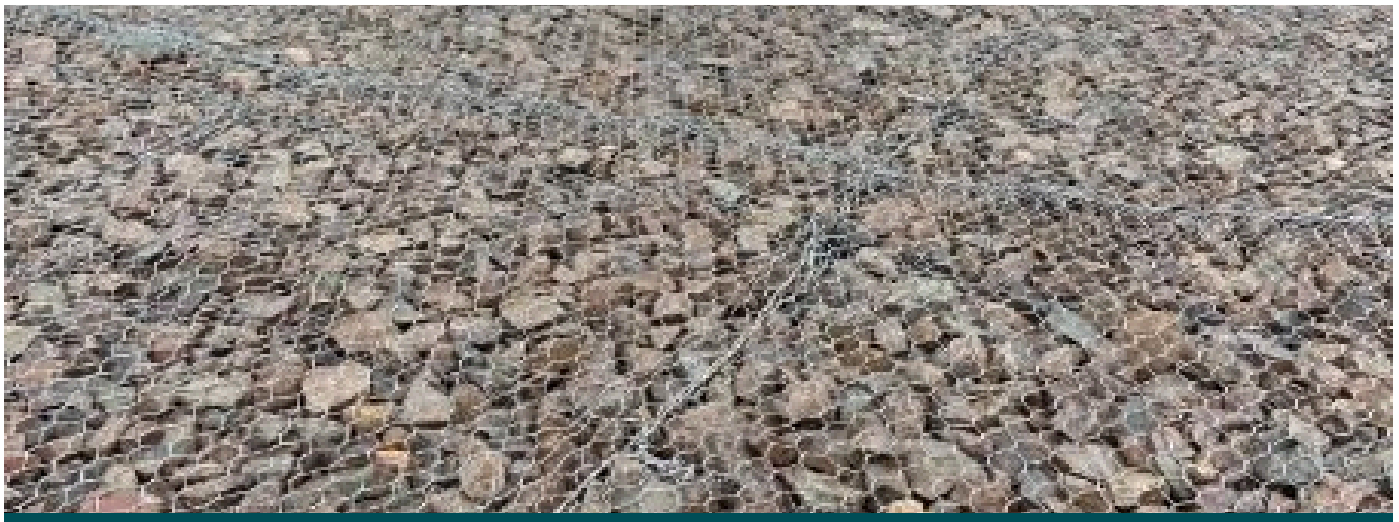
Erosion Protection for SUDS Drainage at SEGRO Gateway South, Coventry

Coventry



TYPE OF PROJECT	YEAR OF CONSTRUCTION	CLIENT	CONTRACTOR	DESIGNER
Weirs, Culverts And Transverse Structures	**2022**	**Sergo**	**Buckingham Group**	**Patrick Parsons**

PROD. RELATED
Reno Mattress Plus ()

Challenge

In early 2020, leading Real Estate Investment Trust SEGRO acquired a 450-acre site adjacent to Coventry Airport as part of its strategy to expand its UK logistics portfolio. The development, known as Gateway South Coventry, is strategically located south of the city near the A45, with excellent access to major motorway networks including the M6, M69, M40 and M1. The scheme represents a significant logistics and industrial development, delivering approximately 3.7 million sq ft of warehouse and industrial space with a gross development value exceeding £400 million.

Due to the scale of the project, effective surface water management was a critical requirement. A comprehensive Sustainable Drainage System (SUDS) was implemented across the site to manage runoff and reduce flood risk. This included multiple large attenuation ponds designed to collect surface water from the piped drainage network. Headwalls were installed to discharge water into these ponds; however, the concentration of flow at these outfalls created a risk of erosion.

During heavy rainfall and storm events, discharge velocities were expected to reach up to 3.8 m/s. These high-energy flows posed a significant threat to the clay-lined pond basins, with the potential to cause scouring, material loss, and

long-term damage to the drainage infrastructure. To ensure the performance and longevity of the SUDS system, a durable and high-performance erosion protection solution was required at each headwall outfall location.



Reno mattresses installed at pond outfall.



Mesh can be locally cut and shaped

Solution

Maccaferri was approached by consulting engineers Patrick Parsons and principal contractor Buckingham Group Ltd to provide expert advice on an effective erosion control system for the attenuation ponds at Gateway South Coventry. Following a detailed assessment of hydraulic conditions and site requirements, Maccaferri proposed the use of 170 mm deep Polimac-coated Reno Mattresses as a robust and reliable solution for erosion protection.

Reno Mattresses are manufactured from double twist steel wire mesh with a 6x8 aperture configuration, using 2.2 mm diameter Class A Zn-Al 5% galvanised wire. Each unit is further protected with a 0.5 mm thick Polimac polymer coating, providing enhanced durability, corrosion resistance, and long-term performance in aggressive hydraulic environments.

The smaller 6x8 mesh aperture allows for the use of a finer stone fill grading, reducing the risk of material loss while maintaining structural integrity. This makes the system both cost-effective and efficient to install. Critically, the selected 170 mm thick Reno Mattresses are capable of withstanding water velocities of up to 4.2 m/s, exceeding the site's maximum design flow conditions and ensuring reliable performance during extreme weather events.

In addition, the solution is BBA certified and offers a design life of over 120 years in hydraulic applications, providing long-term assurance for asset owners and operators.

By implementing Polimac-coated Reno Mattresses, Maccaferri delivered a proven erosion protection solution that safeguarded the attenuation ponds, maintained the integrity of the SUDS drainage system, and supported the successful delivery of this major UK logistics development.



Reno mattresses can be installed on slopes up to 45 degrees

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