plug smart™
intelligent energy solutions

Project Profile
HEIDELBERG UNIVERSITY

"One of the great things about working with Plug Smart was their ability to respond to the unexpected. Because the renovation work and projects involved existing buildings and equipment, there were a couple fairly serious issues that happened beyond the original scope. They were poised and quick to respond to those, and never were thrown off course by what was encountered. It didn't cost us any money or any more time, and they kept their promises, just as they committed at the beginning of the project."

- Rod Morrison,
Associate VP of Facilities,
Heidelberg University

Overview

Project Type : Higher Education Design-Build
Project Cost: $1.04 Million
Annual Energy Savings: $123,000 Annually

Technical Highlights

- Lighting Upgrades, including new T8 fixtures with electronic ballasts
- 1 high efficiency condensing boiler and 1 high-efficiency non-condensing boiler, both with code-compliant safety devices, proper combustion and intake venting
- 3 variable-speed AHUs capable of economizer control and demand controlled ventilation
- 3 – 120-gallon indirect-fired "Smart Tanks" to provide domestic hot water
- A new centralized, non-proprietary Energy Management System (EMS) efficiently controls the boilers, chiller, pumps and fans on a web-based platform

Environmental Impact

- Annual energy saved: 349,493 kWh
- Pollution avoided annually: 531,299 pounds CO_2
- Equivalent to taking 51 cars off the road

The Client:

- Heidelberg University is a private, non-profit institution established in Tiffin, Ohio in 1850. Heidelberg enrolls over 1,300 students annually.
- The 110-acre campus houses 1,110 students in seven residence halls.

The Problem:

- After reviewing the building-level Plug Smart Analytics, it was determined that Miller Hall Dormitory and the attached Hoernemann Refectory had a much higher Energy Utilization Index (EUI) rating than other buildings on campus.
- The buildings, which encompass 66,460 sq. ft., were both served by an end-of-life non-condensing hot water boiler.
- To keep the building fully operational, equipment replacements needed to be addressed within a tight timeline in the shoulder months, when heating and cooling would not be needed.

The Plug Smart Solution:

- Plug Smart replaced the end-of-life boiler with a new high-efficiency hydronic heating hot water boiler plant that significantly reduced the gas consumption as compared to the existing system.
- Converted three-way valves to two way valves in dorm rooms for variable flow pumping.
- Paired the system with non-proprietary, open-front-end BACnet controls, which allow for better set point control, comfort control, smarter heating and cooling, and advanced energy efficiency strategies.
- Delivered all design-build services within the required timeline and under budget.
- The Plug Smart Advantage open-book system opened up additional savings, returned to the university, which would be re-invested into an outdoor lighting project beyond the original scope.
- Plug Smart identified and secured $50,600 of utility rebates associated with the project.

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