

Service Case Study

MEASURING RESULTS

WINTER 2012

Boiler Optimization: Measuring Results

Project Profile

Facility Type: Large Commercial Office Complex.

The Challenge: A Dual Temp customer is looking to save energy usage and remove demand spikes across their facility

The Approach: Dual Temp Service, collaborating alongside the customer's Facilities Department, identified potential energy savings opportunities.

The End Goal: The mechanical systems shall be optimized to the true needs of the office complex

Solutions Provided: Dual Temp Controls Department was called in to document and deliver the highest payback projects. This *Service Case Study* will feature changes made to the 10 stage electric boiler.

The first step of this project was to remove the standard heater controls and install new direct digital controls (DDC). These controls allow the characteristics of the boiler to be individually optimized. The controls technician fine tuned the hot water plant to precisely match the needs of the building and its occupants. The installed controls also allow the boiler to be networked to the other mechanical systems throughout the facility and remotely changed via the internet. This allowed for a 3rd party, hired to perform Demand Limiting (shedding electrical usage during specific times of day, or as requested by the utility company) to take control when required.



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Electro-Mechanical Controls Upgrade

Demand Limiting

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Constant Comfort

Demand Limiting: Removing the Spikes

This customer, because of the large amount of electricity use, has a high demand charge. This means a large portion on their electric bill is based on the single highest rate of energy use over the entire month. Evaluating the customer's use, abnormal spikes were found in the demand. Op-

tions to drastically cut the electric bill include both gaining better control of the equipment to limit the spike, or moving the spike to different time of day when other demands are small. This customer contracts with a 3rd party to make certain these costly spikes are avoided. The

new boiler controls allows remote monitoring and load shedding when necessary.

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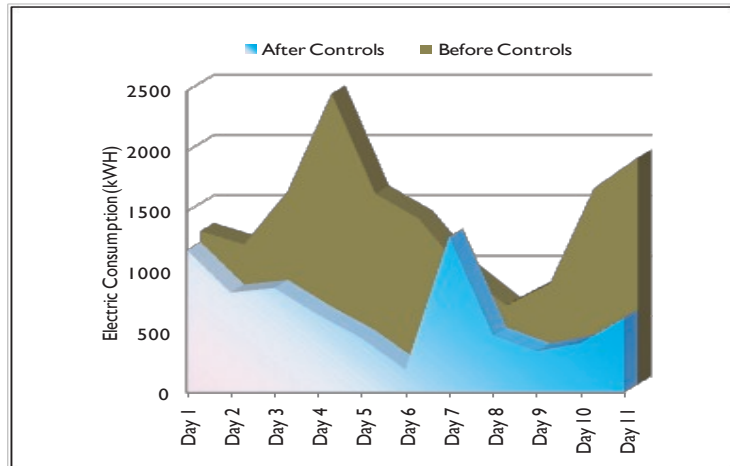
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Measuring Results

Prior to the work being schedule, an energy logger was wired to the electrical feed of the boiler

Actual Energy Use of the Boiler

over seven cold winter days. This provided a base line measurement from where improvements could be compared. After the project was completed, another reading was taken over seven winter days of near identical outside temperatures. These results show substantial energy savings without sacrificing comfort or changing the leaving water set point. These savings are entirely from fine tuning the controls. Electrical consumption was cut by 52% on average. Large savings also occurred in the demand



reduction of the utility bill. These boilers are now tied into the main building's demand limiting system preventing the newly choreographed sequence from spiking at a

time that will negatively impact the customer's demand ratchet on their energy bill.

"60%-70% savings on some days...AND it was colder outside compared to the baseline energy readings!"

We Can Help Your Facility

First, we need to get to know your equipment and how you use it over a period of time. Naturally the best way to do this is have our Service Department perform quarterly maintenance, however if you have any ideas feel free to call.



During our growing relationship, we collaborate with the Facility Manager, Building Engineer, Manager, or Owner to budget and plan for identified improvements. If desired, Dual Temp can log existing conditions and energy usage over a period of time. Its like putting your building's electric meter on a single piece of equipment. We then make the changes, and take new data

measurements. Finally we provide a one page report visually graphing the savings and outlining the improvements in plain language you can show to upper management, tenants, potential tenants, or a future building owner. We are flexible and eager to help in any way. Please contact Tom Byrnes, Director of Sales at (610) 791-9100 x 213 for more details.

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