

2015 LEED Performance

Reliable Controls Corporation - South Annex

Monthly Energy Consumption



Energy Consumption vs Target



Reliable Controls MACH system calculates a daily target for energy consumption, based on 50% of ASHRAE standard 90.1, adjusted for actual heating and cooling degree days. Standard 90.1 is used to predict the energy consumption of an energy efficient building in our geographical region.

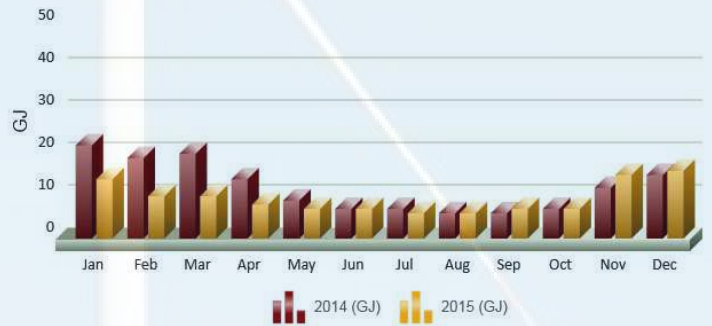
In simple terms, the South Annex uses less than one half the energy of an energy efficient building!!!

Year to date for 2015, the actual energy consumed is 48.8% of ASHRAE 90.1....meaning that our building performance is better than design! The year ending December 2015 is the lowest yet for total energy consumption, with a final Energy Intensity of 57.3 kWh/m².

Electrical Consumption 2014 vs 2015

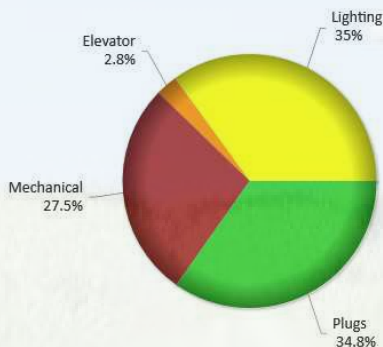


Gas Consumption 2014 vs 2015



Gas consumption was reduced markedly in 2014, mainly through BAS programming changes that minimized the use of gas for building heat. In 2015, slight changes to the operation of the Force Flow loop pump and the Force Flow fans is yielding additional savings.

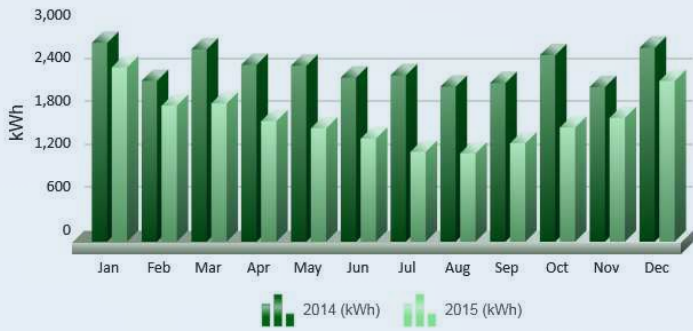
Electrical Consumption Breakdown



The pie chart to the left shows that lighting loads were the greatest consumer of electricity in 2015, closely followed by plug loads. Recent changes to parkade and stairwell lighting (see details below) have resulted in keeping the overall electrical consumption much lower than last year. The parkade lighting panel consumed 10% of the overall building energy in 2014!

Mechanical consumption of electricity is significantly less than the totals for lighting or plug loads, however that comparison does not include the natural gas consumed by the boilers.

Parkade Lighting Panel Consumption 2014 vs 2015



On January 8th, we decreased the time-out on the hard-wired parkade motion sensors by one-half. On the same day, we added code to turn the P1-South LED lights out when the outdoor solar radiation exceeded 90 W/m².

On January 16th, we modified control of the stairwell lighting relays and added code to switch off the above-ground stairwell lights when the solar radiation exceeded 90 W/m².

These few simple changes have led to significant electrical savings for the building.

Overall, 2015 was a very dry year! We used rainwater to flush toilets all winter, but we ran out of rainwater for flushing toilets in late April and there was very little rainfall until October. In addition, a failure of one of the rainwater cistern pumps in October resulted in higher than normal use of potable water for the last two months of the year. Overall, **72.5%** of the water used to flush toilets came from rainwater. The potable water breakdown below shows that we used more potable water to flush toilets this year than last year. .

We started irrigating in May using stored rainwater, however in the month of June 2015 we ran out and used domestic water for irrigation instead. This was unplanned for due to the unprecedented hot and dry weather. For the complete irrigation season, **13.8%** of the water used for irrigation came from rainwater.

Water Consumption



Potable Water Comparison 2014 vs 2015

