

Client	Queensland University of Technology
Value	\$3.66M
Completed	2026
Location	Kelvin Grove Campus, Brisbane

Project Snapshot

VAE Group was engaged as Principal Contractor to deliver Stage 1 of the QUT Kelvin Grove Q Block Central AHU Replacement project at the Kelvin Grove campus in Brisbane.

The project involved the staged upgrade of critical HVAC infrastructure within a live university environment, supporting teaching, research and specialist laboratory facilities, including PC2 laboratory spaces requiring tightly controlled environmental conditions and continuous operation.

With works taking place around operational teaching and laboratory areas, the project required careful staging, planned changeovers and detailed stakeholder coordination to maintain building functionality, laboratory pressure control, environmental stability and occupant comfort throughout delivery.

Stage 1 Works:

- Upgrade of legacy BMS controllers and associated controls infrastructure
- Installation of new electrical infrastructure, including MSSBs and associated control systems
- Installation of duty/standby exhaust systems serving PC2 laboratory spaces
- Installation of AHU-8.3 and associated chilled water, heating water and heat pump systems
- Transitional ductwork and staged system changeovers
- Progressive commissioning and performance testing within operational laboratory environments
- Construction of new plant deck structure to facilitate access to new equipment and support future staged changeovers and HVAC infrastructures.

Outcomes

- Improved power and control diversity from transformer and generator supply through to MSSBs, MCPs and end plant equipment
- Improved maintenance access and operational redundancy to support future staged upgrades
- Improved dehumidification performance to support active chilled beam operation
- Introduction of heat pump systems
- Removal of heat wheel arrangements to eliminate air contamination crossover
- Resolution of acoustic issues associated with the previous system
- BMS upgrade to support future project stages

✓
Improved HVAC reliability, resilience and environmental control while maintaining QUT's Q Block as an operational environment for teaching, research and PC2 laboratory activities.

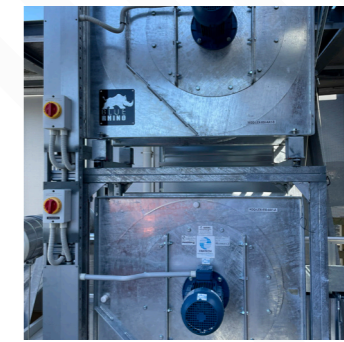
Project Works:



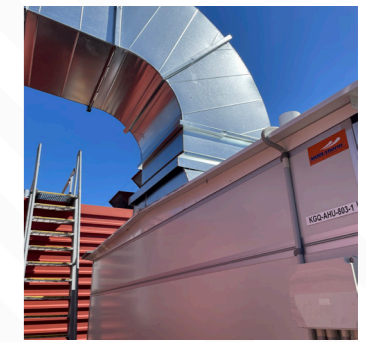
New **Plant Deck**



New **Heat Pump** on the new plant deck



New **Duty/Standby Exhaust** system provides pressure control for wet lab area.



New **Ductwork**



New **Heat Pump** on the new plant deck



New **AHU-8.3** supplies dehumidified air to the wet lab area.



New **AHU-8.3 Sections**



New **MSSB** Mechanical Services Switchboard

Key Challenges

Maintaining a Live Campus

The project was delivered within an active university campus where teaching, research and daily building operations needed to continue throughout construction. The delivery was built around staged construction, coordinated changeovers and progressive commissioning to minimise disruption and maintain building functionality.



Protecting Critical Laboratory Conditions

A key requirement of Stage 1 was maintaining stable PC2 laboratory conditions during the upgrade, supported by reliable ventilation, exhaust and pressure control.

Duty/standby exhaust systems and damper modulation provided active pressure control and improved resilience, with progressive commissioning used to verify performance in the live laboratory environment.