

GATEWAY SOUTH HEADWALLS COVENTRY, WEST MIDLANDS, UNITED KINGDOM

Weirs, Culverts and Transverse Structures

Problem

In early 2020 Real Estate Investment Trust SEGRO completed the purchase of a 450-acre site adjacent to Coventry Airport as part of its strategy to expand its UK logistics portfolio. Known as Gateway South, Coventry, the site is located just south of the city and the A45 with excellent access to several motorways including the M6, M69, M40 and M1. The development will see 3.7m sq ft of industrial and warehouse buildings with a gross development value of over £400 million.

Given the size of the new development, a substantial sitewide SUDS system was introduced to manage the drainage. Several large attenuation ponds were constructed to collect surface water drainage from the piped element of the SUDS system and several headwalls were constructed to outfall pipes into these ponds. Owing to the potential for large water flows in storm conditions, there was a risk of scour to the clay pond basins at the outfall locations. A form of erosion protection capable of dealing with outfall water velocities of up to 3.8m/s was required to mitigate this risk.

Solution

Maccaferri were approached by designers Patrick Parsons and contractors Buckingham Group Ltd and asked for advice on a suitable erosion protection system to be installed at the headwall locations within one of the larger attenuation ponds on the site.

Maccaferri proposed the use of 170mm deep Polimac-coated Reno Mattresses for this application. Maccaferri Polimac Coated Reno Mattresses are manufactured from double twist steel wire mesh 6x8 aperture, 2.2mm diameter class A Zn-Al5% galvanized wire mesh with an additional 0.5mm thick coating of Polimac high-performance polymer. The smaller 6x8 aperture allows a slightly smaller grading of stone fill to be used within the units, without the risk of losing stone through the apertures. They are BBA certified with a 120+ year design life in hydraulic applications and can deal with a range of maximum allowable water velocities ranging from 4.2m/s for 170mm thick mattresses up to 6.4m/s for 300mm thick mattresses.

Client: Sergo

Designer / Consultant: Patrick Parsons

Contractor: Buckingham Group Contracting Ltd

Products used (Qty.)

- Reno Mattress Plus N/A

Date of construction: 06/2022 - 09/2022

[Google Maps](#)

[Google Earth](#)



Reno mattresses installed at pond outfall.



Mesh can be locally cut and shaped



Reno mattresses can be installed on slopes up to 45 degrees