



Fort Sam Houston, Texas

Investment Grade Audit and Retro-Commissioning Services

About the Facility:

Fort Sam Houston is a U.S. Army post in San Antonio, Texas. Known as "Fort Sam," it is named for a U.S. Senator from Texas. The installation's missions include serving as the command headquarters for the United States Army North, South and Medical Command. The installation includes a medical department, school, recruiting and processing station. Fort Sam was in need of implementing an Energy Engineering Analysis Program (EEAP) initiative to identify energy savings across 20 buildings, including an analysis of building envelopes, ventilation air systems, controls, interior and exterior lighting, water use systems and appliances, as well as renewable energy opportunities.

Scope of Work

Sain Engineering Associates, Inc. (SEA) was contracted to provide an Investment Grade Audit (IGA) to investigate central energy plants for potential savings. Two Central Energy Plants at Fort Sam were serving outlying barracks, a galley and office buildings. Previous to the audit, the two plants were not connected for everyday operation. Fort Sam had a desire for this connectivity and even attempted to connect the chillers two years previous to the SEA IGA, but the project failed.

As part of the audit, SEA identified an opportunity to combine the East/West CEPs into one system. SEA recommended creating a single primary/secondary system at the East CEP that would enable all buildings to be serviced by new VFD chillers installed in the West Plant. This satisfied Fort Sam's desire with a cross connection between the two plants by converting the distribution pumping to an efficient variable volume design. As a result of this connection alone, SEA provided an estimated 2.6 million kWh and \$200 thousand in annual savings. Other projects identified during the IGA, included:

- 169 Energy Conservation Measures (ECMs)
- Prioritized tiers of low/no cost, moderate and significant investment projects
- Renewable energy technologies
- Summary of long payback of ECMs (with a savings to investment ratio of less than 1.0)

SEA identified 169 ECMs that will provide Fort Sam Houston with \$800k in annual savings.



Annual Estimated Cost Savings



Buildings Assessed



Annual Savings as a Result of Combining Energy Plants

