

University Project

External, Energy Efficient Data Centre Build



Client Brief:

The University of York required a new standalone Modular Data Centre and associated infrastructure to meet the projected increases in user demand and the requirements for business continuity. The project must meet long-term carbon savings plus targets for energy from renewable sources.

Timescale:

After a consultation of 12 months, construction started in March 2010. Secure I.T. Environments' Service Management delivery team implemented a tight programme of works, which was to schedule the completion and handover of the facility in June 2010. This timescale was compulsory due to I.T. Services migrating their services into the new facility prior to the completion of the main campus construction programme. The Data Centre was successfully handed over two weeks ahead of programme, much to the delight of the University.

Logistical Challenges:

The Phase 1 accommodation was divided into a main server room of 245m², a Service Room of 60m² and an external utilities area to house a generator and fuel tank of 135m². External plant such as drycoolers were located on a roof platform above the modular structure, allowing valuable floor space to be saved. To meet planning requirements the facility was clad with profiled metal cladding to match nearby buildings and Modusec also had to design and erect a steel structure to surround the modular building, which was capable of supporting externally mounted plant and equipped with rails to attach the cladding. Working on site under the main contractor BAM Construction it was imperative that the delivery schedule was timed to perfection, with the complete

area still under major construction works. With only temporary access to site, this was hampered with the wettest March and April for some years. The installation included raised access floors, followed by N+1 design on all M&E services. All external chillers were craned onto the roof which had been designed to house all the external plant and services, plus any expansion equipment to be added. This was followed by the LV Switchboard panels providing connectivity into the new power supply. Full power monitoring was supplied to allow the University to monitor its energy consumption, with all solutions focused on providing the most flexible power delivery option to meet the need for diverse rack and hardware installations. A 1MVA Standby Generator and 5,000 litre fuel tanks were installed to provide a complete standalone facility. Two 200 KVA UPS systems, designed to keep PUE of the site to a minimum, from Riello UPS Systems' High Efficiency Master Plus Range were installed. Free cool air conditioning was installed as Phase 1, with the pipework and infrastructure in place to allow additional cooling to be provided as the facility is fully populated. VESDA and Novec were commissioned, followed with the installation of a full network design with diversely routed fibre entering the building from locations on both campuses. Internal cabling was based on a pre-terminated solution to all racks housed within Cold Aisle Containment. CCTV, intruder alarms and environmental monitoring systems were finally installed to complete the package. The external finish of the room was fitted with a profiled metal cladding to match that of adjacent buildings.

Room Size, Phase 1:
305m²