

CASE STUDY

Abesco Ltd – Structural Steel Fabricators
General Building Ventilation



Weld Shop

Abesco Ltd. is a structural steel fabricator located in Winnipeg, Manitoba, Canada. Abesco provides pre-fabricated structural steel sections for large buildings. Some highlight projects that Abesco has completed are Walmart stores and a Simplot potato processing plant.

The building is an industrial weld shop, with over 9000 square feet of shop space. Abesco also uses oxyacetylene cutters, and many other steel fabrication tools.

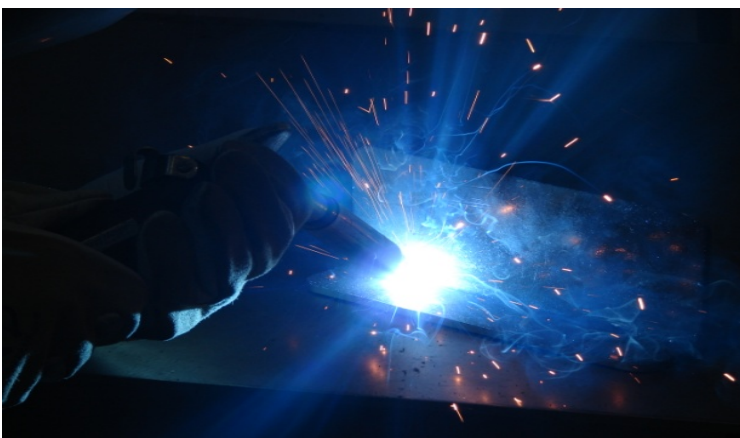


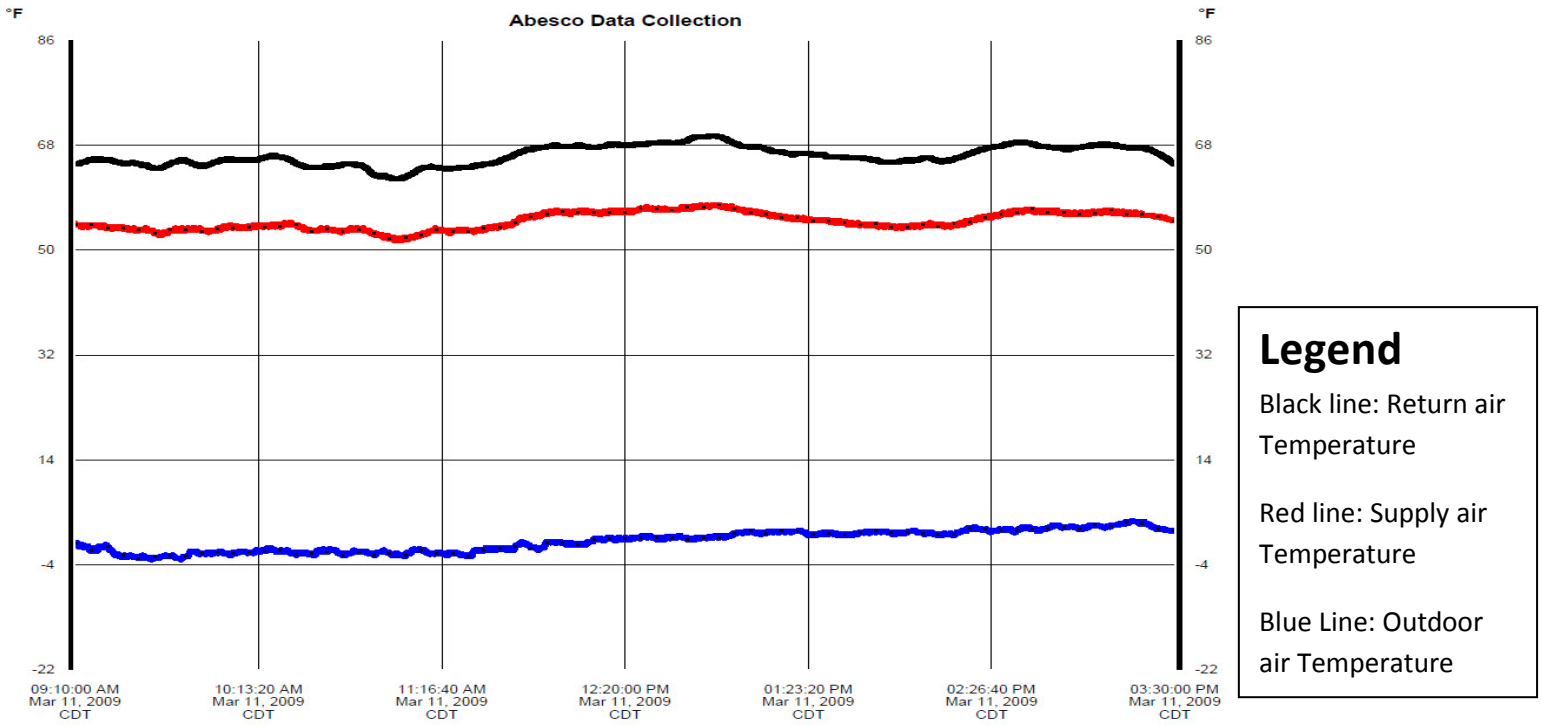
Ventilation

A Tempeff RG 13000 Dual Core™ unit was selected to deliver ventilation air to the building. The unit used exhaust air from the main space, and returned ventilation air to the same space.

A gas fired duct heater was used to raise the air temperature after the Dual Core unit to 70 °F (21.1 °C).

This was an industrial application as weld shops typically exhaust significant amounts of fumes and particulates.





86 % Temperature Efficiency

During testing the Dual Core™ unit had a peak efficiency of 86%. The shop currently runs 1- 8 hour shift and 1-10 hour shift per day, 5 days a week, thus over the period of a year the owner can expect to realize energy savings of over \$18,000. Over the average life expectancy of this equipment, this translates into energy savings of over \$660,000 for the owner.

Due to frequent use of large overhead doors, the return temperature fluctuated between 62 °F (16.8 °C) and 69.5 °F (20.8 °C). The supply temperature tracked these fluctuations; however the variations were smoother than the return temperature. The supply temperature after the Dual Core™ unit ranged from 52 °F (11.1 °C) and 57.5 °F (14.2 °C).

All of this high performance occurred on a very cold March day, where outdoor temperatures hovered around -2°F (-19°C). This clearly reflects the superior performance of the Dual Core™ system, where it can operate at very low ambient temperatures, without defrost mechanisms that reduce energy recovery, and constantly deliver extremely high temperature efficiency!

All data collected with NIST Certified Omega
 NOMAD OM-CP-RHTEMP101 Data Loggers

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