

Sumter County Government

CASE STUDY



Challenge

An economic downturn that resulted in business closings and diminished tax revenues caused Sumter County to defer maintenance on its government buildings. Upgrades of antiquated building systems were needed to reduce operational costs, lower energy consumption and improve comfort. Of particular concern was the County's historical courthouse that had to be vacated due to its inefficient, costly -to-maintain equipment.

Solution

When South Carolina legislation passed to provide a funding mechanism that allowed public and private entities to make self-funded capital improvements from utility and operational savings, Sumter County took action, issuing an RFP (request for proposal) for infrastructure upgrades. After completing a preliminary assessment to evaluate the County's existing energy spend, Trane worked with the facility managers to outline project parameters and potential solutions to replace aging equipment and high-maintenance-cost items.

Providing a unique financing option

To help fund needed improvements, Trane presented the concept of Guaranteed Energy Performance Contracting, which would enable the County to replace its old, obsolete equipment with more efficient technologies, funding the upgrades through guaranteed energy savings and avoided costs. Trane also arranged a unique Qualified Energy Conservation Bond (QECB) designed to support energy saving initiatives with low-cost financing.

Based on the company's proposal and favorable reputation, the county selected Trane as their Energy Services Company (ESCO) to serve as program manager to handle retrofit construction, equipment supply, financing costs, debt service and commissioning with guaranteed results. "The Trane energy audits showed that we had fifteen buildings with suspect equipment and high energy costs," said Galloway. "Using the data from the audits, we prioritized our needs and moved forward with improvements in ten buildings."

Reducing energy use, improving working environment

To reduce energy use and improve lighting levels, more than 5,700 T8 lighting fixtures were retrofit with LED lamps, flood lights, strip fixtures and architectural kits. Aging rooftop units, variable volume boxes, and packaged terminal air conditioning units were also replaced with updated equipment.

"The chiller serving our courthouse was 40 years old, and we needed to replace air handlers and other equipment. We also wanted to drive energy savings by replacing our lighting with LED fixtures."

- Bobby Galloway, Procurement Director,
Sumter County Government

Sumter County Government Sumter, South Carolina

PROJECT HIGHLIGHTS

Guaranteed Performance Contract upgrades improve comfort, lighting and water conservation; reduce energy and operational costs by approximately 38 percent annually; awarded utility rebates of \$88,703; result in avoided capital budget costs of more than \$2.8 million.

Famous of its iris gardens, mild winters and outdoor activities, Sumter County boasts a population of more than 108,000. The County is home of the Shaw Air Force Base, one of the largest bases in the Air Combat Command and a mainstay of the area's economy.

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Implementing conservation, restoring use of courthouse

In the historic courthouse, high efficiency air handlers and fan coil units were installed to improve energy savings and comfort, and more than 670 flush valves and china were replaced with water conservation fixtures to reduce water usage. The 20,000 sq ft roof of the historic courthouse was upgraded with a white reflective single-ply membrane roof and curb materials. The white “cool” roof reflects the sun’s rays, absorbing less heat and requiring less energy to cool, resulting in reduced energy bills.

Centralizing controls, integrating systems

A Tracer® SC building automation system (BAS) was installed in buildings throughout the County, and a retro commissioning of building systems and point verification on all devices was completed. Facility managers use the BAS to coordinate control, adjust temperature and humidity, develop scheduling, initiate unoccupied settings, manage alarms and respond quickly to trouble calls.

Using wireless interface, the Tracer SC and legacy control systems were seamlessly integrated into a single Trane Tracer® Ensemble™ building management system. Eliminating time and labor costs previously incurred to drive sixty miles a day to diagnose equipment and make service calls, the Tracer Ensemble provides facilities managers with an enterprise view and control of all building systems, including chillers, air handlers, VAV terminals and lighting, all from their computer or mobile device.

Managing energy use

Trane® Intelligent Services allows Sumter County to utilize system performance information to increase energy efficiency and improve operations. Using Energy Performance, a cloud-based building energy management system (BEMS) service, Trane building professionals analyze building data to uncover energy waste and savings opportunities, and use real-time monitoring to discern where and when energy is being used, spot anomalies, and drive down energy costs. The verified real-time energy savings is visible to the community through the Trane Energy Performance reports displayed on a dashboard monitor in the County Administration Building.

Results

Using an Energy Savings Performance Contract with Trane, Sumter County funded infrastructure upgrades through guaranteed energy savings and avoided costs. Unique Qualified Energy Conservation Bond (QECCB) financing, designed to promote efficiency, saved the County over \$1 million in interest over the term of the contract. Project benefits include:

- Reduced energy and operational costs by approximately 38 percent or \$298,639 annually.
- Avoided capital budget costs of more than \$2.8 million. • A utility rebate of \$88,703 by Duke Energy.
- \$44,308 from Trane due to 179D Federal tax benefit the company received for the energy efficient project design.
- Reduced water usage. • Improved comfort and lighting.
- BAS integrated into single platform controlled via Internet.
- No change orders to Trane contract.

The upgrades have also enabled the County to re-open its historical courthouse. “Our courthouse was sitting empty,” said Galloway. “Now we can provide stable comfort and better lighting for County residents, and the attorney offices that will be housed there.”



About Sumter County Government

Brad Van Meter, Comprehensive Solutions Account Manager, Trane, presents Trane Energy Savings partnership award to Sumter County Government, County Council Chairman, James T. McCain.



Trane – by Trane Technologies (NYSE: TT), a global climate innovator – creates comfortable, energy efficient indoor environments through a broad portfolio of heating, ventilating and air conditioning systems and controls, services, parts and supply. For more information, please visit trane.com or tranetechnologies.com.

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CASE-SLX492-EN
04/21/2020