



Service and Product Provider

Cambridge Engineering, Inc.

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Customer

DÜRR Systems, Inc.

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Michigan office/plant replaces steam boiler with energy efficient space heating system.

Project Scope

DÜRR decommissioned a gas-fired steam boiler system used to heat both the office and large production area at their facility. The 20-yr old boiler was in good working order but was expensive to operate and maintain. As part of their commitment to reduce energy consumption and operating costs, DÜRR partnered with Cambridge Engineering to install a high efficiency indirect-fired hot water boiler system to provide office heating, and a new energy efficient direct-fired heating system in their 180,000 sq. ft. production area.

Project Summary

The energy efficient heating system was installed during January while the facility was occupied. No temporary heating was required during the conversion. High temperature rise space heaters with 100% combustion efficiency and 92% thermal efficiency provided significant energy savings. The heating system's use of 100%, non-recirculated fresh air improved ventilation and indoor air quality for the office and production area.

- **Energy Savings**

The new combined office/plant heating system reduced natural gas consumption for this facility by an average of 23%. Annual Carbon Dioxide (CO₂) emissions were reduced by over 300 tons, the equivalent of planting over 1,000 new trees each year.

- **Financial Return**

The project payback goal of less than 3 years was met based on documented energy savings and reduced maintenance costs.

- **Other Benefits**

The new heating system improved ventilation for the office and plant, solved a negative air problem, and provided additional heat at cold dock door production areas for increased employee comfort.

Monitoring & Verifying Energy Savings

Utility bills from before and after the conversion were compared in a Heating Degree Day (HDD) annual gas consumption analysis that accounted for year-to-year changes in weather. The DÜRR facility averaged 4.48 MCF/HDD annual gas consumption with the gas-fired steam boiler, which was reduced to 3.44 MCF/HDD with the new heating system.

Distinguishing Value

Energy modeling confirms that efficient space heating technology used by Cambridge Engineering provides significant energy savings for other similar commercial/industrial buildings with large open spaces that require both space heating and ventilation with fresh outside air. This ASHRAE 90.1 compliant heating equipment can qualify for EPA Federal tax deductions and utility rebates.

