

# Case Study

CHANGE IS IN THE AIR

INGENIOUS AIR



## Key Benefits

- ✓ Induction method of air delivery ensures an even distribution of air to all areas.
- ✓ Natural de-stratification action harvests warm air at a high level and brings it down to a lower level.
- ✓ Solves problems of a site being unsuitable for heat pump air conditioning units.

## An Energy Efficient Solution for a Heavy Engineering Factory

### The Problem:

Alchrist Engineering Ltd in Essex had no heating in the manufacturing area of their factory. Having endured a freezing winter, they urgently needed a heating solution before the onset of more cold weather. Key requirements were a cost-effective and energy efficient system that could be installed with minimal interference to production. Standard heat pump air conditioning units could not be used as the ceiling was either too high or too low. There was no space to hang the units and there would have been difficulties with air flow. In addition, the factory had very little electricity available for heat pump units.

### The Solution:

Two Ingenious Air® Small Duct Systems were installed in conjunction with two 30kW gas fired hot water boilers and connected to an unused gas main.

The system's natural de-stratification effect continually harvests and evenly redistributes the warm air, which usually rises and becomes trapped at ceiling level. This overcomes the air flow problems of standard air conditioning units and ensures heat is delivered to exactly where it is needed, without draughts.

For Alchrist Engineering, the added benefit was that the operating time of the heat source (the two boilers), was reduced. This gives a reduction in energy use and costs, which helps reduce the company's carbon footprint. Costs were also reduced as de-stratification meant no insulation was required on the metal ductwork. The heated air was delivered via apertures drilled directly into the ductwork. The induction method of air delivery ensures all areas of the conditioned space reach the required temperature rapidly and evenly, remaining at a constant temperature.

### Follow Up:

The project was completed on time with minimum disruption to production and the company enjoyed a comfortable, warm winter.

"The two Ingenious Air Small Duct Systems heat the factory well and distribute the heat evenly to all areas. This would have been difficult to achieve without using the system. We especially appreciate the benefits on cold mornings."

**MR. STEVE SMITH, OWNER, ALCHRIST ENGINEERING LTD, ESSEX**