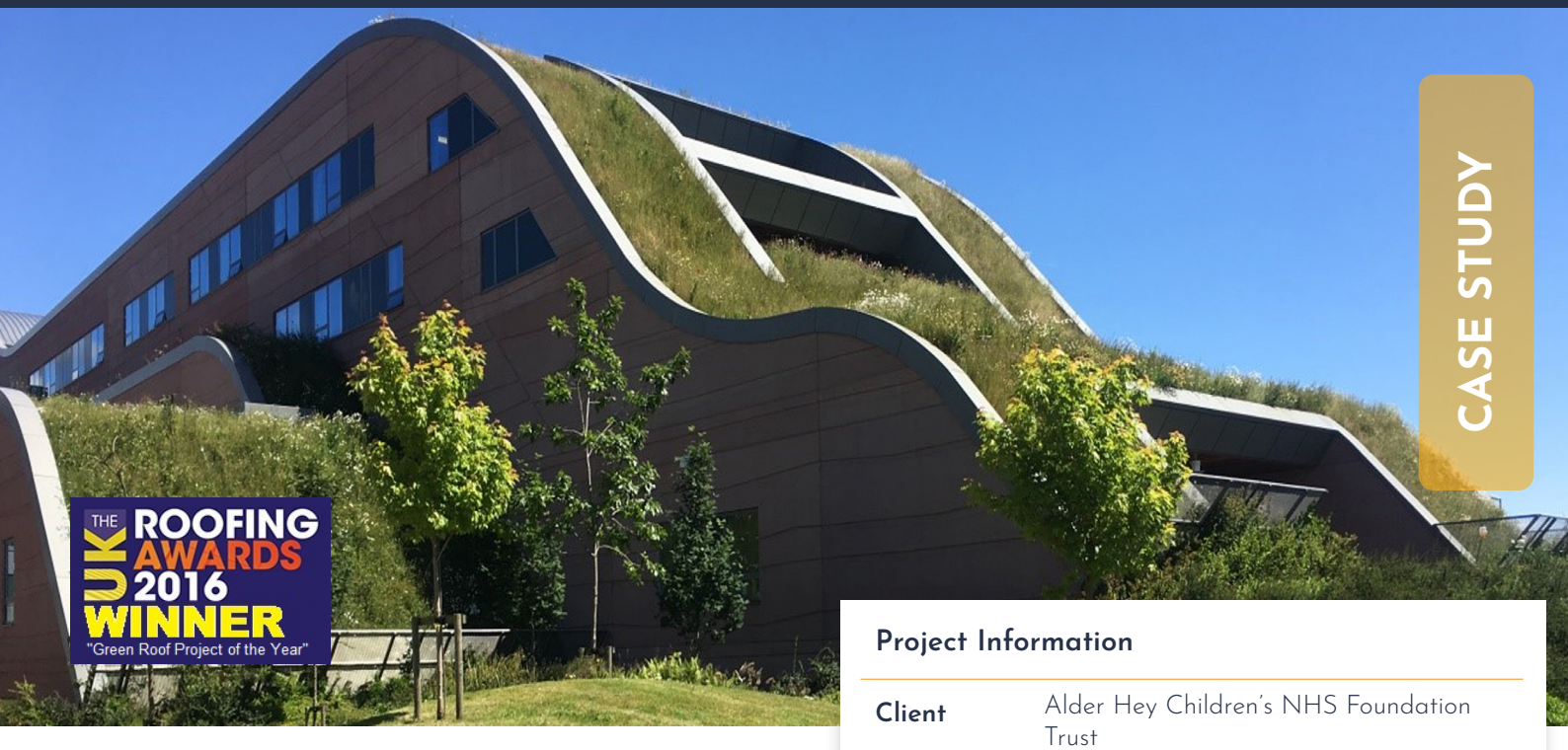
Green Roof

Extensive, Alder Hey Children's Hospital, Liverpool, UK

CASE STUDY



Project Information

Client	Alder Hey Children's NHS Foundation Trust
Contractor	Laing O'Rourke / Geogreen
Architect	Building Design Partnership
Product	ABG Green Roof System
Quantity	4,000m²
Benefits	• Park environment, enhanced patient, visitor and staff experience. • Bespoke Green Roof design for the 45 degree pitch • ABG service: Design to Installation • Award Winning Roofing System

Project Description

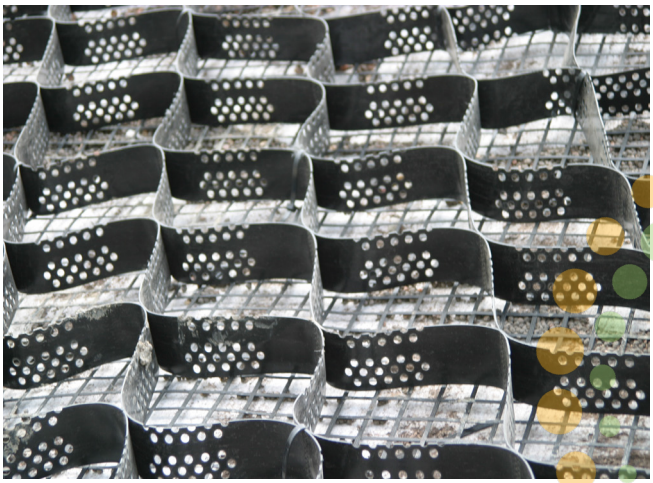
The new Alder Hey Children's Hospital is now open with the £237m contract completed by main contractor, Laing O'Rourke, in October 2015. The Alder Hey world class development is Europe's only hospital in a park. The building rises out of the park on approach with an undulating profile, making it instantly recognisable and a striking and iconic gateway to Liverpool. The unique design of the building engenders well-being and raises patients' and visitors' spirits by adding to their quality of life by providing a pleasant healing environment for children and young people.

The Challenge

Architects, Building Design Partnership, wanted the 3 open fingers to radiate out from the atrium concourse that forms the hospital's public hub. The challenge was to incorporate a green roof finish to both flat and curved roof areas. In areas the roof pitch would be as steep as 45 degrees, a pitch not normally conducive to incorporating such a system. Any solution would not only need to be structurally stable but also support a strict wildflower planting regime to achieve the desired appearance.

The Solution

ABG used their vast experience within both the green roof & slope stabilisation industries to create a bespoke design to make the curved green roofs possible. Working closely with the design team, the main contractor and envelope contractor, Prater Roofing, ABG designed, manufactured & subsequently installed via Geogreen a multi-layer system.



ABG Erosaweb tied to ABG Trigrid laid on ABG Roofdrain anchored to roof

ABG LTD

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The system incorporated a series of anchor points, reinforcement geogrid (Trigrid) & geocellular technology (Erosaweb) to retain the growing media & vegetation on the 3 curved roofs.

A significant part of the design process not only involved slope stability and aesthetics but equally as importantly buildability and subsequent maintenance. The roofing materials were lifted to each roof level using dedicated cranes. Growing media was lifted in concrete skips with pressure release valves to minimise point loading and evenly spread materials. Whilst the pre grown wildflower mat was supplied in 25m long rolls on a steel boom to minimise joints.

The Green Roof system itself incorporates a SMART rain sensor and automated irrigation pipe system, with each finger having its own dedicated mains operated tank.

The ABG Service

ABG designed the detail of the system carefully taking into account the requirements of the client and sensitive nature of the development.

Installation of the geocellular system (Erosaweb) to retain growing media on slopes. All Geogreen operatives were Irata level 3 & 4 trained as rope access was critical.

Reinforcement geogrid (Trigrid) secured to anchor points installed above the reservoir & drainage layer (Roofdrain)

Alder Hey in the park; a pleasant healing environment for children and young people

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