



Commercial office Building COIL REMEDIATION REPORT

Aeris *SmartENERGY* is a comprehensive HVAC/R optimisation system with a proven ability to reduce energy consumption and peak demand whilst improving system efficiency, indoor air quality as well as extending capital life.





Aeris Environmental Limited

Commercial Office Building

TRIAL PROCEDURE:

Loggers were installed prior to 29 December 2014 and data was collected to establish a parameter base line for the AHU trial. On 6 January 2015 the Air Handling Unit coil was remediated with AerisGuard antimicrobial enzymatic cleaner followed by application of AerisGuard protection and polymer coating.

Data from the Bureau of Meteorology for Brisbane during the period of the trial was compared to average weekly data. Aeris concluded there was no material change in weather conditions during the trial.

TRIAL RESULTS:

Fan Data				
	Date	kWh	Reduction	% Saving
Pre	29 Dec '14 - 6 Jan '15	110.77		
Post	7 - 15 Jan '15	91.00	19.77	17.84%

The above results were recorded from an ACR data logger.

Coil Data						
	Date	Air On	Air Off	Humidity	Air Flow	Pressure
Pre	29 Dec '14 - 6 Jan '15	23.03	14.67	69.88	2.29	33.86
Post	7 - 15 Jan '15	23.05	14.85	70.04	2.32	34.42

The above results were tabulated by a SmartENERGY monitoring system, which simultaneously records:

- Air temperature on and off the coil face.
- Relative humidity in the return air chamber.
- Air flow off the coil face.
- Pressure across the entire coil.

Note: The air handling unit fan is fitted with a variable speed drive in order to maintain constant air flow to the conditioned space, the coil is in very good condition prior to AerisGuard treatment





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AerisGuard? – Points of difference with alternative methods of coil remediation

- ✓ **Total cost** - up to three times less expensive than competitors.
- ✓ **Energy reduction** - significant energy savings with an attractive ROI.
- ✓ **System efficiency** - AerisGuard covers the entire coil face. The enzymatic polymer is constantly active, slowly releasing biocides.
- ✓ **Prolonged asset life** - Removal of biofilm and other contaminants. The pH neutral enzymes do not corrode heat exchange coils like traditional caustic cleaners.
- ✓ **Operations & maintenance** - No risk of failures or replacements. No ongoing running costs.
- ✓ **Indoor air quality** - Exceeds Australian Standard AS 3666.
- ✓ **Independently certified** - CSIRO, FDA, USA EPA, HACCP.

GENERAL FINDINGS:

- AerisGuard achieved a **17.84% reduction** in energy consumed by the supply air fan.
- The changes in air flow off the coil face and the pressure change were negligible due to the constancy achieved by the variable speed drive.
- AerisGuard did not cause any noteworthy difference between the air on and off the coil face, pre and post trial.
- Immediate improvement in coil condition. (as evidenced by before and after photos)

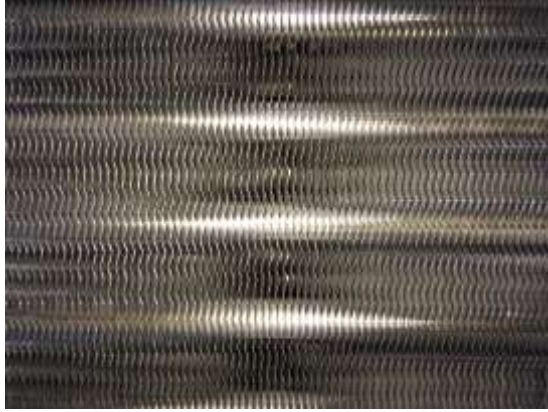




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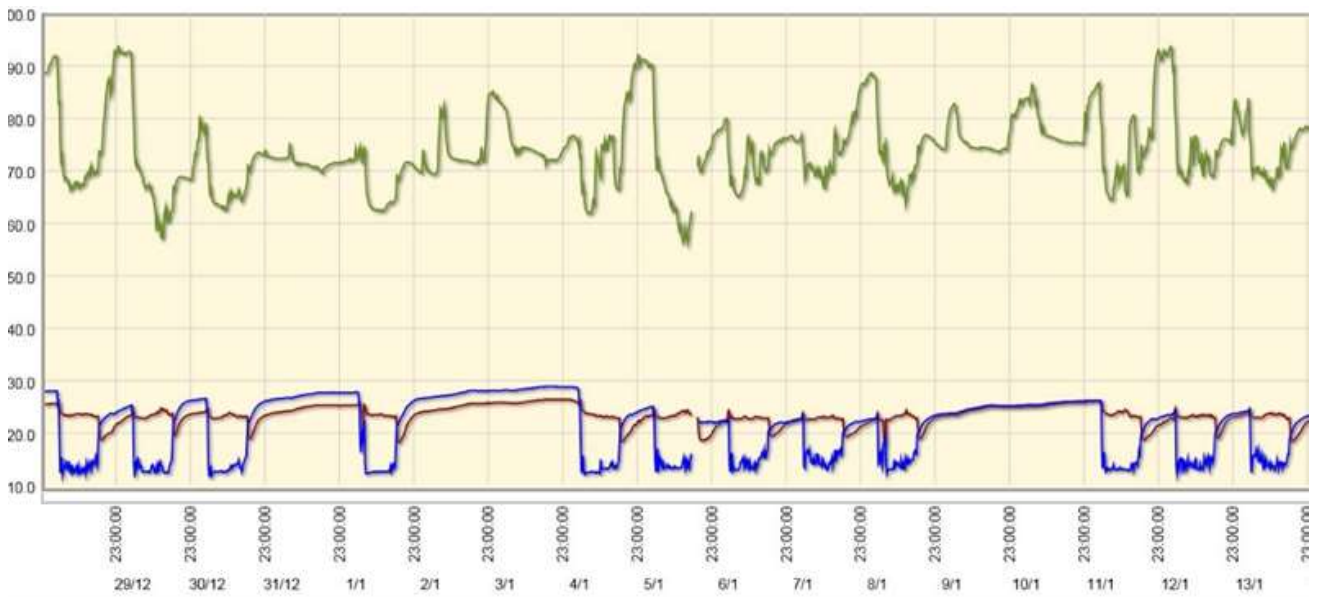


Coil Pre Remediation



Coil Post remediation

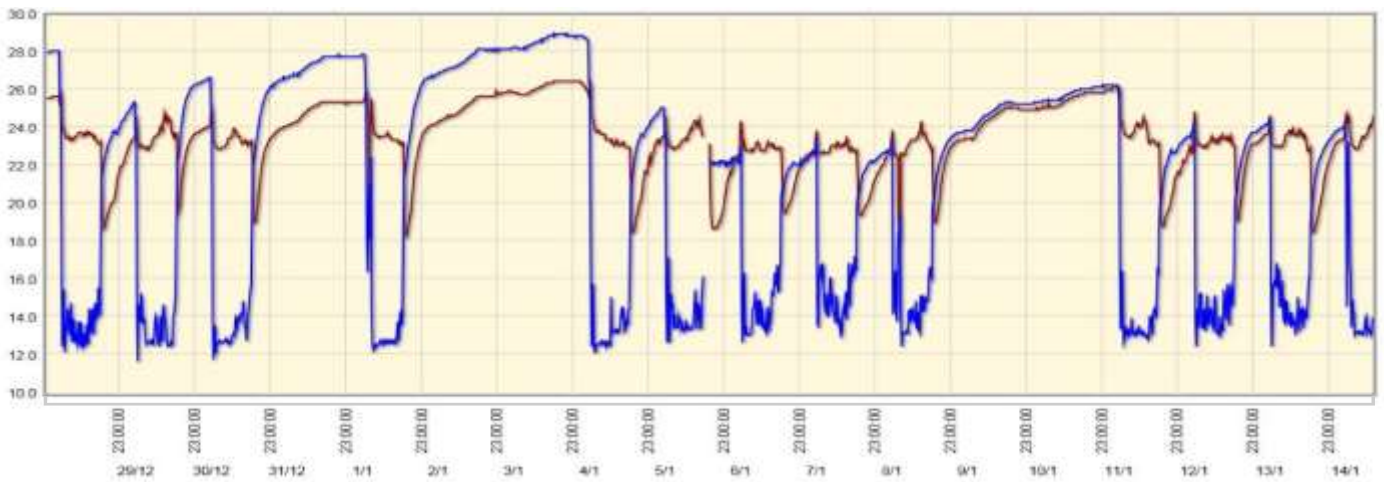
The graph below shows recorded Relative Humidity(Green), and temperature On and Off the coil.



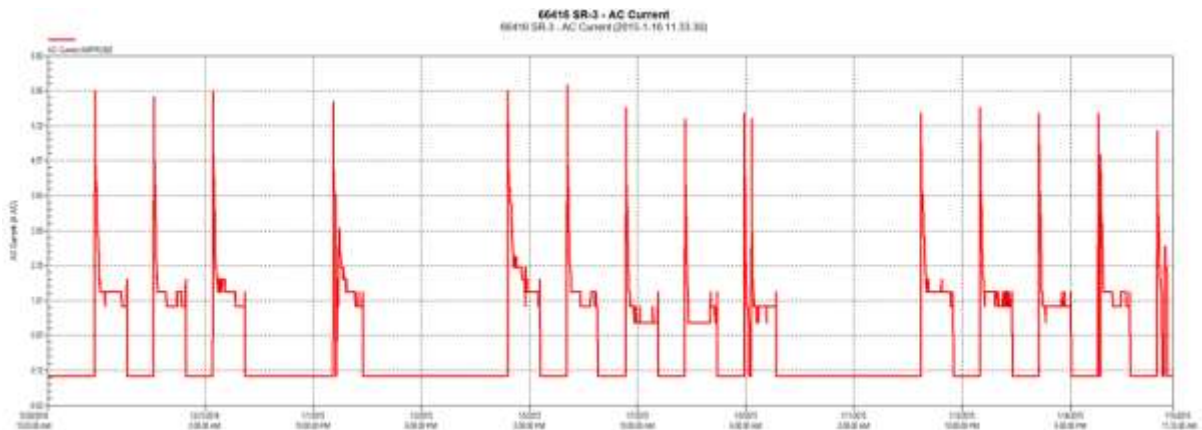


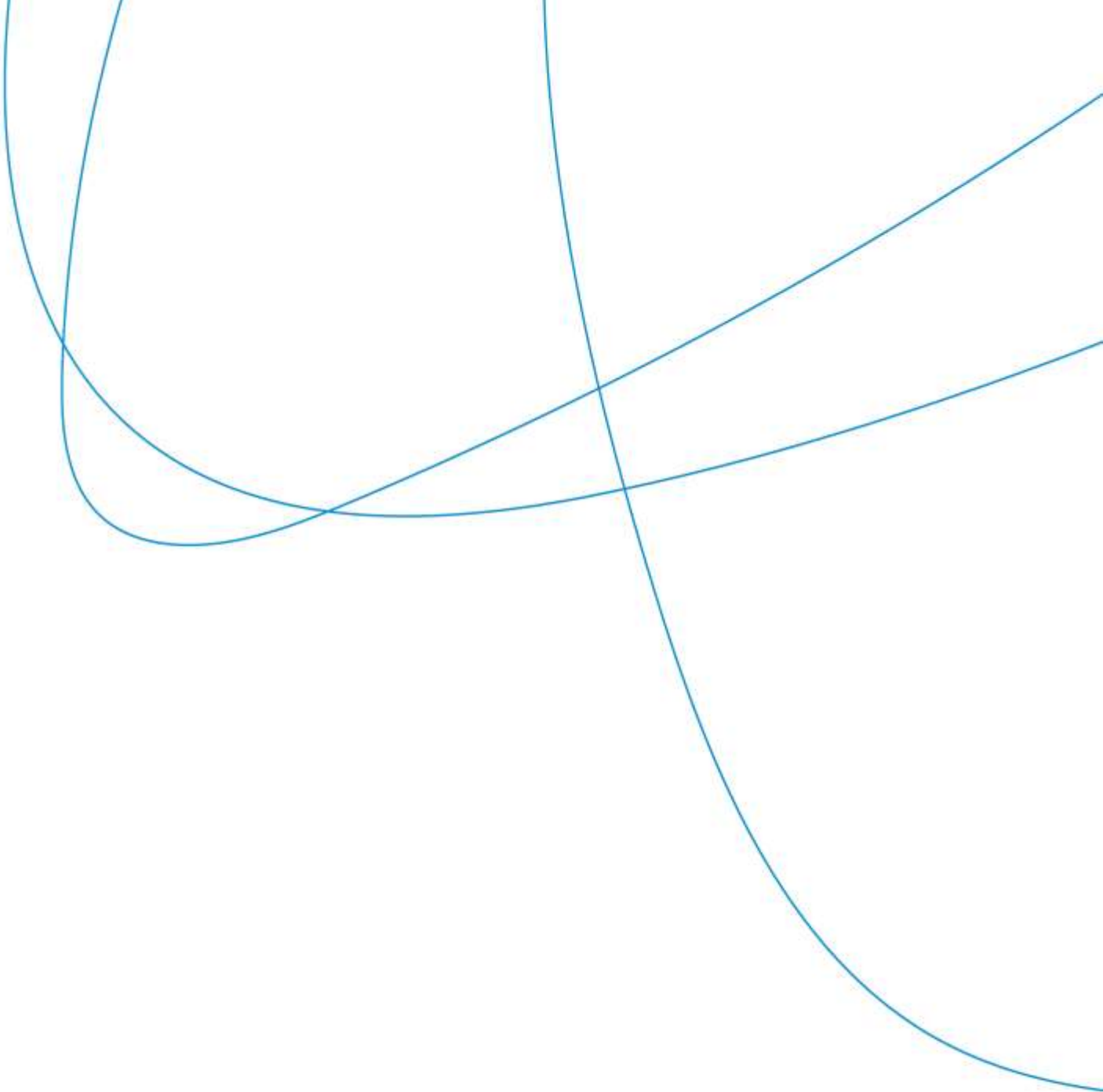
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The graph below shows a closer view of the temperatures and a slightly more stable air on temperature with a slightly higher air off temperature during operating hours.



The graph below is the daily current consumed by the fan.





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