

# Project Phase I, Phase II, Validation



## Client

George Wimpey Manchester Ltd

## Cost

Confidential

## Location

Cardinal Street, Cheetham Hill

## Program

Ongoing



Previously occupied by Bradshaw House, a former warehouse and textile mill, the Cardinal Street site was deemed unfit for restoration. Associated features identified on site included a chimney, boiler house and electricity sub station. An infilled sand pit was also identified on site through historical mapping.

The buildings and chimney were subsequently demolished. The potential for sub-soil contamination and the presence of landfill gas was therefore identified on the site.

LK Associates investigated the site in two phases of site investigation through the sinking of window sample boreholes, the excavation of trial pits, soil and water sample collection and chemical analysis. Standpipes were installed on the site to enable the monitoring of landfill gases. The geotechnical properties of natural ground were derived using insitu and ex-situ geotechnical testing techniques.

Soil sample analysis proved contaminants to be present in levels exceeding Environment Agency soil guideline values and site specific assessment criteria derived by LK Associates.

As a result of the risk assessment recommendations were put forward to zone the site based upon the contamination encountered and as such identified that only one area of the site required remediation. Recommendations were made for remediating this area of site, with suitable recommendations made for capping layer thickness, quality and composition.

Due to the identified area of infilling on site and underground brick structures such as chimney foundations, the geotechnical properties of the ground were deemed to be unsuitable in some areas across the site. Subsequently the site was also zoned into two areas for the purpose of foundation design.

LK Associates, together with George Wimpey Manchester Ltd and Celtic Technologies, devised a remedial strategy which was approved by the Local Authority. This strategy incorporated the removal of hotspot contaminated areas in conjunction with the excavation, sorting and screening of the top 3m of made ground in the area around the former chimney and the top 1-1.5m across the remainder of the site.



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Replacement of the material was carried out in an engineered fashion to enable traditional strip footings and vibro compaction to be used for the foundation options.

Leyden Kirby Associates has worked with George Wimpey Manchester Ltd to supervise the remediation of the site, which has included validating the installation of the gas protection membrane and capping layer thickness in every plot. A Validation and Site Completion Report is in the process of being produced to ensure the site will be suitable for its proposed residential end-use and to assist the Local Authority and NHBC in the discharge of any relevant planning and NHBC conditions.

