

AINLEY INDUSTRIAL ESTATE DEVELOPMENT ELLAND, WEST YORKSHIRE, UNITED KINGDOM

Vertical Walls with Concrete Facing Panels

Problem

Royd Developments were developing part of the Ainley Industrial Estate for a client.

The client needed to create a new development platform to enable a new warehouse and a lorry vehicle turning area to be constructed. A conveyor bridge between an existing and the new warehouse was also to be constructed on the site.

Two large retaining walls were required; Phase 1: 126m long and 7.4m high Phase 2: 58m long and 6m high It was quickly identified that retaining walls with a near-vertical front face would be the most efficient solution to allow the development layout to meet the client's requirements

Solution

Maccaferri provided support to the project team and proposed the MacWall Landmark segmental reinforced soil wall system.

MacWall Landmark features an aesthetic 'split face' concrete block finish in conjunction with soil-reinforcing geogrids, which are placed between layers of compacted structural backfill. A column of free-draining stone is placed directly behind the facing blocks.

The blocks have a positive connection to the geogrids by way of a 'locking bar' which secures the grids within a receiving trough at the top of the concrete block. The next course of concrete blocks has a down stand which engages into the trough of the course below, preventing the locking bar from moving.

The structural backfill is a minimum of 6I/6J material and fortunately, on this project, there was a supply of site-won material of the appropriate condition to meet this specification. Reusing this site won fill as structural backfill dramatically reduced the amount of imported granular materials and the associated transport and quarrying financial and environmental costs.

The foundation of the warehouse was piled to a depth below the MacWall foundation and did not impose loads on the wall structure.

The conveyor supports also required a suitable foundation, which were within the reinforced soil zone of the MacWall. Maccaferri worked with the site teams to propose a suitable layout for the geogrid soil reinforcement in the location of the foundations which allowed them to be constructed, yet not compromise the stability of the MacWall.

Client: Royd Developments

Designer / Consultant: Williams Walling

Contractor: Edwards Excavations

Products used (Qty.)

- Macwall

Unknown

Date of construction: 09/2021 - 04/2022

[Google Maps](#)

[Google Earth](#)



MacWall Landmark - note positive connection



MacWall Landmark under construction



Curved layout to the ends of the wall



MacWall Landmark nearing completion - Phase 1 - adjacent to new warehouse



MacWall Landmark nearing completion - Phase 1



MacWall Landmark supporting turning area - Phase 2