

CASE STUDY

MAT DELIVERS FULL MEP BUILDING SERVICES PACKAGE FOR NEW ORTHOPAEDIC SURGERY CENTRE



Medical Air Technology (MAT) specialises in the design and delivery of operating theatre suites that meet or exceed the guidelines contained within HTM 03-01 (2021)

Specialised ventilation for healthcare buildings. The team at MAT brought its

expertise to bear when working with a large district hospital and specialist healthcare construction firm Darwin Group to provide two new ultraclean ventilation (UCV) operating theatre suites and a six-bed first-stage recovery, complete with staff room and staff change, as part of a brand new specialist orthopaedic surgery centre.

The project represented a sizeable investment of £5.3million. It aimed to increase theatre capacity by 50% and allow operations to take place seven days a week to help reduce waiting times. The hospital chose to use modular construction for the new two-storey building that houses the theatres and associated services so it could be up and running as quickly as possible, bringing the most advanced surgical facilities to people living in the area.



The design, installation and commissioning process

After negotiating the technical and commercial aspects of the project with Darwin Group, MAT coordinated with the healthcare Trust to bring the necessary heating, cold water mains, power and medical gas services to the edge of the new plantroom from the existing hospital infrastructure. Facilitating the new theatres required the laying of more than 19 miles of cabling, three miles of data cables, 1,200 metres of fire alarm cable, 1,000 metres of pipework and 1,350 metres of medical gas lines.

For this full mechanical, electrical and plumbing (MEP) building services package, MAT worked closely with Darwin Group's experienced in-house design team to ensure all new plant and building services were adequately sized and positioned to minimise costs, maximise efficiencies, and ensure future maintenance of equipment would be catered for.

MAT provided three new dedicated air handling units, ductwork distribution and BMS control systems to serve the operating theatre suites, first stage recovery and clinical staff support areas. In addition to the new critical ventilation systems, MAT also provided the domestic hot and cold water pipework distribution, above-ground drainage, sanitaryware, toilets, showers etc, which completed the mechanical services package.

From an electrical perspective, all general internal and external lighting, power and controls wiring, small power, medical IT and UPS, specialist equipment wiring, room-in-use signage, fire alarm, nurse call, data and containment were provided.



Specialist equipment package

The specialist equipment package (SEP) MAT provided encompassed operating lights, service pendants theatre control panels and picture archiving and communication system (PACS) workstations.

At the centre of each theatre is MAT's ECO-flow ultraclean ventilation (UCV) canopy, which uses exponential airflow to create a zone of ultraclean air over the patient and theatre team, dramatically reducing the risk of infection and creating the best possible environment for orthopaedic surgery.



MAT – a specialist critical ventilation contractor

MAT designs, manufactures, and installs bespoke critical ventilation systems and turnkey project solutions for new build and refurbishment healthcare and life science projects. The team has extensive knowledge in delivering these solutions, a dedicated in-house design team, and experienced project managers used to working in live environments who fully understand the challenges around delivering a project within an operational scenario.

In addition, the company's facilities management division, MAT FM, provides a range of competitively priced and highly effective service and maintenance packages for all core products and turnkey solutions offered by MAT or other suppliers, ensuring that equipment is maintained, serviced and validated correctly for optimum performance and efficiency.



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