

Factory Haulage Yard Expansion

Middleton, Manchester



TYPE OF PROJECT

Mass Gravity Retaining Walls

YEAR OF CONSTRUCTION

2021

CLIENT

N/A

CONTRACTOR

Williams Walling Ltd

DESIGNER

Rogers Geotechnical / Maccaferri Ltd

PROD. RELATED

Gabions ()

Challenge

A factory site in Middleton required the construction of a lorry turning circle, which involved cutting into an existing sloped embankment. This excavation created a need for a robust and reliable retaining wall system to stabilise the slope and support the new loading conditions from heavy vehicle movements.

In addition to the engineering challenge, the project had environmental constraints. Existing mature trees located higher up the slope needed to be preserved, meaning the retaining solution had to minimise disruption while maintaining long-term slope stability. Consulting engineers Rogers Geotechnical approached Maccaferri to design an effective and sustainable gabion retaining wall solution tailored to these site conditions.



Welded gabion wall nearing completion



Corner detail of welded gabion wall

Solution

Maccaferri designed a gabion retaining wall system reaching heights of up to 5 metres, carefully optimised to balance structural performance, slope stability, and environmental preservation. The design ensured that the integrity of the slope above the wall was maintained while avoiding unnecessary impact on the existing trees.

To meet both structural and aesthetic landscaping requirements, the solution incorporated welded mesh gabions constructed from 4mm diameter wire. While welded mesh gabions provide a cleaner, more architectural finish compared to traditional double-twisted woven mesh systems, they are typically less suited to high-load applications such as tall retaining walls.

To overcome this, Maccaferri introduced a tailored engineering design using lower-height gabion units combined with enhanced detailing in the lower courses of the wall. This approach allowed for improved load distribution and increased structural stability across the entire retaining system.

Additionally, a larger diameter wire mesh was specified to enhance the strength and durability of the gabion baskets. All units were heavily galvanised with a zinc-aluminium alloy coating, delivering superior corrosion resistance and ensuring a long design life of up to 60 years.

This engineered gabion wall solution provided a durable, cost-effective, and environmentally sensitive retaining structure, perfectly suited for industrial applications such as lorry turning areas while maintaining the natural landscape.



Different stone fill types used to create stripes of darker stone



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