



Project:  
Birmingham Hospital

Value:  
£230 million

Completion date:  
2011

Main Contractor:  
Balfour Beatty Construction

Client:  
Birmingham NHS  
Foundation Trust

Project Summary:  
Phase one of the Acute  
Hospital of Birmingham  
New Hospital project is  
the largest UK new hospital  
outside London. Phase  
one was completed on  
schedule with latter  
phases completed some  
12 months early.

## Case Study Birmingham Hospital

BBES and Modular Systems + complete M&E installations  
12 months early at Queen Elizabeth Hospital Birmingham

**The UK's leading mechanical and electrical contractor, Balfour Beatty Engineering Services (BBES), has delivered a range of mechanical and engineering solutions at Queen Elizabeth Hospital Birmingham. At the UK's largest single site hospital, BBES utilised its modularisation and off-site manufacturing capabilities to complete some aspects of the installation 12 months ahead of schedule.**

BBES was appointed to complete the £230 million mechanical and engineering package at the 137,000m<sup>2</sup> hospital as the company successfully demonstrated its Modular Systems and that its team had the capability to use the latest off-site, prefabrication techniques to deliver significant savings in man hours and expenditure, as well as providing a much safer way to work.

As well as health and safety benefits, off-site fabrication provided a more sustainable and environmentally friendly form of construction. With the correct utilisation of materials, controlled waste systems and scheduled deliveries, BBES was able to minimise waste, reduce labour, use less components and dramatically reduce transportation costs.

At its Modular Systems and manufacturing facility, BBES designed and built more than 600 shower and WC pods to be installed throughout the hospital. Utilising a quick, simple and repetitive installation process, the units were assembled off-site to eliminate the need for hot works at the hospital, saving 6,800 hours in the process.

BBES also utilised an innovative modular wall system, with more than 300 ward wall modules delivered to site, each with integrated services as part of the overall design. The complete wall panels include electrical accessories, medical gases, nurse call and lighting, with all electrical and mechanical services built in. The panels have anti-microbial protected vinyl coating, and are fully fitted with no follow-on finishing required.

The hospital was also supplied with off-site manufactured services risers, plant rooms, modular wiring and more than 1,800 modules supporting ductwork, pipe work and cable containment for the hospital.

BBES and its Modular Systems team aims to provide a Zero Harm environment, in line with Balfour Beatty's corporate safety objectives. Demonstrating this company ethos, as well as the health and safety benefits of off-site modularisation, the project has won several awards throughout the construction process including the Royal Society for the Prevention of Accidents Gold Awards in 2009 and 2010 and the RoSPA Gold Award for Occupational Health and Safety.



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