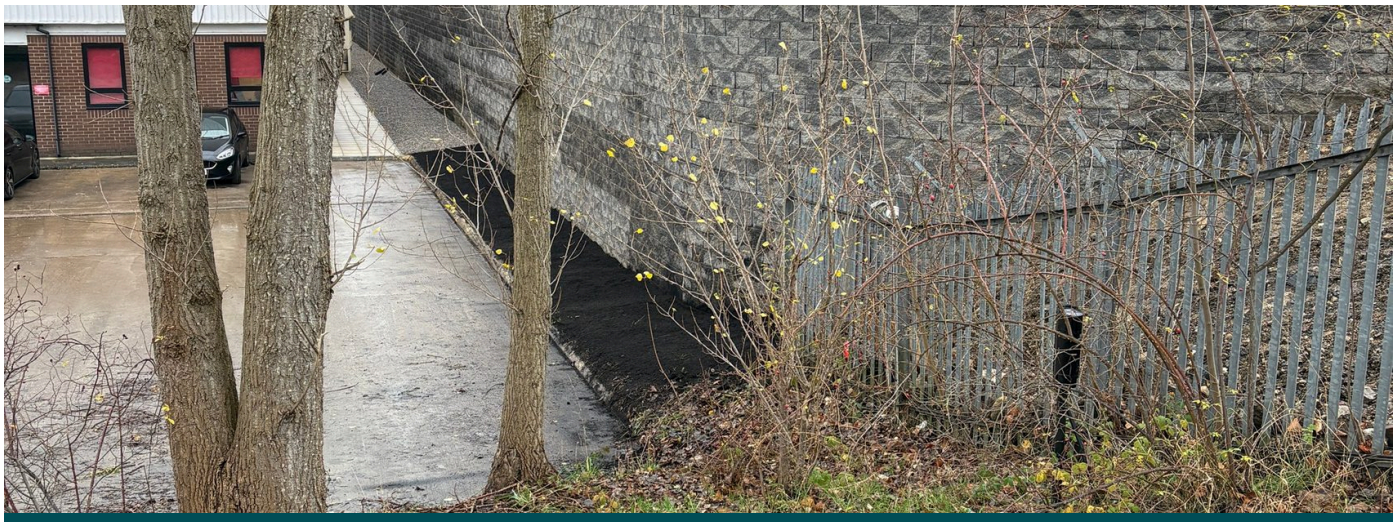
A-Safe Elland Expansion: MacWall 4.0 Retaining Wall Solution for Car Park Construction

Ainley industrial estate, Elland, West Yorkshire



TYPE OF PROJECT	YEAR OF CONSTRUCTION	CLIENT	CONTRACTOR	DESIGNER
Reinforced Soil Walls And Slope Reinforcement	**2025**	**A-Safe**	**Tobias James**	**Maccaferri Ltd**

PROD. RELATED
MACWALL (Null)

Challenge

As part of its ongoing expansion, A-Safe Ltd required a manufacturing facility extension in Elland, West Yorkshire, including the construction of a new car park to support increased staff numbers and operational growth. However, the proposed development site presented a significant geotechnical challenge due to its location on a steep natural slope adjacent to an existing, fully developed industrial estate.

The gradient of the terrain made traditional earthworks solutions such as cut-and-fill or slope regrading impractical, as these methods would not provide sufficient space to create a stable, level car park platform. Additionally, the constrained site conditions and proximity to surrounding infrastructure limited the scope for large-scale excavation or land take. A space-efficient retaining wall solution was therefore required to maximise usable area, ensure long-term structural stability, and minimise environmental impact.

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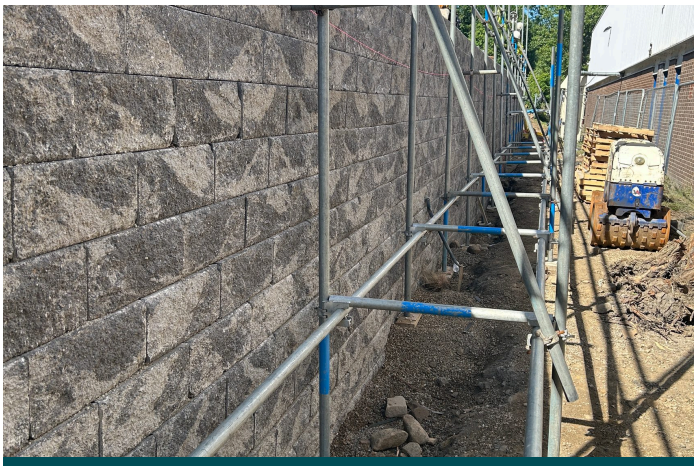
Early stage of MacWall 4.0 installation



MacWall 4.0 taking shape

Solution

To address these challenges, Maccaferri designed and supplied a MacWall 4.0 segmental retaining wall system, providing a high-performance and cost-effective solution for steep slope stabilisation and land development. The system enabled the construction of a 6-metre-high retaining wall, creating a stable, level platform for the new car park while optimising the available footprint.

The modular design of the MacWall 4.0 system allowed the new retaining structure to seamlessly integrate with an existing MacWall installation from a previous phase of development. This ensured continuity in both structural integrity and visual appearance, while also streamlining installation and reducing construction time.

Due to the restricted site conditions, Maccaferri worked closely with the contractor, Williams Walling, to implement a just-in-time delivery strategy. This approach minimised on-site storage requirements, reduced congestion, and improved overall project efficiency, ensuring the retaining wall construction progressed smoothly.

Sustainability was a key driver in the project design. By utilising site-won granular fill as reinforced backfill, the solution significantly reduced the need for imported materials and eliminated the disposal of excavated soils. This not only lowered the project's carbon footprint but also reduced vehicle movements, minimising disruption to the local community.

The geotechnical design, carried out by Geoman, ensured the retaining wall system met all relevant standards and delivered optimal performance under site-specific conditions. The result was a durable, sustainable, and space-efficient retaining wall solution that enabled A-Safe Ltd to successfully expand its facility despite challenging ground conditions.



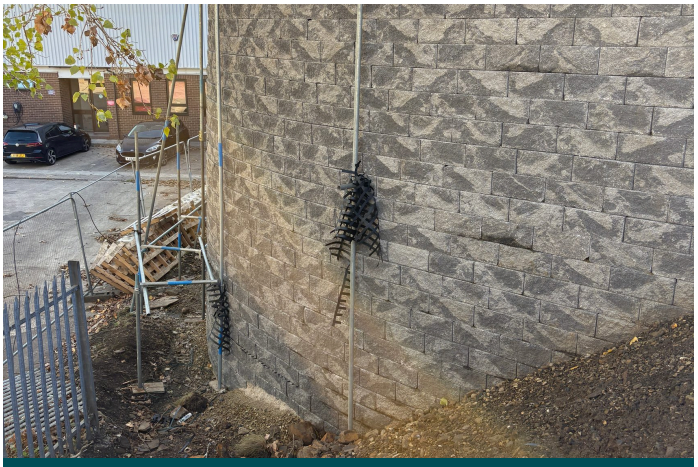
ParaGrid Geogrid reinforcement



Close up of geogrid reinforcement



MacWall 4.0



MacWall 4.0 curved corner

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