

Thermoscreens HE Air Curtain Trial

Location: Dovecote Park, Skellingthorpe

The purpose of the trial is to prove the commercial and operational benefits of installing a 2m Thermoscreens HE Air Curtain inside Chiller A at Dovecote Park, Skellingthorpe.

The air curtain is designed to create climate separation at the chiller entrance and is specifically tailored for the harsh, abattoir environment, featuring full stainless-steel construction and an IP66 rating.



Dovecote Park, Skellingthorpe

The Challenge.

One challenge we faced during the trial was gathering the necessary power consumption data to demonstrate a return on investment. However, through close collaboration with Adam Bowdrey, we successfully collected data that supports a positive return.

The Solution.

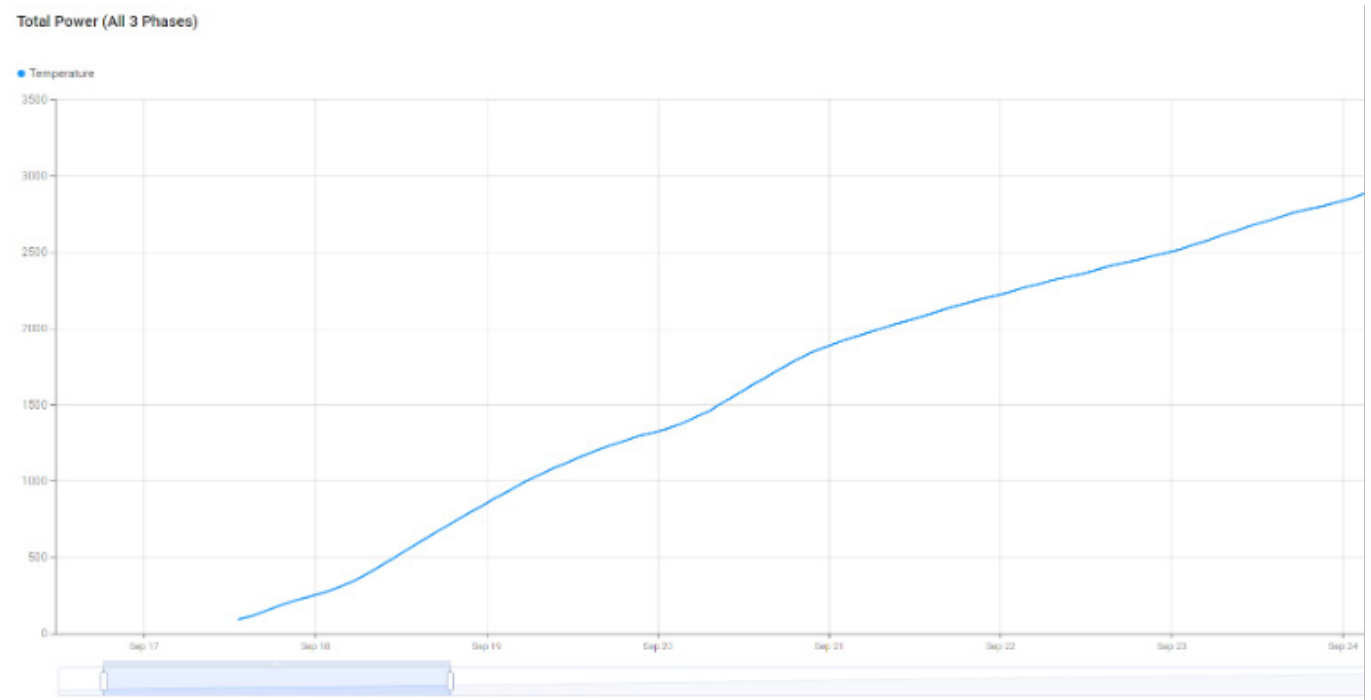
To achieve this, we installed a power meter on the incomer to the chiller compressor, allowing the Thermoscreens team to monitor the energy use during and after loading. This provided a direct view of how much power the room is using to cool down in that period.

Adam also provided corresponding temperature and loading data giving us a broader perspective on the success of the trial.

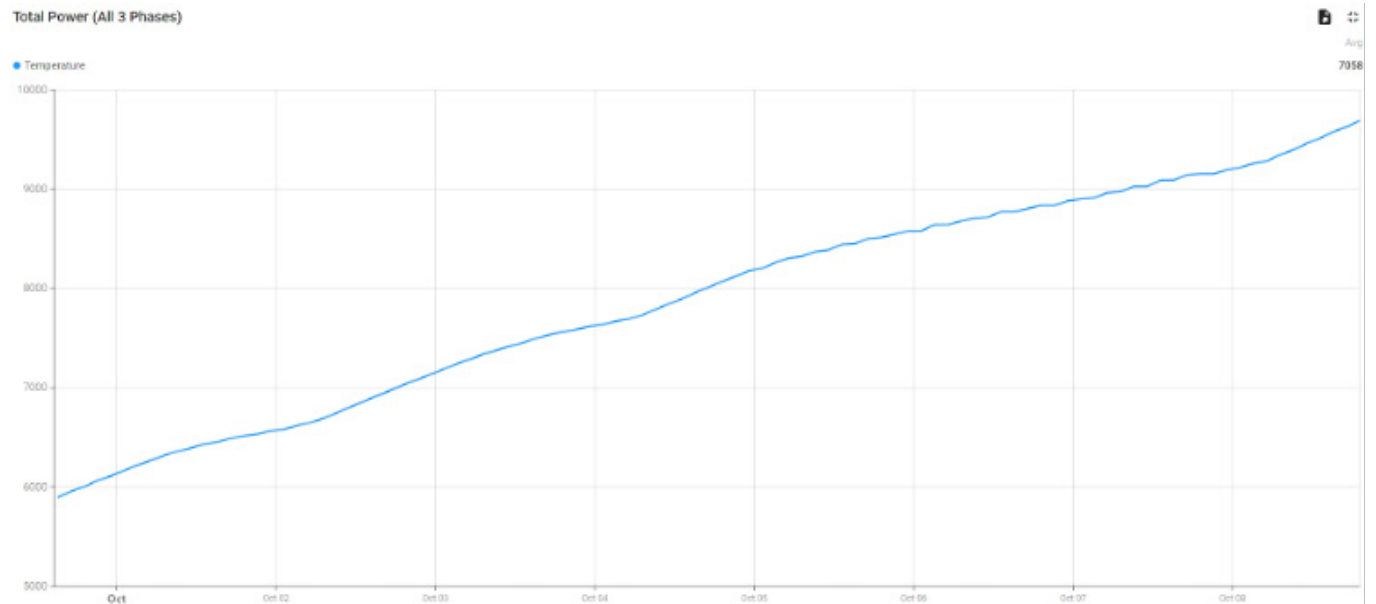
It is important to highlight that the application and the position of this Air Curtain may not be entirely optimal. The chiller's entrance is located in the corner of the room adjacent to a large evaporator fan, and the installation height is at the upper limit our recommended range. Given these factors, it is possible that even better results could be achieved in a more suitable setup, such as at Dovecote Park's Pontefract site.

The Results.

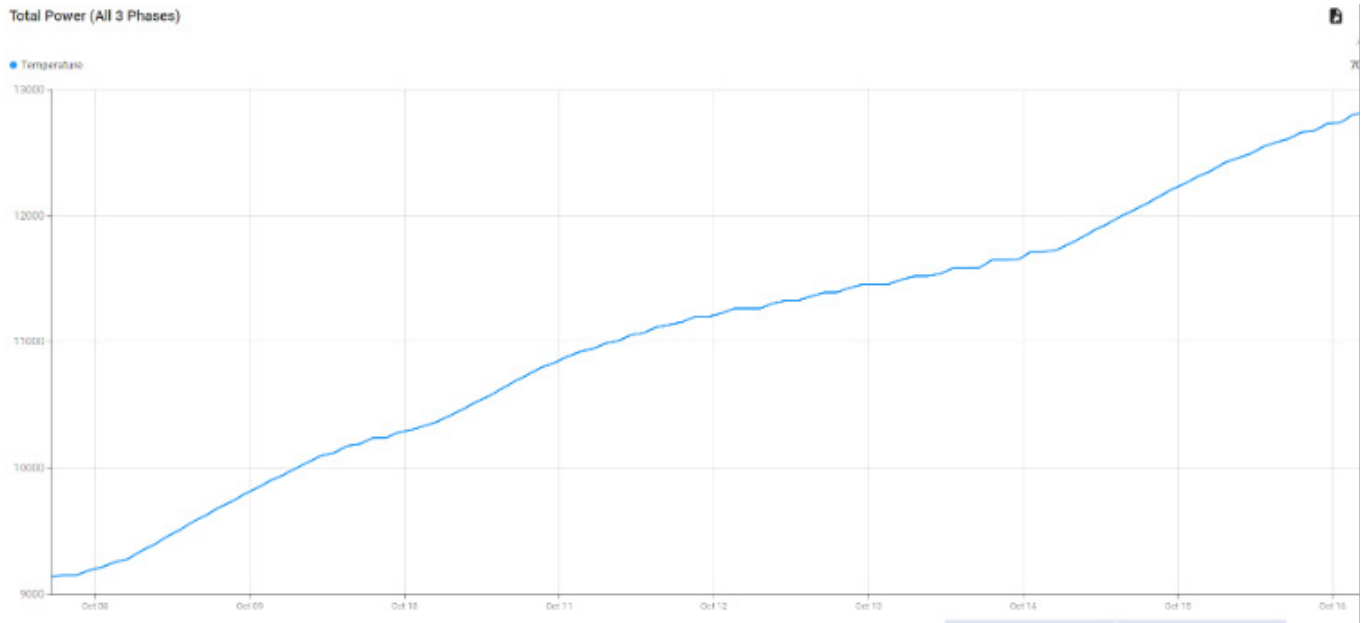
For the 7-day period between 17th September and 24th September with the Air Curtain in operation the room recorder a power usage of 2,846kWh.



For the 7-day period between 1st October and 8th October, with the Air Curtain turned off, the room used 3,346kwh starting at 6,187kWh and ending at 9,533kWh.



For the 7-day period between 8th October and 15th October, with the Air Curtain turned back on, the room used 2,955kWh, starting at 9,533kWh and ending at 12,488kWh.



Return on Investment Calculation.

Based on the collected data and electricity cost of 21.5 pence per kWh we can estimate an ROI for the air curtain installation. Calculation Summary:

Worst Case Scenario

Difference in power usage: 391 kWh

Weekly Cost Savings: 391kwh *

0.215 GBP/kWh = 84.06 GBP

Annual Savings Estimate: £84.06 GBP * 52(weeks) = **£4,371.38 per year.**

Best Case Scenario

Following calculations using the best case data (higher energy assumptions), we estimate an annual saving of : £5,590 per year.

Difference in power usage: 500 kWh

Weekly Cost Savings: 500kwh *

0.215 GBP/kWh = 107.5 GBP

Annual Savings Estimate: 107.5 GBP * 52(weeks) = **£5,590 per year.**

Return on Investment

The Return on Investment is approximately 2 years based on the annual savings.

Additional Observations.

Temperature Impact: With the Air Curtain in operation, the room temperature appears to stabilise 1-2 degrees lower at it's peak and appears to cool down more quickly.

Unit Cost Efficiency: The unit that is installed at Skellingthorpe is priced between £9-10k, however smaller units would cost less, and bulk stainless steel purchases could lower future costs, offering more competitive selling prices.

Conclusion.

This data supports both energy savings and operational efficiency, presenting a compelling case for the Air Curtain's benefits. Thermoscreens would like to express our gratitude to Dovecote Park for the opportunity to collaborate on this project and for the data provided. WE are optimistic that the findings from this trial will help strengthen the partnership between our two businesses.



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Thermoscreens

Your environment is our expertise.

Thermoscreens were one of the pioneers of modern air curtain technology, and we remain at the forefront of its evolution today. Our sales team work hand-in-hand with an international network of distributors, providing solutions to customers of all types and sizes, in more than 50 countries. Across the globe, our name is synonymous with the highest quality standards; our products renowned for their energy efficiency, reliability and ease of use.