

An Energy Performance Contracting Success Story

Cañon City Re-1 School District (CCSD) has realized savings through building efficiency for over 30 years now with multiple phases of energy performance contracting culminating in four of their facilities receiving ENERGY STAR plaques. The district's students and teachers reap the benefits of increased comfort in their learning space while administrators enjoy increased budgetary flexibility. This win-win impact drives the district to continually improve their energy management through cost effective solutions. Having established baseline energy data for their buildings, the team now has their sights set on load shedding controls and solar energy to address their energy demand and usage. Such resounding accomplishments are the result of energy conscious staff, students, and community, who all pull together for a better educational environment in Cañon City.

Decades of Excellence in School Building Efficiency

Decades of Energy Management

In the late 70's and early 80's CCSD began incorporating efficient products in its facilities. The first steps were additional insulation and high quality windows, but it didn't end there. CCSD began using computerized maintenance management systems in the early 90's that helped with work orders and preventative maintenance. Shortly after this installation, CCSD underwent their first energy performance contract to install efficient lighting fixtures throughout the district. The fixtures performed beyond expectations and motivated the district to install an energy management system to monitor the buildings more effectively. Throughout the decades CCSD has continued to use the energy performance contracting model to increase efficiency in their buildings.

“The district now has the ability to control the climate in the classrooms in a manner that better promotes the learning environment.”

*Bob Heacock, Manager of Energy and Facilities,
Cañon City Re-1*



Presentation of ENERGY STAR Plaques to the Cañon City School Board in October of 2009.

From left to right: Robin Gooldy Superintendent, Charlene Seaney School Board President, Patty Crow of ENERGY STAR, School Board Members Mike Near, Ken Kline and John Evans

Innovative Approaches to Energy Use

The promise of energy savings through energy performance contracting also enticed CCSD to pilot a ground source heat pump in a section of its high school in 2000. With generous rebates from Black Hills Energy the project costs were cut down drastically. “The rebate allowed us to install an HVAC system that uses 41% less energy at the same cost as a conventional system,” said Bob Heacock, CCSD's Manager of Energy and Facilities. These savings supported the installation of an, “Ice Storage” air conditioning system in 2004 and full scale ground source heat pump system at the middle school in 2008. In the near future this school district plans to take full advantage of all solar photovoltaic and efficiency opportunities available to them.

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Where it all Began

Bob Heacock first learned about energy performance contracting in 1996 at a CASDEM (Colorado Association of School District Energy Managers) meeting that the Governor's Energy Office (GEO), then the Governor's Office of Energy Management and Conservation, informed him of. Because of CASDEM and the GEO, Bob was able to integrate his energy management practices with the energy performance contracting model to push the district's goals for energy savings from moderate to exceptional. The GEO has continued to bolster CCSD's programs with technical support and advice, explaining topics like measurement and verification and the value of energy tracking software to the facility staff.

Savings Above and Beyond

Ever since the first energy performance contract resulted in approximately \$5,186 in annual savings, CCSD has continued to search for increasingly creative ways to generate savings. As they approach their third decade of leading the way in energy management, CCSD, with help from the GEO, is working to establish an energy tracking website, create district energy management teams, establish new maintenance and operational guidelines and distribute educational materials to engage students in their energy saving programs. Through this work, CCSD hopes to achieve another 20% of behavioral savings district wide.

Team Recognition

Recognition of CCSD's work hasn't just come in the form of energy savings. In October of 2009, CCSD's efforts were recognized with the award of several ENERGY STAR plaques. The awards represent not only the buildings' performance but the culmination of efforts on the part of many past and present school board members, superintendents, and district staff, teachers and students. Obviously this kind of team effort is the main reason that CCSD has come so far in building efficiency and increasing student comfort.

How Can You Take Advantage of Performance Contracting?

The GEO is currently working with schools, cities, municipalities, and state agencies throughout Colorado to execute energy performance contracts. More information can be found on GEO's website at www.colorado.gov/energy or by calling 303.866.2401.

CCSD's History of Energy Saving Practices

- *1980's* – Building insulation and window replacement
- *1998* – First energy performance contract for a lighting retrofit
- *2000* – Ground source heat pump pilot program
- *2004* – Second energy performance contract for boiler replacements, domestic hot water system replacements, air conditioning installation, water conservation measures and building automation
- *2005* – Third energy performance contract to complete district-wide retrofits
- *2006* – Installation of an "Ice Energy Storage" system to cool high school addition
- *2008* – Ground source heat pump installation at middle school
- *Planned Projects* – Ten separate 100kW solar photovoltaic systems, load shedding energy management software

Key Staff Support

- Turning off lights and equipment
- Notifying maintenance of equipment failure
- Changing teacher and student behavior

CCSD's ENERGY STAR Facts

- 9 buildings qualify for a plaque
- 4 buildings awarded
- Buildings perform in the top 25% of similar buildings across the country
- Recognizes the district's commitment to reduced energy usage, utility costs, and environmental impact

Annual Energy Savings

Facility Name	Electricity (kWh)	Natural Gas (ccf)
Cañon City High School	24,336	7,675
Garden Park High School	27,061	1,696
Harrison School K-8	95,125	3,362
Lincoln Elementary	58,757	4,108
Madison Elementary	7,228	2,236
McKinley Elementary	13,747	4,651
Skyline Elementary	20,373	1,523
Washington Elementary	66,042	4,319