

Project: Lowestoft Waste Water Treatment Centre, Corton, Suffolk

Client: Anglian Water

Contractor: John Mowlem & Co

Products: Armorloc. Porcupine walling blocks. Nicotarp. Non-woven geotextile protector. Fortrac geogrid. Deckdrain.

Date: 2000 to 2002

Introduction

This £70 m facility will improve the treatment of the sewage discharge from Lowestoft and the surrounding areas and contribute to the improvement of the seawater quality around the Suffolk coast.

Capable of processing over 6000 litres of wastewater per second, the treatment plants are contained beneath a 14,000m² oval dome, some 160m long x 100m across.



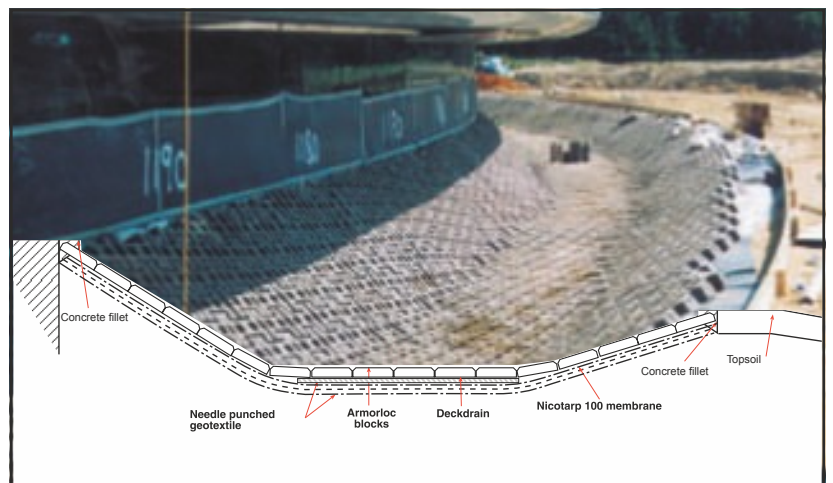
Problem

To deal with the potential storm water surge coming from the surface of the dome, the contractors had to construct a 4m wide drainage rill to collect and discharge a potential of 100 litre per second of storm water into storage lagoons.

Solution

Armorloc concrete revetment blocks were selected to build the rill because they can articulate in both directions to leave a smooth even profile over the whole area.

To ensure the integrity of the rill through a range of ground conditions and the expected storm water velocities that could drain from the centre's roof, a sandwich of geotextiles was installed below the blocks.



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Report

Project

Construction

A needle punched non-woven geotextile protector was laid onto the profiled rill and this was followed by an impermeable geomembrane, which again was protected from above with the needle-punched geotextile.

Since six weirs have been incorporated within the circumference of the rill to control and slow the water flow, a drainage geocomposite was laid below the Armorloc blocks. This will help to prevent puddling occurring on top of the blocks at the low points.

To maintain an aesthetic and environmentally acceptable appearance to the site, much of the external pipe work and structure of the treatment plant has been kept below eye level. 2–3m high Porcupine steep retaining walls have been installed around the excavations of the low-level site.

To increase the factor of safety of the walls the earth behind the Porcupine blocks has been reinforced with Fortrac geogrid.



This vertical Porcupine retaining wall surrounds the exposed sections of the treatment plant constructed below the sight line of the surrounding area.

Porcupine blocks form the vertical face of the wall at a low level access door into the treatment plant



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