Landfill Drainage

Landfill Capping, Pozidrain, Sundon Landfill, Luton, UK

CASE STUDY

Project Information

Client	Bedfordshire County Council
Contractor	J Breheny Contractors
Product	Pozidrain 7S250D/NW8
Quantity	380,000m^2
Benefits	• High in-plane flow capacity • Excellent geomembrane protection • Adequate frictional performance for slope stability • Rapid installation • Replaced 110,000m^3 drainage stone

Project Description

Sundon Landfill is located in a green belt area near Luton in Bedfordshire. For over two decades this was one of the main landfill sites for the Bedfordshire area, used for tipping of mixed waste including large volumes of domestic refuse. The plan area of the landfill was in excess of 400,000m^2 with a maximum waste depth of 40m. The site needed to be permanently capped, restored and remediated to accommodate a country park, with public footpaths, areas of grassland, native trees and shrubs. Bedfordshire County Council approached Robert Long Consultancy to design a final capping system and supervise the restoration of this large landfill site.

The Challenge

In 1997 the Sundon Landfill ceased operating and required capping with a permanent geosynthetic system and 1m of soil cover. The objective was to eliminate the use of costly drainage stone and design a capping solution that would enable fast installation over this large area.

The geosynthetic capping system comprises a geocomposite drainage and protection layer, impermeable geomembrane and protection geotextile.

A large proportion of the landfill cap was on 1 in 4 slopes where it was necessary to ensure slope stability during construction.

ABG Pozidrain

ABG LTD

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The Solution

Robert Long Consultancy and Bedfordshire County Council worked with ABG to develop a geosynthetic capping solution that would provide adequate drainage and frictional performance to ensure slope stability. Pozidrain 7S250D/NW8 geocomposite drainage layer was specified and installed on top of the 1mm LLDPE textured membrane.

All capping phases were completed between 2001 to 2004 without any stability problems during construction. Throughout the construction and after completion of the installation, drainage performance was monitored and reported to be adequate on this large landfill cap.

The ABG Service

ABG provided technical advice and design assistance on this landfill capping project. This included shear box testing, slope stability and flow capacity calculations.

Large rolls enabled rapid installation

Pozidrain installed on top of 1mm LLDPE textured liner

Adequate interface friction ensured slope stability

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