

Celtic Wins **Brownfield**briefing Remediation Innovation Award



The
Remediation
Innovation Awards
2008

Celtic achieved the Sustainability Award in our first entry into the UK's only nationally recognized awards for the remediation industry, runners up were the Olympic Delivery Authority.

most sustainable remediation project Remediation works at West Midlands gasworks

This project, for **National Grid** and with principal contractor **Edmund Nuttall**, concerned one of the UK's largest town gasworks. Significant contamination, including two underground tanks containing coal tar and liquor, was present and posed a threat to a major aquifer.

Sustainable Objectives

The objective of remediation works was to remove the contents of the tanks. During the initial design development, sustainable objectives were set. Celtic prepared a remediation design in consideration of the following objectives:

Environmental – Risk-based remedial targets were derived and agreed. Recovery of neat contaminated liquids was proposed, avoiding bulking the liquids and increasing waste volumes, and maximising recyclable materials.

Social – The tanks were situated in the car park of an operational National Grid site. To minimise impact on site users and neighbours, it was proposed to empty the tanks before removing their lids (carried out by subcontractor **Acumen Waste Services**). A temporary car park was prepared. A locally based principal contractor and subcontractor were employed, minimising travel to and from site.

Economic – Works were strictly limited to what was necessary to remove the most significant contamination sources. Sampling and analysis mechanisms were designed to ensure only soils failing the reuse criteria were disposed of.

Natural Resources – Fossil fuel consumption was minimised by the proposed recovery of neat liquids, minimisation of waste volumes landfilled and maximisation of soil reuse, for which a target of 80% was set. Project team mileage was recorded, as well as fuel (32,221 litres) and water usage (39m³). This enabled the team to track consumption and enable National Grid to build up a databank to help inform the reduction of the carbon footprint of its remediation projects. This project used on average 2.8 litres of fuel per m³ of soil excavated and managed, compared to an average of 5 litres of fuel per m³ on the 2007/8 National Grid remediation programme.



Remediation Works

Works were carried out by Edmund Nuttall, and the car park reinstated. During the works 2,250m³ of water was treated and disposed to foul sewer, 1,000m³ of liquor/water was treated by **Biffa** with the water effectively reused, and 625m³ of tar was incinerated, with 185m³ contributing to cement manufacture.

*“A genuine attempt to qualify all impacts and reduce them. This entry showed a real understanding that sustainability is more than simply adding up one parameter”
Stephen Jefferis*

On completion of the liquid removal works only 9.6t of waste remained that could not be put with one of these three streams. Soil disposed of amounted to 950m³, and was sent to Biffa / **Biogenie's** Risley facility to be treated and reused as restoration material.

A total of 8,250m³ (94%) of the backfill material was won from the wider site during the works and 500m³ of clay, sub-base and tarmac imported. It is estimated that the use of site-won material saved 600 lorry movements, 3,600 litres of fuel and 9.5t of CO₂ emissions.

Overall, it is estimated that the project saved 2,800m³ of material from landfill, as well as 31,600 litres of fuel and 83t of CO₂ emissions.