Climateq

Invest today to save tomorrow

Midlands University

Coolnomix

Trial Data Report

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1. Introduction

As specialists in energy saving air conditioning controls, Climateq was invited to conduct a site survey to identify opportunities to reduce the energy consumption of process cooling across the University estate using the Coolnomix AC-01 control.

To demonstrate the savings, a Coolnomix AC-01 was fitted to a Mitsubishi PKA-RP71KAL unit for a trial period and monitored with a standard kWh meter.

The trial Coolnomix unit was fitted on 19th April 2018 and is currently still connected.

2. Room Overview

The room surveyed was a lift motor room containing motor and control panels and a comms room with multiple racks. The cooling unit was blowing cold air from high level towards the racks.

The air conditioning unit was set to 22°c.

The general opinion of the current room layout and cooling was that it was sufficient for the load.

3. Temperature Readings

The unit within the room was set to 22°c and running adequately.

The below readings were taken to ascertain Coolnomix suitability.

Data Hall	Unit 1		Unit 2		Unit 3		Unit 4	
Environment	Min	Avg	Min	Min	Avg	Avg	Min	Avg
Set Point	22.0							
Cooled Room Temp		23.0						
Return Air Temp		21						
Min Cold Air Temp		13.7						
Temp Delta	9.3							

Having a Temperature Delta of >7 confirmed that there was sufficient spare capacity to undertake a trial.

4. Coolnomix Energy Optimisation Systems – Midlands University

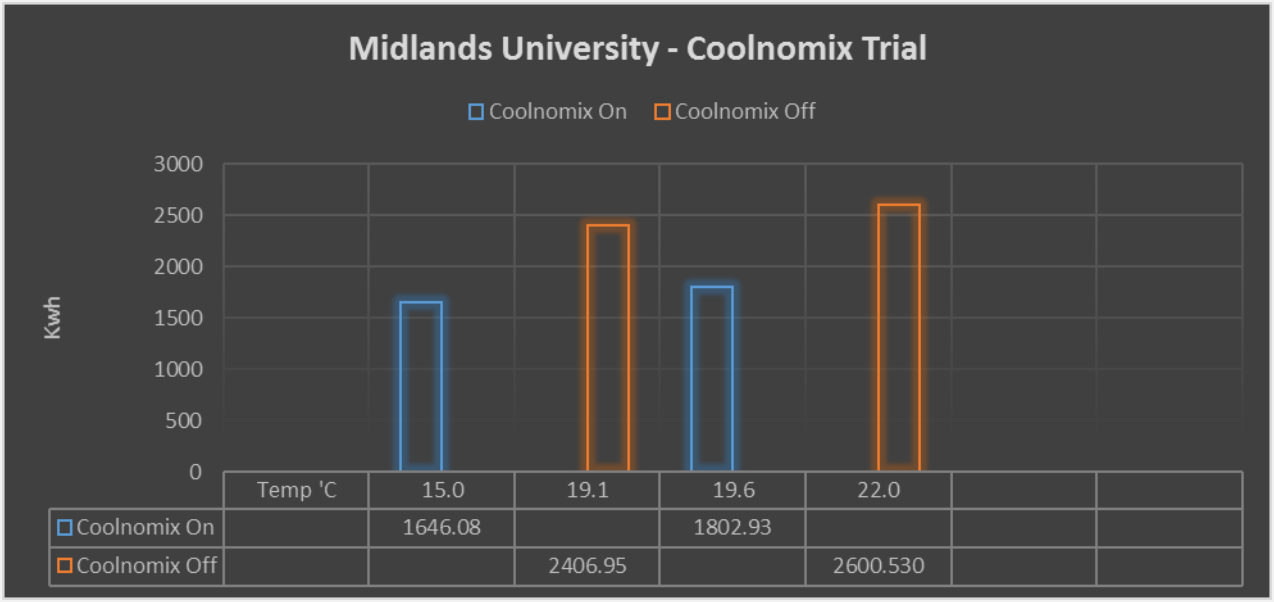
With the unit having spare capacity suitable for a Coolnomix installation, the test was set up to operate with the Coolnomix and without in normal operation. Site monitored the kWh usage and environmental conditions during the trial. The data below shows that good savings were achieved.

Calculation results

The kWh usage of the unit can be seen below with excellent savings being made over both periods with the Coolnomix installed and having been tested for both on/off scenarios over a 6-week period.

kWh Readings		**Status**	kWh Usage	Temperature
19/04 – 02/05 (12days)	26.0 – 83.5	On Coolnomix	57.5	15.0'C
02/05 – 11/05 (10days)	83.5 – 142.3	Normal operation	58.8	19.1'C
11/05 – 25/05 (12days)	142.3 - 213.1	On Coolnomix	55.2	19.6'C
25/05 – 01/06 (6days)	213.1 - 255.7	Normal operation	42.6	22.0'C

By extrapolating the data and creating equal usage periods, when displayed in graph format, we can see that over time the Coolnomix made considerable energy savings.



This is clearly shown, when comparing similar outside temperatures. The graph demonstrates that when the Coolnomix was not connected, the air conditioning unit was using **33.5%** more energy than when the Coolnomix was installed.

As outside air temperatures increase during the summer season, we would expect the Coolnomix kWh savings to also significantly increase**.**

Climateq is confident that with the trial percentage saving, the Coolnomix would offer an excellent return on investment and intend to discuss further where this could be used to best effect across the University's estate.

5. Recommendations

Following on from the successful trial of the Coolnomix, Climateq advised to install the solution permanently in this trial area, identify all other air conditioners used for process cooling and install the Coolnomix accordingly.

Climateq will engage with the University's Energy & Estate teams to formulate a proposal which will cover the remaining in-scope air conditioning systems to enable the quickest return on investment.

For further information and to discuss how we can help your business to reduce costs and increase profit margins, please call Climateq on 01202 556122 or email info@climateq.co.uk