A465 Road Improvement Slope Stabilisation Solutions for South Wales Infrastructure

Abergavenny, South Wales



TYPE OF PROJECT	YEAR OF CONSTRUCTION	CLIENT	CONTRACTOR	DESIGNER
Soil Nailing	**2018**	**Welsh Government**	**Costain**	**Atkins Global/CH2M HILL**

PROD. RELATED
GeoMats (), MacArmour & SteelGrid ()

Challenge

The A465 Heads of the Valleys road is a critical infrastructure route in South Wales, forming a key transport corridor between West Wales, the Welsh Valleys, and the English Midlands. Connecting the M4 at Neath to major hubs such as Abergavenny and Hereford, the A465 plays a vital role in supporting regional economic growth, logistics, and tourism.

However, the original road, constructed in the 1960s, was no longer fit for purpose. Designed as a single three-lane carriageway, with two lanes in the uphill direction and one downhil, it created significant traffic inefficiencies. Limited road width restricted traffic flow and reduced safe overtaking opportunities, leading to congestion and increased journey times.

A regional traffic study identified these challenges as early as 1990, highlighting serious safety concerns. Poor visibility in several sections of the route, particularly around bends and junctions, contributed to a high concentration of road traffic accidents. These issues were further compounded by the road's ageing design, which could not accommodate modern traffic volumes.

Recognising the strategic importance of the A465 for economic development, the Welsh Government launched a long-term road improvement programme. The upgrade was essential to enhance transport connectivity, improve

road safety, and support regeneration across the Heads of the Valleys region. Improved infrastructure would also boost access to employment, services, and key investment zones, including the Ebbw Vale enterprise zone.



Steelgrid HR system secured to the rock face with plates



Steelgrid HR draped over the rock face

Solution

A major component of the A465 road upgrade involved advanced slope stabilisation solutions to address the challenging terrain along the route. CAN Geotechnical and BAM Ritchies worked in close collaboration with the main contractor, Costain, to design and implement effective stabilisation systems across multiple critical slopes.

Leading engineering consultants Atkins and CH2M Hill specified Steelgrid HR as the primary soil reinforcement solution. Steelgrid HR was selected for its high punching resistance and superior load-bearing and containment properties, making it ideal for stabilising steep and potentially unstable slopes adjacent to the highway.

To complement the structural reinforcement, MacMat® R and MacMat® erosion control systems were installed across the slope surfaces. These solutions provided long-term protection against surface erosion caused by rainfall and environmental exposure, while also supporting vegetation growth to enhance slope stability and environmental integration.

Together, these geotechnical solutions delivered a robust, durable, and sustainable slope stabilisation system. The improvements not only enhanced the safety and resilience of the A465 but also supported the wider economic regeneration of South Wales by enabling a more reliable and efficient transport network.



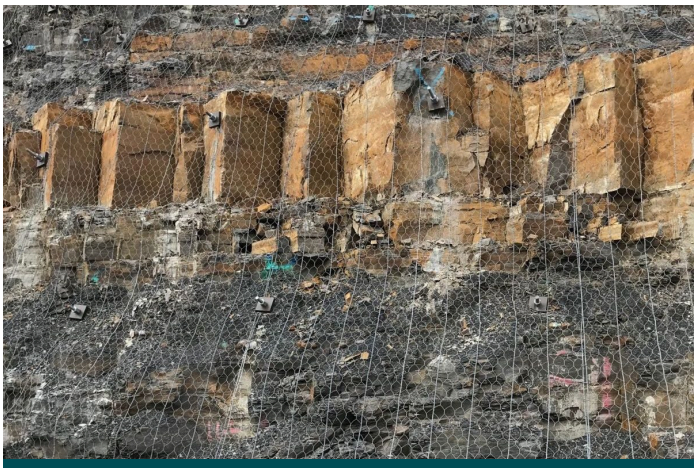
Neat mesh installation. Bottom of the rolls yet to be secured.



View of the slope with the Steelgrid HR 100



General view where Steelgrid HR 100 was used



Steelgrid HR 30 - installation completed

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