

Balmoral Tanks

**Proposed Extension to Building,
Thurnscoe, Barnsley**

Executive Summary

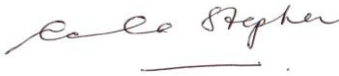
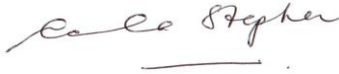
123754

August 2018



FAIRHURST

CONTROL SHEET**CLIENT:** Balmoral Tanks**PROJECT TITLE:** Proposed Extension to Building, Thurnscoe, Barnsley**REPORT TITLE:** Executive Summary**PROJECT REFERENCE:** 123754**DOCUMENT NUMBER:**

Issue & Approval Schedule		Name	Signature	Date
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This document has been prepared in accordance with procedure OP/P02 of the *Fairhurst Quality and Environmental Management System*

Executive Summary of Site Conditions, Page 1 of 4

Developer and Funded			Balmoral Tanks
Current Site Status			The site comprises an irregular shaped area of open ground adjacent to a factory unit. The proposed development site is shown on Drawing No. 123754/0001-A. The proposed development site slopes from east to west. Raised manhole rings are within the development site which is likely to be associated with an infilled mine shaft. The site appears to have been cleared as part of the construction works to the west and is partly used for storage and parking.
Development Proposals			The proposed development is to comprise an extension to the recently built factory unit.
Site Conditions	Location		The site, at National Grid Reference 446574, 405249 (Drawing No. 123754/0001-A.), is located at the former Hickleton Colliery Site on Barrowfield Road, Thurnscoe. The site is bound by wooded Phoenix Park to the south and Barrowfield Road to the north with Thurnscoe Business Park beyond.
	Site History	Onsite	• 1850 Undeveloped agricultural fields • Part of Hickleton Main Colliery, with mineral railway tracks, buildings and re-profiling from 1900's. • Above ground sludge tanks (1930 map) • Mine shaft located within the western site area from 1930's • Colliery closed by the 1980's • Site cleared by early 2000's
	Site History	Offsite	• Hickleton Main Colliery main railway terminal, mine shafts, pit and buildings to the north. • Brick works to the south • Spoil heaps to the south and south east
	Geology		During the site investigation the following ground conditions were identified; • Made ground as predominantly granular fill locally cohesive with fragments of ash, coal, bricks and concrete to 7.5m+. SPT results within the granular made ground gave N value of between 32 and 41 indicating medium dense to dense material. • Natural superficial soils, or rockhead were not encountered in any exploratory holes within the site, however exploratory holes in the recently developed site adjacent to the west, encountered Coal Measures as Mudstone and sandstone from depths of between 4.9m and 7.0m with coal seams at approximately 10.3m (0.2m to 0.3m thick) and 12.1m (0.1m thick). No evidence of coal workings were encountered. • All exploratory holes terminated in the made ground. BH05 was noted to terminate due to the presence of an obstruction at 4.73m.
	Coal Mining		<u>Development site</u> • The proposed development site is in a surface area that could be affected by underground mining in 6 seams of coal at shallow to 740m depth, and last worked in 1983. • 1 No mine entry is located within the site at the western site boundary. Another mine entry is located near to the site to the north west on the other side of Barrowfield Road.

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	Coal Mining continued...	The following information has been obtained from the Coal Authority regarding the mine shaft that is present within the development site; • Name – Hickelton No 3 Shaft (446405-003) • Depth of shaft (m): 831.7 • Diameter of shaft (m): 6.6 • Coordinates - Easting: 446536, Northing: 405217 • Treatment details: is filled to full depth with hardcore, grouted and capped at rockhead with reinforced concrete.
Site Conditions	Surface Water	• Drainage ditch present along southern boundary of site • Culverted water course is understood to be present within the site.
	Groundwater	The following water profile was recorded during the site investigation; • No groundwater strikes were encountered within any of the exploratory holes within the site, which extended to depths of between 4.0m to 7.5mbgl. • The superficial deposits beneath the site is classified as a Secondary A Aquifer • The bedrock beneath the site is classified as a Secondary A Aquifer • There are no potable abstraction points within 1km of the site. The following water profile was recorded during investigation for the original development site to the west: • Perched water within the made ground deposits with levels of between 4.46 and 5.17m, occasionally dry. • Long term ground water level of between 7.74m and 8.31mbgl was recorded within the Coal Measures
	Flood Risk	• The site lies entirely within Environment Agency Flood Zone 1 which means the chance of flooding each year is 0.1% (1 in 1000) or less.
Landfill		• No recorded landfills on site. • The site has undergone historical development as a colliery. As such, made ground as colliery spoil, brick and concrete is expected to be present across the site. • The nearest historical landfill was located 64m north of site. Deposited waste included household waste. The site was operational between 1950 and 1980.
Geotechnical Constraints		The following constraints have been identified on during the site investigation, • Deep and variable made ground to between 4.0m and 7.5m+ • Mine shaft (treated) located close to the south of the development footprint. • Several mine shafts and adits identified to the north east of the site, although out with the building footprint. • Localised surface water ponding identified on site which would indicate poor drainage • Possible gas venting layers connecting mine shaft • Possible culvert water course beneath the site. The exact location is unknown. • Localised settlement of backfilled trial pits. This was likely caused by a period of prolonged heavy rain washing fines away. Geogrids may be required to mitigate any risk in the future.

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Earthworks	The following materials are likely to be generated during general earthworks, foundation arisings and drainage arisings; • Made ground as granular locally cohesive fill – suitable for reuse as low quality fill beneath car park or footpaths. • Due to the presence of asbestos fibres within the soils on the adjacent site and similar nature of the made ground deposits, appropriate mitigation measures and PPE to be employed during redevelopment works to mitigate risks. • Off site removal of material should be avoided as it may incur significant disposal costs.
Foundation and Slab Design	From experience of the remediated site and as per existing, recently completed building, ground bearing shallow foundations and ground bearing slabs. The ground should be proof rolled and any evidence of local movement addressed with the Engineer.
Services	The following services are present: • Possible culverted water course beneath the site. • BT line beneath the site. • Abandoned surface water pipe.
Contamination Issues	• No elevated concentrations of soil contamination identified. • No Asbestos fibres were identified in 2 No. samples tested (TP06 & TP07 at 1.00m). However, Chrysotile was identified in 1 No sample out of 3 in the previous development site to the west. The presence of asbestos fibres or buried asbestos within the new extension site cannot be discounted. • Results of three rounds of monitoring at BH06 within the site indicate elevated levels of carbon dioxide maximum 4.5%v/v, 0.0l/h flow. • On the adjacent site elevated carbon dioxide was recorded up to 5.8% (no flow). • One boreholes on the adjacent site recorded methane at 0.1% (no flow) on one occasion.
Remediation Options	The following measures are recommended to ensure a low risk to receptors is maintained in the development; • Asbestos fibres have been identified within the made ground on the adjacent site. The presence of further asbestos debris and contamination within any made ground cannot be discounted. If encountered this material may require removal. Construction workers should be made aware and shall adopt appropriate health and safety measures during earthworks. • Dust suppression measures should be adopted during all earthworks. • Construction workers should undertake soil gas and VOC monitoring prior to and during man entry of below ground voids. • Surface water control measures should be adopted during construction to limit runoff and infiltration through exposed made ground horizons and to limit siltation of the surface drainage system. • Clean cover for areas of soft landscaping • Soil gas protection measures as soil gas barrier, Juta GP 1 or similar with sealed joints and service entries. • Any land drains or gas vents encountered during the works should be reinstated

Appendix A

Drawings

Drawing No. 123754/0001-A Location Plan

Appendix B

Site Investigation Data

CIVIL ENGINEERING • STRUCTURAL ENGINEERING • TRANSPORTATION • ROADS & BRIDGES
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