

## Bourne Road, Thornton - Cleveleys

<b>Customer:</b>	David Wilson Homes	<b>Value:</b>	£1.25M
	303 Bridgewater Place, Birchwood, Warrington WA3 6XF	<b>Contact:</b>	Tony Sutton Tech Director

### Scope of Work

- Giant Hogweed treatment
- Aniline & Nitrobenzene contamination treatment
- Chemical oxidation of impacted soils
- Surface and groundwater treatment
- Soil stabilisation treatment of weak estuarine silts
- Watercourse management and maintenance
- Ecological mitigation plan



### Project Description

This 7.5ha site was formerly part of the ICI Hillhouse works at Thornton, which had been used to synthesize rubber chemical additives using a range of toxic and persistent organic compounds including aniline. Remediation of the site was critical to facilitate development and mitigate the risk to adjacent surface water courses.



Investigation revealed over 500 chemical compounds with little or no published information relating to their properties or toxicity. Extensive work was carried out to develop database which was then applied within existing risk models to derive remediation targets for the site in liaison with the Regulators supported by bench scale testing to select an effective range of reagents to breakdown the complex organic compounds present.



Treatment of impacted soils involved a combination of chemical oxidation and selective excavation and disposal to meet key programme milestones. A management plan was developed to initiate air and vapour monitoring at key task locations and at the site boundary to verify the effectiveness of site controls.



Further site constraints included the de-siltation of a series of vulnerable watercourses and culverts, retained within the development plan, under consents from the Environment Agency to mitigate further flood and contamination risks.



The site was characterised by shallow groundwater and bands of soft silts, 3 – 4m deep. The potential for settlement under loading from imported fills was anticipated, with the developer using a driven pile foundation solution. Materials within the proposed site infrastructure where excavated to firm strata with the drainage corridors re-engineered with imported fills. The surplus excavated silts were subjected to cement stabilisation ensuring they would meet the design specification for class 2 general fill, mitigating the need to remove the soils off site and introduce replacement imported fills in lieu.



Site wide settlement monitoring was undertaken to verify the levels of consolidation within the weaker soils and were within design parameters and to the satisfaction of the NHBC. The works also incorporated recovery of large volumes of historic foundations for re-processing on site and use within the site infrastructure and the chemical treatment of over an acre of Giant Hogweed.

The collaborative approach adopted by the site team in conjunction with the developer ensured a sustainable approach to materials management on site, with all planning conditions relating to historic contamination managed in line with programme and budget expectations.