

Global Pharmaceutical Manufacturer saves \$650,000 in annual energy costs while improving comfort, sustainability and capital asset reliability.

Overview



This corporation* operates in over 100 countries specializing in the discovery, development, manufacturing and marketing of medicines in the areas of Cardiovascular, Gastrointestinal, Infection, Neuroscience, Oncology and Respiratory & Inflammation diseases. Facing challenges due to increased competition, drug patent expirations and intensifying price pressures, this firm needed to focus on innovation while improving operational efficiency.

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

The Challenge

GPM had a goal of reducing energy consumption throughout its global facilities by 30% by 2015 from 2010 levels. Additionally, GPM had a global commitment to reduce operational greenhouse gas emissions by 20%. To this end, GPM was interested in implementing energy conservation measures and technologies, which help achieve these goals while improving the overall reliability of their operations.

Cimetrics' Solution

Cimetrics was selected to provide its Analytika Pro solution for five buildings at GPM's campus in the Northeastern United States. The buildings included 1.5 million square feet of FDA validated and non-validated space that is utilized for offices, research laboratories, manufacturing and energy utility generation. Cimetrics collaborated with GPM and their building automation system provider to connect to and collect sensor and actuator data from over 4,700 physical points. Data was collected every 15 minutes, 24 hours a day, 365 days a year, for a total of approximately 1.5 million data samples per day from the following systems: 8 Chillers, 9 Boilers, 5 Cooling Towers, 25 Air Handling Units, 60 Laboratory Fume Hoods, 206 zones, 20 pumps and motors, and other miscellaneous equipment.

Over 900 Analytika software algorithms then analyzed the data to identify opportunities to reduce energy, environmental, maintenance, operations and 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 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 towards targeted results. Furthermore, Cimetrics helped secure over \$100,000 in utility incentives to help pay for implementation of recommendations. This business process helped achieve over 90% implementation of recommended actions.

Results achieved

- Energy savings financial summary
 - Energy savings: \$647,233
 - Simple payback: 0.33 years
 - Net present value: \$984,396
- Other operational benefits
 - Implementation rate of recommendations: 90%+
 - Utility incentives secured: \$100,000
 - Capital asset reliability. Instituted predictive maintenance program across all major HVAC systems. Chillers are one example where equipment life was extended by five years.
 - FDA Compliance. Tracked and maintained temperature and relative humidity control in manufacturing clean rooms.
 - Resource management. Utilized impact analysis to prioritize workload for internal maintenance and contract controls personnel and maximize progress towards corporate goals.
 - Capital project justification. Although the focus of Analytika is on operational optimization, a relevant heat recovery capital project was identified, developed and implemented. This project helped reduce load on the existing central utility plant, which had been running near capacity.

Example of implemented opportunities

Air handling units (AHUs) were identified to be in operation excessive hours during unoccupied times.

AHU Schedule Display

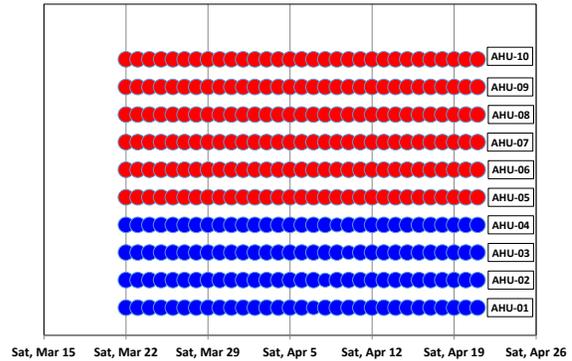


Figure 1: All air handlers operating 24/7

Solution

Cimetrics worked with controls contractor to change the sequence of operation during unoccupied hours.

AHU Schedule Display

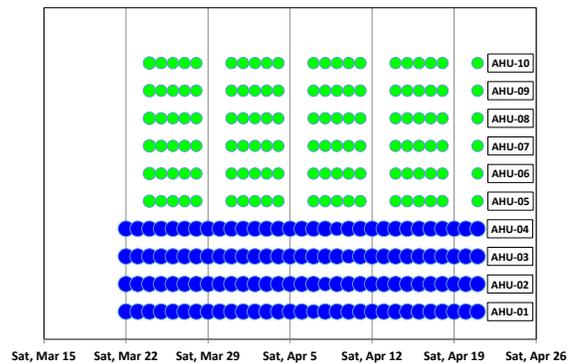


Figure 2: 6 Air handlers operating on a reduced schedule

Energy savings for solution: \$43,412