CASE STUDY

BETTER ENGAGEMENT AND EFFICIENCY AT JOHNSON GEO CENTRE

LOCATION

Johnson GEO CENTRE
St. John’s, Newfoundland Canada

OUR CHALLENGE

With over 85% of the building underground and a strong focus on energy efficiency while maintaining its natural look, the Johnson GEO CENTRE represents a highly successful merging of natural design and energy efficiency. With over 52,000 visitors last year, the swings in occupancy can vary dramatically, posing a real challenge for minimizing energy use.

Seven 6.25 ton ground source heat pumps service the building. Originally the building was configured to operate in three stages: two stages of 13.5 tons each and the third stage at 18.75 tons. CopperTree Analytics’ Kaizen software quickly uncovered two problems that were hurting efficiency. First, the size of each stage was too large, so a small shift in demand could turn an entire stage and result in energy being wasted. Second, it was revealed that heat pump number seven was inoperable, and that in fact leaving it inoperable was costing the building significant energy.

Management was also keen to engage visiting students, communicating in an interactive way the benefits of their energy programs.

KAIZEN BENEFITS

18% reduction in energy consumption, for an annual savings of over $20,000

38% in cost savings for November 2017, compared against the previous year

THE SOLUTION

Using Kaizen’s findings, Jamie Valone of Centinel Services, a Building Automation System service company, convinced management to install energy valves to isolate the heat pumps and thereby allow them to be individually staged. Though heat pump seven is still inoperable, its programming was disabled so as to not affect energy consumption further.
This meant that the conditioned air being supplied met the demand much more closely and eliminated significant energy waste for small changes in demand near the staging boundaries.

A 42-inch touch screen energy dashboard was also installed to meet management’s desire for a visual energy learning tool for students. Using energy information from Kaizen, the screen helps students understand the technologies used to make the Johnson GEO CENTRE one of the most efficient buildings of its kind.

**FINAL RESULTS**

The combination of these changes has resulted in an 18% **reduction in energy consumption**, for an annual savings of over $20,000. Centinel Services has identified a further set of strategies which has made the November 2017 electrical bill **38% lower compared to the bill last year**.

Management was impressed by the fact that the findings of Kaizen were tied directly to problems that could be fixed in the building. Using Kaizen made it possible for the Facility Manager to demonstrate that the savings would pay for the work done.

Both the Facility Manager and Centinel Services are continuing to use Kaizen not only for savings, but to find faults and ensure the smooth-running operation of the building. “Kaizen helped us make the GEO CENTRE’s energy conservation goals a reality,” says Jamie Valone. “It is great to see the GEO CENTRE doing their part for energy conservation in such an amazing building.”

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**THE BENEFITS**

According to the GEO CENTRE’s Property Manager, Dennis Keough, “Kaizen is a very powerful tool that allows me as a facilities manager to efficiently monitor our HVAC system at a glance. I can see exactly where we are being inefficient and what areas need to be addressed to rectify such inefficiency. It also shows you exactly how much money will be saved by addressing any inefficiency. Being able to view and monitor every aspect of our HVAC system saves time and ultimately money. We are very happy with the Kaizen software.”

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_Dennis Keough, Property Manager
Johnson GEO Centre_

**KAIZEN FOR TODAY AND THE FUTURE**

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