

Methane Protection Systems for Retail Stores

Land Case Study



In the early 1990s a major UK retailer approached Oceans ESU requiring a land contamination and methane gas investigation, for a number of its stores. This resulted in Oceans ESU designing one of the first 'retrofitted' methane protection systems in the country.

One East Midlands store was of particular concern, as it had been constructed on a closed refuse tip that had formerly received hazardous and putrescible wastes.

A ground investigation was undertaken and gas monitoring wells installed, to allow monitoring of landfill gas at the site. Waste materials including asbestos, dyes and oils were found over ten metres deep on the site. Though the waste materials themselves were safely contained below ground, landfill gas was still being generated by the breakdown of putrescible material.



Landfill gas monitoring showed methane levels in the ground were up to five times higher than the 'lower explosive limit', presenting an immediate risk. Work commenced immediately to avert a potential disaster.

The solution devised by Oceans ESU was to 'passively vent' areas outside of the building footprint, and to isolate the building area with a gas-impermeable wall in the landfill. The building area was fitted with methane sensors that operated a pump to extract landfill gas from beneath the buildings if levels began to build up.

During the protection works, the store never had to close; exposed excavations within safe areas were undertaken at night and above ground construction and fitting new equipment happened during the day.

Oceans ESU continue to offer expert advice on methane protection and detection systems to large retail clients. We also provide gas monitoring services at several sites, ensuring methane protection systems continue to function as designed.

