A Children's Hospital saves $83,760 in annual energy costs while improving comfort, sustainability, and social responsibility in the community.

Overview

This Children's Hospital* located in the South Atlantic United States is one of the largest non-profit public systems in the United States. They specialize in pediatric medicine. The purpose of SAH is to provide top quality medical care to children without the need to travel far from home. SAH's goals are to reduce energy consumption and decrease emissions while continuing to deliver excellent medical care for its patients.

** Due to confidentiality agreements, we are not able to provide the client name. We will refer to the firm as SAH throughout this case study.*

The Challenge

SAH set a goal to reduce energy consumption and GHG emissions while maintaining a high level of air quality and patient comfort. To this end, SAH was interested in implementing energy conservation measures and technologies, which help achieve these goals while taking into account their specific needs as a healthcare facility.

As part of the Healthier Hospitals Initiative, SAH committed to the challenges of engaging leadership, leaner energy, and less waste. The Healthier Hospitals Initiative (HHI) is a national campaign to implement a completely new approach to improving environmental health and sustainability in the health care sector.

Cimetrics' Solution

Cimetrics was selected to provide its Analytika Pro solution for SAH. Within the 241,000 square feet of SAH there are primarily patient care rooms, an intensive care unit, offices, and play spaces. Cimetrics collaborated with the hospital and their building automation system provider to connect to and collect sensor and actuator data from over 4,000 physical points. Data was collected every 15 minutes, 24 hours a day, 365 days a year, for a total of approximately 400,000 data samples per day. The following systems were monitored: 6 Air Handling Units, 2 Hot Water Pumps, 2 Chilled Water Pumps, 19 Fan Coil Units, 24 Fume Hoods, 325 Terminal Units and other miscellaneous equipment.

Over 1,000 Analytika software algorithms then analyzed the data to identify opportunities to reduce energy, improve environmental conditions, maintenance, operations and reduce regulatory costs. Analytika also uncovered potential equipment problems, opportunities for profitable retrofit projects, occupant comfort improvement, and operational uptime improvements.

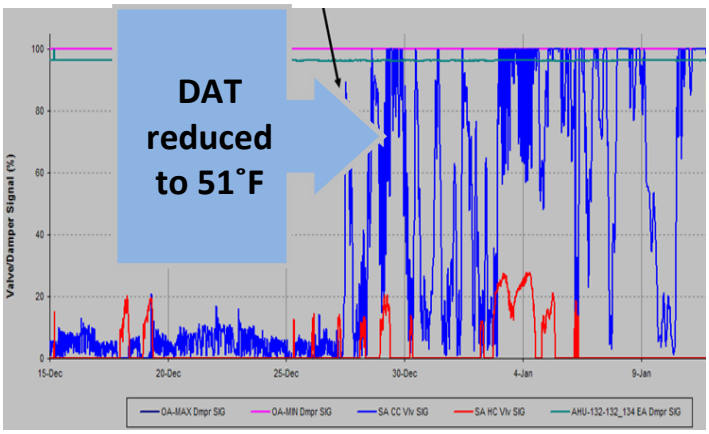
Experienced Cimetrics engineers leveraged Analytika software to identify opportunities, determine root cause, and calculate annual savings impact. Actionable recommendations were documented and provided to the client both through online and offline channels. Cimetrics' role didn't end at recommendations. Cimetrics engineers engaged with the client team on a regular basis to help answer questions, coordinate implementation, and provide regular feedback on progress.

Results achieved

- Energy savings financial summary
  - Energy savings: $83,759 (annual)
  - Simple payback: 0.23 years
  - Net present value: $51,343
  - Implementation rate of recommendations: 90%
- Other operational benefits
  - Joint Commission assistance. Tracked and maintained temperature and relative humidity control in critical care rooms.
  - Each closed fume hood saves 50,000 lbs of CO_2 in a year or 60% on energy.
  - Resource management. Utilized impact analysis to prioritize workload for internal maintenance staff and contracted controls personnel, and maximize progress towards corporate goals.
  - Environmental stewardship.
  - Social responsibility in the community.

Simultaneous heating and cooling issue

The Air handler (AHU) discharge air temperature (DAT) setpoint was overridden from the sequence of operation and reduced from 55˚F to 51˚F. As a result, the cooling coil valve was opening to maintain the lower DAT and consequently requiring additional heating downstream. This resulted in additional heating and cooling costs. This issue was not noticeable in the zones due to proper zone temperature control and lack of comfort complaints; however, it was identified with Analytika.



Solution

Cimetrics worked with the controls vendor to restore the discharge air temperature of this AHU to 55˚F. This resulted in appropriate temperatures at all locations using less cooling and heating energy.

Additionally, a discharge air temperature reset routine was initiated to further maximize savings and improve system operations.

Energy savings for solution: $16,490

Learn how the powerful Analytika technology can translate your system data into meaningful, actionable insight today!

www.analytika.com

+1 (617) 350-7550