lead to the discovery of six dirty coils with decreased air flow, two air handling units with the wrong motor/fan speed, missing or slipping belts on air handling units, approximately 30 plugged filters on fan power boxes, closed fire dampers, and more. All were repaired during the project.

A second phase was implemented at the high school in 2009. These improvements included the much needed HVAC upgrades, roof replacement and a new energy management system.

**Contact:**
Randy Rivers
Superintendent
711 N West St.
Leon, Kansas 67074
316-742-3261

**Construction Start Date:**
June 2007 (Phase 1)

**Construction End Date:**
December 2009 (Phase 2)

**ENERGY CONSERVATION MEASURES**

**Lighting**
High efficiency lighting

**Controls**
• Energy management system
• Kitchen exhaust hood
• Domestic hot water feed pump
• Chilled water pump

**Heating and Cooling**
HVAC Systems

**Water**
Low-flow water fixtures

**Building Envelope**
Roof replacement

**Other**
• Building retro-commissioning
• Replace power transformer

**PROJECT HIGHLIGHTS**

**Environmental Benefits**
979 tons of harmful greenhouse gas emissions reduced annually

Equivalent to:
• Preserving 6.2 acres of forest from deforestation or
• Conserving 2,065 barrels of oil*

**Capital Costs**
$2,461,563

**Annual Savings**

<table>
<thead>
<tr>
<th>Category</th>
<th>Savings</th>
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<tbody>
<tr>
<td>Energy</td>
<td>$65,801</td>
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<tr>
<td>Non-Energy</td>
<td>$14,914</td>
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<tr>
<td>Utility Cost Reduction</td>
<td>21%</td>
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</tbody>
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* Sources:
  • Leonardo Academy’s Cleaner & Greener® Emissions Reduction Calculator
    http://www.cleanerandgreener.org/resources/emission_reductions.htm
  • U.S. Environmental Protection Agency, Greenhouse Gas Equivalencies Calculator
    http://www.epa.gov/cleanenergy/energy-resources/calculator.html

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Baker County Schools, Macclesfield, FL
Bay County Schools, Panama City, FL
Bradford County Schools, Starke, FL
Bluestem Unified School District #205, Leon, KS
Buhler Unified School District #313, Buhler, KS
Calhoun County Schools, Blountstown, FL
Charlotte County Public Schools, Port Charlotte, FL
Charlottesville City Schools, Charlottesville, VA
Clay County Schools, Keystone Heights, FL
Collier County Schools, Naples, FL
Columbia County Schools, Lake City, FL
Columbia Public Schools, Columbia, MO
Dade County Schools, Miami, FL
Desoto County Schools, Arcadia, FL
Emporia Unified School District 253, Emporia, KS
Escambia County School District (65 schools), Pensacola, FL
Foster-Glocester Regional School District and Ponaganset Middle & High School (2 schools), Foster, RI
Franklin County School Board, Apalachicola, FL
Garden City School District, Garden City, NY
Hardee County Schools, Wauchula, FL
Harrisonville Cass R-IX School District, Harrisonville, MO
Haven Unified School District #312, Haven, KS
Hendry County Schools, Labelle, FL
Highland County Schools, Sebring, FL
Hillsborough County Public Schools (10 schools), Tampa, FL
Humboldt Unified School District #258, Humboldt, KS
Indian River Schools, Vero Beach, FL
Jackson County Schools, Marianna, FL
Lake County Schools, Tavares, FL
Lee County School District, Fr. Myers, FL
Leon County Schools, Tallahassee, FL
Mahopac Central School District, Mahopac, NY
Manatee County Schools, Bradenton, FL
Maries County School District, Bismarck, MO
Martin County Schools, Stuart, FL
Monroe County Schools, Key West, FL
Nassau County Schools, Fernandina, FL
Newport Public Schools, Newport, RI
Northampton Public Schools, Northampton, MA
North Jackson Unified School District #335, Holton, KS
Okaloosa County Schools, Fort Walton Beach, FL
Okeechobee County Schools, Okeechobee, FL
Osceola School District, Kissimmee, FL
Palm Beach County Schools, West Palm Beach
Park Hill School District, Kansas City, MO
Piper Unified School District #203, Kansas City, KS
Polk County Schools, Bartow, FL
Port Charlotte County, Port Charlotte, FL
Putnam County Schools, Palatka, FL
Queen Creek School District, Queen Creek, AZ
Raymore-Peculiar School District, Peculiar, MO
Santa Rosa County Schools, Milton, FL
Sarasota County Schools, Sarasota, FL
School Board of Pinellas County, Largo, FL
Scott County Unified School District #466, Scott City, KS
Smithville R-11 School District, Smithville, MO
Springfield Public Schools, Springfield, MO
St. John's County Schools, St. Augustine, FL
Suffnance County Schools, Live Oak, FL
Walton County Schools, DeFuniak Springs, FL
Washington County Schools, Chipley, FL
Windham Public Schools (6 schools), Windham, CT