

Efficiency Upgrades for U.S. Department of State

Significant savings expected from steam-to-hot water conversion project for Harry S Truman Headquarters Building



DistributedEnergy



Challenge

Constructed in 1941, the United States Department of State's (State Department's) Harry S Truman Headquarters Building (known as the "Old War" Building) in downtown Washington, D.C., is home to approximately 8,000 State Department employees who provide mission-critical government services. The majority of heating for the Harry S Truman Building depended on district steam supplied by the US General Services Administration (GSA). The challenge for the State Department was the cost of the GSA supplied steam that was significantly above the cost of heating that could be supplied by on-site distributed natural gas boilers.

Solution

An ongoing phased, facility-wide renovation was taking place throughout the Harry S Truman Building. During the renovation, the State Department sought the conversion of the majority of the heating load from steam to distributed natural gas. At that time, Pepco Energy Services (recently acquired by Exelon, Constellation's parent company, and now organized under Constellation) met State Department stakeholders and explained the benefits of the Utility Energy Service Contract (UESC) vehicle as well as Constellation's unparalleled engineering and construction capabilities. It then became clear to State Department leadership that a UESC project spearheaded by Constellation would provide a fast, efficient, and highly effective means to obtain a distributed natural gas solution. Ultimately, Constellation was awarded a \$12.1

million UESC project through a competitive selection process.

One of the State Department's key concerns was to obtain a natural gas boiler system prior to the start of the next heating season. To this end and within a six month time period, Constellation managed initial contact with the State Department, submitted an RFP response, performed a Detailed Feasibility Study (DFS), and initiated construction.

The design-build project included nine Fulton Vantage 6 MMBtu dual fuel condensing boilers, new domestic hot water heaters, variable primary pumping, steam-to-hot water coil conversions of 23 high pressure air conditioning (HPAC) units, new ModSync controls, and system commissioning. Constellation has estimated cost savings of over \$1.4 million annually during the 9-year contract.

As the project involved installation of piping on the roof of the Harry S Truman Building, Constellation applied for and received approval for its aesthetic and architectural aspects from the District of Columbia State Historic Preservation Office (DC SHPO), National Capital Planning Commission (NCPC), and the Commission of Fine Arts (CFA). Constellation was able to navigate these regulatory requirements as well as air permitting regulations to deliver the project on schedule. In addition, Constellation adhered to the requisite timeline despite schedule delays due to



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Highlights

Project

- \$12.1 million UESC
- \$1.4 million in annual energy cost savings over 9-year contract term
- Received the 2015 Washington Building Congress Craftsmanship Award for Mechanical-HVAC Piping

Technical

- Steam-to-hot-water coil conversions of 23 HPAC units
- Fulton Vantage 6 MMBtu dual fuel condensing boilers
- Condensing hot water heater installation
- Variable primary pumping
- Hot water piping throughout
- New Fulton ModSync controls installed
- System commissioning

visits from high-level political leaders, and conferences with foreign dignitaries.

As a result of this exceptional performance, the State Department additionally awarded important energy management projects to Constellation, including the SA-1 Annex project (LED conversion, controls, and water conservation) and Harry S Truman Phase II project (central plant optimization, digital data controls updates, LED lighting conversion, and mechanical improvements).

From the Customer

“Our project with Constellation was an excellent opportunity for the Department of State to utilize a performance contract to improve our operating energy efficiencies as well as upgrade our building systems and lower our maintenance requirements. Constellation provided outstanding project management and professional support throughout the project in support of our O&M contractor and government staff to identify greater opportunities to improve the comfort and operation of our facility.”

—Mark Baker, A/OPR/FMS/CRD Division Chief, U.S. State Dept.

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Constellation tailors its integrated energy solutions to its customers' unique needs, providing them with the flexibility to choose how to cost-effectively buy, manage and use energy to meet their business goals. Along with expertise, Constellation offers a wide range of innovative and integrated distributed energy products—including solar, energy efficiency, cogeneration, backup generation, fuel cells, and battery storage—as well as the reach of one of the nation's leading competitive suppliers of power, natural gas, renewable energy and energy management products. With more than 30 years of experience and over \$2 billion in energy-related projects financed and built, Constellation helps business, nonprofit and public sector customers achieve sustainability goals, develop energy resiliency, manage costs and capital needs, and mitigate risk.

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