



Bournemouth University

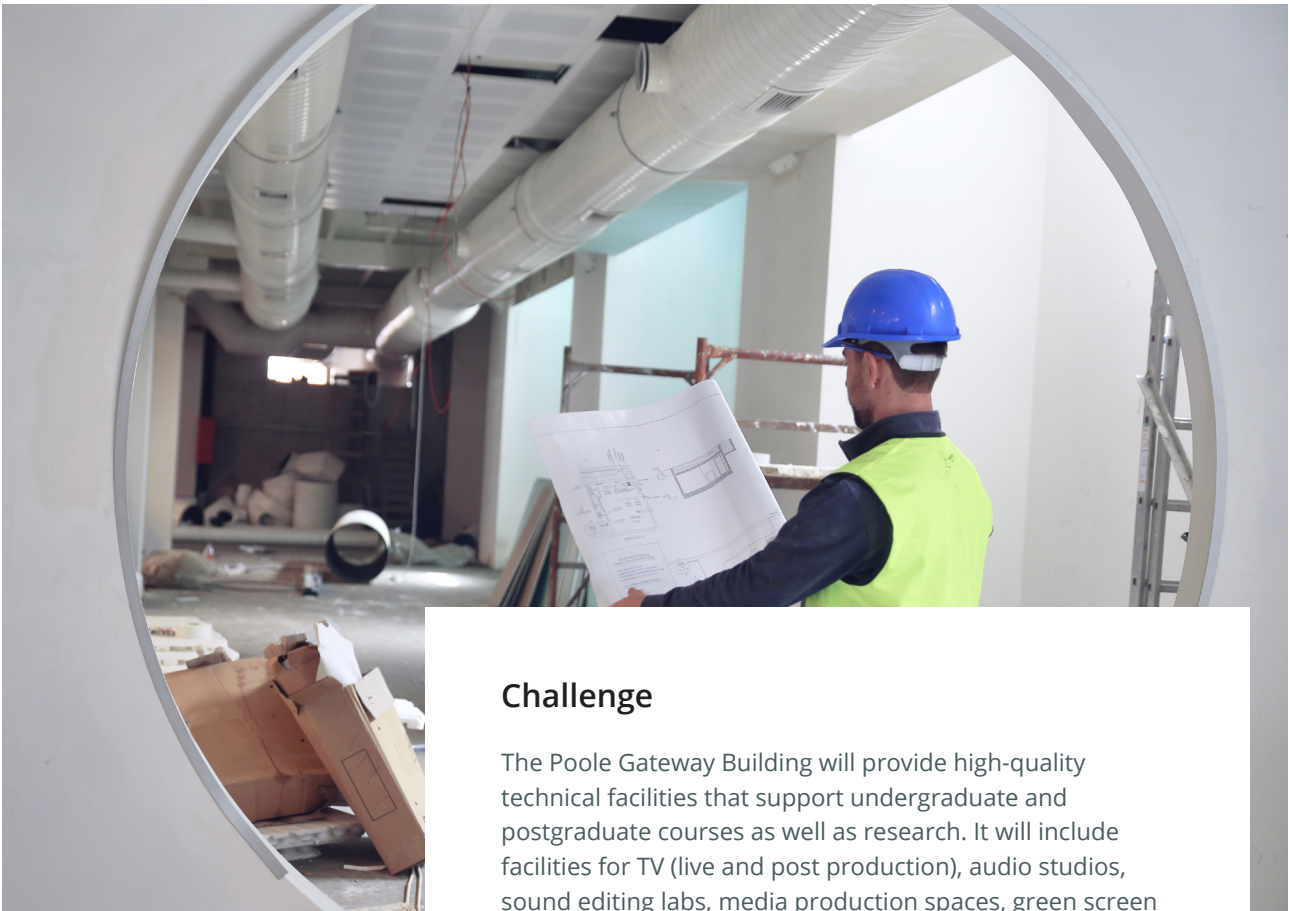
Case Study



Delivering a comfortable, productive learning environment

VES, in conjunction with Willmott Dixon Construction and Mitie Projects Wales, provided a bespoke HVAC solution tailored to suit the new build design criteria and low noise requirements of this new cutting-edge technical facility for Bournemouth University. A comfortable, productive learning environment was achieved.

Client	Willmott Dixon
Sector	Education
Challenge	Create a bespoke air handling unit that delivered effective performance and efficiency savings
Success	Manufactured 13 innovatively bespoke air handling units reducing breakout



Rendered impression of the new building

Challenge

The Poole Gateway Building will provide high-quality technical facilities that support undergraduate and postgraduate courses as well as research. It will include facilities for TV (live and post production), audio studios, sound editing labs, media production spaces, green screen with motion capture suite, PC and Mac laboratories and cross-faculty collaboration spaces. These facilities will be predominantly used by the Faculty of Science & Technology and the Faculty of Media & Communication. They will also be used by the Faculty of Management and the wider student body (Willmott Dixon).

In conjunction with the latest BREEAM sustainability assessment programmes and new product designs, the challenge was to deliver student comfort for effective learning, whilst delivering effective performance and efficiency savings.

VES were asked to work with the appointed Contractor and M&E Consultant to design and manufacture a premium specification, bespoke air handling solution, to meet the European standards for an AHU's mechanical performance; BS EN 1886, including the low noise requirements required from this 5,000 sqm specialist teaching facility.

Specific classifications for the mechanical performance of these AHUs included L2 casing air leakage and TB2/T2 thermal transmittance classification, as well as achieving extremely low breakout from large air volume units, which were providing the appropriate Indoor Air Quality (IAQ) for the facility.



Solution

Working with Mitie Projects Wales for Willmott Dixon, VES designed and manufactured 13 innovative configured bespoke Air Handling Units, which optimised the use of a Thermal wheel for heat recovery and reduced exhaust noise by positioning fans differently from the norm. The project also included 4 Adiabatic AHUs for adiabatic cooling; the process of reducing heat through a change in air pressure by volume expansion.

Whilst complying to building regulations, we significantly reduced the breakout from the unit, contributing to smaller units being positioned on an already clustered roof space. All units were delivered fully assembled to ensure a straightforward crane lift.

We provided units to a premium construction, with the case being built with an aluminium frame and galvanised steel sheet panels, tested to BS EN 1886 to achieve Thermal Bridging (TB1), Thermal transmittance (T), Deflection (D) and L2 Leakage class.

D1 construction ensures the case will withstand the forces applied when in operation and maintain the Leakage (L) Class 1 rating. L1 construction minimises the air leakage through the unit reducing wasted energy and guaranteeing performance. T1 construction minimises heat loss within the AHU reducing energy consumption from associated heating and cooling plant whilst TB1 mitigates the risk of condensation prolonging the lifespan of the AHU.



AHUs delivered on site



One of the larger units on site



AHU on site



Both the support up to order stage and after-sales has been very good, and happy to continue to work with VES.

Project Manager *Mitie*

Results

This large Plant for the University Media Building, supplying air to Drama Studios, Film Studios, PC Suites, Laboratories, Media Production facilities and Green screen rooms will ensure heat and airflow losses are minimised, capitalising on the energy recovered from the high efficiency thermal wheel.

Not only was the main contractor very satisfied with the proposed solution, VES also ensured we kept to the strict tender budgets to deliver on this project.