Case Study //

833 Collins Street, Melbourne

Located in the heart of Melbourne's Docklands precinct, the 14-storey low rise ground scraper features a fully connected floor plan and dynamic central atrium space providing natural light penetration. The building was completed in 2009 and is home to 6,500 ANZ employees with a net lettable area of 85,450m2.

The Challenge //

Built with a heavy focus on energy efficiency, 833 Collins Street is recognised as a Green Star rated building and utilises best practice design throughout including a fully operational Tri Generation Plant. Other environmental efficiencies include a facade coefficient, specialised lighting systems, natural light harvesting, blackwater recycling, solar panels, rainwater harvesting, and landscaped roofing.

To further continue the building's high energy efficiency standards, it was recommended that the operating plant be reviewed to ensure full optimisation. This review would not only maintain energy savings but would also provide the client with measurement and verification of the plant's performance, detailed reporting, and plant diagnostics.

The Solution //

Airmaster deployed the award-winning plant optimisation solution, PlantPRO to be installed at this site to both optimise the operation of the central plant and to provide advanced measurement and reporting capabilities to the facility.

Control strategies included active lift optimisation through a combination of chilled water and condenser water reset and further enhanced with variable speed primary pumping control. In addition to this, optimised chiller sequencing was employed to ensure the best fit chiller is always sequenced for the given building load.

The deployment of PlantPRO at 833 Collins Street was the first integration with a Siemens Building Management System (BMS). Integration was seamless and used BACNet IP for communications between the two systems.

PlantPRO was installed in December 2017 and operated in Measurement and Verification mode for the first three months so it could learn the characteristics of the plant while still being controlled by the BMS. Data gathered through PlantPRO was then used as a baseline to compare plant efficiency once PlantPRO took over control.

In March 2018, PlantPRO took full control of the chiller plant. An immediate improvement in running costs was seen and maintained over the next several months of operation.

The Results //

Comparative operating data for two 12-mont contract periods illustrate a continued downward trend in total plant energy consumption resulting in significant energy savings across the total two-year period. For the most recent 12-month period, PlantPRO realised a reduction in total plant energy consumption of 198,443 kWh equating to a cost saving for the previous 12 months of $21,569. These are based on the Q4 2018 VicCommercial Buildings Retail Blended Supply Rates.

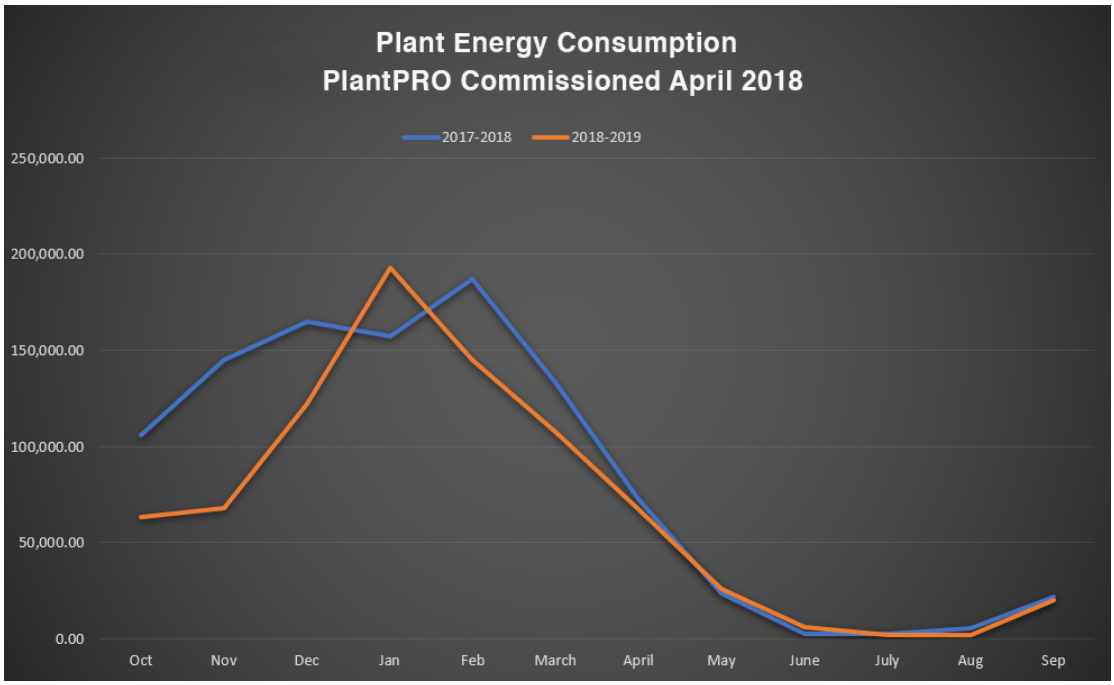

Figure 1- Total Plant Energy Consumption 2017-2018 vs 2018-2019. It should be noted that at the following times, the plant was operating under BMS control: prior to April 2018 (PlantPRO was newly commissioned in April 2018) and January 2019 (in order to facilitate the repair of chillers).

About Us //

Airmaster is an award-winning technical solutions company, delivering end-to-end management of heating, ventilation, air conditioning, industrial and process cooling and smart building automation across Australia, New Zealand and South East Asia. Based in Melbourne with 13 branches across Australia and New Zealand, Airmaster's commitment to sustainability is achieved through a proactive, integrated approach to helping organisations achieve energy efficiency in innovative ways.

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