



University of Newcastle

Health Education & Research Building (HERB)



CHILLER



BMS



AIR HANDLING UNITS
AND FAN COIL UNITS



DUCT
WORK



MSSB

Client: Lipman P/L

Contract Value: \$2.7M

Completion: 2025



STATE OF THE ART FACILITY

FULL MECHANICAL SERVICES FITOUT

Project Overview

VAE Group's Newcastle team has proudly delivered the full mechanical services fitout for the University of Newcastle's new Health Education Research Building (HERB) at the Callaghan campus. Partnering with Lipman, this state-of-the-art facility provides a modern environment to support the University's Nursing and Midwifery programs, featuring advanced simulation labs, teaching spaces, student hubs, and offices.

The University of Newcastle (UoN) is renowned for its commitment to world-class education and research, particularly in the health and medical fields. The new Health Education and Research Building (HERB) provides cutting-edge facilities that combine modern teaching spaces, enhancing student learning, fostering innovation, and ultimately deliver long-term benefits to both the University community and the wider healthcare sector.

Our Approach

To align with the building's unique operational requirements, our team implemented a mix of chilled and hot water systems alongside refrigerant-based systems:

- Two new heat pumps were installed on ground level to generate chilled & hot water.
- Seven Air Handling Units (AHUs) and four Fan Coil Units (FCUs) serving the entire Level 2 tenancy.
- The chilled water pipework was integrated with existing Level 3 services to provide seamless system connectivity.
- The complete system was fully integrated into the main Universities site-wide BMS
- The Central Hot Water pipework was reconnected to the main campus Thermal plant system, ensuring redundancy and reliable backup for the teaching space.
- Both chilled and hot water circuits feature dual pumps, buffer tanks, and supporting hydronic equipment, ensuring redundancy and system reliability.





Comfort, Control & Efficiency

The new AHUs are fitted with Variable Air Volume (VAV) boxes, each managed via room thermostats to control comfort levels within the space. The system was design & selected in line with stringent acoustic requirements to maintain sound levels within the teaching space.

Additionally, a dedicated DX split system has been installed to service the Level 2 Network Room. This includes a wall-mounted indoor unit paired with an air-cooled outdoor condenser located in the southern ground floor plant space.

Key Highlights

- State-of-the-art facility: Delivered a full HVAC fitout to support modern nursing and midwifery programs, including simulation labs, teaching spaces, and student hubs.
- Comprehensive mechanical scope: Installed chilled and hot water systems, refrigerant-based solutions, seven new AHUs, and four FCUs.
- Seamless integration: Designed and delivered systems that tie into existing campus infrastructure while ensuring redundancy and efficiency.
- Future-ready performance: Prioritised occupant comfort, reliability, and long-term energy efficiency to support the University's teaching and research goals.

Outcome

The UoN HERB Fitout represents a successful collaboration between VAE Group and Lipman, delivering a mechanical services solution that balances comfort, safety, efficiency, and reliability. With advanced systems now in place, the University's Health Education Research Building is ready to provide students and staff with a modern, future-ready teaching and learning environment. This project also showcases VAE's expertise and continued growth in the Newcastle region, reinforcing our position as a trusted partner in delivering innovative HVAC solutions for education and research facilities.

