

EVOQUE MESA DATA CENTER
MESA, AZEnergy
Assessment

Goals & Challenges

Evoque's Mesa, Arizona data center facility is approximately 154,000 square feet with 73,500 square feet dedicated to critical rooms. An estimated 1 MW of critical load is used by critical equipment with an average site demand of 1.7 MW.

A preliminary assessment of the facility was conducted through the utility's Business Solutions Custom Program to identify measures that would reduce the facility's annual energy consumption, improve the site's power usage effectiveness (PUE), and increase critical infrastructure reliability. Evoque uses Vigilant®, an advanced control system that controls and monitors several aspects of the computer room air handler (CRAH) units including fan speed and valve position. This control system uses real time data and advanced HVAC control methodologies to optimize operation of the units. Although this control system is advanced, it was still operating in less-than-ideal conditions with high fan speeds and low chilled water temperatures.

Solutions & Outcomes

The preliminary assessment for Evoque evolved to include retro-commissioning with both an investigation phase and verification phase. Three weeks of trending data was provided for the CRAHs, water-cooled chillers (WCCs), supply fans, and cooling towers. An energy bin analysis was performed to create detailed total savings and return on investment (ROI). Our team provided a detailed energy assessment that identified solutions and ideal setpoints for the CRAHs and chiller plant. The analysis determined that most of the CRAH fan speeds can be reduced since they are all electronically communicated. The chiller plant was producing lower chilled water temperatures than expected for a critical environment, forcing the compressors to use more energy, and there was much more cooling capacity for the critical load than necessary. Additionally, there was much more cooling capacity for the critical load than necessary. Reducing fan speeds and increasing chilled water supply temperatures saved the facility 1.5 million kWh of annual energy consumption, and the critical rooms and the chiller plant are now operating more efficiently.



Peak Demand Savings

179 kW



Annual Energy Savings

1,583,469 kWh



Annual Cost Savings

\$ 136,653



About Evoque

Evoque is a data center solutions provider that specializes in colocation digital infrastructure and delivers mission-critical real estate, engineering, and technologies.