SHOWCASE PROJECT: SABEY DATA CENTERS: INTERGATE QUINCY, BUILDING C

SOLUTION OVERVIEW

Sabey's Intergate Quincy, Building C data center is a multi-tenant data center that can support approximately 7.2MW of IT equipment. It was constructed in four quadrants from 2011 to 2014. Intergate Quincy is located in central Washington State, an area attractive for its low-cost hydroelectric power (about $0.025/kWh). Despite low power costs, Sabey approached the project with the intent of providing its customers a highly energy-efficient facility. By requiring customers to utilize hot aisle containment and by installing variable and efficient infrastructure, Sabey was able to achieve Energy Star certification for the building in 2015, with a perfect score of 100.

SECTOR TYPE

Data Center

LOCATION

Quincy, Washington

PROJECT SIZE

140,000 Square Feet

FINANCIAL OVERVIEW

$6 million (project included utility incentives)

SOLUTIONS

To design this highly-efficient data center, Sabey incorporated several energy conservation measures (ECMs), including:

- Requiring customers to utilize hot aisle containment
- Implementing indirect evaporative cooling computer room air handlers (CRAHs)
- Segregating uninterruptible power supply (UPS) batteries to reduce electrical energy required to cool the data center
- Selecting a highly-efficient UPS system
- Utilizing variable speed drives (VSDs) on fans and controlling fan speed to match server load requirements

The total facility energy savings for this project was 57 percent. Sabey is committed to reducing their

facilities' energy consumption (in proportion to IT energy consumption), via percent usage effectiveness (PUE) - a metric of building infrastructure load not including IT equipment.

OTHER BENEFITS

In addition to the energy and cost savings passed on to customers, hot aisle containment has allowed for a high degree of flexibility in relation to the density of the server deployment. Implementation of hot aisle containment has also created a very uniform temperature environment in the air supply aisles. The integration of ECMs comprising the overall cooling system allows for a very simple data center environment control strategy, thereby increasing the overall reliability and customer satisfaction with the Intergate Quincy data center.

Annual Energy Use

Baseline(2012)

1.44 PUE

Actual(2016)

1.19 PUE

Energy Savings

57% Reduction in PUE-1

Annual Energy Cost

Baseline(2012)

$1,191,586

Actual(2016)

$985,456

Cost Savings

$206,130