

## Lamby Way Capping Works Cell 4

<b>PROJECT:</b>	Lamby Way Capping Works
<b>CLIENT:</b>	City of Cardiff Council
<b>VALUE:</b>	£2.4 Million
<b>AT-A-GLANCE:</b>	Principle contractor NEC 3 33,000m <sup>3</sup> of cut-to-fill in waste to create profile 70,000tonnes of regulating material 131,000m <sup>2</sup> of geosynthetic liner 190,000tonnes of restoration soils



### PROJECT OUTLINE

Walters have been involved with the prestigious Lamby Way landfill site in Cardiff since the 1990's, working several lining extensions and capping phases through the active landfill operations. Due to increased UK wide recycling targets, the Lamby way operation continued several years past its expected operational period.

Having finally reached capacity, Walters were selected to carry out the final capping phase - marking the end of the landfill process at Lamby way.

The project involved the capping of cell 4 (with an area exceeding 130,000 square meters), suitably phased to enable the continued landfill following phase 1 and to capitalise on working through the summer months.

Walters worked closely with the council and maintenance contractor to enable the continued gas extraction throughout the works, ensuring the NRW permit conditions were met and continual power generation.

### PROJECT DELIVERY

Prior to the capping element of the works, the landfill site required reprofiling of the waste material to achieve slopes in all directions, thus preventing standing water and supporting the continuing gas extraction. Once reprofiled, a layer of 300mm of soils was placed to regulate the waste and create a smooth, even working platform for the lining operation.

Three (3) layers of liner are used to cover site, creating a complete seal for the landfill waste underneath and preventing the ingress of water. The combined overlays are then subsequently covered with a further 800mm depth of restoration soils, thus completely covering the area, protecting the liner and fully sealing the waste below. The project also involves landscaping and associated drainage to finish.

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### DESIGN SOLUTION

During the site's operational lifetime, the tipping of waste had not always been accurately controlled. To create the required profile Walters worked with the council to offer a design solution which enabled the planning conditions to be met and falls for the surface run off and gas extraction

A digital terrain model was produced offering a balance in the cut to fill of the waste material, preventing the need of costly addition material importation to site.

### GPS

GPS guided machine control was used- optimising plant use and efficiency - to control the required reprofiling and subsequent capping works, ensuring the accuracy of the levels throughout. The design was constantly reviewed, updated and monitored during the course of the construction phase, accounting for settlement and bulking of the waste, ensuring the cut-to-fill balance was rigorously maintained throughout.



### NESTING BIRDS

The site team worked quickly and efficiently to capitalise on the summer months, despite Walters operatives discovering Lapwings and Oystercatchers nesting on site during the reprofiling. The nests were fenced off to protect the eggs whilst works continued, until the young had hatched successfully and vacated the nest to nearby feeding grounds.