MITSUBISHI HEAVY INDUSTRIES

HOT WATER SOLUTIONS

Q-ton Air to Water

Case Study

UNIVERSITY OF MELBOURNE

PROJECT DESCRIPTION

The Dookie Campus of the University of Melbourne, located just outside Shepparton, Victoria, is a key agricultural education and research facility with a history dating back to 1886. Known for its role in agricultural innovation and sustainability, the campus features a mix of heritage-listed buildings, solar farm infrastructure, and modern facilities designed to support student learning.

As part of the University's commitment to sustainability and its long-term goal of reducing carbon emissions, the Dookie Campus embarked on a project to become the university's first fully electrified campus, eliminating the use of gas-powered systems entirely.

PROJECT REQUIREMENTS & CHALLENGES

As part of this transition, the university wanted to replace existing heating solutions as well as their hot water system that relied solely on gas. This required an efficient high performance hot water system capable of servicing 35 hot water points, including sinks, kitchens, and bars as well as a heating and cooling solution to replace aging gas wall heaters and inefficient wall-box air conditioners. All solutions would need to deliver reliable performance given the region's extreme temperature conditions.

The project also required compliance with heritage building regulations and a quick installation time-line to minimize disruption to the operational campus.

PROJECT DETAILS
University of Melbourne
Dookie, VIC

COMPLETION DATE
2024

SYSTEMS INSTALLED
1 x ESA30EH2-25 Q-ton System
2 x 1,000L Stainless Steel Tanks

4 x SCM**ZSW Multi-split Systems
2 x DXK**ZSA-W Split Systems
2 x DXK**ZRA-W Split Systems

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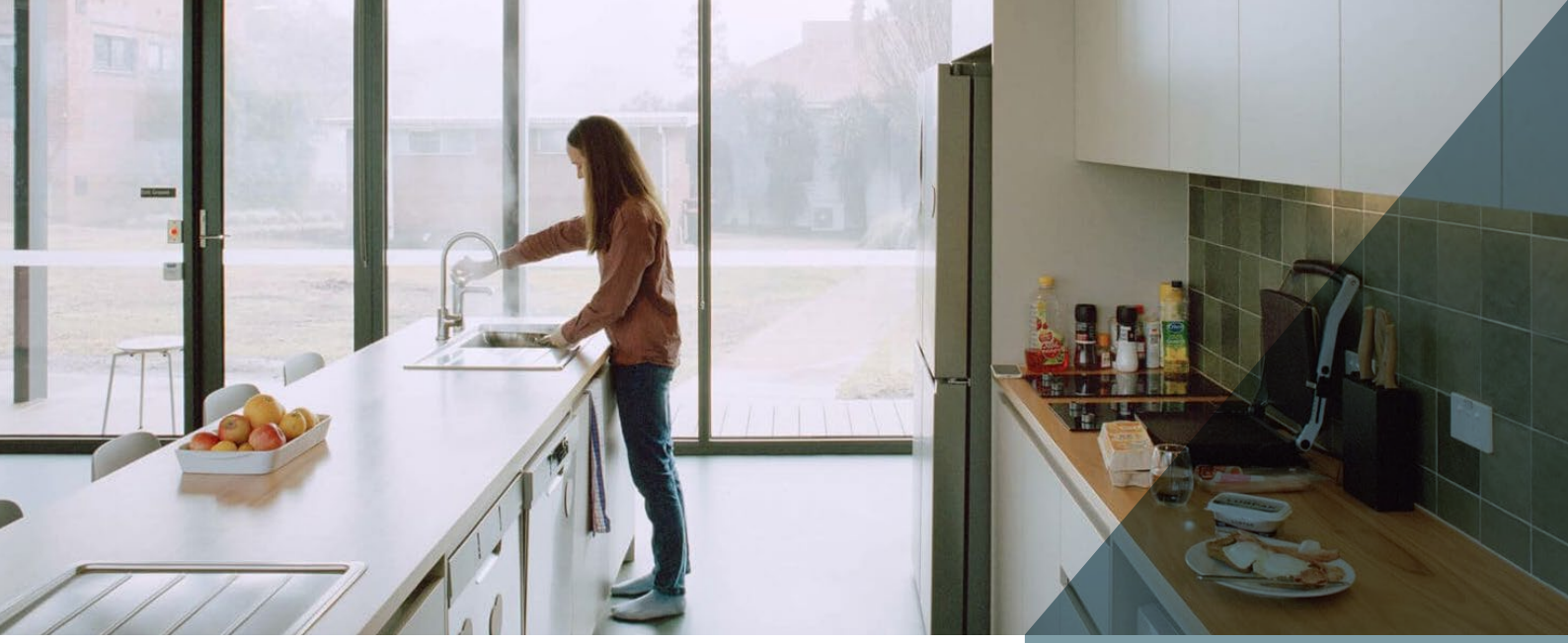

MHI'S SOLUTION

After discussions with contractors, the Q-ton CO2 heat pump was selected to deliver reliable hot water while the SCM series of multi split systems were selected as the heating solution for the project.

A single Q-ton unit was installed to replace the existing gas water heating systems, providing hot water for 35 points, including accommodation, dining hall and the commercial kitchen. The Q-ton's ability to deliver reliable, high-temperature water in extreme climates made it ideal for the project. With Q-ton being 600% more efficient than gas boilers, the system also significantly lowers carbon emissions, producing 76% less emissions, enabling the university to work towards achieving their long term sustainability goals while also offering a huge reduction in running costs.

Four SCM series outdoor units were connected to wall-mounted split systems across the student accommodation and classrooms, delivering energy-efficient heating and cooling. These systems were chosen for their compact design and ability to operate efficiently in high-temperature environments.

The combination of the Q-ton heat pump and SCM series air conditioning systems provided a cohesive, energy-saving solution that aligned with the University's electrification goals.

The University of Melbourne's Dookie Campus electrification project is a significant milestone in its sustainability journey, showcasing the viability of transitioning to gas-free, electrified systems in large-scale facilities. By providing reliable, energy-efficient heating, cooling, and hot water solutions, Mitsubishi Heavy Industries was able to assist the University chase its goal of creating a more sustainable future while maintaining the campus' operational excellence and preserving its heritage.

Q-ton Air to Water

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