

Structural Drainage

Green Bridge, Roofdrain, A556 Knutsford to Bowdon, Cheshire, UK



Case Study

Project Description

The A556 Knutsford to Bowdon Green Bridge is one of the seven bridges on the £192M Highways England strategic road scheme, constructed to improve links to Manchester Airport from the M6. This unique structure crosses the road south of the A50 at Mere and is the first ever green bridge constructed on the Highways England Network. It was part of the environmental mitigation measures for the local community providing a natural wooded connectivity over the A556 for farm animals and pedestrians.

The Challenge

Minimising the environmental impact included carbon footprint reduction in both the design and the construction for the whole site. The design aim was to plant trees over the bridge as suitable environment for wildlife. These trees require a depth of growing media along with sufficient water supply to sustain a strong root system and tree canopy.

The challenge was to minimise the dead load to avoid increasing the bridge structure cross section whilst providing sufficient nutrients, water and soil structure for the trees the flourish. Access on the bridge is restricted and installation of any chosen product should be easy and quick to place.

The Solution

Roofdrain was chosen as a combined water attenuation and drainage layer reducing the depth of soil usually required to sustain the desired plants and trees to 600mm. **Roofdrain** is a lightweight, robust, geocomposite

Project Information

Client	Highways England
Contractor	Costain
Consultant	Capita
Products	Roofdrain 40S1RXSSC3h
Quantity	450m ²
Benefits	<ul style="list-style-type: none">• Supplied as one product allowing fast installation and reduced construction time• Light and easy to cut to shape• High water storage capacity for tree growth• High strength resists trafficking



ABG Roofdrain – bonded geocomposite with upper filter geotextile and basal protection geotextile

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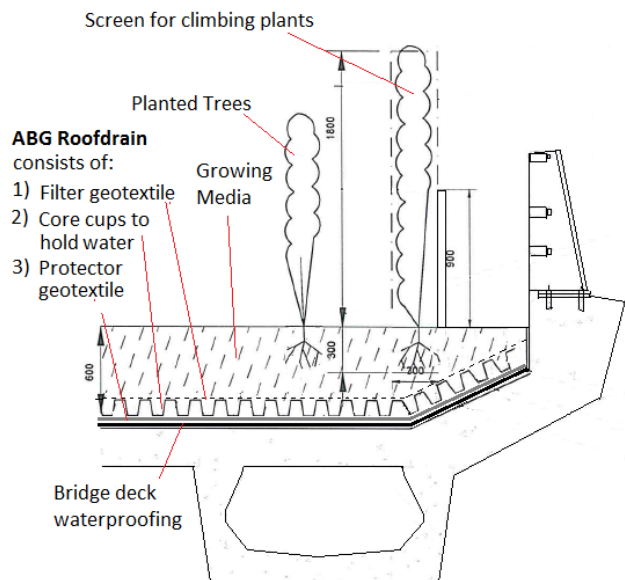
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water retention and drainage product which provides a complete modular system, easy to lay and cut to the surface profile of the bridge. **Roofdrain** is comprised of a protection geotextile which allows it to be placed directly onto the bridge deck waterproofing, an upturned cusped core which holds the water overlain with a filter geotextile to prevent soil filling the cups. This is backfilled with growing media and planted.

The ABG Service

ABG, also a leading green roof provider, assisted with the specification to provide an optimum design for the bridge. **ABG's Roofdrain** was shipped to site on one of their own FORS accredited vehicles, in line with the sites' award winning safety goals for site and public personnel. **ABG Deckdrain** was supplied for all the structures on the site as an alternative to back of wall drainage stone. This contributed to the 120 tonnes of reduced Carbon attributed to reduced vehicle movements on the site.



Roofdrain is a geocomposite with three components laid directly on bridge deck waterproofing layer



Placing of 600mm of growing media



First Green Bridge for Highways England

Contact ABG today to discuss your project specific requirements and discover how ABG past experience and innovative products can help on your project.