

CASE STUDY

883 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 façade coefficient, specialised lighting systems, blackwater recycling, solar panels, rainwater harvesting, and landscaped roofing.

To further continue the building's high energy efficiency standards, it was recommended 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

Working closely with Airmaster, the award-winning plant optimisation solution, PlantPRO was 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.

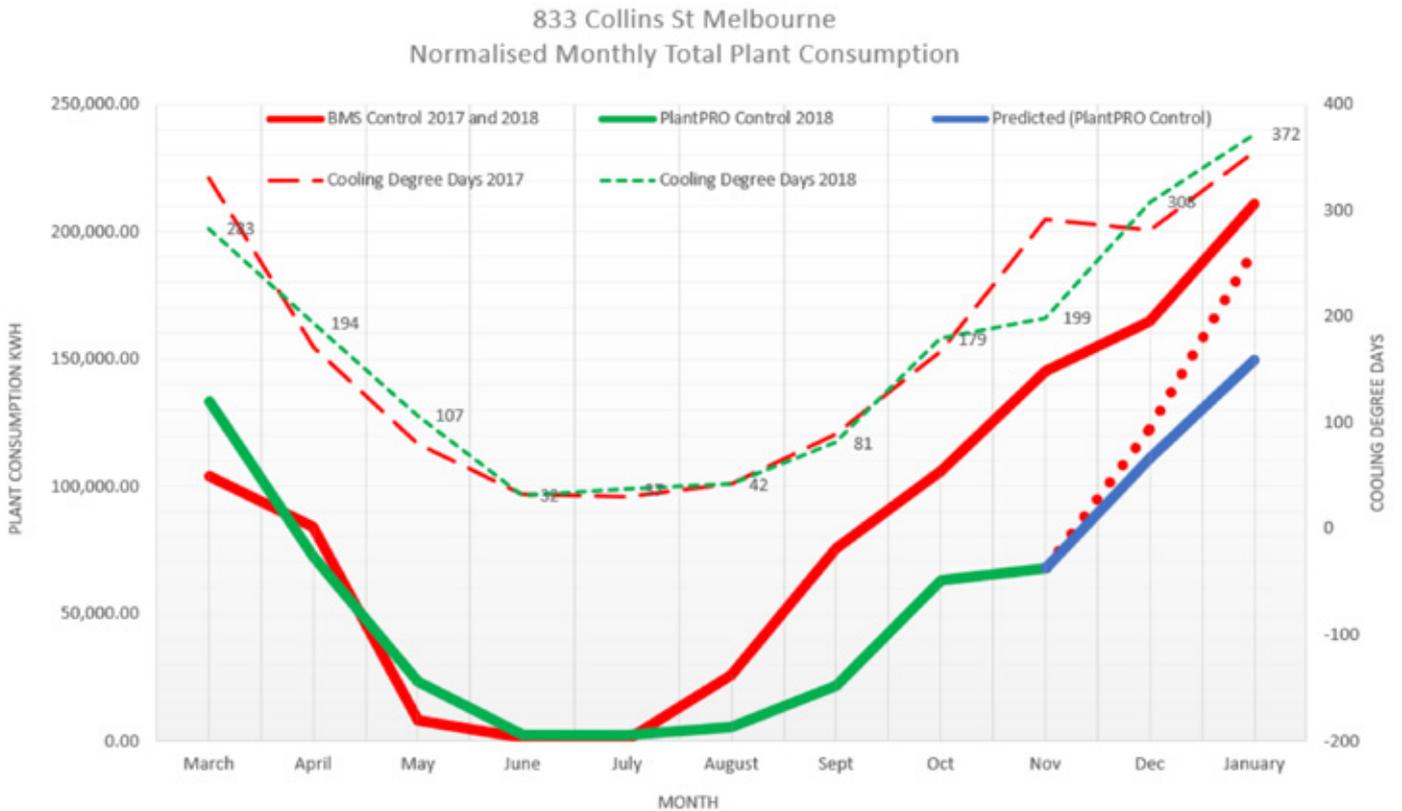
In March 2018, PlantPRO took full control of the chiller plant. An immediate improvement in running costs was seen and maintained over the next several months of operation.

THE RESULTS

Although comparative operating data was predominately over the winter months, it was clear that a downward trend in energy consumption was forming with even more significant energy savings seen over Spring 2018. To date, the site is tracking at 30% energy savings compared to the same time 12 months prior as demonstrated in the below table. Over an 11-month period, these energy savings equate to 273,164 kWh or \$35,400.00 based on the Q4 2018 Vic Commercial Buildings Retail Blended Supply Rates. Verified reporting predicts that the return on investment will be within 24 months of PlantPRO installation.

Figure 1- Normalised Monthly Total Plant Consumption.

(Note: In December 2018 and January 2019, the plant was under Manual BMS control to facilitate the repair of chillers as indicated in dotted red)



About Conserve It

Conserve It is an international leader in Smart IoT Solutions, building automation and HVAC solutions, having designed the award-winning plant room optimisation solution PlantPRO and founding member of Project Haystack.

We have partnered with international leaders in Building Automation & Controls, Analytics & Visualisation, Sensors & Metering, Actuators & Valves and Remote Access Security to be one of the leading Distributors in Smart Building Solutions.

As Developers, we build market-ready, Edge to Cloud solutions through best-in-class hardware and software solutions as a Dell OEM, through our range of Conserve It Edge IoT Controllers.

We are Industry Disruptors through our award-winning, smart machine learning chiller plant controls and optimisation solution PlantPRO®. With ongoing research and development, we work with our partners and local government to look into systems and solutions to ensure the future opportunities and trends are realised.

Headquartered in Melbourne, Australia, the Conserve It team has a wealth of knowledge and vast experience in control and optimisation solutions that ensure central plant equipment

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