



A Study in Energy Efficiency: Armstrong County Government, Kittanning, PA

Civic Pride in Energy Efficiencies, Conservation and Savings.

Customer Profile

First and foremost, Armstrong County, northeast of Pittsburgh, aims to be a role model to its citizens. It is dedicated to providing innovative technological solutions to essential public services and enhancing the quality of life for its 70,000 residents in a fiscally responsible way.

The Challenge

Constellation performed an extensive investment grade audit at county properties throughout Kittanning, revealing many gaps and opportunities for energy efficiency improvements. For starters, existing systems for managing energy expenses were not doing the job, steam production facilities and inefficient cooling systems were outdated and needed to be replaced. Also, there were lighting, water and infrastructure issues at five primary county sites. The question became, "How can we address these serious issues in an energy-efficient, cost effective way?" They looked to Constellation for answers.



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The Solution

Constellation's experts developed a two-phase improvement project, putting in place energy conservation measures in 12 properties covering more than 100,000 square feet.

Phase 1 addressed lighting, water, and infrastructure improvements at five county sites. Light fixtures were retrofitted or replaced with new energy-efficient electronic ballast systems and new high-efficiency luminaires. LED signs replaced incandescent and fluorescent signage; compact fluorescent bulbs and fixtures replaced incandescent lamps. The installation occupancy sensors increased savings even more.

Water was a big part of the plan. Several conservation strategies were applied to improve operating performance and efficiency at the County Health Center and the County Courthouse Complex. Cost-cutting measures included replacing or rebuilding water and sewer fixtures and installing conservation devices such as aerators and restrictors.

Significant infrastructure improvements made a big difference, too. New Direct Digital Control (DDC) systems were installed and older systems upgraded to allow designated County personnel access to automated temperature controls directly from their laptops or desktops to manage energy expenses. Modular, high-efficiency, non-condensing hot water boilers eliminated steam production equipment. Constellation also installed a new 100-ton chiller using existing air cooled condensers at the Health Center and a replacement water-cooled chiller at the Courthouse.

Phase 2 included lighting system upgrades, building automation, and water conservation measures at seven additional sites. Constellation also retrofitted the Courthouse's steam plant to a hot water plant to reduce energy use, and save natural gas.

The Results

Working with Constellation's team, Armstrong County took advantage of the Pennsylvania Guaranteed Savings Act which made a **15-year cost recovery/payback period** for capital improvements possible. Consequently, the County was able to tap into cost savings resulting from the energy savings to pay for the construction and installation of the initiatives.

In fact, a total of \$2.7 million in upgrades and improvements were financed. The first year savings alone were \$193,800. And annual savings over the course of the 15-year guaranteed savings project are expected to average \$191,000 per year.

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Highlights

- \$2.7 million in capital improvements
- 15-year guaranteed savings project
- **Expected annual savings: \$191,000**
- **First year savings: \$193,800**

Technical Benefits

- Energy conservation measures covering 12 sites and more than 100,000 square feet
- Lighting retrofits, upgrades, and new fixture installations throughout to increase quality of light while achieving maximum savings
- Replaced aging steam boiler with four modular high-efficiency, non-condensing hot water boilers
- Installed new 100-ton chiller utilizing existing air-cooled condensers
- Installed and programmed new DDC systems with expanded capabilities



Call Us

To discover how we can put our expertise to work for you, call us today at **1.866.237.7693**.



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