IGE consulting

South Dean Road, Huyton

Phase 1 Geo-Environmental Investigation Report

For: Breck Homes Ltd

Breck

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1.0 INTRODUCTION

This Phase 1 Geo-Environmental Investigation report has been prepared at the request of Breck Homes Ltd. Instructions to proceed were received in July 2025. Phase 1 desk study work was undertaken in July and August 2025.

1.1 Site Location and Description

This report pertains to a c. 2.75 Ha site located to the northeast of Southdean Road, c. 7.7km northeast of Liverpool City Centre, at the approximate post code L14 8UL. The National Ordnance Survey Grid Reference for the centre of the site is 342657E, 392725N.

The site currently comprises hardstanding associated with a former school in the central and southwestern site sections and an open field in the northeast section separated by a foot path running from northwest to southeast. Areas of dense vegetation exist across the site. The site is bound by residential properties to the east and south with open fields to the west and Hope Primary School to the north. Access to the site is off the unnamed side road off Southdean Road. An aerial photo of the site is included below and a site location plan is contained in Appendix 2.

Figure 1: Aerial image of the site dated August 2025.

Proposed Development

This Phase 1 Geo-Environmental Investigation is to be used for submission to the Local Authority as part of a planning application. It is the client's intention to develop the site into a low-rise residential development comprising 141 No. semi-detached, terraced and maisonette dwellings as well as an apartment block with associated private gardens, soft landscaping and access roads.

A proposed development plan is contained in Appendix 2 with an extract below as Figure 2.

Figure 2: Extract of the proposed development plan.

1.2 Brief

The brief was to carry out a Phase 1 Geo-Environmental Investigation for the site based upon the proposed development outlined in Section 1.0. The site area is shown on the site location plan contained in Appendix 2.

The investigation was to include the following:

a) Assess the probable ground conditions and contaminated land conditions on and below the site based on existing and historical site uses and relevant off-site activities, including a site walkover.

b) Identify sources of contamination that may be present at the site using current contaminated land guidance and develop a conceptual site model for potential human health, ground gas and controlled waters receptors.

c) Undertake a Preliminary Risk Assessment which will determine the requirement for further environmental (contaminated land) investigation and assessment.

d) Design, on the basis of the anticipated ground conditions, appropriate ground investigation works and discuss potential development issues (i.e. sub-surface features – obstructions, infilling, compressible ground, faulting, mineral extraction, mining and land instability).

A report was to be provided to summarise findings and to provide recommendations.

The limitations of this investigation work and report are included in Appendix 1.

2.0 SCOPE OF INVESTIGATION WORKS

2.1 Walkover Survey

The site was visited on 1st August 2025 in cloudy weather conditions. Photographs were taken of the site during the walkover survey and these photographs, together with a plan indicating their location and direction, are contained in Appendix 3.

2.2 Documentation

A combined Enviro + Geo Insight report (Ref GS-HB1-RPQ-VM8-HL3) was obtained from Groundsure, an environmental database company, which provides a list of recorded past and present activities at or adjacent to the site which could have an impact on the levels of contamination in the soils and groundwater at the site. As part of the desk study works, the below documents were obtained and examined. Unless otherwise stated, the documents are contained within the Groundsure Enviro + Geo Insight Report in Appendices 4 and 5:

a) Groundsure maps, all dated 2025 as follows:

- Historical Land Use map;
- Environmental Permits, Incidents and Registers map;
- Landfill and other Waste Sites map;
- Current Land Use map;
- Hydrogeology and Hydrology maps;
- Environment Agency / Natural Resources Wales flood maps;
- Designated Environmentally Sensitive Sites map;
- Geological maps and Ground Working map;
- Mining, Extraction & Natural Cavities map;
- Natural Ground Subsidence maps;
- Borehole Records map; and
- Railways and Tunnels map.

b) Aerial photographs of the site dated May 2023, October 2022, June 2015, May 2001 and July 2000.

c) Historical Ordnance Survey maps dated between 1850 and 2025, at scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

d) The following sources were obtained and examined from the British Geological Survey. All items were copied under licence: [C18/01] British Geological Survey ©UKRI. All rights reserved:
   - The BGS 1:50,000 drift geological map (Sheet ref 97 dated 1977); and
   - The BGS 1:50,000 solid geological map (Sheet ref 97 dated 1980).

e) A Brimstone Preliminary UXO Risk Assessment was obtained for the site and is included in Appendix 7.

f) The Knowsley Metropolitan Borough Council planning portal has been reviewed however; no useful information was available.

3.0 FINDINGS

3.1 Walkover Survey

The walkover survey was carried out on 1st August 2025 during cloudy weather conditions. During the walkover survey the following features were noted.

The site currently comprises an open field in the northern site section and an area of hardstanding in the southern site section separated by metal fencing. The site is accessible to the public via footpaths in the northern site section. The region north of St. Dominic's Church in the southwestern site section was noted to be underlain by hardstanding and heavily vegetated.

Figure 3: Photographs of the southern (left) and northern (right) site section

The topography of the entire site remains relatively consistent at c. 24.00m AOD with a gradual slope from c. 26.20m AOD in the northern site section to c. 20.70m AOD in the northwestern section and 23.20m AOD in the southern site section. An extract of the site location plan showing LIDAR data for the site is shown in Figure 4, below.

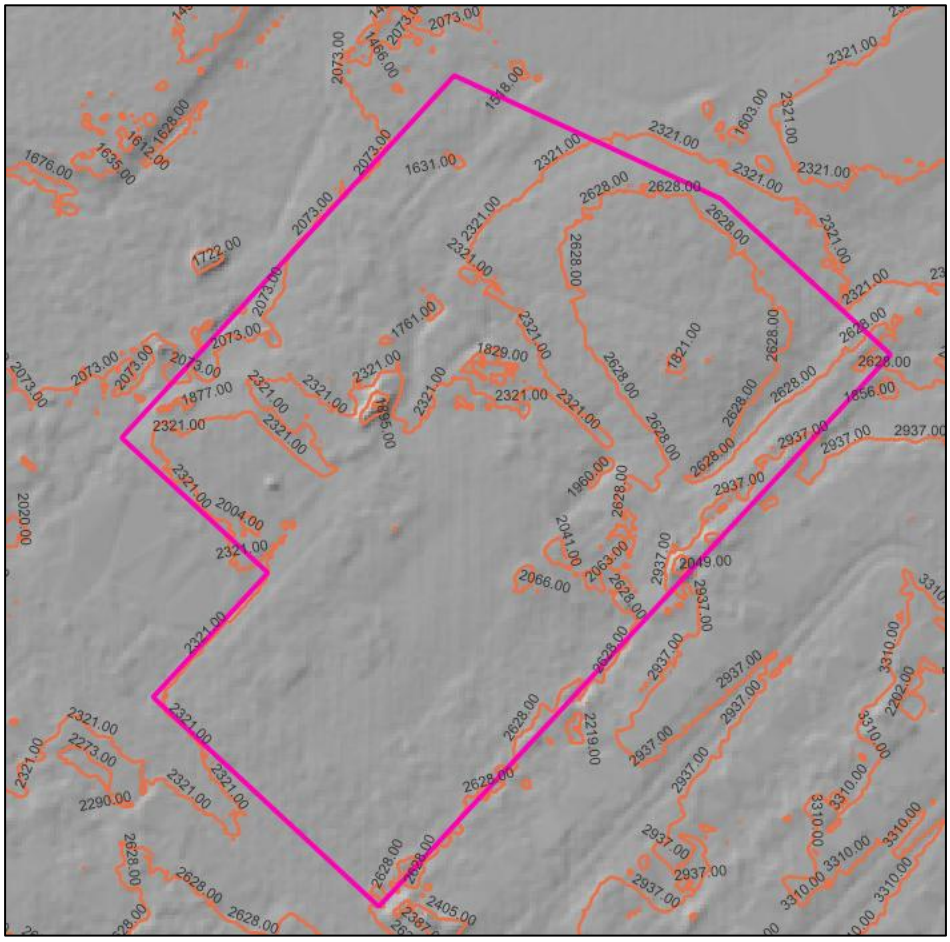


Figure 4: Extract of the site location plan with LIDAR data showing elevation change in the northern site section.

Dense vegetation was noted across the southern site section with the eastern and southeastern southern site sections being particularly overgrown. This hindered access to these areas during the walkover.

Figure 5: Photographs showing areas of dense vegetation across the site

Two uncovered manholes were noted in the southwestern site section with fly tipping identified within the manholes. This is most likely related to the private drainage

services associated with the former school. Based on the hardstanding still being present on site, foundations and ground floor slabs may still be present, therefore the presence of obstructions cannot be discounted.

Figure 6: Photograph showing the uncovered manholes in the southern site section

Contamination

No evidence of contamination (i.e. spillages or leakages) or contaminative sources were identified. Evidence of fly tipping was noted in the southwestern site section; however, this is not considered a contaminative source as the material was primarily inert (metal and plastic).

3.2 Site History

The site development history has been researched by reference to historical maps, street plans and aerial photographs. The historical maps are included in Appendix 4 to this report and the principal observations, which are divided into on-site history and off-site history, are summarised below:

On-Site History

Date	Site Feature
1850 - 1938	On the earliest historical maps, the site is recorded as open fields with a pond feature in the southeastern site section. No evidence of the pond remains after 1938, therefore the pond may have been infilled
1938 - 1969	From 1938, St Dominic's Junior School is recorded in the southern site section. The northern site section remains an open field.
1969 - 2012	From 1969, St Dominic's Secondary School extends into the northern site section with associated playing fields. Both the junior school and secondary school were demolished sometime between 2010 and 2012.

2012 - present	From 2012, the site becomes unoccupied with both the junior school and secondary school demolished with only hardstanding pertaining to the junior school visible at the surface. The site has remained in this condition until the present day.

Figure 7: Extracts of the OS historical maps dated 1893, 1951 and 1972 from left to right.

Off-Site History

Date	Site Feature	Distance (m)	Direction
1968 – Present	Numerous electricity substations surround the site within 200m; the closest are 64m west of the site and 79m southeast of the site.	64	W
Unknown date - Present	A roofed storage tank is recorded 71m northeast of the site, it is unclear when this feature was constructed but was first identified in 2016.	71	NE

Due to the primarily residential nature of the surrounding area, very few potentially contaminative historical land use was identified within 500m of the site.

3.3 Geology

3.3.1 BGS Geological Map

The BGS 1:50,000 Solid and Drift Geological Maps of the area (Sheet No: 97, dated 1977 and 1980, respectively) indicate that the site is underlain by superficial deposits of **Glacial Till** which typically comprises a heterogenous mixture of clays, sands and gravels. The site is underlain by bedrock of the **Chester Formation**, comprising sandstone.

Figure 8: Extracts of the BGS 1:50,000 Drift (left) and Solid (right) Geological Maps. Light blue = Glacial Till, yellow = Alluvium, Orange = Chester Formation and Purple = Etruria Formation

The solid geological map indicates no bedrock faults are present on site. However, a fault is recorded 600m west of the site down throwing to the west with another located c. 1km to the east down throwing to the east. The solid geological map states that the underlying Chester formation dips 20˚ to the southwest.

3.3.2 BGS Borehole Logs

There were no available BGS boreholes on site. Furthermore, there were no freely available borehole records within 600m of the site boundary. Two borehole records were identified 600 – 800m from the site within comparable geological settings.

BGS Borehole Ref: SJ49SW135

This borehole is located c. 600m north of the site and was excavated to a depth of 30.50m bgl. Unspecified superficial deposits were recorded to a depth of 2.44m bgl underlain by “red marly sandstone” to 30.50m bgl.

BGS Borehole Ref: SJ49SW2

This borehole is located c. 800m west of the site and reached a maximum depth of 546m bgl. The log recorded unspecified superficial deposits to a depth of 10.00m bgl underlain by interbedded marl, shale, sandstone and coal.

3.3.3 BGS Geohazards

Data Type	Details
Ground Stability Data	• The Potential for Shrinking or Swelling Clay Ground Stability Hazards is regarded as very low. • The Potential for Running Sand Ground Stability Hazards is regarded as very low. • The Potential for Compressible Ground Stability Hazards is regarded as negligible. • The Potential for Collapsible Ground Stability Hazards is regarded as very low. • The Potential for Landslide Ground Stability Hazards is regarded as very low. • The Potential for Dissolution Ground Stability Hazards is regarded as negligible.

3.3.4 BGS Estimated Soil Chemistry

The BGS have estimated that the superficial deposits across the site to naturally comprise the following determinands:

- Arsenic: 15 - 25mg/kg
- Cadmium: 1.8mg/kg
- Chromium: 90mg/kg – 120mg/kg
- Nickel: 15mg/kg – 30mg/kg
- Lead: 100mg/kg

3.4 Mining

3.4.1 Coal Mining

The site does not lie within a Mining Remediation Authority Mining Reporting Area.

3.4.2 Salt Mining / Brine Extraction

The site does not lie within the Cheshire Brine Subsidence Compensation Board.

3.4.3 Historical Surface Excavations

A pond was recorded in the southern site section in the early 20th Century. Although this feature appears to have been infilled for the construction of the school, the presence of variable ground conditions in this area of the site cannot be discounted. Numerous other ponds are recorded in the vicinity of the site, therefore the presence of additional unrecorded historical surface excavations cannot be discounted.

3.4.4 Mineral Safeguarding

Where mineral resources are present the mineral planning authority may designate areas as Mineral Safeguarding Areas (MSA) and Mineral Consultation Areas (MCA). These are aimed to safeguard mineral resource areas from unnecessary sterilization by non-mineral development. The BGS Mineral Resources maps designate the areas of potential mineral resources and where active / lapsed planning permission was granted for mineral extraction.

The BGS Mineral Resources Map indicates that the site lies within an area of deep coal resources (50m to 1200m bgl).

The Knowsley Metropolitan Borough Local Plan states that there are no aggregate mineral resources within Knowsley considered likely to be of commercial interest in the foreseeable future.

3.5 Hydrology and Hydrogeology

Environmental data relevant to the site and its immediately surrounding area has been obtained from sources available in the public domain. In addition, an environmental report was obtained from Groundsure. The Enviro + Geo Insight report and associated maps that have been inspected are presented in Appendix 5 and the principal observations in relation to waters and flooding can be summarised as follows:

Data Type	Details
Flooding	• With respect to rivers and seas, the site lies within Flood Zone 1. • Localised areas of the site, in the northern and southern most site sections, are recorded to be susceptible to surface water flooding, the highest risk pertaining to a **1 in 30-year event** with a floodwater depth of between than 0.30m and 1.00m. • Small, localised BGS groundwater flooding susceptibility areas have been identified on site predominantly in the southern site section and central site section, with the highest risk on site classified as **moderate to high**. An extract of the BGS groundwater flooding susceptibility map is shown in figure 10.
Surface Water Features	• There are no surface water features recorded on site; however, the River Alt lies 195m northeast of the site and runs northwest to southeast.
Surface Water Abstractions	• There are no licensed surface water abstractions located on site. • There are 2 No. licensed surface water abstractions located within 2km of the site, both of which are historical.

Superficial Aquifer	• The site is underlain by superficial deposits classified as a Secondary Undifferentiated Aquifer. • A Secondary Undifferentiated Aquifer is *assigned where it is not possible to attribute either category A or B to a rock type.*
Bedrock Aquifer	• The underlying bedrock is classified as a Principal Aquifer - *Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale.*
Groundwater Abstractions	• There are no recorded groundwater abstraction licenses located on site. • There are 5 No. groundwater abstraction licenses located within 2km of the site, 2 of which are active. The nearest active groundwater abstraction is located 1318m west of the site and relates to the abstraction of groundwater from a borehole at West Derby Golf Club, West Derby for make-up or top up water.
Source Protection Zones	• The site lies in a Source Protection Zone 3 (Total catchment).
Nitrate Vulnerable Zones	• There is a Nitrate Vulnerable Zone recorded on site associated with the nearby River Alt.
Licensed Discharge Consents	• There are no licensed discharge consents to controlled waters recorded on site. • There are 4 No. recorded licensed discharge consents to controlled waters located within 300m of the site. 2 No. of which were been revoked in 2005. All pertain to sewage discharge into the River Alt.
Pollution Incidents to Controlled Waters	• There are no recorded pollution incidents to controlled waters located on-site or within 500m of the site.

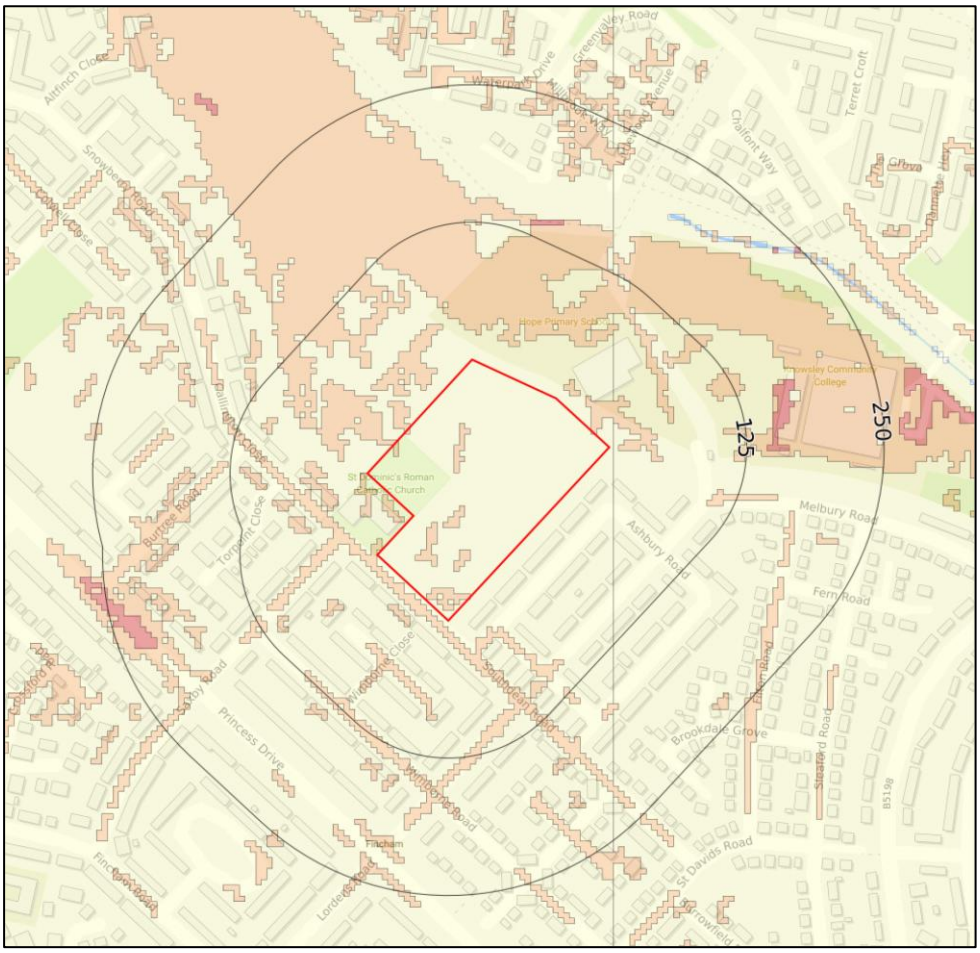


Figure 9: Extract of the BGS groundwater flooding susceptibility map. Orange = Moderate to High risk, Red = High risk.

3.6 Hazardous Installations, Landfill and Waste

The following information relating to hazardous installations, landfill and waste obtained from the Groundsure Enviro + Geo Insight report, published information and the walkover survey can be summarised as follows:

Data Type	Details
Environment Agency Recorded Active Landfill Sites	• There are no Environment Agency recorded landfill sites located on site or within 500m of the site.
Environment Agency Recorded Historical Landfill Sites	• There are no Environment Agency recorded historical landfill sites located on site.
BGS Recorded Historical Landfill Sites	• There are no BGS recorded landfill sites located on site or within 500m of the site.
Local Authority Recorded Landfill Sites	• There is a no Local Authority recorded landfill sites located on site or within 500m of the site.
Local Authority Pollution Prevention and Control (Part A(2) and Part B Activities and Enforcements)	• There are no Local Authority Part A2 or Part B Activities or Enforcements located on site or within 500m of the site.
Registered Radioactive Substances	• There are no Registered Radioactive Substances recorded on site or within 500m of the site.
Registered Waste Treatment, Transfer or Disposal Sites	• There are no waste exemptions recorded on site • There is a single waste exemption located 240m northeast of the site attributed to screening and blending of waste • Ther are no historical or licensed waste sites recorded on site or within 500m of the site.
Industrial Land Use	• There are no current or historical industrial land uses recorded on site. • There are 6 No. recent industrial uses recorded within 500m of the site, the nearest is located 64m west of the site and pertains to an electricity substation • There is a single Britpit located 427m southeast of the site associated with the Woolfell Brick Works • There are 7 No. surface ground workings pertaining to ponds located between 193m and 246m N of the site. • There are numerous historical land use surrounding the site within 500m of the boundary associated with electricity substations, the nearest of which is located 64m to the west of the site.
Dangerous Substances	• There are no recorded discharges of dangerous substances on site or within 500m of the site.
Hazardous Building Materials	• If underground structures such as ground floor slabs and basements pertaining to the former school are still present, asbestos may be present on site. However, given the date of demolition, an asbestos survey and removal of any asbestos would likely have been required prior to any demolition.

3.7 Radon

A site-specific radon map is included in the Groundsure Enviro + Geo Insight report which finds that the site lies within an area where less than 1% of homes are above the Action Level and consequently, no radon protection measures are required.

3.8 Unexploded Ordnance (UXO)

The Zetica UXO risk map indicated that the site lies within an area of moderate risk. Therefore, a Stage 1 Preliminary Risk Assessment was obtained for the site from Brimstone which indicates that there is no evidence of bombing incidents or military activity on the site. Therefore, a Stage 2 UXO report was not deemed necessary. Both the Zetica risk map and Stage 1 Preliminary Risk Assessment are included in Appendix 7.

3.9 Animal Burial Sites

The Animal Health and Veterinary Laboratories Agency (AHVLA) no longer routinely respond to consultations relating to records of animal burial sites. Based upon a review of the site history it is considered unlikely that the site has been subject to recorded animal burials.

3.10 Archaeology

We do not anticipate that the site will be affected by archaeological issues, however consultation with the county archaeologist is recommended.

3.11 Vegetation

Established trees and dense vegetation were noted across the site during the walkover with the eastern and western boundaries appearing to be heavily overgrown. Prior to any intrusive ground investigation works, trees will likely need to be felled and vegetation removed. However, the presence of any protected species on site is currently unknown, therefore a full arboricultural survey should be carried

out prior to clearance and intrusive works. A Phase 1 Habitat Survey may also be required.

4.0 CONCLUSIONS

4.1 General

The site has historically been used as as a junior and secondary school throughout the mid-late 20th century and early 21st century with all on site buildings demolished sometime between 2010 and 2012.

4.2 Ground Conditions and Geotechnical Hazard Identification

The anticipated typical ground conditions across the site are as follows:

- **Made Ground** likely comprising asphalt, concrete underlain by Made Ground of unknown composition to an unknown depth, underlain by:
- **Glacial Till** typically comprising firm to stiff slightly gravelly, slightly sandy CLAY to an unknown depth, underlain by:
- **Chester Formation** comprising SANDSTONE.

The BGS drift model states that bedrock is present at depths of 4.00m to 11.00m bgl, possibly as deep as 32.00m bgl in the area.

4.2.1 Geotechnical Hazard Identification

Potential geotechnical hazards based on the expected ground conditions that may require further consideration at the site are outlined below:

Factors	Remarks	Considerations	Hazard
Made Ground	Made Ground is anticipated to be widespread across the site but is likely to be thin in external areas e.g., car parks and playing areas with deeper regions associated with the buildings.	Made Ground may settle variably, have highly inconsistent bearing capacity and may suffer significant movements that may be problematic for foundations, externals and infrastructure elements without treatment. The presence of Made Ground may be problematic for foundations as there may be loose / soft spots within the Made Ground and it may not be suitable to utilise traditional foundations.	**Low to Moderate**
Aggressive Ground and Groundwater	While the risk posed from the natural strata is anticipated to be very low, the presence of widespread Made Ground introduces a potential for	Acidic ground / groundwater and sulfate may attack the concrete and steel used in foundations and react with aggregates. The oxidation of pyrite and other sulfides can also occur due to geotechnical activities. This can lead to the generation of high concentrations	**Low to Moderate**

	aggressive ground conditions to be present on site.	of sulfate and low pH that attacks construction materials and may lead to the precipitation of gypsum resulting in the heave of foundations and floor slabs. Pyrite oxidation can also be triggered by mixing susceptible materials with lime or cement resulting in high pH that can lead to the expansion of some sulfates that cause heave of stabilised soils.	
Shrink and Swell Clays	Established trees are present along the site boundaries and along field boundaries. Low to moderate plasticity and low to moderate volume change potential Glacial Till deposits are anticipated to be present at shallow depth.	Some types of ground (e.g., clay soils) can change volume due to changes in moisture content that may be induced by weather variations (e.g., drought), vegetation (e.g., growth or removal of trees) or man-made activities (e.g., changes to local drainage). This shrink / swell behaviour typically causes ground movement to a depth of approx. 3m potentially damaging building foundations, externals, pipes or services by differential movements.	**Low to Moderate**
Compressible Deposits	A small pond is recorded on historical maps in the southeastern site section. Although infilled, organic and compressible deposits may be present at the base.	May cause significant or differential settlement of foundations if placed on compressible ground	**Low**
Soft Spots	Soft spots may be present across the site associated with localised excavations e.g., historical pond.	Soft spots may cause differential settlement of foundations therefore there will be a requirement for localised deepening of foundations where soft spots are present.	**Low**
Shallow bedrock	Bedrock of the Chester Formation may be present at shallow depths. The BGS superficial thickness model suggests that the likely thickness of superficial deposits on site is between 4.00m and 11.00m bgl and as thick as 32.00m to the east of the site.	Rock break may be required for the installations of foundations or drainage	**Low**
Obstructions	Structures associated with the former school buildings may still be present underground given the presence of hardstanding across the southern site section.	May act as obstructions to excavations and / or the chosen foundations solution or act as 'hard spots' within the ground or left in-situ. A turnover may be required during enabling works within the southern site section.	**Moderate to High**

4.3 Sources of Contamination and Probable Contaminants

Based on the desk study information the following potentially contaminative on-site sources have been identified:

Potentially Contaminative Source	Associated Determinands	Remarks
On-Site Made Ground	Unknown, anticipated to be metals, semi-metals, PAHs, TPH, asbestos. Ground Gas – carbon dioxide, methane, hydrogen sulphide, VOCs	Made Ground is likely to be widespread across the formerly developed areas of the school. The Made Ground is of unknown composition and of unknown depth but likely to be thin in external areas and deeper in the regions of the former school buildings.

Former School	Asbestos	Numerous historical buildings were present on site associated with former schools, all of which will were demolished between 2012 and 2012. Given the age of the buildings, asbestos containing materials are likely to be present. Given the date of demolition, an asbestos survey was likely undertaken and asbestos removed, however remaining ACM cannot be discounted.
On-Site Historical Pond / Organic Clay	Unknown, anticipated to be metals, semi-metals, PAHs, TPH, asbestos. Ground Gas – carbon dioxide, methane, hydrogen sulphide, VOCs	The historical pond cannot be discounted as a contaminative source. If infilled, the Made Ground used to infill the pond is unknown and therefore cannot be discounted as a contaminative source. Any Made Ground infill and organic deposits must be considered as a potential ground gas source.

It should be noted that potentially contaminative unrecorded historical activities may have occurred (e.g. the use or deposition of Made Ground from off-site during historical on-site developments) and in this event, further contaminative sources may be present.

4.3.1 Unknowns

Following the desk study, the areas of uncertainty are summarised as follows:

- Depth, extent and composition of on-site Made Ground;
- Depth to bedrock;
- Depths to groundwater; and
- Extent, depth and infill material of historical pond.

4.4 Identified Pathways of Contamination

Human Health		Ground Gas		Controlled Waters	
A	Ingestion of dust and soil	**A**	Migration through fractures and fissures in bedrock	**A**	Vertical migration through coarse Made Ground and coarse soils
B	Dermal contact with dust and soil	**B**	Preferential migration along foundations & service ducts	**B**	Lateral migration along low permeability natural soils & pooling at relative low points
C	Inhalation (dust)	**C**	Migration within groundwater	**C**	Vertical migration along future foundations and pooling at base
D	Inhalation (vapours)	**D**	Ingress through cavity walls & floors	**D**	Migration through porous bedrock
E	Consumption of homegrown produce			**E**	Overland flow
F	Inhalation and oral backgrounds			**F**	Lateral migration along historical drainage

4.5 Identified Receptors of Contamination

Human Health receptors include the following:

- End Users (residential land use scenario);
- Construction workers; and
- The general public and adjacent site users.

Controlled waters receptors include the following:

- Groundwater contained within the Secondary undifferentiated and Principal Aquifer; and
- Surface Water – Off-site River (River Alt).

Other receptors include the following:

- Subsurface plastic (e.g. potable plastic water pipe); and
- Building fabric (e.g. concrete foundations, etc)

4.6 Conceptual Site Model

4.6.1 Conceptual Model for Human Health Risk Assessment

A site conceptual model in the form of a linkage table for the purposes of a preliminary risk assessment for the human health of site occupants has been produced as a result of the probable contaminants, pathways and receptors identified above. A diagram of the site conceptual model is included as Appendix 2.

Conceptual Model for Human Health Assessment					
Sources of Contamination	**Pathway**	**Receptor**	**Hazard (severity)**	**Likelihood**	**Risk**
On-Site Made Ground **Former school buildings** (1938 – 2012) **Historical Pond** (1850 – 1938)	A B C D E F	End users General public	Effect on human health **(Medium)**	**Low likelihood:** Site wide Made Ground and potential contaminative hotspots are likely to be present beneath site base on the historical land use as a school. Ingestion, dermal and inhalation pathways will be reduced across some areas of the site given the presence of hardstanding i.e. roads and buildings. Private gardens and areas of soft landscaping will be at increased risk	**Low to Moderate**
		Construction workers		**Low likelihood:** Construction workers will be at increased risk due to their acute interaction with soils. The appropriate use of PPE, Good Practice and Health and Safety Measures will significantly reduce the risk, however due to the presence of potentially contaminative sources and the possible presence of asbestos containing materials on site the risk remains low to moderate.	**Low to Moderate**
	D	End users and general public		**Unlikely:** Localised hydrocarbon hotspots may be encountered on site given the possible presence of former boiler rooms associate with the school. If localised contaminative hotspots of VOCs are present given their relative mobility and volatility VOCs are unlikely to remain at significant concentrations.	**Low**
		Construction workers		**Unlikely:** Construction workers at increased risk if any disturbance of soil occurs as this may generate a temporary increase in the release of soil vapours, however risk remains low given the lack of a source of VOCs.	**Low**

4.6.2 Conceptual Model for Ground Gas Risk Assessment

A conceptual model in the form of a linkage table for the purposes of a preliminary risk assessment for ground gas has been produced as a result of the probable contaminants, pathways and targets identified above as follows:

Conceptual Model for Ground Gas Risk Assessment					
Source	**Pathway**	**Receptor**	**Hazard (severity)**	**Likelihood**	**Risk**
On-Site Made Ground	A B C D E	Human occupants Site Workers	Effect on human health **(Mild to Severe*)**	**Low likelihood:** Site-wide Made Ground is anticipated on site with potentially contaminative hotspots. However, the Made Ground is unlikely to contain significant organic rich or putrescible material. Based on historical on-site land use, localised areas of deep Made Ground may be present in regions of former school buildings; as the composition of the Made Ground is unknown, the risk is low to moderate.	**Low to Moderate**
On-Site Historical Pond (1850 – 1938)		Building and Structures	Damage to building **(Mild)**	**Unlikely:** A pond was identified on historical OS maps in the southeastern site section between 1850 and 1938, likely infilled after 1938. Organic deposits associated with infilled ponds are regarded as a high concentration but low generation ground gas source. There may be some organic deposits in the southeastern site section, however this is a localised area with likely natural clay deposits surrounding reducing the risk of lateral migration, therefore the risk remains low . Furthermore, the historical pond is less than 15m in diameter and was infilled prior to the 1940s, therefore remains as a source of very low generation potential in line with BS8576 (2013) Table 6: Decision Matrix Tool. Therefore, any risk associated with organic material from the historical pond is deemed low.	**Very Low**

*Due to the risk of explosion.

4.6.3 Conceptual Model for Controlled Waters Risk Assessment

A site conceptual model in the form of a linkage table for the purposes of a preliminary risk assessment for pollution of waters has been produced as a result of the probable contaminants, pathways and targets identified above as follows:

Conceptual Model for Controlled Waters Risk Assessment					
Source	**Pathway**	**Receptor**	**Hazard (severity)**	**Likelihood of Occurrence**	**Risk**
On-Site Made Ground **Historical Infilled Pond** (1850 – 1938) **Former School** (1938 – 2012)	A C D F	Groundwater within the Secondary undifferentiated and Principal Aquifers	Effects to controlled waters (**Medium**)	**Pre-Development Site** **Low likelihood:** Made Ground is anticipated to be widespread across site, with local regions of deeper Made Ground associated with the former school building possible. Although cohesive Glacial Till deposits are anticipated underlying the Made Ground on site, the thickness of this stratum is unknown, therefore it is unknown how effectively the Glacial Till is able to negate any migration from the Made Ground to the underlying Principal Aquifer. Historical drainage infrastructure may remain underground pertaining to the former school buildings, thus creating a potential pathway to the off-site River Alt. The Principal Aquifer is located within a Source Protection Zone 3, therefore, careful consideration must be applied when excavating as pathways may be facilitated to the Principal Aquifer.	**Low to Moderate**
				Post Development Site **Unlikely:** Following development there will be a slight increase in hardstanding (i.e. buildings and roads) across the site therefore vertical migration will be reduced. Localised contaminative hotspots may need to be removed during enabling works.	**Low**
	B F E	Surface water courses (Off-Site River Alt)	Effects to controlled waters: (**Mild**)	**Pre-Development Site:** **Unlikely**: Lateral migration of contaminants is considered unlikely given the distance between source and receptor.	**Very Low**
				Post Development Site: **Unlikely**: The potential for lateral migration of contaminants will remain unchanged post development due to a relatively maintained presence of hardstanding across the site.	**Very Low**

4.7 Preliminary Risk Assessment Summary

Human Health

Based on the human heath conceptual model the risk to human health is deemed low to moderate to end users and construction workers. Elevated concentrations of metals and PAHs may be present in localised areas and contaminative linkages have been identified. Although the risk to construction workers is increased due to their acute interaction with site soils, it is envisaged that with appropriate PPE and site management, risks to construction workers can be mitigated therefore the risk remains low to moderate.

Ground Gas

Ground gas sources have been identified on site. However, the Made Ground, although anticipated to be widespread and locally deep, is not anticipated to contain significant putrescible or organic-rich deposits. The possible on-site historical infilled pond may contain potentially organic-rich deposits; however, they are suspected to be localised and unlikely to be a significant ground gas source. Therefore, the risk is deemed low. As potential pathways exist, therefore, ground gas monitoring is recommended to be undertaken to inform the ground gas regime of the site. The monitoring programme is recommended to include 6 No. visits over 3 No. months.

The length and frequency of the ground gas monitoring regime and the sampling method, initial results and alterations to the conceptual model are subject to the findings of the ground investigation works and development constraints (i.e. development timescales and liaison with the local authority).

Controlled Waters

Sensitive receptors have been identified on site (Secondary Undifferentiated and Principal Aquifer) There is a Source Protection Zone 3 associated with the underlying Chester Formation. However, there is a lack of pathway linkages between contaminative sources and the Principal Aquifer and off-site River Alt, therefore the risk is deemed low to moderate. Following development and with the incorporation of hardstanding and engineered drainage, the risk will be reduced to low.

If unrecorded contaminative sources are noted, the above conceptual models may require re-assessment.

4.8 Scope of Phase 2 Intrusive Geo-Environmental Ground Investigation

As a result of the preliminary risk assessment, a Phase 2 intrusive geo-environmental ground investigation should be carried out to quantify the identified risks. This intrusive ground investigation works should include the collection of appropriate samples – solid and / or liquid, if deemed necessary, across the site for appropriate chemical testing as detailed above.

Furthermore, to determine the geotechnical and geological properties of the underlying ground conditions, appropriate intrusive works and associated testing should be undertaken. The rationale and aims for these Phase 2 environmental, geotechnical and geological investigative works are detailed below.

In order to provide adequate assessment in terms of both environmental and geotechnical site parameters, ground investigation works will be required on a spatial basis and targeting the former school building and the historical infilled pond. The proposed initial ground investigation works should comprise a programme of dynamic sampling boreholes and mechanically excavated trial pits.

The rationale for the exploratory holes is discussed below:

- To allow the collection of samples from the Made Ground and natural deposits for chemical laboratory testing (solid samples) for an appropriate suite of determinands and to determine the suitable concrete classification in associated with relevant guidance e.g. BRE Special Digest 1;
- To determine the extent, composition and depth of any Made Ground deposits;
- To determine the nature, thickness and extent of superficial deposits;

- Enable geotechnical testing, including density testing (SPTs), hand shear vane (HSV) testing and undrained shear strengths of the underlying Made Ground and natural deposits for the purposes of sub-structure design; and
- To allow installation of ground gas and groundwater monitoring wells.

Based on the findings of the initial ground investigation works, further works may be required for detailed design including California Bearing Ratio determinations, testing for earthworks information and deep ground investigation to inform pile design.

5.0 RECOMMENDATIONS

- As a result of the information gathered and the risks identified in this report, there is a low to moderate risk to human health on the basis that feasible contaminative linkages have been identified for end users and construction workers in localised areas. The risk to controlled waters is deemed low (following development) given the lack of significant contaminative linkages.

- A low ground gas risk has been identified. However, as potential pathways have been identified, a ground gas monitoring programme of 6 No. visits over c. 3 months is recommended. On the basis that the site lies within an area where between less than 1% of homes are above the action level no radon protection measures are necessary.

- Due to geotechnical requirements, ground investigation works should be undertaken in order to determine the ground conditions with a greater degree of certainty and allow design of the proposed development, drainage, services and immediate external areas to be undertaken. It is therefore recommended that exploratory holes are constructed where access is permitted across the site. The use of soakaways is unlikely to be suitable given the presence of low-permeability shallow Glacial Till across the site.

- From the results of the Phase 2 ground investigation work – if this report identifies a potential risk and / or a requirement for further detailed site-specific assessment, a Phase 3 environmental investigation report and / or a Remedial Strategy (informing on potential remediation solutions) may be required.

- The nature and extent of the proposed targeted chemical and environmental testing should be confirmed, if time / commercial constraints allow, with the relevant Local Authority Environmental Health Officer and the Environment Agency prior to undertaking works on-site. Proceeding without agreement between regulatory authorities may result in further assessment being required.

- It should be noted that, if any visual or olfactory evidence of contamination is encountered during remediation or construction work, then the Local Authority Environmental Health Officer and Environment Agency should be contacted immediately in order to agree any necessary remediation measures.

- Given the possibility of services on-site, full service plans have been obtained prior to any intrusive ground investigation works.

- Due to the presence of established trees on-site and the presence of cohesive deposits, an arboricultural survey is recommended.

APPENDIX 1

LIMITATIONS OF INVESTIGATION WORK AND REPORT AND CONTAMINATED LAND LEGISLATIVE FRAMEWORK

LIMITATIONS OF REPORT

This consultancy report was compiled and carried out by IGE Consulting Limited ('IGE') for the client, as defined in the main report (the 'client'), on the basis of a defined programme and scope of works and the terms of a contract between IGE and the client. IGE undertook this with all reasonable skill and care, taking into account the limits of the scope of works required by the client, the prevailing site conditions, the time scale involved and the resources, including financial and manpower resources, agreed between IGE and the client. IGE cannot accept responsibility to any parties whatsoever, following the issue of this report, for any matters arising which may be considered outwith the agreed scope of works.

Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices. This report may not be relied upon, or transferred to, by any other party without the written agreement of its author. If a third party relies on this report, it does so wholly at its own and sole risk and IGE disclaims any liability to such parties.

It is IGE's understanding that this report is to be used for the purpose described in the 'Brief' section of this report. That purpose was a significant factor in determining the scope and the services to be provided. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without IGE's review and advice shall be at the client's sole and own risk.

The information contained in this report is protected by disclosure under Part 3 of the Environmental Information Regulations 2004 pursuant to the provisions of Regulation 12(5) without the consent in writing of a Director of IGE.

This report is a function of the date it was written and should be read in light of any subsequent changes in legislation, statutory requirements and industry practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of IGE. In the absence of such written advice of IGE, reliance on the report in the future shall be at the client's own and sole risk. Should IGE be requested to review the report in the future, IGE shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between IGE and the client.

The observations and conclusions described in this report are based solely upon the scope of works agreed between the client and IGE. IGE has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report. IGE is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the agreed scope of works. For the avoidance of doubt, this report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species (e.g. Japanese Knotweed). It is recommended that the client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the suspected presence asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace full and proper surveys.

Throughout the report the term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements) and the term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential contamination). However, it should be appreciated that this is an integrated investigation and these two main aspects are inter-related. The geo-environmental sections are written in broad agreement with BS 10175:2011+A2 2017.

LIMITATIONS OF INVESTIGATION WORK

Desk Study References

This report is based upon IGE's observations of existing physical conditions at the site gained from a walkover survey of the site together with IGE's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. Reliance has been placed on this publicly available data obtained from the sources identified in the main report. When using the information, it has been assumed that it is correct. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst IGE have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified. No responsibility can be accepted for errors within third party items presented in this report. IGE did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services. IGE is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to IGE and including the doing of any independent investigation of the information provided to IGE except when otherwise provided in the terms of the contract between the client and IGE.

Historical Mapping

Historical Ordnance Survey maps do not provide a comprehensive description of a site history. They provide details of the site from a date prior to the publication of the map (i.e. a snapshot in time). The period between map editions can be substantial (i.e. several decades). Not all map series are available for every date range in many areas of the UK and therefore there will be gaps in this mapped record for some sites. Potentially contaminative land uses could have been present and removed during such periods and may therefore not form a part of this particular record. In addition, there will be potentially contaminative land uses which are not identified on the map records such as small scale storage / use of hazardous materials, illegal / unlicensed waste disposal activities etc. Different map series identify different features utilising different symbols which can result in features that remain on-site being removed from maps. Some features are also not mapped for security reasons (e.g. airfields and other military installations). These areas are mostly shown as blank areas on historical maps.

Site Walkover

During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not be made known or accessible.

Flooding

Flooding in this report is defined as flooding caused by the sea, ditches, rivers, streams, ponds, lakes, reservoirs and the like. It does not extend to flooding caused by surcharged piped drainage systems and investigations into flooding of this nature are excluded from this report.

Extent of Contamination Studies

Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities. The conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the reporting in full. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

Intrusive Investigation

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations, the potential exists for ground conditions to be encountered which are different to those considered in this report. The explored extent of the site area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters, based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Exploratory Holes

Where exploratory holes have been carried out as part of this investigation, the spacing has been determined to provide a reasonable indication of the general ground conditions across the site, but the number has ultimately been limited by commercial constraints. The findings of the exploratory holes relate specifically to the exploratory hole locations and are no absolute guarantee of the ground conditions between such locations. Due allowance should be made for the possibility of variation in conditions between exploratory hole locations.

Extent of Contamination Testing

The extent of contaminated land testing carried out on samples obtained from the site has been determined in accordance with the latest legal guidance issued by the government to provide, with reasonable certainty, the probable general levels of contamination present on site that could pose a significant hazard to human health or waters. The extent of site investigation works including chemical testing has also been limited by reasonable commercial constraints. Although extensive testing of samples has been carried out, the volume of samples taken for testing are a minute fraction of the total volume of soils and groundwater present on site. Therefore, there is a residual risk that undetected pockets of contamination may be present on site, situated between testing locations.

When investigating or developing potentially contaminated land it is important to recognise that sub-surface conditions may vary spatially and temporally. The absence of certain ground, ground gas, contamination or groundwater conditions at the positions tested is not a guarantee that such conditions do not exist anywhere across the site. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

Extent of Geo-Environmental Studies

This report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species e.g. Japanese Knotweed. It is recommended that the Client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the identification asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace a full and proper survey. If an Unexploded Ordnance (UXO) report has been obtained within the report, it has been so on the basis of Health and Safety concerns and no assessment has been made other than transcribing the recommendations of the sub-contractor contained within the report. In terms of a potential contaminative source, unless ordnance has been manufactured / stored on site, UXOs will only be determined as a contaminative source following a positive identification on site.

PLANNING CONTEXT

The National Planning Policy Framework (NPPF, 2025) states that the purpose of the planning system is to contribute to the achievement of sustainable development. In order to do this the planning system has three overarching objectives, one of which directly relates to the potential for pollution and contaminated land:

- *'**environmental objective** - to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy'.*

In accordance with this environmental objective, Paragraph 125 clarifies that 'making effective use of land' includes to:

- *'give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land'*.

In accordance with this environmental objective, Paragraph 187 clarifies that' conserving and enhancing the natural environment includes:

- *'preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability*'; and
- *'remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate'.*

Paragraph 196 of the NPPF states that planning policies and decisions for developments should also ensure that:

- *'a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation)*'; and,
- '*after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990'*; and
- '*adequate site investigation information, prepared by a competent person, is available to inform these assessments'*.

This report has been prepared and authorised by staff that are competent as defined in the NPPF.

APPENDIX 2

FIGURES AND DRAWINGS

FOR GUIDANCE PURPOSES ONLY

Approximate Site Boundary

N

0 100 200 300 400 500 m

Rev	Drawn	Date	Description

Drawing Status:
Information

Contract:

Southdean Road, Huyton

For: Breck Homes Ltd

Drawing Title:

Site Location Plan

IGE consulting

1st Floor, 15, Oxford Court, Manchester, M2 3WQ
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk
Tel: 0161 914 9170

Scale: 1:4500 @A3	Date: Aug 2025	
Drawn: LG	Checked: AE	
Contract No. 4450	Drawing No. SI - 01	P1

N

FOR GUIDANCE PURPOSES ONLY

Approximate Site Boundary
Former Club (1972 - 2012)
Former Junior School (1938 - 2012)
Former Secondary School (1969 - 2012)
Historical Pond (1850 - 1938)

Former Secondary School (1969 - 2012)

Former Club (1972 - 2012)

Former Junior School (1938 - 2012)

Historical Pond (1850-1938)

0 20 40 60 80 100 m

Rev	Drawn	Date	Description

Drawing Status:
Information

Contract:

Southdean Road, Huyton

For: Breck Homes Ltd

Drawing Title:

Site Features Plan

IGE consulting

1st Floor, 15, Oxford Court, Manchester, M2 3WQ
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk
Tel: 0161 914 9170

Scale: 1:1000@A3	Date: Aug 2025	
Drawn: LG	Checked: AE	
Contract No. 4450	Drawing No. SI - 02	P1

Notes

1 This drawings is indicative and not to scale.

2 This drawing is to be read in conjunction with all relevant Architects and Service Engineers drawings.

SOURCES

Sources
1. Made Ground including historical pond infill
2. Former School (1938 - 2012)

Secondary Sources
3. Pooling beneath current and / or future foundations
4. Pooling in relative low points above low permeability deposits
5. Pooling within granular lenses within low permeability deposits

Ground Gas Sources
1. Made Ground
2. Historical Infilled Pond (1850 - 1938)

PATHWAYS

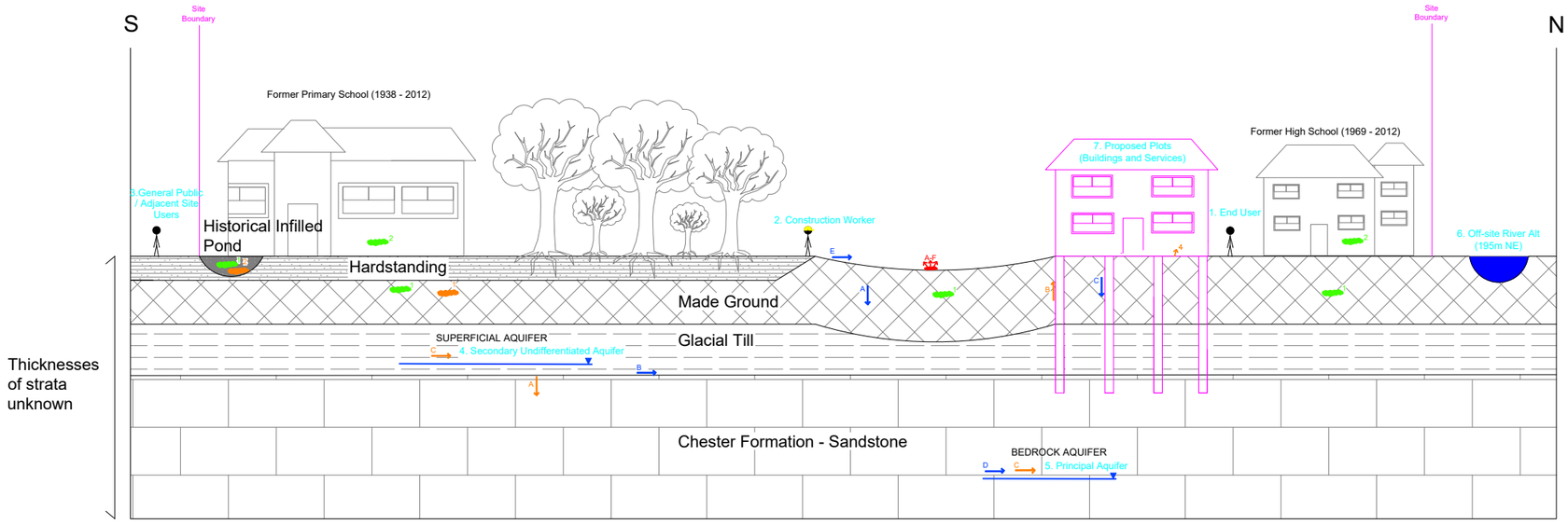
Pathways To Human Health
A. Ingestion of dust and soil
B. Dermal contact with dust and soil
C. Inhalation (dust)
D. Inhalation (vapours)
E. Consumption of homegrown produce
F. Inhalation and oral backgrounds

Pathways To Controlled Waters
A. Vertical migration athrough coarse Made Ground and coarse soils
B. Lateral migration along low permeability natural soils & pooling at relative low points
C. Vertical migration along future foundations and pooling at base
D. Migration through porous bedrock
E. Overland flow
F. Migration along historical drainage

Ground Gas Pathways
A. Migration through fractures and fissures in bedrock
B. Preferential migration along foundations and service ducts
C. Migration within groundwater
D. Inhalation through cavity walls and floors

RECEPTORS

Receptors
1. End user
2. Construction workers
3. General public / adjacent site users
4. Secondary Undifferentiated Aquifer in superficial deposits
5. Principal aquifer in bedrock
6. Surface water - Off-site River Alt (195m northeast
7. Buildings and services



Rev	Drawn	Date	Description

Drawing Status
INFORMATION

Contract
Southdean Road, Huyton

FOR: Breck Homes Ltd

Drawing Title
Conceptual Site Model

1st Floor, 15, Oxford Court, Manchester, M2 3WQ
email: contact@igeconsulting.co.uk
web: www.igeconsulting.co.uk

Scale	Date	
NTS	August 2025	
Drawn LG	**Checked** AE	
Contract No. 4450	**Drawing No.** SI-04	P1

KEY:

Type A
1b2p 50 Bungalow

Type B
2b3p 61 Bungalow

Type C
2b3p 74 House Type
M4(2)

Type D
2b4p 81 Aspect House Type

Type F
3b4p 86 House Type

Type H
3b5p 93 House Type
M4(2)

Type L1
1b2p GF Maisonette 65 M4(3)
Type L2
2b3p FF Maisonette 72

Type M1
2b3p 61 Apartments x2 (Ground Floor Only)

Type M2
1b2p 61 Apartments x10

Communal Areas

Type T
4b5p 100 House Type

Indicates Cycle Stores

Indicates M4(2) Units (28No. Units) 20%

Indicates M4(3) Units (08No. Units) 05%

0 5 10 15 20 25
SCALE BAR

Housetype	m²	Ft²	Total No.	Total m²	Total Ft²
TYPE A - 1B2P Bungalow M4(2)	50	538	9	450	4844
TYPE B - 2B3P Bungalow M4(2)	61	797	2	122	1593
TYPE C - 2B3P House Type M4(2)	74	797	11	814	8762
TYPE D - 2B4P Aspect House Type	81	872	7	567	6103
TYPE F - 3B4P House Type	86	926	29	2494	26845
TYPE H - 3B5P House Type	93	1001	8	744	8008
TYPE L1 - 1B2P Maisonette GF M4(3)	65	700	12	780	8396
TYPE L2 - 1B2P Maisonette FF	72	775	12	864	9300
Type M1 - 2B3P Apartment	61	657	6	366	3940
Type M2 - 1B2P Apartment	61	657	30	1830	19698
TYPE T - 4b5P House Type	100	1076	8	800	8611
		TOTAL	134	9831	106100

	Site Area		Density		Footage			
	Ha	Ac	Un/Ha	Un/Ac	m²/Ha	m²/Ac	Ft²/Ha	Ft²/Ac
Gross	2.77	6.84	48.38	19.58	3549.10	1436.27	38303.16	15500.76
Nett	2.66	6.57	50.38	20.39	3695.86	1495.67	3695.86	16141.77

REV	DATE	DRAWN	DESCRIPTION	ARCH CHECK	ENG CHECK
H	AUG.25	SHW	PLANNERS COMMENTS ENDORSED	-	-
G	JULY.25	SHW	HOUSING MIX UPDATED	-	-
F	JULY.25	SHW	SCHEME RE-DESIGNED TO NEW ENTRANCE ROAD LOCATION	-	-
E	JUNE.25	SHW	RED EDGE BOUNDARY UPDATED, LAYOUT UPDATED TO SUIT	-	-
D	FEB.25	SHW	LAYOUT UPDATED WITH NEW HOUSE TYPE RANGE	-	-
C	SEPT.24	SHW	MAISONETTES REMOVED & REPLACED WITH PUBLIC OPEN SPACE	-	-
B	SEPT.24	SHW	RED EDGE BOUNDARY UPDATED, LAYOUT UPDATED TO SUIT	-	-
A	OCT.23	SHW	LINK ROAD TO FUTURE DEVELOPMENT LAND ADDED TO NORTH WEST BOUNDARY	-	-

TITLE:
PROPOSED SITE LAYOUT

Breck Homes
20 Sceptre Court
Bamber Bridge
Preston
PR5 6AW
tel: 01253 587 010
web: www.breck.co.uk/homes
hello@breck.co.uk

PROJECT:
SOUTHDEAN ROAD, KNOWSLEY

DATE:	SCALE:	JOB REF:	DRAWING NUMBER:	REV:
SEPT.23	1:500 @ A1	-	Southdean Road / Proposed Site Layout	H

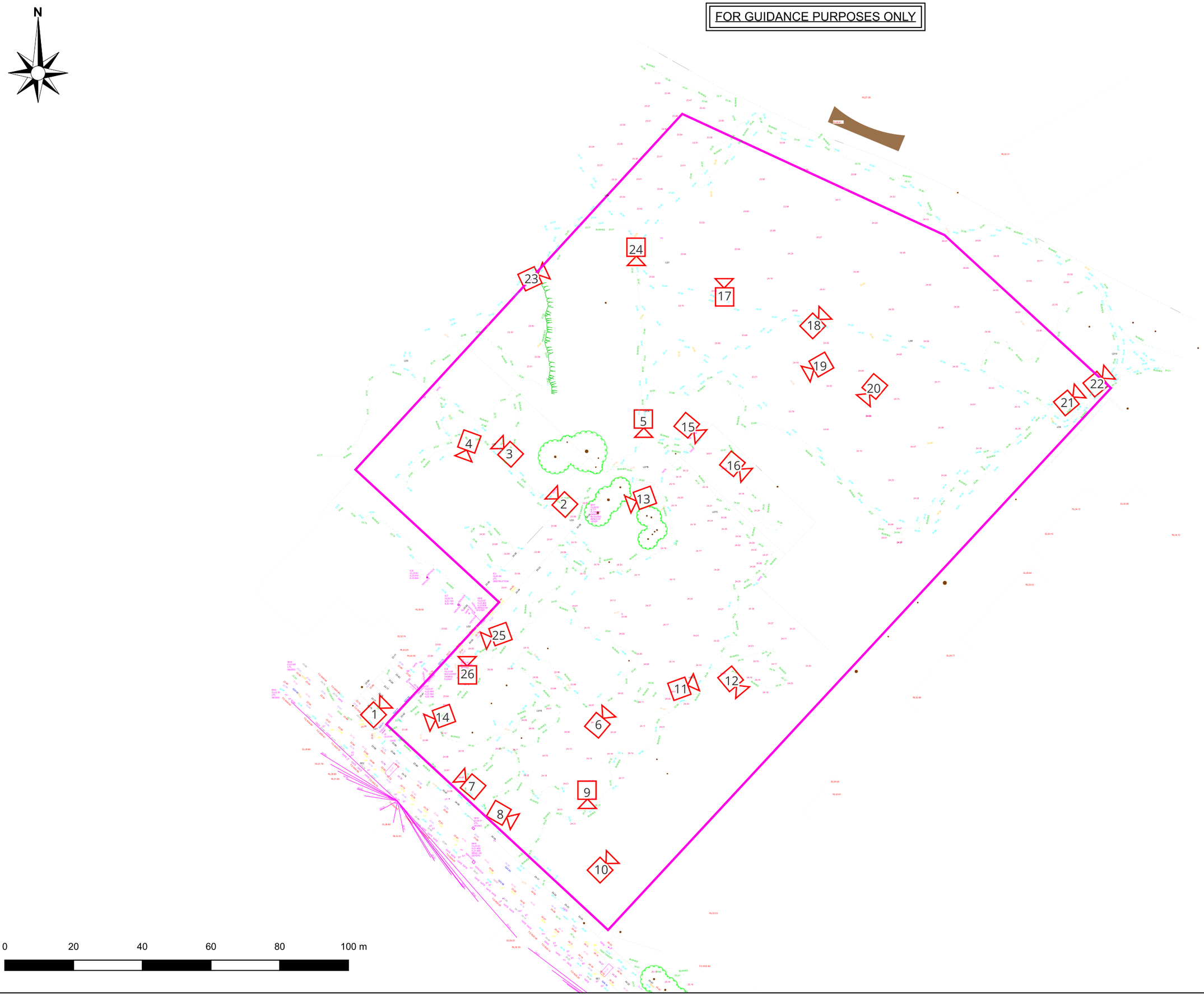
APPENDIX 3

Walkover Survey Photographs and Photograph Location Plan

FOR GUIDANCE PURPOSES ONLY

Approximate Site Boundary

Walkover Photo Locations



Rev	Drawn	Date	Description

Drawing Status:
Information

Contract:

Southdean Road, Huyton

For: Breck Homes Ltd

Drawing Title:

Site Walkover Plan

IGE consulting

1st Floor, 15, Oxford Court, Manchester, M2 3WQ
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk
Tel: 0161 914 9170

Scale: 1:1000@A3	Date: Aug 2025
Drawn: LG	Checked: AE
Contract No. 4450	Drawing No. SI - 03 P1

SITE WALKOVER PHOTOGRAPHS – 01st August 2025	
	
Figure 1 – Site entrance and existing St. Dominic's Church from Southdean road facing north.	Figure 2 – Second access gate facing west
	
Figure 3 – Third access gate facing west from the area of the former club.	Figure 4 – Area of the former club with dense vegetation underlain by hardstanding.
	
Figure 5 – Access to the southern site section facing southeast	Figure 6 – Hardstanding underlying most of the southern site section.

Figure 7 (left) and 8 (right) – Hardstanding and dense vegetation on the southern site boundary in the area one of the former school buildings

Figure 9 (left) and 10 (right) – Dense region of established trees in the southeastern site section

Figure 11 (left) and 12 (right) – Continued dense vegetation on the eastern site boundary

Figure 13 (left) and 14 (right) – Fly tipping on the southwestern site boundary.

Figure 15 – Access to playground separating the northern and southern site sections.

Figure 16 – Fromer playground area with dense vegetation and remaining rubber surfacing.

Figure 17 (left) and 18 (right) – Northern site section and area of the former high school.

Figure 19 (left) and 20 (right) – Sloping topography in the northern site section facing south.

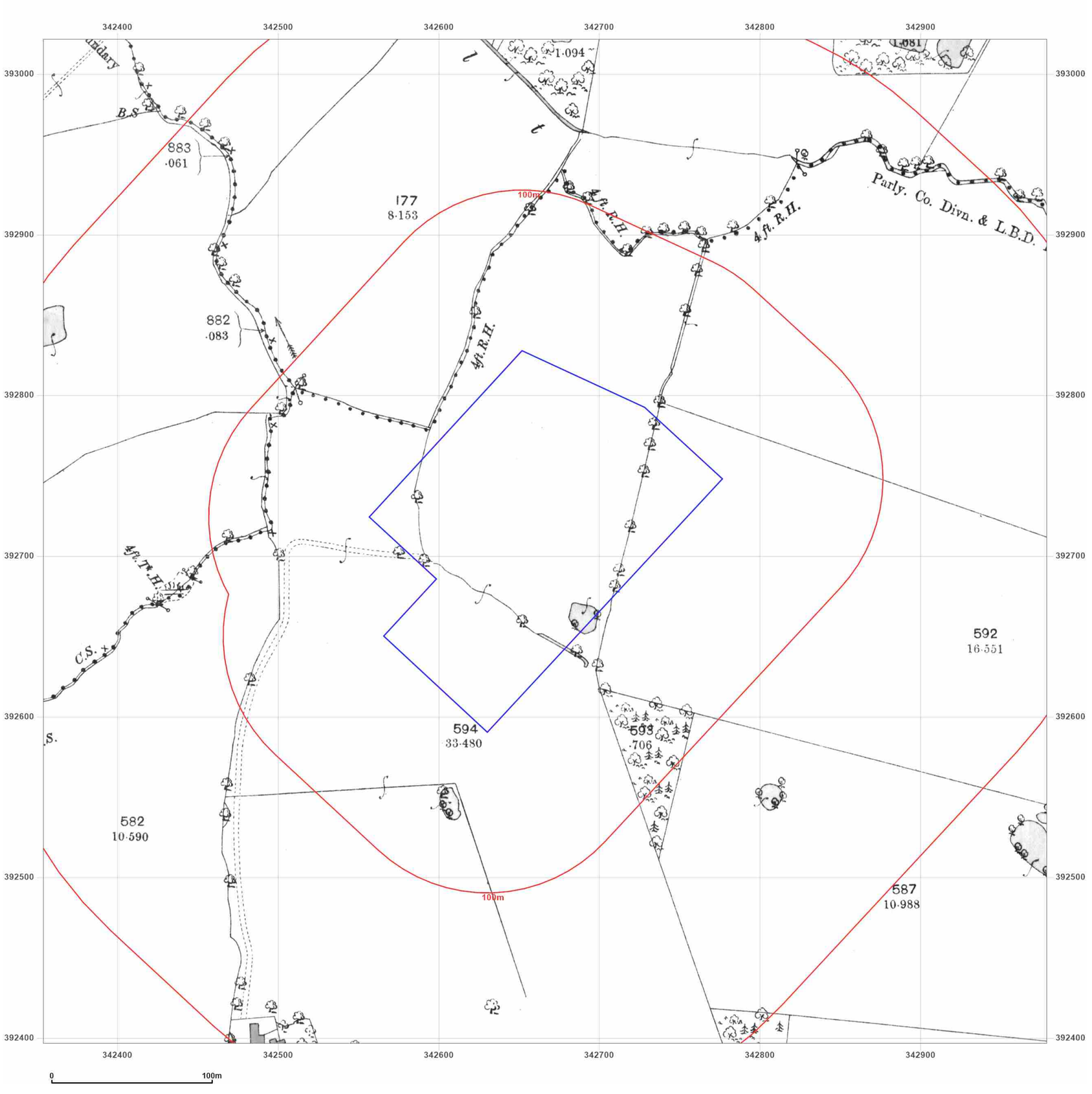
Figure 21 (left) and 22 (right) – Access route and public footpath in the northeastern corner of the site.

Figure 23 (left) and 24 (right) – Northwestern site section bordering the off-site field..

Figure 25 (left) and 26 (right) – Uncovered manholes on the southwestern site boundary.

APPENDIX 4

Historical Ordnance Survey Maps



Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: County Series

Map date: **1893**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

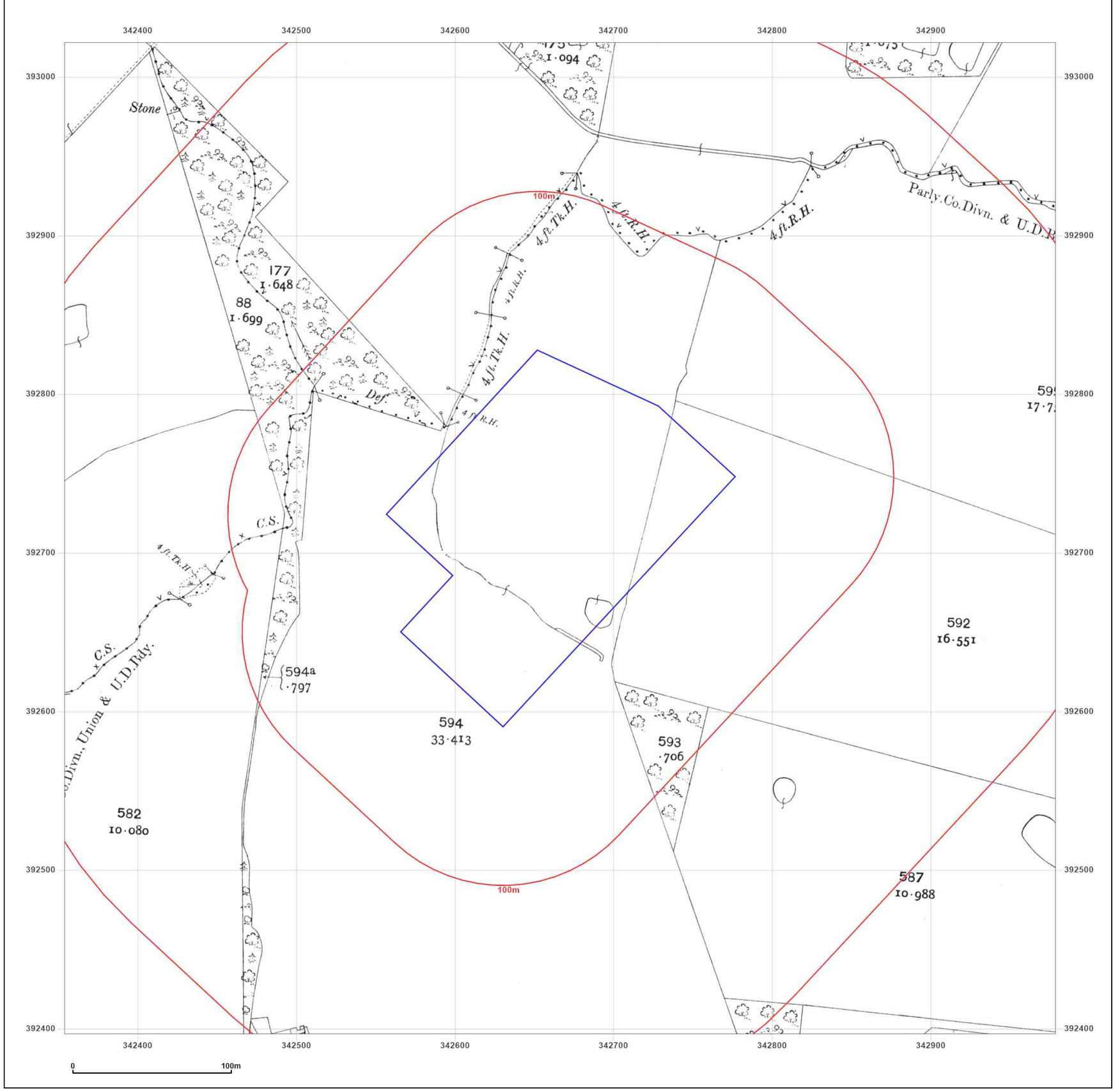
Surveyed 1893
Revised 1893
Edition N/A
Copyright N/A
Levelled N/A

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

Production date: 22 July 2025

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: County Series

Map date: **1908**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1908
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

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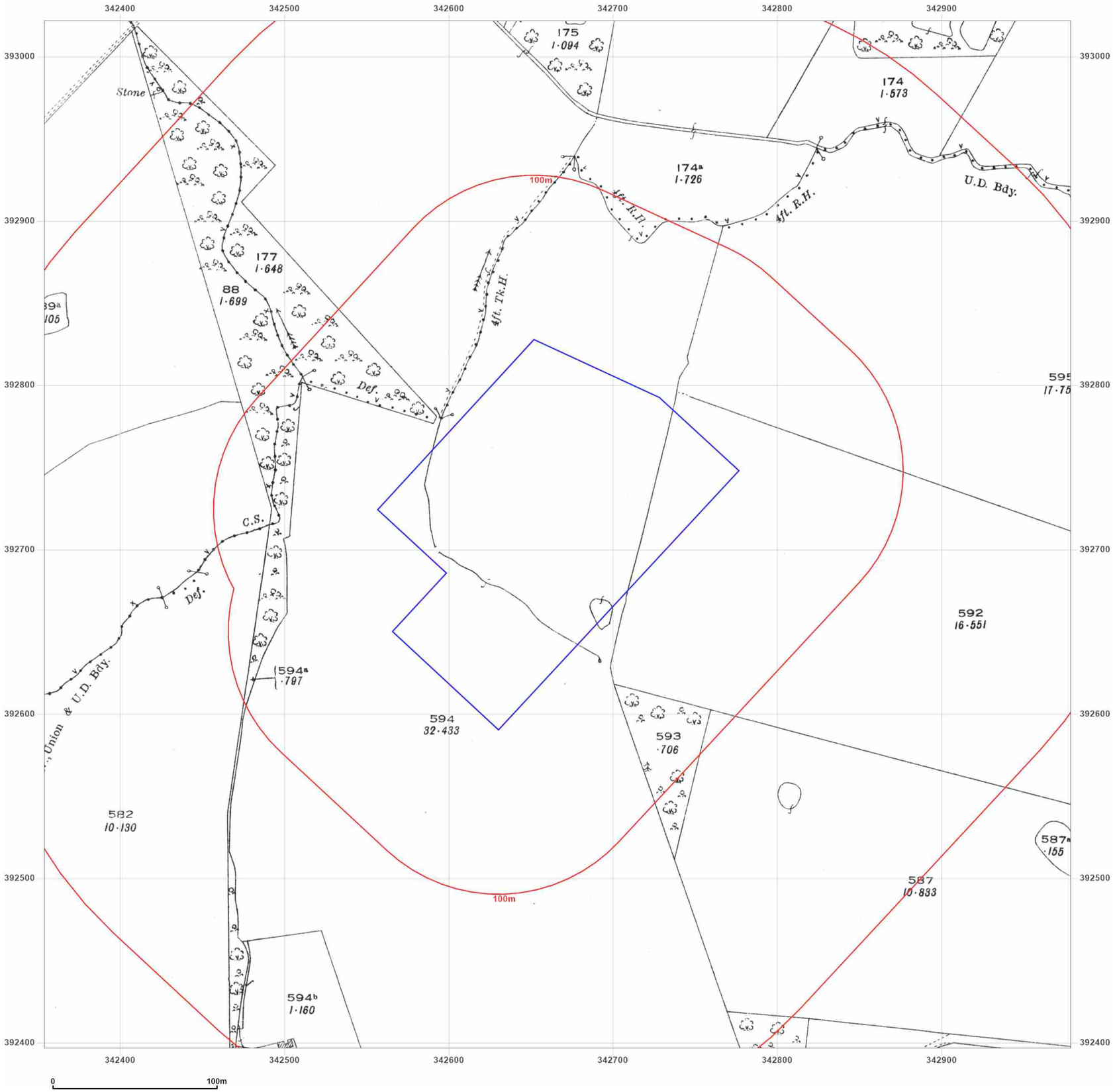

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: County Series

Map date: **1927**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1927
Revised 1927
Edition N/A
Copyright N/A
Levelled N/A

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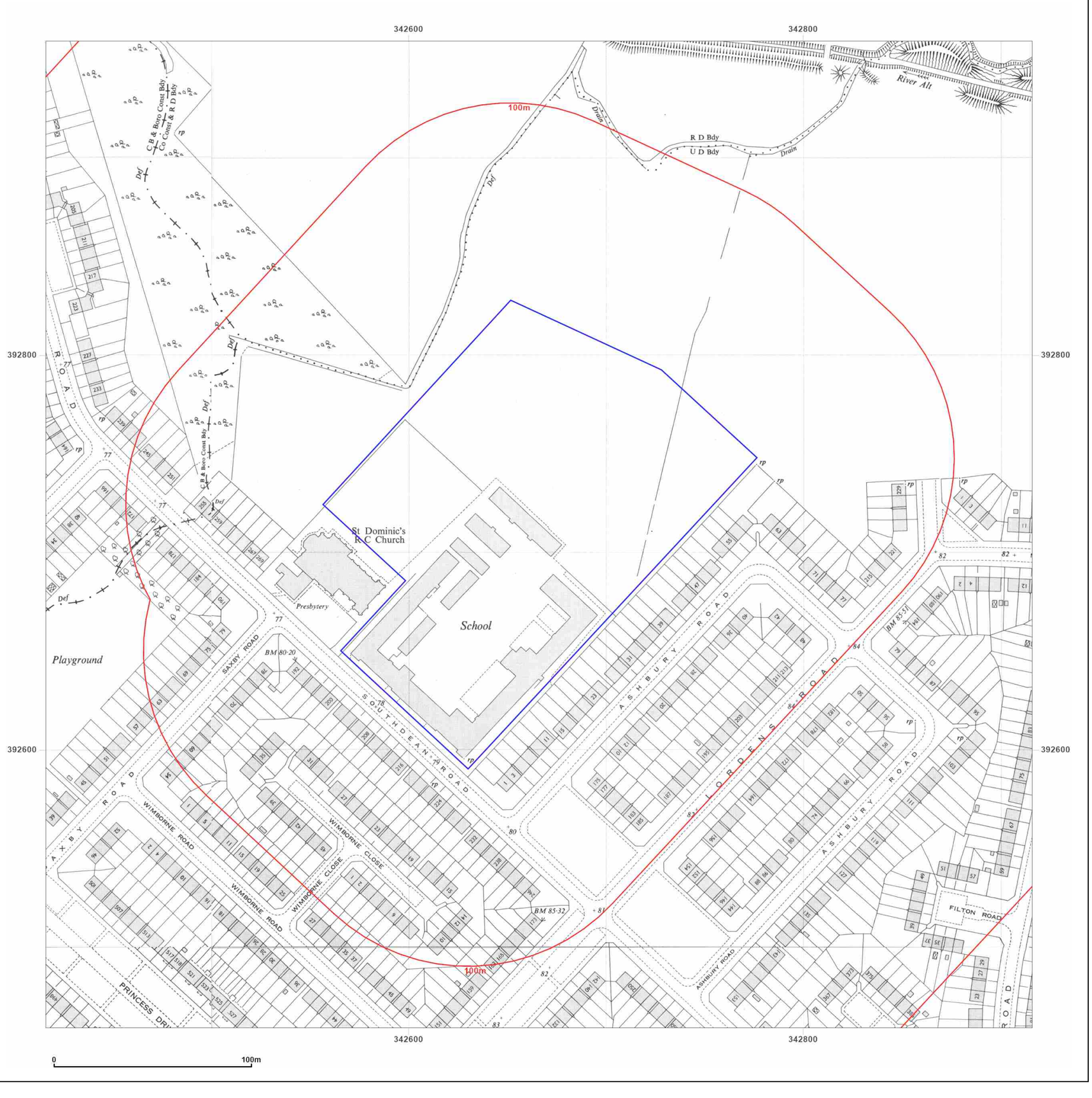

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid

Map date: **1950**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1950 Revised 1950 Edition N/A Copyright N/A Levelled 1947	Surveyed 1950 Revised 1950 Edition N/A Copyright N/A Levelled 1947
Surveyed 1950 Revised 1950 Edition N/A Copyright N/A Levelled 1947	Surveyed 1950 Revised 1950 Edition N/A Copyright N/A Levelled 1947

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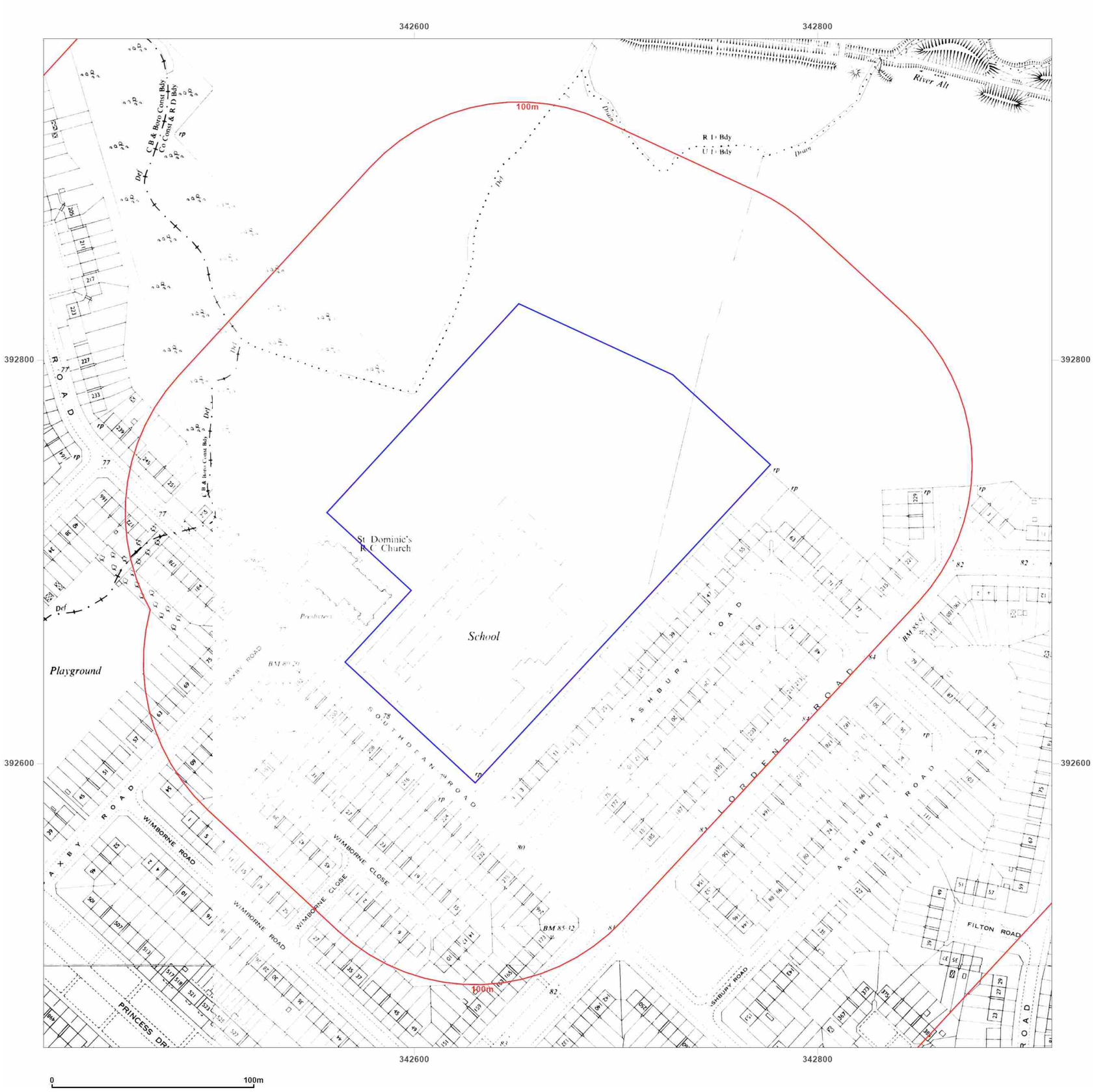

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid

Map date: **1951**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A		Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A		Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A

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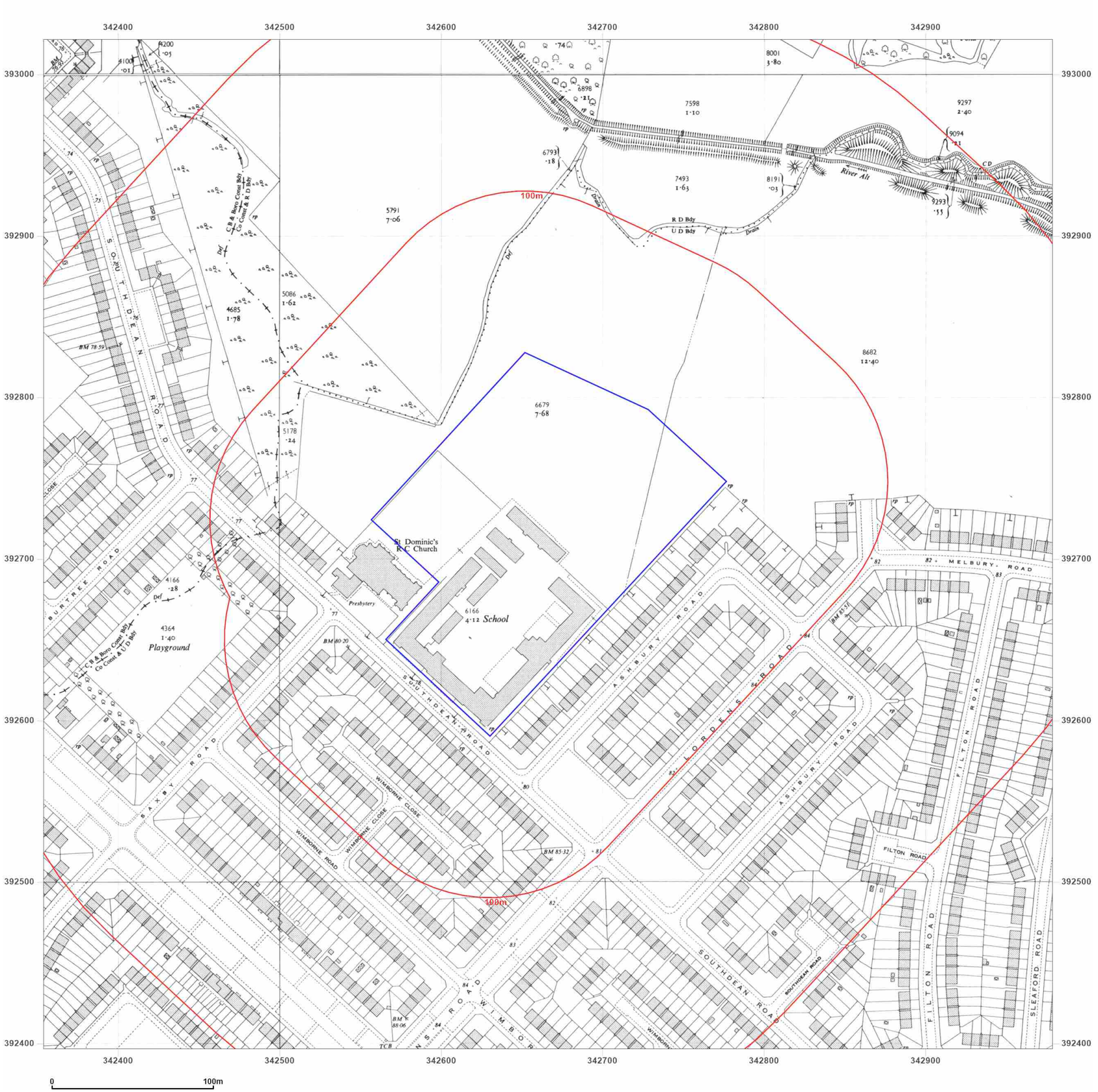

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid

Map date: **1950-1951**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1951
Revised 1951
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1950
Revised 1950
Edition N/A
Copyright N/A
Levelled 1947

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Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid

Map date: **1969**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1968
Revised 1968
Edition N/A
Copyright 1969
Levelled 1960

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Surveyed 1950
Revised 1971
Edition N/A
Copyright 1972
Levelled 1960

Surveyed 1950
Revised 1971
Edition N/A
Copyright 1972
Levelled 1960

Surveyed 1967
Revised 1967
Edition N/A
Copyright 1968
Levelled 1960

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid
Map date: **1968-1972**
Scale: 1:1,250
Printed at: 1:2,000

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Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid

Map date: **1981-1984**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
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Surveyed 1960
Revised 1984
Edition N/A
Copyright 1984
Levelled 1960

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1981
Levelled 1960

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Production date: 22 July 2025

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Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid

Map date: **1987-1990**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
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Surveyed 1960
Revised 1990
Edition N/A
Copyright 1990
Levelled 1960

Surveyed 1960
Revised 1987
Edition N/A
Copyright 1987
Levelled 1960

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Production date: 22 July 2025

Map legend available at:
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Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid

Map date: **1991-1993**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A		Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A
Surveyed N/A Revised N/A Edition N/A Copyright 1993 Levelled N/A		Surveyed N/A Revised N/A Edition N/A Copyright 1991 Levelled N/A

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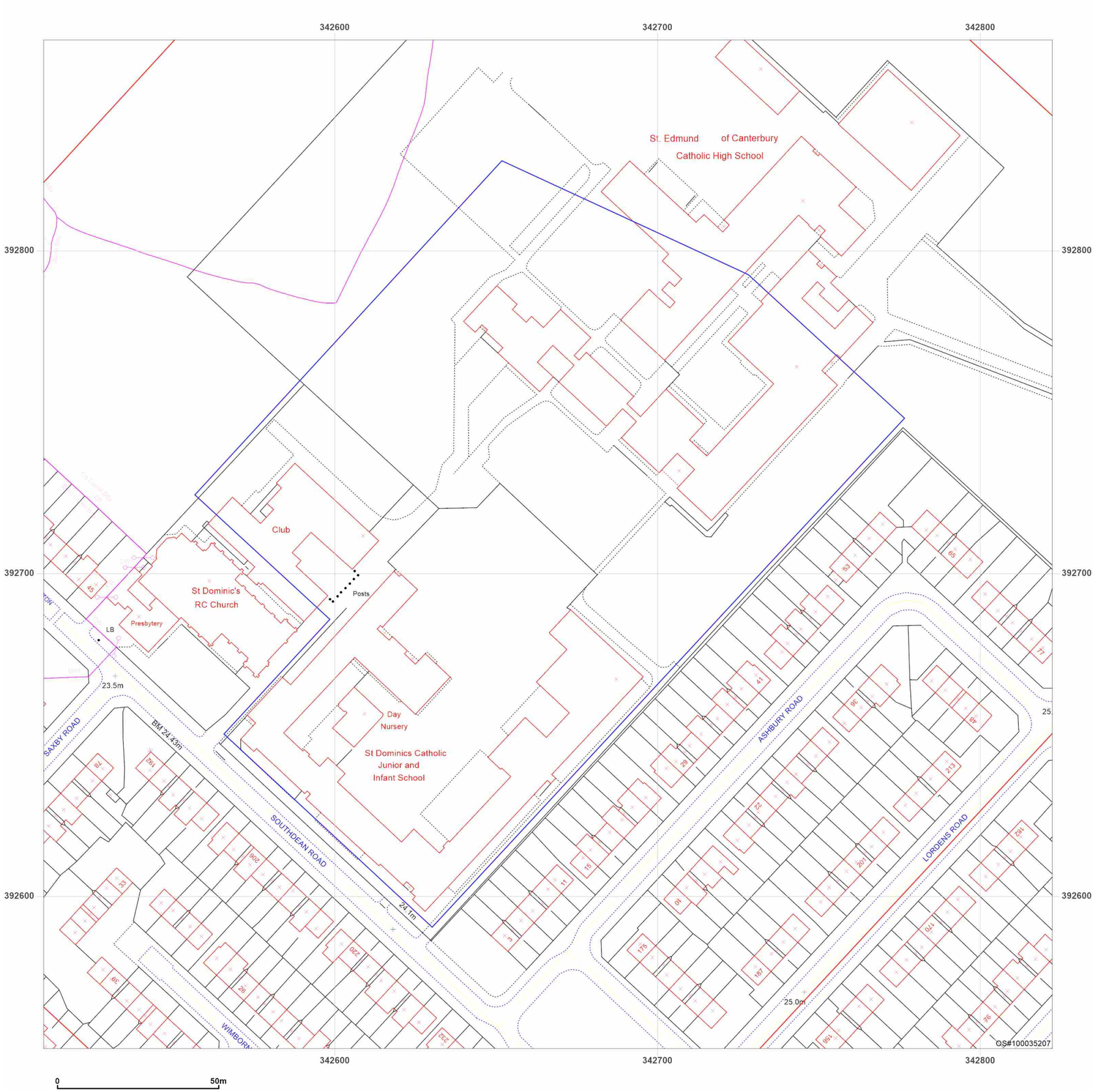

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: LandLine
Map date: **2003**
Scale: 1:1,250
Printed at: 1:1,250

N
W E
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2003

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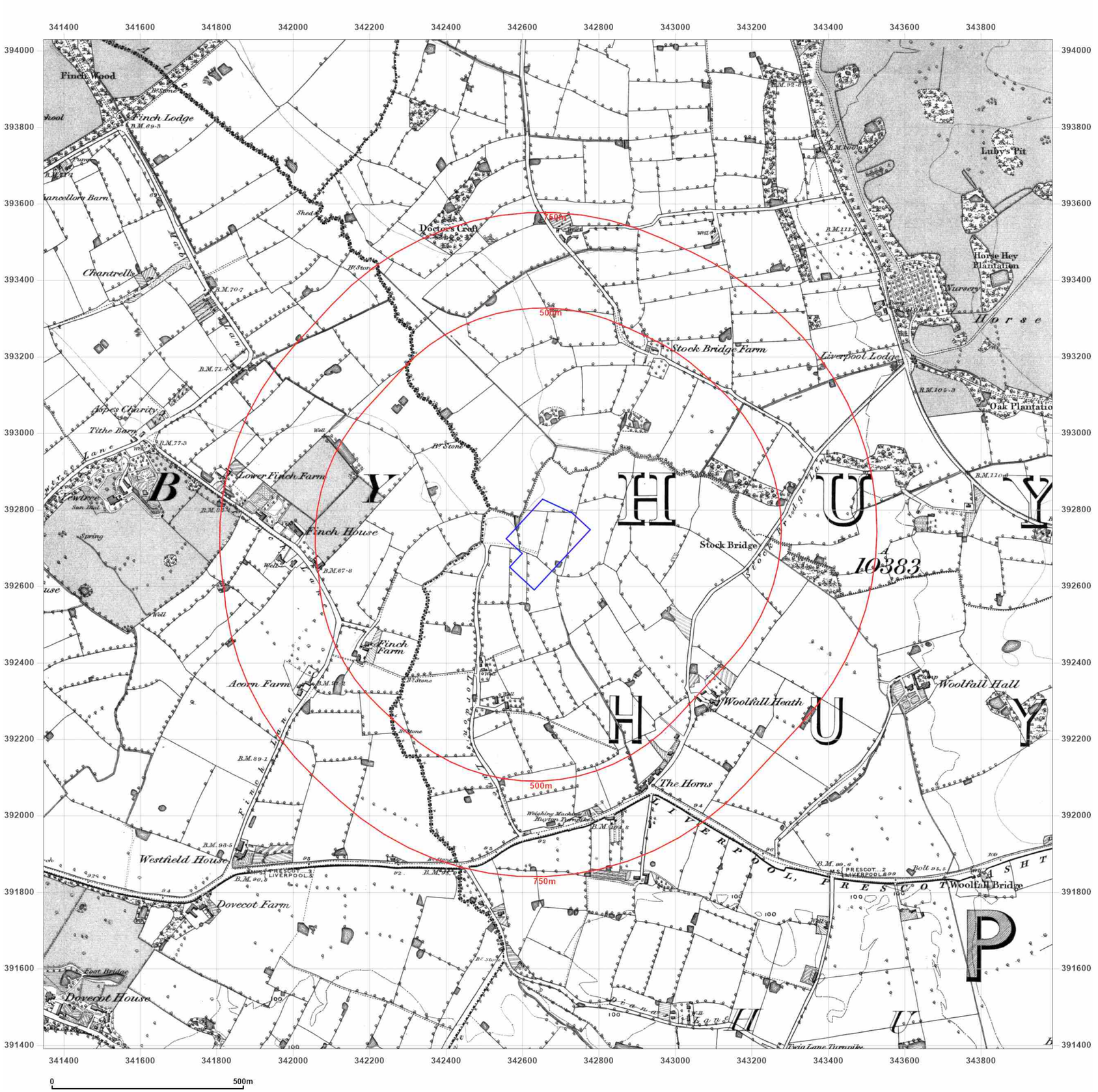

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: County Series

Map date: **1850**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1847
Revised N/A
Edition 1850
Copyright N/A
Levelled N/A

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Production date: 22 July 2025

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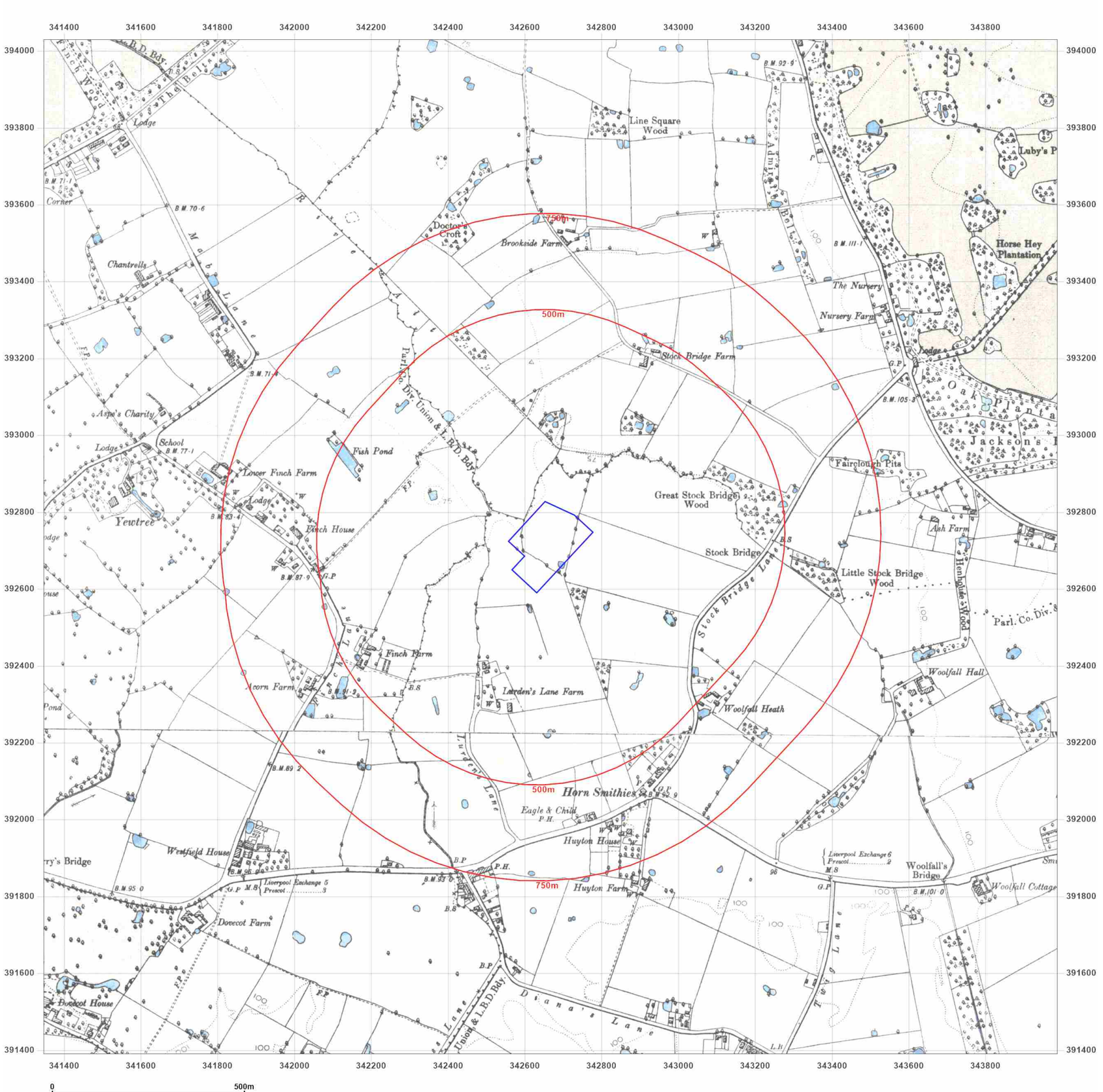

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: County Series

Map date: **1891**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1891
Edition N/A
Copyright N/A
Levelled N/A

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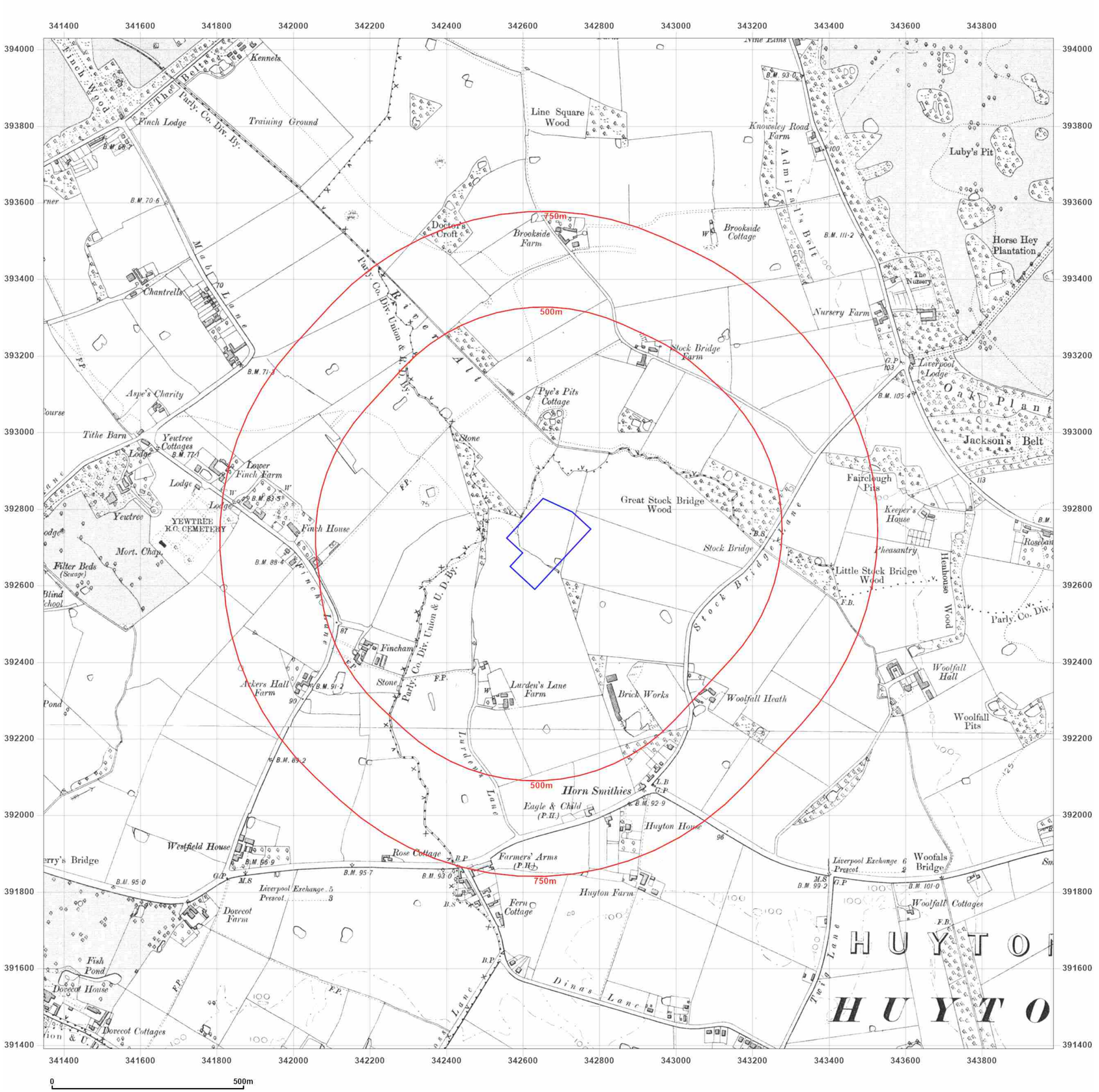

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: County Series

Map date: **1906**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1891
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

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Map legend available at:
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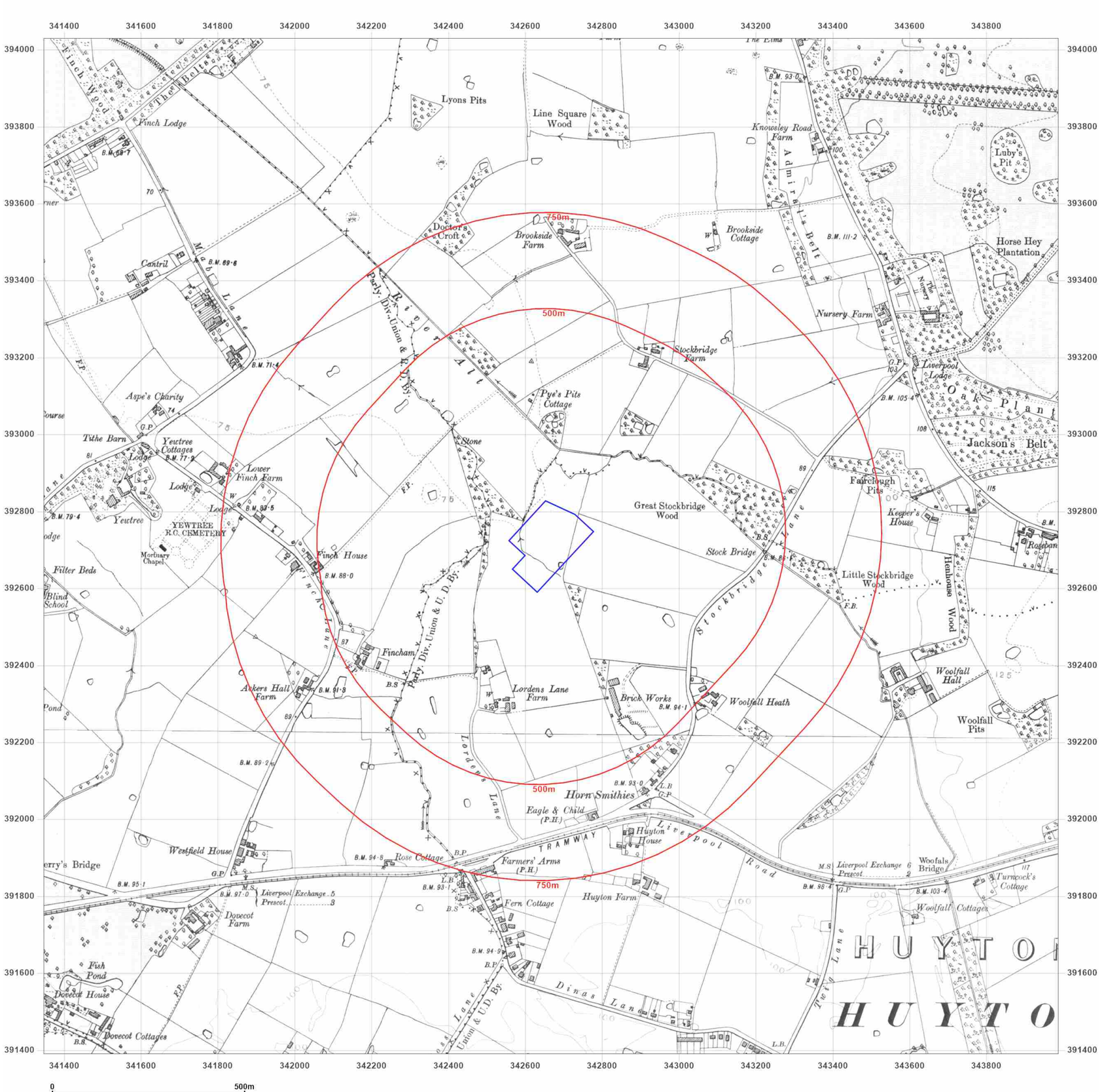

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: County Series

Map date: **1925**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1849
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

Powered by

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Production date: 22 July 2025

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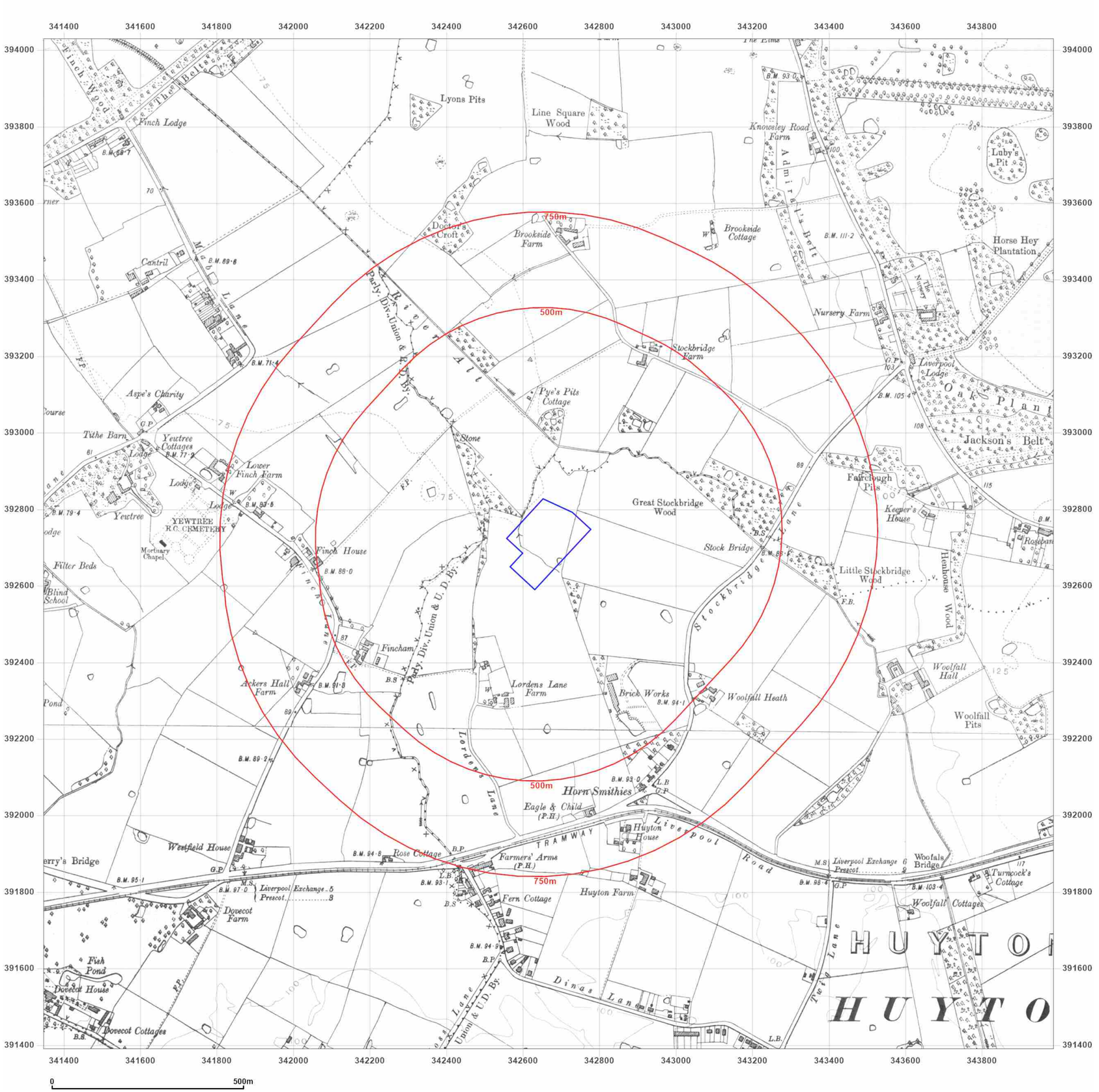

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: County Series

Map date: **1925**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1849
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A

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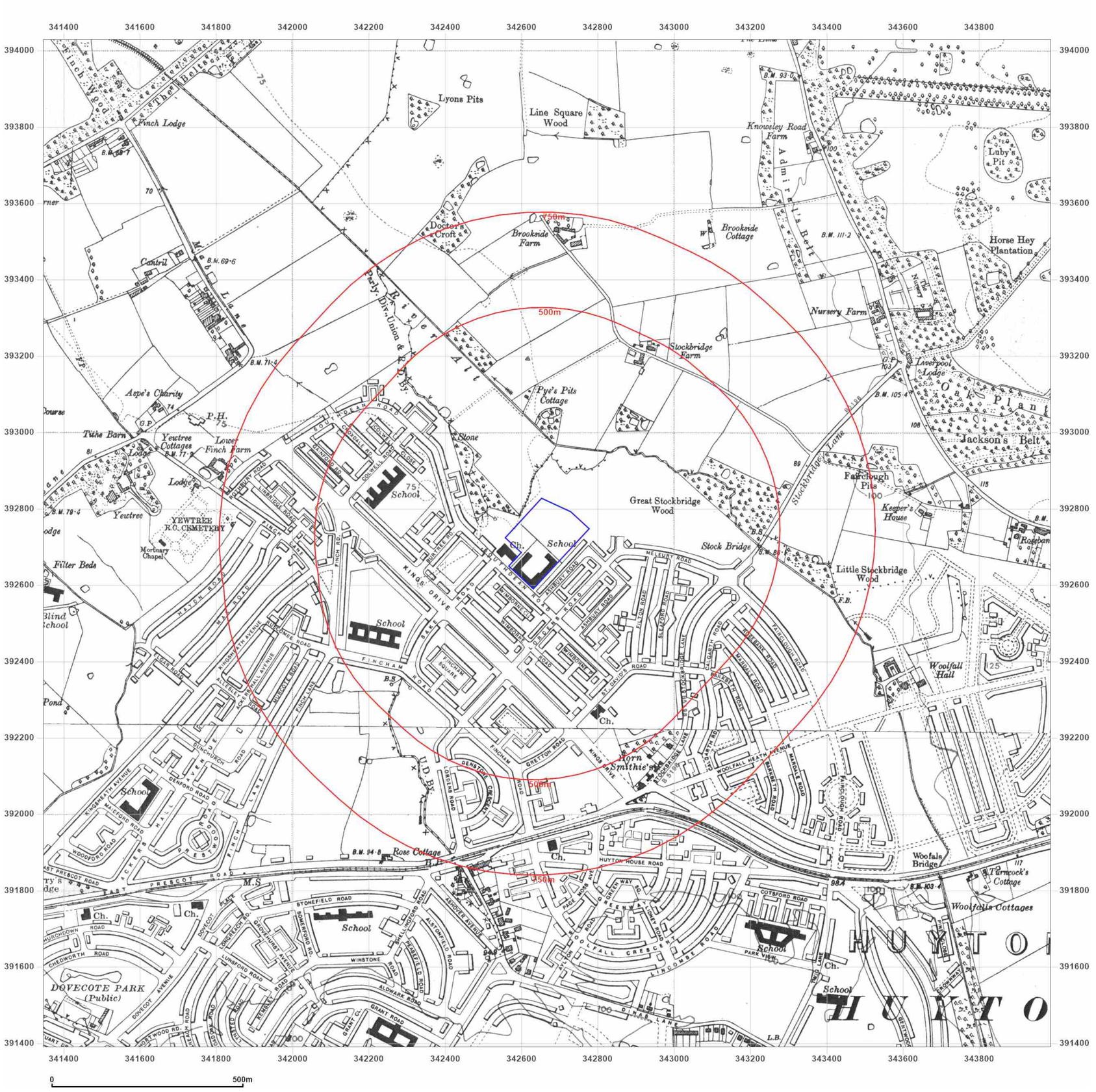

Surveyed 1849
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: County Series
Map date: **1938**
Scale: 1:10,560
Printed at: 1:10,560

N
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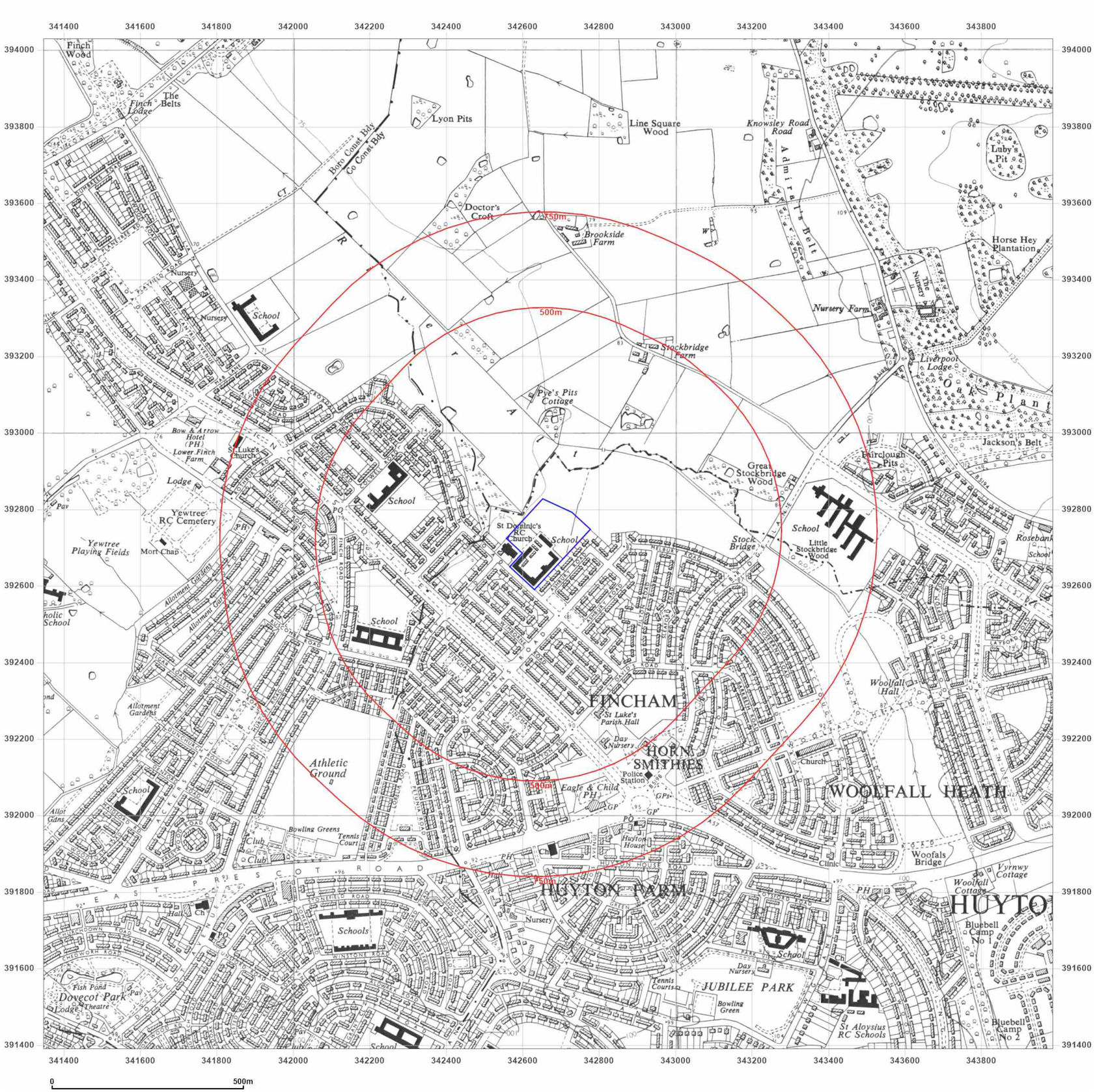

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: Provisional

Map date: **1956**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1954
Revised 1955
Edition N/A
Copyright 1956
Levelled N/A

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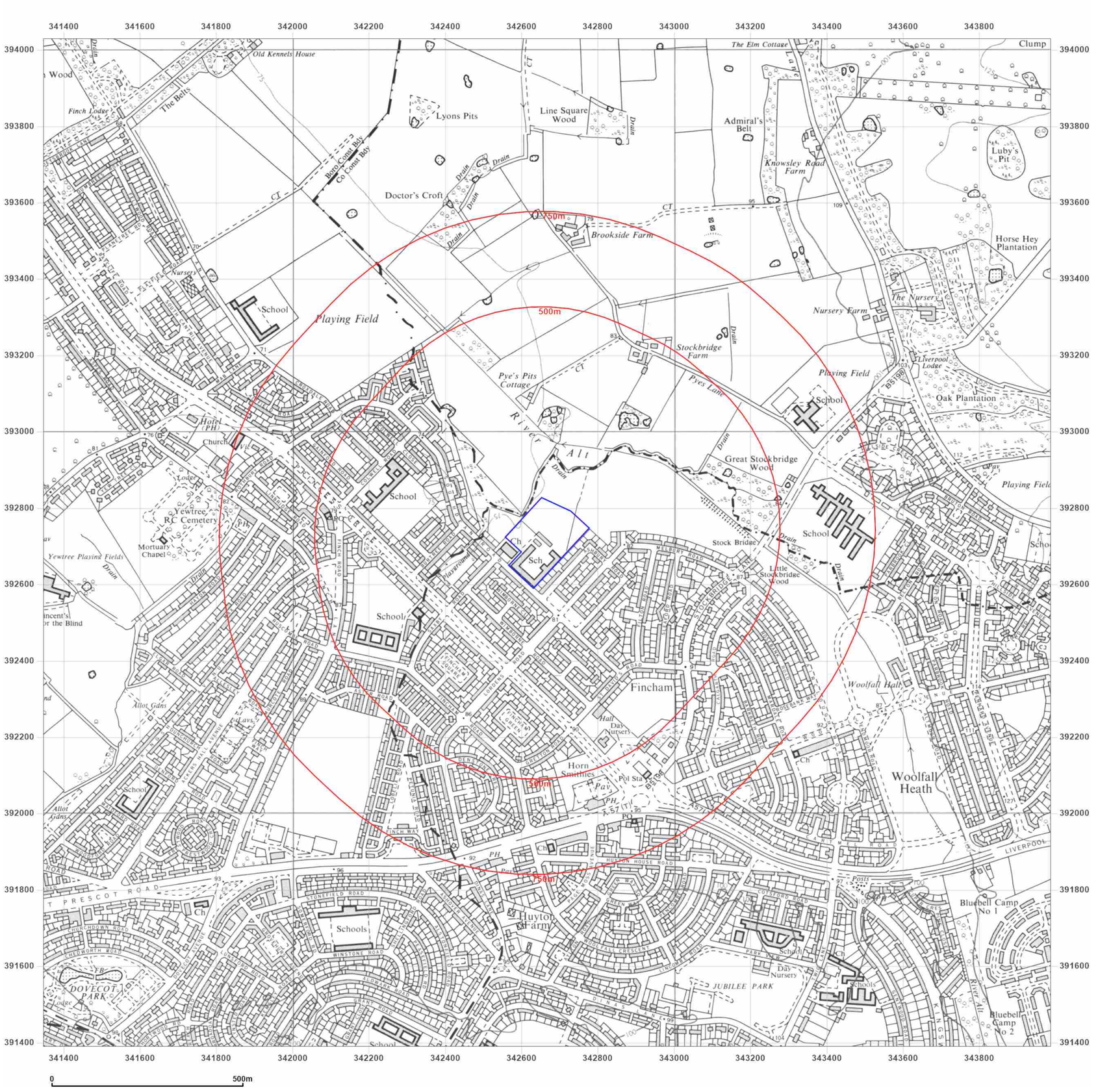

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: Provisional

Map date: **1965**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1965
Revised 1965
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 22 July 2025

Map legend available at:
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Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid

Map date: **1978**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
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Surveyed 1975
Revised 1977
Edition N/A
Copyright 1978
Levelled 1955

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Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid

Map date: **1989**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1987
Revised 1989
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 22 July 2025

Map legend available at:
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Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid
Map date: **2001**
Scale: 1:10,000
Printed at: 1:10,000

N W E S

2001

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Production date: 22 July 2025

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Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N W E S

2010

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Produced by
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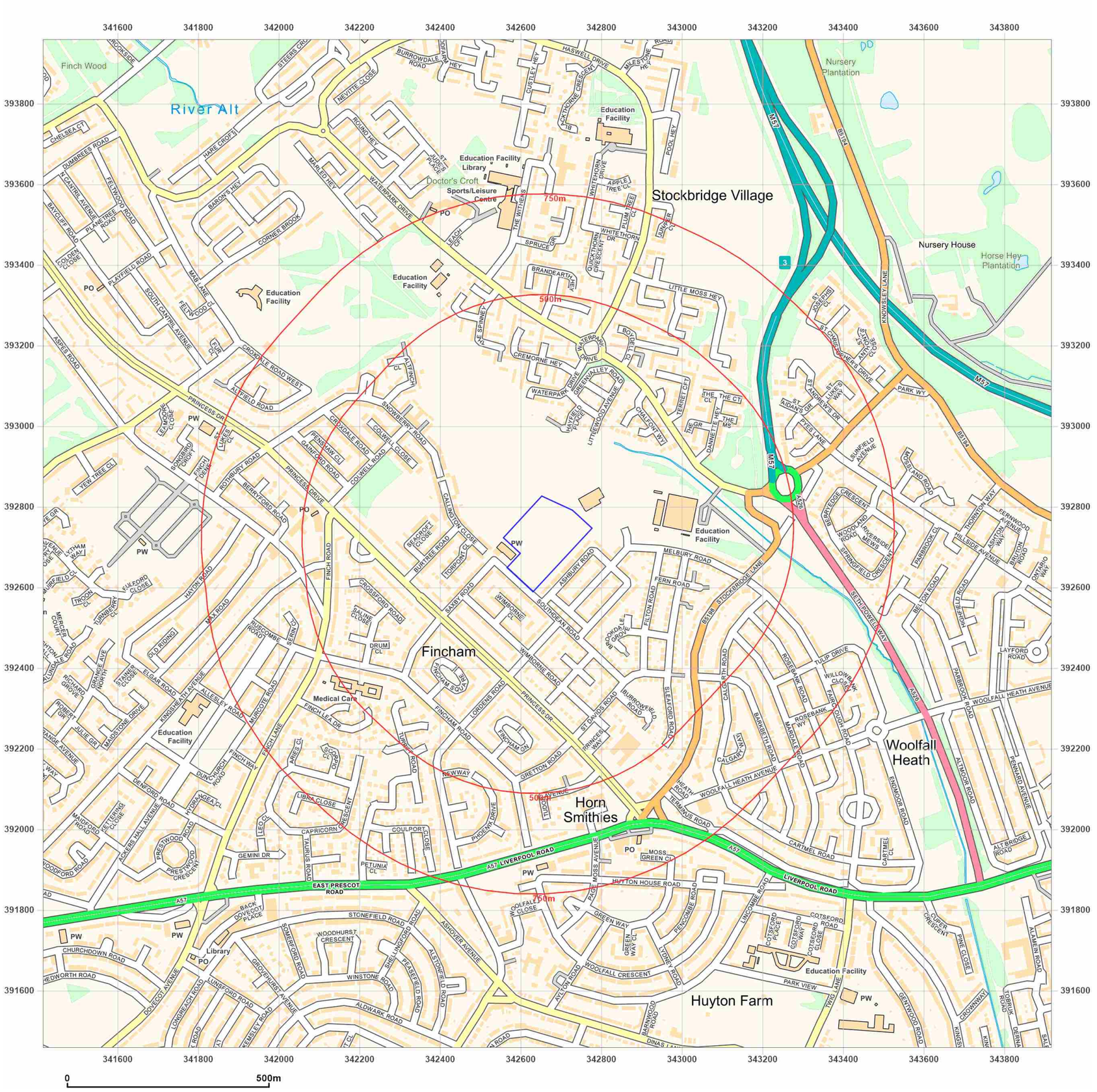

Groundsure INSIGHTS

Site Details:

South Dean Road, Huyton

Client Ref: 4450/LG
Report Ref: GS-GEF-N5E-YR2-156
Grid Ref: 342666, 392709

Map Name: National Grid
Map date: **2025**
Scale: 1:10,000
Printed at: 1:10,000

N
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2025

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Production date: 22 July 2025

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APPENDIX 5

Groundsure Combined Enviro + Geo Insight Report

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

South Dean Road, Huyton

Order Details

Date: 22/07/2025

Your ref: 4450/LG

Our Ref: GS-HB1-RPQ-VM8-HL3

Site Details

Location: 342657 392717

Area: 2.75 ha

Authority: Knowsley Metropolitan Borough Council ↗

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

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 >	0	0	0	13	-
16	1.2	Historical tanks	0	0	0	0	-
16 >	1.3 >	Historical energy features >	0	0	6	17	-
18	1.4	Historical petrol stations	0	0	0	0	-
18	1.5	Historical garages	0	0	0	0	-
18	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
19 >	2.1 >	Historical industrial land uses >	0	0	0	13	-
20	2.2	Historical tanks	0	0	0	0	-
20 >	2.3 >	Historical energy features >	0	0	10	40	-
22	2.4	Historical petrol stations	0	0	0	0	-
23	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
24	3.1	Active or recent landfill	0	0	0	0	-
24	3.2	Historical landfill (BGS records)	0	0	0	0	-
25	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
25	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
25	3.5	Historical waste sites	0	0	0	0	-
25	3.6	Licensed waste sites	0	0	0	0	-
25 >	3.7 >	Waste exemptions >	0	0	2	0	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
27 >	4.1 >	Recent industrial land uses >	0	0	6	-	-
28 >	4.2 >	National Geographic Database (NGD) - Current or recent tanks >	0	0	1	-	-
28	4.3	Current or recent petrol stations	0	0	0	0	-
28	4.4	Electricity cables	0	0	0	0	-
29	4.5	Gas pipelines	0	0	0	0	-

29	4.6	Sites determined as Contaminated Land	0	0	0	0	-
29	4.7	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
29	4.8	Regulated explosive sites	0	0	0	0	-
29	4.9	Hazardous substance storage/usage	0	0	0	0	-
30	4.10	Historical licensed industrial activities (IPC)	0	0	0	0	-
30	4.11	Licensed industrial activities (Part A(1))	0	0	0	0	-
30	4.12	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
30	4.13	Radioactive Substance Authorisations	0	0	0	0	-
30 >	**4.14 >**	**Licensed Discharges to controlled waters >**	0	0	4	0	-
31	4.15	Pollutant release to surface waters (Red List)	0	0	0	0	-
31	4.16	Pollutant release to public sewer	0	0	0	0	-
32	4.17	List 1 Dangerous Substances	0	0	0	0	-
32	4.18	List 2 Dangerous Substances	0	0	0	0	-
32 >	**4.19 >**	**Pollution Incidents (EA/NRW) >**	0	0	0	2	-
32	4.20	Pollution inventory substances	0	0	0	0	-
33	4.21	Pollution inventory waste transfers	0	0	0	0	-
33	4.22	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	**Hydrogeology >**	On site	0-50m	50-250m	250-500m	500-2000m
34 >	**5.1 >**	**Superficial aquifer >**	Identified (within 500m)				
36 >	**5.2 >**	**Bedrock aquifer >**	Identified (within 500m)				
38 >	**5.3 >**	**Groundwater vulnerability >**	Identified (within 50m)				
39	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
39	5.5	Groundwater vulnerability- local information	None (within 0m)				
40 >	**5.6 >**	**Groundwater abstractions >**	0	0	0	0	5
42	5.7	Surface water abstractions	0	0	0	0	0
42 >	**5.8 >**	**Potable abstractions >**	0	0	0	0	2
43 >	**5.9 >**	**Source Protection Zones >**	1	0	0	0	-
43	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	**Hydrology >**	On site	0-50m	50-250m	250-500m	500-2000m

44 >	6.1 >	Water Network (OS MasterMap) >	0	0	2	-	-
45 >	6.2 >	Surface water features >	0	0	1	-	-
45 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
45 >	6.4 >	WFD Surface water bodies >	0	0	1	-	-
46 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
47	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
47	7.2	Historical Flood Events	0	0	0	-	-
47	7.3	Flood Defences	0	0	0	-	-
48	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
48	7.5	Flood Storage Areas	0	0	0	-	-
49	7.6	Flood Zone 2	None (within 50m)				
49	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding >	
50 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)

Page	Section	Groundwater flooding >	
52 >	9.1 >	Groundwater flooding >	Moderate-High (within 50m)

Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
53	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
54	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
54	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
54	10.4	Special Protection Areas (SPA)	0	0	0	0	0
54	10.5	National Nature Reserves (NNR)	0	0	0	0	0
55 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	1
55	10.7	Designated Ancient Woodland	0	0	0	0	0
55	10.8	Biosphere Reserves	0	0	0	0	0
55	10.9	Forest Parks	0	0	0	0	0
56	10.10	Marine Conservation Zones	0	0	0	0	0
56 >	10.11 >	Green Belt >	0	0	0	0	3

56	10.12	Proposed Ramsar sites	0	0	0	0	0
56	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
57	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
57	10.15	Nitrate Sensitive Areas	0	0	0	0	0
57 >	**10.16 >**	**Nitrate Vulnerable Zones >**	1	0	0	0	2
58 >	**10.17 >**	**SSSI Impact Risk Zones >**	1	-	-	-	-
59	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
60	11.1	World Heritage Sites	0	0	0	-	-
60	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
60	11.3	National Parks	0	0	0	-	-
60	11.4	Listed Buildings	0	0	0	-	-
61	11.5	Conservation Areas	0	0	0	-	-
61	11.6	Scheduled Ancient Monuments	0	0	0	-	-
61	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	**Agricultural designations >**	On site	0-50m	50-250m	250-500m	500-2000m
62 >	**12.1 >**	**Agricultural Land Classification >**	Urban (within 250m)				
63	12.2	Open Access Land	0	0	0	-	-
63	12.3	Tree Felling Licences	0	0	0	-	-
63	12.4	Environmental Stewardship Schemes	0	0	0	-	-
63	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
64	13.1	Priority Habitat Inventory	0	0	0	-	-
64	13.2	Habitat Networks	0	0	0	-	-
64	13.3	Open Mosaic Habitat	0	0	0	-	-
64	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
65 >	**14.1 >**	**10k Availability >**	Identified (within 500m)				
66	14.2	Artificial and made ground (10k)	0	0	0	0	-

67	14.3	Superficial geology (10k)	0	0	0	0	-
67	14.4	Landslip (10k)	0	0	0	0	-
68	14.5	Bedrock geology (10k)	0	0	0	0	-
68	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	**Geology 1:50,000 scale >**	On site	0-50m	50-250m	250-500m	500-2000m
69 >	**15.1 >**	**50k Availability >**	Identified (within 500m)				
70	15.2	Artificial and made ground (50k)	0	0	0	0	-
70	15.3	Artificial ground permeability (50k)	0	0	-	-	-
71 >	**15.4 >**	**Superficial geology (50k) >**	1	0	1	1	-
72 >	**15.5 >**	**Superficial permeability (50k) >**	Identified (within 50m)				
72	15.6	Landslip (50k)	0	0	0	0	-
72	15.7	Landslip permeability (50k)	None (within 50m)				
73 >	**15.8 >**	**Bedrock geology (50k) >**	1	0	1	0	-
74 >	**15.9 >**	**Bedrock permeability (50k) >**	Identified (within 50m)				
74	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
75	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	**Natural ground subsidence >**					
76 >	**17.1 >**	**Shrink swell clays >**	Very low (within 50m)				
77 >	**17.2 >**	**Running sands >**	Very low (within 50m)				
78 >	**17.3 >**	**Compressible deposits >**	Negligible (within 50m)				
79 >	**17.4 >**	**Collapsible deposits >**	Very low (within 50m)				
80 >	**17.5 >**	**Landslides >**	Very low (within 50m)				
81 >	**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
83 >	**18.1 >**	**BritPits >**	0	0	0	1	-
84 >	**18.2 >**	**Surface ground workings >**	0	0	7	-	-
84	18.3	Underground workings	0	0	0	0	0
85	18.4	Underground mining extents	0	0	0	0	-

85	18.5	Historical Mineral Planning Areas	0	0	0	0	-
85	18.6	Non-coal mining	0	0	0	0	0
85	18.7	JPB mining areas	None (within 0m)				
85	18.8	The Coal Authority non-coal mining	0	0	0	0	-
86	18.9	Researched mining	0	0	0	0	-
86	18.10	Mining record office plans	0	0	0	0	-
86	18.11	BGS mine plans	0	0	0	0	-
86	18.12	Coal mining	None (within 0m)				
87	18.13	Brine areas	None (within 0m)				
87	18.14	Gypsum areas	None (within 0m)				
87	18.15	Tin mining	None (within 0m)				
87	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
88	19.1	Natural cavities	0	0	0	0	-
88	19.2	Mining cavities	0	0	0	0	0
88	19.3	Reported recent incidents	0	0	0	0	-
88	19.4	Historical incidents	0	0	0	0	-
Page	Section	**Radon** >					
90 >	**20.1** >	**Radon** >	Less than 1% (within 0m)				
Page	Section	**Soil chemistry** >	On site	0-50m	50-250m	250-500m	500-2000m
92 >	**21.1** >	**BGS Estimated Background Soil Chemistry** >	1	0	-	-	-
92	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
92	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
93	22.1	Underground railways (London)	0	0	0	-	-
93	22.2	Underground railways (Non-London)	0	0	0	-	-
93	22.3	Railway tunnels	0	0	0	-	-
93	22.4	Historical railway and tunnel features	0	0	0	-	-
93	22.5	Royal Mail tunnels	0	0	0	-	-

94	22.6	Historical railways	0	0	0	-	-
94	22.7	Railways	0	0	0	-	-
94	22.8	Crossrail 2	0	0	0	0	-
94	22.9	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 20/05/2023

Site Area: 2.75ha

Recent site history - 2022 aerial photograph

Capture Date: 18/10/2022

Site Area: 2.75ha

Recent site history - 2015 aerial photograph

Capture Date: 11/06/2015

Site Area: 2.75ha

Recent site history - 2001 aerial photograph

Capture Date: 01/05/2001

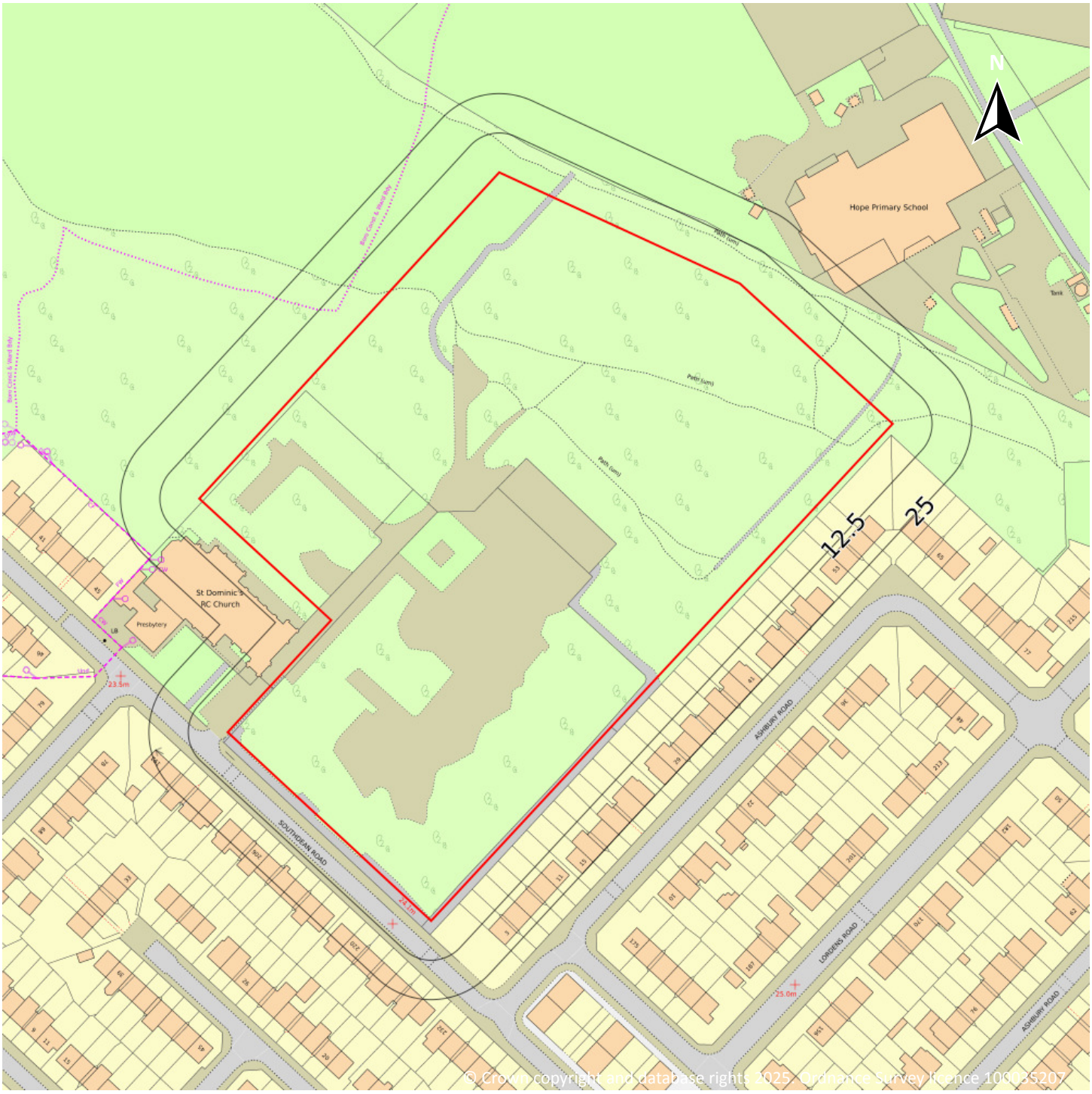
Site Area: 2.75ha

Recent site history - 2000 aerial photograph

Capture Date: 21/07/2000

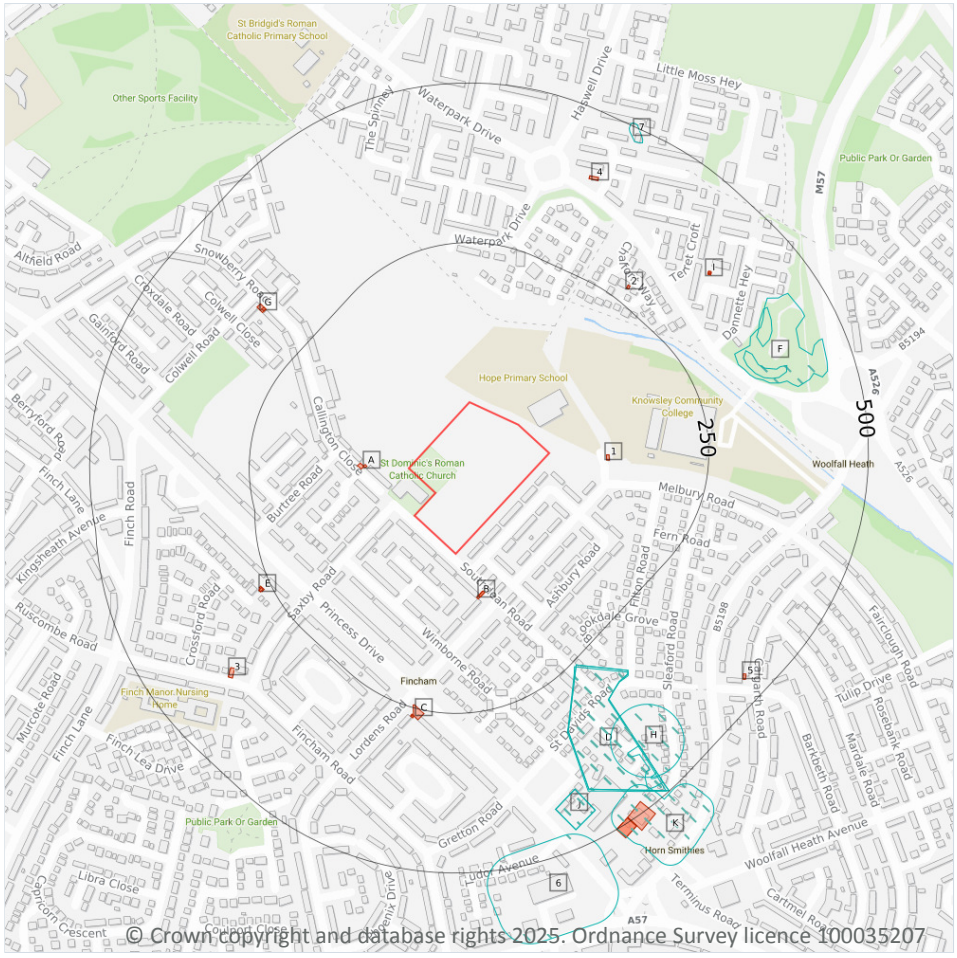
Site Area: 2.75ha

OS MasterMap site plan



Site Area: 2.75ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical energy features

1.1 Historical industrial land uses

Records within 500m	13

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
D	257m SE	Brick Works	1925	915626

ID	Location	Land use	Dates present	Group ID
D	257m SE	Brick Works	1925	892769
D	257m SE	Brick Works	1906	919032
F	327m NE	Unspecified Heaps	1989	837777
F	339m NE	Unspecified Heap	1978	842930
H	362m SE	Smithies	1978	821765
F	373m NE	Unspecified Heap	1978	842929
H	412m SE	Unspecified Ground Workings	1906	814906
J	413m SE	Nursery	1956	985849
J	413m SE	Nursery	1965	1001403
K	457m SE	Smithies	1956	957535
6	472m S	Smithies	1965	821766
7	479m NE	Unspecified Pit	1906	829409

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	0

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'.

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	23

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
A	66m W	Electricity Substation	1981	90851
A	71m W	Electricity Substation	1996	76606
B	72m SE	Electricity Substation	1972	85914
B	72m SE	Electricity Substation	1984 - 1990	76798
1	90m E	Electricity Substation	1972 - 1990	73301
C	245m S	Electricity Substation	1968 - 1969	70782
C	260m S	Electricity Substation	1978 - 1991	71194
C	261m S	Electricity Substation	1997	74139
E	262m SW	Electricity Substation	1996	91020
E	264m SW	Electricity Substation	1972 - 1981	85321
2	273m NE	Electricity Substation	1984 - 1993	79286
G	333m NW	Electricity Substation	1972	69695
G	334m NW	Electricity Substation	1981 - 1996	75139
3	370m SW	Electricity Substation	1976 - 1999	88448
I	375m NE	Electricity Substation	1987	87258
I	375m NE	Electricity Substation	1993	75917
I	375m NE	Electricity Substation	1975 - 1979	71854
I	376m NE	Electricity Substation	1988	71282
4	396m NE	Electricity Substation	1971 - 1993	92046
5	458m SE	Electricity Substation	1986 - 1991	87625
K	484m SE	Electricity Substation	1950 - 1969	80107
K	493m SE	Electricity Substation	1987 - 1991	75535
K	493m SE	Electricity Substation	1997	90762

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	0

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'.

This data is sourced from Ordnance Survey / Groundsure.

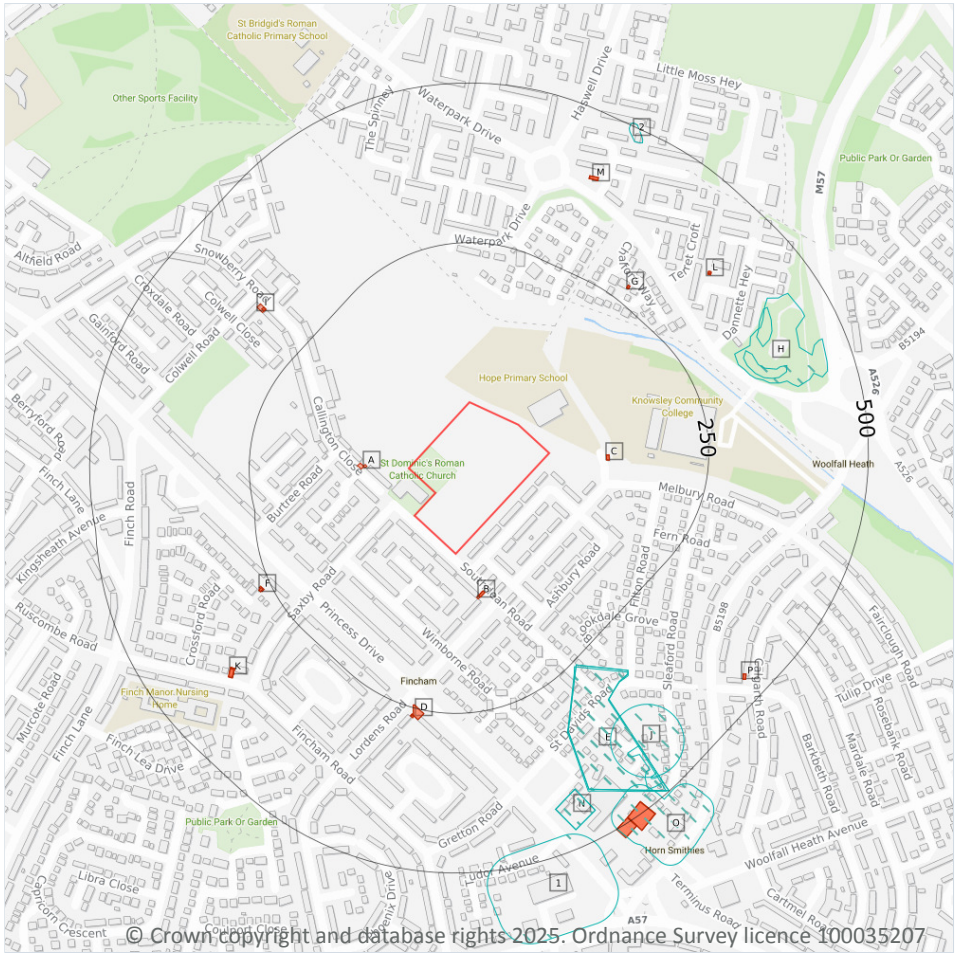
1.6 Historical military land

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



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Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical energy features

2.1 Historical industrial land uses

Records within 500m	13

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 19 >**

ID	Location	Land Use	Date	Group ID
E	257m SE	Brick Works	1925	915626
E	257m SE	Brick Works	1925	892769
E	257m SE	Brick Works	1906	919032

ID	Location	Land Use	Date	Group ID
H	327m NE	Unspecified Heaps	1989	837777
H	339m NE	Unspecified Heap	1978	842930
J	362m SE	Smithies	1978	821765
H	373m NE	Unspecified Heap	1978	842929
J	412m SE	Unspecified Ground Workings	1906	814906
N	413m SE	Nursery	1956	985849
N	413m SE	Nursery	1965	1001403
O	457m SE	Smithies	1956	957535
1	472m S	Smithies	1965	821766
2	479m NE	Unspecified Pit	1906	829409

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**0**

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'.

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**50**

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 19 >**

ID	Location	Land Use	Date	Group ID
A	66m W	Electricity Substation	1981	90851
A	71m W	Electricity Substation	1996	76606
B	72m SE	Electricity Substation	1972	85914

ID	Location	Land Use	Date	Group ID
B	72m SE	Electricity Substation	1984	76798
B	72m SE	Electricity Substation	1990	76798
C	90m E	Electricity Substation	1984	73301
C	90m E	Electricity Substation	1990	73301
C	90m E	Electricity Substation	1972	73301
D	245m S	Electricity Substation	1969	70782
D	246m S	Electricity Substation	1968	70782
D	260m S	Electricity Substation	1978	71194
D	260m S	Electricity Substation	1987	71194
D	260m S	Electricity Substation	1991	71194
D	261m S	Electricity Substation	1997	74139
F	262m SW	Electricity Substation	1996	91020
F	264m SW	Electricity Substation	1972	85321
F	264m SW	Electricity Substation	1981	85321
G	273m NE	Electricity Substation	1993	79286
G	274m NE	Electricity Substation	1988	79286
G	274m NE	Electricity Substation	1984	79286
I	333m NW	Electricity Substation	1972	69695
I	334m NW	Electricity Substation	1996	75139
I	334m NW	Electricity Substation	1981	75139
K	370m SW	Electricity Substation	1995	88448
K	370m SW	Electricity Substation	1997	88448
K	370m SW	Electricity Substation	1997	88448
K	370m SW	Electricity Substation	1998	88448
K	370m SW	Electricity Substation	1996	88448
K	370m SW	Electricity Substation	1999	88448
K	371m SW	Electricity Substation	1976	88448
K	372m SW	Electricity Substation	1981	88448

ID	Location	Land Use	Date	Group ID
L	375m NE	Electricity Substation	1987	87258
L	375m NE	Electricity Substation	1993	75917
L	375m NE	Electricity Substation	1975	71854
L	375m NE	Electricity Substation	1979	71854
L	376m NE	Electricity Substation	1988	71282
M	396m NE	Electricity Substation	1993	92046
M	397m NE	Electricity Substation	1988	92046
M	397m NE	Electricity Substation	1971	92046
M	397m NE	Electricity Substation	1984	92046
P	458m SE	Electricity Substation	1986	87625
P	458m SE	Electricity Substation	1988	87625
P	458m SE	Electricity Substation	1991	87625
O	484m SE	Electricity Substation	1950	80107
O	484m SE	Electricity Substation	1969	80107
O	484m SE	Electricity Substation	1968	80107
O	484m SE	Electricity Substation	1950	80107
O	493m SE	Electricity Substation	1987	75535
O	493m SE	Electricity Substation	1991	75535
O	493m SE	Electricity Substation	1997	90762

This data is sourced from Ordnance Survey / Groundsure.

2.4 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. 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.

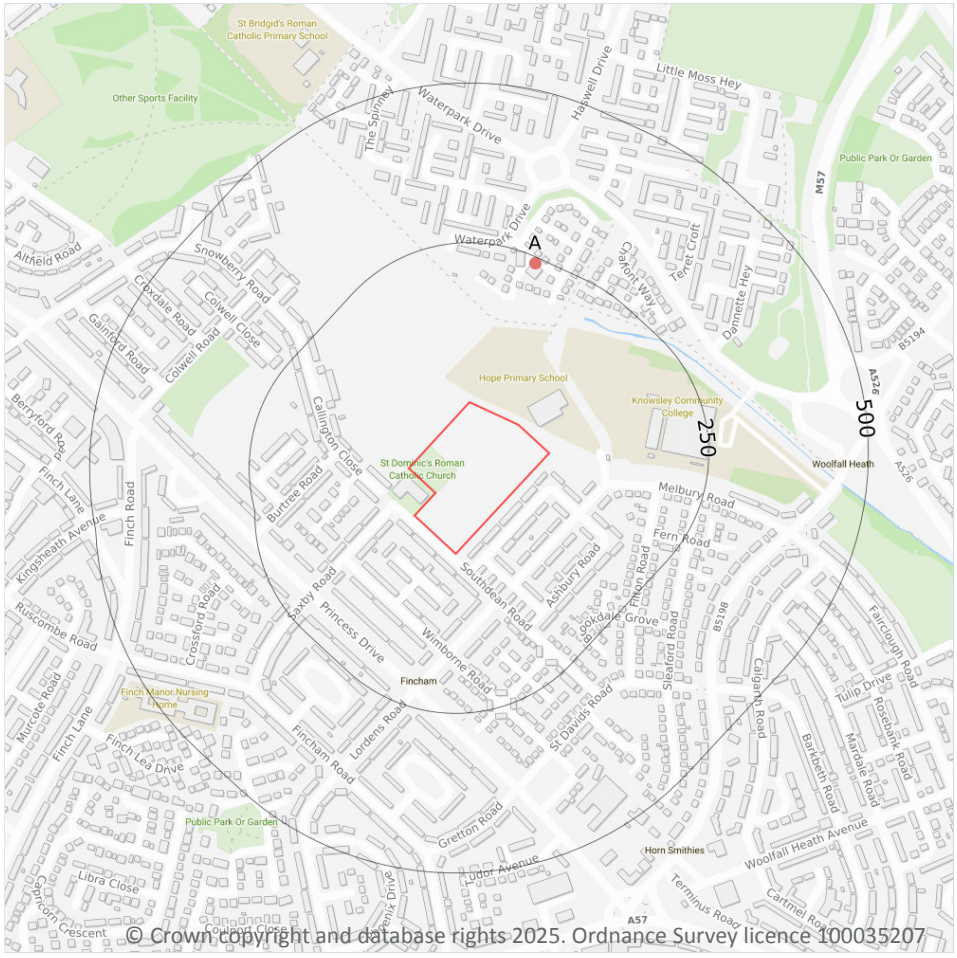
2.5 Historical garages

Records within 500m	0

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'.

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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	0

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.

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	2

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.

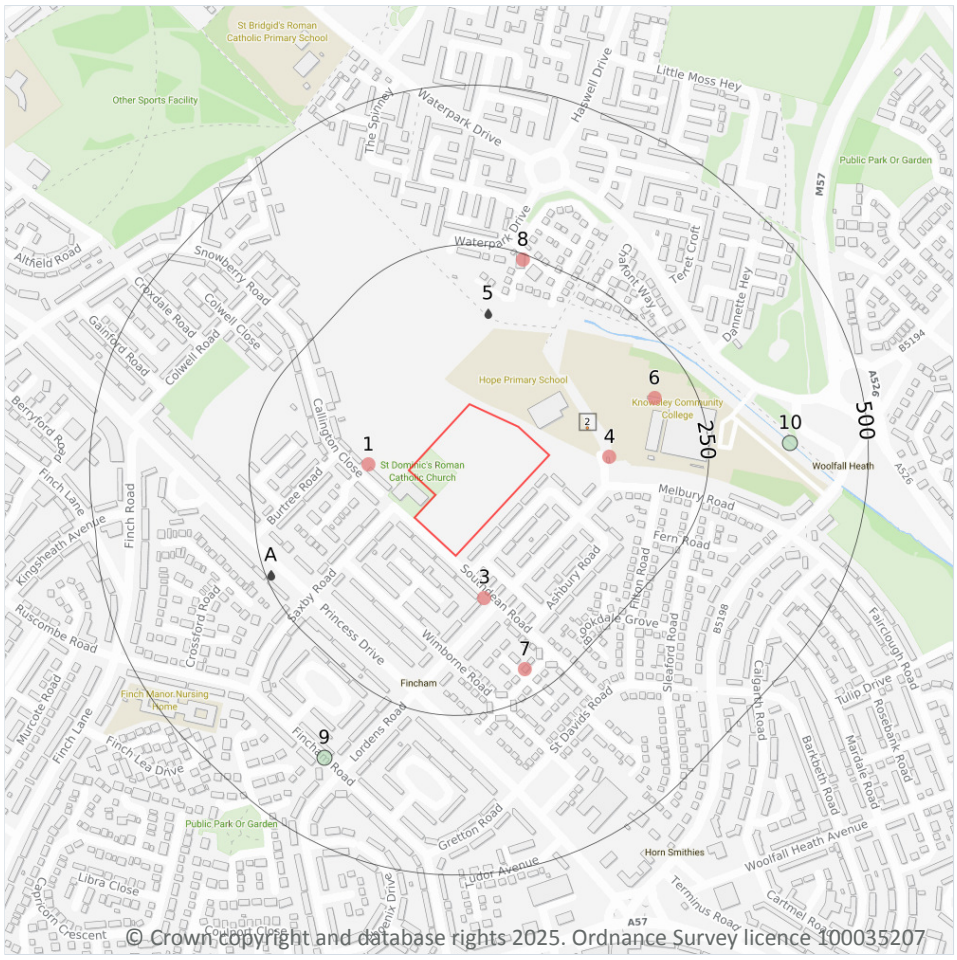
Features are displayed on the Waste and landfill map on **page 24 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	240m NE	-	WEX111804	Treating waste exemption	Not on a farm	Screening and blending of waste

ID	Location	Site	Reference	Category	Sub-Category	Description
A	240m NE	-	WEX111804	Using waste exemption	Not on a farm	Use of waste in construction

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

4 Current industrial land use



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Site Outline

Search buffers in metres (m)

Recent industrial land uses

NGD current or recent tanks

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	6

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 27 >**

ID	Location	Company	Address	Activity	Category
1	64m W	Electricity Sub Station	Merseyside, L14	Electrical Features	Infrastructure and Facilities
3	79m SE	Electricity Sub Station	Merseyside, L14	Electrical Features	Infrastructure and Facilities
4	95m E	Electricity Sub Station	Merseyside, L14	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
6	187m NE	Electricity Sub Station	Merseyside, L14	Electrical Features	Infrastructure and Facilities
7	208m SE	Time Travel Private Hire	10, Wimborne Place, Huyton, Merseyside, L14 8AA	Airlines and Airline Services	Transport, Storage and Delivery
8	241m N	Electricity Sub Station	Merseyside, L28	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 National Geographic Database (NGD) - Current or recent tanks

Records within 250m	**1**

Current or recent tanks identified from the Ordnance Survey NGD.

Features are displayed on the Current industrial land use map on **page 27 >**

ID	Location	Tank description	Activity	Date first identified
2	71m NE	Roofed Storage Tank	Commercial Activity: Distribution Or Storage	12/05/2016

This data is sourced from Ordnance Survey.

4.3 Current or recent petrol stations

Records within 500m	**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.4 Electricity cables

Records within 500m	**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.5 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.6 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.7 Control of Major Accident Hazards (COMAH)

Records within 500m	0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.8 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.9 Hazardous substance storage/usage

Records within 500m	0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.10 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

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

4.11 Licensed industrial activities (Part A(1))

Records within 500m	0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

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

4.12 Licensed pollutant release (Part A(2)/B)

Records within 500m	0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.13 Radioactive Substance Authorisations

Records within 500m	0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

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

4.14 Licensed Discharges to controlled waters

Records within 500m	4

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 27 >**

ID	Location	Address	Details	
5	145m N	HUYTONFARMPS,KNOWSLEY,MERSEYSIDE	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 016982106 Permit Version: 1 Receiving Water: RIVER ALT	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1900 Revocation Date: 11/08/2005
A	243m W	HUYTONFARMPUMPINGSTATION,PAGEMOSSAVENUE,KNOWSLEY,MERSEYSIDE	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 016997049 Permit Version: 1 Receiving Water: UN-NAMED TRIB. OF RIVER ALT	Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: 12/10/2001 Effective Date: 12/10/2001 Revocation Date: 10/08/2005
A	243m W	HUYTONFARMPUMPINGSTATION,PAGEMOSSAVENUE,KNOWSLEY,MERSEYSIDE	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016997049 Permit Version: 2 Receiving Water: UN-NAMED TRIB. OF RIVER ALT	Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 11/08/2005 Effective Date: 11/08/2005 Revocation Date: -
A	243m W	HUYTONFARMPUMPINGSTATION,PAGEMOSSAVENUE,KNOWSLEY,MERSEYSIDE	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: 016997049 Permit Version: 2 Receiving Water: UN-NAMED TRIB. OF RIVER ALT	Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 11/08/2005 Effective Date: 11/08/2005 Revocation Date: -

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

4.15 Pollutant release to surface waters (Red List)

Records within 500m	**0**

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

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

4.16 Pollutant release to public sewer

Records within 500m	**0**

Discharges of Special Category Effluents to the public sewer.

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

4.17 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

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

4.18 List 2 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

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

4.19 Pollution Incidents (EA/NRW)

Records within 500m	2

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 27 >**

ID	Location	Details	
9	378m SW	Incident Date: 05/01/2002 Incident Identification: 50662 Pollutant: Specific Waste Materials Pollutant Description: Tyres	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
10	378m E	Incident Date: 31/10/2003 Incident Identification: 199228 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.20 Pollution inventory substances

Records within 500m	0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.21 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

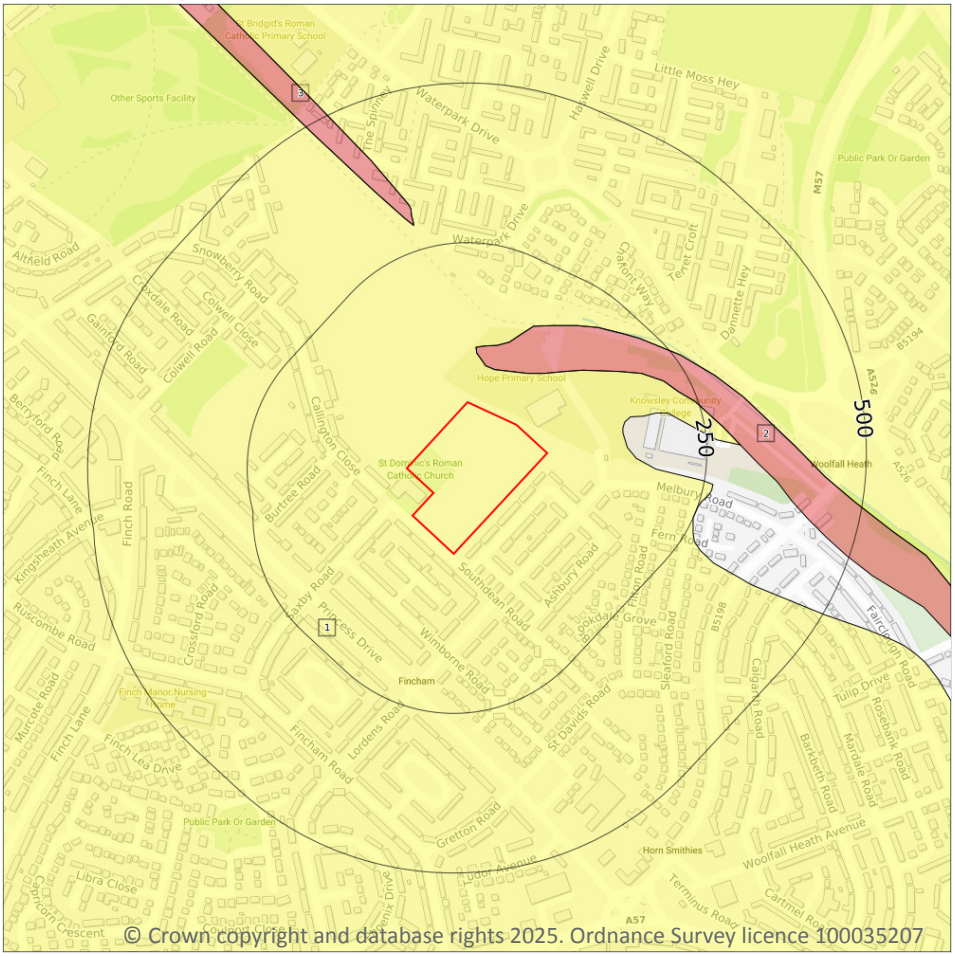
4.22 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



5.1 Superficial aquifer

Records within 500m	3

Aquifer status of groundwater held within superficial geology.

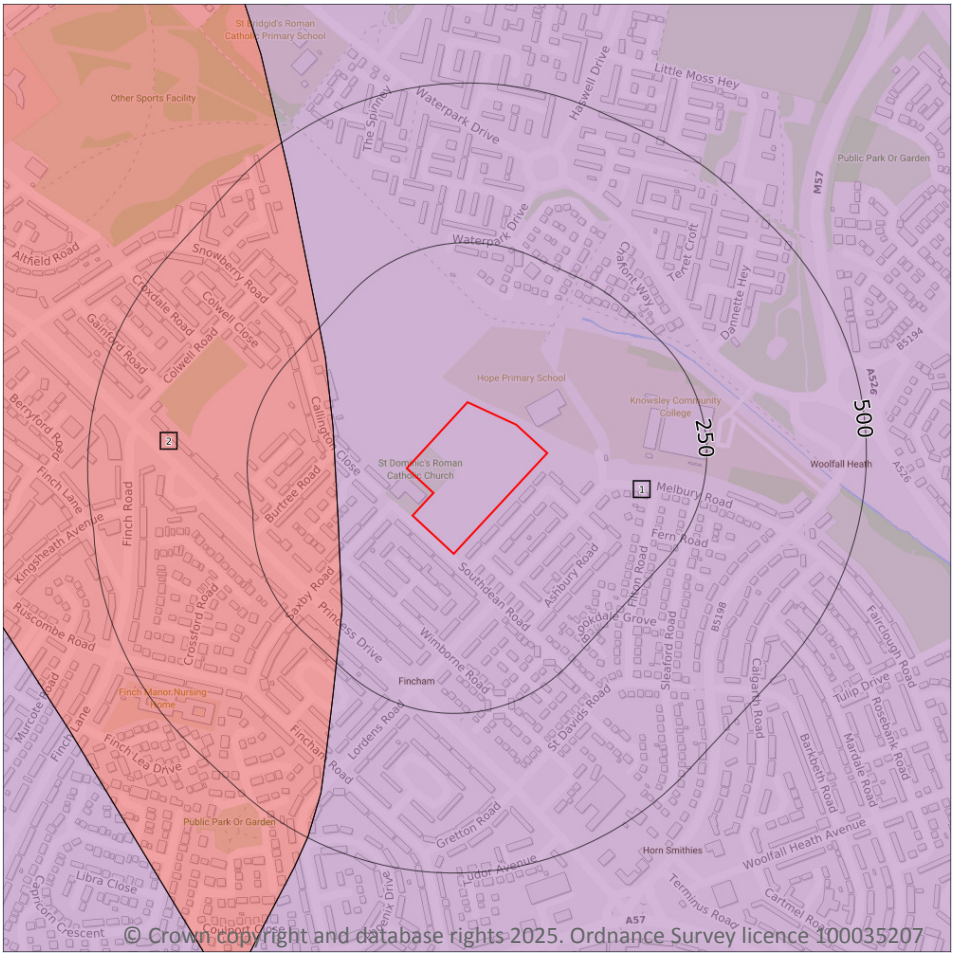
Features are displayed on the Hydrogeology map on **page 34 >**

ID	Location	Designation	Description
1	**On site**	**Secondary Undifferentiated**	**Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type**
2	64m NE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

ID	Location	Designation	Description
3	290m N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m	2

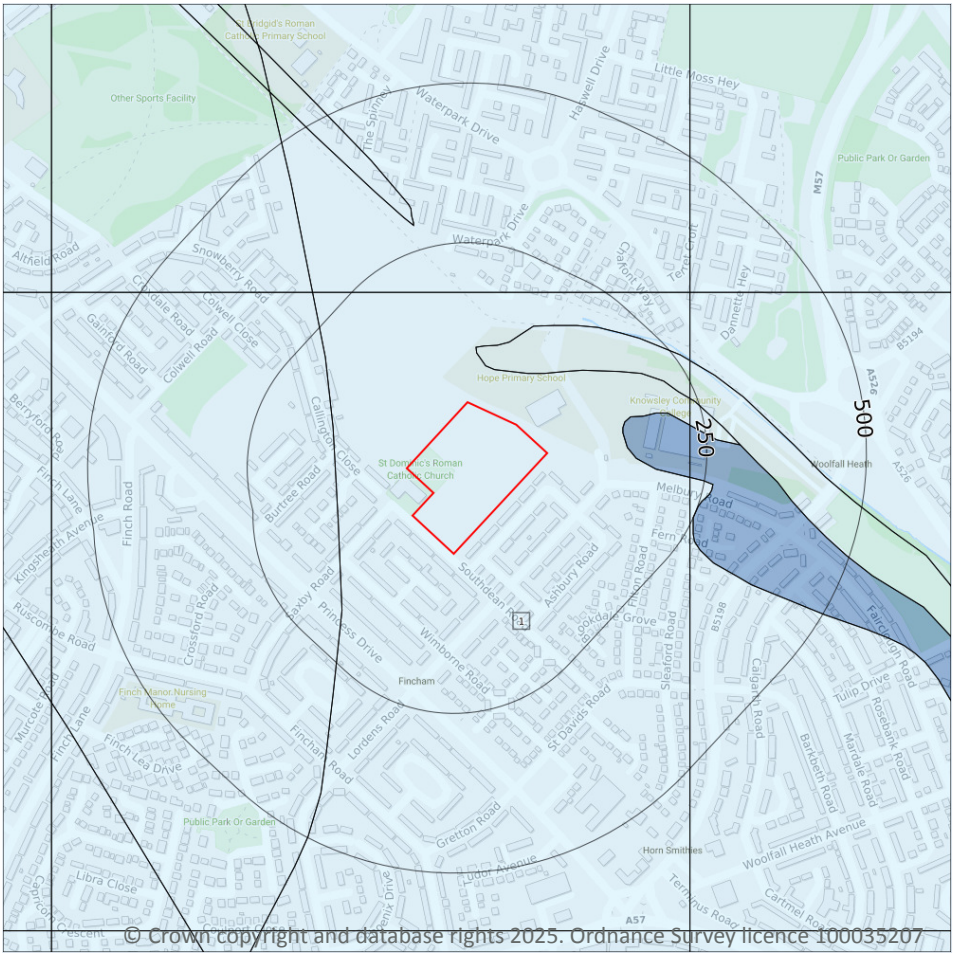
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 36 >**

ID	Location	Designation	Description
1	**On site**	**Principal**	**Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers**
2	112m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m	1

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 38 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	**Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year**	**Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

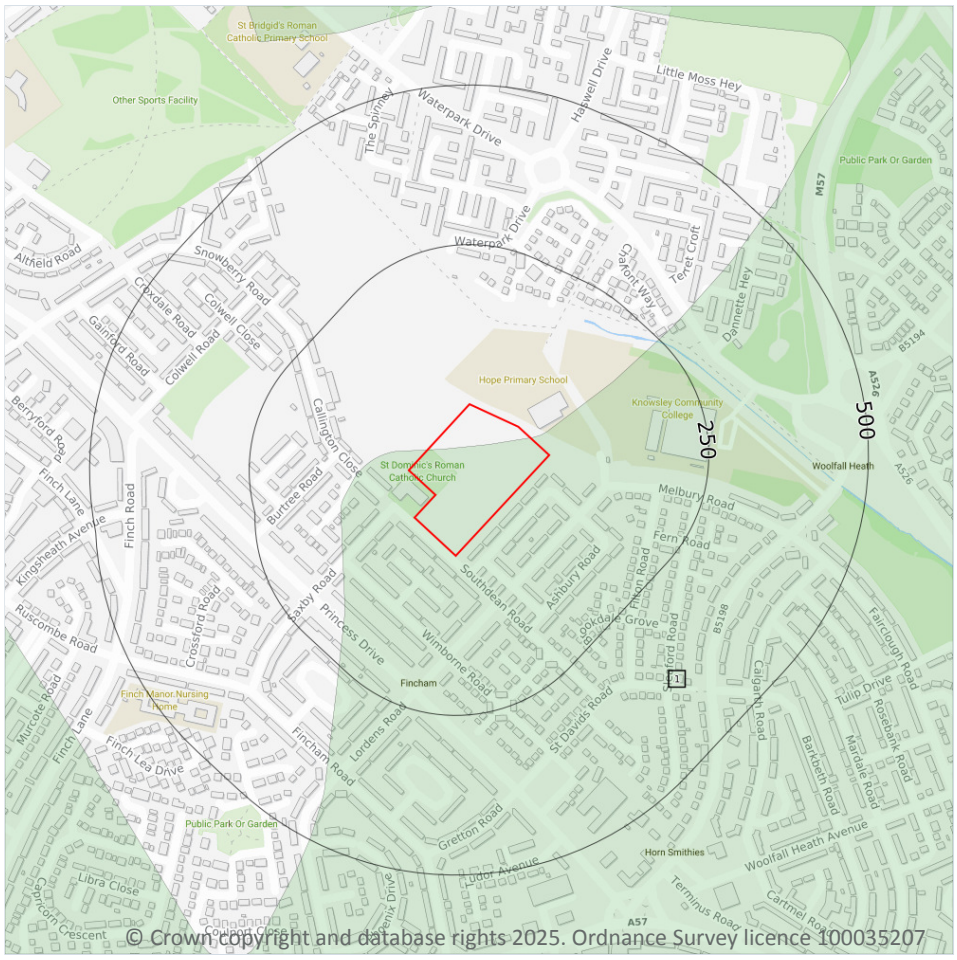
5.5 Groundwater vulnerability- local information

Records on site	0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



5.6 Groundwater abstractions

Records within 2000m	5

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 40 >**

ID	Location	Details	
-	1318m W	Status: Active Licence No: 2569031130 Details: Make-Up Or Top Up Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT WEST DERBY GOLF CLUB, WEST DERBY Data Type: Point Name: THE TRUSTEES OF WEST DERBY GOLF CLUB Easting: 341250 Northing: 392900	Annual Volume (m^3): 13090.9 Max Daily Volume (m^3): 109.1 Original Application No: 8643 Original Start Date: 23/12/1998 Expiry Date: - Issue No: 101 Version Start Date: 26/11/2018 Version End Date: -
-	1318m W	Status: Active Licence No: 2569031130 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT WEST DERBY GOLF CLUB, WEST DERBY Data Type: Point Name: THE TRUSTEES OF WEST DERBY GOLF CLUB Easting: 341250 Northing: 392900	Annual Volume (m^3): 13090.9 Max Daily Volume (m^3): 109.1 Original Application No: 8643 Original Start Date: 23/12/1998 Expiry Date: - Issue No: 101 Version Start Date: 26/11/2018 Version End Date: -
-	1318m W	Status: Historical Licence No: 2569031130 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLE AT WEST DERBY GOLF CLUB, WEST DERBY" Data Type: Point Name: THE TRUSTEES OF WEST DERBY GOLF CLUB Easting: 341250 Northing: 392900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: 100 Version Start Date: 23/12/1998 Version End Date: -
-	1571m N	Status: Historical Licence No: 2569031024 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "B/HOLES, WELLS, ADITS AND HEADINGS@ KNOWSLEY,RANDLES BRIDGE" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 343200 Northing: 394300	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 02/11/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/02/1995 Version End Date: -

ID	Location	Details	
-	1571m N	Status: Historical Licence No: 2569031024 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: B/HOLES, WELLS, ADITS AND HEADINGS@ KNOWSLEY,RANDLES BRIDGE Data Type: Point Name: UNITED UTILITIES WATER LTD Easting: 343200 Northing: 394300	Annual Volume (m^3): - Max Daily Volume (m^3): 9092.2 Original Application No: - Original Start Date: 02/11/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/02/1995 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**0**

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

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

5.8 Potable abstractions

Records within 2000m	**2**

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 40 >**

ID	Location	Details	
-	1571m N	Status: Historical Licence No: 2569031024 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "B/HOLES, WELLS, ADITS AND HEADINGS@ KNOWSLEY,RANDLES BRIDGE" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 343200 Northing: 394300	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 02/11/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/02/1995 Version End Date: -

ID	Location	Details	
-	1571m N	Status: Historical Licence No: 2569031024 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: B/HOLES, WELLS, ADITS AND HEADINGS@ KNOWSLEY,RANDLES BRIDGE Data Type: Point Name: UNITED UTILITIES WATER LTD Easting: 343200 Northing: 394300	Annual Volume (m^3): - Max Daily Volume (m^3): 9092.2 Original Application No: - Original Start Date: 02/11/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/02/1995 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	**1**

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

Features are displayed on the Abstractions and Source Protection Zones map on **page 40 >**

ID	Location	Type	Description
1	**On site**	**3**	**Total catchment**

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

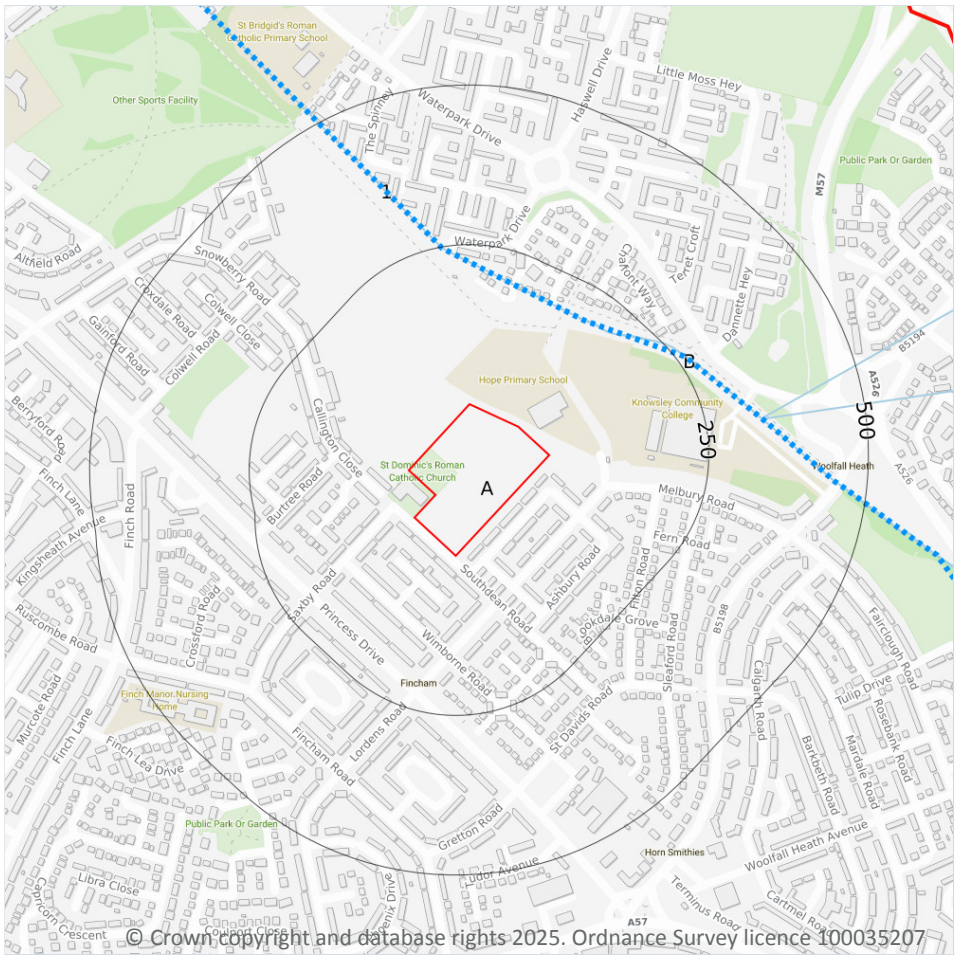
5.10 Source Protection Zones (confined aquifer)

Records within 500m	**0**

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

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

6 Hydrology



6.1 Water Network (OS MasterMap)

Records within 250m	2

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 44 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
1	195m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	River Alt

ID	Location	Type of water feature	Ground level	Permanence	Name
B	196m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Alt

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**1**

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 44 >**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	**1**

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 44 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	**On site**	**River**	**Alt**	**GB112069060580**	**Alt**	**Alt and Crossens**

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

6.4 WFD Surface water bodies

Records identified	**1**

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 44 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
2	195m NE	River	Alt	GB112069060580 ↗	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site	**1**

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 44 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers**	**GB41201G101700 ↗**	**Poor**	**Poor**	**Poor**	**2019**

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

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

7.2 Historical Flood Events

Records within 250m	0

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

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

7.3 Flood Defences

Records within 250m	0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

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

7.5 Flood Storage Areas

Records within 250m	0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

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

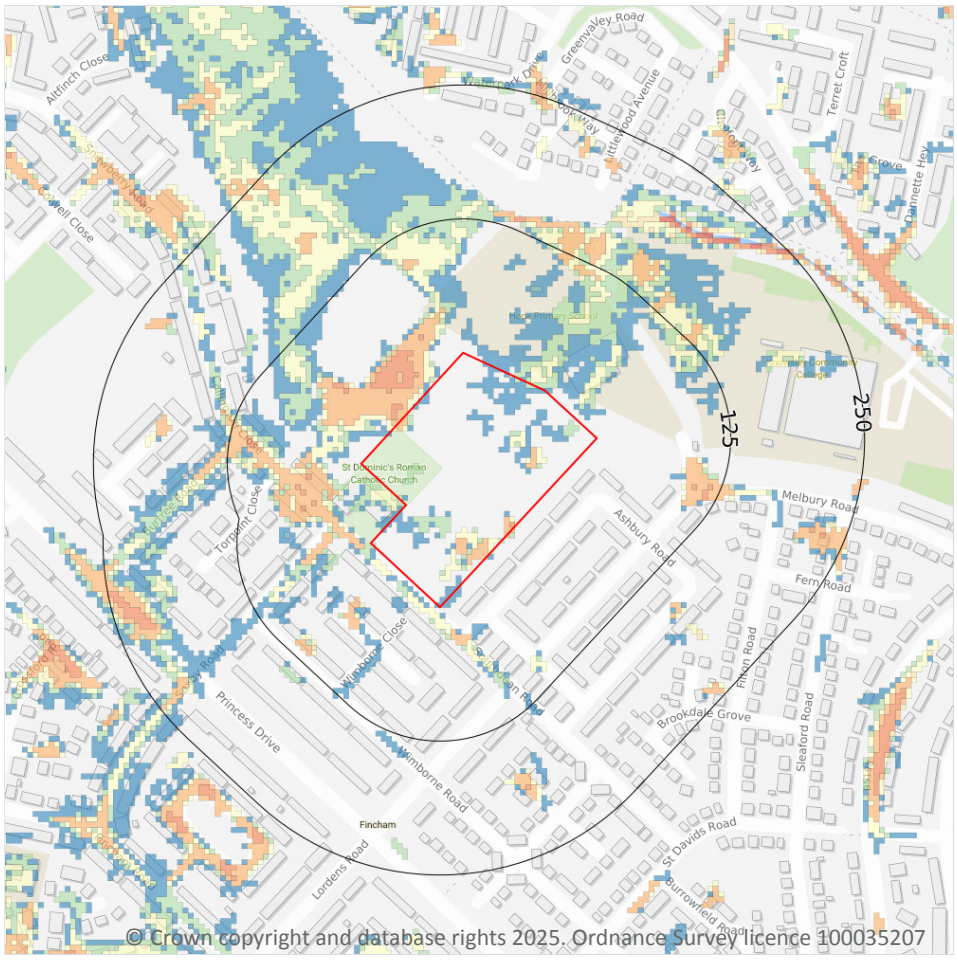
7.7 Flood Zone 3

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

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

8 Surface water flooding



8.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 50 >**

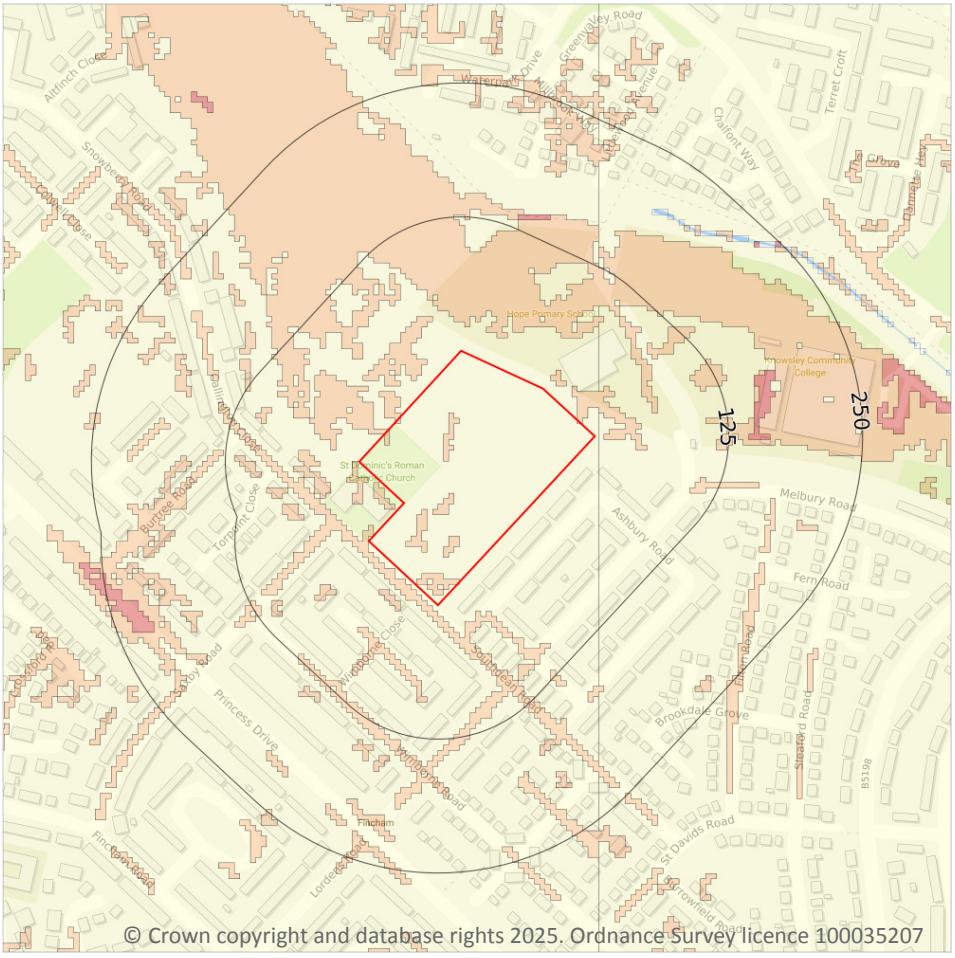
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

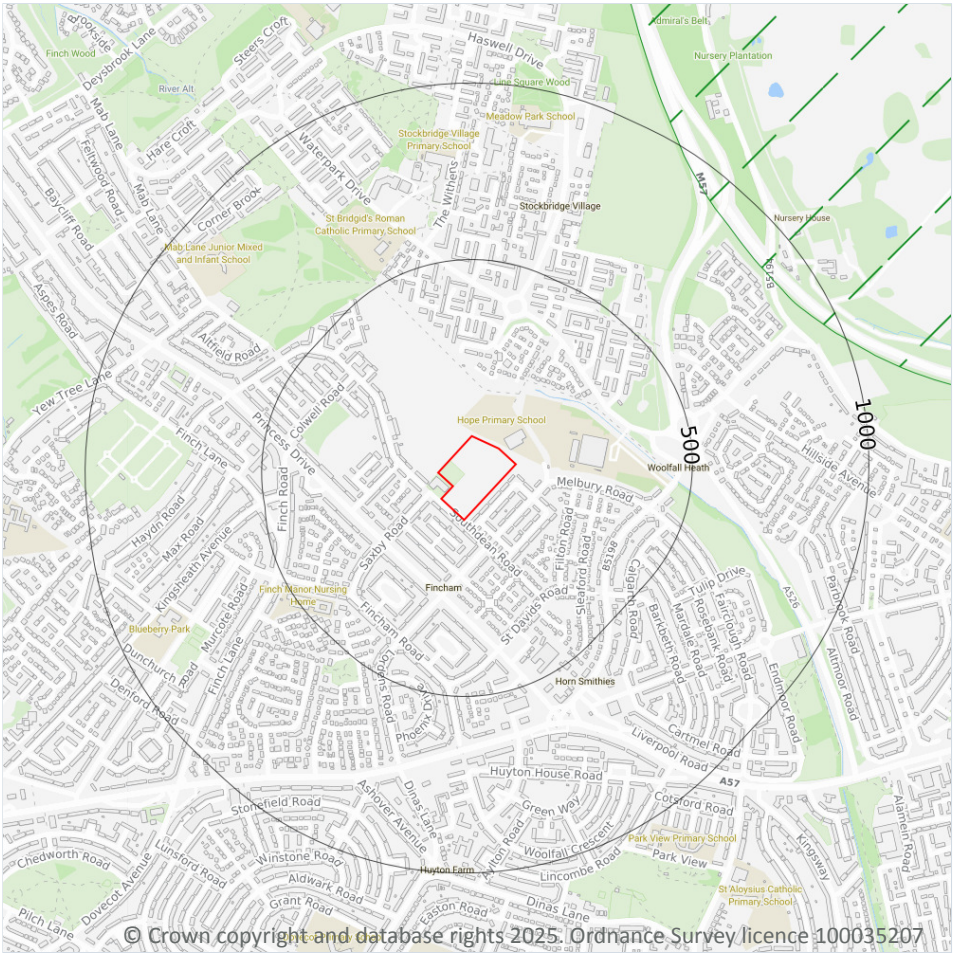
Highest risk on site	**Moderate-High**
Highest risk within 50m	**Moderate-High**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 52 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Local Nature Reserves (LNR)

Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m	1

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

Features are displayed on the Environmental designations map on **page 53 >**

ID	Location	Name	Data source
-	1762m NW	Croxteth	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m	0

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m	0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m	0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m	3

Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on **page 53 >**

ID	Location	Name	Local Authority name
1	891m NE	Merseyside and Greater Manchester Green Belt	Knowsley
-	1338m N	Merseyside and Greater Manchester Green Belt	Liverpool
-	1996m S	Merseyside and Greater Manchester Green Belt	Knowsley

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m	0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

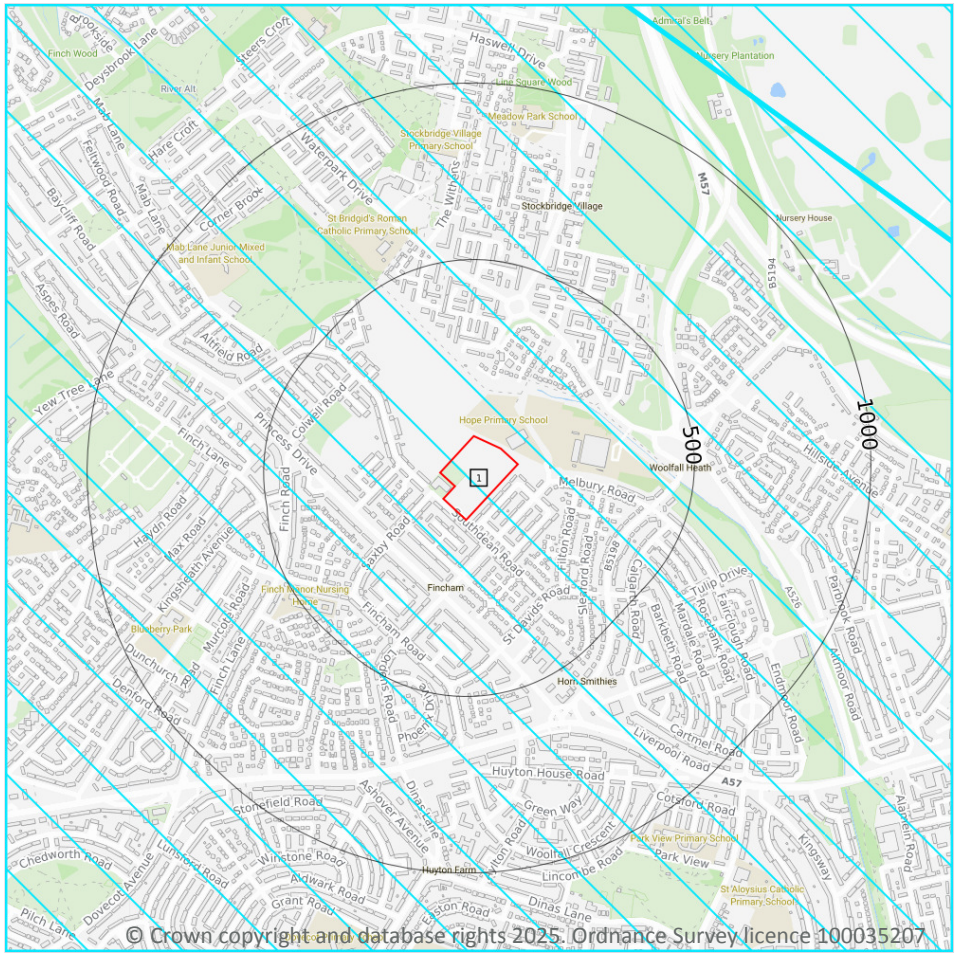
Records within 2000m	3

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	**ALT NVZ**	**Surface Water**	**642**	**Existing**
1316m E	ALT NVZ	Surface Water	642	Existing
1455m S	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	640	Existing

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site	1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 58 >**

ID	Location	Type of developments requiring consultation
1	**On site**	**https://irz.geodata.org.uk/IRZ/step2.html?irzcode=0310000632000&notes=&location=342398,392957%20(IRZ%20polygon%20centre)**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m	0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m	0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m	0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m	0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

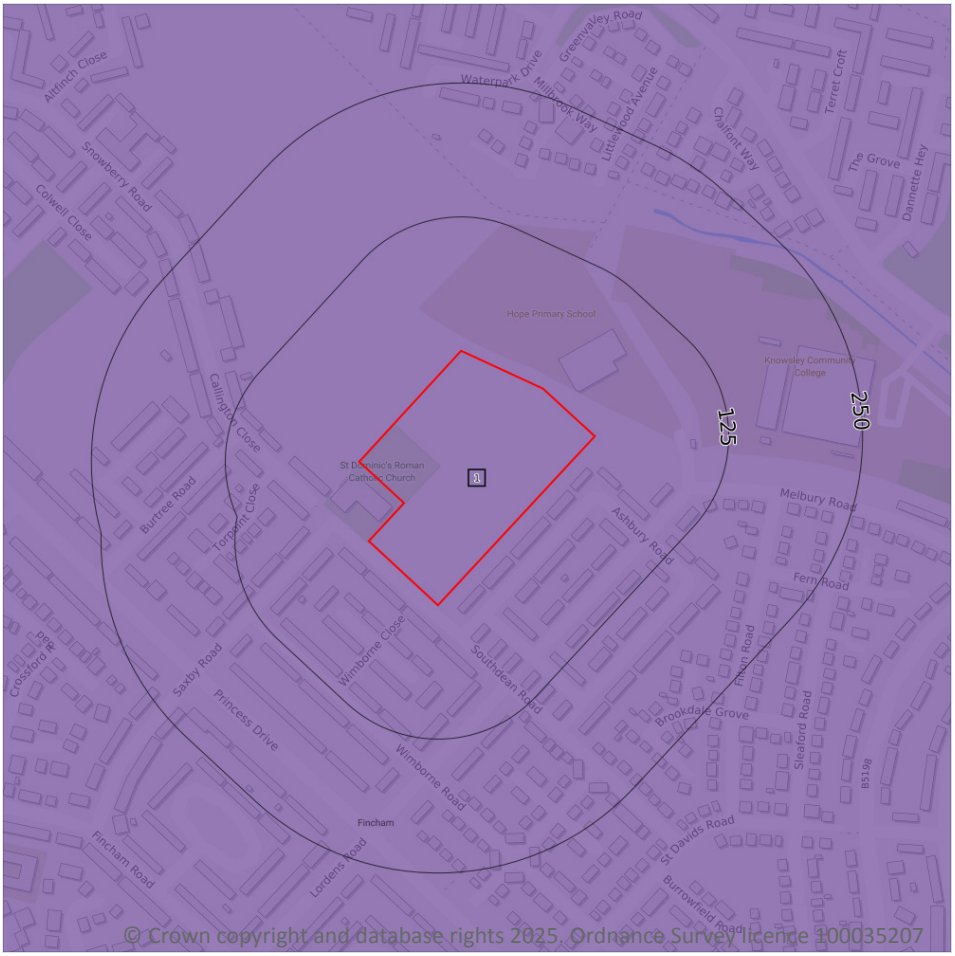
11.7 Registered Parks and Gardens

Records within 250m	0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 62 >**

ID	Location	Classification	Description
1	**On site**	**Urban**	**Non-agricultural/no quality assigned**

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m	0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability

14.1 10k Availability

Records within 500m	1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 65 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**No coverage**	**No coverage**	**No coverage**	**NoCov**

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Artificial and made ground

14.2 Artificial and made ground (10k)

Records within 500m	0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m	0

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m	0

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability

15.1 50k Availability

Records within 500m	1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 69 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**Full**	**Full**	**No coverage**	**EW097_runcorn_v4**

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m	0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

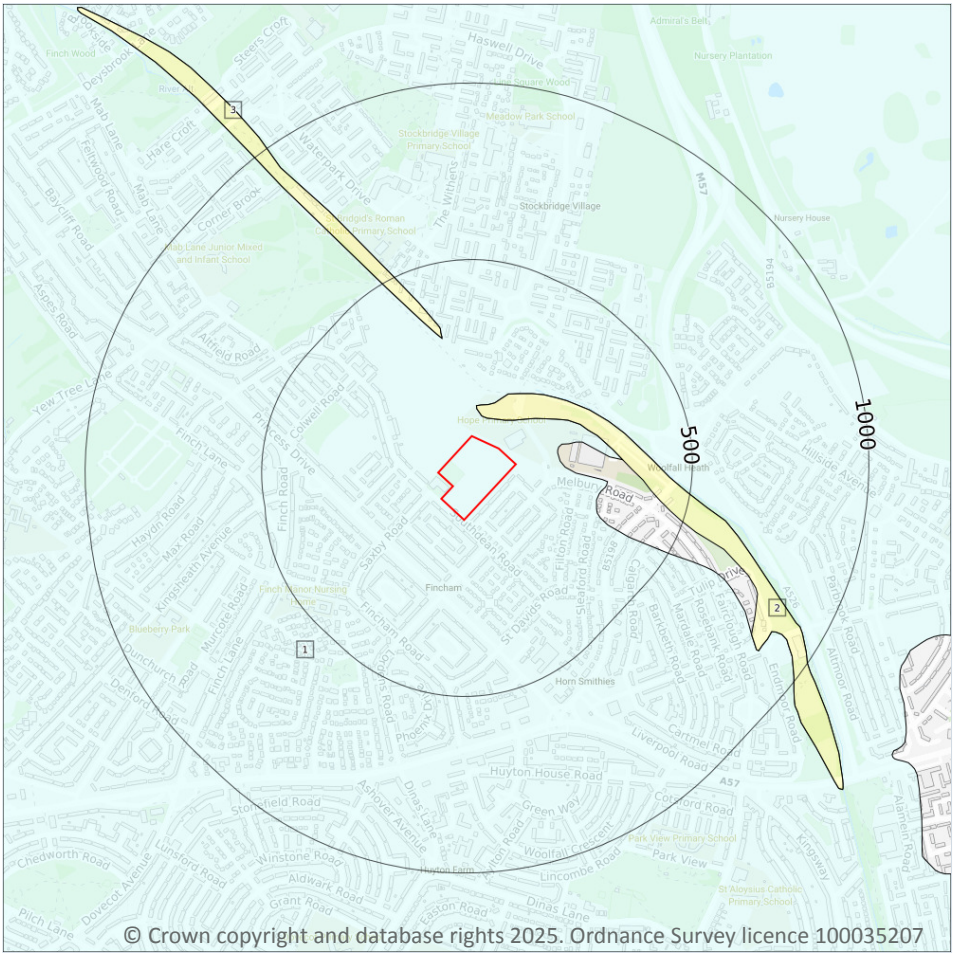
15.3 Artificial ground permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m **3**

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 71 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-DMTN**	**TILL, DEVENSIAN**	**DIAMICTON**
2	64m NE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	290m N	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**High**	**Low**

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

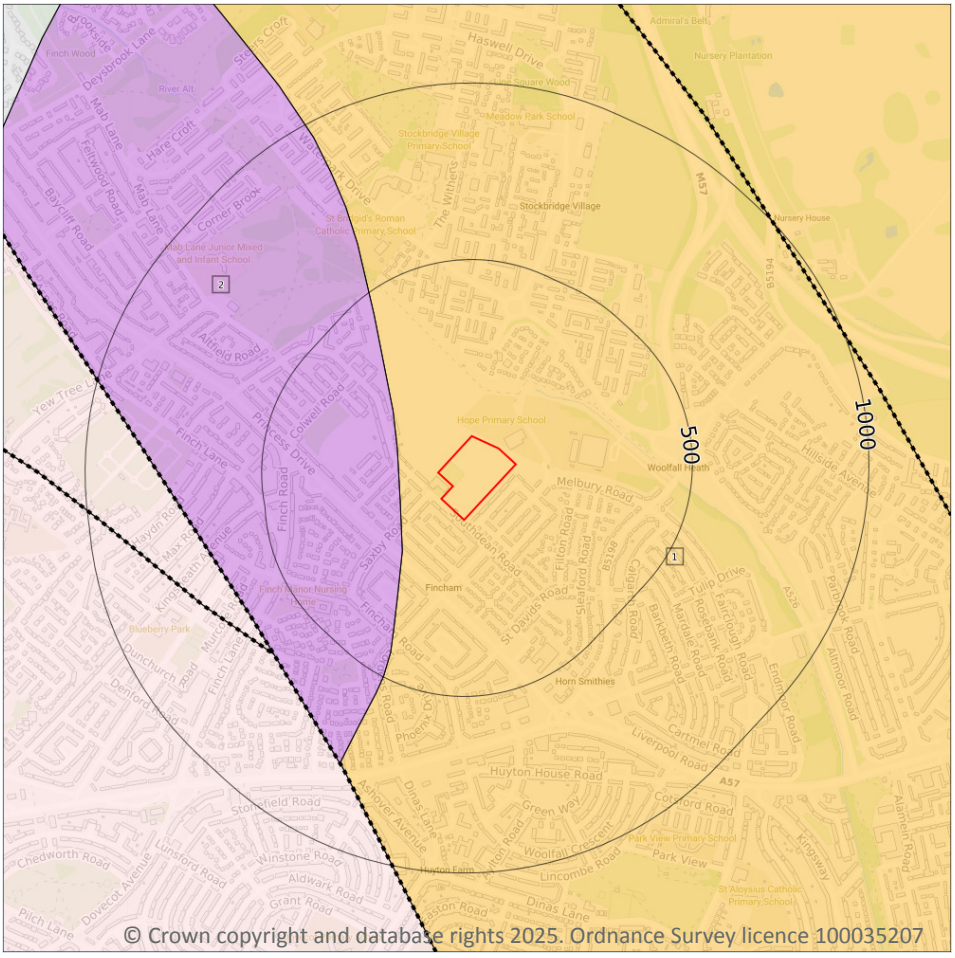
15.7 Landslip permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m	2

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 73 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**CHES-SDST**	**CHESTER FORMATION - SANDSTONE**	**OLENEKIAN**
2	112m W	ETM-MDST	ETRURIA FORMATION - MUDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**High**	**Moderate**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

16 Boreholes

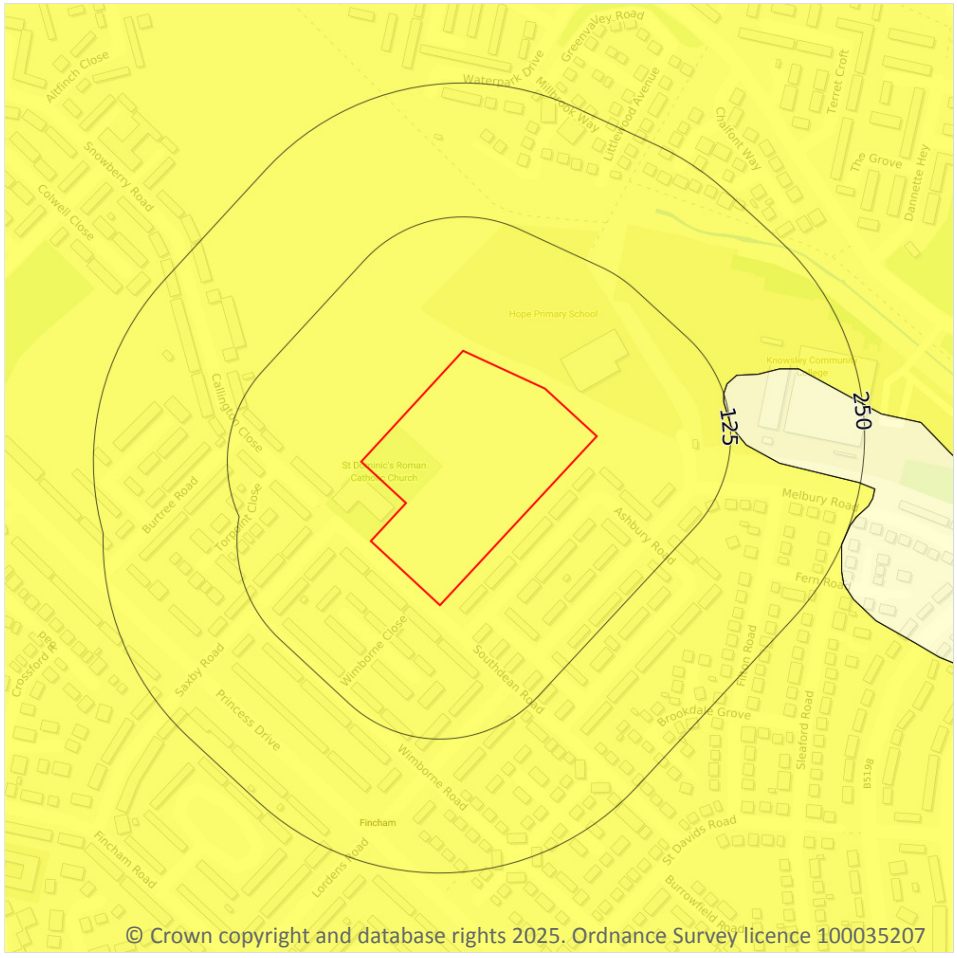
16.1 BGS Boreholes

Records within 250m	0

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.1 Shrink swell clays

Records within 50m	1

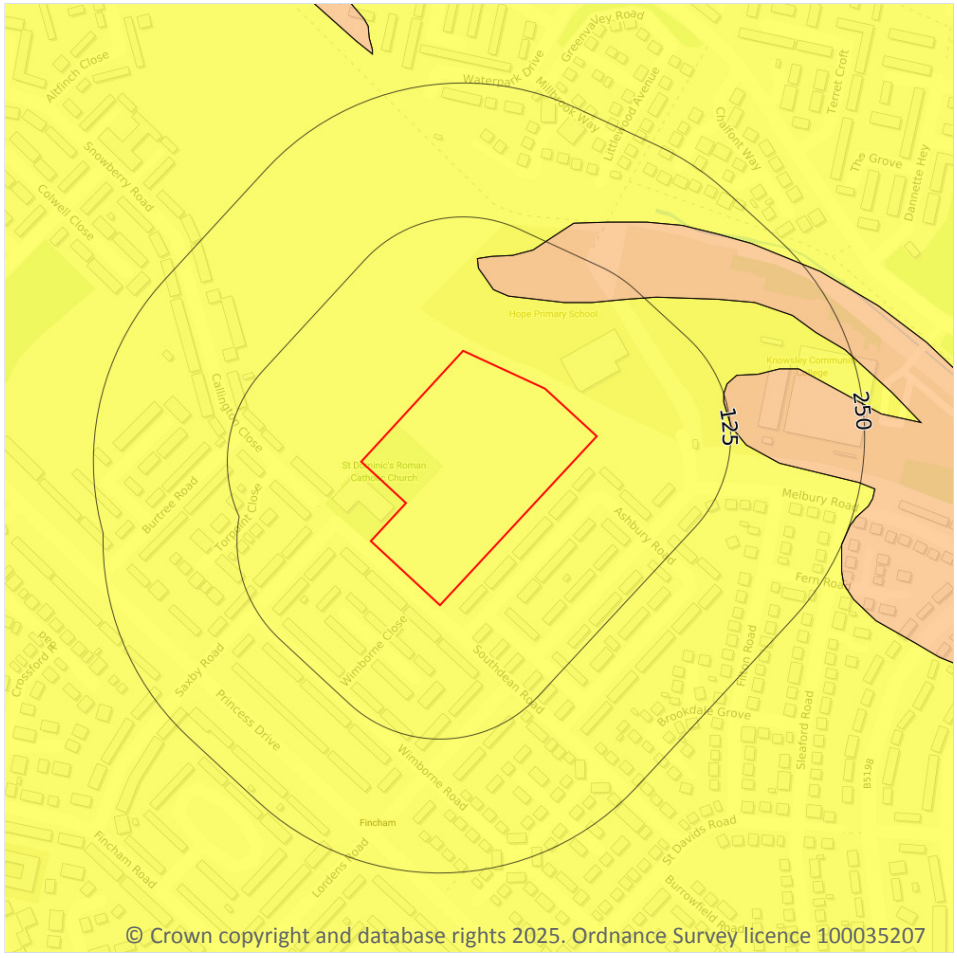
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 76 >**

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	1

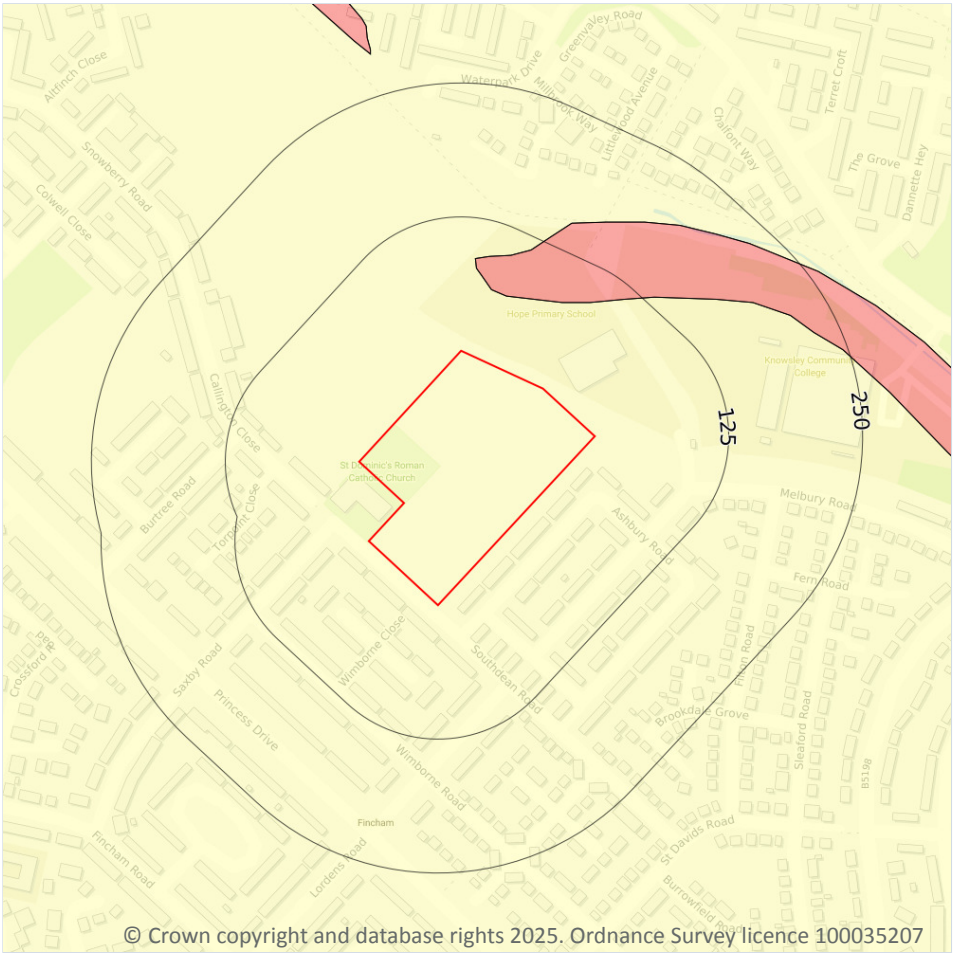
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 77 >**

Location	Hazard rating	Details
On site	**Very low**	**Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	1

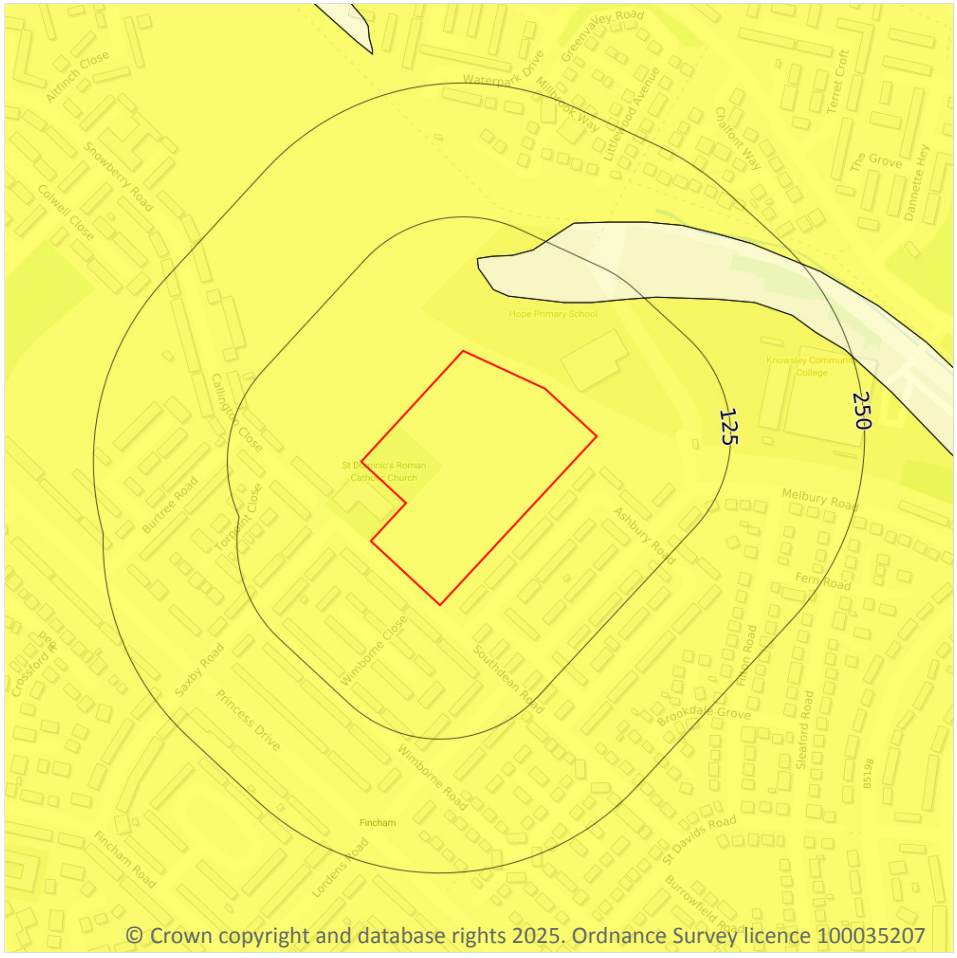
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 78 >**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



17.4 Collapsible deposits

Records within 50m	1

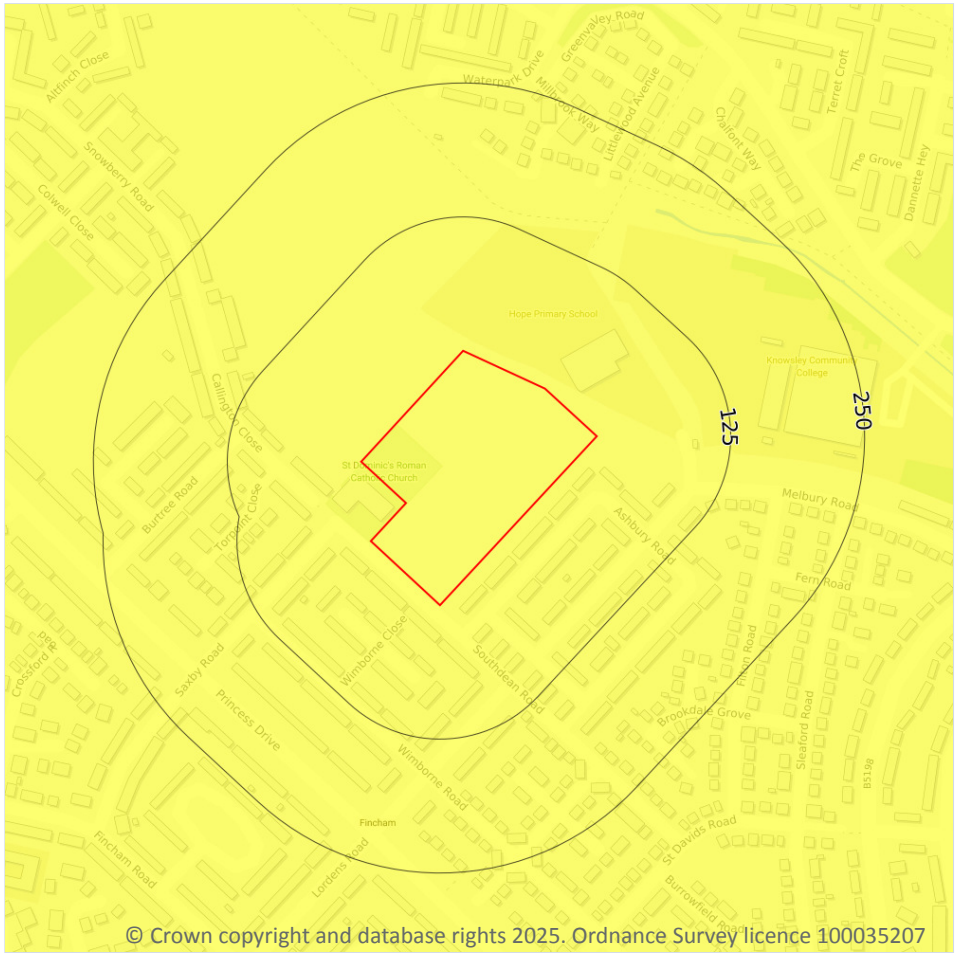
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 79 >**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	1

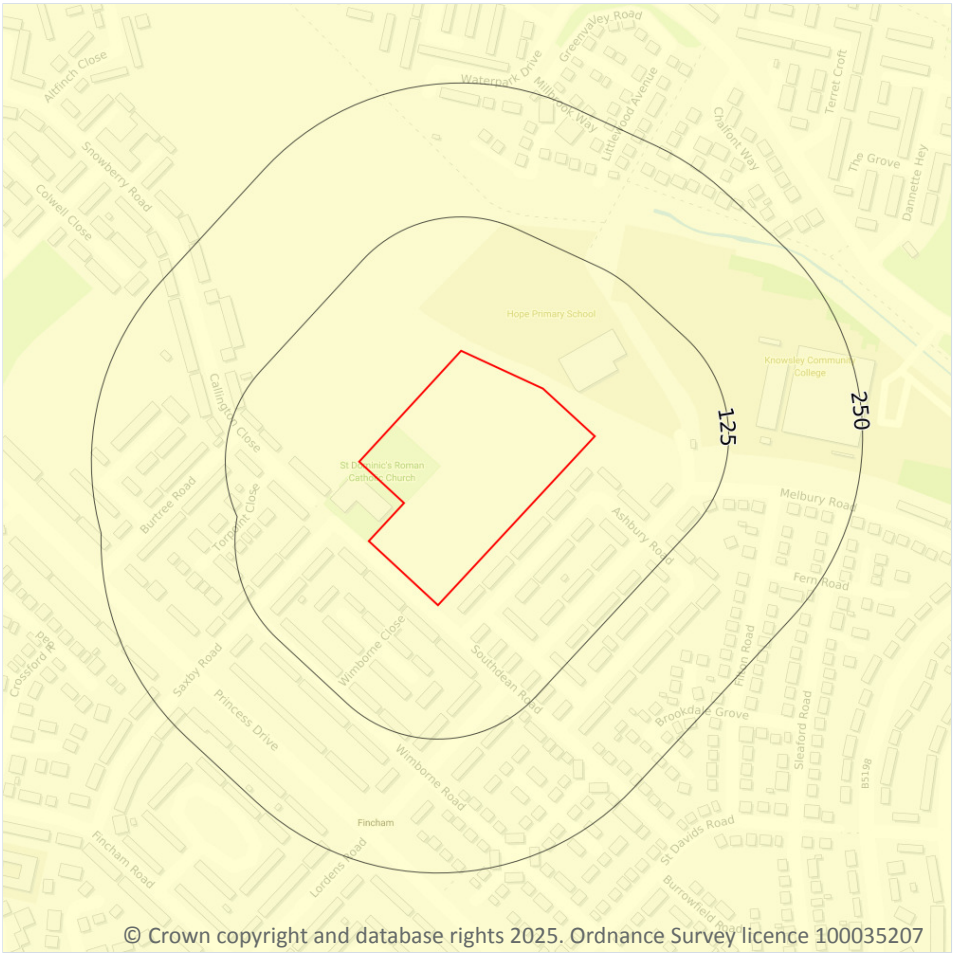
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 80 >**

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	1

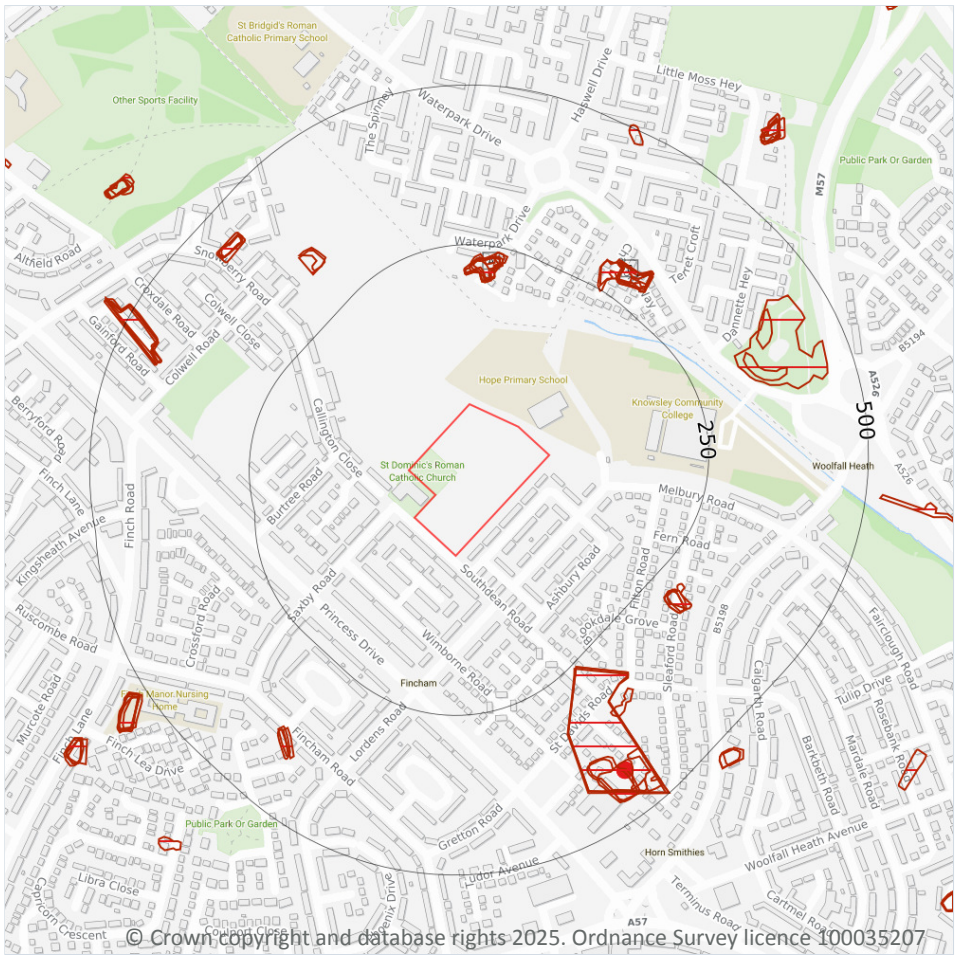
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 81 >**

Location	Hazard rating	Details
On site	**Negligible**	**Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.**

This data is sourced from the British Geological Survey.

18 Mining and ground workings



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Site Outline

Search buffers in metres (m)

- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m	1

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

Features are displayed on the Mining and ground workings map on **page 83 >**

ID	Location	Details	Description
H	427m SE	Name: Woolfell Heath Brick Works Address: HUYTON-WITH-ROBY, Merseyside Commodity: Clay & Shale Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Delf, Delph, Gravel Pit, Sand Pit, Sand and Gravel Pit, Clay Pit, Pit, Opencast Coal Site or Surface Mine. It may be mapped as Worked Ground or Worked and Made Ground on BGS mapping. Status description: Site which has ceased to extract minerals. May be considered as 'Closed' by operator. May be considered to have 'Active', 'Dormant' or 'Expired' planning permissions by the Mineral Planning Authority.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	**7**

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on **page 83 >**

ID	Location	Land Use	Year of mapping	Mapping scale
A	193m N	Ponds	1925	1:10560
A	193m N	Ponds	1906	1:10560
A	195m N	Ponds	1891	1:10560
A	195m N	Ponds	1938	1:10560
A	197m N	Ponds	1965	1:10560
A	199m N	Ponds	1956	1:10560
B	248m NE	Ponds	1965	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	**0**

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m	0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the

Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

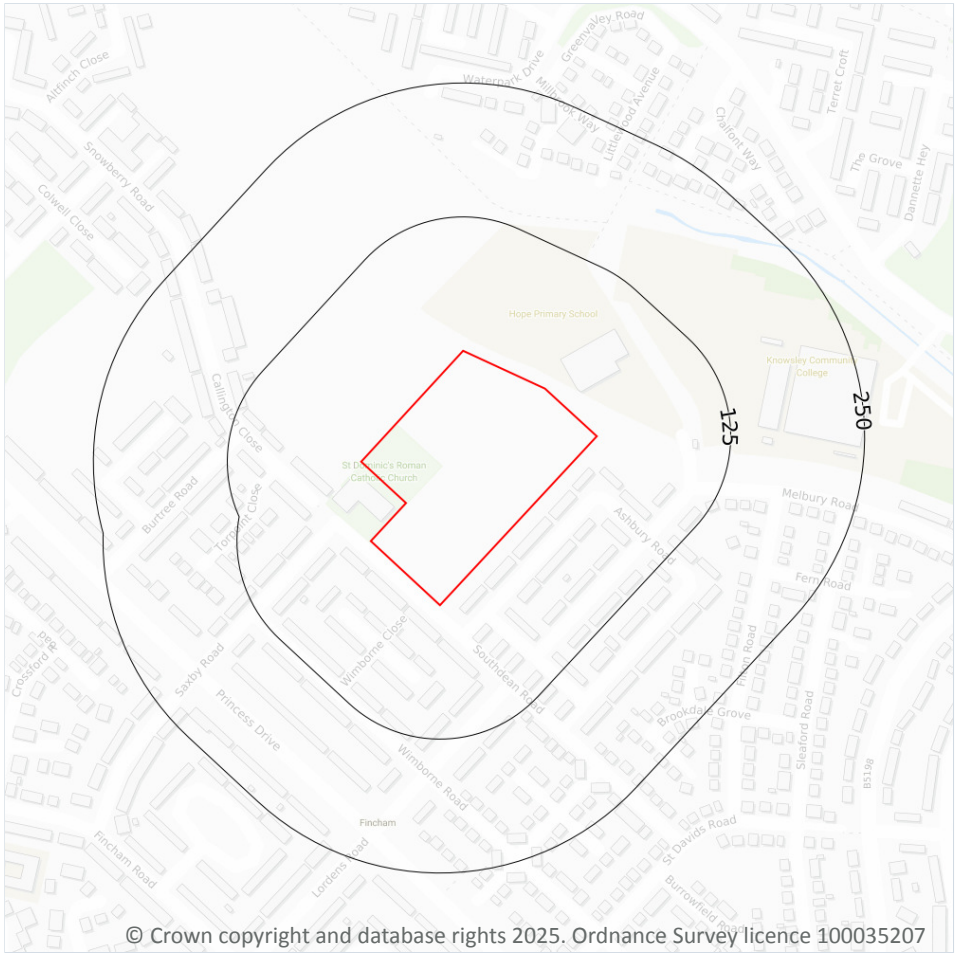
Records within 500m	0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.

This data is sourced from Groundsure.

20 Radon



Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site	1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on **page 90 >**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Less than 1%**	**None**

This data is sourced from the British Geological Survey and UK Health Security Agency.

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m	1

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km^2. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km^2; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m	0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	0

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 2

Records within 500m	0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.9 HS2

Records within 500m	0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference ↗.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-and-conditions-april-2023/ ↗.

APPENDIX 6

BGS Borehole Logs

NGR. 4193 9318

SJ49SW/2

No.1 (Finch Farm Boring)

(a) Specimens LL 1111, 1110, 1113, which all fit together, and LL 1114 are alleged to come from a depth of 908ft., in spite of the fact that Hickling in his published account (Trans. Manchester Geol. and Mining Soc. 34, pp. 268-73, 1915) gives no marine band at this depth. These specimens contain Dunbarella papyracea (J Sowerby) and also Gastrioceras subcrenatum (Schlotheim MS) C. Schmidt. There is, however, a vein running through all these specimens, and a similar vein is seen in the next lowest horizon at 1022ft. (LL 1115-25). As a result, I am inclined to think that specimens LL 1110-14 really come from a depth of 1022ft. and not 908ft. I suspect that the levels got mixed up, especially as the Lepidodendron and Elonichthys mentioned by Hickling at 908 are not seen on the material you sent.

(b) At 1022ft. (specimens LL 1115-25). I think it likely that Hickling made a mistake in his multiplication when converting yards to feet, and that the correct depth for this marine band is 1022ft., and not 1122ft., as given in the paper. The fauna at this level includes Gastrioceras suborenatum G. sp. (not subcrenatum) Dunbarella papyracea and Posidoniella cf. multirugata Jackson. This agrees with the fauna from LL 1110-14.

(c) At 1297ft. (LL 1126-31) I find fish remains and Gastrioceras cumbriense? Bisat.

SJ49SW 2 2

GEOLOGICAL SURVEY AND MUSEUM. BOREHOLES AND SHAFTS.

SJ 49 SW/2
County
6" Quarter Sheet

County LANCS
6-in. Map 107 NW
GSM

BORE ~~or SHAFT~~ FINCH FARM BORE

For Garswood Hall Colly. Co.

Surface level ______ O.D. ______ One-inch Map 97

Communicated ______ by G Hickling, in Trans. Inst. Min. Eng. vol L, 1915-16, Pt. V, p 325

Date of sinking ______ Borer ______ Fossils taken from Hickling's Paper

Specimens See Note from Ramsbottom 3/9/52 Palaeontology File.

Description	Thickness Feet	Thickness Inches	Depth Feet	Depth Inches	Thickness metric (m)	Thickness metric (cm)	Depth metric (m)	Depth metric (cm)
Soil and Drift	33	-	33	-	10	06	10	06
Variegated Marl	170	-	203	-	51	81	61	87
Sandy Marl and Sandstone	30	-	233	-	9?	15	71	02
Red Marl	22	-	255	-	6	70	77	72
Black, Red, Bluish-Grey, and Brown Shales	29	6	284	6	9	00	86	72
Grey Sandstone	4	-			1	22	87	94
Dark Red and Blue Shales	92	-	380	6	28	04	115	98
Reddish Sandstone	11	-	391	6	3	35	119	33
Brown and Blue Shales	72	6			12	10	141	43
Grey, Blue, and Dark Shales	76	6	540	6	23	31	164	74
Grey Sandstone (streaks of COAL 1 foot above Base)	76	-	616	6	23	17	187	91
Blue and Grey Sandy Shale	7	-	623	6	2	13	190	04
Dark Grey Sandy Marl	15	-	638	6	4	58	194	62
Dark Shale	28	-	666	6	8	53	203	15
Dark Ironstone		4	666	10	0	20	203	25
Dark Shale	35	2	702	0	10	72	213	97
Grey Sandstone	2	-	704	-	0	61	214	58
Blue and Dark-Grey Sandy Shale	26	6	730	6	8	08	222	66
Grey Sandstone	16	-	746	6	4	87	227	53
Dark Shale, with Ironstone Bands	33	6	780	-	10	21	237	74
Dark-Grey Shale	27	3	807	3	8	31	246	05
?L. Mountain Mine: COAL and Dirt		9	808	-	0	23	246	28
Grey Fireclay	2	-	810	-	0	61	246	89
Dark Fireclay, with Shale Bands	26	6	836 (corr. 886)	6	8	08	254	97
Red and Blue Marl	9	-	845	6	2	74	257	71
Dark Blue Shale with Ironstone	12	-	857	6	3	66	261	37
Grey Sandstone with Shale Bands	6	-	863	6	1	83	263	20
Dark Blue Shale with Ironstones (Elonichthys sp. Lepidodendron obovatum at 908')	44	-	907	6	13	41	276	61
Dark-Blue Shale	17	-	924	6	5	18	281	79
"Bassy Lower"??: COAL		10	925	4	0	25	282	04
Grey Sandstone, with Shale Bands	20	2	945	6	6	15	288	19
Dark Grey Sandy Shale	48	-	993	6	14	63	302	82
Dark Blue Shales with Ironstone	66	-	1059	6	20	12	322	94
Dark Fireclay, with Shales	10	-	1069	6	3	04	325	98
6" Mine: Inferior COAL		11	1070	5	0	28	326	26
Fireclay	4	1	[illegible]	6	1	25	327	51
Blue Shale	40	-	1114	6	12	19	339	70
Grey Sandstone, with Shale Bands	30	-	1144	6	9	14	348	84
Grey Shale	146	-	1290	6	44	50	393	34

Posidoniella minor, P. laevis, Aviculopecten papyraceus, Gastrioceras subcrenatum at ? 1059' ? 6" Mine MB

(B12268) Wt. 13119—0014 5000 9/27 Gp. 160 O.A.

GEOLOGICAL SURVEY AND MUSEUM. BOREHOLES AND SHAFTS. 8

2

Folio ______ County ______

6 in. Map

SJ 49 SW/2

Description.	Thickness Feet.	Thickness Inches.	Depth Feet.	Depth Inches.	Thickness (Metres)		Depth (Metres)	
Elonichthys aitkeni, Orthoceras sp. (?) at 1297' & G. cumbriense (contd)			1290	6			393	34
Blue Shale	49	-	1339	6	14	94	408	28
Grey Sandy Shale, with Sandstone Bands	122	-	1461	6	37	19	445	47
Blue Shale	67	-	[illegible]	6	20	42	465	89
Dirty COAL *Fish scales 1529'*		3	1528	9	0	07	465	96
Grey Sandstone	33	9	1562	6	10	29	476	25
Dark Grey Shale	15	3	1577	9	4	65	480	90
COAL 9 inches with Fireclay 1 foot								
Grey Sandstone	28	-	1607	6	9	07	489	97
Grey Sandstone and Shale	14	-	1621	6	4	26	494	23
Grey Sandstone	103	-	1724	6	31	40	525	63
Dark Grey Shales	20	6	1745	-	6	25	531	88
Hard Grey Sandstone	46	6	1791	6	14	17	546	05

To WHCR 1884

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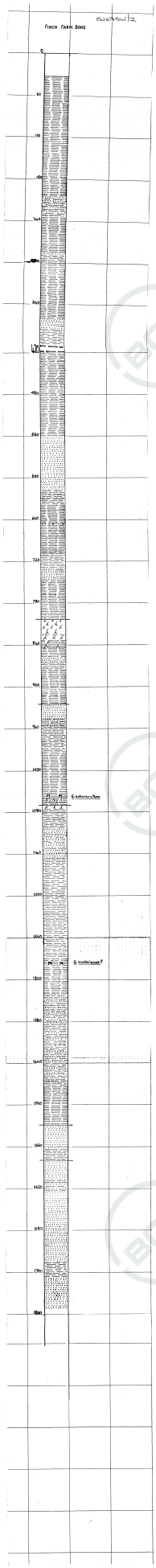
SJ49SW/2
FINCH FARM BORE

SJ 4194 9318

SJ 49/30

GEOLOGICAL SURVEY AND MUSEUM. BOREHOLES AND SHAFTS.

County LANCS

BORE or ~~SHAFT~~ FINCH FARM BORE

6-in. Map 107NW 2

GSM

Surface level O.D. One-inch Map 97

Communicated by G Nickling, in Trans. Fed. Min. Eng. vol L, 1915-16, pt. V.

Date of sinking Borer

Specimens

Description.	THICKNESS. Feet.	Inches.	DEPTH. Feet.	Inches
Soil and Drift	33	-	33	-
Variegated Marl	170	-	203	-
Sandy Marl and Sandstone	30	-	233	-
Red Marl	22	-	255	-
Black, Red, Bluish-Grey, and Brown Shales	29	6	284	6
Grey Sandstone	4	-		
Dark Red and Blue Shales	92	-	380	6
Reddish Sandstone	11	-	391	6
Brown and Blue Shales	72	6		
Grey, Blue, and Dark Shales	76	6	540	6
Grey Sandstone (streaks of COAL 1 foot above Base)	76	-	616	6
Blue and Grey Sandy Shale	7	-		
Dark Grey Sandy Marl	15	-		
Dark Shale	28	-		
Dark Ironstone		4		
Dark Shale	35	2		
Grey Sandstone	2	-	704	-
Blue and Dark-Grey Sandy Shale	26	6	730	6
Grey Sandstone	16	-		
Dark Shale, with Ironstone Bands	33	6		
Dark-Grey Shale	27	3		
COAL and Dirt		9	803	-
Grey Fireclay	2	-		
Dark Fireclay, with Shale Bands.	26	6	886	6
Red and Blue Marl	9	-		
Dark Blue Shale with Ironstone	12	-	857	6
Grey Sandstone with Shale Bands	6	-		
Dark Blue Shale with Ironstones	44	-		
Dark-Blue Shale	17	-		
COAL		10	925	4
Grey Sandstone, with Shale Bands	20	2	945	6
Dark Grey Sandy Shale	48	-	993	6
Dark Blue Shales with Ironstone	66	-		
Dark Fireclay, with Shales	10	-	1069	6
Inferior COAL		11		
Fireclay	4	1		
Blue Shale	40	-		
Grey Sandstone, with Shale Bands	30	-	1144	6
Grey Shale	146	-	1290	6

(B12868) Wt. 13119—0014 5000 9/27 Gp. 160 O.A.

BGS ID: 165923 : BGS Reference: SJ49SW2
British National Grid (27700) : 341927,393177

Lancs 107 NW Page 4

Lancs 107 NW/2

SJ49/30

2

GEOLOGICAL SURVEY AND MUSEUM. BOREHOLES AND SHAFTS.

Folio | County | 6 in. Map

Description.	Thickness Feet.	Thickness Inches.	Depth Feet.	Depth Inches.
(contd)			1290	6
Blue Shale	49	-	1339	6
Grey Sandy Shale, with Sandstone Bands	122	-	1461	6
Blue Shale	67	-		
Dirty COAL		3	1528	9
Grey Sandstone	33	9	1562	6
Dark Grey Shale	15	3	1577	9
COAL 9 inches with Fireclay 1 foot				
Grey Sandstone	28	-	1607	6
Grey Sandstone and Shale	14	-	1621	6
Grey Sandstone	103	-	1724	6
Dark Grey Shales	20	6	1745	-
Hard Grey Sandstone	46	6	1791	6

(B12887) Wt. 18116A—8814 8000 9.27 Gp. 160 O.A.

BGS ID: 165923 : BGS Reference: SJ49SW2
British National Grid (27700) : 341927,393177

Lancs 107 NW. Page 5

Lancs. 107 NW/2

SJ49SW/2

SJ49/30

No.1 (Finch Farm Boring)

(a) Specimens LL 1111, 1110, 1113, which all fit together, and LL 1114 are alleged to come from a depth of 908ft., in spite of the fact that Hickling in his published account (Trans.Manchester Geol.and Mining Soc. 34, pp. 268-73, 1915) gives no marine band at this depth. These specimens contain Dunbarella papyracea (J Sowerby) and also Gastrioceras subcrenatum (Schlotheim MS) C.Schmidt. There is, however, a vein running through all these specimens, and a similar vein is seen in the next lowest horizon at 1022ft. (LL 1115-25). As a result, I am inclined to think that specimens LL 1110-14 really come from a depth of 1022ft. and not 908ft. I suspect that the levels got mixed up, especially as the Lepidodendron and Elonichthys mentioned by Hickling at 908 are not seen on the material you sent.

(b) At 1022ft. (specimens LL 1115-25). I think it likely that Hickling made a mistake in his multiplication when converting yards to feet, and that the correct depth for this marine band is 1022ft., and not 1122ft., as given in the paper. The fauna at this level includes Gastrioceras subcrenatum G. sp. (not subcrenatum) Dunbarella papyracea and Posidoniella cf. multirugata Jackson. This agrees with the fauna from LL 1110-14.

(c) At 1297ft. (LL 1126-31) I find fish remains and Gastrioceras cumbriense? Bisat.

KIRKBY AREA

OBSERVATION WELLS:- WELL DATA SHEET

WDU Ref No SJ49/47

IGS Ref No _____

LOCATION

Site: STOCKBRIDGE LANE

Hydrometric area: 69 NGR SJ 433 930

WELL DETAILS

Depth		Diameter		Length of solid lining	
_____	(feet)	_____	(inches)	_____	(feet)
30.48	(metres)	10.1	(cms)	3.05	(metres)

Measuring point: _____ O.D. of surface _____

_____ O.D. of measuring point: 27.44m

Geological succession: Drift 2.44 m

Red Marly Sst. 30.50 m

_____

_____

Aquifers: _____

MEASUREMENT

Automatic recorder: type _____ : _____ operated

gauge scale _____ : Time traverse _____ inches per day

Manual measurements: frequency Monthly

Measuring authority: NWWA Rivers Division

Record charts changed by: _____

REMARKS

Records available from: AUGUST 1971

Interference effects: from adjacent discharging wells ; barometric ;
river influence ; tidal ; miscellaneous ;
(add details on accompanying sheet)

Disused or used (_____ hours pumped per _____) Sunk as observation well: ✓

Surface run-off gauging stations: ✓

_____

Nearest rainfall station: ✓

_____

534/14/9/76

APPENDIX 7

Preliminary UXO Risk Assessment

UNEXPLODED BOMB RISK MAP

SITE LOCATION

Location: L14 8UL,
Map Centre: 342539,392687

This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- **High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- **Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- **Low:** Areas indicated as having 15 bombs per 1000acre or less.

Miltary | **Industry** | **UXO find** | **Other**
Transport | **Docks** | **Luftwaffe targets**
Utilities | **Bombing decoy** | **Airfields**

How to use your Unexploded Bomb (UXB) risk map?

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density.
Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then additional detailed research is recommended.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirm that there is a low potential for UXO to be present on your site, then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

If you are unsure whether other sources of UXO may be present, you can request one of our pre-desk study assessments (PDSA) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 **email:** uxo@zetica.com **web:** www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the accompanying notes on our website.

STAGE 1 PRELIMINARY UXO RISK ASSESSMENT

Report Ref: PRA-25-2783 | **Author:** DS | **Reviewer:** WS

Client: IGE Consulting
Project: Southdean Road, Liverpool
Date: 11/07/2025

BRIMSTONE
Innovation Centre Medway, Maidstone Road, Chatham, ME5 9FD
020 7117 2492
www.brimstoneuxo.com

INTRODUCTION

The Stage 1 Preliminary Risk Assessment aims to identify potential sources of unexploded ordnance (UXO) that may impact the site. The assessment determines if further investigation through a Stage 2 Detailed UXO Risk Assessment is necessary.
This desktop study follows the Construction Industry Research and Information Association (CIRIA) C681 Guidelines: 'Unexploded Ordnance, a Guide for the Construction Industry' (published in 2009). It incorporates multiple historical datasets, including available wartime records, Ordnance Survey (OS) mapping, aerial imagery and the Brimstone UXO Sources Database.

THE SITE

National Grid Ref: SJ 42647 92659 | **What3Words:** piper.skinny.elbow

Location: Situated in Liverpool, within the Metropolitan County of Merseyside, approximately 2km north-west of Roby railway station.

Site Composition: The northern extent largely comprises undeveloped, open ground, while the southern extent comprises hard surfaced sports grounds and accessways.

Surroundings: Bound to the north and west by further undeveloped ground, to the east by residences on Ashbury Road, and to the south by Southdean Road and St Dominic Roman Catholic Church.

THE PROPOSED WORKS

Site Investigation (SI) Works	SI works will likely comprise deep boreholes; however, information regarding depths of these boreholes was not provided.
Development Works	The Client has indicated that a residential development is planned on Site, potentially with piled foundations; although further details, including precise depths of intrusions, were not provided.

SITE HISTORY

Pre-WWII	The Site was largely undeveloped, with a school structure present in the southern extent.
WWII-era	No notable development has occurred. The Site remains largely undeveloped, with the school structure present in the south.

Post-WWII	Additional structures associated with the pre-WWII school were constructed in the northern extent of the Site by 1955, with further structures and associated hardstanding constructed in this section by 2000. However, all structures on Site were cleared by 2012. General maintenance and laying of hardstanding will have disturbed WWII-era soil to very shallow (<1m below ground level (bgl)) across the Site. The construction / clearance of the pre- and post-WWII structures will have disturbed WWII-era soil to shallow (1-2m bgl) depths in their footprints. No deep (>2m bgl) intrusions are anticipated to have occurred across the Site.
ENEMY ACTION DURING WWI	
WWI German Bombing	No air raids affected Liverpool during WWI.
ENEMY ACTION DURING WWII	
British District Bombing Density Statistics	The Site is situated in the WWII-era Urban District of Huyton with Roby, which sustained 22.3 bombs / 1,000 acres, a low-to-moderate bombing density. The Site was also situated approximately 70m east of the County Borough of Liverpool, which sustained 91.5 bombs / 1,000 acres, a moderate-to-high bombing density.
Evidence of Bomb Strikes	No bombing incidents recorded on Site in consulted sources. The closest incident, comprising a high-explosive (HE) bomb or anti-aircraft (AA) shell strike, occurred approximately 425m south-east.
Evidence of Bomb Damage	No immediately obvious evidence of bomb damage, such as clearance or cratering, visible on Site or in the vicinity.
Local Bombing Decoy Sites	None within a significant distance. The closest recorded decoy was approximately 2.7km north-west.
Local German Bombing Targets	The closest identifiable primary Luftwaffe target was the Green Lane Road waterworks, approximately 3.9km south-west. Railway infrastructure approximately 1.9km south of the Site, may have been identified as a target of opportunity.
BRITISH / ALLIED MILITARY ACTIVITY	
Potential Source of UXO	**Details**
WWII Home Guard (HG) Activity	Soldiers of the 86th Liverpool (Stoneycroft) HG Battalion will have been active locally during WWII. However, armed HG troops on patrol are unlikely to have accessed the Site or utilised it in any significant way due to its use as a school.
Historic or Current Military Activity	No evidence of activity occurring on Site found at this stage within an in-house geo data set or a local Historic Environment Record (HER).
WWII Light and / or Heavy Anti-Aircraft (LAA and HAA) Batteries	22 permanent HAA batteries were active within range of the Site during WWII. LAA guns likely have defended vulnerable points in the wider study area. Luftwaffe activity in the region was frequent and as a result these guns would have fired a considerable amount of ordnance. It is possible that an unexploded AA shell struck the Site and penetrated to a shallow depth in the open ground present in the north.

UXO Finds	n/a
LIKELIHOOD OF UXB DETECTION	
Access Levels	Access levels were likely frequent in the south of the Site; no evidence has been identified to suggest the school was evacuated / requisitioned. Although, access to the north was likely infrequent, although this would have depended on the landowner(s).
Ground Cover	The ground cover in the south was conducive to the visual detection of UXBs. However, the ground cover in the north was likely unconducive to the visual detection of UXBs
RISK MITIGATING FACTORS	
Likelihood of UXO Remaining	The risk associated with (any) very shallow buried UXO will have likely been largely mitigated across the Site. The risk associated with (any) shallow buried UXO will have likely been partially mitigated in the footprints of the pre- and post-WWII school structures. The risk associated with (any) deep buried UXO almost certainly remains unmitigated.
CONCLUSIONS	

German UXO:

- No bombing incidents recorded on Site in consulted sources; the closest incident, comprising a HE bomb or AA shell strike, occurred approximately 425m south-east. No immediately obvious evidence of bomb damage visible on Site or in the vicinity.
- Whilst the ground cover in the north of the Site was potentially unconducive to the detection of UXBs, monitor levels are anticipated to have been frequent and regular, given the undamaged school in the south.
- However, given the lack of evidence suggesting the Site was affected by bombing, the risk of encountering German UXBs is not considered elevated above the 'background level' for the country, and further research is not deemed necessary.

British / Allied UXO:

- No evidence of significant military activity specifically on Site has been found and none is likely to have occurred.
- It is possible that an unexploded British AA shell struck the Site during WWII. Any such UXO could have penetrated the open ground in the north of the Site to shallow depths and may remain in situ.

RECOMMENDATIONS	
SI Works	A Stage 2 Detailed Risk Assessment is not considered necessary prior to SI works commencing. However, the possibility of UXO remaining on Site cannot be completely ruled out at desktop stage. Therefore, a **UXO Safety Briefing** to all personnel conducting ground works would be considered prudent.
Development Works	

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Email: contact@igeconsulting.co.uk