

Client Contacts

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Project Manager
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Haag Hall



New Chilled Water Plant

Completion Date

October 2008

Contract Term

15 year Guaranteed Energy
Savings Program

Cost

\$19.4 Million

Annual Savings Guarantee

Cost Savings

- \$1.6 Million

Energy Savings

- 11.8 Million kWh (22.8 % reduction, electricity)
- 4,279 kW Avg/mo (45.6% reduction, electricity)
- 613,559 Therms (30.8% reduction, natural gas)
- 21,024,908 gallons (29.4% reduction, water)

Emissions Reductions

Projected

- 11,706 Tons of CO₂
- 26 Tons of NO_X
- 52 Tons of SO₂
- 224,465 milligrams of Hg
- Net 30% reduction of emissions

Project Manager

Laura Thompson, PE, CEM
Burns & McDonnell
Energy Services

Project Design & Engineering

Burns & McDonnell
Engineering Company, Inc.

Project Summary

Burns & McDonnell was selected to provide performance contracting services in 27 university buildings covering over 2 million square feet at the Volker Campus and Hospital Hill facilities. The goal was to identify sufficient cost savings via energy conservation strategies to fund the proposed retrofits, but also to cover the large capital cost of replacing the existing central chilled water plant. Burns & McDonnell met this challenge and developed a program that satisfied the University's criteria.

Scope of Services

- Design and construction of new a central chilled water plant featuring four water cooled centrifugal York chillers and associated piping and pumps
- Variable flow, Occupancy based fume hood exhaust controls
- High efficiency lighting retrofits
- Medical School chiller replacement
- Variable frequency drives and high efficiency motors installed on fans and pumps
- Convert constant volume air handlers to Variable Air Volume
- Low flow plumbing retrofits
- Steam leak surveys
- Expand and enhance energy management system controls and reporting capabilities
- Assist in hiring an Energy Resource Manager for UMKC to enhance and discover additional sources of energy savings

Key Project Benefits

By implementing the recommended energy conservation strategies, the University will increase the reliability of critical systems such as the chilled water, electric, and plumbing systems benefiting each student, instructor, administrator, and visitor to the campus. The facilities will have learning and working environments which contribute to the productivity and health of each person. The project also provides fiscal responsibility by paying for these retrofits out of energy and cost savings over the next fifteen years. The net energy reduction for the Volker and Hospital Hill campuses is 27% resulting in a net emissions reduction of 30%.