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GSA Region 7 Energy Savings Performance Contract

Siemens Helps 39 Federal Government Buildings Reduce Energy Usage and Costs

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Fort Worth, Texas – The U.S. General Services Administration (GSA) oversees the business of the U.S. government, providing workplaces for federal employees and overseeing the preservation of historic federal properties. With a dedication to delivering the best value in real estate, acquisition, and technology services to the government and the American people, GSA policies seek best practices for efficient management and operations.

The GSA's Greater Southwest Region 7 supports customers in Texas, Louisiana, Arkansas, Oklahoma, and New Mexico. As part of its commitment to improving its buildings' energy efficiency and carbon footprint, GSA Region 7 partnered with Siemens Government Technologies, Inc., and the Building Technologies division of Siemens Industry, Inc., for a four-year Department of Energy (DOE) Energy Savings Performance Contract (ESPC).

Objectives

Through the Energy Independence and Security Act of 2007, the U.S. Government has mandated that, by 2015, federal facilities must reduce their energy and fossil fuel consumption by 30% from a 2005 baseline. This requirement will not only help reduce federal facilities' utility costs, but will also contribute to reducing the government's carbon footprint and greenhouse gas (GHG) emissions. Federal buildings are required to be carbon-neutral by 2030.

GSA Region 7 selected Siemens in 2010 to provide Energy Conservation Measures (ECMs) for 39 buildings, as well as several more historic courthouses where work was required to improve building performance without harming or altering the historic structures. Because the GSA wanted to use American Recovery and Reinvestment Act of 2009 (ARRA) funds to help pay for the ECMs, the agency needed Siemens to comply with timing and deadline requirements.

Siemens Solutions
Over the 26-month implementation period, Siemens delivered a variety of renewable energy and building automation systems for the 39 buildings and 7.1 million square feet involved in the GSA Region 7 ESPC. These improvements included:

- Building automation – Siemens recommissioned the building automation systems in all 39 buildings to upgrade and improve operations. Recommissioning also allowed the systems to integrate with the Fort Worth, Texas-based data center and reporting system. In several buildings, Siemens upgraded the building automation system to Apogee.®
- HVAC improvements – Siemens improved HVAC operations in all 39 buildings. As part of those improvements, GSA Region 7 received one SMARDT magnetic levitation bearing 700-ton chiller, two 800-MBH gas-fired condensing hot water boilers, 14 new air handling units, two energy wheels, 14 air purification systems, and several Variable Frequency Drives (VFDs).
- Demand Flow® – Siemens implemented Demand Flow, a unique energy optimization application for water-cooled centralized chiller plants. The solution automatically controls and sequences operations throughout the chilled water plant, from optimizing temperature set points to maintaining proper pump and fan speeds, all based on energy demand. The result is dramatically reduced electricity use in the central plant—an area that typically uses the most energy in a facility.
- Lighting retrofits – In 30 of the 39 buildings, Siemens retrofitted existing light fixtures with energy-efficient and compact fluorescent (CFL) lamps. Additionally, motion detectors were added in appropriate offices, storage rooms, electrical rooms, mechanical rooms, and stairwells to reduce electricity use.
- Thermal storage – At the Texas data center, Siemens implemented a thermal storage system, which allows the GSA to take advantage of load shifting and offset electric demand charges.
- Water conservation – An advanced, demand-based irrigation system and the implementation of water-conserving plumbing fixtures will contribute to the GSA's commitment to reducing the use of natural resources.

In addition to these facility improvement measures, Siemens helped GSA Region 7 achieve its renewable energy objectives. The GSA received multiple solar panel implementations, including a 26.5kW system at the MLK Federal Building in Victoria, Texas; a 200kW system at the Veterans Affairs Data Center in Austin, Texas; an 80kW system at the Ellender Federal Building in Houma, Louisiana; and a 55kW system at the Gallup Federal Building in Gallup, New Mexico. The Batesville Federal Building in Batesville, Arkansas also received a solar thermal energy system, which is saving 131Mbtu annually. These solar implementations meet the government's renewable energy mandates and generate useable energy for the facilities. Facilities also receive renewable energy credits for these implementations.

Customer Results
The facility improvement measures combine with the renewable energy projects to save GSA Region 7 an estimated $2.59 million annually, of which $2.35 million are guaranteed through the ESPC with Siemens.

Thirty-nine buildings across five states comprised the GSA Region 7 ESPC, and Siemens accommodated this wide footprint with support from its more than 100 local branches across the U.S. A lead project manager served at the GSA's single point of contact and engaged additional, locally-based project managers. That local knowledge meant GSA Region 7 and Siemens could capitalize on in-depth understanding of local requirements, subcontractors, face-to-face interaction, and onsite quality control. Over the course of the project, Siemens maximized its small business subcontracting strategy, involving more than 30 subcontractors to provide the solutions; the majority of these subcontractors were small businesses who helped create jobs for the local economies.

During the course of construction, all 39 buildings, which included post offices, courthouses, and office buildings, remained open and occupied. Siemens worked with each building's management to determine normal operating hours and then developed a work schedule that would allow the project to be completed on time and without disrupting normal business. Additionally, Siemens replaced chillers during the off-season to avoid taking HVAC units offline when they would be needed most.

All Siemens employees and subcontractors who worked in GSA Region 7 facilities or their IT network infrastructure had to complete comprehensive National Agency Check with Inquiries (NACI) security background checks. Several of the facilities, including data centers, required more extensive security checks. Siemens project managers coordinated this significant effort to ensure that several hundred people had the right clearances to complete their work. In addition, careful scheduling and notifications for work in areas like Judges Chambers, court rooms, and data centers were important project management factors for Siemens.

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