Report Berowra RFS Headquarters
Power Logging/Thermal XR Treatment

16.5% Energy Savings (total building load)

Power monitoring indicates total building energy use savings of 16.5% over the monitored period.

Overload/Shutdown Occurrences Eliminated

Overload conditions experienced prior to treatment being applied did not re-occur during the monitoring period after treatment was applied

Introduction

This report summarises the power used at the Berowra RFS Headquarters building before and after Thermal XR, a thermally conductive coil coating was applied to the air conditioning units installed at the site.

Five Daikin 30kw heat recovery units are installed on the site, and the applicator has indicated that all units had the coating applied.

The report is based on data logged by Mt Colah Electrical, using an AEMC Model 8335 instrument to record power data including Amps, voltages and wattages for the complete building.

The data provided covers the period from the 12th November 2019 through to the 4th December 2019 with the coil coating applied on the 22nd November.

Thermal XR Coil Treatment

Thermal XR is a condenser coil coating that is intended to recover/improve heat transfer of corroded condenser coils, the application process involves:

- Cleaning the condenser coils, (the applicator has indicated that the coils, prior to treatment were “well serviced and relatively clean”.
- Pre-treating the coils
- Applying the Thermal XR coating

The treatment is expected to optimise the heat transfer properties of the condenser coils thereby improving operating efficiency, lowering energy consumption and peak loads.

The coating supplier has indicated that the coating is also “intended to provide ongoing corrosion protection and thereby extend the life of coils by at least ten years, with maintenance”.

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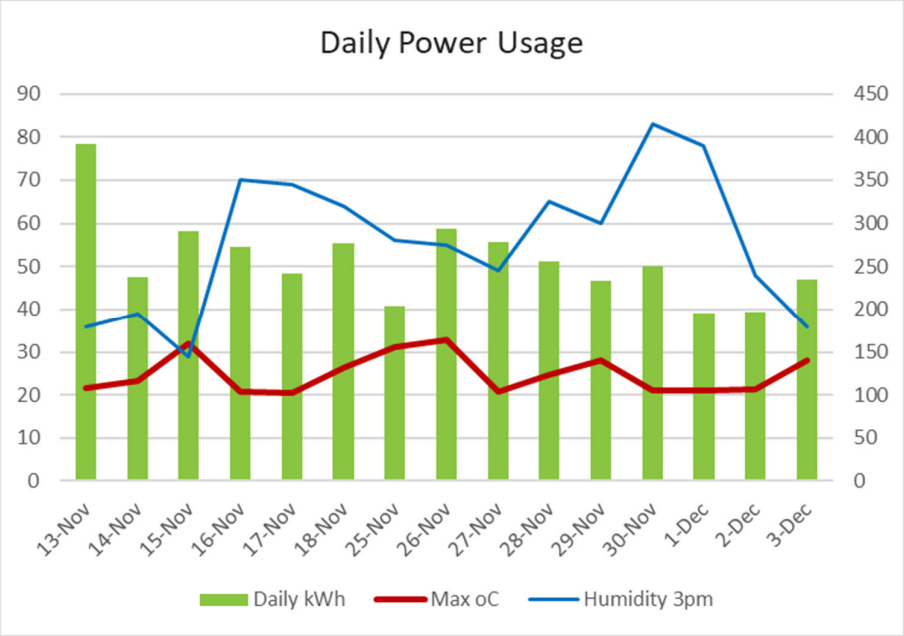
Results

Daily energy usage

The energy usage data provided, was filtered to remove days for which the logged data did not cover a full 24hr period, this data was then plotted along with weather data for the closest BOM data site (Terry Hills, Sydney).



The above data indicates a reduction in energy usage between the pre-treatment (13 Nov – 18 Nov) and post treatment (25 Nov – 3 Dec) periods (coating applied 22nd November) even though the operating conditions might be considered to be slightly more onerous in the post treatment period – slightly higher temperatures and humidity.

Averages:

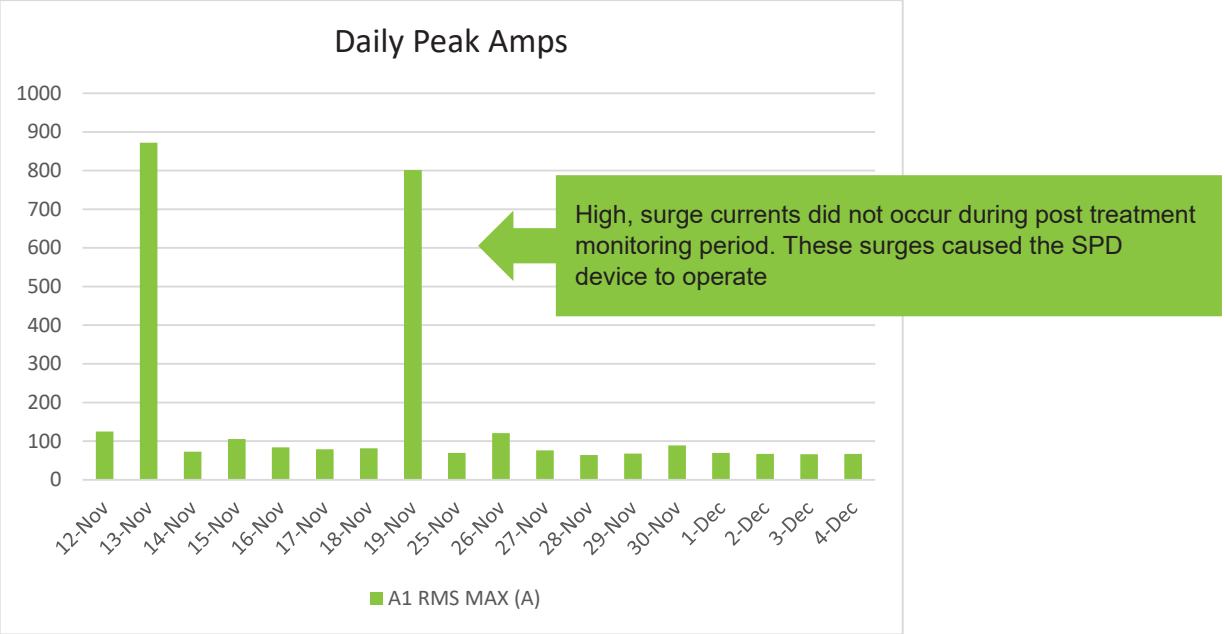
Measured Value	UOM	Value
Av Daily Power Consumption - Pre Treatment	kWh	286
Av Daily Power Consumption - Post Treatment	kWh	238
Av Max Temp - Pre Treatment	oC	24.1
Av Max Temp - Post Treatment	oC	25.4
Av Min Temp - Pre Treatment	oC	13.8
Av Min Temp - Post Treatment	oC	15.1
Av Humidity - Pre Treatment	%RH	51.2
Av Humidity - Post Treatment	%RH	58.9

Energy usage reduced by 16.5%

... while ambient conditions were slightly more onerous

Peak Currents

Prior to treatment occurring a safety protection device (SPD) was tripping, after treatment the device did not trip during the monitoring period. The graph below includes all data monitored and provides the peak amps measured on each day.



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