



The Royal Marsden Hospital, Chelsea, London

Project overview

As a world leader in the diagnosis and treatment of cancers, London's Royal Marsden Hospital invests heavily in the latest technologies to help its patients fight the disease. When in 2010 the hospital decided to replace its old brachytherapy suite with a state of the art Cyberknife[®], Calder Industrial Materials were asked to design, manufacture and install high performance lead shielding into the existing bunker.

Duration:

Installation began in October 2010 and finished in January 2011. Factoring in the Christmas holiday and breaks to allow other contractors to undertake their works, Calder completed the job in just over 7 weeks, two weeks ahead of schedule.

Constraints:

Cost was a significant issue and the Royal Marsden were obviously keen to get the best value for their money. Additionally, the steel shielding used on the roof of the bunker meant the junction between it and the lead walls needed special consideration.

Project controllers:

The Royal Marsden Foundation Trust appointed Ansell and Bailey, an architectural practice with a long history of healthcare projects, to work closely with the building contractor Cuffe Plc to manage the overall refit and successful delivery of the project.



Control from start to finish

Calder's project management specialists oversaw every step of the design, manufacture and installation of the shielding in The Royal Marsden's Cyberknife® bunker, a one-stop solution only provided by Calder, the European leader in lead shielding.



High levels of radiation

The new Cyberknife® will be installed in an old brachytherapy suite. As the CyberKnife precisely delivers pencil thin beams of radiation from a large number of angles the existing shielding was insufficient to support this. Calder's lead chevrons were able to provide the necessary additional protection required and were flexible enough to work within the existing structure of the bunker.

An innovative solution

With thicknesses varying from 20mm to 150mm, Calder's lead chevron rail system was the perfect solution to the bunker's increased shielding requirements. The interlocking chevron "bricks", 93 tonnes of them in total, lined the existing concrete walls, while Calder's experienced installation team made sure that their configuration eliminated potential shine paths.

The junction between the new lead chevron walls and the existing steel roof required an innovative solution from Calder's design and installation teams. By working together they were able to ensure that this critical joint, potentially a source of radiation leakage, was efficiently sealed to preserve the integrity of the bunker.

One of the last jobs during fit out was the installation of a shielded automatic swing door. Weighing 800kg and with 10mm of lead shielding, this 1500mm wide door was the final component of a lead shielded bunker that will help The Royal Marsden safely deliver the very best care to their patients.



CyberKnife® Unit

“ Due to the challenges of eliminating any shine paths between the lead walls and the steel ceiling, we required a specialist radiation shielding contractor with the necessary technical skills and expertise to come up with a workable, cost effective solution. Not only did Calder provide this solution but they completed their element of the project ahead of schedule and to budget. ”

David O'Neill, Cuffe Plc Contracts Manager



Call today for more details.

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