

SOVEREIGN INDUSTRIAL ESTATE, HUYTON

PRELIMINARY RISK ASSESSMENT

OCTOBER 2023



FAIRHURST

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CONTENTS

1.0	INTRODUCTION	1
2.0	SITE DETAILS	3
3.0	GEOLOGY AND HYDROGEOLOGY	14
4.0	ENVIRONMENTAL INFORMATION	21
5.0	CONCEPTUAL MODEL AND QUALITATIVE RISK ASSESSMENT	27
6.0	GEOTECHNICAL CONSIDERATIONS	35
7.0	CONCLUSIONS & RECOMMENDATIONS	36

APPENDICES

Appendix A	Site Plans
Appendix B	Groundsure Report
Appendix C	Principles of Environmental Risk Assessment
Appendix D	BGS Borehole Records
Appendix E	Regulatory Consultations
Appendix F	Site Photographs

EXECUTIVE SUMMARY

The below provides only a brief summary of the report and the recommendations – the reader is directed to the main body of the text for further detail.

Introduction and Purpose of Report
Fairhurst has been appointed by Quod on behalf of DAVOS Property Developments Ltd (the Client), to prepare a Preliminary Risk Assessment to support the forthcoming planning application for the redevelopment of Halewood International Ltd, Sovereign Industrial Estate, Wilson Road, Tarbock Green, Liverpool, L36 6AW.
Site Description and Development Proposals
The site currently consists of 2 No. vacant warehouses, 3 No. car parking areas, access road and service yard. It is our understanding that the buildings were vacated in September 2022 and to the best of our knowledge have remained largely empty since then with the exception of racking. The south western / western portion of the site consists of a densely vegetated grassed area. The proposed development plans include the partial demolition, reconfiguration and refurbishment of existing employment floorspace to create 2 No. industrial warehouse buildings with ancillary offices (Classes E(g)(iii), B2 and B8) with dedicated servicing and car parking arrangements; erection of 1 No. retail unit (Class E) with external display area and dedicated car parking and servicing arrangements; retention and amendment of existing site accesses along with internal estate roads; 2 No. substations; landscaping; and associated works.
Site History
The earliest available mapping (c. 1849), indicates the site was part of Colliery Farm and consisted of fields and potentially worked land. The surrounding area also consisted of fields which had been subjected to surface workings potentially relating to coal and/or sand pits. By c. 1890s the site was occupied by Priory Farm, with the surrounding area comprising predominantly of fields, a number of ponds and some buildings. Extensive residential and industrial development occurs in the late c. 1960s northwest of the site, and continues to be developed through to the c. 1990s. All buildings associated with the farm on site are demolished by c. 1976, and a large industrial building is developed by c. 1982. The site is redeveloped into the present day layout by c. 2010.
Ground Conditions
The British Geological Survey (BGS) published data (Sheet 97) indicates that the site is underlain by a Till, Devensian (thickness not stated). Underlying the superficial deposits the bedrock comprises of the Pennine Lower Coal Measures Formation overlain by the Pennine Middle Coal Measures, which has an anticipated thickness of >650m in the area. According to the BGS and the Groundsure Report, 1 No. bedrock normal fault and 8 No. inferred coal seams are recorded on site.
Coal Mining
A review of the Coal Authority Interactive Map viewer indicates that the site falls within a Development High Risk Area and therefore the planning application will likely need to be supported by a Coal Authority Report and Coal Mining Risk Assessment. A Consultants Coal Mining Report has been obtained for the site, and confirms there are probable unrecorded workings beneath the site, 8 No. recorded coal outcrops beneath the site and 6 No. recorded shafts noting that they may have excavated, grouted or capped.
Hydrogeology
The Department of Environment, Food, and Rural Affairs (DEFRA) 'Magic Map' and Groundsure Report advised that the underlying Till, Devensian is defined as a Secondary Undifferentiated Aquifer and the Pennine Coal Measures Formation as a Secondary A Aquifer. The site is located within a Medium Groundwater Vulnerability Zone. There are no groundwater abstractions within 1km of the site. A previous off-site investigation (BGS Ref. SJ48NE467, 272m E) recorded groundwater at a depth of 2.0m bgl, as such there is potential for shallow groundwater to be present within the onsite Till, Devensian deposit. Across the wider region, groundwater flow of the shallow aquifers is likely to be easterly, toward the Logwood Mill Brook. It should be noted however, that local variations in groundwater flow direction cannot be discounted.
Hydrology & Flooding
The nearest surface water feature is Logwood Mill Brook (226m E), which flows towards the south east. The Groundsure Report indicates that there are no surface water abstraction points within 500m of the site. There are 2 No. historic Licensed Discharges to controlled waters within 250m of the site. The UK Government 'Long Term Flood Risk Information' and Groundsure Report advised that the site is within an area that could potentially be affected by flooding from reservoirs, when there is also flooding from rivers. The majority of the site is classified as being a Very Low risk (<0.1% chance) of surface water flooding, with localised Low to High risk (0.1% to 3.3% chance) areas eastern side and north western portion of the site. A localised Low

to Moderate risk (0.1% to 3.3% chance) flood zone for surface water is also located in the southern portion of the site. The site is considered at Very Low risk from flooding from rivers or the sea (Flood Zone 1). The production of a Flood Risk Assessment will very likely be a requirement to satisfy planning considering the site area size.

Geo-Environmental Risks

The preliminary qualitative risk assessment confirms potential risks, assessed via the source-pathway-receptors conceptual site model range from **Low to High** associated with various potential sources of contamination, ground gas (the historical development of the site, presence of made ground /infilled ground and mine gas). The PRA is conservative in its approach and intrusive ground investigation is recommended in order to confirm the CSM and quantify the risks associated with the potential pollutant linkage identified. The ground investigation should confirm the presence/nature and extent of Made Ground, the underlying superficial and bedrock conditions, the shallow groundwater (if encountered), a ground gas (including mine gas) / vapour regime and include geo-environmental soil and water testing to assess the potential risks to human health and the environment.

Geotechnical Constraints

The following potential geotechnical constraints to development may be present at the site as inferred from the desk based findings identified to date:

- Made Ground is anticipated to be present on-site which can comprise significantly variable material resulting in poor and variable engineering properties, such as high compressibility and low shear strength;
- Made Ground may contain obstructions typically in the form of brick, building rubble, cobbles and boulders;
- Presence of buried obstructions relating to the previous developments across the site;
- Consideration should be given to the presence of mine entries in the central and eastern parts of the site, as a previously unknown mine entry has historically collapsed on site. The known mine entries on site have either been excavated, capped and/or grouted, with the exception of one mine entry adjacent to the south-eastern corner which has received no treatment. There will be development exclusion zones associated with the mine entries and these will need to be established;
- In light of the available information, in addition to the presence of the mine shafts, there is the potential for the site to be underlain by shallow unrecorded coal mine workings. As such, we would advise that a Coal Mining Risk Assessment be carried out to establish the risk, if any, posed by unrecorded workings. It should be noted that given the site falls within a Coal Mining Development High Risk Area, the production of a CMRA will very likely be a requirement to satisfy planning.
- Presence of existing services potentially requiring either diversion, protection or decommissioning;
- Given the presence of mature trees along the site boundaries and the west of the site in particular, it would be prudent to confirm if the soils are susceptible to shrink/swell. An arboriculturalist should be consulted with regards to the presence of protected trees, tree root protection zones and a tree survey has been provided confirming the height and species of trees for consideration in detailed design;
- Pyrite (sulphate 'attack') may present a risk to the fabric of the proposed building structures and foundations associated with the Made Ground and/or groundwater as detailed in BRE Special Digest 1:2005 Concrete in aggressive ground;
- Non-engineered materials (i.e. Made Ground) can lead to unacceptable total and differential settlement, particularly when building across the boundaries between infilled features and natural ground. Infilled features also present a potential ground gas risk. When undertaking intrusive investigation, these areas should be targeted to determine whether they present potential geotechnical or geo-environmental constraints; and,
- Potential for shallow water within granular deposits of Made Ground or shallow natural ground may require pumping/dewatering during any intrusive works involving excavations and/or earthworks.

Recommendations

The PRA has identified potential geotechnical and geo-environmental risks and constraints that should be further understood and addressed with consideration of the specific Proposed Development. On this basis an Intrusive Ground Investigation is recommended to inform both planning / building control requirements and design considerations.

The following specific recommendations apply to the proposed works:

- A site specific ground investigation should be undertaken to allow for the refinement of the CSM, and to aid in detailed design. Given the elevated risk of ground gas / mine gas generation underlying the site due to the presence of the Made Ground, potentially infilled land and potential shallow mine workings, ground gas monitoring consisting of 12 No. monitoring rounds undertaken over 6 No. months would be required to be in accordance with BS 8576:2013. The potential vapour risk should also be investigated by PID monitoring. The site ground investigation should also include, soft landscaping samples, BRE Suites to determine concrete design, and groundwater monitoring and testing;
- Following the ground investigation, a Generic Risk Assessment / Ground Investigation Report (GIR) will be required to present an updated conceptual model;
- Prior to the commencement of any works on site, an Asbestos Management Survey Report should be provided. A licenced asbestos specialist should also be appointed to remove and dispose of any asbestos containing materials that would be disturbed by the works in accordance with the asbestos regulations;
- Consideration should be given to commissioning an invasive species survey to identify any remediation needed prior to commencement on site;
- A Coal Mining Risk Assessment will be required to establish the risk, if any, posed by unrecorded workings and the presence of mineshafts.
- A utilities survey should be consulted identifying any services in the Proposed Development area, which may require decommissioning or diversion of existing identified services; and,
- This report and any future GIR should be submitted to Knowsley Metropolitan Borough Council in support of the forthcoming planning application.

1.0 Introduction

1.1 General

Fairhurst has been appointed by Quod on behalf of DAVOS Property Developments Ltd (the Client), to prepare a Preliminary Risk Assessment to support the forthcoming planning application for the redevelopment of Halewood International Ltd, Sovereign Industrial Estate, Wilson Road, Tarbock Green, Liverpool, L36 6AW.

1.2 Objectives

The objectives of this report are to provide a geo-environmental preliminary risk assessment in relation to the proposed development and an assessment of potential geotechnical constraints to development. Based on the assessment, this report provides recommendations for further investigation or assessment in order to refine or quantify the potential geotechnical and geo-environmental risks and support onward development.

The above objectives are to be met by undertaking the following:

- Reviewing desk-based information on site history, geology, hydrogeology and other potential environmental sensitivities;
- Reviewing and summarising historical setting of the site;
- Providing a summary of the anticipated ground conditions;
- Identifying potential contamination sources, pathways and receptors at the site and surrounding area, and developing an initial Conceptual Site Model;
- Assessing and evaluating the potential for unacceptable risks to site receptors via qualitative environmental risk assessment in the context of the proposed site end use;
- Identifying potential geotechnical constraints to the development of the site;
- Assess potential coal mining risks to the site; and,
- Recommendations for further assessment to inform the design process for the proposed redevelopment.

1.3 Limitations

This report is for the private and confidential use of the Client for whom the report is undertaken and should not be reproduced in whole or in part, or relied upon by third parties for any use whatsoever. Fairhurst have based the conclusions and recommendations within this report upon information supplied by third parties. Fairhurst have assumed that all relevant information has been supplied from whom it was requested. Fairhurst accepts no duty or responsibility (including negligence) to any party other than the stated Client(s) and disclaims all liability of any nature whatsoever to any such party in respect of this report.

1.4 Planning Context

This report has been prepared in support of a forthcoming planning application by DAVOS Property Developments Ltd, which will reconfigure and refurbish existing employment floorspace and create a new retail unit for occupation by Home Bargains.

1.5 Sources of Information

The following sources of information were utilised in the preparation of this report:

(i) Client Provided Information

- AJA Architects, Proposed Site Plan Option 2, Wilson Road Huyton Liverpool, Ref. 7182-035 PRELIMINARY, dated June 2023 (Appendix A);

- AJA Architects, Proposed Site Plan Option 3, Wilson Road Huyton Liverpool, Ref. 7182-036 PRELIMINARY, dated June 2023 (Appendix A);
- Greenhatch Group, Topographic Survey, Sovereign Distillery Huyton Business Park Liverpool, Ref. 40493_T, dated June 2021 (Appendix A); and,
- Greenhatch Group, Underground Utility Survey, Sovereign Distillery Huyton Business Park Liverpool, Ref. 40493_UG, dated June 2021 (Appendix A).

(ii) Published Geological and Environmental Information

- British Geological Survey (BGS), Map sheet 97, Runcorn, 1980, Solid, 1:50,000 series;
- BGS on-line map viewer, BGS GeoIndex Onshore and borehole records (accessed 25/07/2023, <http://www.bgs.ac.uk/discoveringGeology/geologyOfBritain/viewer.html>);
- Department for Environment, Food & Rural Affairs (DEFRA), Magic Map Application (accessed 25/07/2023, <http://magic.defra.gov.uk/MagicMap.aspx>);
- Environment Agency 'Long term flood risk assessment for locations in England' (accessed 25/07/2023, <https://flood-warning-information.service.gov.uk/long-term-flood-risk>);
- Health Protection Agency and British Geological Survey 'UK maps of radon', (accessed 25/07/2023, <https://www.ukradon.org/information/ukmaps>);
- Knowsley Metropolitan Borough Council Planning Portal (accessed 25/07/2023, <https://planapp.knowsley.gov.uk/online-applications/>);
- Zetica Regional Unexploded Bomb Risk Map, Cambridgeshire (accessed 25/07/2023, <http://www.zetica.com/index.htm>);
- British Geological Survey (BGS), Borehole Records, 'BGS Reference: SJ48NE30', dated 1977 (accessed 25/07/2023, <https://api.bgs.ac.uk/sobi-scans/v1/borehole/scans/items/163805>);
- British Geological Survey (BGS), Borehole Records, 'BGS Reference: SJ48NE123' dated 1967, (accessed 25/07/2023, <https://api.bgs.ac.uk/sobi-scans/v1/borehole/scans/items/163898>);
- British Geological Survey (BGS), Borehole Records, 'BGS Reference: SJ48NE467', dated 1987 (accessed 25/07/2023, <https://api.bgs.ac.uk/sobi-scans/v1/borehole/scans/items/15937787>); and,
- Quod, Coal Mining Risk Assessment, submitted to Planning Application 23/00118/FUL, dated March 2023 (accessed 11/07/2023).

(iii) Site-Specific Information

- Groundsure Enviro + Geo Insight Report. GS-QDC-QZ8-T57-FGG. 24th July 2023 (Appendix B)
- Groundsure Consultants Coal Mining Report. GS-PSG-JPZ-FVB-4KO. 24th July 2023 (Appendix B)

2.0 Site Details

2.1 Site Location and Description

The site is located at Halewood International Ltd, Sovereign Industrial Estate, Wilson Road, Tarbock Green, Liverpool, L36 6AW. The National Grid Reference at the centre of the site is approximately E345648, N389502 which occupies approximately 6.41 Hectares of land. The Site Location Plan is presented in Appendix A.

The site currently consists of vacated buildings previously occupied by Halewood International Ltd. At the time of the site visit no internal access was available, however, Quod have advised that the buildings were vacated in September 2022 and have remained largely empty since then with the exception of racking associated with the previous site operations that included the production, distilling and bottling of alcohol within 2 No. units labelled as Warehouse A & B and Warehouse D. The eastern portion of the site consists of 3 No. car parking areas and an access road located off Wilson Road, leading to the previous service yard that is located in the centre of the site. The south western portion of the site consists of densely vegetated grassed area.

The site is bound by Cronton Road (A5080) to the south and Wilson Road to the east. The north is bound by the rear gardens of residential properties located on Bridgewater Way and by the adjacent Halewood International Ltd site. To the west, the site is bound by a Public House / restaurant with associated carpark and a Building and Garden Supplies Yard.

2.2 Proposed Development

The proposed development plans are yet to be finalised, with currently two options being considered (Option 2 and Option 3) both of which are the most recent options presented in Appendix A. The main differences between the two proposed options is the layout of the warehouses and warehouse carpark. The current outline proposal includes the partial demolition of existing ancillary offices associated with Warehouse A & B, and the construction of a retail store (Home Bargains) in the south eastern portion of the site. The development plans also include a new carpark and access point from Wilson Road for the proposed commercial unit, which will also include an external garden centre and HGV service yard. A new car park will be developed for Warehouse A & B and site access will be reconfigured, with a new car park for Warehouse D is also proposed.

2.3 Services

Fairhurst has been provided with an Underground Utility Survey by the Client (Appendix A), which displays the presence of electrical, water, drainage and gas services within the site area. Electrical and Telecoms underground cables are present in the eastern portion of the site, with a further electrical cable also running from north to south through the centre of the site. Foul drainage within the south flows towards a manhole in a southerly direction and then runs towards the east. A surface water drain runs along the south of the site which flows towards the east and then north. A second surface water drain also trends north within the car parks on the eastern side of the site. The surface drainage trending north, runs into the adjacent site to the north, which then appears to connect to drainage on Wilson Road.

Please note that further services may be present on site of which have not been displayed within the provided service plan.

2.4 Site Walkover

A site walk-over was undertaken by a Fairhurst Geo-Environmental engineer on 1st August 2023. At the time of the walkover the weather conditions were intermittently overcast and sunny, with intermittent showers. The site comprised 2 No. large buildings, 3 No. car parks, a service yard a grassed and wooded area. Shrubs and trees were present along the southern and part of the northern site boundaries. It should be noted that access was not granted into the internal areas of

the site, however one area of the buildings interior was visible through a window. A photographic record is presented within Appendix F.

Pertinent findings from the site walkover are summarised below.

2.4.1 Site Access

Vehicular and pedestrian access to the 2 No. car parks on the eastern side of site, is available via Wilson Road that forms the eastern boundary. Currently vehicle access to these 2 No. car parks is prevented by concrete barriers, however pedestrian access is still available. The presence of metal security palisade fencing prevents access to the remainder of the site, albeit access can be via secured barrier/gate located in the middle of the aforementioned car parks.

2.4.2 Boundaries and Surrounding Land Uses

To the north, the site is partially bound by the rear gardens of residential properties on Bridgewater Way and by the adjacent Halewood International Ltd site. The south-western side of the site is bounded by a Building and Garden Supplies yard, a Public House / restaurant (Hare & Hounds) and associated car park, and the rear gardens of residential properties on Cronton Road. The boundary between the wooded area onsite and the adjacent builders yard/car park was not accessible or visible due to the dense vegetation. To the south, the site is bounded by Cronton Road (A5080), beyond which residential properties are present, a Tesco Petrol Station and an agricultural field. To the east, the site is bound by Wilson Road, beyond which is a Public House / restaurant (Brewers Fayre) and Paramount Business Park.

2.4.3 Topography and Ground Surfacing

No significant slopes were identified on site or within the immediate surrounding area. The site was observed to be generally topographically level, which is in accordance with the available information presented in the Topographic Survey (Appendix A). It should be noted that access to the far west portions of the site was prevented by dense vegetation, therefore the topography of the wooded area is unknown.

Ground surfacing in the eastern portion of the site consists of soft landscaping and asphalt hardstanding associated with the car parks and access road. Hardstanding was generally in good condition with the exception of localised cracks and deterioration of the asphalt. Concrete slabbed pathways and brick paving, both in good condition, are located in the southern external areas of the eastern elevation of the building. Ground surfacing located in the former HGV docks/yard space to the west of the building consists of concrete slabs and asphalt hardstanding, both of which appear in reasonable condition. A track runs alongside the buildings in the northern portion of the site, leading to a concrete slab in the northern section which is in generally good condition.

2.4.4 Underground Services, Manholes, Drains and Overhead Cables

Numerous manhole covers were observed across the site. Surface water gullies were observed to the west and east of the building on site, the gully to the west appeared to be blocked with overgrown vegetation. A wet well, likely for sewage water, was observed in the north east, protruding above the ground. Possible buried services are indicated by scars in the asphalt surfacing in the north east. Overhead cables were not observed during the walkover.

2.4.5 Evidence of Contamination, Waste Products and Tanks

An electricity substation enclosed in a locked store room was observed on the eastern side of the site, which had warning signs with sulphur hexafluoride (sulphur hexafluoride is utilised within electrical substations circuit breakers, however, decomposes under electrical stress to form by-products potential harmful to human health). A review online suggests a sulphur hexafluoride by-products can consist of disulphur decafluoride, sulphur dioxide and hydrogen fluoride. Numerous warning signs of asbestos within the roof were observed on the eastern elevation of the building. A boiler room is located in the south eastern elevation of the building. Access into the boiler room was not granted, however pictures taken through a broken panel of the door indicated the boiler equipment was still present.

The site was observed to have 2 No. 2200 litre propane gas tanks situated on the southern site boundary, suspected to be previously used for powering forklifts. The tanks appear to be in good condition, with no rusting or odours in the vicinity of the tank. The tanks are located on a metal plinth above a concrete slab.

A 1,400 litre diesel tank in a plastic bund is situated adjacent to the propane gas tanks. A strong hydrocarbon odour was observed within the vicinity of the diesel tank, suggesting a possible leakage however there was no visual evidence of a leak. An empty cage is situated between the propane tanks and diesel tank, with a 'LPG Empty Bottles' sign on the top half and 'LPG Full Bottles' sign on the bottom half. Overgrown vegetation has filled the cage, with no LPG canisters observed during the walkover.

A large 'firestore' tank, suspected to contain water, and a connected potential pump house are located on the southern side of the building. The tank and pump house are likely to be part of the fire suppression system for the site. The potential pump house is considered a potential source of contamination due to the fuelled generators/pumps associated with them. No signs of contamination were observed outside the assumed pump house.

It should be noted that 2 No. 'masts' are present in the east and south west of the site which displayed radioactive warning symbols. These may be associated with components of a former alarm system.

2.4.6 Vegetation and trees

The western and south western portions of the site consist of grassed areas, beyond which is dense vegetation, consisting of shrubs and mature deciduous trees. Mature trees are also present on the southern site boundary. Numerous sections of soft landscaping are located within the car parking areas in the eastern section of the site. Small trees and bushes are located in a soft landscaping area adjacent to the concrete slabbed pathway on the eastern elevation of the building. The northern site boundary is bordered by a mix of coniferous and deciduous mature trees.

2.4.7 Internal Areas

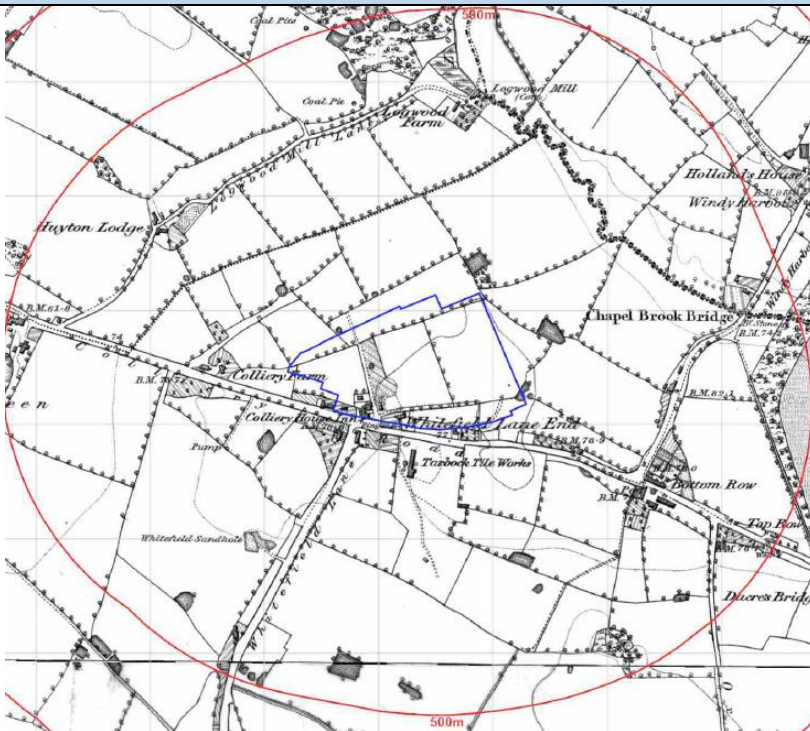
Access was not granted into the internal areas of the site, however one area of the buildings interior was visible through a window. The view through window showed the area to be emptied of any former equipment.

2.5 Historical Development of the Site

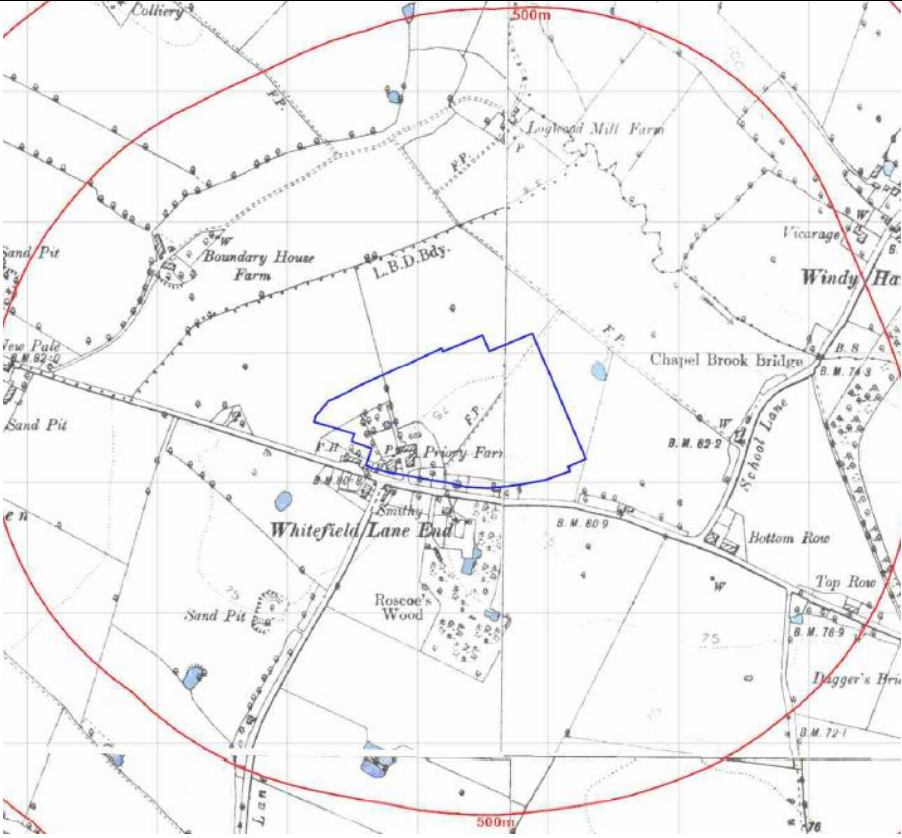
2.5.1 Review of historical OS Maps

All the historical maps outlined in the Groundsure report (Appendix B) were reviewed, with a selected few being presented in Table 1. The historical development of the site, based on the historical maps, has also been summarised in Table 1.

Table 1 - Historical Development Summary

Date / Scale	Onsite	Offsite	Historical Map Visual Different
County Series, 1849-1850 1:10,560	The site appears to largely consist of five fields with trees present on the boundaries between the fields. The site appears to be part of Colliery Farm that is present c. 150m W. The map legend does not indicate what the markings are in the centre of the site, however it is assumed to be surface workings, likely related to coal. Small buildings are located on the southern site boundary.	The surrounding area is predominately fields which have been subjected to surface workings potentially relating to coal. The southern site boundary is bordered by Whitefield Lane End, with the remaining site boundaries bordered by fields. Tarbock Tile Works is located 27m S. 18 No. pits, likely related to Colliery Farm (150m W) are located within 500m of the site, with the closest being c. 5m N, 48m N, and 87m E. Other notable features include a pump (198m SW), and Whitefield Sandhole (250m S). Logwood Mill Brook is located 226m E, and an unnamed surface water body is located 190m N. Colliery House is located adjacent to the sites south western boundary.	

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Date / Scale	Onsite	Offsite	Historical Map Visual Different
County Series, 1892 1:2,500	The site has been reconfigured into three fields, and the area previously marked surface workings are no longer present, suggesting it has been infilled . Buildings noted in the southern portion of the site are now listed as Priory Farm. A footpath cuts through the site, connecting Priory Farm to a 100m footpath northeast of the site. A mixed wood is located in the western portion of the site.	The surrounding site area no longer notes the previous surface workings. However, The Whitefield Sandhole (250m S), has been relabelled as a sand pit with additional sand pits noted 500m W.	
County Series, 1891 1:10,560		Residential plots now border the southern site boundary beyond which is an unlabelled road running adjacent (5m S). A 'Smithy' is located adjacent to the southern site boundary (10m S) The Tarbock Tile Works (27m S) and pump (198m SW) are no longer present. Previously recorded pits are now shown to be ponds, with these located - 87m E, 130m SW, 393m N, 406m S, and 415m SW. Other ponds/flooded pits are located 100m S and 208m S. Other notable features include Rose Cottage (40m S), Logwood Farm (270m N) and Boundary House Farm (334m NW). Logwood Mill Brook is indicated to flow in a south easterly direction.	

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Date / Scale	Onsite	Offsite	Historical Map Visual Different
County Series, 1925 1:10,560	A building labelled Mission Room (Wes. Meth) is now present in the southern portion of the site.	A tank associaed with the Hare & Hounds Public House is situated 5m south of the southern western boundary.	
County Series, 1927 1:2,500	Removal of one of the buildings situated adjacent to the southern site boundary.	The pond associated with Rose Cottage (previously noted 100m S) has extended in size and is now located 40m S.	
	A pond is now located in the western side of the site.	A sewage works has been developed c. 280m N. The previously noted water course (190m N) is now indicated to have a north easterly flow direction towards the sewage works. The Smithy located 10m S is no longer noted on mapping however the building is still present.	

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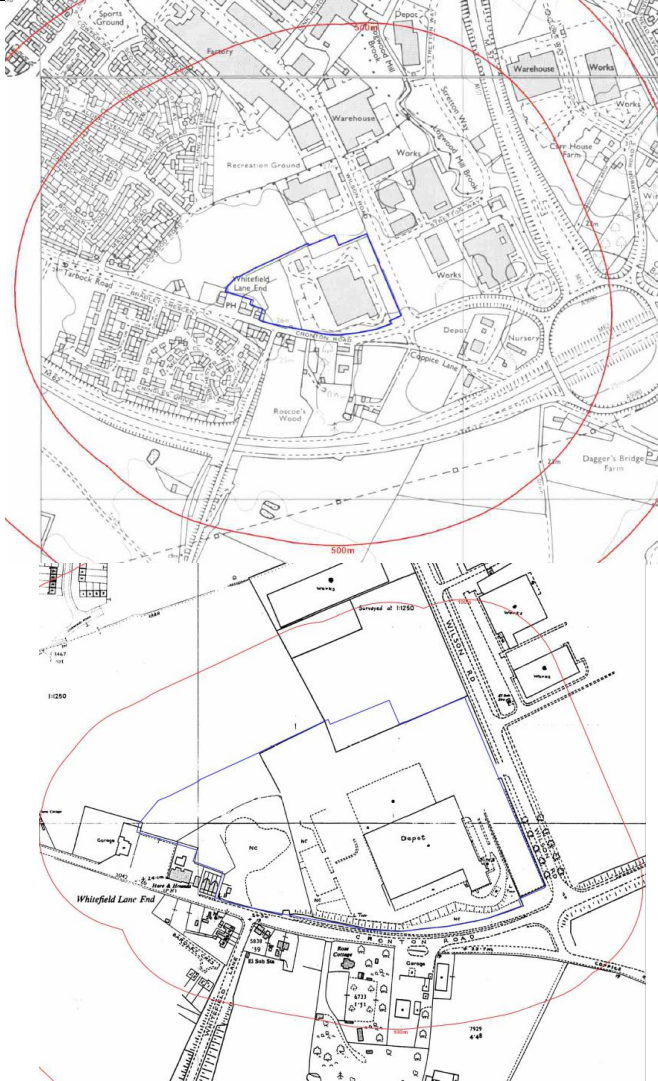
Date / Scale	Onsite	Offsite	Historical Map Visual Different
County Series, 1955-1956 1:10,560 County Series, 1957 1:2,500	Reconfiguration of Priory Farm building layout. Mission Room now labelled as Tarbock Hall.	The road running adjacent to southern site boundary is now labelled as Cronton Road. Notable additions to surrounding area consist of a garage (40m W) and electricity substation (60m S). A residential development is now located 250m NW. The pond associated with Rose Cottage (40m S) is no longer present and considered to have been infilled. Tank (5m S) no longer noted.	

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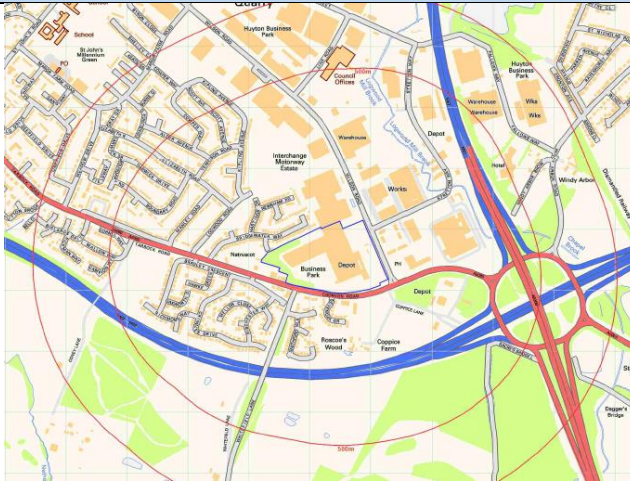
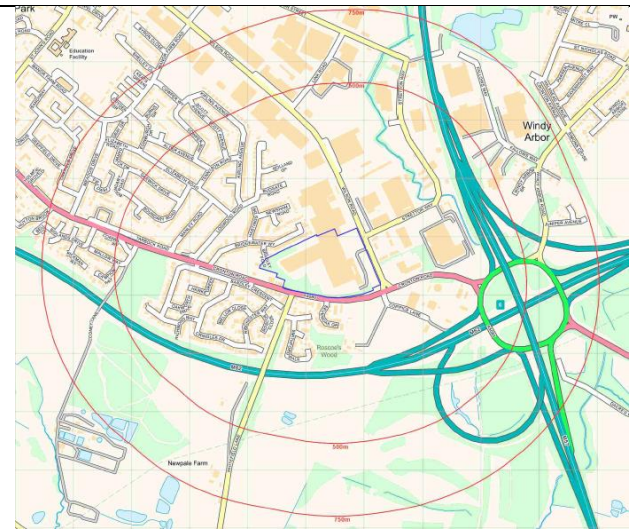
Date / Scale	Onsite	Offsite	Historical Map Visual Different
Provisional, 1965-1967 1:10,560	Previously noted footpath is now labelled as Whitefield Lane End.	Significant residential development has occurred north west of the site. A factory is now located north of the site, with the building extending 218m N. 2 No. Drains are located 258m an 445m SW of the site. The ponds previously noted 87m E and 393m N are no longer present, suggested they have been infilled. The sewage works located 280m north is no longer present and the area is now labelled as a storm outfall.	The historical map shows the area around the Sovereign Industrial Estate. The site is outlined in blue and labeled 'Whitefield Lane End'. To the north, a large area is labeled 'Factory'. To the west, there are 'Drains' and 'Ponds'. To the east, there are 'Storm Outfall' and 'Lagwood Farm'. The map also shows 'Whitefield Lane' and 'Larbock Road'. Red circles indicate distances of 500m from the site.

FAIRHURST

Date / Scale	Onsite	Offsite	Historical Map Visual Different
National Grid, 1974-1978 1:10,000 National Grid, 1976 1:2,500	All buildings and infrastructure on site has been removed. The pond remains on site.	Extensive development has occurred in the surrounding area including both residential, industrial and the construction of associated infrastructure. To the north of the site, are a group of buildings labelled as Works (150m N and 38m NE) and a Warehouse (215m N). Other notable features include a pipe line (277m N), and a recreation ground with associated club and pavilion (200m N). To the east, a depot (186m E), nursery (233m E) and a large roundabout (335m E) associated with M57 (375m E) and M62 have been developed. The M62 runs c. 244m S of the site. Other notable features include 2 No. electricity substations (25m S and 27m E) and an additional garage noted 10m S.	

Date / Scale	Onsite	Offsite	Historical Map Visual Different
National Grid, 1982 1:2,500 National Grid, 1989-1990 1:10,000 National Grid, 1993 1:1,250	A large building, labelled as a depot, has been developed in the eastern portions, with a smaller building noted to north. The pond is no longer present, indicating it has potentially been infilled.	Further industrial development has occurred to the east. A large residential development has appear c. 70m SW. The pond previously noted 130m SW is no longer present and considered to have been infilled.	

FAIRHURST

Date / Scale	Onsite	Offsite	Historical Map Visual Different
National Grid, 2010 1:10,000	The site has been redeveloped to the present day layout, consisting of large building in the eastern portion of the site, with an extended building to the west in the northern portion. The site is now labelled as a Business Park and with the building labelled Depot.	Additional buildings to the east have been developed, with one noted as a public house (67m E). Further residential development has occurred to the south of the site. The previously noted water course at 190m N is no longer present and possibly infilled.	
National Grid, 2023 1:10,000	Access road located in the eastern portion of the site.	New residential development on Holland Grove and Rudgate Road.	
*Potentially Contaminative sources are in bold .			

3.0 Geology and Hydrogeology

The British Geological Survey (BGS) published data (Sheet 97, Solid) and on-line GeoIndex viewer 1:50,000 scale maps, the Groundsure Report, historical BGS borehole records, and online BGS geological database have been reviewed to provide information on the published and proven underlying geology and ground conditions at the site. The findings of the review have been summarised below.

3.1 Made Ground

Although not recorded on the published geology maps, Made Ground is anticipated to be present across the site associated with the site's development history. Given that the site has previously contained various buildings the potential presence of historical foundations / structures cannot be discounted.

3.2 Topsoil

Currently the site is predominantly occupied by hardstanding, as such topsoil is considered to likely be limited to areas of existing soft landscaping on the site, located in the western portion and along the southern site boundary.

3.3 Superficial Geology

A review of on-line GeoIndex viewer 1:50,000 scale maps indicates the site to be underlain by Glacial Till. The BGS Lexicon describes Till as an unsorted and unstratified drift, generally over consolidated and consists of a heterogeneous mixture of clay, sand, gravel, and boulders varying widely in size and shape. No likely thickness of the superficial deposits was indicated.

3.4 Bedrock Geology

The BGS mapping (Sheet 97 Solid) indicates that the bedrock underlying the site comprises the Pennine Lower Coal Measures Formation overlain by the Pennine Middle Coal Measures Formation in the eastern portion of site. BGS Lexicon describes the Pennine Lower and Middle Coal Measures Formation as interbedded grey mudstone, siltstone and pale grey sandstone, with thicknesses up to 650m.

According to the BGS and the Groundsure Report, 1 No. bedrock normal fault and 8 No. inferred coal seams are recorded on site.

3.5 Historical Exploratory Hole Records

BGS borehole records within 250m of the site boundaries have been reviewed to provide an indication of ground conditions in the area of the site. The records summarised below are considered to be the most representative in terms of the documented conditions, with the complete borehole logs are presented within Appendix D.

BGS Ref. SJ48NE30 (c. 70m S, dated 1977)

- The superficial deposit is recorded to a depth of 2.7m bgl, a description was not provided;
- Sandstone (representing the bedrock), described as grey, finely laminated becoming very finely laminated, complex speckled with carbonised plant material on dark laminae, was encountered underlying the superficial deposit to a depth of 5.12m bgl;
- The sandstone was directly underlain with fragments of coal to a depth of c. 5.33m bgl, which was underlain with Seatearth to a depth of 6.40m bgl; Seatearth is British Mining term referring to material present underlying coal seams which has been altered by plant activity and the soil forming process (weathered);
- Sandstone was encountered underlying the above to 6.71m bgl;

- Coal, described as 'dirty, carbonised and pyritic' was logged underlying the aforementioned sandstone to 7.62m bgl, which in turn was underlain with Seatearth to 8.53m bgl; and
- The above was then underlain with alternating beds of sandstone and mudstone proven to a depth of 99.97 m bgl, in which coal seams were encountered intermittently between 9.44m bgl to 88.69m bgl. The above listed alternating deposits of sandstone, mudstone, coal and 'seatearth' are considered to represent the Pennine Middle Coal Measures Formation.

Groundwater was not reported.

BGS Ref. SJ48NE123 (233m S, dated 1967)

- Topsoil, (no description) encountered to a depth of 0.40m bgl;
- Underlain by loose brown sand, to a depth of 0.91m bgl;
- Mudstone, described as stiff, reddish brown clayey shaley Marl (Mudstone) was encountered underlying the above to a depth of 4.57m bgl. Marl is a historical term for referencing high strength glacial clays, and thus the material is considered to represent the Till superficial deposits; and
- Shale, described as hard reddish grey alternating to grey to a depth of 6.18m bgl.

Groundwater was not encountered.

BGS Ref. SJ48NE467 (272m E, dated 1987)

- Made Ground, described as topsoil and clay was encountered to a depth of 0.50m bgl;
- The above was underlain with Made Ground, described as firm brown Clay with brick fragments to a depth of 1.00m bgl, which in turn was underlain with Made Ground described as loose black ash and Sand to a depth of 2.00m bgl;
- Sand, described as loose dark brown medium and coarse Sand to a depth of 3.00m bgl, of which was underlain by stiff red/brown silty sandy Clay with gravel to a depth of 4.00m bgl (considered to represent the Till superficial deposits);
- The superficial deposits were underlain with Sandstone, described as completely weathered to 4.50m bgl, which was underlying with weathered Sandstone to a maximum unproven depth of 5.00m bgl; and,
- Groundwater encountered at 2.00m bgl.

The above BGS boreholes records are considered in general accordance with the mapping, which indicates the superficial deposit consisting of clay, sand, gravel, and boulders (Till Deposit) underlain by the Pennine Lower and Middle Coal Measures Formation.

3.6 Mineral and Natural Ground Stability

A review of Coal Authority interactive online map indicates that the site is located within a Coal Mining Reporting Area. Therefore, a Consultants Coal Mining Report was obtained for the site and is further discussed in Section 3.7. Information provided within the Groundsure Report indicates the following in relation to mineral instability at the site:

- The site is located within a Coal Mining Reporting Area as defined by the Coal Authority;
- 4 No. BritPits are recorded within 500m of site, the closest (102m NE) relating to an ceased deep coal commodity named Tarbock Colliery;
- 16 No. Surface ground workings are recorded within 500m of site, the closest (30m S) relating to pond dated from 1925;
- 60 No. Underground workings are recorded within 1000m of the site, the closest being 571m NW relating to an unspecified old shaft dated from 1925;

- 2 No. Historical Mineral Planning Areas were identified within 500m of the site;
- 3 No. Non-coal mining activities are recorded within 500m of the site;
- There are no records of natural cavities within 500m of the site; and,
- There are no records of mining cavities within 1000m of the site.

Information provided within the Groundsure report indicates the following in relation to natural ground hazards at the site:

- Very low potential for running sand;
- No potential for compressible ground stability hazards;
- Very low potential for shrinking and swelling clay ground stability hazards;
- Very low potential for landslide ground stability hazards;
- Very low for collapsible ground stability hazards; and,
- No potential for ground dissolution stability hazards.

3.7 Consultants Coal Mining Report

A review of the Coal Authority Interactive Map viewer indicates that the site falls within a Development High Risk Area and therefore the planning application will likely need to be supported by a Coal Mining Risk Assessment, including a Coal Authority Report.

The Coal Authority Inter map confirms that the site is an area classified as likely being underlain by probable shallow coal mine workings.

The aforementioned Consultants Coal Mining Report is presented within Appendix B, and advises the following:

- No past underground mining has been recorded on site;
- The report states there are probable unrecorded workings beneath the site;
- No spine roadway at shallow depth has been recorded;
- No recorded opencast mines or Coal Authority managed tips recorded within 500m of the site boundary;
- There are 6 No. recorded shafts on site, of which have been subject to capping / excavation / grouting as outlined Table 2 below. 5 No of these are in the east of the site, with one in the west, as indicated on the drawing provided within the Consultant's Report (Appendix B). A further 6 No. shafts are noted within 100m of the site, of which shaft ref. 34539-011 is included on Table 2 below due to its proximity to site. Full details of the mine shafts are presented in the Coal Authority included in Appendix B.
- There are 8 No. recorded coal outcrops beneath the site, and one outcrop within 50m of the site;
- The report confirms that 5 No. previous ground investigations have been undertaken on site (and two within 50m of the site). Liaison with the Coal Authority regarding the investigation work carried out on the site, indicates that site investigations have previously been carried out by NKC Geotech Ltd (February 1999), Cooper Associates (February 2001), Tetra Tech (March 2022), Drillquest Ltd (July 2001) and Cooper Associates (July 2000). Other investigations within 50m of the site were carried out by Drillquest Ltd (September 2000) and E3P (July 2018). The Coal Authority reported they were unable to provide the records/reports held for the site. These reports should be requested directly from the companies which undertook the investigations, if not already available to the client;
- No recorded remediated sites or damage notice or claim within 50m of the site;

- No recorded mine gas incidents or mine water treatment schemes within 500m of the site;
- There are no incidences of court orders, coal mining licensing, or future underground mining proposed, and no notices of subsidence under Section 46 of the Coal Mining Subsidence Act;
- There is no current Stop Notice applied to the site, nor has a request for preventative works been made for the site.
- The property is not in an area where a notice to withdraw support has been given nor in an area where a notice has been given under Section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

In addition to the above number of shafts recorded on site, the Consultants Coal Mining Report provided treatment descriptions for each mine shaft, as listed in Table 2 below.

Table 2 – Summary of Mine Shafts on Site

Shaft Reference	Grid Reference	Location on Site	Treatment Description
345389-011	E345845 N389425	Present adjacent to the sites south eastern corner	None
345389-017	E345765 N389550	Underlying the car parks present in the east of the site	Shaft excavated to rockhead 1976, where it was reported to terminate in 1976
345389-018	E345775 N389544		Capped with a 4m square reinforced concrete (RC) cap
345389-019	E345764 N389540		Capped with a 7m square RC cap
345389-020	E345775 N389515		Grouted and capped with a 6m square RC cap
345389-021	E345764 N389461	Underlying an existing structure in the central east of the site.	Grouted and capped with a 6m square RC cap
345389-022	E345612 N389461	Underlying an existing structure in the central west of the site.	Located in 1987 due to collapse. The shaft was grouted and capped with a 4.4m square RC cap to 2.6m bgl

A Coal Mining Risk Assessment has been prepared for a proposed planning application (Tetra Tech Ltd, Ref. B029681.CMRA.0, dated May 2022) immediately north of the site. In summary, the report concluded a low to moderate risk with respect to the mine gas and potential unrecorded mine entries and low risk with respect to the shallow mine workings. It should be noted that the geological conditions between the Site and the land the north (i.e that which was subject to the CMRA) vary, as such, the conclusions reached are not transferable.

In light of the available information, in addition to the presence of the mine shafts, there is the potential for the site to be underlain by shallow unrecorded coal mine workings. As such, we would advise that a Coal Mining Risk Assessment be carried out to establish the risk, if any, posed by unrecorded workings. It should be noted that given the site falls within a Coal Mining Development High Risk Area, the production of a CMRA will very likely be required to satisfy planning.

3.8 Hydrogeology

The Department of Environment, Food, and Rural Affairs (DEFRA) 'Magic Map' and Groundsure Report provide the following hydrogeological information:

- The superficial Till, Devensian deposit is defined as a Secondary Undifferentiated Aquifer. Defined by the Environment Agency (EA) as aquifers where it is not possible to apply either a Secondary A or B definition because of the variable characteristics of the rock type. These have only a minor value;
- The underlying Pennine Coal Measures Formation is defined as Secondary A Aquifer. Defined by the Environment Agency (EA) as permeable layers that can support local water supplies, and may form an important source of base flow to rivers;
- The site is located within a Medium Groundwater Vulnerability Zone;
- The site is located within a Nitrate Vulnerable Zone;
- The site is not located within a Drinking Water Safeguard Zone (surface water and groundwater);
- The site is not located within Source Protection Zone; and,
- There are no groundwater abstractions within 1km of the site.

A previous off-site investigation (BGS Ref. SJ48NE467, 272m E) recorded groundwater at a depth of 2.0m bgl, which suggests that there is potential for shallow groundwater to be present within the onsite Till, Devensian deposit.

Across the wider area, groundwater flow of the shallow aquifers is likely to be easterly, toward the Logwood Mill Brook. It should be noted however, that local variations in groundwater flow direction cannot be discounted.

3.9 Hydrology and Flooding

The UK Government 'Long Term Flood Risk Information' and Groundsure Report provide the following hydrological information. It should be noted that this report does not purport a Flood Risk Assessment for the site. The nearest surface water feature is the Logwood Mill Brook (226m E), which flows towards the south east.

- With respect to risk of surface water flooding, the majority of the site is classified as being a Very Low risk (<0.1% chance) with localised Low to High risk (0.1% to 3.3% chance) areas eastern side and north western part of the site. A localised Low to Moderate risk (0.1% to 3.3% chance) flood zone is located in the southern portion of the site;
- The site is within a Low risk area of groundwater flooding;
- The site is within an area that could potentially be affected by flooding from reservoirs, when there is also flooding from rivers;
- The site is considered as Very Low risk from flooding from rivers or the sea (<0.1% chance);
- There are no surface water abstractions within 500m of the site;
- The closest surface water abstraction point is located 725m SE. The abstraction point is recorded as historical and was operated by TH Critchley & Son for spray irrigation; and,
- There are 2 No. historic Licensed Discharges to controlled waters within 250m of the site. The closest was located 195m E for the discharge of process effluent to the Ditton Brook.

Information provided from the Environment Agency (EA) Flood Map for Planning and Groundsure Report indicates that the site is within Flood Zone 1. The production of a Flood Risk Assessment will likely be required to satisfy planning considering the size of the site area.

Knowsley Metropolitan Borough Council Planning Records

A search for planning applications was undertaken on the Knowsley Metropolitan Borough Council Planning Portal and identified the following relevant applications for the site:

Planning Application Ref: 23/00118/FUL (May 2023) located on site

Erection of 1 No. substation at Halewood international Ltd Wilson Road, Huyton, Knowsley, L36 6AD. The planning application was granted on the 17th May 2023, subject to 4 No. planning conditions, none of which were geo-environmentally / geotechnically pertinent.

The application was supported by the submission of a Coal Mining Risk Assessment produced by Quod, which concluded that the proposed development will have no adverse effect upon mining legacy, and nor would it increase to likelihood of coal mining risk to the existing site / site customers and / or to structures in close proximity to the application site.

For further information on the above please see the associated planning application.

Planning Application Ref: 22/00109/FUL (May 2023) located immediately north of site

The Sovereign Distillery, Halewood Wines And Spirits - Factory Outlet Wilson Road Huyton Knowsley L36 6AD. The proposed works consist of the demolition of buildings and the erection of 2 No. industrial units together with the part demolition/part extension and remodelling of existing industrial building to form 7 no. units (use classes e (g)(ii) (iii), b2 and b8) with ancillary office space. Reconfiguration of car parking including service and vehicular circulation areas, landscaping, infrastructure works and other associated works. The application is granted planning permission in May 2023.

The redline boundary of planning application (ref. 22/00109/FUL) is located immediately north of the proposed site area. The application was supported by a Geo-environmental Assessment Desk Top Study and a Coal Mining Risk Assessment were undertaken by Tetra Tech Ltd (as discussed in section 3.7).

The planning application was subject to 18 No. planning conditions, which included 1 no. geo-environmental pertinent planning condition (Planning Condition 8) which requires following documentation to be submitted to and approved by the Local Planning Authority (LPA):

1. Prior to any ground investigation being undertaking a scope of the for the investigation works must be agreed, in writing, with the LPA;
2. Assessment must be undertaken by a suitably qualified contaminated land practitioner assessing both on-site and off-site sources of contamination, including:
 - a. A survey of the extent, scale and nature of contamination; and,
 - b. An assessment of the potential risks to on-site and off-site receptors, including controlled water, ecological systems etc.
3. Submission of a Remediation Scheme, which must include an appraisal of remediation options, the proposed remediation objectives and remediation criteria and a verification plan;
4. Remediation Verification Report (submitted to and approved in writing by the LPA prior to the development being brought into use);
5. Reporting of unexpected contamination;
6. Materials Management Plan, demonstrating that any reuse of contaminated materials does not result increased risk to the environment or human health; and,
7. A suitable methodology for the testing of imported soil / material to confirm its suitability for importation to site, including testing frequency, schedule and assessment criteria. Following from the analysis should be undertaken and submitted to the LPA.

For further details on the above please see planning application Ref. 22/00109/FUL.

Planning Application Ref: 22/00662/FUL (April 2023) located c. 485m north of site

Land At Interchange Motorway Estate Wilson Road Huyton Knowsley L36 6JG. The proposed works consist of demolition of buildings and the erection of 2 no. industrial buildings to include 24 no. units comprising of 2 no. units (use class E (g) (iii), 4 no. units (use class B8) and 18 no. units (use class B2) together with other associated works The application was granted permission.

The application was supported by a Geo-environmental Investigation and Assessment (dated July 2022) by WML Consulting. The report was briefly reviewed, and summarised key findings below:

- No visual and/or olfactory evidence of significant ground contamination was identified within the exploratory holes during the investigation;
- A localised elevated TPH concentration was encountered in the Made Ground of one borehole;
- Made Ground was encountered within all exploratory boreholes to depths between 0.30m and 1.20m bgl;
- Strata considered to represent Glacial Till was encountered in most exploratory holes between depths of 2.00m and 2.70m bgl. Glacial Till was described as reddish brown, soft to firm, slightly silty to sandy, slightly gravelly Clay;
- The Pennine Lower Coal Measures (PLCM) deposits were encountered underlying the Glacial Till to depths between 2.10m and 2.70m bgl. The PLCM deposit was described as highly weathered dark grey, thinly laminated mudstone, locally recovered as silty fine to coarse angular gravel or mudstone; and,
- Groundwater was encountered at depths between 2.00m and 3.00m bgl.

Planning was granted on the 20th January 2023, however was subject to 18 No. planning conditions, of which Planning Condition 6 is geo-environmentally pertinent, and Planning Condition 7 and 8 are geotechnical pertinent.

Planning Condition 6 mirrors that of aforementioned references Planning Application Ref. 22/00109/FUL Planning Condition 8. Planning Condition 7 is associated with historical coal mining, and required the following:

- a. A scheme of intrusive site investigations has been carried out on site to establish the risks posed to the development by past coal mining activity, and.*
- b. Any remediation works and / or mitigation measures to address land instability arising from coal mining legacy, as may be necessary, have been implemented on site in full in order to ensure that the site is made safe and stable for the development proposed. This should include the submission of the approved site layout plan which illustrates the exact location (and grid co-ordinates) of the recorded mine entries, if found present within the site, and the calculate zone of influence (no build exclusion zone) of any recorded mine entry within influencing distance of the site.*

Planning Condition 8 requires that prior to occupation of the development, or being taken into beneficial use, a signed statement is issued to the LPA that the site has been made safe and stable for the approved development. The document is to include:

- Confirmation on the methods and findings of the intrusive site investigations; and,
- Confirmation on the completion of any remedial works and / or mitigation necessary to address the risks posed by past coal mining activity.

4.0 Environmental Information

4.1 Radon

Mapping of the radon risk associated with the site viewed on the UK Radon website identified that the site is within an area where less than 1% of homes are affected by radon. As such it is considered that radon protection measures are not required for new structures.

4.2 Ground Gas and Vapours

Due to the site history and previous development, Made Ground is expected across the site, where former structures were located and potentially infilled land. The composition of Made Ground on site is currently unknown and therefore it should be considered as a potential source for ground gas.

In regards to the vapour risk on site, numerous potential vapour sources have been identified on site, including a diesel tank with visual/olfactory evidence of contamination noted at its location during the walkover. Vapour risk requires to be considered further.

4.3 Mine Gas Assessment

Findings from the Consultants Coal Mining Report (Appendix B) highlight there are probable unrecorded workings beneath the site, and presence of mine shafts. As such, reference was made to the guidance provided in CL:AIRE – Good Practice for Risk Assessment for Coal Mine Gas Emissions, 2021, and specifically 'Figure 13.1: Decision support tool for mine gas risk assessment'. Figure 13.1 of the aforementioned document is a flow chart which provides a series of statements to establish the potential level of risk of mine gases being present and what subsequent assessment is required. Table 3 provides a summary of this process and the risk assigned to the site.

Table 3 – Summary of Potential Level of Risk of Mine Gases

Statement From CL:AIRE Guidance	Answer (Yes / No)
<u>1) Are all of these statements true? If yes, site negligible risk</u>	
Mine Entries > 50m from the site	No , Mine shafts are located onsite and within 50m of site.
Workings > 150m	No , Potential for unrecorded workings beneath the site.
No faults or potential pathways connecting surface to deeper unflooded workings	No , bedrock fault is present, traversing through the eastern part of the site on an approximate north-south trend.
Outside area of past or probable works as shown on the Coal Authority Interactive Viewer	No , site is within an area of probable shallow coal mine working across the site.
<u>2) Are all of these statements true? If so, site low risk</u>	
Workings between 30m and 150m but permanently flooded or covered by 10m of low permeability superficial deposits	No , depths of unrecorded workings unknown beneath the site however superficial deposits on site may be less than 10m.
Mine Entries > 50m from the site	No , Mine shafts located onsite and within 50m of site.
Are any of these statements true? If so site High Risk, if not site Medium Risk	
Mine entry on site or <20m from site boundary	Yes , Mine shafts are located onsite and within 20m

Statement From CL:AIRE Guidance	Answer (Yes / No)
	of site.
Workings below site <30m depth and unflooded or variable water level (not permanently flooded)	Yes , if coal seams are present on site, workings are likely to be at shallow depths.
Faults or potential pathways connecting surface to deeper unflooded workings	Yes , as previously stated, there is potential evidence for a viable pathway to be present at the site.
Within an area of past or probable works as shown on the Coal Authority Interactive Viewer	Yes . As previously stated, the site is within an area of probable shallow coal mine working across the site.

Based on the above, it is considered that the site is at a high theoretical risk of mine gas which confirms that future detailed assessment is required.

4.4 Consultations

The Environment Agency (EA) and Knowsley Metropolitan Borough Council were contacted on 25th July 2023. The information received is summarised below and full responses are provided in Appendix E.

Environment Agency

A response was received from Environment Agency on the 10th August 2023. The relevant information has been selected and is summarised below. For the full response please see Appendix E in this report.

- 3 No. pollution incidents are recorded within 250m of the site. The pollution incident closest to the site (173m N) from 2001 reported significant impact on land, however the pollutant was not identified. The 2009 incident located 235m E did not report any impact to land or water and therefore is not considered a potential source. The 2009 pollution incident 240m E reported a minor impact to water from inorganic chemicals/products;
- 1 No. Waste Site is recorded within 250m of the site;
- Records do not indicate that the property has been designated as a Special Site;
- No groundwater quality information or level data available from the EA monitoring network;
- No current or historic landfill sites are recorded within the vicinity; and,
- No surface water or groundwater abstractions are recorded at the site or within a 1km radius.

Knowsley Metropolitan Borough Council

A response was received from Knowsley Council on the 31st July 2023. The relevant information has been selected and is summarised below. For the full response please see Appendix E in this report.

- 3 No. Landfills (current/historic) have been reported within 500m of the site, a specific indication of distance to these landfills from site was not provided. The Tushingham Metallic Brick works was filled from early to 1970s. The former clay extraction pit was filled with putrescible waste;
- No issues have been reported in relation to contaminated land;
- The site has not been identified as contaminated land under Part 2A of the Environmental Protection Act 1990;
- The Council has not yet determined any sites as 'contaminated land' within this area of the County Borough;

- Historical maps held by the department indicate that the site has been associated with Halewood International;
- In light of the former use of the land where the property is situated, if the site was to be redeveloped the potential contaminated land at the site would be addressed through the planning process. At this stage it would be unlikely that the site would be assessed under Part 2A; and,
- The Halewood International site has had site investigations undertaken as part of planning applications 22/00662/FUL and 23/00118/FUL.

4.5 Asbestos

Fairhurst have not been provided with an Asbestos Management Survey Report for the site. The historical maps indicate the part of the building was constructed sometime between 1976 and 1982. Furthermore, during the walkover it was noted that there were asbestos warnings for the roof surrounding the eastern side of the building.

Prior to the demolition works a licenced asbestos specialist should be appointed to remove and dispose of the asbestos in accordance with the asbestos regulations.

With regards to the underlying Made Ground. Considering the varied commercial development that has taken place both on site, coupled with the age of the former structures associated with these developments, and within immediate surrounding area, the presence of asbestos fibres within the underlying Made Ground is anticipated.

4.6 Unexploded Ordnance (UXO)

Mapping of the UXO risk associated with the site viewed on the Zetica UXO Risk website identified that the site is within a low risk area. As such, UXO mitigation measures are not required.

4.7 Invasive Species

Whilst no invasive species were observed during the site survey walkover. An assessment on invasive species is not within the scope of this report. If invasive species are suspected of being present, an invasive species specialist should be consulted in order to advise on potential treatment/removal.

4.8 Archaeology and Ecology

No archaeological areas were identified on site from the historical mapping.

A Green Belt zone is located 238m south east from site. The site is located within an Special Scientific Interest (SSSI) Impact Risk Zone however consultation is only required for developments of aviation infrastructure, wind and solar schemes, livestock & poultry units, general combustion process, landfills, and any discharges of water or liquid waste.

A full assessment of the archaeological and ecological setting of the site is outside the scope of this report.

4.9 Consented, Permitted and Other Activities

Table 4 summarises relevant information provided within the Groundsure Report, including details of potential off-site contaminative land uses. Potential sources located at a distance greater than 250m from the site are generally discounted on the basis of distance and influence from the subject site. Migration of ground gas for instance from landfills are however, considered to a greater distance of 500m from the site.

Table 4 – Summary Potential Contaminative Consents, Permits and Other Activities

Details	Location Relative to Site	Status
Licensed Pollutant Release, Tesco Service Station, Process: Unloading of Petrol into Storage at Service Stations	39m S	Current Permit Part B
4 No. Waste exemptions, Tarbock Motorway Maintenance Compound, Storing of waste in secure containers and place	32-187m S	Ref. WEX168997 Ref. WEX303248
Pollution Incident Category 2 (Significant Impact) in Land 2001, Pollutant not specified	173m N	-
Licensed Discharges to controlled waters, Whiston Industrial Estate, Trade Discharges - Process Effluent to Ditton Brook	195m E	Historic Permit No. 016990366
2 No. List 1 Dangerous Substances, Lucas Aerospace Ltd & Trs Aeronautical Systems, Authorised Substances: Cadmium, Receiving Water: Stw Partcons	235m NE	Active

The pollution incident north of the site has also been identified from consultation with the Environment Agency. Given the time passed (c. 22 years) the contamination may attenuated with time, however there is still potential for the soils and groundwater beneath the site to have been impacted, therefore this source is not discounted.

The Environment Agency Public Register indicates that the historic Licensed Discharge (195m E) was held by Tarmac Trading Ltd. The operations consisted of making glass, ceramics, cement, and cutting stone and the permit was dated from 1982. It is considered unlikely for the historic Licensed Discharge to have significantly impacted on site conditions and therefore it is not taken forward in the assessment.

The Environment Agency Public Register does not indicate the type of waste stored at Tarbock Motorway Maintenance Compound. The Waste Exemptions are not discounted, but are considered unlikely to affect the site, as they unlikely to be storing hazardous waste.

Information obtained from the Groundsure Report for the site indicates the following:

- There are no BGS or LA recorded landfill sites within 500m of the site;
- There are no historic or active landfill sites within 500m of the site;
- There is 1 No. historic landfill (EA/NRW record) located within 500m of the site. The landfill contains inert waste and was operated by Tushingham Metallic Brick Works, located 486m N. This information is in contrary with the response from Knowsley Metropolitan Borough Council which states the Tushingham Metallic Brick Works was filled with putrescible waste;
- There are 5 No. historic waste management sites within 500m of the site. The closest being a waste recycling facility, dated April 2011, was located 126m N and comprised a household waste recycling centre; and
- There are 4 No. licensed waste sites within 500m of the site. The closest being Huyton H W R C located 149m N, the site operates as a household waste recycling centre.

The Groundsure report lists current potentially contaminative land uses within 500m of the site, of which those present within influencing distance of the site (250m or 500m for ground gas risk) have been considered in this report; these are presented in Table 5.

The Groundsure report indicates that there are a total of 28 No. recent industrial land uses within a 250m radius and 21 No. historic industrial land uses within a 250m radius of the site. Reference should be made to the Groundsure Report (Appendix B) for full details of the type and location.

Only the records within 250m of the site area have been reviewed below, comprising 9 No. active/recent entries, and 15 No. historic entries.

Table 5 – Summary of Contaminative Industrial Land Uses

Land Use Activity	Distance	Direction
Electricity Substation (Historic), dated 1982-1997	On site	
Unspecified Works (Historic), dated 1975	On site	
Garage (Historic), dated 1956-1982	On site	
Halewood International - Alcoholic Drinks (Active)	Onsite	
Electricity Substation (Active)	Onsite	
Smithy (Historic), dated 1891	19m	SW
5 No. Unspecified Works, Commercial / Industrial (Historic)	21m - 218m	NE, N
Tile Works (Historic), dated 1851	21m	S
4 No. Unspecified Tanks / Tanks (Historic)	7m - 203m	S, W, N
Unspecified Depot (Historic), dated 1975 – 1989	154m	E
Pump (Historic), dated 1851	167m	W
2 No. Unspecified Warehouse (Historic), dated 1975 – 1989	200 - 216m	N
Unspecified Pit (Historic)	230m	SW
Unspecified Ground Workings (Historic)	237m	SW
6 No. Electricity Substations (Historic)	35m - 230m	All directions
2 No. Gas Governor (Historic), dated 1992 – 1997	135m - 330m	N, NE
4 No. Garage Services (Historic)	17m - 183m	S, N, SE
8 No. Electricity Substations (Active)	27m - 229m	All Directions
Garage Service – Testing, Repair and Servicing (Active)	90m	E
3 No. Petrol Stations (Active)	20m - 42m	S, SE
3 No. Unspecified Works Or Factories (Active)	100m - 181m	NE, E
3 No. Gas Governor / Station (Active)	140m - 184m	N, W
Public Recycling Facility (Active)	204m	N
2 No. Sewage Pumping Station (Active)	204m – 249m	NW, SW

There are 4 No. historic Garage Services and 3 No. active/recent fuel stations that should be considered a potential off-site source of contamination.

The electricity substations (historic and some active) included above are likely to have included use of Polychlorinated Biphenyls (PCBs) at some stage. However, given PCBs are not very mobile in the environment a distance of 50m is adopted to assess impact on site conditions. Therefore the substations at a greater distance than 50m are unlikely to have significantly impacted on site conditions and are discounted as a source. It should be noted that PCBs from the electricity substations within 50m of the site are taken forward in the assessment in addition to other contaminants which are also often associated with historical substations.

There is the potential for the Smithy, Tile Works and pump in the surrounding area to have impacted soils or groundwater beneath the site, albeit given the time passed (c. 130 - 170 years) the contamination may have attenuated with time and these sources are not taken forward in the conceptual model. The historic Unspecified Depot and Warehouses have been discounted as

they are considered unlikely to affect the site due to the age of when these features were present and their distance from the site.

The historic maps identified potential coal workings associated with the Colliery Farm, a potentially infilled pond and a depot on site. There are also 4 No. of potentially infilled ponds surrounding the site (closest being 40m S). During the development of the surrounding area between 1974 – 1993, the ponds were either constructed over or removed from mapping suggesting they were potentially infilled, depending on the material utilised during the suspected infilling these features may represent a source of ground gas.

The site visit at Halewood International confirmed the storage of a diesel tank and 2 No. propane gas tanks from previous site operations. It was noted that the propane gas tanks appeared to be in a good condition and situated on a metal plinth above a concrete slab (see Appendix F). The diesel tank appear in good condition and no visible evidence of spillages were noted, however, a strong hydrocarbon odour was encountered in the vicinity of the diesel tank. As stated previously, the site walkover also observed numerous warning signs for asbestos, suspected to be located in the roof sheeting.

5.0 Conceptual Model and Qualitative Risk Assessment

An initial conceptual model (CM) represents the characteristics of the site that show the possible relationship between identified potential contaminant sources, pathways and receptors. The Principles of Environmental Risk Assessment is presented in Appendix C. The significance of the presence of sources, pathways and receptors is considered by carrying out a risk assessment of all potentially complete source-pathway-receptor (S-P-R) linkages.

5.1 Source Characterisation

Potential sources of contamination at the site have been established based on the site walkover, the historical map review, review of environmental information within the Groundsure Report and taking account of local ground investigation information. Potential sources located at a distance greater than 250m from the site are discounted on the basis of distance and influence from the subject site. The exception being potential sources of ground gas and / or soil vapour, such as landfill, which are considered relevant up to 500m from the site boundary. The remaining relevant potential sources are shown in Table 6.

Table 6 - Identified Potential Sources of Contamination

Potential Contamination Sources	
On-site	
Made Ground	
Historic industrial land uses (incl. colliery farm, garage, depot and unspecified works etc.)	
Recent site operations (boiler room, pump house, diesel tank and propane tanks)	
Electricity Substations (Active and Historic)	
Potentially infilled pond and surface workings	
Potential below ground coal workings	
Potential for asbestos within building	
Off-site	Location
Unspecified Tanks / Tanks (Historic)	Closest being 7m W
Garage Services (Active and Historic)	Closest being 17m S
Petrol Stations (Active), including Licensed Pollutant Release for Unloading of Petrol into Storage at Service Stations	Closest being 20m S
Unspecified Works, Commercial / Industrial (Historic) and Factories (Active)	Closest being 21m NE
Electricity Substations (Active and Historic)	Closest being 27m E
Waste exemptions, Storing of waste in secure containers and place (Active)	Closest being 32m S
Potentially infilled ponds	Closest being 40m S
Active licensed waste sites and historic waste management sites	Closest being 126m N
Gas Governors / Station (Active and Historic)	Closest being 135m N
Sewage Pumping Stations (Active)	Closest being 204m NW
Unspecified Pit and Ground Workings (Historic)	230m – 237m SW
Pollution Incidents, Significant Impact on Land and Minor Impact in Water	Closest being 173m N
List 1 Dangerous Substances, Trs Aeronautical Systems, Authorised Substances: Cadmium (Active)	235m NE
Historic Landfill (Tushingham Metallic Brick Works), inert / putrescible waste	486m N

Table 6 contains the most pertinent identified potential sources of contamination based on the available data at the time of reporting.

The off-site potentially infilled ponds are not discounted, but are considered unlikely to affect the site, as they are too distant, and the likelihood of a significant pathway being present is low.

The 'Contaminants of Concern' for those potential sources which cannot be discounted, as identified in Table 6, are listed in Table 7.

Table 7 - Contaminants of Concern for Sources Identified

SOURCE	CONTAMINANTS OF CONCERN													
	Heavy Metals	SF ₆ *	TPH	BTEX	MTBE	PCBs	PAHs	SVOCs & VOCs	Asbestos	SO ₃ SO ₄	pH	NH ₃ / NH ₄	Ground Gas / Soil Vapour	Cyanide
On-site Sources														
Made Ground	✓		✓				✓	✓	✓	✓	✓		✓	
Colliery Farm (Historic)	✓										✓			
Garage (Historic)	✓		✓	✓	✓		✓	✓	✓				✓	
Depot (Historic)	✓		✓					✓						
Unspecified Works (Historic)	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓	
Boiler Room	✓	✓					✓							
Potential below ground coal workings	✓										✓		✓	
Pump House	✓	✓	✓										✓	
Storage of diesel and propane tanks			✓	✓	✓		✓	✓					✓	
Electricity Substations (Active and Historic)	✓	✓	✓			✓	✓							
Potentially infilled pond & surface workings	✓		✓				✓	✓	✓	✓	✓		✓	
ACM within building materials									✓					
Off-site Sources														
Unspecified Tanks			✓	✓	✓		✓	✓		✓	✓		✓	
Garage Services	✓		✓	✓	✓		✓	✓	✓				✓	
Petrol Stations**	✓		✓	✓	✓		✓	✓					✓	
Unspecified Works***	✓		✓	✓	✓		✓	✓	✓	✓	✓		✓	✓
Electricity Substations	✓	✓	✓			✓	✓							
Waste Exemptions	✓													
Potentially infilled ponds	✓		✓				✓	✓	✓	✓	✓		✓	

SOURCE	CONTAMINANTS OF CONCERN													
	Heavy Metals	SF ₆ *	TPH	BTEX	MTBE	PCBs	PAHs	SVOCs & VOCs	Asbestos	SO ₃ SO ₄	pH	NH ₃ / NH ₄	Ground Gas / Soil Vapour	Cyanide
Off-site Sources														
Waste Management Site	✓													
Gas Governors / Station			✓					✓					✓	✓
Sewage Pumping Station	✓											✓	✓	✓
Unspecified Pit / Ground Workings													✓	
Pollution Incident	✓	✓										✓		
List 1 Dangerous Substances (Cadmium)	✓													
Historic Landfill (Inert / Putrescible Waste)											✓	✓	✓****	

*Including sulphur hexafluoride (SF₆) by-products which consist of disulphur decafluoride, sulphur dioxide and hydrogen fluoride.

**Off-site Petrol Stations including the Licensed Pollutant Release for Unloading of Petrol into Storage at Service Stations.

***Off-site Unspecified Works including Commercial / Industrial Works (Historic) and Unspecified Factories (Active).

**** Knowsley Metropolitan Borough Council indicated feature was infilled with putrescible waste which is a source of ground gas.

5.2 Receptor Characterisation

Potential receptors at the site are related to the development proposals and the surrounding area. The location of the site relative to sensitive environmental receptors have been considered, as well as the ground and groundwater conditions at and below the site. This report has identified the following potential receptors:

- Human health: Future site users, current and future off-site receptors, including members of the public;
- Buildings: On-site and off-site building fabric and services; and,
- Controlled Waters: Possible shallow groundwater present within the Till, Devensian and Secondary A Aquifer (bedrock) at depth.

It is assumed that appropriate health & safety measures will be adopted by the Contractor, based upon an environmental risk assessment of site conditions. This is likely to include personal protective equipment (PPE). It is considered that these measures will adequately mitigate the risk to construction and future maintenance workers from any potential sources of contamination. Therefore, construction and future maintenance workers are not discussed further as part of this risk assessment.

It is considered that appropriate pollution prevention controls will be set out in RAMS or a Construction Environmental Management Plan (CEMP) and utilised during construction works to mitigate risks to identified receptors (e.g. human health receptors on and off-site and controlled waters).

5.3 Pathway Characterisation

The potential pathways by which receptors might be exposed to contaminants (sources) at the site can vary depending on the proposed or current land use. This assessment is to be undertaken to consider the suitability of the site for development to retail store with warehouses, as identified on the development plans (see Appendix A).

The following potential pathways relevant to the identified receptors are presented below:

On-site Human health

- Dermal (skin) contact, ingestion and/or inhalation with contaminated soils;
- Inhalation of ground gas / soil vapours and mine gas;
- Inhalation of airborne fibres; and,
- Ingress of contaminants into water supply pipes contaminating drinking water supplies, followed by ingestion.

Off-site Human health

- Ingestion and / or inhalation of windblown contaminated soils from the site (during construction only);
- Inhalation of airborne fibres; and
- Inhalation of ground gas / soil vapours derived from the site where it has accumulated in buildings.

On-site Buildings and Services

- Ground gas (including mine gas) and / or soil vapour migration and accumulation in voids within or beneath the proposed structures; and
- Direct contact of building fabric with contaminated and/or aggressive soils or groundwater / shallow perched water.

Off-site Buildings and Services

- Ground gas (including mine gas) and / or soil vapour migration derived from the site and accumulation in voids within or beneath the proposed structures, followed by explosion; and
- Off-site migration followed by direct contact of building fabric with contaminated and/or aggressive soils or groundwater.

Controlled Waters

- Migration off-site and onto site via possible shallow groundwater present within the Till, Devensian and Secondary A Aquifer (bedrock) at depth.

Off-site sources impacting on on-site ground conditions

- Migration of ground gas (including mine gas) and vapours onto site and accumulation in buildings via preferential pathways.

5.4 Pollutant Linkages

The preliminary CSM outlined below has been used to undertake an initial assessment for the site to determine the possibility of significant risks that may exist following redevelopment of the site. All potential sources, pathways and receptors detailed above have been considered. The principles of environmental risk assessment are presented as Appendix C.

Table 8 – Initial Conceptual Site Model

Source	Potential Pathways	Potential Receptors	Assessment	Potential Consequence	Potential Probability	Risk Class
Potential on site sources (see tables 6 and 7)	Dermal contact / ingestion and / or inhalation of contaminated soils	On-site human health (see Section 5)	Made Ground may be present on site, associated with the historical phases of development. The risk of proposed site end users and third party site users coming into contact with this is considered low as the proposed development predominantly includes the placement of hardstanding across the eastern and central parts of the site. The direct contact pathway is considered only to be viable in the areas of retained soft landscaping, which is limited to the southern border and western parts of the site.	Severe	Unlikely / low likelihood	Moderate
	Inhalation of accumulated ground gases, mine gas and/or soil vapours		There is potential for the generation of ground gases from any degradable components within the Made Ground, and potentially infilled land on site. There is also a potential for coal mine gas. Numerous potential vapour sources have been identified on site, including the olfactory evidence of contamination from the diesel tank.	Severe	Likely	High
	Ingress of contaminants into conduits, contaminating drinking water supplies.		There is potential for contaminants, which have the potential of permeating through drinking water supply pipes to be present at elevated concentrations. <i>(The use of a suitable clean corridor for water supplies or the utilisation of contamination resistant pipe work would mitigate this risk where contamination is encountered).</i>	Medium	Likely	Moderate
	Dermal contact / ingestion and / or inhalation of contaminated soils	Off-site human health (see Section 5)	There is a limited risk to adjacent site users, restricted to windblown pathways if contaminants of concern are identified. Risks during construction will be managed by dust suppression measures.	Minor	Unlikely	Low
	Off-site migration, followed by inhalation of accumulated ground gases, mine gas and/or soil vapours		There is potential for the generation of ground gases from any degradable components within the Made Ground, potentially infilled land on site, and potential surface workings. Numerous potential vapour sources have been identified on site. There is potential for ground gas generated on site to migrate to offsite receptors. However, the presence of low permeability till is likely to reduce the likelihood of migration.	Medium	Unlikely	Low

Source	Potential Pathways	Potential Receptors	Assessment	Potential Consequence	Potential Probability	Risk Class
	Direct contact of building fabric with contaminated soils and/or groundwater	On-site building materials and services	On-site sources of contamination have been identified which present a risk to proposed structures with regards to direct contact with the building fabrics / substructures.	Mild	Likely	Moderate / Low
	Ground gas and / or soil vapour accumulation within voids or beneath structures, followed by explosion		There is potential for the generation of ground gases from any degradable components within the Made Ground, potentially infilled land and potential surface workings on site. There is also a potential for coal mine gas. Sources of vapour have been identified on site.	Severe	Likely	High
	Off-site migration of potentially contaminated groundwater from on-site sources.	Off-site building materials and services	Groundwater is likely to be shallow within the Till deposit. Potential for sources to leach into groundwater on site and migrate off-site.	Mild	Low Likelihood	Low
	Migration of contaminants to underlying aquifers	Secondary Undifferentiated and Secondary A Aquifer	There is the potential for contamination onsite to reach the shallow groundwater. Future hardstanding should reduce the risk moving forward.	Medium	Likely	Moderate
Potential off site sources (see tables 6 and 7)	Migration onto site followed by accumulation and inhalation of ground gas, mine gas and / or soil vapour	Human health (on-site)	There is a potential risk of asphyxiation by end users from ground gases (e.g. CO ₂) migrating from offsite sources and accumulating within confined spaces within the proposed development.	Severe	Low Likelihood	Moderate
		Buildings and service conduits (on-site)	The potential for the migration, accumulation and ignition of ground gas, mine gas and / or vapour from offsite sources.	Severe	Low Likelihood	Moderate

Risk Ratings:

- High - The available information indicates a significant possibility of harm to a receptor requiring further investigation, assessment or treatment.
- Moderate - The available information indicates a potential for significant harm to a receptor requiring further investigation and assessment.
- Low - The available information does not indicate a significant potential for harm to a receptor requiring further investigation. This does not indicate zero risk.

The preliminary risk assessment undertaken using information provided to date suggests that risks range generally from **Low through to High**. However, in keeping with the government Land Contamination Guidance, ground investigation is recommended in order to confirm the absence of unacceptable risk and to confirm the site is suitable for intended use, based on the findings of the PRA.

The initial CSM has identified complete pollutant linkages, therefore an investigation of the main pathways will be required. The investigation should include ground gas/vapour/groundwater monitoring and soil sampling and testing in order to inform risks to human health, the water environment, the appropriate drinking water supply pipe specification and concrete specification.

6.0 Geotechnical Considerations

The following potential geotechnical constraints to the proposed development may be present at the site as inferred from the desk based findings identified to date:

- Made Ground is anticipated to be present on-site which can comprise significantly variable material resulting in poor and variable engineering properties, such as high compressibility and low shear strength;
- Made Ground may contain obstructions typically in the form of brick, building rubble, cobbles and boulders;
- Presence of buried obstructions relating to the previous developments across the site;
- Consideration should be given to the presence of mine entries in the central and eastern parts of the site, as a previously unknown mine entry has historically collapsed on site. The known mine entries on site have either been excavated, capped and/or grouted, with the exception of one mine entry adjacent to the south-eastern corner which has received no treatment. There will be development exclusion zones associated with the mine entries and these will need to be established;
- In light of the available information, in addition to the presence of the mine shafts, there is the potential for the site to be underlain by shallow unrecorded coal mine workings. As such, we would advise that a Coal Mining Risk Assessment be carried out to establish the risk, if any, posed by unrecorded workings. It should be noted that given the site falls within a Coal Mining Development High Risk Area, the production of a CMRA will likely be required to satisfy planning.
- Presence of existing services potentially requiring either diversion, protection or decommissioning;
- Given the presence of mature trees along the site boundaries and the west of the site in particular, it would be prudent to confirm if the soils are susceptible to shrink/swell. An arboriculturalist should be consulted with regards to the presence of protected trees, tree root protection zones and a tree survey has been provided confirming the height and species of trees for consideration in detailed design;
- Pyrite (sulphate 'attack') may present a risk to the fabric of the proposed building structures and foundations associated with the Made Ground and/or groundwater as detailed in BRE Special Digest 1:2005 Concrete in aggressive ground;
- Non-engineered materials (i.e. Made Ground) can lead to unacceptable total and differential settlement, particularly when building across the boundaries between infilled features and natural ground. Infilled features also present a potential ground gas risk. When undertaking intrusive investigation, these areas should be targeted to determine whether they present potential geotechnical or geo-environmental constraints; and,
- Potential for shallow water within granular deposits of Made Ground or shallow natural ground may require pumping/dewatering during any intrusive works involving excavations and/or earthworks.

7.0 Conclusions & Recommendations

This report has identified constraints associated with the Proposed Development of the site to reconfigure the existing warehouses, and construct a new retail store and car parking areas. It should be noted that the assessments and recommendations presented within the desk based study should be refined following confirmation of the final development layout. If the development proposal end uses are altered, this report, risk assessment and considerations within should be updated accordingly.

Based on the initial CSM, the identified pathways are of **Low to High** risk. The PRA is conservative in its approach and intrusive ground investigation is recommended in order to confirm the CSM and quantify the risks associated with the potential pollutant linkage identified. The ground investigation should confirm the presence/nature and extent of Made Ground, the superficial deposits and bedrock beneath the site, potential mine entries, the shallow groundwater (if encountered) and ground gas (including mine gas) / vapour regime and include geo-environmental soil testing to assess the potential risks to human health and the environment.

The PRA has identified potential geotechnical risks and constraints that should be further understood and addressed with consideration of the specific Proposed Development. On this basis an Intrusive Ground Investigation is recommended to inform both planning / building control requirements and design considerations.

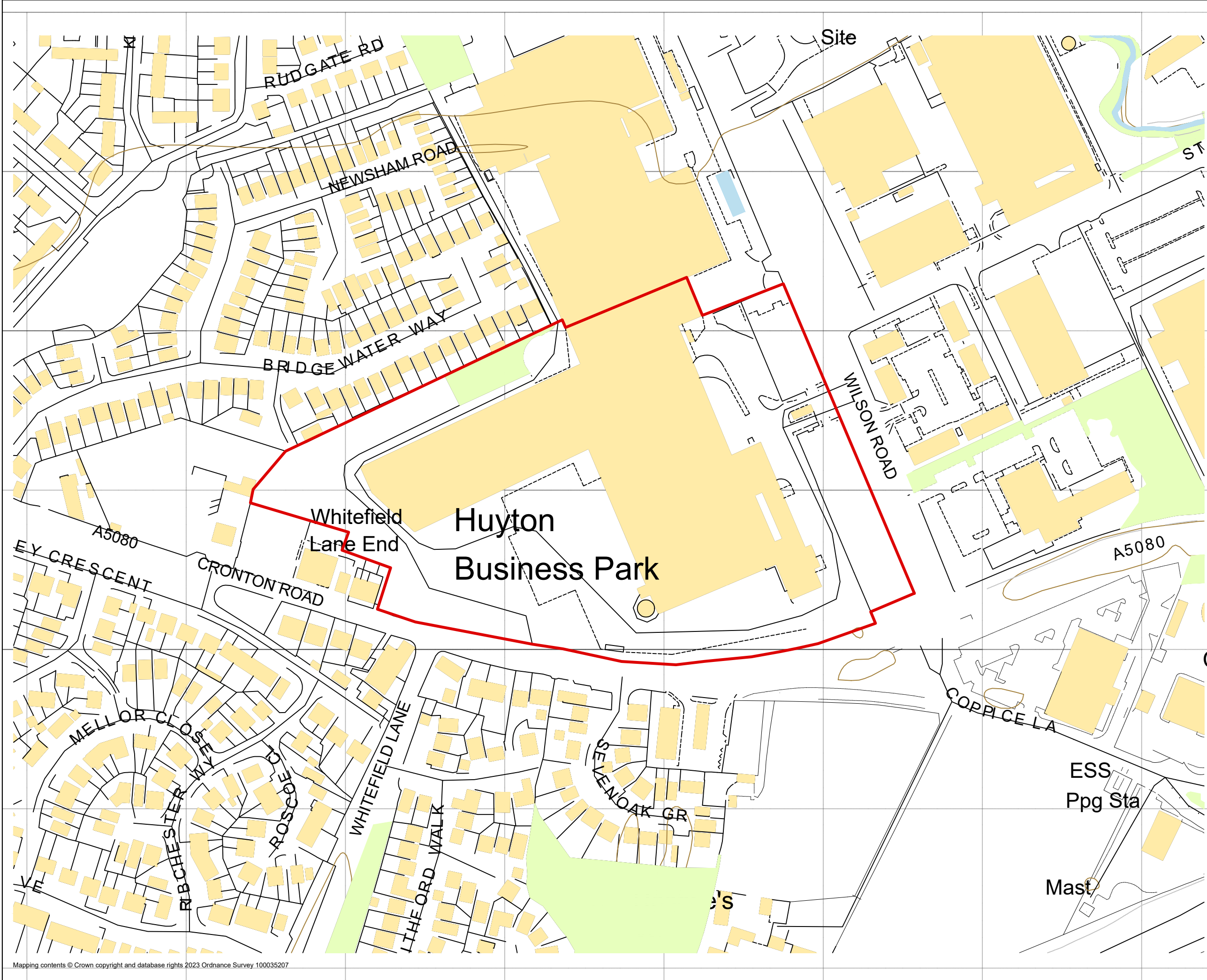
The following specific recommendations apply to the proposed works:

- A site specific ground investigation should be undertaken to allow for the refinement of the CSM, and to aid in detailed design. Given the elevated risk of ground gas / mine gas generation underlying the site due to the presence of the Made Ground, potentially infilled land and potential shallow mine workings, ground gas monitoring consisting of 12 No. monitoring rounds undertaken over 6 No. months would be required to be in accordance with BS 8576:2013. The potential vapour risk should also be investigated by PID monitoring. The site ground investigation should also include, soft landscaping samples, BRE Suites to determine concrete design, and groundwater monitoring and testing;
- Following the ground investigation, a Generic Risk Assessment / Ground Investigation Report (GIR) will be required to present an updated conceptual model;
- Prior to the commencement of any works on site, an Asbestos Management Survey Report should be provided. A licenced asbestos specialist should also be appointed to remove and dispose of any asbestos containing materials that would be disturbed by the works in accordance with the asbestos regulations;
- Consideration should be given to commissioning an invasive species survey to identify any remediation needed prior to commencement on site;
- A Coal Mining Risk Assessment will be required to establish the risk, if any, posed by unrecorded workings and the presence of mineshafts.
- A utilities survey should be consulted identifying any services in the Proposed Development area, which may require decommissioning or diversion of existing identified services; and,
- This report and any future GIR should be submitted to Knowsley Metropolitan Borough Council in support of the forthcoming planning application.

Appendix A

Site Plans

Username: pncourt Date: 15/08/23 12:42:25 Filename: C:\Users\pncourt\AppData\Local\Microsoft\Windows\NCache\Content\Outlook\2EM85KNV156463_... Home_Bargains_Huyton_VectorMapLocal_DWG00AD.dwg



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RISKS LISTED HERE ARE NOT EXHAUSTIVE. REFER TO DAF001.

CONSTRUCTION

MAINTENANCE

RESIDUAL DESIGN RISKS

FOR INFORMATION RELATING TO USE, CLEANING AND MAINTENANCE SEE THE HEALTH AND SAFETY FILE
IT IS ASSUMED THAT ALL WORKS WILL BE CARRIED OUT BY A COMPETENT CONTRACTOR WORKING, WHERE APPROPRIATE, TO AN APPROVED METHOD STATEMENT.

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Rev	Date	Description	Drawn	Chkd	Appd
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STATUS

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TJ MORRIS Ltd.

Project Title

HOME BARGAINS HUYTON

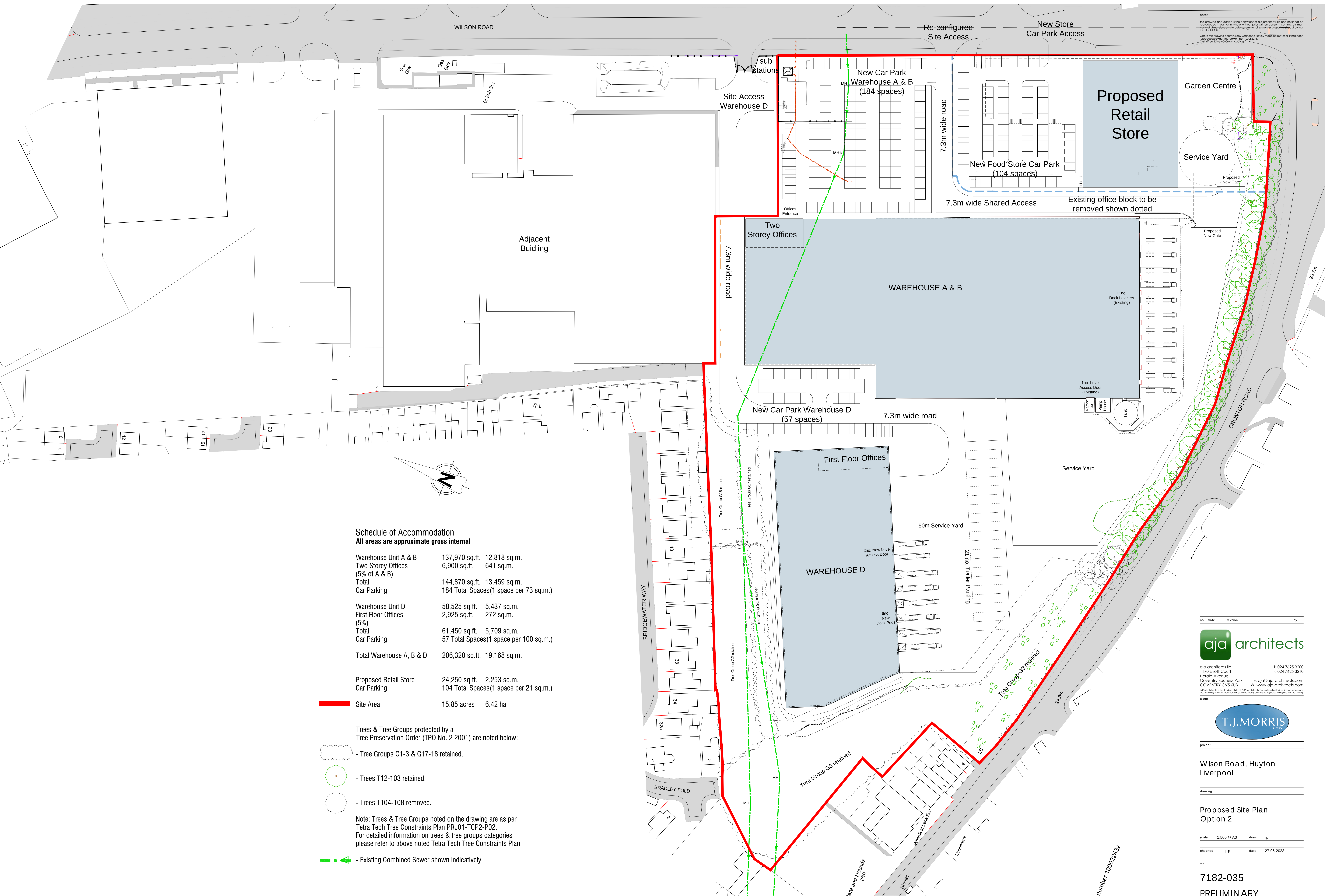
Drawing Title

SITE LOCATION PLAN

Drawn	Date	Designed	Date
PM	15/08/23		
Checked	Date	Approved	Date
PL	15/08/23	CD	15/08/23

A3	Scale	Fairhurst Ref	Revision
	NTS	156463	

156463/9000



Schedule of Accommodation
All areas are approximate gross internal

Warehouse Unit A & B	137,970 sq.ft.	12,818 sq.m.
Two Storey Offices	6,900 sq.ft.	641 sq.m.
(5% of A & B)		
Total	144,870 sq.ft.	13,459 sq.m.
Car Parking	184 Total Spaces(1 space per 73 sq.m.)	
Warehouse Unit D	58,525 sq.ft.	5,437 sq.m.
First Floor Offices	2,925 sq.ft.	272 sq.m.
(5%)		
Total	61,450 sq.ft.	5,709 sq.m.
Car Parking	57 Total Spaces(1 space per 100 sq.m.)	
Total Warehouse A, B & D	206,320 sq.ft.	19,168 sq.m.
Proposed Retail Store	24,250 sq.ft.	2,253 sq.m.
Car Parking	104 Total Spaces(1 space per 21 sq.m.)	
Site Area	15.85 acres	6.42 ha.

Trees & Tree Groups protected by a Tree Preservation Order (TPO No. 2 2001) are noted below:

- Tree Groups G1-3 & G17-18 retained.

- Trees T12-103 retained.

- Trees T104-108 removed.

Note: Trees & Tree Groups noted on the drawing are as per Tetra Tech Tree Constraints Plan PRJ01-TCP2-P02. For detailed information on trees & tree groups categories please refer to above noted Tetra Tech Tree Constraints Plan.

- Existing Combined Sewer shown indicatively

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project

Wilson Road, Huyton
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drawing

Proposed Site Plan
Option 2

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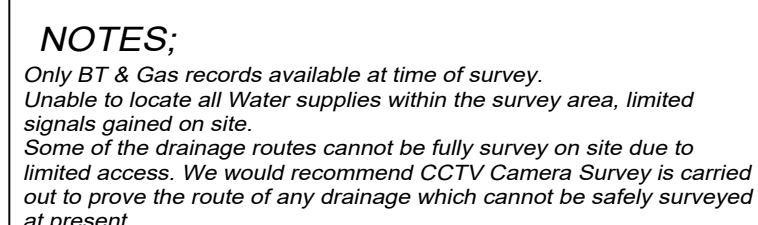
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PRELIMINARY

number 10022432



	ELECTRIC CABLE
	ELECTRIC & COMS CABLE
	TRAFFIC SIGNALS
	TELECOMM CABLE
	CABLE TELEVISION
	COMMUNICATION CABLE
	WATER PIPE
	GAS PIPE
	FOUL DRAINAGE
	SURFACE DRAINAGE
	COMBINED DRAINAGE
	FULL PIPE
	VENT PIPE
	OFFSET FILL PIPE
	GEORGE LINE
	VALVE RECOVERY
	SEWER DUCTS
	UNIDENTIFIED
	END OF TRACE

AR	ASSUME ROUTE	NSA	NOT LOCATED
BD	BACKDROP	OSA	OFF SURVEY AREA
CP	CATCHPIT	PR	PIPE RISER
CL	COVER LEVEL	RE	ROOOFING EYE
CR	CABLE RISER	RWP	RAINWATER PIPE
DP	DOWN PIPE	SCAKAWAY	SCAKAWAY
EF	ELECTRICITY POLE	SV	STOP VALVE
EoC	EDGE OF CANOPY	SVP	SOIL VENT PIPE
EOT	END OF TRACE	TYE	TRAPPED EXIT
FH	FIRE HYDRANT	TYT	TELEGRAPH POLE
G	GAS	U	UNABLE TO FIND RECORDS
GV	GUT VALVE	UFL	UNABLE TO FIND
HC	HIGH LEVEL	UFL	UNABLE TO LIFT
IC	INSPECTION CHAMBER	UTS	UNABLE TO SURVEY
IN	INLET LEVEL	VR	VENT PIPE
LP	LAMP HOUSE	VR	VAPOUR RECOVERY
LH	LAMP POST	WL	WATER LEVEL
MH	MANHOLE	WM	WATER METER
NEV	NO EXIT VISIBLE	WO	WASH OUT VALVE

ELECTRO-MAGNETIC TECHNIQUES AND/OR GROUND PENETRATING RADAR HAVE BEEN USED IN THE LOCATION OF UNDERGROUND SERVICES AND STRUCTURES. THE RESULTS OF SUCH SURVEYS SHOULD BE CARRIED OUT TO CONFIRM SERVICE IDENTIFICATION, POSITIONS AND DEPTHS. WHERE APPROPRIATE, THE RESULTS OF SUCH SURVEYS SHOULD BE RECORDED. REASONABLE EFFORT HAS BEEN MADE IN SEARCHING AVAILABLE RECORDS FOR INFORMATION ON THE LOCATION OF SERVICES AND STRUCTURES. NO INFORMATION CANNOT BE GUARANTEED. THE METHOD OF SURVEY DOES NOT DIFFERENTIATE BETWEEN LIVE AND DEAD SERVICES AND AS SUCH A SERVICE MAY BE IDENTIFIED AS EITHER. THE RESULTS OF SUCH SURVEYS WHERE SERVICES ARE NON-METALLIC POSITIONS MAY BE TAKEN FROM THE SURFACE. THE RESULTS OF SUCH SURVEYS ARE NOT GUARANTEED. WHERE QUOTED, DEPTH ESTIMATIONS ARE GENERALLY TO THE CENTRE OF THE SERVICE, DEPTHS TO GRAVITY SEWERS AND DRAINAGE ARE GENERALLY TO INVERT LEVELS UNLESS OTHERWISE STATED.

PIPE SIZES WHICH CANNOT BE OBTAINED BY VISUAL SURVEY HAVE BEEN RECORDED DRAWINGS ON MANHOLE PLATES WHERE AVAILABLE.

WHERE GROUND PENETRATING RADAR HAS BEEN USED IT HAS BEEN PRIMARILY TO IDENTIFY THE LOCATION OF SERVICES AND STRUCTURES. IF POSSIBLE WE WILL ALSO IDENTIFY UNDERGROUND STRUCTURES/ SERVICES AND RECORD THEIR POSITIONS AND DEPTHS. THE USE OF RADAR CANNOT BE LIMITED BOTH BY SURFACE CONDITIONS AND BY THE TYPE OF SERVICE. THE RESULTS OF SUCH SURVEYS ARE PROVIDED FOR INFORMATION AND USED WITH CARE.

Rev	Date	Description	Drawn	Q. Ref.
				

Rowan House
Duffield Road
Little Eaton
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DE21 5DR

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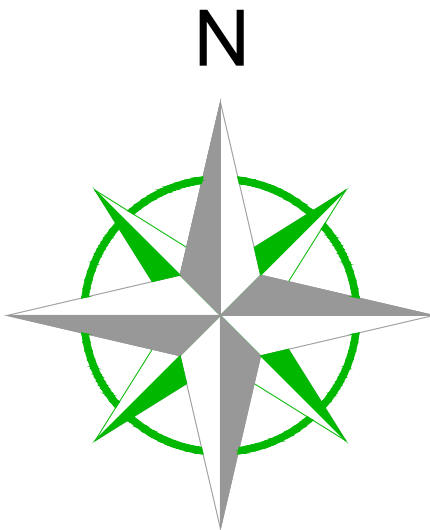
TITLE **Underground Utility Survey**

DRAWN SL/D.O'T	QUALITY REF 14396
--------------------------	-----------------------------

Job number	40493
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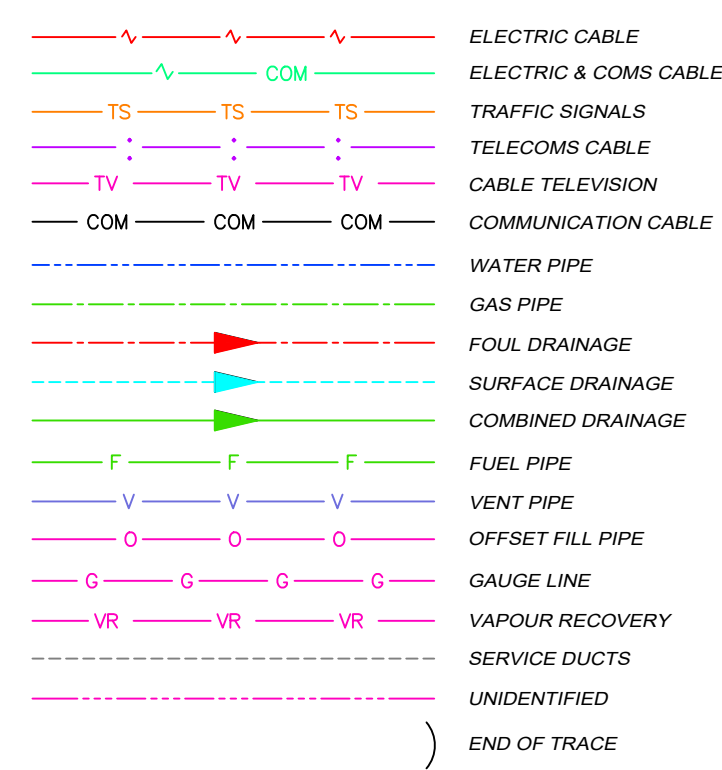
Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:



NOTES:
Only BT & Gas records available at time of survey.
Unable to locate all Water supplies within the survey area, limited signals gained on site.
Some of the drainage routes cannot be fully surveyed on site due to limited access. We would recommend CCTV Camera Survey is carried out to prove the route of any drainage which cannot be safely surveyed at present.

UTILITY KEY



ABBREVIATIONS

AR	ASSUMED ROUTE	NL	NOT LOCATED
BD	BACKDROP	OSA	OFF SURVEY AREA
CP	CATCHPIT	PR	PIPE RIBBON
CL	CORNER LEVEL	RE	ROADSIDE EYE
CR	CABLE RISER	RWP	RAINWATER PIPE
DP	DOWN PIPE	SV	STOP VALVE
EP	ELECTRICITY POLE	SV	STOP VALVE
EOC	EDGE OF CANOPY	SVP	SOIL VENT PIPE
EOT	END OF TRACE	TE	TRAPPED EXIT
FI	FIRE HYDRANT	TP	TELEGRAPH POLE
G	GULLY	TR	TAKEN FROM RECORDS
GV	GAS VALVE	UT	UNABLE TO FIND
HL	HIGH LEVEL	UL	UNABLE TO LIFT
IC	INSPECTION CHAMBER	UTS	UNABLE TO SURVEY
IP	INVERT LEVEL	VP	VENT PIPE
LP	LAMP POST	VR	VAPOUR RECOVERY
MH	MANHOLE	WM	WATER METER
NEV	NO EXIT VISIBLE	WO	WASH OUT VALVE
		WP	WASTE PIPE
SWS	SURFACE WATER SEWER		
FWS	FUUL WATER SEWER		
CWS	COMBINED WATER SEWER		

DISCLAIMER

ELECTRO-MAGNETIC TECHNIQUES AND/OR GROUND PENETRATING RADAR HAVE BEEN USED IN THE LOCATION OF UNDERGROUND SERVICES. THE RESULTS ARE NOT INFALLIBLE AND TOTAL DEPTH INFORMATION SHOULD BE OBTAINED BY TO CARRY OUT A FULL DEPTH SURVEY. PARTICULARLY DEPTHS WHERE THESE ARE CRITICAL. ALTHOUGH ALL REASONABLE EFFORT HAS BEEN MADE IN SEARCHING AVAILABLE RECORD DRAWINGS, THE COMPLETENESS OF THE UNDERGROUND SERVICES INFORMATION CANNOT BE GUARANTEED. THE METHOD OF SURVEY DOES NOT DIFFERENTIATE BETWEEN LIVE AND DEAD SERVICES AND AS SUCH ALL SERVICES SHOULD BE TREATED AS LIVE.

WHERE SERVICES ARE NON-METALLIC POSITIONS MAY BE TAKEN FROM RECORDS, TRENCH SCALES & SURFACE DETAIL.

WHERE QUOTED, DEPTH ESTIMATIONS ARE GENERALLY TO THE CENTRE OF THE SERVICE, DEPTHS TO GROUND SURFACES AND DEPTHS ARE GENERALLY TO INVERT LEVELS UNLESS OTHERWISE STATED.

PIPE SIZES WHICH CANNOT BE OBTAINED BY VISUAL SURVEY ARE TAKEN FROM RECORD DRAWINGS OR MANHOLE PLATES WHERE AVAILABLE.

WHERE GROUND PENETRATING RADAR HAS BEEN USED IT WILL PRIMARILY HAVE BEEN TO IDENTIFY UNDERGROUND UTILITIES. IF POSSIBLE, AND WILL ALSO IDENTIFY PROXIMITY TO STRUCTURES. THE USE OF RADAR CAN BE LIMITED BOTH BY SURFACE CONDITIONS AND ALSO BY SOIL TYPE. DEPTH ESTIMATES WOULD NOT NORMALLY BE PROVIDED FOR SERVICES LOCATED WITH GPR.

Rev	Date	Description	Drawn	C. Rev

- ☐ Topographical Surveys
- ☐ Site Engineering
- ☐ Utility / CCTV Surveys
- ☐ Measured Building Surveys
- ☐ 3D Laser Scanning
- ☐ Rent & BIM Models

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--	--	--

CLIENT

AEW Architects

PROJECT

**Sovereign Distillery
Huyton Business Park
Liverpool**

TITLE

**Underground Utility
Survey**

SCALE	DATE
A0@ 1: 500	14-25/06/21

DRAWN	QUALITY REF
SLD.OT	14396

Level datum	See OS Note
Grid orientation	See OS Note

Job number	40493
------------	-------

Drawing No.	Rev.
40493_UG_2	0

Comments

This plan should only be used for its original purpose. Greenhatch Group accepts no responsibility for this plan if supplied to any party other than the original client.

All dimensions should be checked on site prior to design and construction.

Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only.

Notes:

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Appendix B

Groundsure Report

345708, 389493,

Order Details

Date: 24/07/2023
Your ref: 156463_-_Home_Bargains_Huyton
Our Ref: GS-QDC-QZ8-T57-FGG

Site Details

Location: 345698 389502
Area: 6.41 ha
Authority: [Knowsley Metropolitan Borough Council](#) ↗



[Summary of findings](#)

[p. 2 >](#) [Aerial image](#)

[p. 9 >](#)

[OS MasterMap site plan](#)

[p.14 >](#) groundsure.com/insightuserguide ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	1	3	17	35	-
18 >	1.2 >	Historical tanks >	0	1	3	16	-
19 >	1.3 >	Historical energy features >	1	3	6	18	-
20	1.4	Historical petrol stations	0	0	0	0	-
20 >	1.5 >	Historical garages >	1	1	5	0	-
21	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
22 >	2.1 >	Historical industrial land uses >	1	3	19	41	-
25 >	2.2 >	Historical tanks >	0	1	5	23	-
26 >	2.3 >	Historical energy features >	5	6	18	37	-
29	2.4	Historical petrol stations	0	0	0	0	-
29 >	2.5 >	Historical garages >	2	1	10	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
31	3.1	Active or recent landfill	0	0	0	0	-
31	3.2	Historical landfill (BGS records)	0	0	0	0	-
32	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
32 >	3.4 >	Historical landfill (EA/NRW records) >	0	0	0	1	-
32 >	3.5 >	Historical waste sites >	0	0	1	4	-
34 >	3.6 >	Licensed waste sites >	0	0	2	8	-
38 >	3.7 >	Waste exemptions >	0	2	3	12	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
40 >	4.1 >	Recent industrial land uses >	2	4	22	-	-
42 >	4.2 >	Current or recent petrol stations >	0	2	0	0	-
43	4.3	Electricity cables	0	0	0	0	-
43	4.4	Gas pipelines	0	0	0	0	-
43	4.5	Sites determined as Contaminated Land	0	0	0	0	-



43	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
43	4.7	Regulated explosive sites	0	0	0	0	-
44 >	4.8 >	Hazardous substance storage/usage >	0	0	1	0	-
44 >	4.9 >	Historical licensed industrial activities (IPC) >	0	0	5	0	-
45 >	4.10 >	Licensed industrial activities (Part A(1)) >	0	0	6	3	-
47 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	1	0	2	-
47	4.12	Radioactive Substance Authorisations	0	0	0	0	-
47 >	4.13 >	Licensed Discharges to controlled waters >	0	0	1	13	-
50	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
50	4.15	Pollutant release to public sewer	0	0	0	0	-
50 >	4.16 >	List 1 Dangerous Substances >	0	0	2	1	-
51	4.17	List 2 Dangerous Substances	0	0	0	0	-
51 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	1	4	-
52	4.19	Pollution inventory substances	0	0	0	0	-
52	4.20	Pollution inventory waste transfers	0	0	0	0	-
52	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
53 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
55 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
57 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
58	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
58	5.5	Groundwater vulnerability- local information	None (within 0m)				
59 >	5.6 >	Groundwater abstractions >	0	0	0	0	5
61 >	5.7 >	Surface water abstractions >	0	0	0	0	4
62 >	5.8 >	Potable abstractions >	0	0	0	0	5
64 >	5.9 >	Source Protection Zones >	0	0	1	0	-
64	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
65 >	6.1 >	Water Network (OS MasterMap) >	0	0	1	-	-



66 >	6.2 >	Surface water features >	0	0	1	-	-
66 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
66 >	6.4 >	WFD Surface water bodies >	0	0	1	-	-
67 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
68	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
68	7.2	Historical Flood Events	0	0	0	-	-
68	7.3	Flood Defences	0	0	0	-	-
69	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
69	7.5	Flood Storage Areas	0	0	0	-	-
70	7.6	Flood Zone 2	None (within 50m)				
70	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
71 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
73 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
74	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
75	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
75	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
75	10.4	Special Protection Areas (SPA)	0	0	0	0	0
75	10.5	National Nature Reserves (NNR)	0	0	0	0	0
76	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
76 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	2
76	10.8	Biosphere Reserves	0	0	0	0	0
76	10.9	Forest Parks	0	0	0	0	0
77	10.10	Marine Conservation Zones	0	0	0	0	0
77 >	10.11 >	Green Belt >	0	0	1	0	4
77	10.12	Proposed Ramsar sites	0	0	0	0	0



77	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
78	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
78	10.15	Nitrate Sensitive Areas	0	0	0	0	0
78 >	10.16 >	Nitrate Vulnerable Zones >	1	0	0	0	3
79 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
80	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
81	11.1	World Heritage Sites	0	0	0	-	-
81	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
81	11.3	National Parks	0	0	0	-	-
81	11.4	Listed Buildings	0	0	0	-	-
82	11.5	Conservation Areas	0	0	0	-	-
82	11.6	Scheduled Ancient Monuments	0	0	0	-	-
82	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
83 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
84	12.2	Open Access Land	0	0	0	-	-
84	12.3	Tree Felling Licences	0	0	0	-	-
84	12.4	Environmental Stewardship Schemes	0	0	0	-	-
85	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
86 >	13.1 >	Priority Habitat Inventory >	0	0	5	-	-
87	13.2	Habitat Networks	0	0	0	-	-
87	13.3	Open Mosaic Habitat	0	0	0	-	-
87	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
88 >	14.1 >	10k Availability >	Identified (within 500m)				
89	14.2	Artificial and made ground (10k)	0	0	0	0	-
90 >	14.3 >	Superficial geology (10k) >	1	0	0	2	-

91	14.4	Landslip (10k)	0	0	0	0	-
92 >	14.5 >	Bedrock geology (10k) >	2	1	4	6	-
93 >	14.6 >	Bedrock faults and other linear features (10k) >	9	4	8	9	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
95 >	15.1 >	50k Availability >	Identified (within 500m)				
96	15.2	Artificial and made ground (50k)	0	0	0	0	-
96	15.3	Artificial ground permeability (50k)	0	0	-	-	-
97 >	15.4 >	Superficial geology (50k) >	1	0	0	1	-
98 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
98	15.6	Landslip (50k)	0	0	0	0	-
98	15.7	Landslip permeability (50k)	None (within 50m)				
99 >	15.8 >	Bedrock geology (50k) >	4	1	5	10	-
101 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
101 >	15.10 >	Bedrock faults and other linear features (50k) >	11	4	7	12	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
103 >	16.1 >	BGS Boreholes >	0	0	6	-	-
Page	Section	Natural ground subsidence >					
105 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
106 >	17.2 >	Running sands >	Very low (within 50m)				
107 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
108 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
109 >	17.5 >	Landslides >	Very low (within 50m)				
110 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
112 >	18.1 >	BritPits >	0	0	2	2	-
113 >	18.2 >	Surface ground workings >	0	3	13	-	-
114 >	18.3 >	Underground workings >	0	0	0	0	60
117	18.4	Underground mining extents	0	0	0	0	-
117 >	18.5 >	Historical Mineral Planning Areas >	0	0	0	2	-



117 >	18.6 >	Non-coal mining >	0	0	1	2	0
118	18.7	JPB mining areas	None (within 0m)				
118	18.8	The Coal Authority non-coal mining	0	0	0	0	-
118	18.9	Researched mining	0	0	0	0	-
119	18.10	Mining record office plans	0	0	0	0	-
119	18.11	BGS mine plans	0	0	0	0	-
119 >	18.12 >	Coal mining >	Identified (within 0m)				
119	18.13	Brine areas	None (within 0m)				
120	18.14	Gypsum areas	None (within 0m)				
120	18.15	Tin mining	None (within 0m)				
120	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
121	19.1	Natural cavities	0	0	0	0	-
121	19.2	Mining cavities	0	0	0	0	0
121	19.3	Reported recent incidents	0	0	0	0	-
121	19.4	Historical incidents	0	0	0	0	-
122	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
123 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
125 >	21.1 >	BGS Estimated Background Soil Chemistry >	9	3	-	-	-
126	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
126	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
127	22.1	Underground railways (London)	0	0	0	-	-
127	22.2	Underground railways (Non-London)	0	0	0	-	-
127	22.3	Railway tunnels	0	0	0	-	-
127	22.4	Historical railway and tunnel features	0	0	0	-	-
127	22.5	Royal Mail tunnels	0	0	0	-	-



128	22.6	Historical railways	0	0	0	-	-
128	22.7	Railways	0	0	0	-	-
128	22.8	Crossrail 1	0	0	0	0	-
128	22.9	Crossrail 2	0	0	0	0	-
128	22.10	HS2	0	0	0	0	-



Recent aerial photograph



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Capture Date: 22/04/2019

Site Area: 6.41ha



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info@groundsure.com ↗

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Date: 24 July 2023

Recent site history - 2016 aerial photograph



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Capture Date: 21/04/2016

Site Area: 6.41ha



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01273 257 755

Date: 24 July 2023

Recent site history - 2009 aerial photograph



Capture Date: 24/06/2009

Site Area: 6.41ha



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info@groundsure.com ↗

01273 257 755

Date: 24 July 2023

Recent site history - 2005 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2023. All Rights Reserved.

Capture Date: 02/09/2005

Site Area: 6.41ha



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01273 257 755

Date: 24 July 2023

Recent site history - 2000 aerial photograph

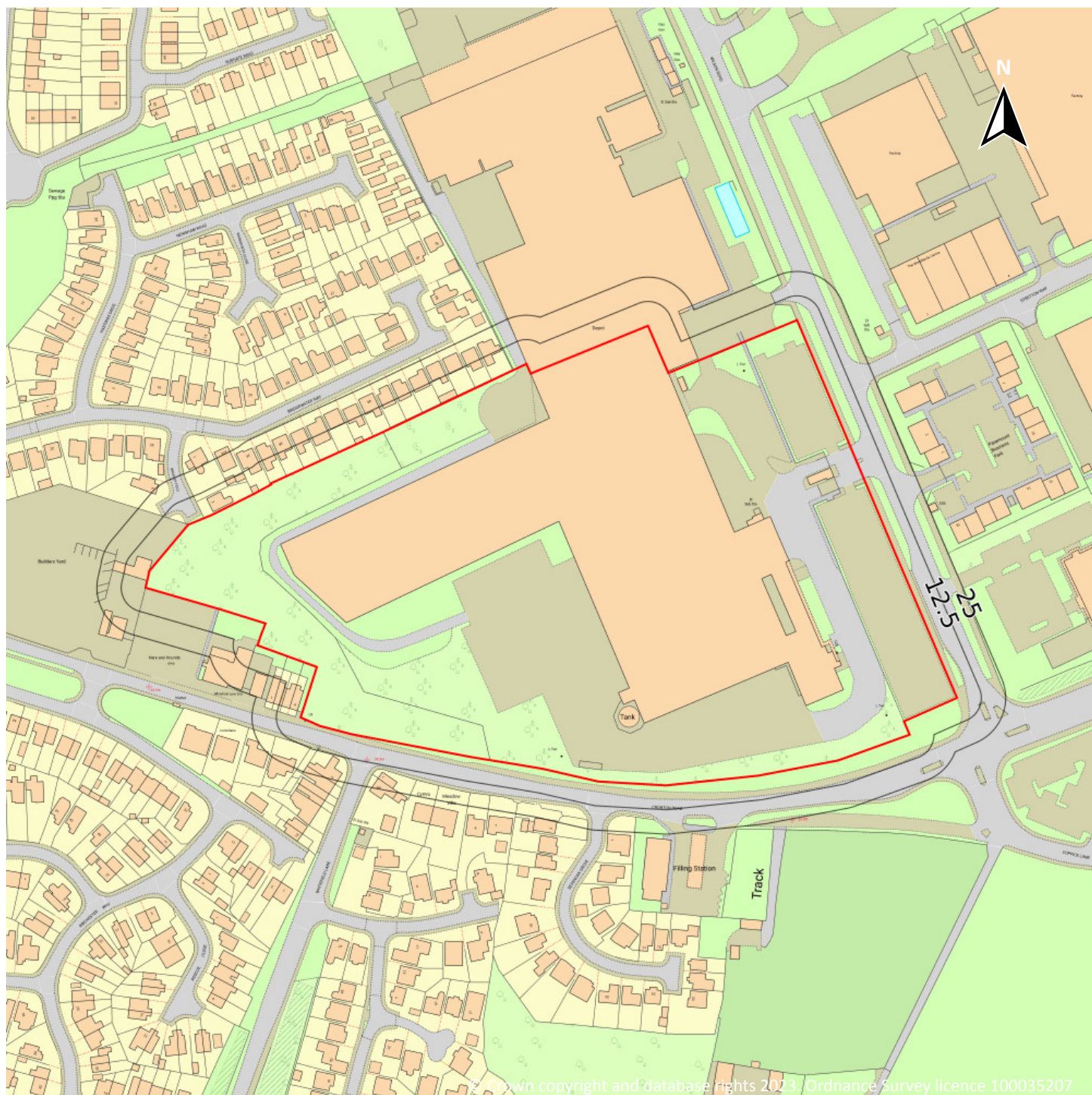


Capture Date: 21/07/2000

Site Area: 6.41ha



OS MasterMap site plan



Site Area: 6.41ha



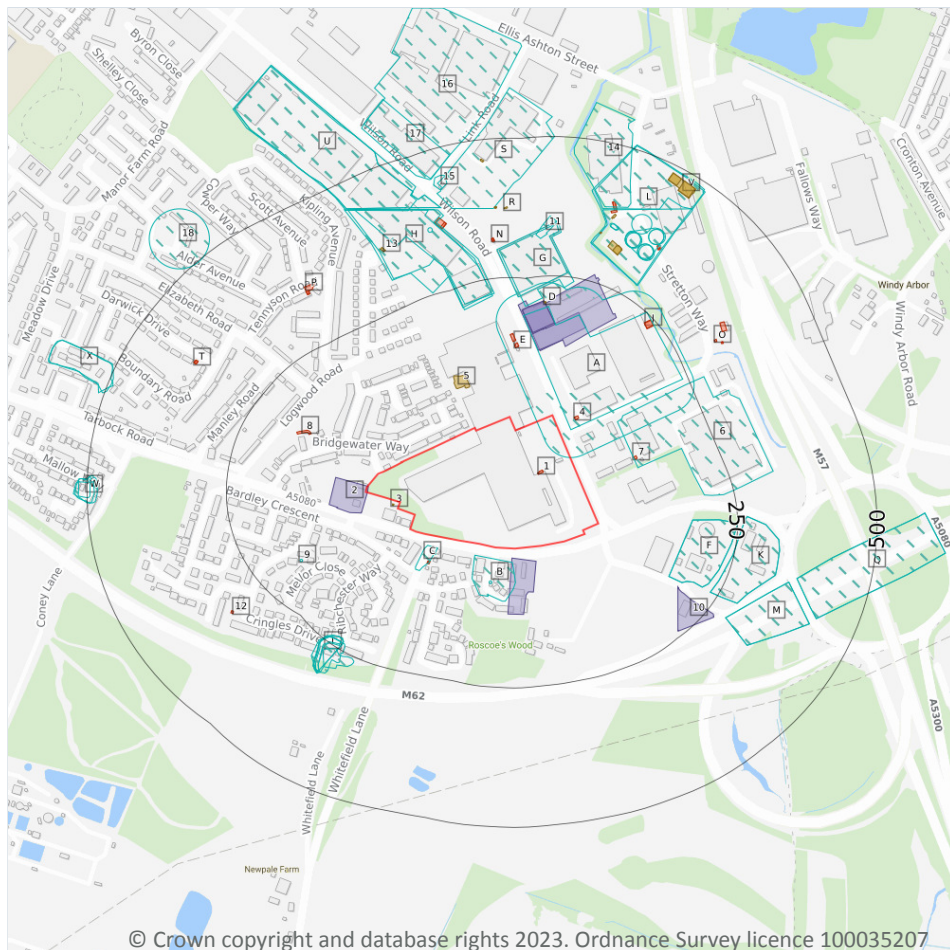
Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Date: 24 July 2023

1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

1.1 Historical industrial land uses

Records within 500m

56

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15](#) >

ID	Location	Land use	Dates present	Group ID
A	On site	Unspecified Works	1975	945342



ID	Location	Land use	Dates present	Group ID
C	19m SW	Smithy	1891	843198
A	21m NE	Unspecified Works	1989	934148
B	21m S	Tile Works	1851	811560
B	61m S	Unspecified Tank	1851	824616
6	103m NE	Unspecified Works	1989	938212
F	154m E	Unspecified Depot	1989	925297
F	154m E	Unspecified Depot	1975	925987
9	167m W	Pump	1851	826842
G	200m N	Unspecified Warehouse	1989	934162
H	209m N	Unspecified Commercial/Industrial	1975	950037
H	213m N	Unspecified Commercial/Industrial	1967	942003
G	216m N	Unspecified Warehouse	1975	987780
H	218m N	Unspecified Commercial/Industrial	1989	918977
I	230m SW	Unspecified Pit	1950	882728
I	230m SW	Unspecified Pit	1938	891559
K	236m SE	Nursery	1975	913666
K	236m SE	Nursery	1989	924721
I	237m SW	Unspecified Ground Workings	1906 - 1925	962801
I	237m SW	Unspecified Ground Workings	1925	872783
I	237m SW	Sand Pit	1891	797449
I	253m SW	Sand Hole	1851	808315
L	277m NE	Sewage Works	1925 - 1947	966970
L	279m NE	Sewage Works	1950	870370
M	284m SE	Cuttings	1975	950437
M	284m SE	Cuttings	1989	975788
11	318m N	Corn Mill	1851	823124
L	323m NE	Unspecified Tank	1950	879671
L	323m NE	Unspecified Tank	1947	853971



ID	Location	Land use	Dates present	Group ID
L	323m NE	Unspecified Tank	1925	909267
L	324m NE	Unspecified Tanks	1938	815135
L	332m NE	Unspecified Tank	1950	948197
L	332m NE	Unspecified Tank	1947	849069
L	332m NE	Unspecified Tank	1925	899371
L	351m NE	Unspecified Tanks	1950	887271
L	352m NE	Unspecified Tanks	1938	973630
L	357m NE	Unspecified Tank	1947 - 1950	915977
L	357m NE	Unspecified Tank	1925	988346
H	360m N	Coal Pit	1851	808456
L	361m NE	Unspecified Tank	1947 - 1950	857500
Q	370m E	Cuttings	1989	866992
Q	370m E	Cuttings	1975	970795
S	375m N	Unspecified Warehouse	1975	807172
L	382m N	Sewage Works	1955	959491
14	386m N	Unspecified Depot	1990	818270
U	395m N	Unspecified Factory	1975	889546
U	395m N	Unspecified Factory	1990	928277
U	408m N	Unspecified Factory	1966	891030
15	426m N	Unspecified Heap	1966	803345
16	449m N	Unspecified Works	1975	875478
17	449m N	Unspecified Factory	1966	821341
W	481m W	Sand Pit	1851 - 1891	990324
W	487m W	Unspecified Ground Workings	1925	799821
X	490m W	Sand Pit	1891	797455
X	494m W	Unspecified Pit	1906	839700
18	498m NW	Unspecified Old Shaft	1950	985464

This data is sourced from Ordnance Survey / Groundsure.



1.2 Historical tanks

Records within 500m

20

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
3	7m W	Unspecified Tank	1927	112541
5	73m N	Tanks	1996 - 1997	130050
D	202m N	Unspecified Tank	1992	112543
D	203m N	Unspecified Tank	1993 - 1996	133589
L	310m NE	Tanks	1937	105835
L	311m NE	Settling Tanks	1927	108655
L	337m NE	Unspecified Tank	1927 - 1937	138396
13	355m NW	Unspecified Tank	1989 - 1993	143604
L	369m NE	Settling Tank	1927 - 1937	133556
R	373m N	Unspecified Tank	1987	112544
R	375m N	Unspecified Tank	1977	126818
R	375m N	Unspecified Tank	1968	147506
R	376m N	Unspecified Tank	1994	135551
R	376m N	Unspecified Tank	1984	140560
R	376m N	Unspecified Tank	1987	147889
R	376m N	Unspecified Tank	1969	144293
V	460m NE	Settling Tanks	1927	122956
S	460m N	Unspecified Tank	1968 - 1987	140637
V	461m NE	Settling Tanks	1937	126633
V	469m NE	Settling Tanks	1937	147519

This data is sourced from Ordnance Survey / Groundsure.



1.3 Historical energy features

Records within 500m

28

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
1	On site	Electricity Substation	1982 - 1997	64193
4	35m NE	Electricity Substation	1982 - 1993	75863
C	46m SW	Electricity Substation	1982	66963
C	47m SW	Electricity Substation	1956	65981
7	105m E	Electricity Substation	1992 - 1997	75507
E	125m N	Electricity Substation	1992 - 1997	72408
E	135m N	Gas Governor	1992 - 1997	77708
8	138m W	Electricity Substation	1996	61628
J	230m NE	Electricity Substation	1992 - 1997	78944
J	230m NE	Electricity Substation	1982	77789
N	316m N	Electricity Substation	1992	69240
N	316m N	Electricity Substation	1982	77915
N	318m N	Electricity Substation	1993 - 1997	75056
12	320m SW	Electricity Substation	1984	61629
O	320m NE	Electricity Substation	1989 - 1992	81066
O	330m NE	Gas Governor	1992 - 1997	74213
O	340m NE	Electricity Substation	1993 - 1997	85444
P	344m NW	Electricity Substation	1993 - 1996	76202
P	345m NW	Electricity Substation	1989	71679
L	352m NE	Electricity Substation	1992	70254
L	354m NE	Electricity Substation	1993 - 1997	77082



ID	Location	Land use	Dates present	Group ID
H	358m N	Electricity Substation	1982 - 1992	74285
H	359m N	Electricity Substation	1993 - 1997	74849
T	377m NW	Electricity Substation	1956	77767
T	377m NW	Electricity Substation	1982 - 1996	78674
L	378m NE	Electricity Substation	1993 - 1997	82215
L	384m NE	Electricity Substation	1992 - 1994	68566
L	387m NE	Electricity Substation	1987	73647

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

7

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
2	On site	Garage	1956 - 1982	26161
B	17m S	Garage	1982	20211
D	118m N	Garage	1982	22780
D	119m N	Garage	1982	21978



ID	Location	Land use	Dates present	Group ID
D	150m N	Garage	1992	23768
D	153m N	Garage	1993 - 1997	26136
10	183m SE	Garage	1989 - 1997	27669

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

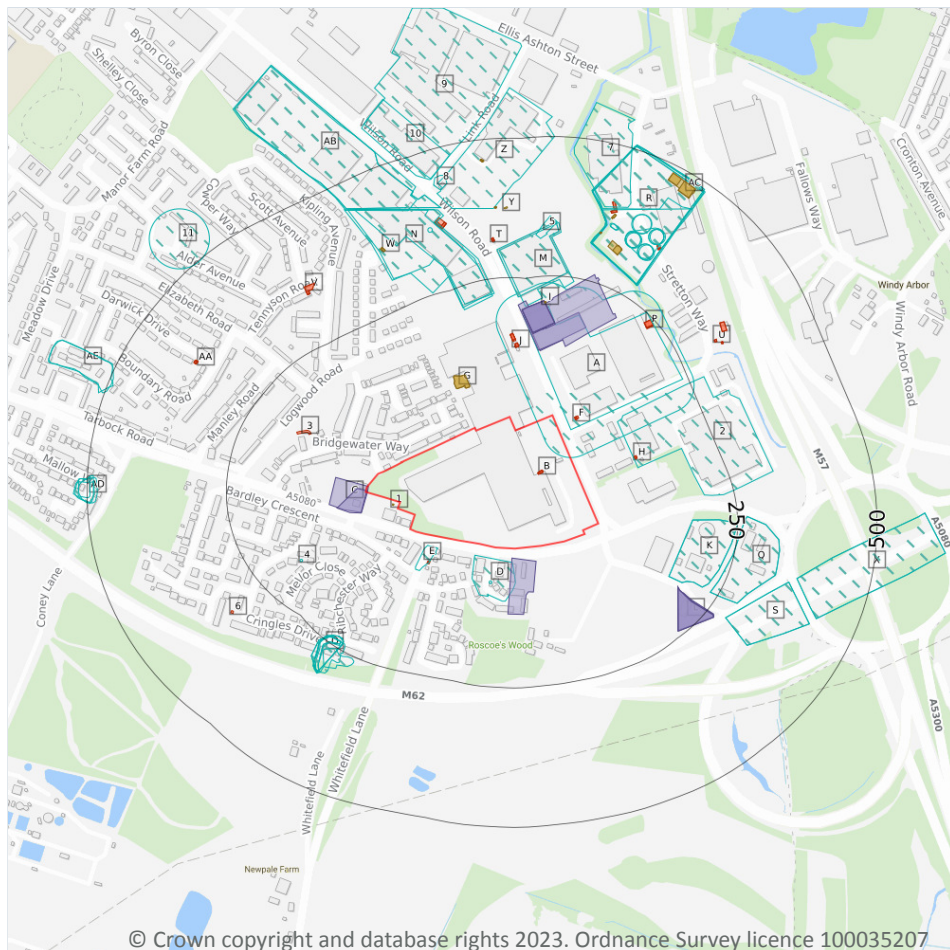
0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.



2 Past land use - un-grouped



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

2.1 Historical industrial land uses

Records within 500m

64

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 22](#) >

ID	Location	Land Use	Date	Group ID
A	On site	Unspecified Works	1975	945342
E	19m SW	Smithy	1891	843198
A	21m NE	Unspecified Works	1989	934148



ID	Location	Land Use	Date	Group ID
D	21m S	Tile Works	1851	811560
D	61m S	Unspecified Tank	1851	824616
2	103m NE	Unspecified Works	1989	938212
K	154m E	Unspecified Depot	1975	925987
K	154m E	Unspecified Depot	1989	925297
4	167m W	Pump	1851	826842
M	200m N	Unspecified Warehouse	1989	934162
N	209m N	Unspecified Commercial/Industrial	1975	950037
N	213m N	Unspecified Commercial/Industrial	1967	942003
M	216m N	Unspecified Warehouse	1975	987780
N	218m N	Unspecified Commercial/Industrial	1989	918977
O	230m SW	Unspecified Pit	1950	882728
O	230m SW	Unspecified Pit	1938	891559
O	230m SW	Unspecified Pit	1938	891559
Q	236m SE	Nursery	1975	913666
Q	236m SE	Nursery	1989	924721
O	237m SW	Unspecified Ground Workings	1925	962801
O	237m SW	Unspecified Ground Workings	1906	962801
O	237m SW	Unspecified Ground Workings	1925	872783
O	237m SW	Sand Pit	1891	797449
O	253m SW	Sand Hole	1851	808315
R	277m NE	Sewage Works	1947	966970
R	277m NE	Sewage Works	1925	966970
R	279m NE	Sewage Works	1950	870370
R	279m NE	Sewage Works	1938	966970
R	279m NE	Sewage Works	1938	966970
S	284m SE	Cuttings	1975	950437
S	284m SE	Cuttings	1989	975788



ID	Location	Land Use	Date	Group ID
5	318m N	Corn Mill	1851	823124
R	323m NE	Unspecified Tank	1950	879671
R	323m NE	Unspecified Tank	1947	853971
R	323m NE	Unspecified Tank	1925	909267
R	324m NE	Unspecified Tanks	1938	815135
R	332m NE	Unspecified Tank	1950	948197
R	332m NE	Unspecified Tank	1947	849069
R	332m NE	Unspecified Tank	1925	899371
R	351m NE	Unspecified Tanks	1950	887271
R	352m NE	Unspecified Tanks	1938	973630
R	357m NE	Unspecified Tank	1947	915977
R	357m NE	Unspecified Tank	1925	988346
R	358m NE	Unspecified Tank	1950	915977
N	360m N	Coal Pit	1851	808456
R	361m NE	Unspecified Tank	1947	857500
R	362m NE	Unspecified Tank	1950	857500
X	370m E	Cuttings	1975	970795
X	370m E	Cuttings	1989	866992
Z	375m N	Unspecified Warehouse	1975	807172
R	382m N	Sewage Works	1955	959491
7	386m N	Unspecified Depot	1990	818270
AB	395m N	Unspecified Factory	1975	889546
AB	395m N	Unspecified Factory	1990	928277
AB	408m N	Unspecified Factory	1966	891030
8	426m N	Unspecified Heap	1966	803345
9	449m N	Unspecified Works	1975	875478
10	449m N	Unspecified Factory	1966	821341
AD	481m W	Sand Pit	1851	990324



ID	Location	Land Use	Date	Group ID
AD	487m W	Unspecified Ground Workings	1925	799821
AD	488m W	Sand Pit	1891	990324
AE	490m W	Sand Pit	1891	797455
AE	494m W	Unspecified Pit	1906	839700
11	498m NW	Unspecified Old Shaft	1950	985464

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

29

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 22 >](#)

ID	Location	Land Use	Date	Group ID
1	7m W	Unspecified Tank	1927	112541
G	73m N	Tanks	1996	130050
G	73m N	Tanks	1997	130050
I	202m N	Unspecified Tank	1992	112543
I	203m N	Unspecified Tank	1996	133589
I	203m N	Unspecified Tank	1993	133589
R	310m NE	Tanks	1937	105835
R	311m NE	Settling Tanks	1927	108655
R	337m NE	Unspecified Tank	1927	138396
R	337m NE	Unspecified Tank	1937	138396
W	355m NW	Unspecified Tank	1993	143604
W	356m NW	Unspecified Tank	1989	143604
R	369m NE	Settling Tank	1927	133556
R	369m NE	Settling Tank	1937	133556
Y	373m N	Unspecified Tank	1987	112544



ID	Location	Land Use	Date	Group ID
Y	375m N	Unspecified Tank	1977	126818
Y	375m N	Unspecified Tank	1968	147506
Y	376m N	Unspecified Tank	1994	135551
Y	376m N	Unspecified Tank	1984	140560
Y	376m N	Unspecified Tank	1987	147889
Y	376m N	Unspecified Tank	1969	144293
AC	460m NE	Settling Tanks	1927	122956
Z	460m N	Unspecified Tank	1969	140637
Z	460m N	Unspecified Tank	1977	140637
Z	460m N	Unspecified Tank	1968	140637
Z	460m N	Unspecified Tank	1984	140637
Z	460m N	Unspecified Tank	1987	140637
AC	461m NE	Settling Tanks	1937	126633
AC	469m NE	Settling Tanks	1937	147519

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

66

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 22 >](#)

ID	Location	Land Use	Date	Group ID
B	On site	Electricity Substation	1996	64193
B	On site	Electricity Substation	1997	64193
B	On site	Electricity Substation	1982	64193
B	On site	Electricity Substation	1992	64193
B	On site	Electricity Substation	1993	64193
F	35m NE	Electricity Substation	1982	75863



ID	Location	Land Use	Date	Group ID
F	35m NE	Electricity Substation	1993	75863
F	35m NE	Electricity Substation	1992	75863
F	38m NE	Electricity Substation	1982	75863
E	46m SW	Electricity Substation	1982	66963
E	47m SW	Electricity Substation	1956	65981
H	105m E	Electricity Substation	1992	75507
H	105m E	Electricity Substation	1996	75507
H	105m E	Electricity Substation	1997	75507
H	105m E	Electricity Substation	1993	75507
J	125m N	Electricity Substation	1993	72408
J	126m N	Electricity Substation	1992	72408
J	126m N	Electricity Substation	1996	72408
J	126m N	Electricity Substation	1997	72408
J	135m N	Gas Governor	1992	77708
J	138m N	Gas Governor	1996	77708
J	138m N	Gas Governor	1997	77708
J	138m N	Gas Governor	1993	77708
3	138m W	Electricity Substation	1996	61628
P	230m NE	Electricity Substation	1992	78944
P	230m NE	Electricity Substation	1982	77789
P	231m NE	Electricity Substation	1996	78944
P	231m NE	Electricity Substation	1997	78944
P	231m NE	Electricity Substation	1993	78944
T	316m N	Electricity Substation	1992	69240
T	316m N	Electricity Substation	1982	77915
T	318m N	Electricity Substation	1996	75056
T	318m N	Electricity Substation	1997	75056
T	318m N	Electricity Substation	1993	75056



ID	Location	Land Use	Date	Group ID
6	320m SW	Electricity Substation	1984	61629
U	320m NE	Electricity Substation	1989	81066
U	320m NE	Electricity Substation	1992	81066
U	330m NE	Gas Governor	1997	74213
U	330m NE	Gas Governor	1993	74213
U	330m NE	Gas Governor	1992	74213
U	340m NE	Electricity Substation	1997	85444
U	340m NE	Electricity Substation	1993	85444
V	344m NW	Electricity Substation	1996	76202
V	344m NW	Electricity Substation	1993	76202
V	345m NW	Electricity Substation	1989	71679
R	352m NE	Electricity Substation	1992	70254
R	354m NE	Electricity Substation	1996	77082
R	354m NE	Electricity Substation	1997	77082
R	354m NE	Electricity Substation	1993	77082
N	358m N	Electricity Substation	1992	74285
N	359m N	Electricity Substation	1996	74849
N	359m N	Electricity Substation	1997	74849
N	359m N	Electricity Substation	1993	74849
N	361m N	Electricity Substation	1982	74285
AA	377m NW	Electricity Substation	1956	77767
AA	377m NW	Electricity Substation	1982	78674
AA	377m NW	Electricity Substation	1996	78674
AA	377m NW	Electricity Substation	1993	78674
AA	378m NW	Electricity Substation	1956	77767
R	378m NE	Electricity Substation	1996	82215
R	378m NE	Electricity Substation	1997	82215
R	378m NE	Electricity Substation	1993	82215



ID	Location	Land Use	Date	Group ID
AA	379m NW	Electricity Substation	1989	78674
R	384m NE	Electricity Substation	1992	68566
R	387m NE	Electricity Substation	1994	68566
R	387m NE	Electricity Substation	1987	73647

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0
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Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	13
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Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on [page 22 >](#)

ID	Location	Land Use	Date	Group ID
C	On site	Garage	1982	26161
C	On site	Garage	1956	26161
D	17m S	Garage	1982	20211
I	118m N	Garage	1982	22780
I	119m N	Garage	1982	21978
I	150m N	Garage	1992	23768
I	153m N	Garage	1993	26136
I	153m N	Garage	1996	26136
I	153m N	Garage	1997	26136



ID	Location	Land Use	Date	Group ID
L	183m SE	Garage	1993	27669
L	183m SE	Garage	1997	27669
L	183m SE	Garage	1989	27669
L	183m SE	Garage	1992	27669

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (EA/NRW)
- Historical waste sites
- Licensed waste sites
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m

0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m

1

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

Features are displayed on the Waste and landfill map on [page 31 >](#)

ID	Location	Details		
7	486m N	Site Address: Brickfields, Knowsley, Merseyside Licence Holder Address: -	Waste Licence: - Site Reference: GDO M209 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: Tushingham Metallic Brick Works Licence Holder: Tushingham Metallic Brick Works First Recorded - Last Recorded: -

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m

5

Waste site records derived from Local Authority planning records and high detail historical mapping.

Features are displayed on the Waste and landfill map on [page 31 >](#)



ID	Location	Address	Further Details	Date
B	126m N	Site Address: Former Hayden Drysys, Internati, Wilson Road, Thorburn International, LIVERPOOL, Merseyside, L36 6AD	Type of Site: Waste Recycling Centre Planning application reference: 10/00153/FUL Description: Scheme comprises formation of a household waste recycling centre comprising of 1 office building, covered collection area & 1 storage building, together with construction of car parking & new vehicular access landscaping, boundary treatments & associated works. Construction - pitched roof; roller shutter, steel doors; portal frame; black top surfacing, concrete paving, fencing, grp liners, lighting columns, planting, Tarmac surfacing site works. An application (ref: 10/00153/FUL) for detailed planning p ermission was granted by Knowsley B.C. The start date and contract period are for guideline only. Barhale Construction Plc has been awarded the main contract and work has commenced on site. Data source: Historic Planning Application Data Type: Point	28/11/2011
4	327m NE	Site Address: Orchid Environmental MWDA Trea, Stretton Way, & W H Smith News, Liverpool, Merseyside, L36 6JF	Type of Site: Waste Transfer Station Planning application reference: 12/00669/COU Description: Scheme comprises change of use of from distribution depot (use class B8) to waste reception building, together with external alterations, construction of double weighbridge and gatehouse, temporary modular building, relocation of car parking and associat ed works. Data source: Historic Planning Application Data Type: Point	04/03/2013
F	395m NE	Site Address: Fleet Removals Of Liverpool, Stretton Way, LIVERPOOL, Merseyside, L36 6JF	Type of Site: Waste Treatment & Transfer Facilities Planning application reference: 06/00990/FUL Description: Scheme comprises change of use and extension to form waste treatment and transfer facility with associated visitor centre, together with construction of car parking, installation of weighbridge and associated works. Construction - black top surfacing s e works. An application (ref: 06/00990/FUL) for detailed planning permission was granted by Knowsley B.C. Planning decision obtained Data source: Historic Planning Application Data Type: Point	-



ID	Location	Address	Further Details	Date
G	421m N	Site Address: Orchid Environmental MWDA Trea, Stretton Way,Huyton,Knowsley, LIVERPOOL, Merseyside, L36 6JF	Type of Site: Waste Recycling Facility Planning application reference: 09/00409/FUL Description: Scheme comprises change of use of and external alterations to building to form extended waste recycling facility resulting in increase of waste processed from 50,000 tonnes/year to 120,000 tonnes/year, change of use of factory unit to form associated off ices/maintenance workshop, construction of car parking and associated works - amended description. Construction - automatic, roller shutter doors; external refurbishment; black top surfacing, fencing, hardcore, turfing/grass site works. An application (r ef: 09/00409/FUL) for detailed planning permission was granted by Knowsley B.C. Project value, start date and contract period are for guideline only. This scheme is now complete. Data source: Historic Planning Application Data Type: Point	-
G	435m N	Site Address: Stretton Way,Stretton Way, Huyton Ind. Estate, Huyton, LIVERPOOL, Merseyside, L36 6JF	Type of Site: Waste Transfer Station (C/U) Planning application reference: APP/97/00600 Description: Change of use from storage to waste transfer station for the sorting and processing of non-toxic/non hazardous waste to generate re-usable materials. An application (ref: APP/97/00600) for Detailed Planning permission was submitted to Knowsley B. n 24th October 1997. Data source: Historic Planning Application Data Type: Point	-

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	10
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Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on [page 31](#) >



ID	Location	Details		
B	149m N	Site Name: Huyton H W R C Site Address: Huyton Ind Est, Wilson Road, Huyton, Knowsley, Merseyside, L36 6AD Correspondence Address: -	Type of Site: 75kte Non-hazardous & hazardous HWA Site Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: VEO167 EPR reference: EA/EPR/DB3833DK/A001 Operator: Veolia E S Merseyside & Halton Ltd Waste Management licence No: 103677 Annual Tonnage: 74999	Issue Date: 12/12/2011 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
B	149m N	Site Name: Huyton H W R C Site Address: Huyton Ind Est, Wilson Road, Huyton, Knowsley, Merseyside, L36 6AD Correspondence Address: -	Type of Site: 75kte Non-hazardous & hazardous HWA Site Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: VEO167 EPR reference: EA/EPR/DB3833DK/A001 Operator: Veolia E S Merseyside & Halton Ltd Waste Management licence No: 103677 Annual Tonnage: 74999	Issue Date: 12/12/2011 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
3	298m NE	Site Name: Stretton Way Bulking Station Site Address: Stretton Way Depot, Stretton Way, Huyton, Knowsley, Merseyside, L36 6JF Correspondence Address: -	Type of Site: 75kte HCI Waste Transfer Station Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KNO020 EPR reference: EA/EPR/EP3491LE/A001 Operator: Knowsley Metropolitan Borough Council Waste Management licence No: 101122 Annual Tonnage: 0	Issue Date: 03/11/2009 Effective Date: - Modified: - Surrendered Date: 19/06/2015 Expiry Date: - Cancelled Date: - Status: Surrendered



ID	Location	Details		
E	391m NE	Site Name: Arpley 2 Site Address: Arpley 2, Stretton Way, Huyton Ind Est, Huyton, Merseyside, L36 6JF Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FCC004 EPR reference: EA/EPR/JB3633RP/V003 Operator: F C C Recycling (U K) Limited Waste Management licence No: 104504 Annual Tonnage: 120000	Issue Date: 23/07/2012 Effective Date: - Modified: 08/06/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC
E	391m NE	Site Name: Stretton Way Site Address: Stretton Way, Huyton Ind Est, Huyton, Merseyside, L36 6JF Correspondence Address: -	Type of Site: 75kte HCI Waste TS + treatment Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FCC004 EPR reference: EA/EPR/JB3633RP/A001 Operator: F C C Recycling (U K) Limited Waste Management licence No: 104504 Annual Tonnage: 74999	Issue Date: 23/07/2012 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
E	391m NE	Site Name: Arpley 2 Site Address: Stretton Way, Huyton Ind Est, Huyton, Merseyside, L36 6JF Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FCC004 EPR reference: EA/EPR/JB3633RP/V002 Operator: F C C Recycling (U K) Limited Waste Management licence No: 104504 Annual Tonnage: 120000	Issue Date: 23/07/2012 Effective Date: - Modified: 18/12/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified



ID	Location	Details		
E	391m NE	Site Name: Arpley 2 Site Address: Arpley 2, Stretton Way, Huyton Ind Est, Huyton, Merseyside, L36 6JF Correspondence Address: -	Type of Site: Household, Commercial & Industrial Waste T Stn Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FCC004 EPR reference: EA/EPR/JB3633RP/V003 Operator: F C C Recycling (U K) Limited Waste Management licence No: 104504 Annual Tonnage: 120000	Issue Date: 23/07/2012 Effective Date: - Modified: 08/06/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC
G	460m N	Site Name: Materials Recycling And Recovery Centre Site Address: Land/premises At, Stretton Way, Huyton, Liverpool, Merseyside, L36 6JF Correspondence Address: -	Type of Site: Physical Treatment Facility Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ORC009 EPR reference: EA/EPR/DP3794ST/V004 Operator: Orchid Environmental Ltd Waste Management licence No: 50487 Annual Tonnage: 49999	Issue Date: 10/05/2007 Effective Date: 14/01/2009 Modified: 24/09/2010 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified
G	460m N	Site Name: M W D A Treatment Facility Site Address: M W D A Treatment Facility, Stretton Way, Huyton, Nr Liverpool, Merseyside, L36 6JF Correspondence Address: Market Place, Adlington, Nr Chorley, Lancashire, PR7 4EZ	Type of Site: Physical Treatment Facility Size: >= 25000 tonnes 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FAI011 EPR reference: - Operator: Fairport Engineering Ltd Waste Management licence No: 50487 Annual Tonnage: 0	Issue Date: 10/05/2007 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued



ID	Location	Details		
G	460m N	Site Name: Materials Recycling And Recovery Centre Site Address: Land/premises At, Stretton Way, Huyton, Liverpool, Merseyside, L36 6JF Correspondence Address: -	Type of Site: Physical Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ORC009 EPR reference: EA/EPR/DP3794ST/V004 Operator: Orchid Environmental Ltd Waste Management licence No: 50487 Annual Tonnage: 49999	Issue Date: 10/05/2007 Effective Date: 14/01/2009 Modified: 24/09/2010 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	17
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Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on [page 31 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
A	32m S	Tarbock Motorway Maintenance Compound, Coppice Lane, Prescott, Merseyside, L35 1QY	WEX168997	Storing waste exemption	Not on a farm	Storage of waste in secure containers
A	32m S	Tarbock Motorway Maintenance Compound, Coppice Lane, Prescott, Merseyside, L35 1QY	WEX168997	Storing waste exemption	Not on a farm	Storage of waste in a secure place
1	62m NE	Huyton HWRC, Huyton Industrial Estate, Wilson Road, Huyton, L36 6AD	WEX175384	Storing waste exemption	Not on a farm	Storage of waste in a secure place
C	187m S	Tarbock Motorway Maintenance Compound, Coppice Lane, Prescott, Merseyside, L35 1QY	WEX303248	Storing waste exemption	Not on a Farm	Storage of waste in a secure place



ID	Location	Site	Reference	Category	Sub-Category	Description
C	187m S	Tarbock Motorway Maintenance Compound, Coppice Lane, Prescot, Merseyside, L35 1QY	WEX303248	Storing waste exemption	Not on a Farm	Storage of waste in secure containers
2	290m NE	STRETTON WAY, LIVERPOOL, L36 6JF	WEX089643	Storing waste exemption	Not on a farm	Storage of waste in a secure place
D	328m NE	STRETTON WAY, LIVERPOOL, L36 6JF	WEX093799	Disposing of waste exemption	Not on a farm	Burning waste in the open
D	328m NE	-	WEX237679	Disposing of waste exemption	Not on a farm	Burning waste in the open
F	414m NE	STRETTON WAY, LIVERPOOL, L36 6JF	WEX121161	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
F	414m NE	Knowsley Depot, Stretton Way, Huyton, Knowsley, Merseyside, L36 6JF	WEX076561	Storing waste exemption	Not on a farm	Storage of waste in a secure place
F	414m NE	-	WEX261078	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
F	415m NE	Locker Freight Ltd, Stretton Way, Huyton, Liverpool, L366JF	WEX137591	Storing waste exemption	Not on a farm	Storage of waste in a secure place
F	415m NE	Riverside House Stretton Way LIVERPOOL L36 6JF	EPR/GF0235A U/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in a secure place
F	415m NE	Knowsley Metropolitan Borough Council Stretton Way LIVERPOOL L36 6JF	EPR/EF0001M P/A001	Treating waste exemption	Non-Agricultural Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
5	416m S	-	WEX321775	Storing waste exemption	On a farm	Storage of sludge
6	430m N	Huyton HWRC, Huyton Industrial Estate, Wilson Road, Huyton, L36 6AD	WEX308871	Storing waste exemption	Not on a farm	Storage of waste in a secure place
8	499m N	Locker Freight, Link Road, Huyton, Liverpool, L36 6AP	WEX297363	Storing waste exemption	Not on a Farm	Storage of waste in a secure place

This data is sourced from the Environment Agency and Natural Resources Wales.

