

Bexley Wing, St James's Institute of Oncology Leeds, United Kingdom



Project

Design and build one of Europe's largest cancer treatment centres

Location

Leeds, UK

Commencement on site

October 2004

Completion year

December 2007

Client

Catalyst Healthcare Management Limited

Value

£181 million



Bovis Lend Lease role

- Design and build contractor
- Procurement of major medical equipment
- Underwriting the financial risk for commissioning both the building and the equipment – a market precedent in the PFI healthcare sector.

Highlights

- Winner of the Gold medal for PFI projects in the 2008 Construction Manager of the Year awards
- One of Europe's largest cancer treatment centres
- Energy saving measures to cut running costs
- Innovative building program ensured on-track handover

Set to become a national centre for teaching, research and development, the new wing provides diagnostic and therapeutic services for non-surgical oncology and specialist surgical services.

The 12-storey Bexley Wing has 1 600 staff and accommodates 350 inpatient beds, making it one of Europe's biggest specialist cancer treatment centres.

Design Challenges and Innovation

Architects Anshen Allen made clever use of the steeply sloping site to position three of the storeys below ground level significantly reducing the visual impact of the 12-storey building and providing a safer underground location for the hospital's radiation emitting radiotherapy equipment. To protect the public and hospital staff, the treatment chambers are constructed with high density concrete walls up to 2.4 metres thick.

Above the radiotherapy plinth, the building rises in an E-shaped footprint that maximises perimeter walls for natural light and ventilation. Particular attention has been paid to the design of the patient environment, with individual controls for light, temperature and airflows.

Standing beside an existing wing of the famous St James's Hospital on a very constrained and previously developed site, extensive excavation and piling was needed prior to construction.

Construction Challenges and Innovation

To manage risk, Bovis Lend Lease developed a two-stage 'build on building' program that allowed plenty of drying time for the dense concrete of the radiotherapy plinth. The eight linear accelerators in the radiation department were commissioned a year ahead of handover.

Leadership in Sustainability

Particular attention has also been given to the building's carbon footprint and running costs. Two absorption chillers capture waste steam from existing hospital boilers, turning it into chilled water for use in the new wing's heating and cooling system.

Another process recycles waste air from the ventilation system, feeding it back into the hospital boilers as pre-heated water, while a series of heat exchangers recover waste heat from the hot water pipes.

To reduce maintenance bills and protect the environment, stainless steel drainage pipes have been used rather than PVC, and cabling is insulated in polythene rather than PVC.

