

A5130 Road Widening and Busway Park & Ride, Milton Keynes

MILTON KEYNES, BUCKINGHAMSHIRE, UNITED KINGDOM



TYPE OF PROJECT

Reinforced Soil Walls And
Slope Reinforcement

YEAR OF CONSTRUCTION

2011

CLIENT

Milton Keynes Council

CONTRACTOR

Balfour Beatty Civil
Engineering

DESIGNER

Pell Frischmann

PROD. RELATED

TerraMesh ()

Challenge

The development of the Busway Park and Ride facility near Junction 14 of the M1 Motorway in Milton Keynes required major infrastructure improvements to support increased transport demand. Central to the scheme was the widening of the A5130 feeder road from the Northfield roundabout, upgrading it from a single two-lane carriageway to a dual two-lane highway. This upgrade was essential to accommodate predicted increases in traffic volume and improve overall traffic flow in the area.

The project presented several engineering and environmental challenges. The widened roadway needed to cross a culverted stream in close proximity to the Busway site, creating spatial and structural constraints. Additionally, the construction corridor was restricted, limiting the footprint available for traditional solutions. Environmental and aesthetic requirements were also a key consideration, as the site was bordered by semi-mature vegetation that needed to be preserved and visually integrated into the final design.

Unforeseen construction delays added further pressure, making it impractical to adopt a conventional reinforced concrete retaining wall for the roadway embankment. Such a solution would have been time-consuming to construct, less adaptable to site constraints, and visually intrusive. Main contractor Balfour Beatty required a fast, flexible, and

sustainable retaining solution capable of forming a steep-faced embankment while blending seamlessly with the surrounding landscape.



Green Terramesh® Installation after construction



Immediately after construction

Solution

A reinforced soil solution using Green Terramesh® was selected to meet the project's technical, environmental, and programme requirements. Three Green Terramesh® reinforced slopes were constructed, extending a total length of 240 metres and reaching a maximum height of 3.6 metres. These structures run south from the Northfield roundabout to the Busway access road and integrate smoothly into the abutments of the newly widened pedestrian underpass.

The Green Terramesh® system provided a cost-effective and efficient alternative to traditional retaining walls, enabling rapid installation within the constrained construction schedule. Its modular and flexible design allowed it to adapt easily to varying ground levels across the site. This flexibility also enabled the formation of precise 90-degree returns at the pedestrian under-bridge, as well as smooth transitions and curves where the reinforced slopes connect to the roundabout and access road.

From an environmental and aesthetic perspective, the solution delivered a natural, vegetated finish. A topsoil wedge was incorporated behind the face of the reinforced embankment and seeded with a carefully selected vegetation mix. This promoted rapid plant growth, allowing the structure to blend into the surrounding landscape and become largely concealed by natural vegetation over time.

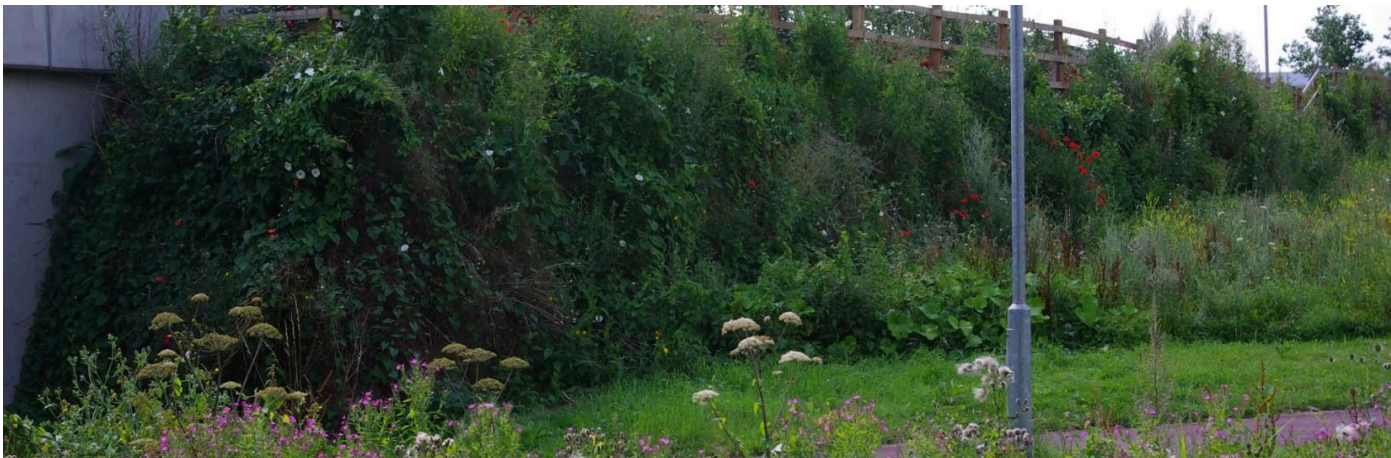
The use of Green Terramesh® reinforced slopes not only met the engineering and programme demands of the project but also provided a sustainable, visually appealing solution that aligned with modern infrastructure and environmental design standards.



Early signs of vegetation establishing



One year after construction



Vegetation after one year after construction



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