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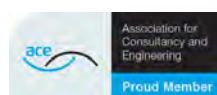
Phase 1 Geo-Environmental Investigation Report

For: Breck Homes



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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 March 2025. Phase 1 desk study work was undertaken in April 2025.

1.1 Site Location and Description

This report pertains to a c. 0.70 Ha site located to the south of Pilch Lane, Liverpool, c. 7.00km east of Liverpool City Centre, at the approximate post code L14 0JG. The National Ordnance Survey Grid Reference for the centre of the site is 341850E, 391139N.

The site currently comprises a vacant plot of land which is predominantly grassed save for an area of hardstanding in the north-western site section. The site is bound by Pilch Lane to the north, St Margaret Mary's Church to the west, open land to the south and residential properties to the east. Access to the site is off Pilch Lane along the northern site boundary. 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 March 2022. The site boundary is highlighted in pink.

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 40 No. semi-detached, terraced and maisonette dwellings with associated private gardens, soft landscaping and access roads. A proposed development plan is contained in Appendix 2 and as an extract below.



Figure 2: An extract of the proposed development plan, taken from Breck Homes, Proposed Site Layout, Ref: Pilch Lane / Proposed Site Layout, Rev. A, dated March 2025

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 14th April 2025 in clear 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-8M9-CXS-OWQ-ZTR) 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 Appendix 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 September 2022, April 2019, September 2005, May 2001, and July 2000.
- c) Historical Ordnance Survey maps dated between 1852 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 bedrock and superficial geological map (sheet ref: 96, dated 2006); and
- e) A Zetica UXO Risk Map was obtained and is included in Appendix 7.
- f) A Preliminary UXO Risk Assessment Report was obtained from Brimstone Site Investigation Ltd. and is included in Appendix 7.
- g) RoC Consulting, Phase 2 Site Investigation report (Ref: ROCP Ltd / RM / AS / 4227-ROC-XX-XX-RP-ES-PH2SI R2, revision R4, dated 20.10.2021) was obtained from the Knowsley Council Planning Portal.

3.0 FINDINGS

3.1 Walkover Survey

The walkover survey was carried out on 14th April 2025 during clear weather conditions. During the walkover survey the following features were noted.

The site currently comprises a vacant plot of land with an area of hardstanding in the north-western site section. The ground underfoot was noted to be hardstanding across the northern site section, with areas of bare soil and vegetated areas in the remaining areas of the site.



Figures 3 and 4: The northern site section (left) and the south-western site section with stockpiled soils (right).

The topography of the site is relatively flat, falling from c. 34.20m AOD in the north-east to c. 33.40m AOD along the south-western boundary. A 1:0.175 slope was noted on the LiDAR imagery in the central site section, sloping to the south-west. This is anticipated to be associated with the stockpiles discussed below.

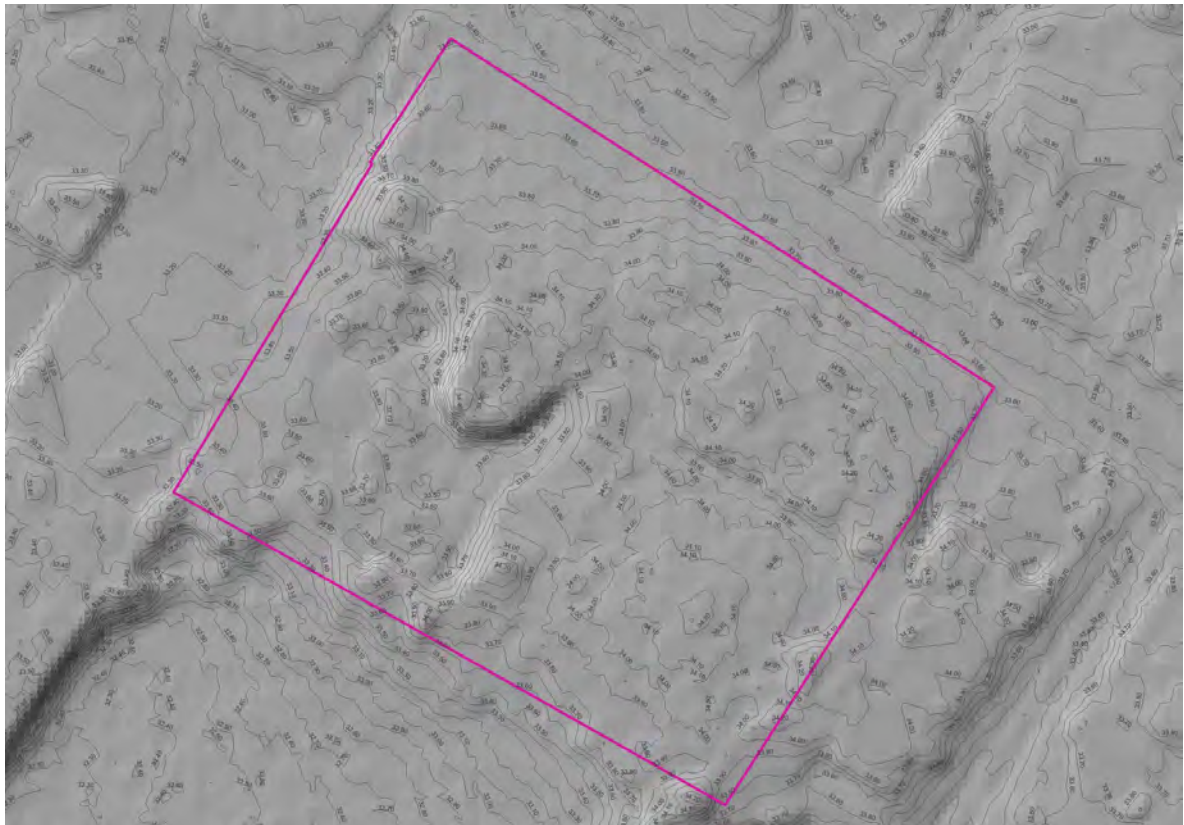


Figure 5: An extract of the LiDAR imagery of the site, showing the on-site topography.

Site features

Numerous stockpiles of suspected Made Ground materials were noted across the site, particularly in the southern and central site section. The stockpiles were noted to vary in size and contain predominantly plastic, metal, timber and plant remains. Monitoring wells, anticipated to have been installed during a previous ground investigation of the site, were noted in the northern site section. Established trees were also noted along the site boundaries.



Figures 6 and 7: Stockpiles in the southern site section (left) and a monitoring well in the northern site section (right).

Contamination

No evidence of contamination (i.e. spillages or leakages) were identified. Discarded materials (possible fly-tipping) were encountered during the walkover however are not deemed to be a contaminative source as the material is primarily inert (timber, metal and plastic).



Figures 8 and 9: Discarded materials in the eastern site section (left) and in the central site section (right).

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
1851 - 1937	On the earliest historical map, the site is recorded as open land with Pilch Lane recorded along the northern boundary.
1937 – 2010	By 1937, the Boundary Hotel is now recorded in the northern site section with associated bowling greens in the southern site section.
2010 – 2025	The site remains relatively unchanged until 2010 when the hotel has been demolished and the bowling greens are no longer recorded. The site remains relatively unchanged since.



Figure 10: Extracts of the OS historical maps dated 1892 and 2003 (left to right)

Off-Site History

Date	Site Feature	Distance (m)	Direction
1851 - 1978	Numerous ponds were recorded within a 500m radius of the site from 1851, all of them appear to have been developed and presumed infilled by 1978 when they are no longer recorded.	50 - 500	N, E, S, W
1891 - 1937	A sand pit is recorded to the east of the site from the early 1890s, it is no longer present after 1937 when the area is developed into residential housing.	230 - 250	E
1851 - 1891	An additional sand pit is recorded on the earliest historical map to the south-west of the site, however it is no longer noted on the historical records after the early 1890s.	470	SW
1851 - 2025	The Liverpool and Manchester railway line is recorded to the south of the site on the earliest historical map. This feature remains relatively unchanged until the present day.	480 - 500	S

Given the predominantly residential and historically agricultural nature of the area no further significant potential contaminative sources were recorded off site.

3.3 Geology

3.3.1 BGS Geological Map

The BGS 1:50,000 superficial and bedrock geological maps of the area (sheet No: 96, both dated 2006) indicate that the site is underlain by superficial deposits comprising **Glacial Till** which typically comprises a heterogenous mixture of clays, sands and gravels. The site is underlain by bedrock of the **Wilmslow Sandstone Formation** comprising red-brown to brick-red, fine to medium-grained, cross-bedded sandstones, with sporadic siltstones.

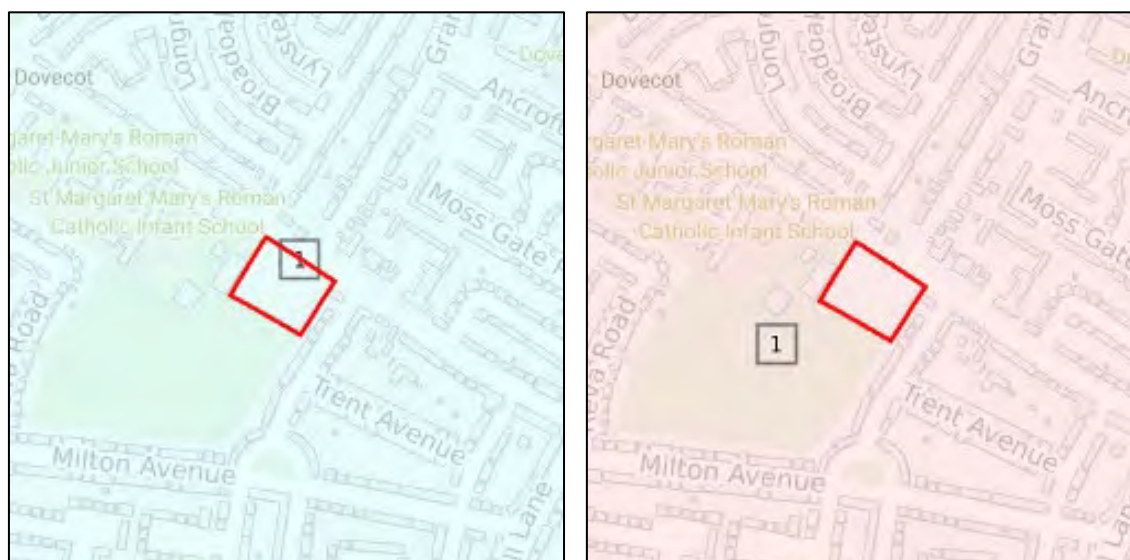


Figure 11: Extracts of the BGS 1:50,000 superficial (left) and bedrock (right) geological maps. Light blue = Glacial Till, Light Pink = Wilmslow Sandstone Formation.

No faults are recorded in the vicinity of the site. No bedrock dips are recorded, however based on the younging direction of the bedrock, the bedrock is anticipated to be dipping to the north-east.

3.3.2 BGS Borehole Logs

There were no available BGS boreholes on site. The nearest available boreholes were identified between c. 623m and 1066m to the south-east of the site, which are located within a comparable geological setting. The pertinent information from the 5 No. deepest available borehole logs is outlined below:

BGS Borehole References: SJ49SW13, SJ49SW21, SJ49SW28, SJ49SW31 and SJ49SW136

These boreholes are located approximately c. 623m – 1066m south-east of the site and were excavated to depths of between 18.29m and 101.19m bgl in 1968 and 1981. The logs recorded the following pertinent information:

- **Topsoil** to depths of between 0.30m and 0.45m bgl, underlain by:
- Localised **Made Ground** of unknown composition to a depth of c. 1.00m, underlain by:
- **Glacial Till** comprising firm to stiff, brown, sandy, gravelly clay with occasional thin to thick bands of brown, silty sand to depths of between 1.83m and 18.90m bgl, underlain by:

- **Wilmslow Sandstone Formation** comprising hard, coarse, micaceous, cross-bedded sandstone with occasional thin bands of soft mudstone to depths of at least between 18.29m and 101.19m bgl.

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: 15mg/kg – 25mg/kg
- Cadmium: 1.8mg/kg
- Chromium: 90mg/kg – 120mg/kg
- Nickel: 15mg/kg – 30mg/kg
- Lead: 100mg/kg
- Bioaccessible Lead: 60mg/kg

3.4 Mining

3.4.1 Coal Mining

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

3.4.2 Non-Coal Mining

No non-coal mining was recorded on site or within 1km of the site.

3.4.3 Salt Mining / Brine Extraction

The site does not lie within the Cheshire Brine Subsidence Compensation Board Compensation District or within a Consultation Area.

3.4.4 Historical Surface Excavations

No historical surface ground working were recorded on site. 9 No. historical surface ground workings were recorded within 250m of the site, including ponds, unspecified pits and a sand pit.

2 No. BritPits were recorded 308m east of the site and 462m south-west of the site, both related to the extraction of sand at Ashfield House Sand Pit and Thingwall Sand Pit respectively. Both have ceased operation according to Groundsure records.

As numerous ground workings were recorded within the area, as well as due to the historical presence of on-site buildings and bowling greens / pavilion, the presence of potentially unrecorded historical on-site excavations cannot be discounted.

3.4.5 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 for Merseyside indicates that the site does not lie within an area designated as containing mineral resources.

No information on the Mineral Safeguarding Areas was available from the Knowsley Council website, however, a report obtained from St Helens Council (The Evidence Base for Minerals Planning in Merseyside, Final Report, dated August 2008) states that the only Mineral Safeguarding Area in the jurisdiction of Knowsley Council is the area immediately surrounding the Cronton Clay Pit, located 5.6m to the south-east of

the site. Therefore, the site is not anticipated to be present within a Mineral Safeguarding Area.

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. - The risk of surface water flooding on site was recorded as negligible. - A moderate BGS groundwater flooding susceptibility area has also been identified on site.
Surface Water Features	No surface water features were recorded on site. The nearest surface water is the Court Hey Brook located 757m south of the site.
Surface Water Abstractions	There are no licensed surface water abstractions located on site or within 2km of the site.
Superficial Aquifer	The site is underlain by superficial deposits classified as a Secondary Undifferentiated Aquifer.
Bedrock Aquifer	The underlying bedrock is classified as a Principal Aquifer - <i>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.</i>
Groundwater Abstractions	- There are no recorded groundwater abstraction licenses located on site. - There are 2 No. active and a single historical groundwater abstraction licenses located within 2km of the site. The nearest active groundwater abstraction is located 1801m north of the site and relates to the abstraction of groundwater from a borehole at West Derby Golf Club for make-up or top up water.
Source Protection Zones	The site lies within a Source Protection Zone 3 (Total Catchment).
Nitrate Vulnerable Zones	- There is a single Nitrate Vulnerable Zone located on site related to the Ditton Brook NVZ. - There is a further single Nitrate Vulnerable Zone located 5m north of the site related to the River Alt NVZ.
Licensed Discharge Consents	There are no licensed discharge consents to controlled waters recorded on site or within 500m of the site.
Pollution Incidents to Controlled Waters	- There are no recorded pollution incidents to controlled waters located on site. - There are 2 No. pollution incidents recorded 427m north and 438m north-east of the site, related to incidents in April and August 2002 involving solvents and fumes, respectively. These were respectively recorded as Category 3 (Minor) and Category 4 (No Impact) incidents to controlled waters.

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 active or recent 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 or within 500m of the 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 are 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 historical or registered waste sites, waste treatment, transfer or disposal sites recorded on site or within 500m of the site. - There are no waste exemptions recorded on site. There are 4 No. waste exemptions recorded within 500m of the site, the nearest is located 39m east and pertains to the storing and denaturing of controlled drugs for disposal at Pilch Lane, Liverpool.
Industrial Land Use	- There are no current industrial land uses recorded on site. - There are 2 No. recent industrial uses recorded within 500m of the site, the nearest is located 45m north-west and pertains to an electricity substation. - There is a single recent petrol / fuel station recorded within 500m of the site, located 110m south-east of the site, recorded as obsolete. - There are no historical industrial land uses recorded on site. - There are 4 No. historical industrial land uses recorded within 500m of the site, including unspecified pits and sand pits. - There are 2 No. historical unspecified tanks recorded 99m north-west and 380m north-west of the site. - There are 17 No. historical energy features located within 500m of the site, all related to electricity substations. - There are 3 No. historical garages recorded within 500m of the site, recorded between 1966 and 1993.
Dangerous Substances	There are no recorded discharges of dangerous substances on site or within 500m of the site.
Hazardous Building Materials	No buildings are currently present on site, therefore asbestos containing materials are unlikely to be present, however, cannot be discounted if demolition waste is present on site following demolition of the previous building.

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 Previous Ground Investigations

RoC Consulting have previously undertaken a ground investigation of the site in 2021. The ground investigation included the following exploratory holes:

- 5 No. dynamic sample boreholes undertaken to a depth of 5.45m (WS101 to WS105); and
- 3 No. dynamic cone penetrometer tests undertaken to depths of between 0.098m and 0.950m bgl (DCP101 to DCP103A and DCP103B).

3 No. ground gas and groundwater depth monitoring wells were installed, and 4 No. subsequent monitoring visits were undertaken over a period of 2 months. Soil samples were obtained during the ground investigation and sent for subsequent chemical and geotechnical laboratory testing.

The typical ground conditions encountered were as follows:

- **Made Ground** comprising asphalt and concrete to a depth of c. 0.30m bgl, underlain by:
- **Made Ground** comprising dark brown, gravelly sand, brick, concrete and clinker to a depth of between 0.70m and 1.30m bgl, underlain by:
- **Glacial Till** comprising soft becoming stiff, slightly gravelly, slightly sandy clay with occasional sand bands to a depth of at least 5.45m bgl.

In the western site section, RoC stated that a band of 'relic topsoil' was encountered at the base of the Made Ground. However, in one location the band was recorded within Glacial Till. The stratum was recorded to comprise a very soft dark greyish brown slightly sandy organic clay and was present at depths of between 1.20m and 2.70m bgl (0.20m – 0.60m thick).

A single SPT was undertaken within the stratum recorded as relic topsoil in WS105 between 1.50m and 2.70m bgl within Glacial Till which recorded an N-value of 0. However, due to its location within Glacial Till, this may be an organic band of Glacial Till rather than relic topsoil.

Groundwater strikes were recorded between 1.20m and 4.00m bgl. The resting water level was observed between 1.20m and 1.87m bgl.

Geotechnical Testing

Standard penetration tests were undertaken by RoC at 1m intervals within the dynamic sample boreholes which recorded variable N-values of between 7 and 27 (average N-value of 16) within the Glacial Till, typically increasing with depth.

The dynamic cone penetrometer test results identified CBR values of between 2% and 12% within the Glacial Till.

Subsequent laboratory geotechnical testing was undertaken. 10 No. samples of Glacial Till were submitted for the determination of the plasticity index (Atterberg limit tests). 9 No. samples were recorded to be of low plasticity with the exception of the sample taken from WS105 at 2.50m bgl, which was recorded to be of medium plasticity. All Glacial Till samples were identified to be of low volume change potential.

Foundations

RoC do not recommend the construction of foundations onto the Made Ground deposits, as it may lead to differential settlement. The Glacial Till was found to be a potentially competent founding stratum at depths greater than 2.00m bgl by RoC, however, due to localised weakening and presence of groundwater, RoC recommended that vibro stone column (VSC) ground improvement may be implemented to treat shallow soils and potentially reduce foundation excavation depths. Based on the proposed development being lower than 3-storeys in height and constructed using masonry, RoC recommend the implementation of a ground bearing foundation solution, comprising pad or strip footings placed upon the firm to stiff Glacial Till.

Chemical Testing

The RoC ground investigation was undertaken based on a commercial end use (care home with limited soft landscaping areas), therefore, only a single GAC exceedance was recorded pertaining to lead (465mg/kg) within Made Ground in WS105 at 1.00m bgl. Therefore, RoC recommended a 450mm clean cover system within areas of soft landscaping. However, as the proposed development is now a residential end use, the RoC chemical data has been re-assessed against residential with home grown produce GACs. When re-assessed against relevant GACs, a single lead exceedance is recorded within the RoC data.

Ground Gas Monitoring

4 No. ground gas monitoring visits were undertaken by RoC which recorded a maximum carbon dioxide concentration of 0.9% v/v. No methane or steady gas flow were recorded above detection limit. Based on the ground gas monitoring results, RoC classified the site as Characteristic Situation (CS) 1 and recommended no ground gas protection measures.

During the groundwater depth monitoring visits, groundwater was recorded at depths of between 0.62m and 1.87m bgl.

3.9 Unexploded Ordnance (UXO)

The Zetica UXO risk map, contained in Appendix 7, indicates that the site lies within an area of **high risk**, therefore, a Preliminary UXO Risk Assessment Report has been obtained from Brimstone Site Investigation Ltd. The report is included in Appendix 7 and is summarised below.

With respect to World War II German bombing of Liverpool, the site was found to be located between the WWII-era administrative boundaries of County Borough of Liverpool and Urban District of Huyton with Roby, which were impacted with moderate to high and low to moderate bombing, respectively. The nearest impact was recorded within 240m to the south-east, anticipated to be related to a 50kg HE bomb strike. Furthermore, a water works located within 2.9km north west of the site was identified as a primary Luftwaffe bombing target. The railway infrastructure

present 460m south of the site was recorded as a potential target of opportunity. However no evidence was noted that the site itself was targeted.

The 86th Liverpool (Stoneycroft) HG Battalion may have accessed the site due to it being undeveloped during WWII.

7 No. possible military – related huts were recorded in the adjacent church grounds, however there is no evidence to suggest these were utilised by the military; the structures may have been used to provide temporary housing for bombing victims.

The report found that during WWII, 22 No. permanent Heavy Anti-Aircraft (HAA) batteries were present in the vicinity of the site and within its range. Consequently, it is possible that an unexploded shell struck the site, as a large number of ammunition was stored in these facilities. Additionally, LAA guns were recorded as likely to have been utilised to defend vulnerable targets, as Luftwaffe activity was known to be frequent, therefore a large amount of ordnance may have been fired. Furthermore, it is considered possible that an unexploded AA shell has historically struck the site and penetrated into the shallow ground.

As the site has changed since WWII, it is likely that the risk associated with shallow buried UXO was partially mitigated, however, any deep (2m bgl and below) UXO may still remain buried, consequently, the associated risk remains.

In conclusion, the report states '*A Stage 2 Detailed Risk Assessment is not considered necessary. 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*'.

3.10 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.

3.11 Archaeology

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

4.0 CONCLUSIONS

4.1 General

The site currently comprises a vacant plot of land with and an area of hardstanding in the north-western site section. The site formerly comprised a hotel building with associated bowling greens which has been demolished since 2010.

4.2 Ground Conditions and Geotechnical Hazard Identification

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

- **Made Ground** comprising asphalt, concrete, dark brown, gravelly sand and very soft, dark greyish brown, slightly sandy, organic clay to depths of between 0.70m and 1.30m bgl, underlain by:
- **Made Ground (Relic Topsoil)** comprising very soft, dark greyish brown, slightly sandy, organic clay with plant remains to a depth of between 1.20m and 1.30m bgl, underlain by:
- **Glacial Till** comprising firm to stiff, soft in places, brown, slightly gravelly, slightly sandy clay with thin to thick bands of loose to medium dense, silty, fine to coarse sand to a depth of at least 5.45m bgl (likely 12m – 18m bgl); underlain by:
- **Wilmslow Sandstone Formation** comprising reddish brown sandstone with sporadic siltstones.

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 has been recorded by RoC on site to depths of up to 1.30m bgl. The Made Ground was noted to be primarily granular but soft, organic clays were also recorded at the base of the Made Ground (possible relic topsoil)	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, given the presence of Made Ground, which could be locally deep, there is potential for aggressive ground conditions to be present on site.	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 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.	Low to Moderate
Shrink and Swell Clays	Established trees are present along the site boundaries. Low to moderate plasticity and low volume change potential Glacial Till deposits are 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
Obstructions	Although no significant obstructions were encountered during the ground investigation undertaken by RoC with the exception of near surface concrete slabs, the presence of obstructions i.e former foundations and wall, cannot be discounted.	May act as obstructions to excavations and / or the chosen foundation solution or act as 'hard spots' within the ground if left in-situ.	Low to Moderate
Soft Spots	Very soft organic clays have been recorded on site, determined to be relic topsoil by RoC. However, a band of very soft clay (N-value of 0) was recorded within Glacial Till between 1.50m and 2.70m bgl within one exploratory hole. This is unlikely to be relic topsoil as the other very soft organic clays encountered at the base of Made Ground, therefore, there may be localised soft spots within the Glacial Till as well as Made Ground. The bands of very soft clays vary from 0.20m – 1.20m thick.	Soft spots may cause differential settlement of foundations therefore there will be a requirement for localised deepening of foundations where soft spots are present.	Moderate

4.3 Sources of Contamination and Probable Contaminants

Based on the desk study information the following potentially contaminative 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 sulfide, VOCs	Made Ground has been recorded on site during the RoC site investigation, with a single exceedance of lead recorded.

Given the agricultural and residential nature of the immediate area surrounding the site, no significant potentially contaminative sources or ground gas sources have been identified within 500m of the site.

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 to bedrock; and
- Presence and extent of underground obstructions.

4.4 Identified Pathways of Contamination

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

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 underlying Secondary Undifferentiated Aquifer and Principal Aquifer; and
- Surface Water – none on site or within influence of the site. The nearest is located over 750m of the site.

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	A B C E F	End users General public	Effect on human health (Medium)	Low likelihood: Made Ground was recorded on site during the RoC ground investigation, primarily comprising suspected demolition rubble. A lead exceedance was recorded in a single exploratory hole within Made Ground. Additional elevated concentrations cannot be discounted however widespread contamination is not anticipated. Ingestion, dermal and inhalation pathways will be reduced across the majority 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, reduced to unlikely with best practice: Construction workers will be at increased risk due to their acute interaction with soils, however, and as potential contaminative hotspots within the Made Ground have been identified. The appropriate use of PPE, Good Practice and Health and Safety Measures are likely to reduce the risk.	Low
	D	End users and general public		Unlikely: No potential sources of VOCs have been identified. If localised contaminative hotspots of VOCs are present (i.e. from possible spillages from vehicles present at the former hotel or a possible former boiler room) 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	Human occupants Site Workers	Effect on human health (Mild to Severe*)	Low likelihood: Made Ground deposits are anticipated to be present across the site, which are primarily granular and present to a depth of between 0.70m and 1.30m bgl. However, soft organic deposits including possible relic topsoil has been recorded during the RoC ground investigation. RoC undertook 4 No. ground gas monitoring visits of 3 No. ground gas monitoring wells. 1 No. of the wells had a response zone within the Glacial Till and organic relic Topsoil, a second well had a response zone within organic deposits within the Glacial Till. No significant ground gas concentrations were recorded, a maximum carbon dioxide concentration of 0.9% v/v was recorded and no methane or steady flow rates above detection limits were recorded. Therefore, RoC deemed the site to be in-line with a Characteristic Situation 1. However, given the updated development proposals, now a residential development, further ground gas monitoring may be required to confirm the low ground gas risk.	Low
		Building and Structures	Damage to building (Mild)		
		Building and Structures	Damage to building (Mild)		
		Building and Structures	Damage to building (Mild)		

*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	A C D	Groundwater within the Secondary Undifferentiated and Principal Aquifers	Effects to controlled waters (Mild)	Low likelihood: Made Ground was recorded on site during the RoC ground investigation however was relatively shallow (0.70m – 1.30m bgl). Significant contaminative sources have not been identified and widespread contamination is not anticipated. The presence of significant deposits of fine Glacial Till (to c. 12.00m – 18.00m bgl) will act as an aquitard to any possible contamination significantly reduce any potential vertical migration into the underlying aquifers. Additionally, the contaminants of concern based on the site's history (metals and PAHs) are of low solubility and mobility, therefore the likelihood of migration is further reduced. Following development there will be a significant increase in hardstanding (i.e. buildings and roads) across the site and an increase in drainage features therefore infiltration and subsequent vertical migration will be further reduced.	Low
	B	Surface water courses	Effects to controlled waters: (Mild)	Unlikely: Groundwater was recorded in some exploratory holes during the RoC ground investigation at depths of between 1.20m and 1.87m bgl, however, the groundwater is not anticipated to be continuous but rather present in discrete pockets of coarse deposits. The presence of primarily fine Glacial Till between the site and the nearest surface water feature, as well as the presence of significant drainage infrastructure, will negate the potential for lateral migration of contaminants. Additionally, no significant contaminative sources have been recorded on site and the nearest surface water feature is present over 750m from the site. Consequently, lateral migration and overland flow are not deemed feasible pathways and can be excluded.	Very Low

4.7 Preliminary Risk Assessment Summary

Human Health

Based on the human health conceptual model the risk to human health is deemed low to moderate to end users and construction worker as feasible pathways may be present within areas of soft landscaping. 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.

Ground Gas

No significant ground gas sources have been identified. The results of the RoC ground gas monitoring as well as the conceptual site model indicate that there is a low risk of ground gas. However, given the sensitivity of the development it is recommended that further ground gas monitoring is undertaken to confirm the ground gas risk, including 6 No. visits over 3 No. months.

If any organic rich Made Ground deposits are identified or if previously unrecorded potential ground gas sources are recorded during the ground investigation works, then ground gas monitoring may be required. 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

Although sensitive receptors have been identified beneath the site (Secondary Undifferentiated and Principal Aquifers) no significant contaminative linkages exist, therefore the risk to controlled waters is deemed very low 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 solid samples 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 location of previous site features including the former hotel building.

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 monitoring wells.

Based on the findings of the initial ground investigation works, further works may be required, including deep boreholes (e.g. cable percussive or rotary core boreholes).

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 very low to low given the lack of feasible contaminative linkages.
- A low ground gas risk has been identified however it is recommended that ground gas monitoring is undertaken to confirm the ground gas regime, including 6 No. visits over 3 months. 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.
- 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 should be 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 been 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, 2024) 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'.*

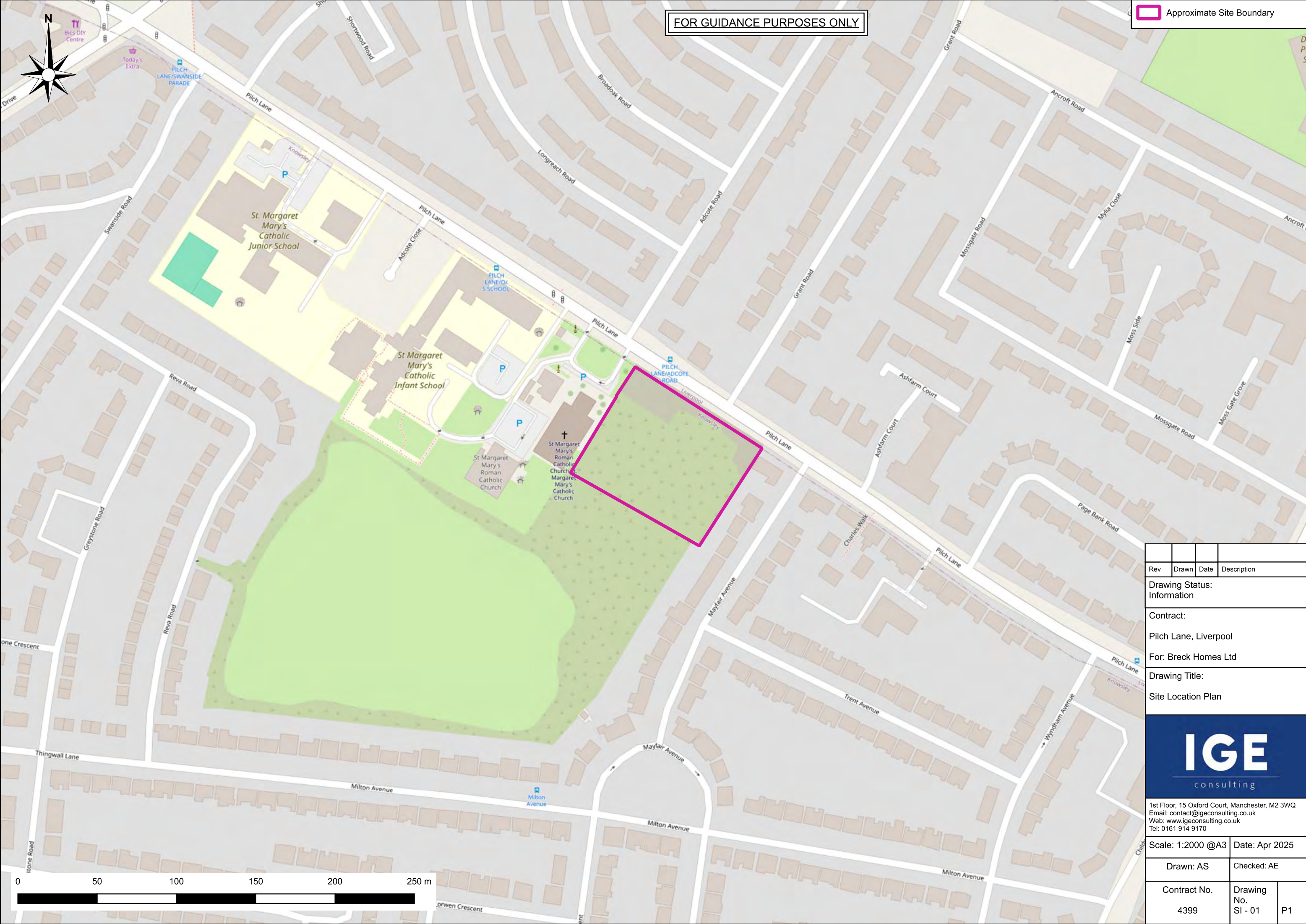
Paragraph 196 of the NPPF states that planning policies and decisions for developments should also ensure that:

- *'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

Rev	Drawn	Date	Description
Drawing Status: Information			
Contract: Pilch Lane, Liverpool			
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: 1:2000 @A3		Date: Apr 2025	
Drawn: AS		Checked: AE	
Contract No. 4399		Drawing No. SI - 01	P1

FOR GUIDANCE PURPOSES ONLY

Approximate Site Boundary

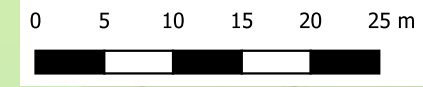
Proposed Plots

On-Site Historical Boundary Hotel and Public House (1937-2010)

On-Site Historical Bowling Greens and Pavilion (1937-2010)

RoC DCPs (2021)

RoC Window Sample Holes (2021)



Rev	Drawn	Date	Description
Drawing Status: Information			
Contract: Pilch Lane, Liverpool			
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: 1:550 @A3		Date: Apr 2025	
Drawn: AS		Checked: AE	
Contract No. 4399	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.

Key

- Made Ground
- Glacial Till (fine)
- Glacial Till (coarse)
- Wilmslow Sandstone Formation

SOURCES

Sources

1. On-site Made Ground

Secondary Sources

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

Ground Gas Sources

1. On-site Made Ground

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

Ground Gas Pathways

- A. Preferential migration along foundations & service ducts.
- B. Migration within groundwater.
- C. Ingress through cavity walls and floors.
- D. Inhalation of ground gas and vapours

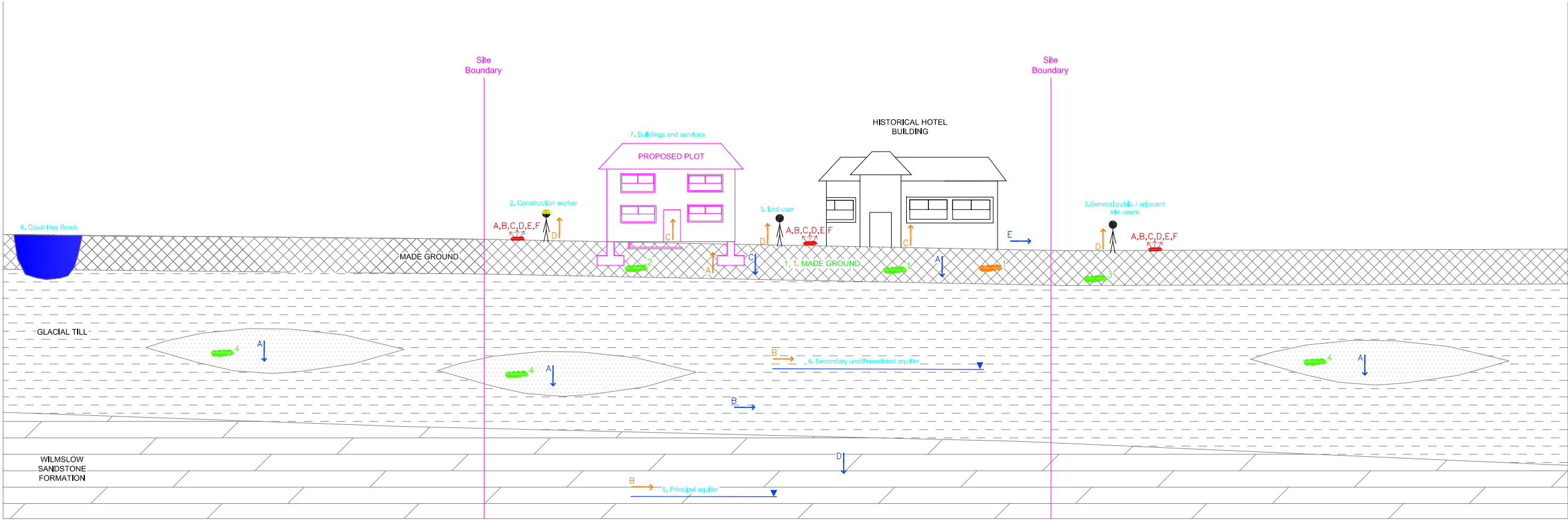
RECEPTORS

Receptors

1. End user
2. Construction workers
3. General public / adjacent site users
4. Secondary undifferentiated aquiifer in superficial deposits
5. Principal aquiifer in bedrock
6. Surface water - off-site Court Hey Brook (757m south)
7. Buildings and services

SW

NE



Rev	Drawn	Date	Description
Drawing Status			
INFORMATION			
Contract			
PILCH LANE, LIVERPOOL			
FOR: BRECK HOMES LTD			
Drawing Title			
CONCEPTUAL SITE MODEL			
IGEconsulting			
1st Floor, 15 Oxford Court, Manchester, M2 3WQ email: contact@igeconsulting.co.uk web: www.igeconsulting.co.uk			
Scale		Date	
NTS		APR 2025	
Drawn		Checked	
AS		AE	
Contract No.		Drawing No.	
4399		SI-03 P1	



House type	m ²	Ft ²	Total No.	Total m ²	Total Ft ²
Type C - 2B3P House Type (NDSS & M4(2))	74	797	6	444	4779
Type F - 3B4P House Type (NDSS)	86	926	16	1376	14811
Type K - 4B6P 2.5 Storey House Type (NDSS)	114	1227	2	228	2454
Type P - 1b2p 50 Maisonettes (M42)	50	538	8	400	4306
Type P - 1b2p 57 Maisonettes (NDSS)	57	614	8	456	4908
TOTAL	40	2904		31258	

	Site Area		Density		Footage			
	Ha	Ac	Un/Ha	Un/Ac	m ² /Ha	m ² /Ac	Ft ² /Ha	Ft ² /Ac
Gross	0.72	1.78	55.56	22.48	4033.33	3632.23	43434.40	17569.21
Nett	0.72	1.78	55.56	22.48	4033.33	3632.23	4033.33	17569.21

HOUSE TYPE KEY:

TYPE C 2B3P
HOUSE TYPE 74

TYPE F 3B4P
HOUSE TYPE 86

TYPE K 4B6P
HOUSE TYPE 114

TYPE P1 1B2P 50 (GF)
TYPE P2 1B2P 57 (FF)

0510152025

SCALE BAR

A

MAR.25

SHW

SCHEME RE-DESIGNED

REV

DATE

DRAWN

DESCRIPTION

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:

PILCH LANE, LIVERPOOL

DATE:

FEB.25

SCALE:

1:500

@ A3

JOB REF:

-

DRAWING NUMBER:

Pilch Lane /

Proposed Site Layout

REV:

A

APPENDIX 3

WALKOVER SURVEY PHOTOGRAPHS AND PHOTOGRAPH LOCATION PLAN



Rev	Drawn	Date	Description
Drawing Status: Information			
Contract:			
Pilch Lane, Liverpool			
For: Breck Homes Ltd			
Drawing Title:			
Site Walkover Photograph Location Plan			
IGEconsulting 1st Floor, 15 Oxford Court, Manchester, M2 3WQ Email: contact@igeconsulting.co.uk Web: www.igeconsulting.co.uk Tel: 0161 914 9170			
Scale: 1:2000 @A3		Date: Apr 2025	
Drawn: AS		Checked: AE	
Contract No.		Drawing No.	
4399		SI - 04	P1

SITE WALKOVER PHOTOGRAPHS – 14th April 2025



Figure 1 – Site entrance in the north-western site corner, looking north-east.



Figure 2 – The north-western site section, looking south-east.



Figure 3 – An on-site monitoring well in the north-western site section, looking south-west.



Figure 4 – The northern site section, looking south-east.



Figure 5 – A suspected disused service or on-site street light structure, looking north-east.



Figure 6 – Fly-tipping and stockpiles in the eastern site section, looking south-east.

SITE WALKOVER PHOTOGRAPHS – 14th April 2025



Figure 7 – Suspected Japanese Knotweed in the south-eastern site section, looking south-west.



Figure 8 – On-site stockpiled materials in the south-eastern site section, looking south.



Figure 9 – Stockpiled soils in the central site section, looking north-west.



Figure 10 – The north-eastern site section, looking north-east.



Figure 11 – Metal and timber fly-tipping in the central site section, looking north-east.



Figure 12 – A gentle change in topography in the central site section, looking north.

SITE WALKOVER PHOTOGRAPHS – 14th April 2025



Figure 13 – Stockpiled soils in the south-western site section, looking west.



Figure 14 – A stockpile in the south-western site corner, looking south-west.



Figure 15 – The southern site section, looking south-east.



Figure 16 – Change in topography in the north-western site corner, looking north-east.

APPENDIX 4

HISTORICAL ORDNANCE SURVEY MAPS

Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: County Series

Map date: 1892

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1892
 Revised 1892
 Edition N/A
 Copyright N/A
 Levelled N/A

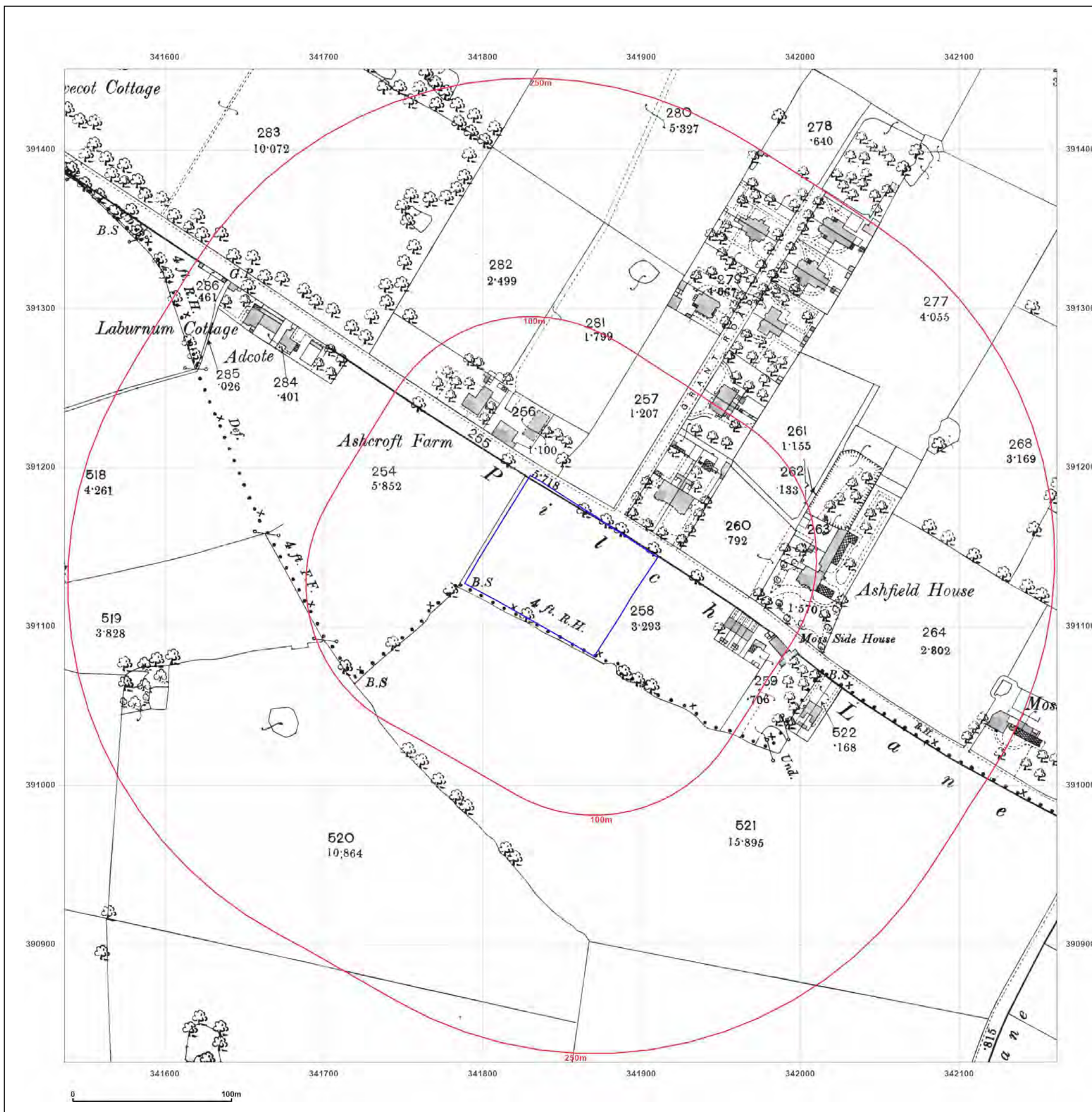


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Production date: 14 March 2025

Map legend available at:
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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: County Series

Map date: 1907

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1907
 Revised 1907
 Edition N/A
 Copyright N/A
 Levelled N/A

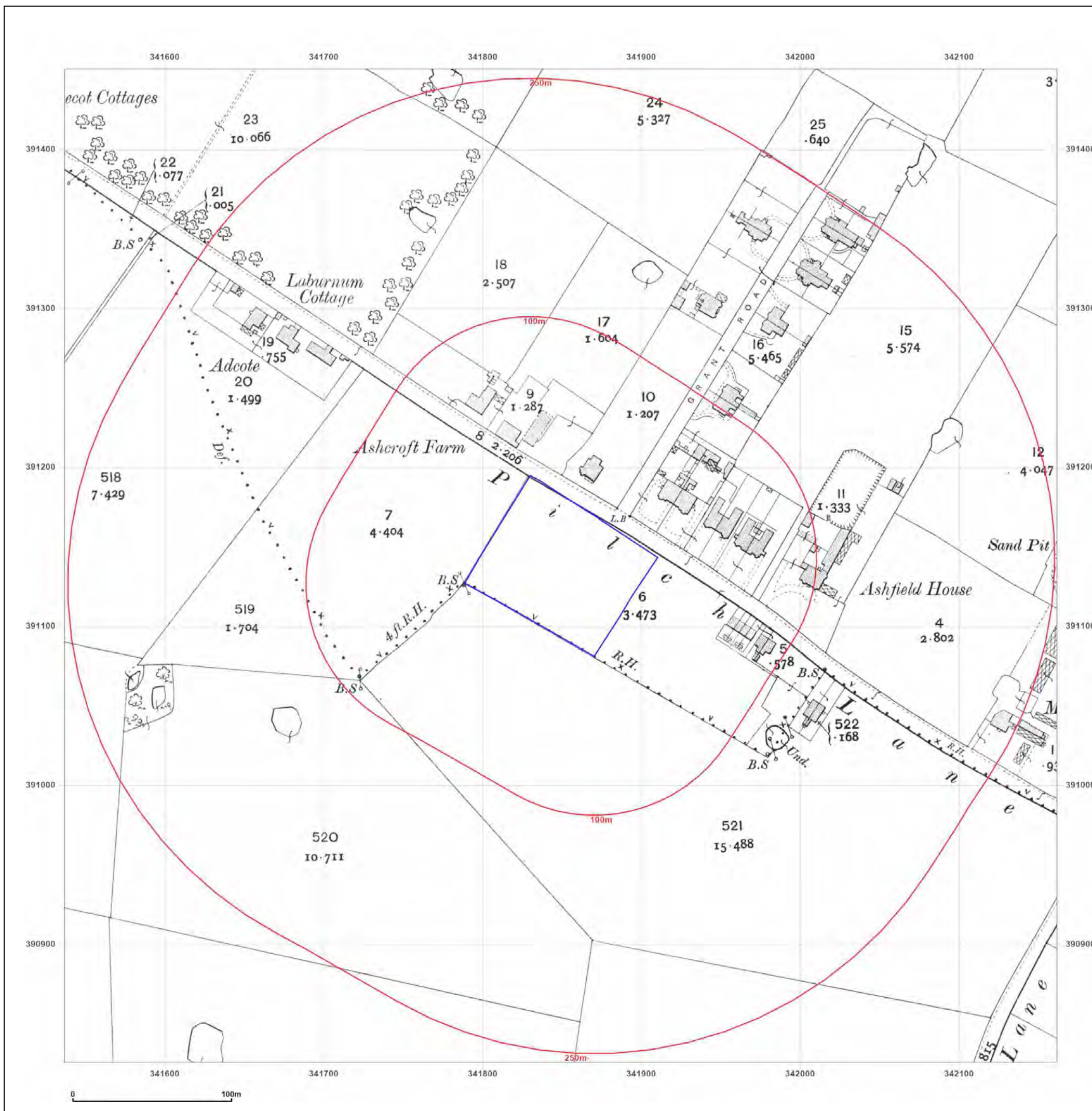


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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: County Series

Map date: 1927

Scale: 1:2,500

Printed at: 1:2,500



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

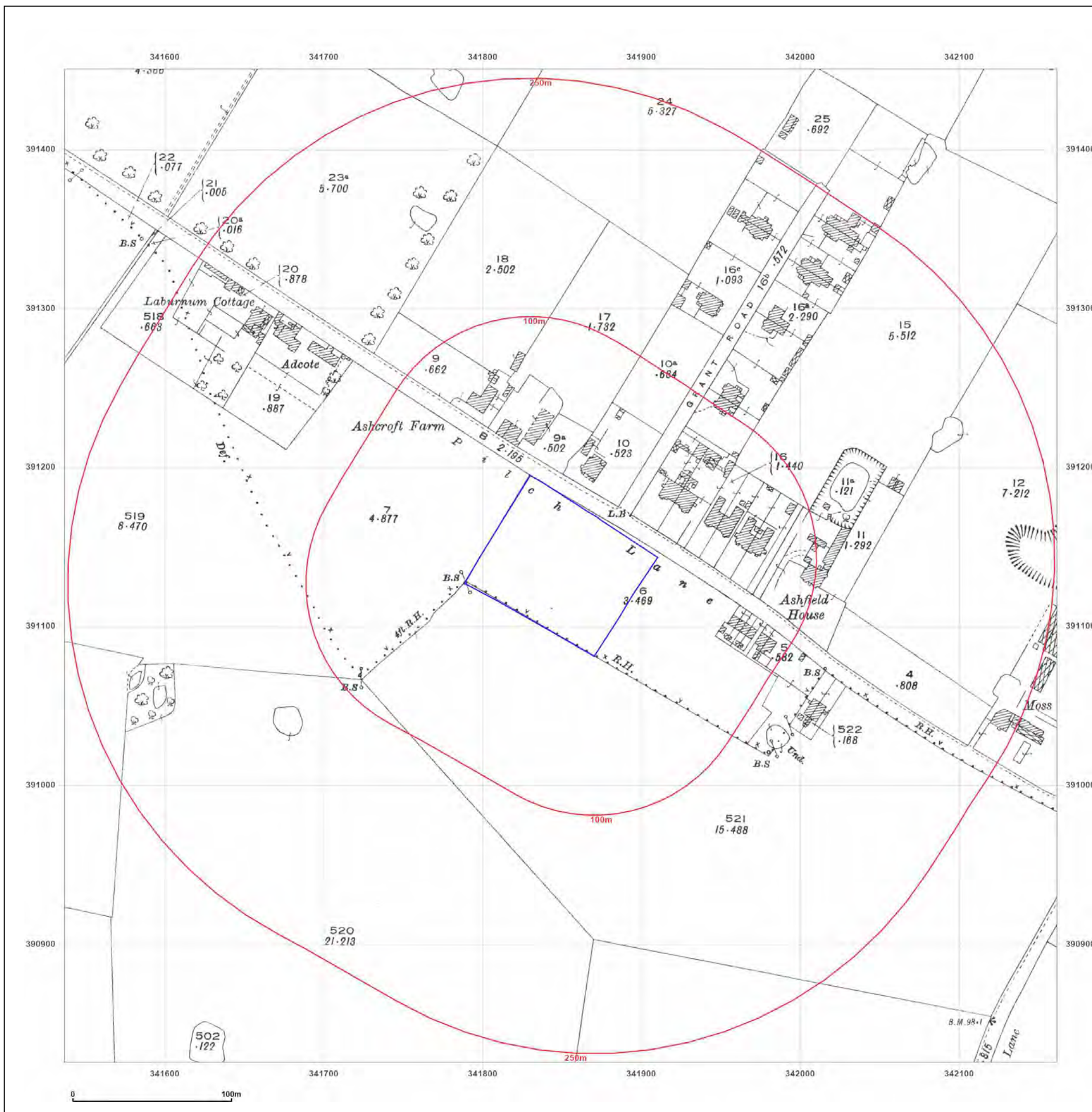


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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: County Series

Map date: 1937

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1937
Revised 1937
Edition N/A
Copyright N/A
Levelled N/A

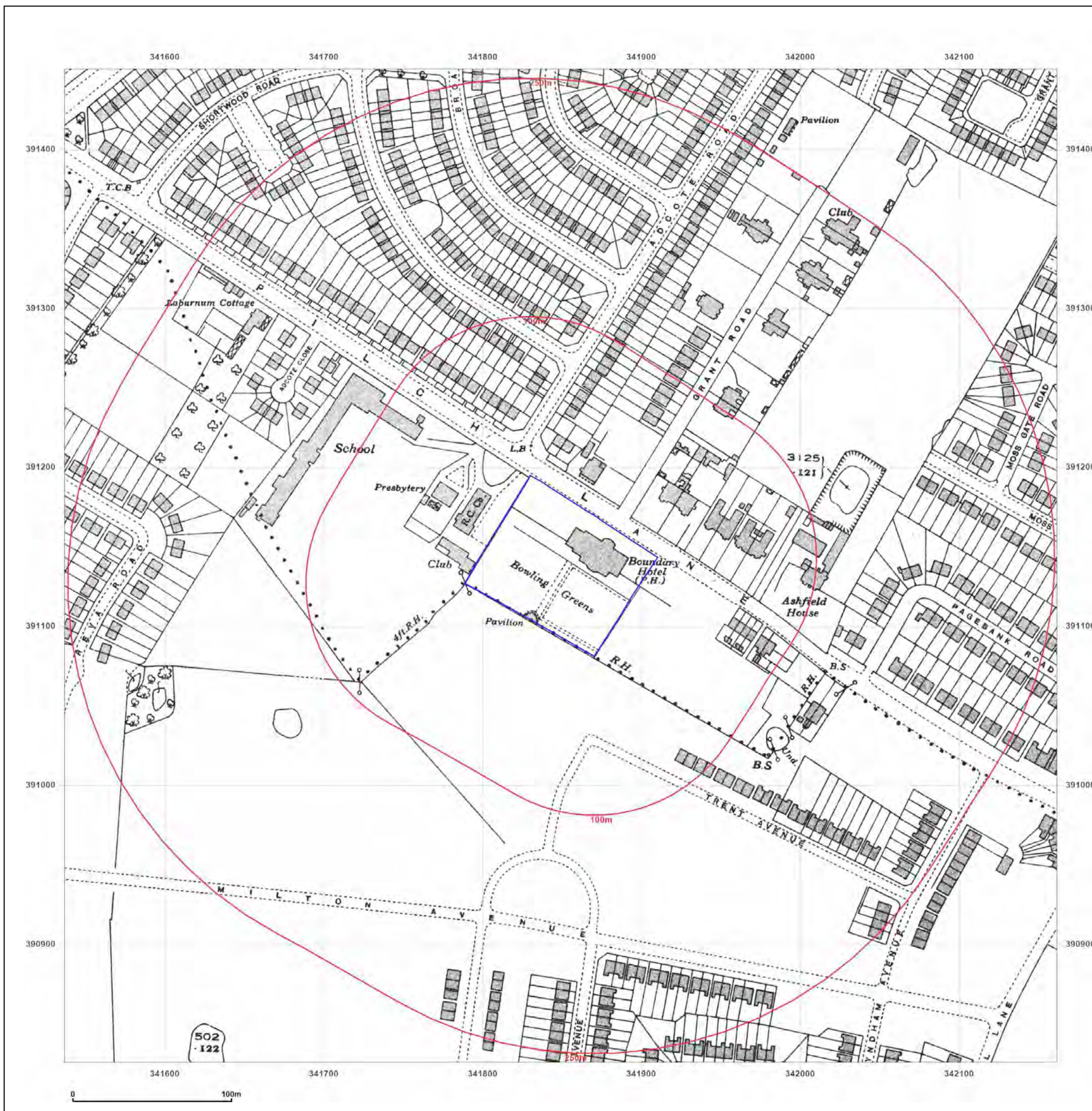


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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 1950-1951

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1950 Revised 1950 Edition N/A Copyright N/A Levelled 1947	Surveyed 1951 Revised 1951 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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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 1951-1953

Scale: 1:1,250

Printed at: 1:2,000



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 1950 Revised 1953 Edition N/A Copyright N/A Levelled 1947	Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A



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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 1950-1955

Scale: 1:2,500

Printed at: 1:2,500



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

Surveyed N/A
Revised 1951
Edition N/A
Copyright N/A
Levelled 1947

Surveyed 1954
Revised 1954
Edition 1955
Copyright N/A
Levelled 1947

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

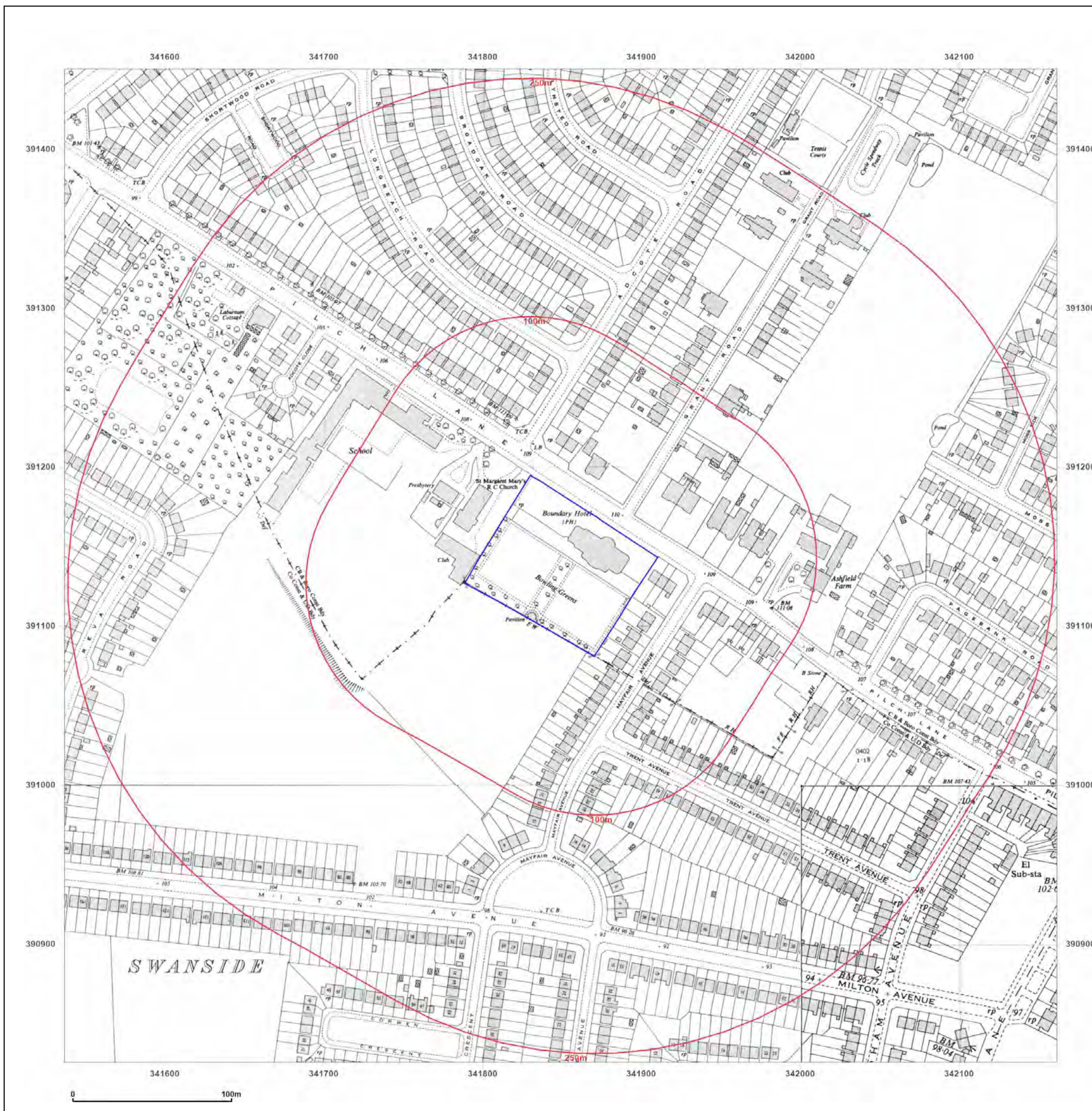


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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 1960

Scale: 1:2,500

Printed at: 1:2,500



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

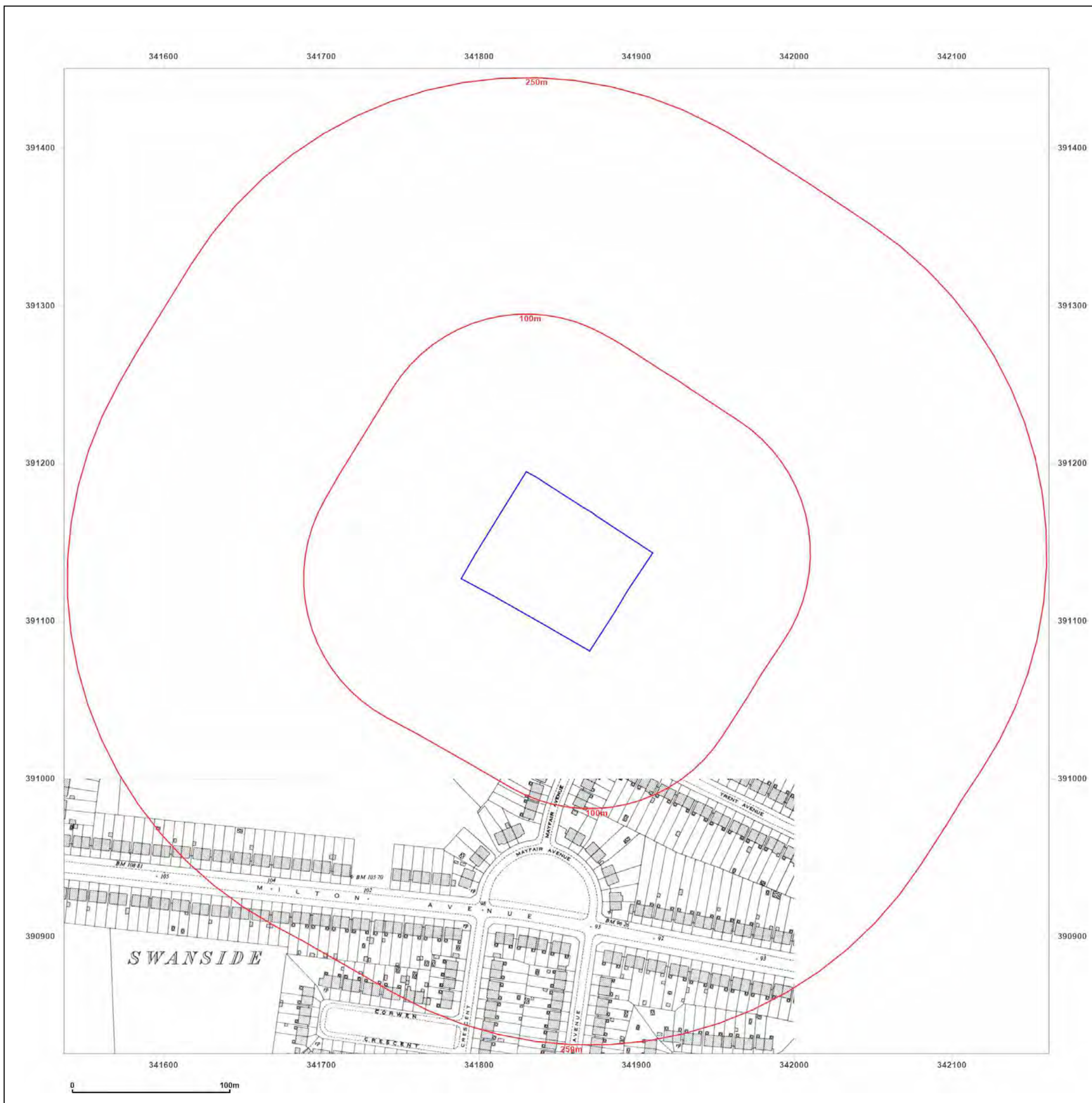


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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 1964-1966

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
Copyright 1966
Levelled 1960

Surveyed 1950
Revised 1964
Edition N/A
Copyright 1964
Levelled 1960



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Site Details:

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Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 1967

Scale: 1:2,500

Printed at: 1:2,500



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

Surveyed 1965
Revised 1965
Edition 1965
Copyright 1967
Levelled 1960

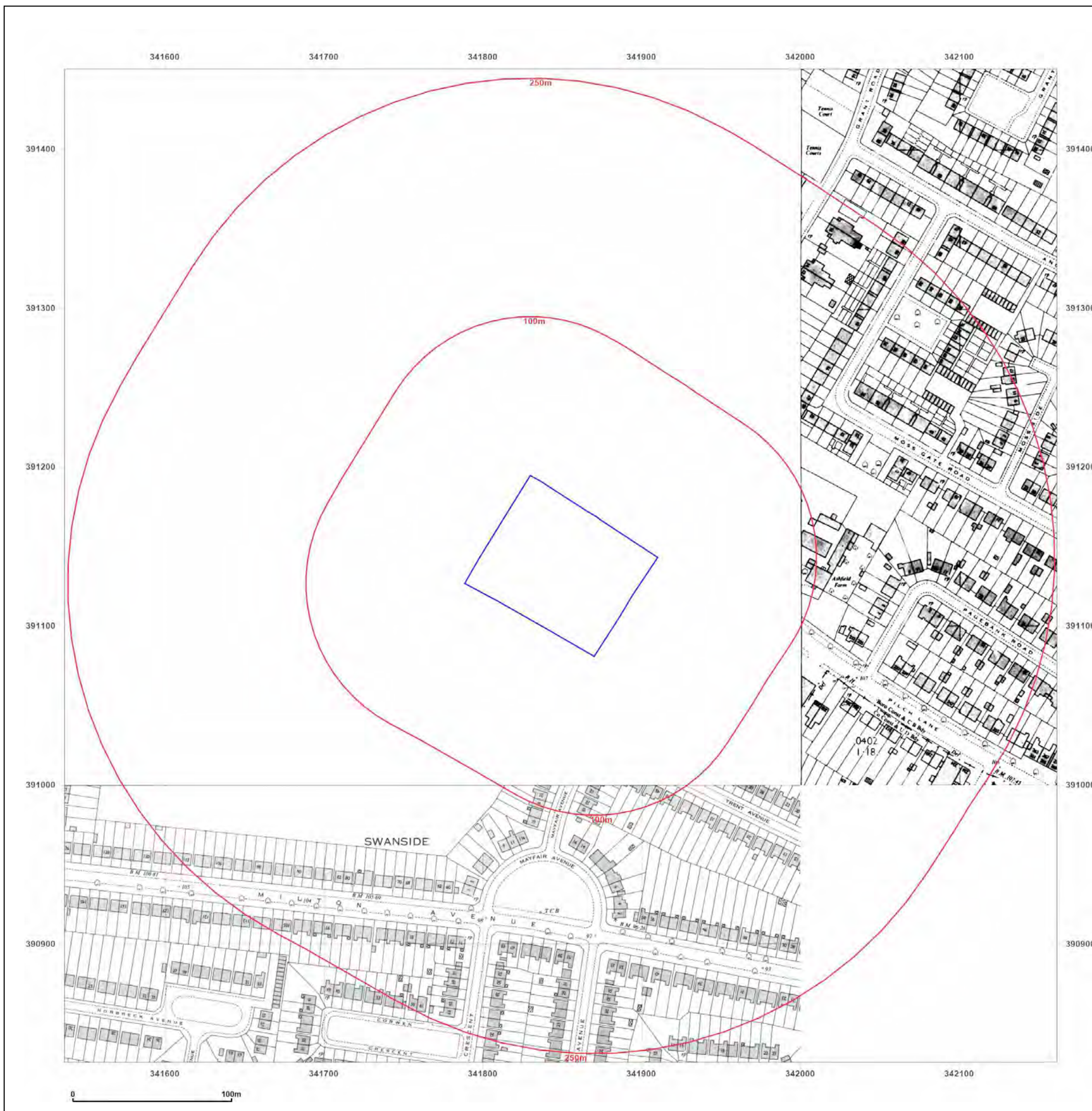


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Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

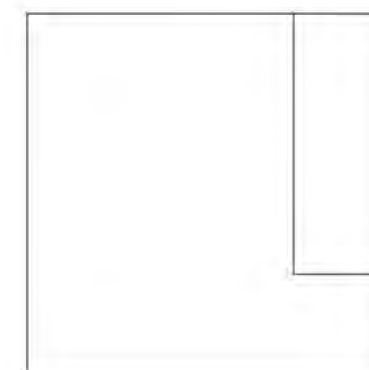
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Surveyed 1967
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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 1977-1982

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A Revised N/A Edition N/A Copyright 1982 Levelled 1960	Surveyed 1951 Revised 1976 Edition N/A Copyright 1977 Levelled 1960
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Site Details:

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Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



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



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Site Details:

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Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: County Series

Map date: 1850-1851

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1849
Revised N/A
Edition 1851
Copyright N/A
Levelled N/A

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

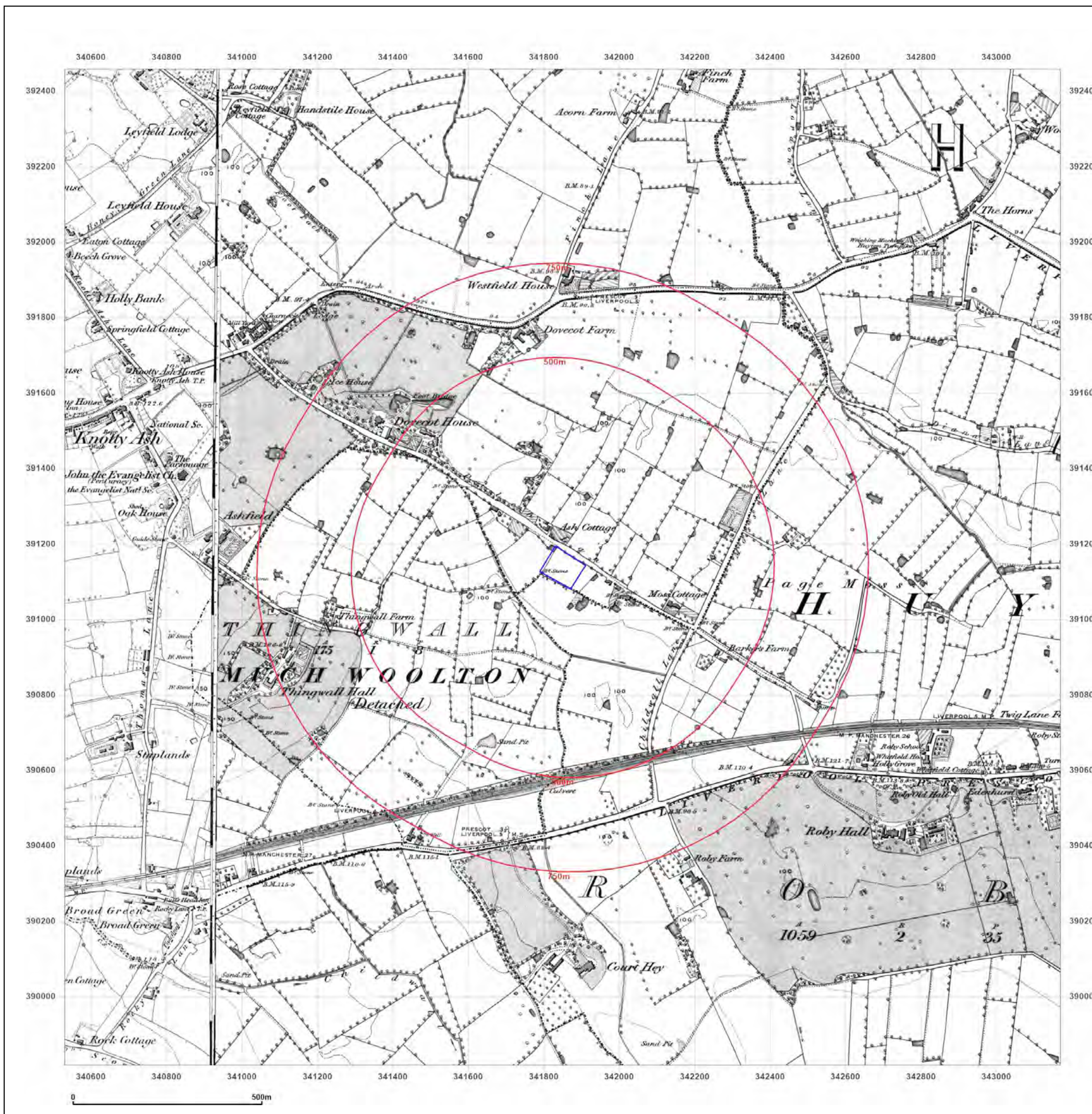


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Production date: 14 March 2025

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Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: County Series

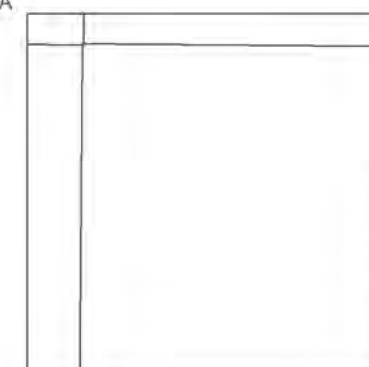
Map date: 1891

Scale: 1:10,560

Printed at: 1:10,560



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

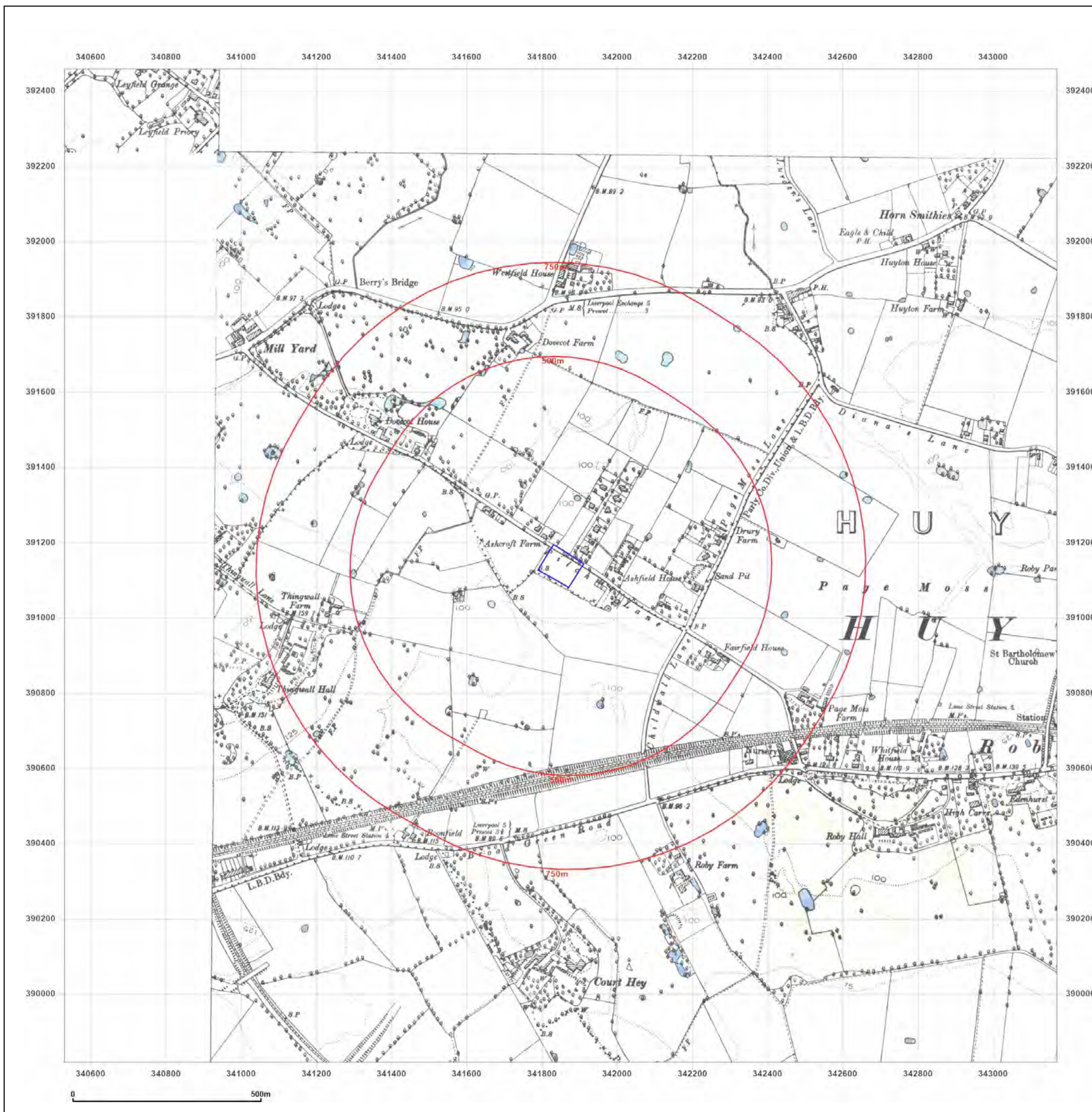


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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: County Series

Map date: 1906

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1849
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

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

Surveyed 1848
Revised 1906
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1906
Edition N/A
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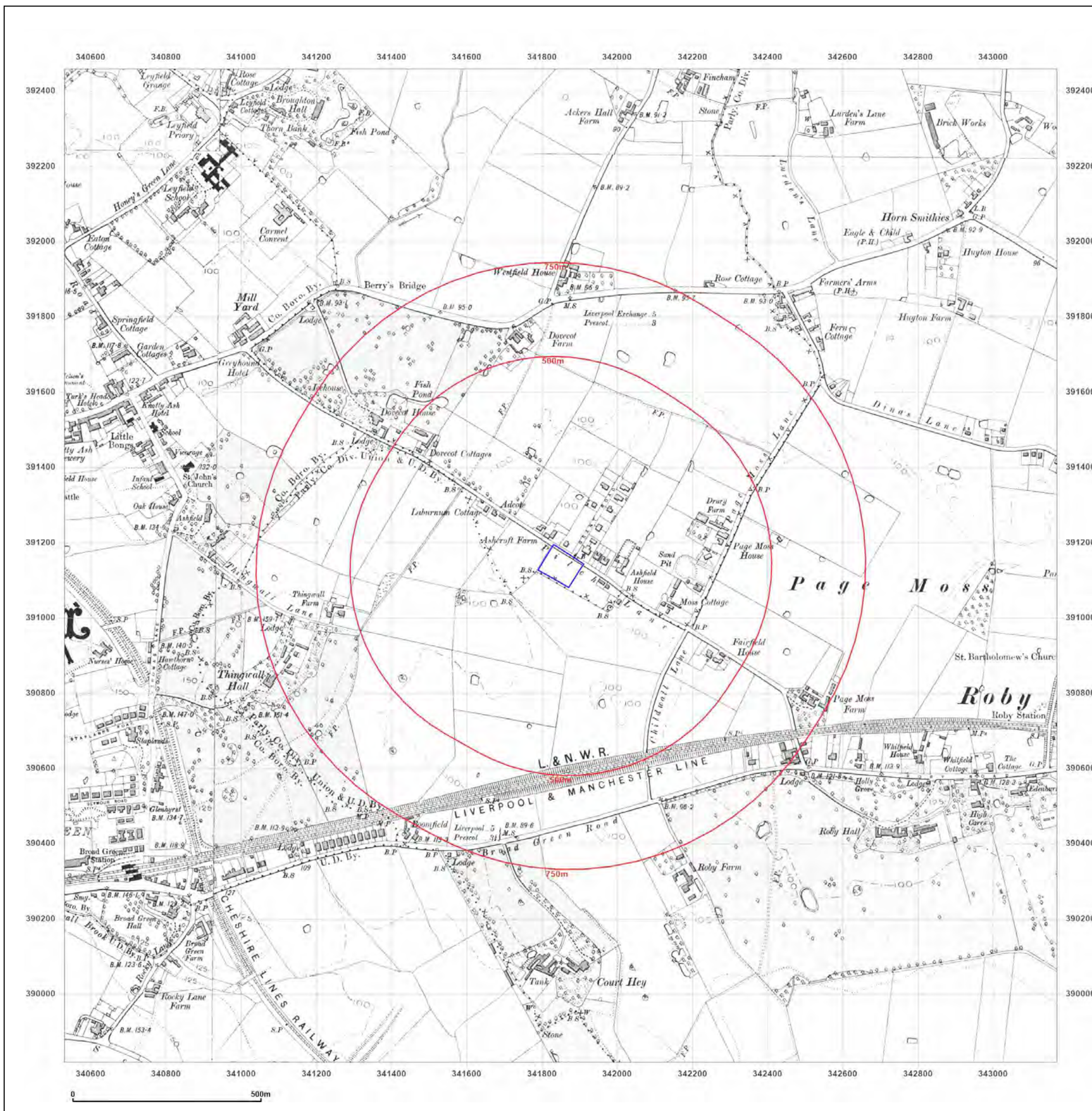


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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: County Series

Map date: 1925

Scale: 1:10,560

Printed at: 1:10,560



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

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

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

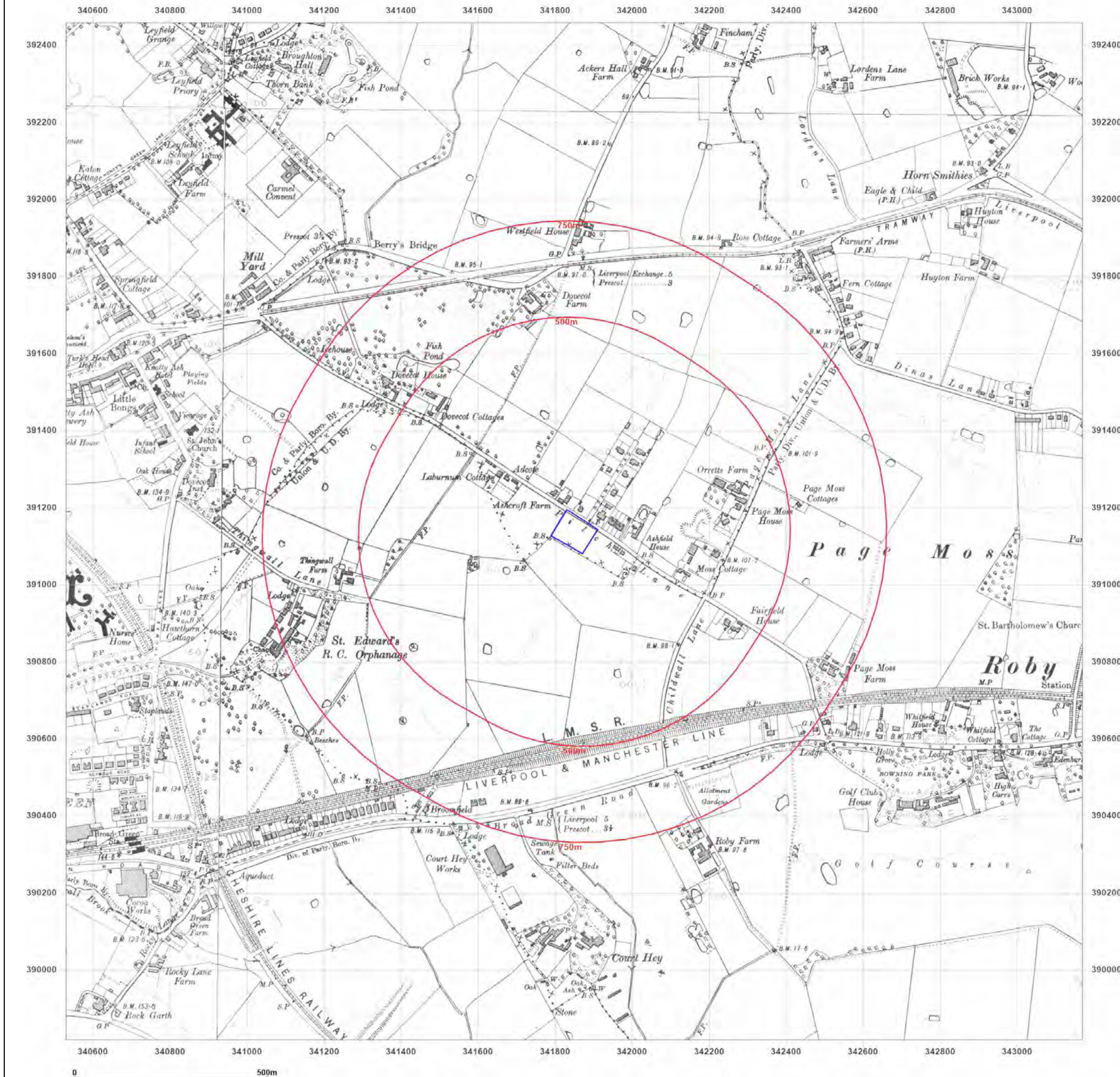


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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: County Series

Map date: 1925

Scale: 1:10,560

Printed at: 1:10,560



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

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

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

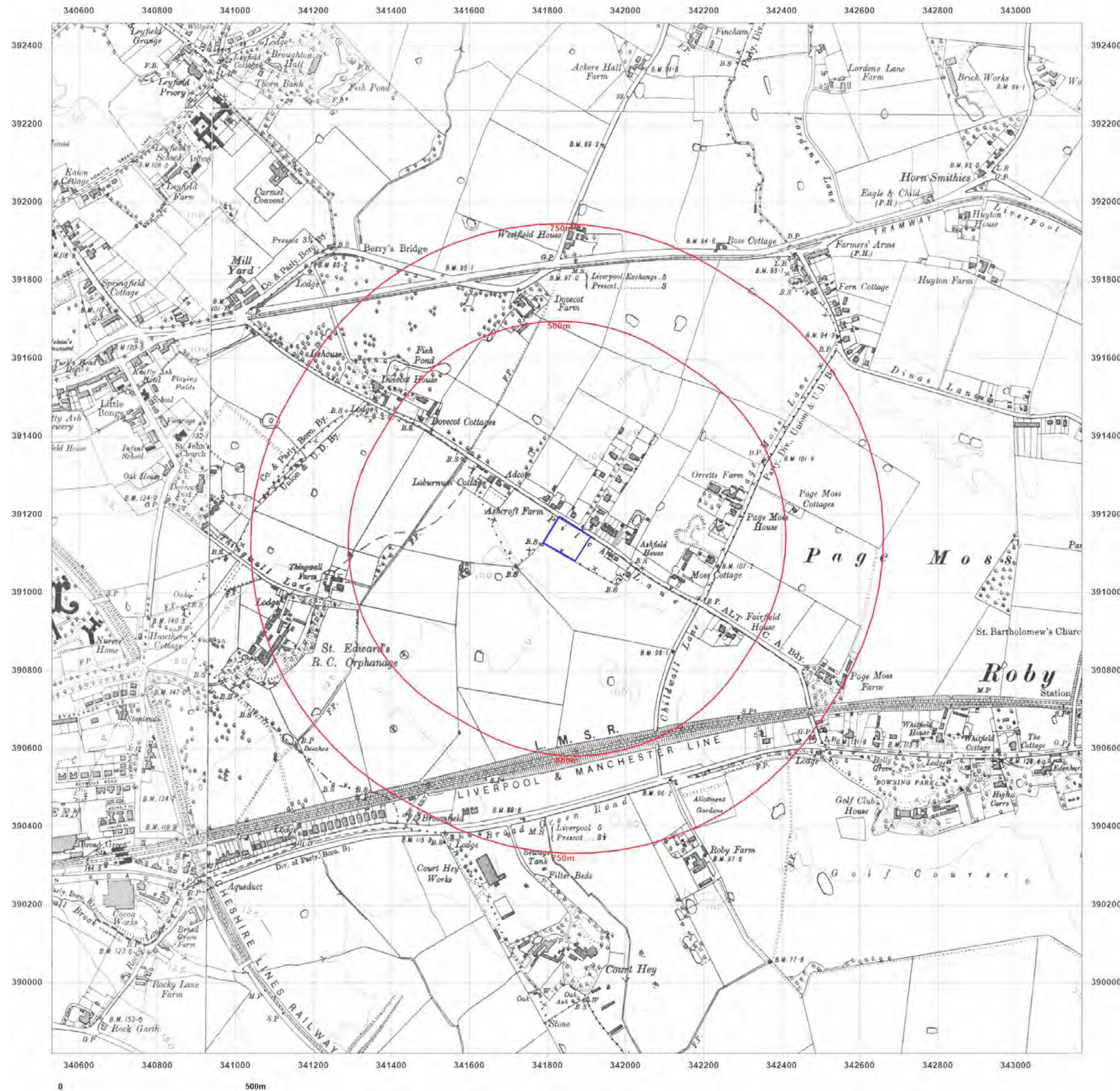


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Production date: 14 March 2025

Map legend available at:
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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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

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

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

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

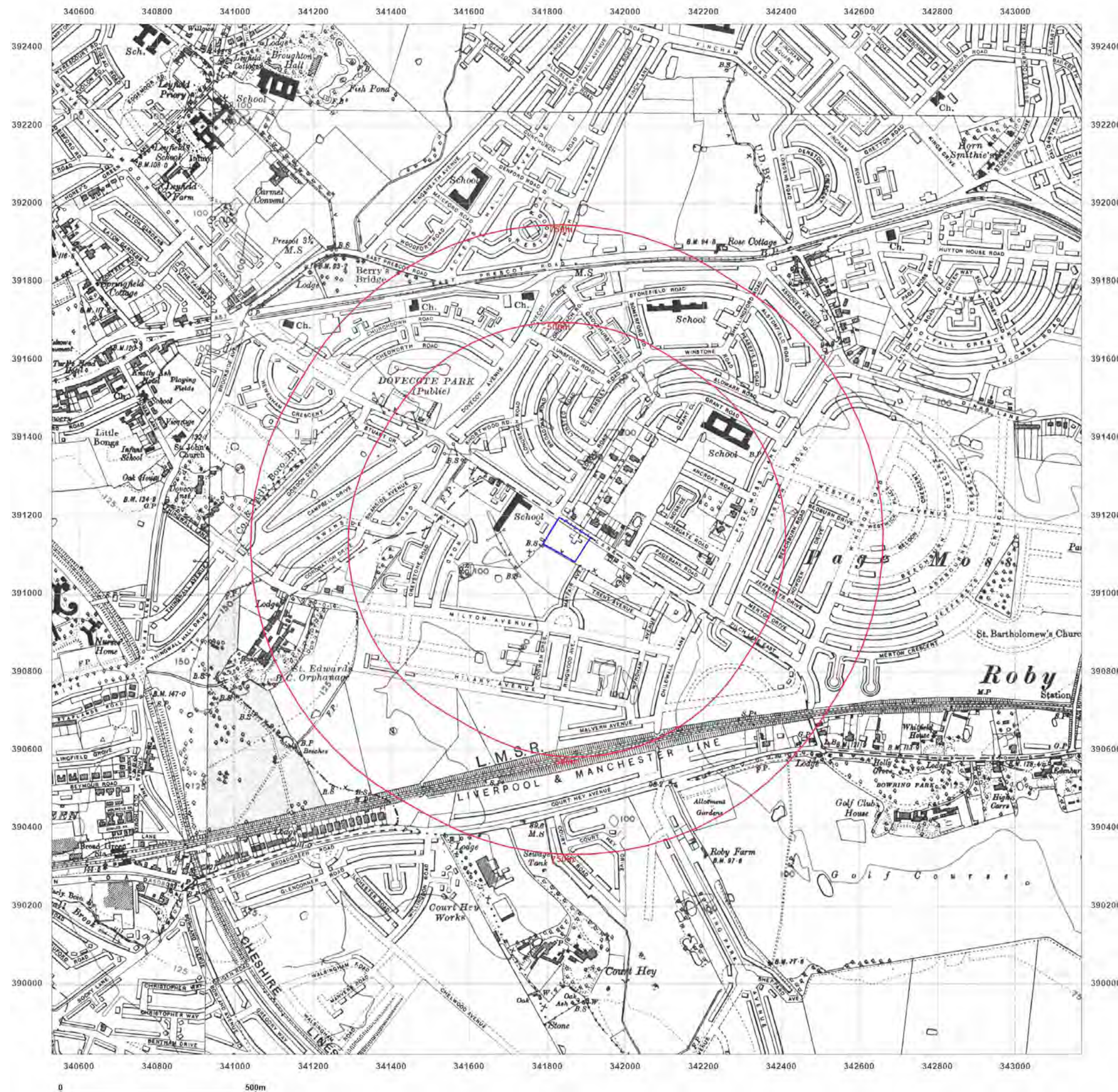


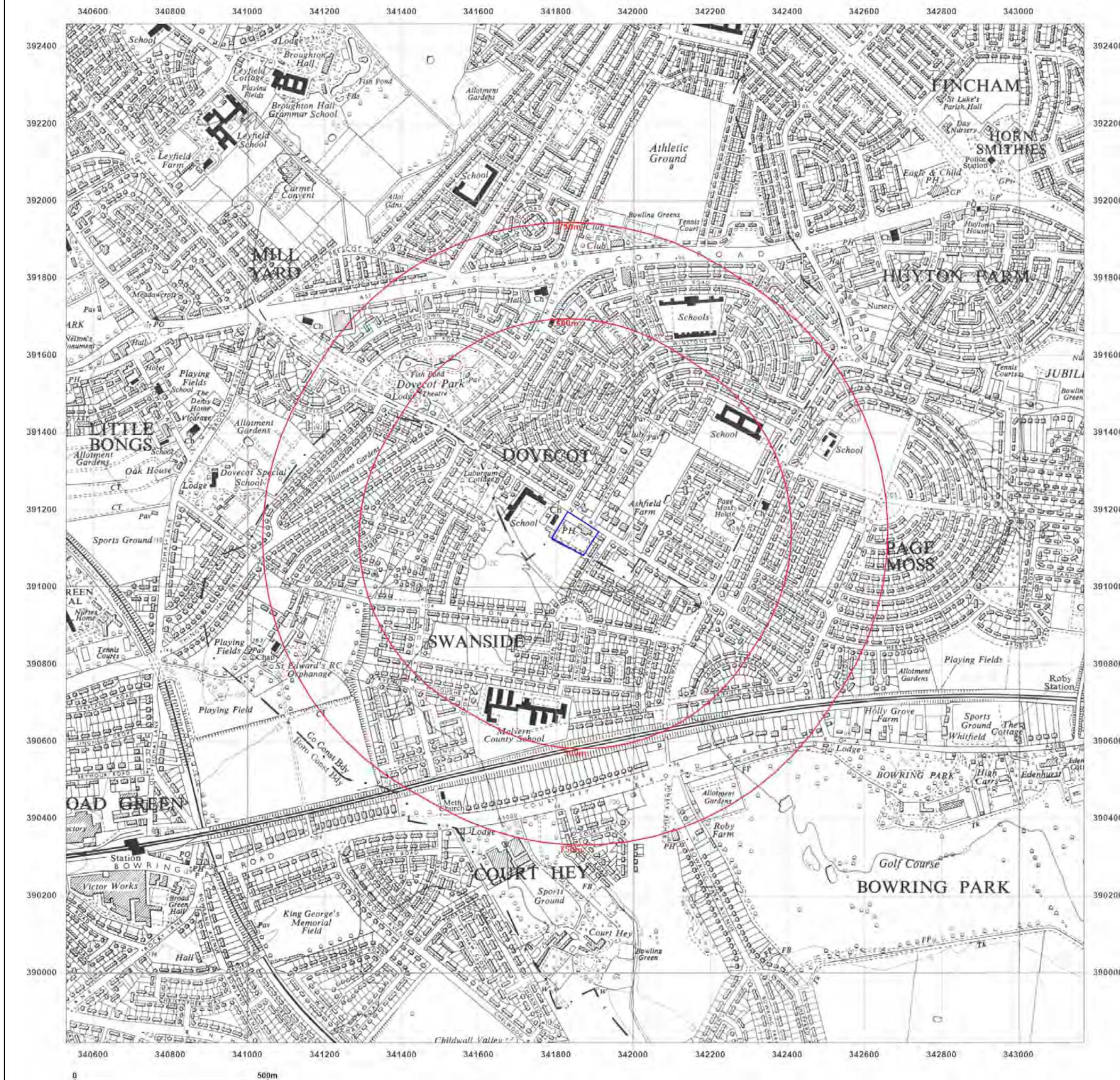
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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: Provisional

Map date: 1956

Scale: 1:10,560

Printed at: 1:10,560



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

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



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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: Provisional

Map date: 1965-1967

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1965
Revised 1985
Edition N/A
Copyright N/A
Levelled N/A

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

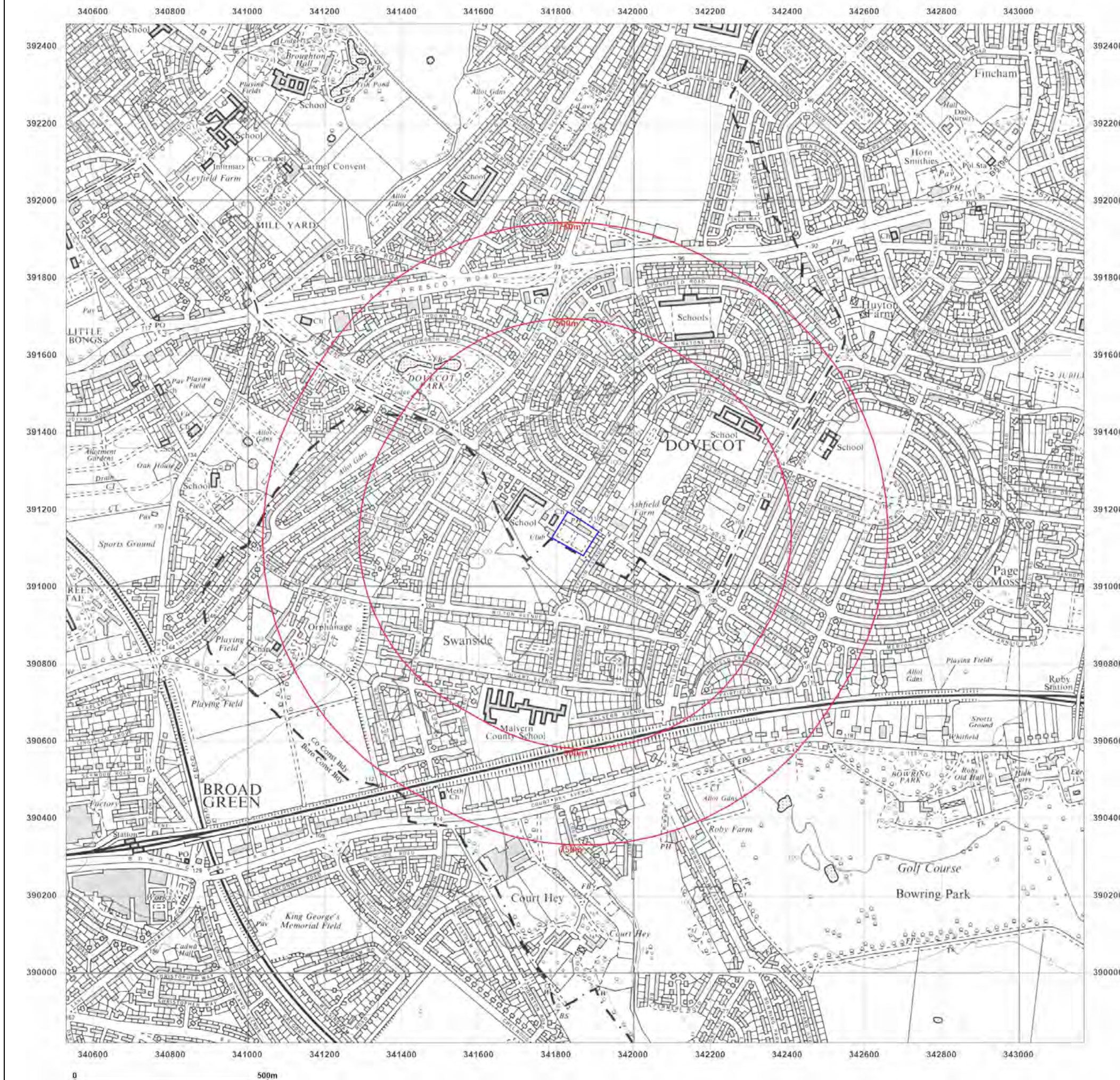


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Production date: 14 March 2025

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



Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 1974-1978

Scale: 1:10,000

Printed at: 1:10,000



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

Surveyed 1973
Revised 1974
Edition N/A
Copyright 1974
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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 1989

Scale: 1:10,000

Printed at: 1:10,000



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

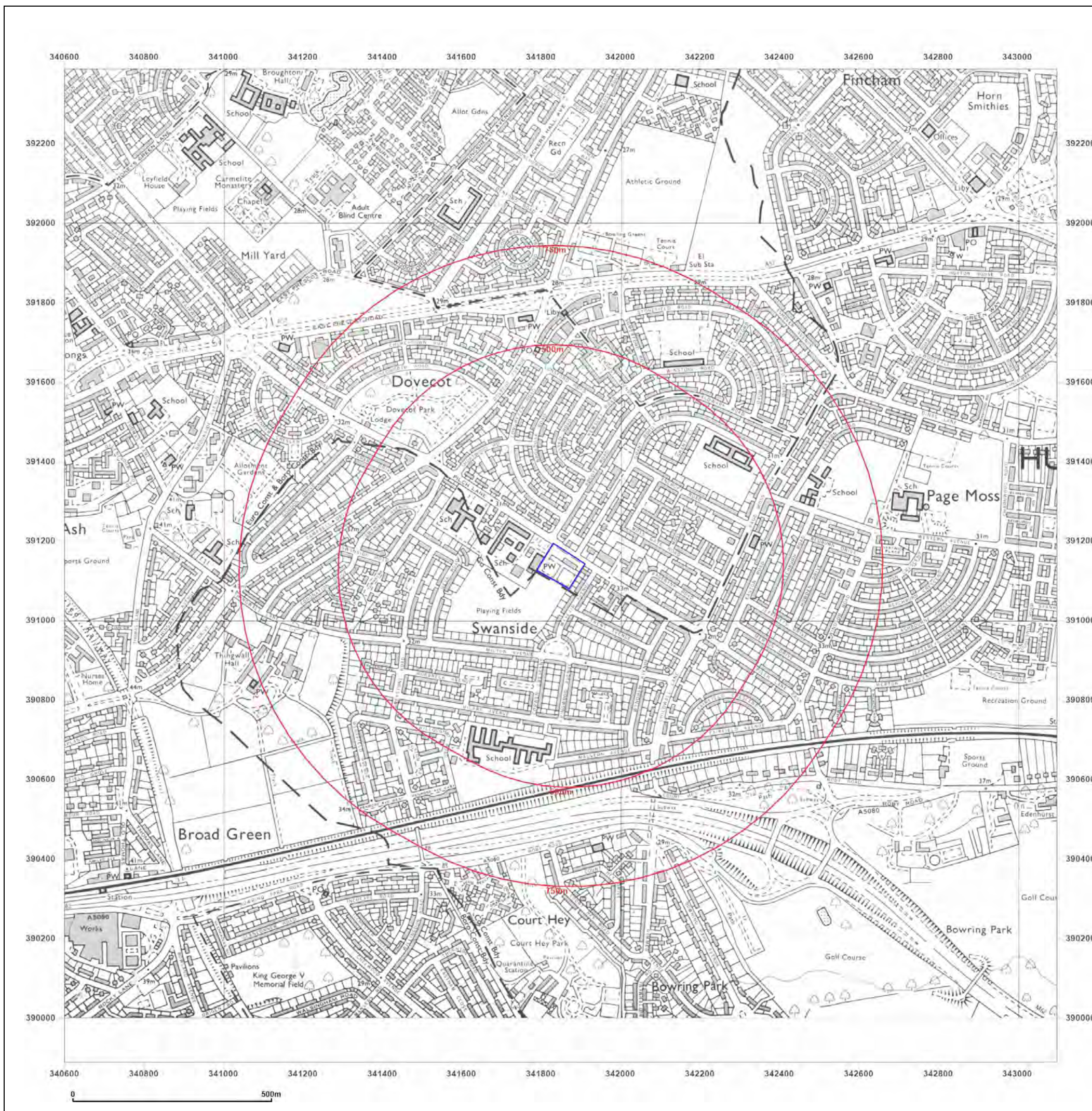


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Client Ref: 4399/LG
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Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

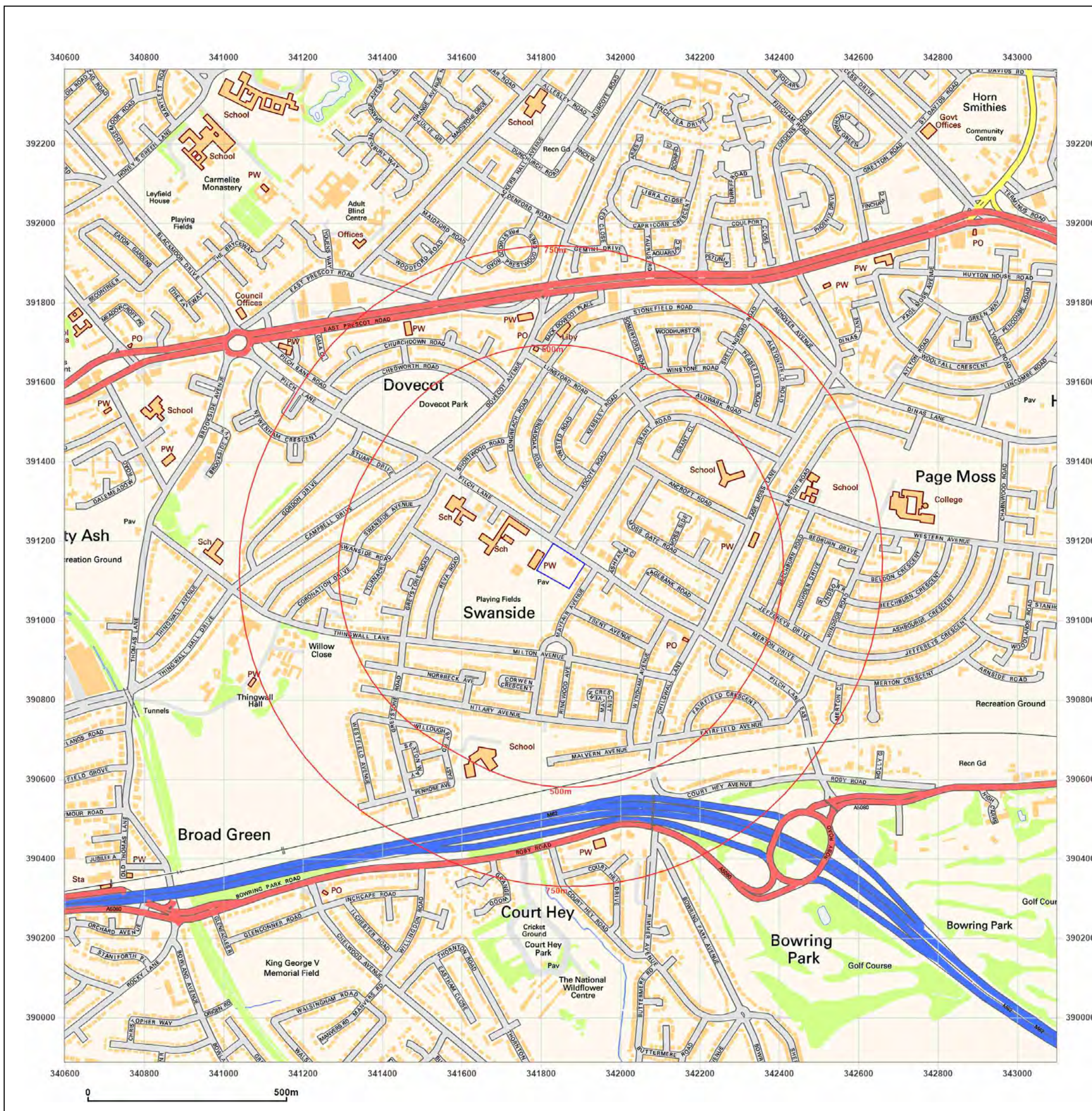


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Site Details:

Pilch Ln, Liverpool L14 0JG

Client Ref: 4399/LG
Report Ref: GS-QT6-8VR-SER-4WG
Grid Ref: 341849, 391138

Map Name: National Grid

Map date: 2025

Scale: 1:10,000

Printed at: 1:10,000

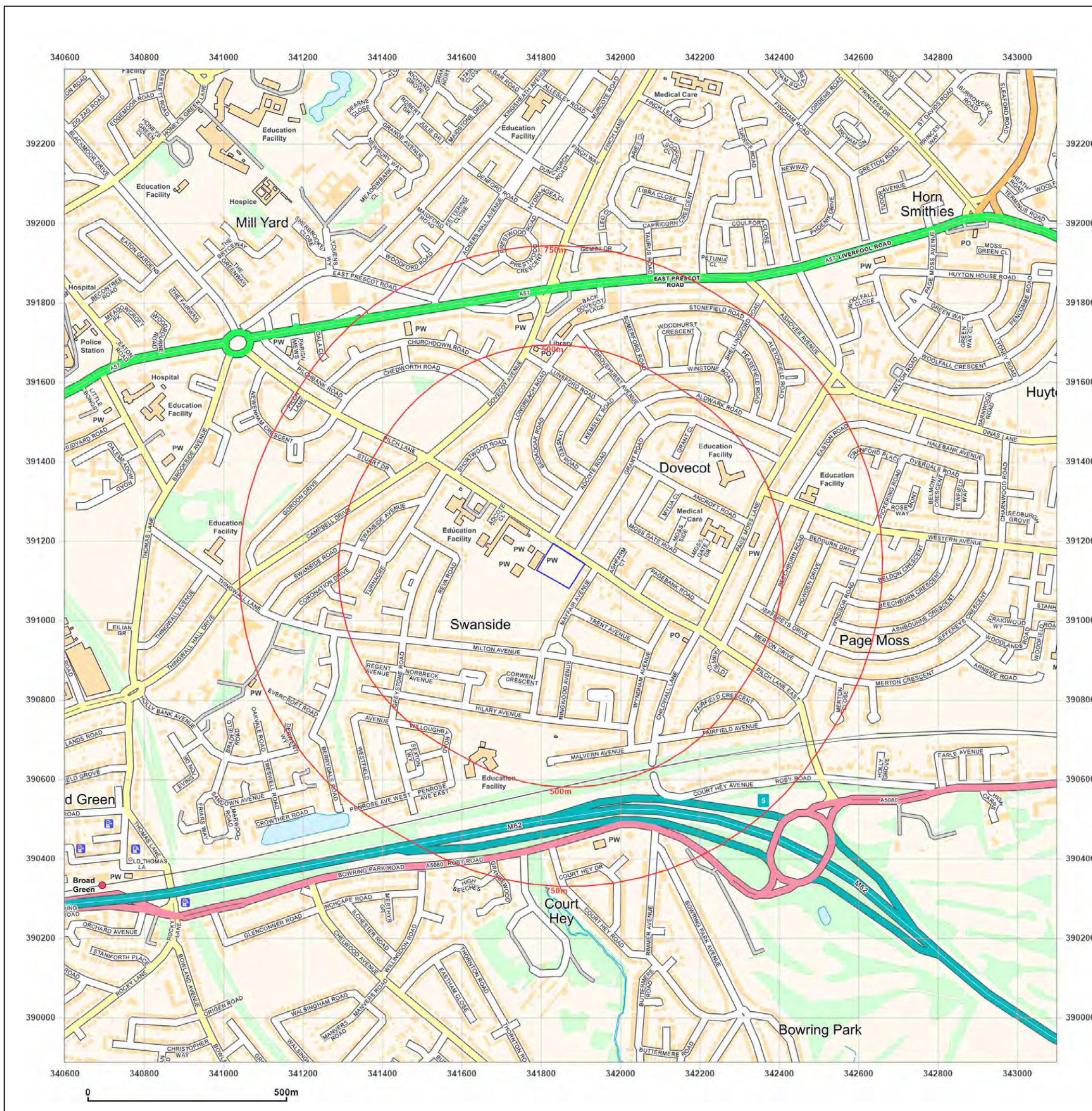


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APPENDIX 5

GROUNDSURE COMBINED ENVIRO + GEO INSIGHT REPORT

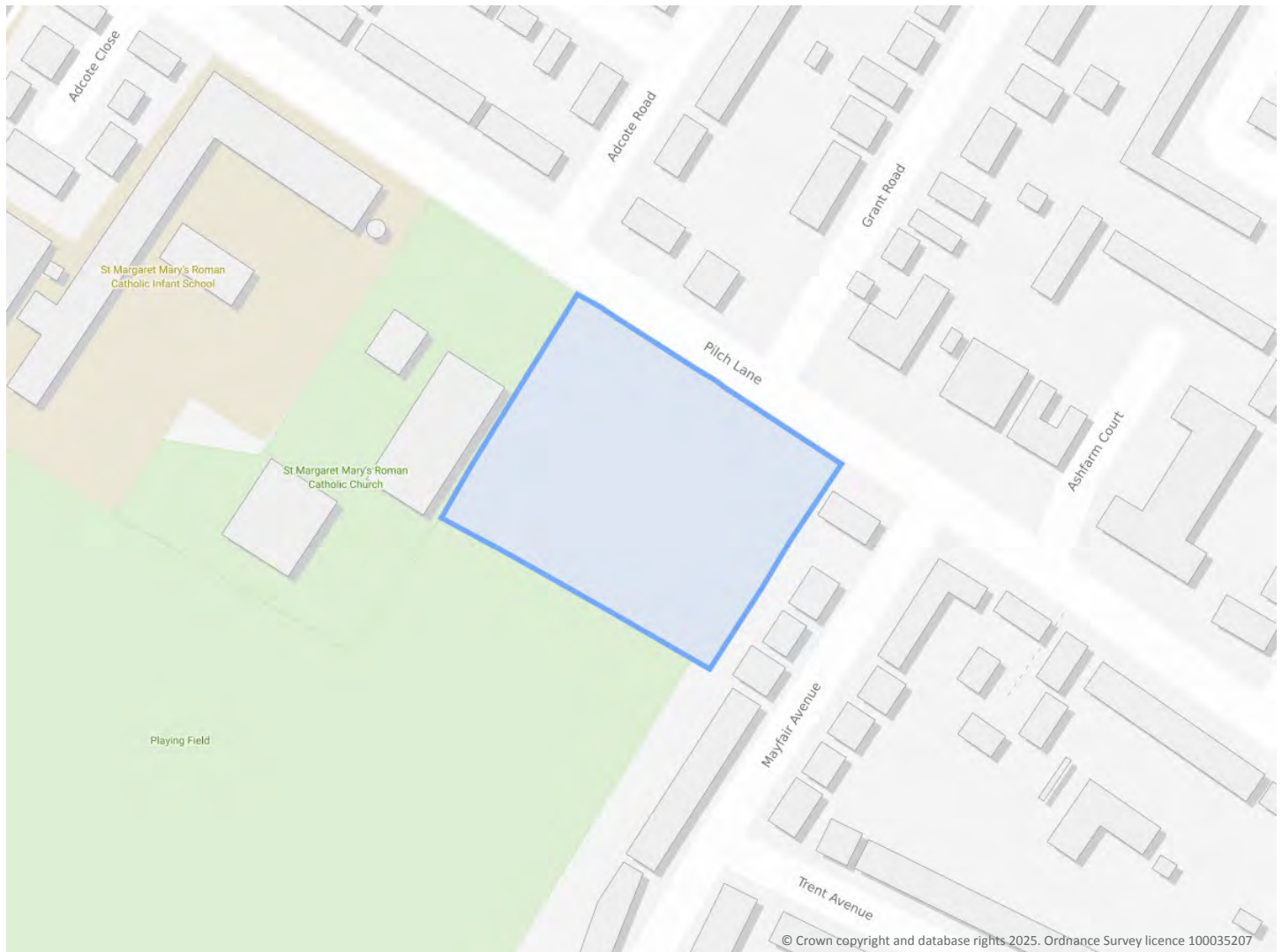
Pilch Ln, Liverpool L14 0JG

Order Details

Date: 14/03/2025
Your ref: 4399/LG
Our Ref: GS-8M9-CXS-OWQ-ZTR

Site Details

Location: 341849 391137
Area: 0.73 ha
Authority: [Knowsley Metropolitan Borough Council](#)
↗, [Liverpool City Council](#) ↗



Summary of findings

[p. 2 >](#)

Aerial image

[p. 9 >](#)

OS MasterMap site plan

[p.14 >](#)

[Insight User Guide](#) ↗

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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	3	1	-
16 >	1.2 >	Historical tanks >	0	0	1	1	-
16 >	1.3 >	Historical energy features >	0	1	1	15	-
17	1.4	Historical petrol stations	0	0	0	0	-
17 >	1.5 >	Historical garages >	0	0	3	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	4	2	-
20 >	2.2 >	Historical tanks >	0	0	2	1	-
20 >	2.3 >	Historical energy features >	0	1	1	27	-
22	2.4	Historical petrol stations	0	0	0	0	-
22 >	2.5 >	Historical garages >	0	0	4	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
24	3.5	Historical waste sites	0	0	0	0	-
24	3.6	Licensed waste sites	0	0	0	0	-
24 >	3.7 >	Waste exemptions >	0	1	0	3	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
26 >	4.1 >	Recent industrial land uses >	0	1	1	-	-
27 >	4.2 >	Current or recent petrol stations >	0	0	1	0	-
27	4.3	Electricity cables	0	0	0	0	-
27	4.4	Gas pipelines	0	0	0	0	-
27	4.5	Sites determined as Contaminated Land	0	0	0	0	-



27	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
28	4.7	Regulated explosive sites	0	0	0	0	-
28	4.8	Hazardous substance storage/usage	0	0	0	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
28	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
28	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
29	4.12	Radioactive Substance Authorisations	0	0	0	0	-
29	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
29	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
29	4.15	Pollutant release to public sewer	0	0	0	0	-
29	4.16	List 1 Dangerous Substances	0	0	0	0	-
30	4.17	List 2 Dangerous Substances	0	0	0	0	-
30 >	4.18 >	<u>Pollution Incidents (EA/NRW) ></u>	0	0	0	2	-
30	4.19	Pollution inventory substances	0	0	0	0	-
31	4.20	Pollution inventory waste transfers	0	0	0	0	-
31	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<u>Hydrogeology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
32 >	5.1 >	<u>Superficial aquifer ></u>	Identified (within 500m)				
33 >	5.2 >	<u>Bedrock aquifer ></u>	Identified (within 500m)				
34 >	5.3 >	<u>Groundwater vulnerability ></u>	Identified (within 50m)				
35	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
35	5.5	Groundwater vulnerability- local information	None (within 0m)				
36 >	5.6 >	<u>Groundwater abstractions ></u>	0	0	0	0	3
37	5.7	Surface water abstractions	0	0	0	0	0
38	5.8	Potable abstractions	0	0	0	0	0
38 >	5.9 >	<u>Source Protection Zones ></u>	1	0	0	0	-
38	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	<u>Hydrology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
39	6.1	Water Network (OS MasterMap)	0	0	0	-	-



39	6.2	Surface water features	0	0	0	-	-
40 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
40 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
40 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
42	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
42	7.2	Historical Flood Events	0	0	0	-	-
42	7.3	Flood Defences	0	0	0	-	-
43	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
43	7.5	Flood Storage Areas	0	0	0	-	-
44	7.6	Flood Zone 2	None (within 50m)				
44	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
45 >	8.1 >	Surface water flooding >	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
47 >	9.1 >	Groundwater flooding >	Moderate (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
48	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
49	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
49	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
49	10.4	Special Protection Areas (SPA)	0	0	0	0	0
49	10.5	National Nature Reserves (NNR)	0	0	0	0	0
50	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
50	10.7	Designated Ancient Woodland	0	0	0	0	0
50	10.8	Biosphere Reserves	0	0	0	0	0
50	10.9	Forest Parks	0	0	0	0	0
51	10.10	Marine Conservation Zones	0	0	0	0	0
51 >	10.11 >	Green Belt >	0	0	0	0	1
51	10.12	Proposed Ramsar sites	0	0	0	0	0



51	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
52	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
52	10.15	Nitrate Sensitive Areas	0	0	0	0	0
52 >	10.16 >	Nitrate Vulnerable Zones >	1	1	0	0	0
53 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
54	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
55	11.1	World Heritage Sites	0	0	0	-	-
55	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
55	11.3	National Parks	0	0	0	-	-
55	11.4	Listed Buildings	0	0	0	-	-
56	11.5	Conservation Areas	0	0	0	-	-
56	11.6	Scheduled Ancient Monuments	0	0	0	-	-
56	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
57 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
58	12.2	Open Access Land	0	0	0	-	-
58	12.3	Tree Felling Licences	0	0	0	-	-
58	12.4	Environmental Stewardship Schemes	0	0	0	-	-
58	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
59	13.1	Priority Habitat Inventory	0	0	0	-	-
59	13.2	Habitat Networks	0	0	0	-	-
59	13.3	Open Mosaic Habitat	0	0	0	-	-
59	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
60 >	14.1 >	10k Availability >	Identified (within 500m)				
61	14.2	Artificial and made ground (10k)	0	0	0	0	-
62	14.3	Superficial geology (10k)	0	0	0	0	-



62	14.4	Landslip (10k)	0	0	0	0	-
63	14.5	Bedrock geology (10k)	0	0	0	0	-
63	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
64 >	15.1 >	50k Availability >	Identified (within 500m)				
65	15.2	Artificial and made ground (50k)	0	0	0	0	-
65	15.3	Artificial ground permeability (50k)	0	0	-	-	-
66 >	15.4 >	Superficial geology (50k) >	1	0	0	0	-
67 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
67	15.6	Landslip (50k)	0	0	0	0	-
67	15.7	Landslip permeability (50k)	None (within 50m)				
68 >	15.8 >	Bedrock geology (50k) >	1	0	0	0	-
69 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
69	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
70	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence >					
71 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
72 >	17.2 >	Running sands >	Very low (within 50m)				
73 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
74 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
75 >	17.5 >	Landslides >	Very low (within 50m)				
76 >	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
78 >	18.1 >	BritPits >	0	0	0	2	-
79 >	18.2 >	Surface ground workings >	0	1	8	-	-
80	18.3	Underground workings	0	0	0	0	0
80	18.4	Underground mining extents	0	0	0	0	-
80	18.5	Historical Mineral Planning Areas	0	0	0	0	-



80	18.6	Non-coal mining	0	0	0	0	0
80	18.7	JPB mining areas	None (within 0m)				
81	18.8	The Coal Authority non-coal mining	0	0	0	0	-
81	18.9	Researched mining	0	0	0	0	-
81	18.10	Mining record office plans	0	0	0	0	-
81	18.11	BGS mine plans	0	0	0	0	-
82	18.12	Coal mining	None (within 0m)				
82	18.13	Brine areas	None (within 0m)				
82	18.14	Gypsum areas	None (within 0m)				
82	18.15	Tin mining	None (within 0m)				
82	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes >	On site	0-50m	50-250m	250-500m	500-2000m
83	19.1	Natural cavities	0	0	0	0	-
84	19.2	Mining cavities	0	0	0	0	0
84 >	19.3 >	Reported recent incidents >	0	0	0	1	-
84	19.4	Historical incidents	0	0	0	0	-
Page	Section	Radon >					
85 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
87 >	21.1 >	BGS Estimated Background Soil Chemistry >	1	0	-	-	-
87	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
87	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
88	22.1	Underground railways (London)	0	0	0	-	-
88	22.2	Underground railways (Non-London)	0	0	0	-	-
88	22.3	Railway tunnels	0	0	0	-	-
88	22.4	Historical railway and tunnel features	0	0	0	-	-
88	22.5	Royal Mail tunnels	0	0	0	-	-
89	22.6	Historical railways	0	0	0	-	-



89	22.7	Railways	0	0	0	-	-
89	22.8	Crossrail 2	0	0	0	0	-
89	22.9	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 28/09/2022

Site Area: 0.73ha



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Date: 14 March 2025

Recent site history - 2019 aerial photograph



Capture Date: 22/04/2019

Site Area: 0.73ha



Contact us with any questions at:

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01273 257 755

Date: 14 March 2025

Recent site history - 2005 aerial photograph



Capture Date: 02/09/2005

Site Area: 0.73ha



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Date: 14 March 2025

Recent site history - 2001 aerial photograph



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Capture Date: 01/05/2001

Site Area: 0.73ha



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Date: 14 March 2025

Recent site history - 2000 aerial photograph



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Capture Date: 21/07/2000

Site Area: 0.73ha



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Date: 14 March 2025

OS MasterMap site plan



Site Area: 0.73ha



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info@groundsure.com

01273 257 755

Date: 14 March 2025

1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

4

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
1	91m E	Unspecified Pit	1891	829412



ID	Location	Land use	Dates present	Group ID
C	212m E	Unspecified Pit	1925	956254
C	243m E	Sand Pit	1891 - 1906	880635
9	434m SW	Sand Pit	1850	827374

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

2

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 ungrouped 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	99m NW	Unspecified Tank	1966 - 1982	151110
6	380m NW	Unspecified Tank	1892	116107

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

17

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 ungrouped 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	50m NW	Electricity Substation	1982	66113
2	124m S	Electricity Substation	1984	66105
3	267m NW	Electricity Substation	1982	66112



ID	Location	Land use	Dates present	Group ID
D	286m SE	Electricity Substation	1950	87937
D	286m SE	Electricity Substation	1984 - 1993	70888
4	310m NE	Electricity Substation	1977 - 1993	70321
5	344m NW	Electricity Substation	1982	66111
E	372m S	Electricity Substation	1953 - 1955	87182
E	372m S	Electricity Substation	1984	88367
F	391m NE	Electricity Substation	1983 - 1992	72047
F	393m NE	Electricity Substation	1973	81356
F	394m NE	Electricity Substation	1993 - 1996	86841
7	422m W	Electricity Substation	1972	64671
8	427m E	Electricity Substation	1977 - 1993	71186
10	436m SW	Electricity Substation	1983 - 1993	74633
11	447m SE	Electricity Substation	1993	66114
12	479m W	Electricity Substation	1972	64672

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 ungrouped 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

3

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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.



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
B	58m SE	Garage	1982	23533
B	96m SE	Garage	1966	29876
B	110m E	Garage	1977 - 1993	24116

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

0

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

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



2 Past land use - un-grouped



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

2.1 Historical industrial land uses

Records within 500m

6

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
1	91m E	Unspecified Pit	1891	829412
C	212m E	Unspecified Pit	1925	956254
C	212m E	Unspecified Pit	1925	956254



ID	Location	Land Use	Date	Group ID
C	243m E	Sand Pit	1906	880635
C	287m E	Sand Pit	1891	880635
7	434m SW	Sand Pit	1850	827374

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

3

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

Features are displayed on the Past land use - un-grouped map on [page 19 >](#)

ID	Location	Land Use	Date	Group ID
A	99m NW	Unspecified Tank	1966	151110
A	100m NW	Unspecified Tank	1982	151110
5	380m NW	Unspecified Tank	1892	116107

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

29

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	50m NW	Electricity Substation	1982	66113
2	124m S	Electricity Substation	1984	66105
3	267m NW	Electricity Substation	1982	66112
D	286m SE	Electricity Substation	1950	87937
D	286m SE	Electricity Substation	1984	70888



ID	Location	Land Use	Date	Group ID
D	286m SE	Electricity Substation	1950	87937
D	287m SE	Electricity Substation	1993	70888
E	310m NE	Electricity Substation	1977	70321
E	310m NE	Electricity Substation	1993	70321
4	344m NW	Electricity Substation	1982	66111
F	372m S	Electricity Substation	1955	87182
F	372m S	Electricity Substation	1953	87182
F	372m S	Electricity Substation	1984	88367
G	391m NE	Electricity Substation	1983	72047
G	391m NE	Electricity Substation	1992	72047
G	393m NE	Electricity Substation	1973	81356
G	394m NE	Electricity Substation	1995	86841
G	394m NE	Electricity Substation	1996	86841
G	394m NE	Electricity Substation	1993	86841
G	394m NE	Electricity Substation	1993	86841
G	394m NE	Electricity Substation	1994	86841
G	394m NE	Electricity Substation	1993	86841
6	422m W	Electricity Substation	1972	64671
H	427m E	Electricity Substation	1993	71186
H	434m E	Electricity Substation	1977	71186
I	436m SW	Electricity Substation	1993	74633
I	439m SW	Electricity Substation	1983	74633
8	447m SE	Electricity Substation	1993	66114
9	479m W	Electricity Substation	1972	64672

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**4**

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

Features are displayed on the Past land use - un-grouped map on [page 19](#) >

ID	Location	Land Use	Date	Group ID
B	58m SE	Garage	1982	23533
B	96m SE	Garage	1966	29876
B	110m E	Garage	1993	24116
B	110m E	Garage	1977	24116

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m**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**4**

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 23](#) >

ID	Location	Site	Reference	Category	Sub-Category	Description
1	39m E	Pilch Lane, Liverpool, L14 0je	WEX380312	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal



ID	Location	Site	Reference	Category	Sub-Category	Description
A	339m E	77, Page Moss Lane, Liverpool, L14 0jj	WEX301541	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
A	339m E	77, Page Moss Lane, Liverpool, L14 0jj	WEX165004	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
2	428m NE	Gb Group Grovehurst Avenue L14 0na	EPR/AE5844P M/A001	Treating waste exemption	Non- agricultura l waste only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 26 >](#)

ID	Location	Company	Address	Activity	Category
1	45m NW	Electricity Sub Station	Merseyside, L14	Electrical Features	Infrastructure and Facilities
3	129m S	Electricity Sub Station	Merseyside, L14	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.



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Date: 14 March 2025

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4.2 Current or recent petrol stations

Records within 500m**1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on [page 26](#) >

ID	Location	Company	Address	LPG	Status
2	110m SE	MARTINDAL ES	Pilch Lane, Swanside, Liverpool, Merseyside, L14 0JE	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m**0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m**0**

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 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.

4.6 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.



4.7 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.

4.8 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.

4.9 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.

4.10 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.

4.11 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.



4.12 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.

4.13 Licensed Discharges to controlled waters

Records within 500m**0**

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

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

4.14 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.

4.15 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.

4.16 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.

4.17 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.

4.18 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 26 >](#)

ID	Location	Details	
4	427m N	Incident Date: 17/04/2002 Incident Identification: 72605 Pollutant: Organic Chemicals/Products Pollutant Description: Solvents	Water Impact: Category 3 (Minor) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
5	438m NE	Incident Date: 23/08/2002 Incident Identification: 102683 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Fumes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

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

4.19 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.

4.20 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.

4.21 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



— Site Outline
Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m

1

Aquifer status of groundwater held within superficial geology.

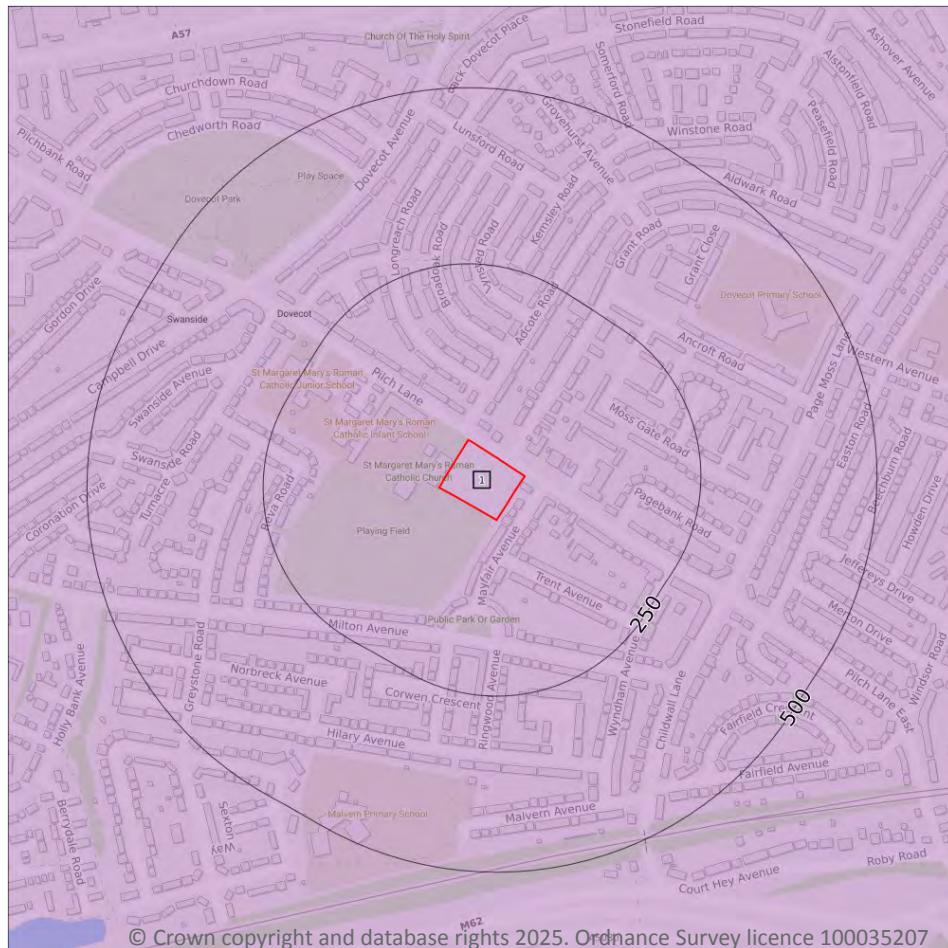
Features are displayed on the Hydrogeology map on [page 32](#) >

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

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



Bedrock aquifer



- Site Outline
- Search buffers in metres (m)
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

1

Aquifer status of groundwater held within bedrock geology.

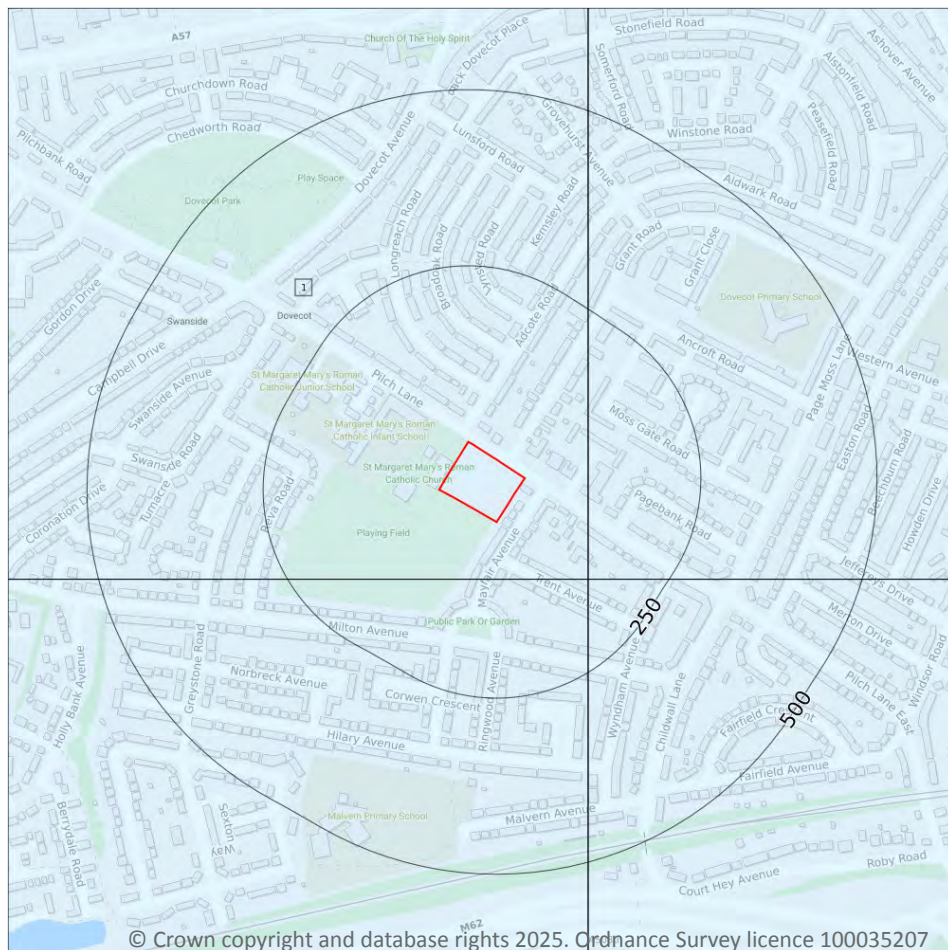
Features are displayed on the Bedrock aquifer map on [page 33](#) >

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

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



Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

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 34 >](#)



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: 3-10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Principal Flow mechanism: Intergranular

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



- Site Outline
- Search buffers in metres (m)**
- Source Protection Zone 1
Inner catchment
- Source Protection Zone 2
Outer catchment
- Source Protection Zone 3
Total catchment
- Source Protection Zone 4
Zone of Special Interest
- Source Protection Zone 1c
Inner catchment - confined aquifer
- Source Protection Zone 2c
Outer catchment - confined aquifer
- Source Protection Zone 3c
Total catchment - confined aquifer
- Drinking water abstraction licences
Polygon features
- Drinking water abstraction licences
Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m

3

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 36 >](#)



ID	Location	Details	
-	1801m N	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: -
-	1801m N	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: -
-	1801m N	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: -

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

0

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.

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 36 >](#)

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



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ... WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

0

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.



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 39 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	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 39 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1909m E	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 39](#) >

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	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



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

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 45 >](#)

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.

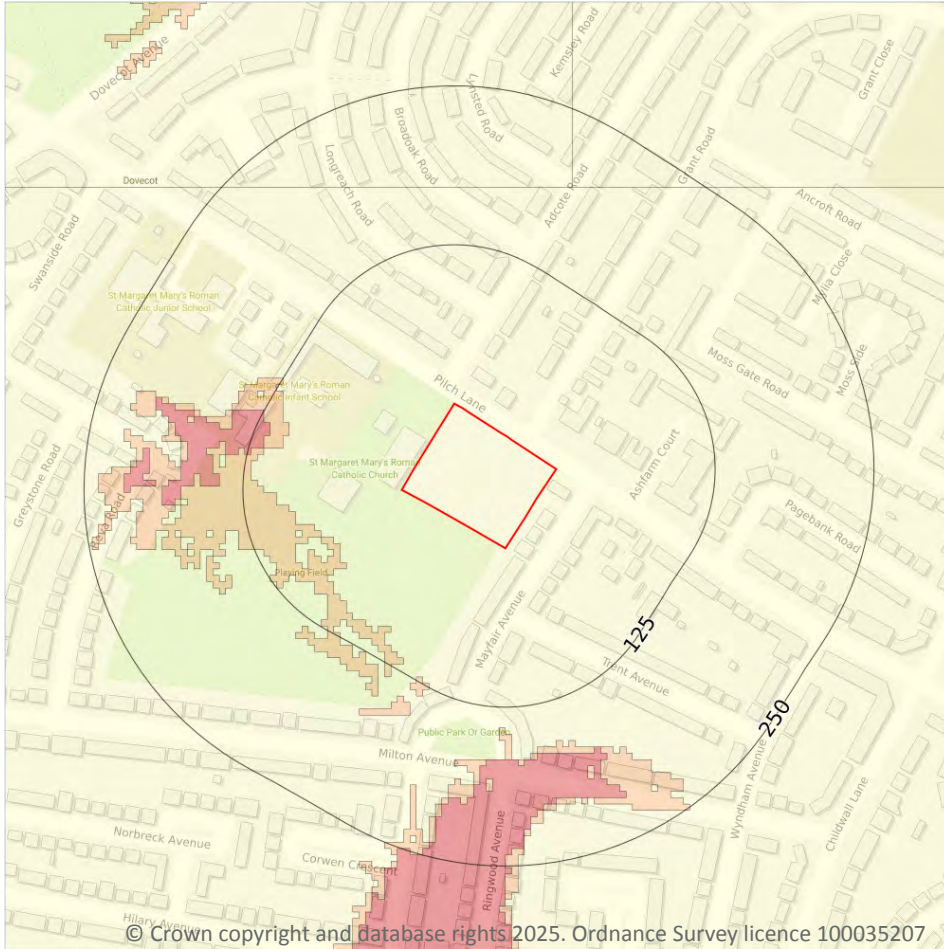
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Moderate

Highest risk within 50m

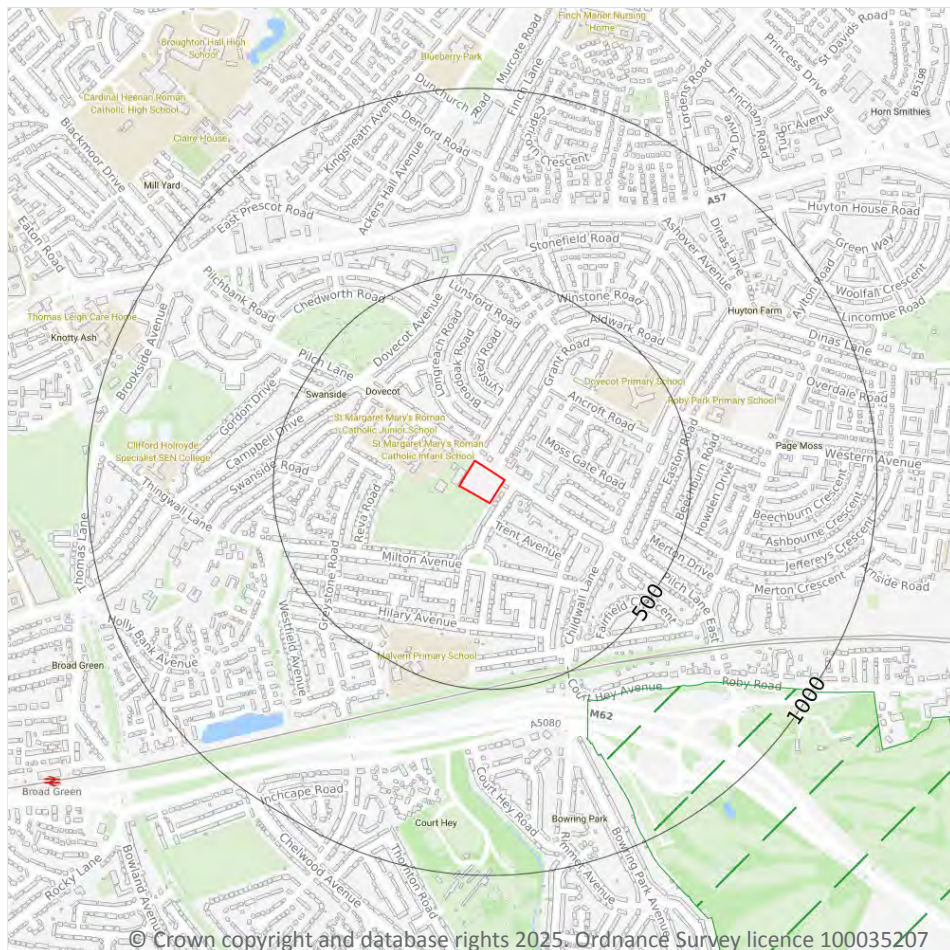
Moderate

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 47](#) >

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- 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

0

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.

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

1

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

Features are displayed on the Environmental designations map on [page 48](#) >

ID	Location	Name	Local Authority name
1	590m SE	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

2

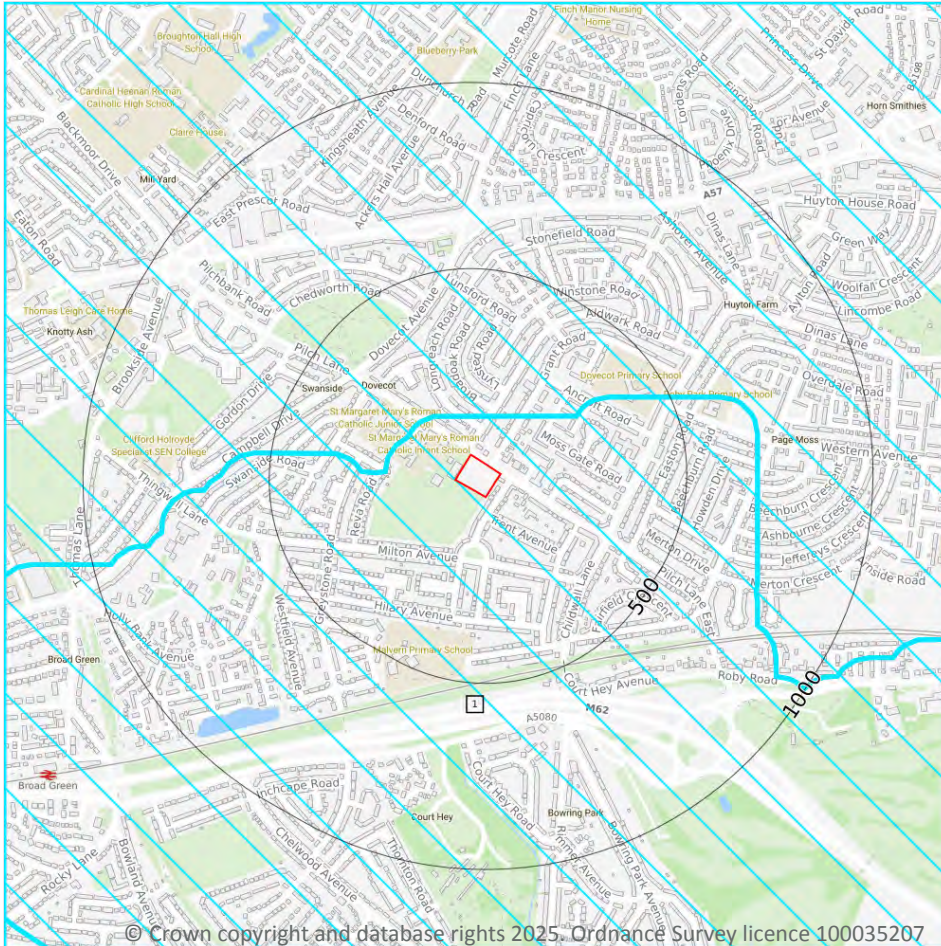
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	640	Existing
5m N	ALT NVZ	Surface Water	642	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 53 >](#)



ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. Incl: inert landfill, non-hazardous landfill, hazardous landfill. Discharges - Any discharge of water or liquid waste of more than 20m³/day to ground (ie to seep away) or to surface water, such as a beck or stream.

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

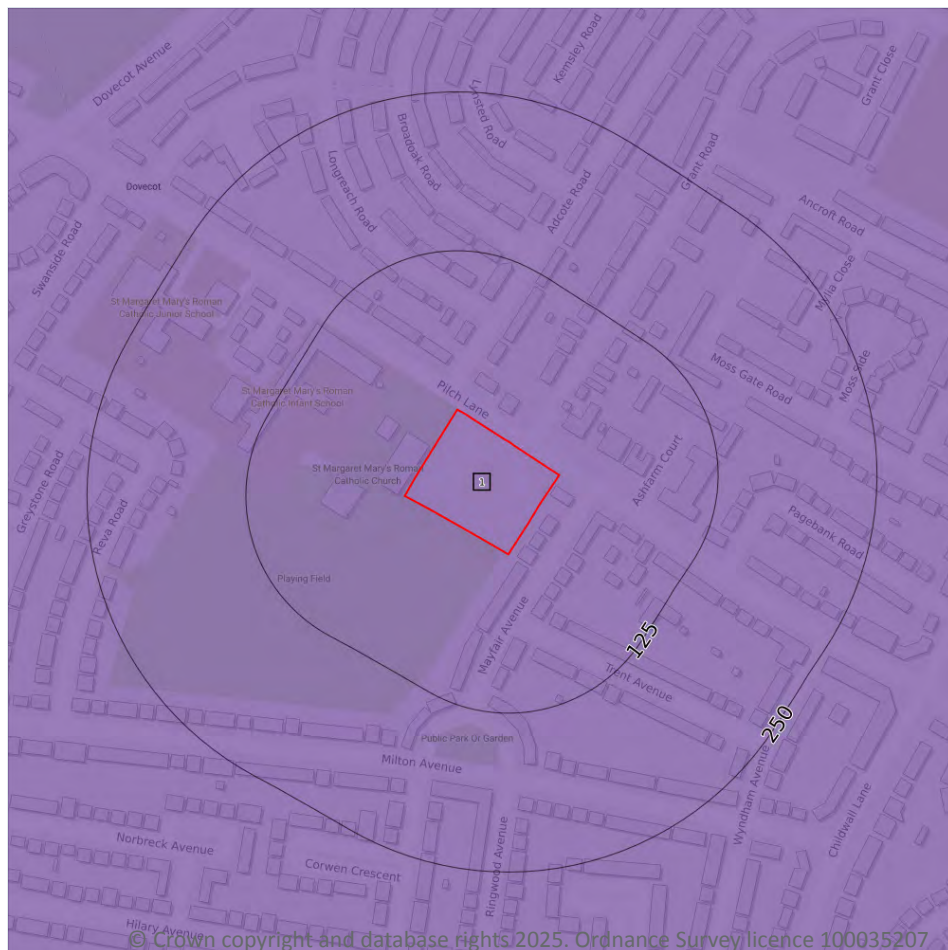
0

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 57](#) >

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

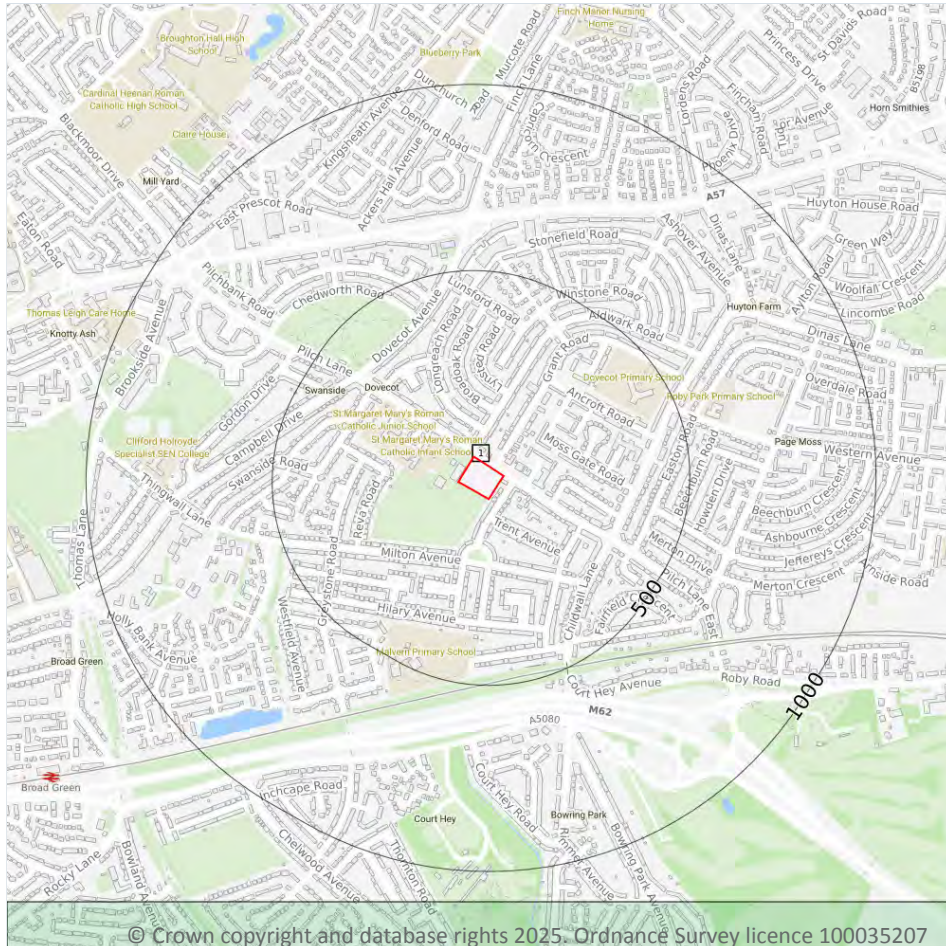
0

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



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

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 60](#) >

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

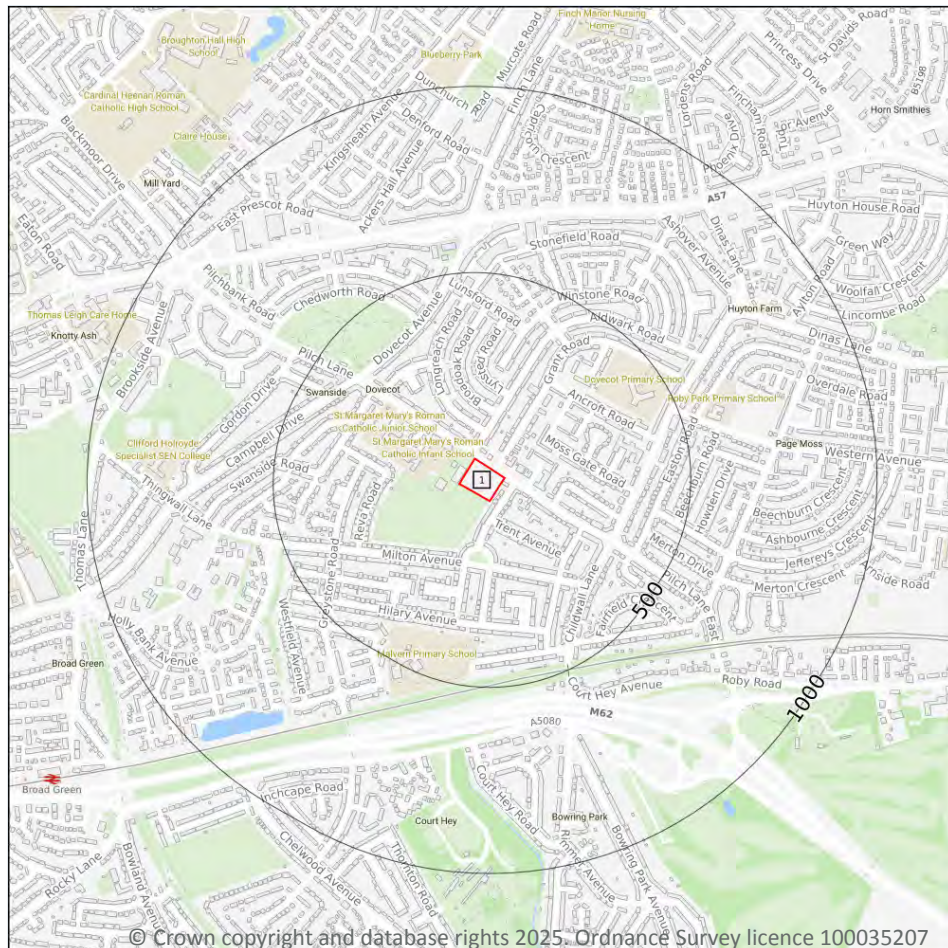
0

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



— Site Outline
Search buffers in metres (m)

□ Geological map tile

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 64](#) >

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.



Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Date: 14 March 2025

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

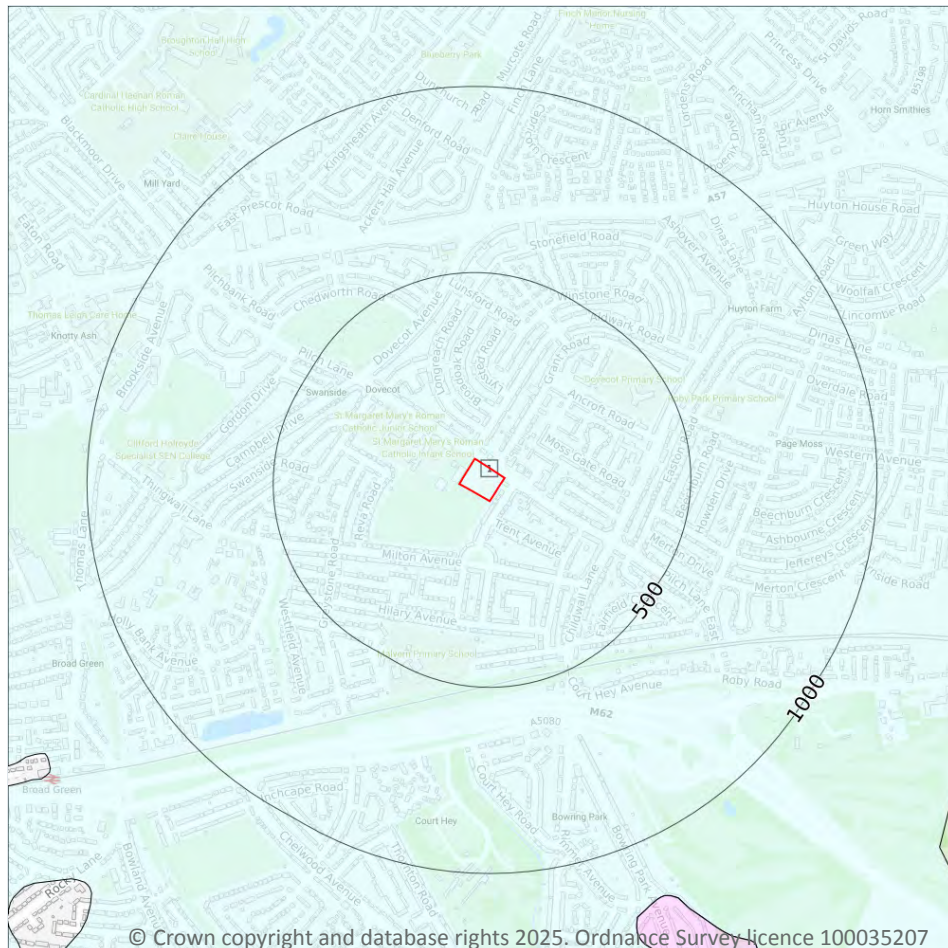
0

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

1

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 66](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVANSIAN	DIAMICTON

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)

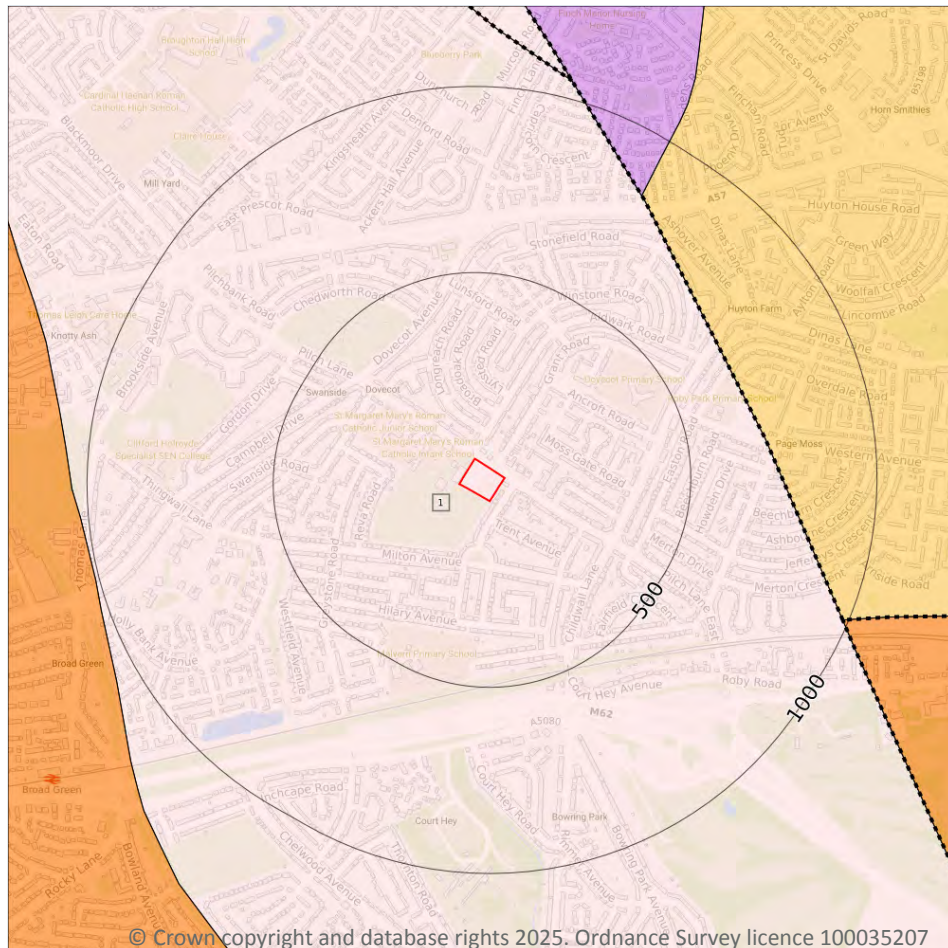
Records within 50m**0**

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

1

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 68](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	WLSF-SDST	WILMSLOW SANDSTONE FORMATION - SANDSTONE	-

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	Intergranular	High	High

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

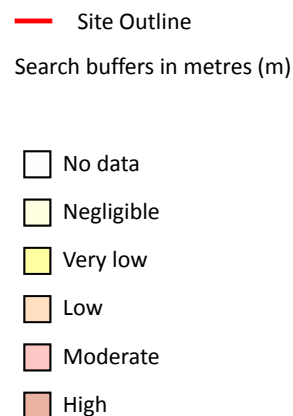
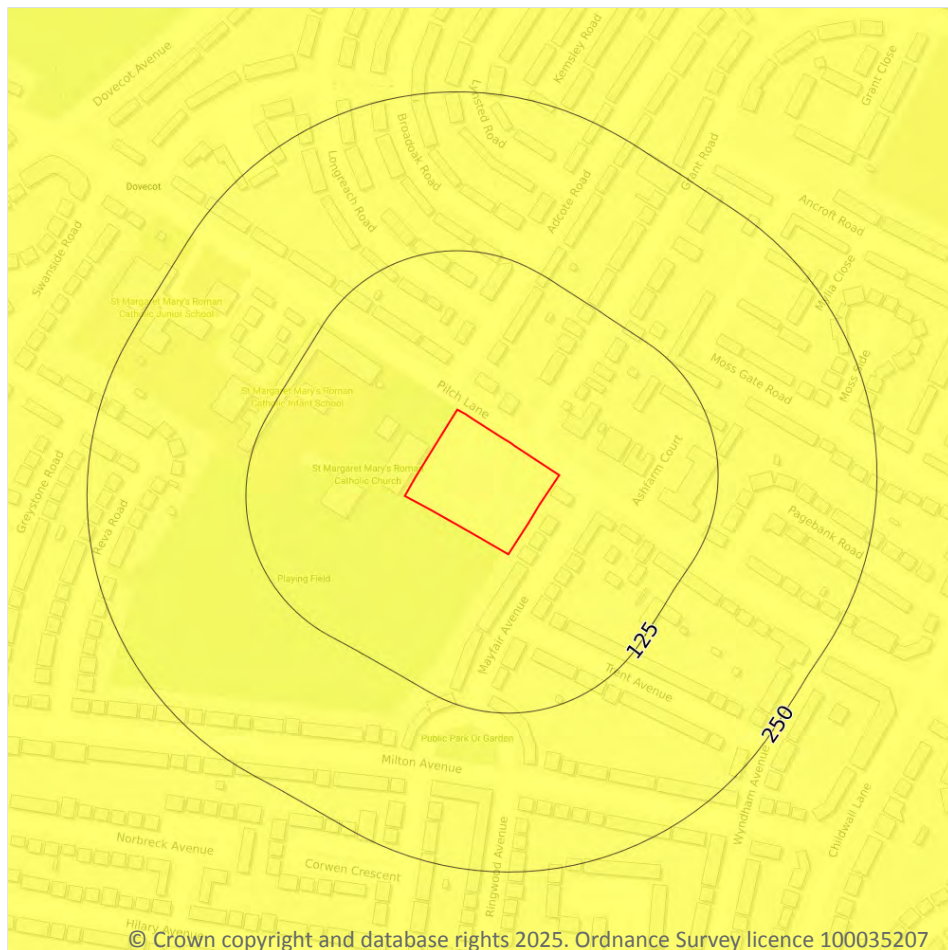
0

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



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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).

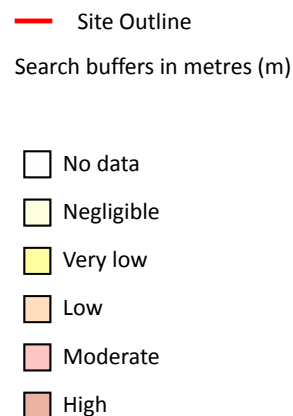
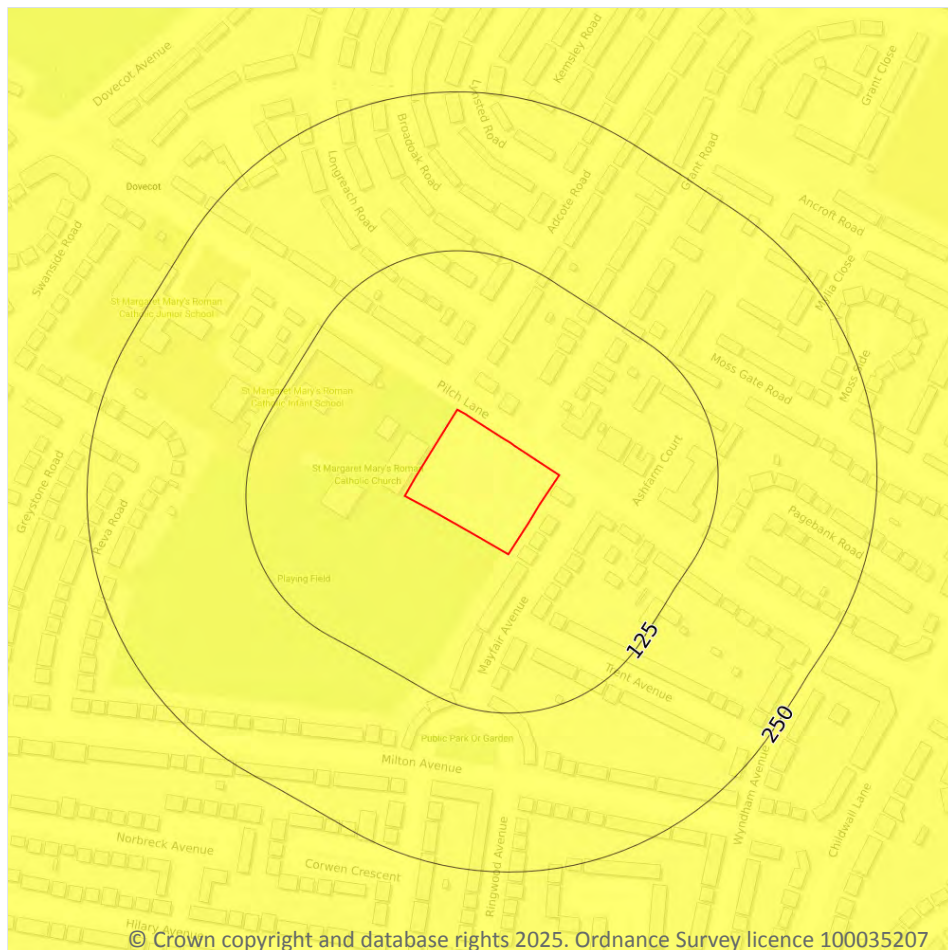
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 71 >](#)

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



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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.

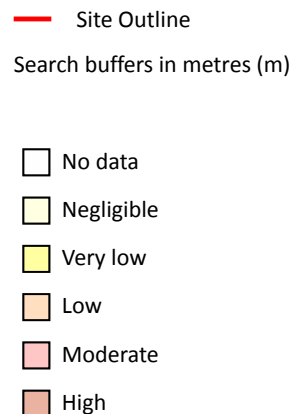
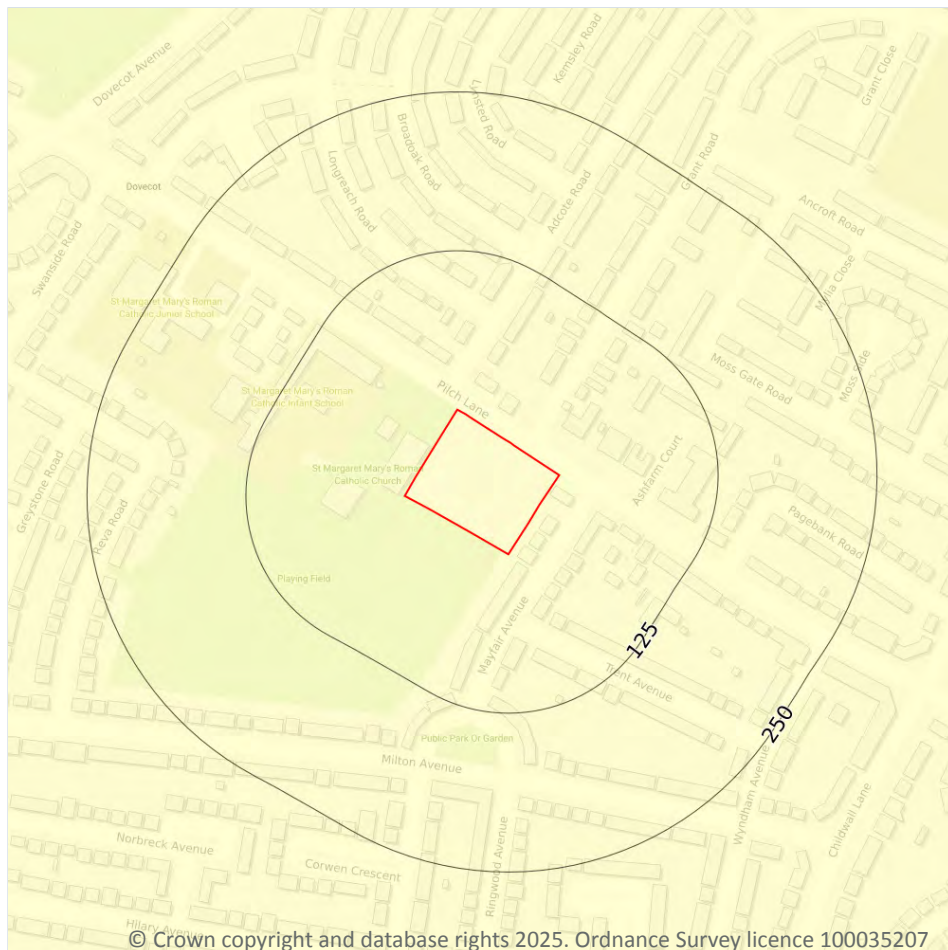
Features are displayed on the Natural ground subsidence - Running sands map on [page 72 >](#)

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



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.

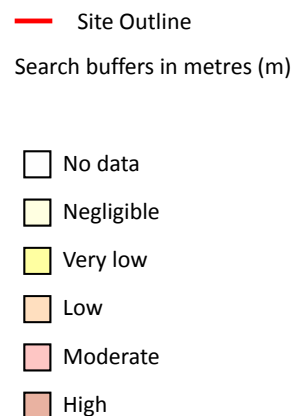
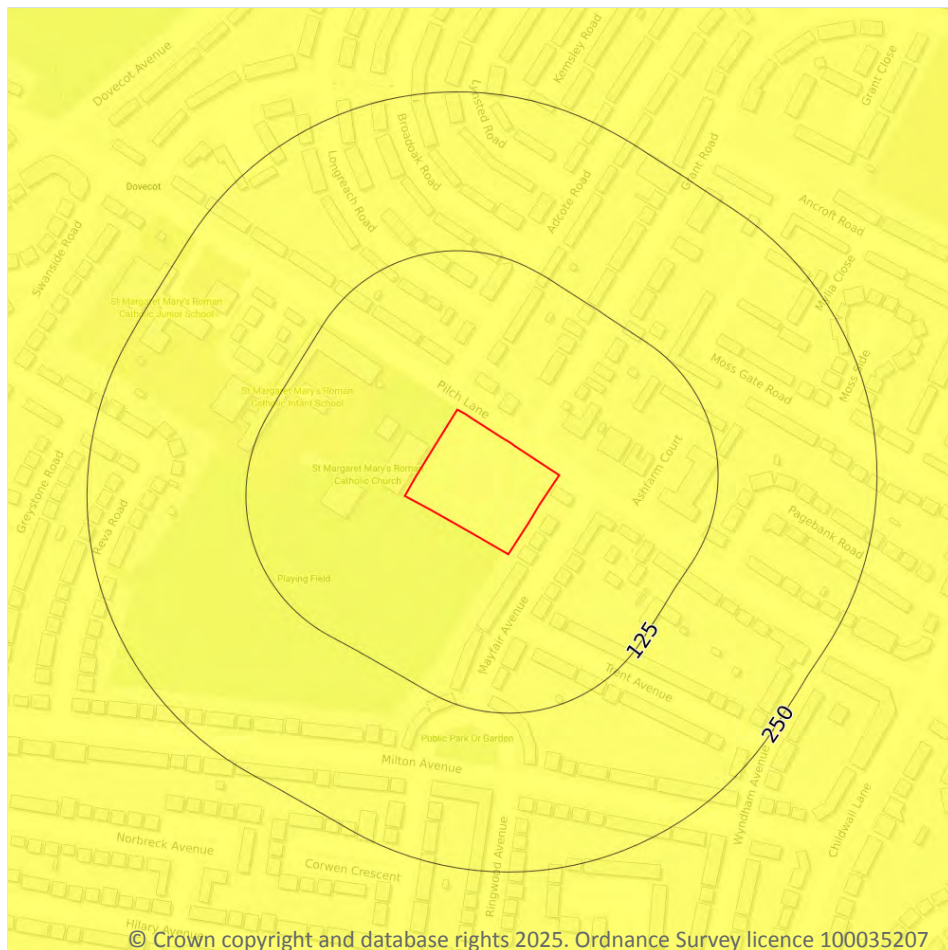
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 73 >](#)

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.

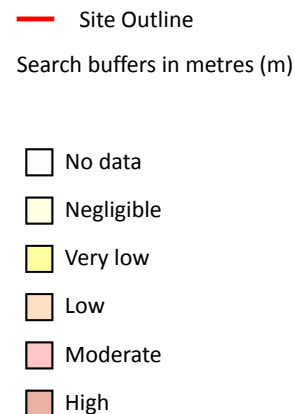
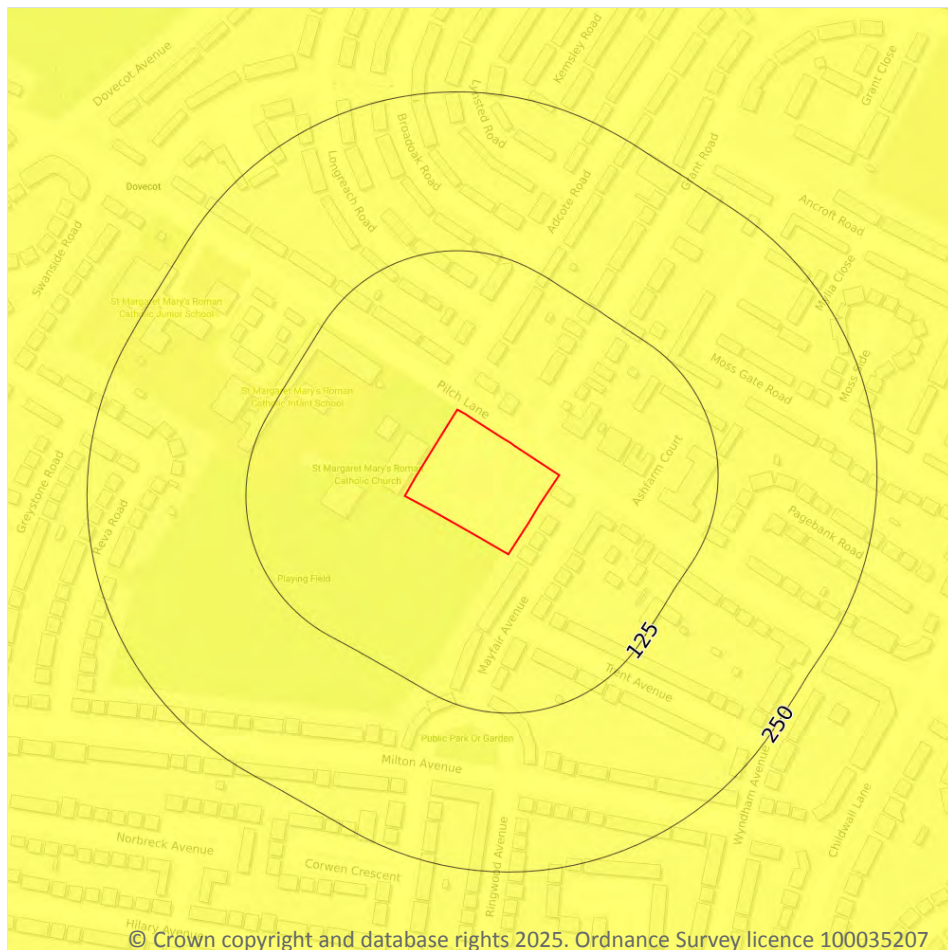
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 74 >](#)

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



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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.

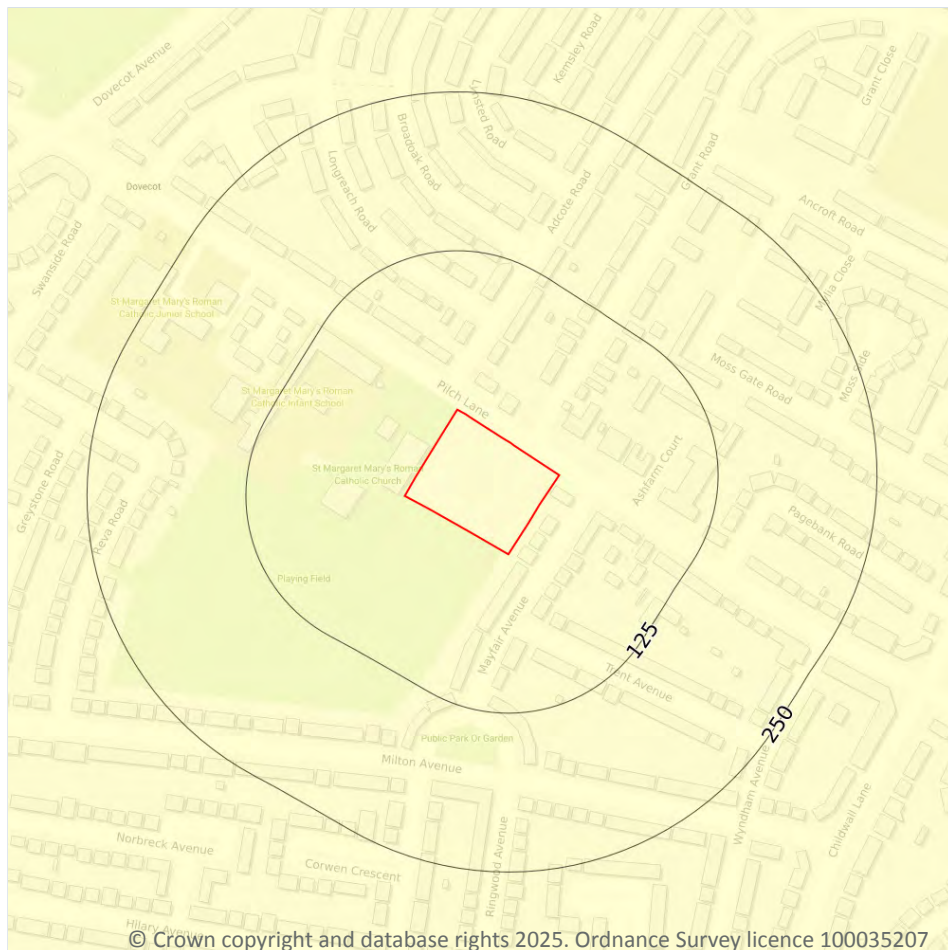
Features are displayed on the Natural ground subsidence - Landslides map on [page 75 >](#)

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



© Crown copyright and database rights 2025. Ordnance Survey licence 100035207

- 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 76](#)

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



- 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

2

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 78 >](#)



ID	Location	Details	Description
B	308m E	Name: Ashfield House Sand Pit Address: Page Moss, HUYTON-WITH-ROBY, Merseyside Commodity: Sand Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
C	462m SW	Name: Thingwall Sand Pit Address: Huyton with Roby, KNOWSLEY, Lancashire Commodity: Sand Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m

9

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 78 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
1	39m SE	Pond	1850	1:10560
A	91m E	Unspecified Pit	1891	1:10560
A	98m E	Pond	1925	1:10560
A	99m E	Pond	1925	1:10560
A	101m E	Pond	1938	1:10560
B	212m E	Unspecified Pit	1925	1:10560
B	212m E	Unspecified Pit	1925	1:10560
2	242m N	Ponds	1891	1:10560
B	243m E	Sand Pit	1906	1:10560

This 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 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



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- Mining cavities
- Reported recent incidents
- Historical incidents

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

1

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.

Features are displayed on the Ground cavities and sinkholes map on [page 83](#) >

ID	Location	Name	Date	Cause	Estimated diameter	Description	Accuracy
1	498m SW	Malvern Primary School, Knowsley ↗	06/07/2023	Collapsed drain	1.5m	A hole opened up at the edge of the primary school field with ground beginning to sink	1m

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

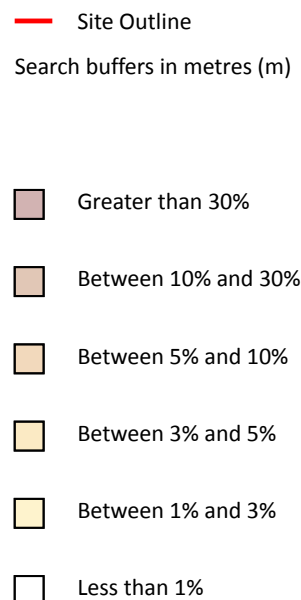
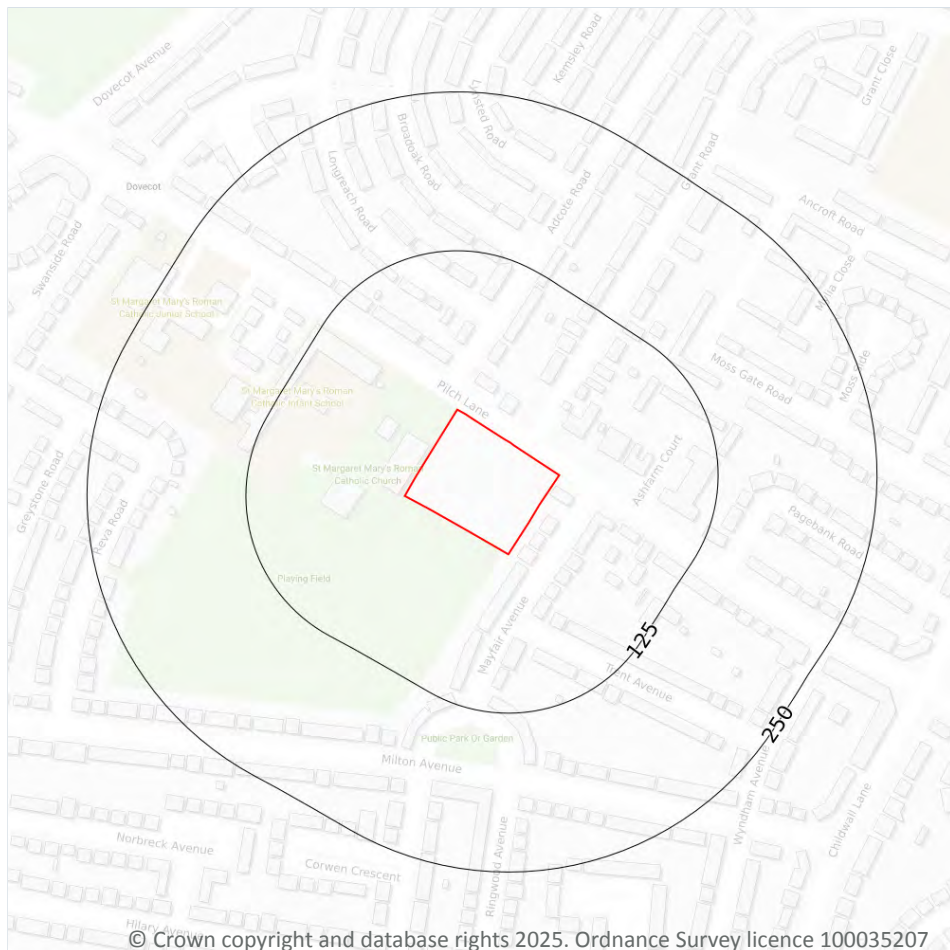
This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a 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



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 85](#) >

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 km². 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 km²; 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 km²).

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 km².

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



SJ49SW13

BH. A100

CONTRACT. LANCASHIRE YORKSHIRE MOTORWAY M62

LOCATION. BOWRING TO TARBOCK (Site 1)

SHEET No. 1

No. of sheets. 2

CLIENT. SJ49SW13

4205.9048

MINISTRY OF TRANSPORT

PERCUSSION

Casing.

Ground level. 96.31

U
D

Size to. Size to.

Commenced. 16/5/68

SPT.

6"

Completed. 21/5/68

ROTARY

Cored

runs

O/H

LEGEND

5

6

7

8

9

10

Weather.

RAIN, FINE

STRATUM (Scale: 1/4 inch to 1 foot)

SPT.

Blow Count

(N)

LL/PL/PI

1 Thickness

Depth

Sample

No.

2

3

4

Top soil

1'6"

1'6"

Stiff brown sandy
stony clay

3'0"

M1

3'6"

U1

3'0"

4'6"

27/16/11

(CL)

Stiff brown sandy
stony silty clay

6'0"

M2

7'0"

U2

8'6"

A1

10'0"

M3

7'6"

12'0"

Firm/stiff brown
sandy stony clay,
with wet bands of
sand

13'6"

A2

15'0"

M4

17'0"

U4

18'6"

A3

20'0"

M5

21'0"

P1

23'0"

U5

24'6"

A4

26'0"

M6

28'0"

U6

17'0"

22'0"

Very stiff brown
sandy stony clay,
with wet bands of
sand

29'6"

A5

31'0"

M7

REMARKS: Continued on Sheet 2

Sample

Depth

M.C.

%

D.W.

SG.

Air

Voids

Type

TOP

BOTTOM

Value

B.S.

1377

No

Max. Dry

Density

Optm

M.C.

C. B. R.

COMPACTION

TOP

BOTTOM

Value

B.S.

1377

No

Max. Dry

Density

Optm

M.C.



GEO — RESEARCH LTD. SJ49SW13						B/H. No. A100	
CONTRACT. LANCASHIRE YORKSHIRE MOTORWAY M62						SHEET No. 2	
LOCATION. BOWRING PARK TO TARBOCK (Site 1)						No. of sheets. 2	
CLIENT. SJ 49 SW/13 4205.9048 MINISTRY OF TRANSPORT				PERCUSSION U D B SPT.		Casing. Size to. Size to. 6"	
Weather. RAIN, FINE				Ground level. 96.31		Commenced. 16/5/68	
Completed. 21/5/68				ROTARY Cored runs O/H		M.C. % Type of Test	
STRATUM (Scale: 1/4 inch to 1 foot)				GRADING % PASSING SIEVE		TAQ. or UCT.	
SPT. Blow Count (N) LL/PL/PI				3" 1 1/2" 2" 3" 4"		Bulk Density p.c.f. Shear / o° p.s.f.	
1 Thickness 2 Depth 3 Sample No. 4				5 LEGEND 6 7 8 RESULTS OF ANY OTHER TESTS 9 10		WATER REMARKS	
Very stiff brown sandy stony clay, with wet bands of sand				23.1 UCT 18.5		129.3 127.4	
31'0" 32'0" U7				18.6		7446	
33'6" A6				21.5 UCT 21.4		6485	
35'0" M8				13.6		8767	
37'0" U8 47/17/30 (CI)				10.7 UCT 10.4		9968	
38'6" A8				17.4		129.3 127.4	
40'0" M9				15.2 UCT 15.6 AASHO 15.0		131.5 134.6	
42'0" U9				139.8 138.5 137.8		10929 10929	
12'6" 43'6" A8				11.8 UCT 12.0 AASHO 11.9 12.5		10929	
Compact brown silty sand				6.4		Moist SWL @ 42'0"	
1'6" 45'0" M10				11.6		SWL @ 45'0"	
Brown sandy stony clay, with wet bands of sand and large boulders				11.6		SWL @ 45'0"	
48'0" B1				140.7 140.8 139.9		1356 1243 1243	
49'0" M11				11.6		Dam.	
51'0" 50'0"				11.6		Moist OCB @ 62'0"	
Very stiff brown sandy stony clay				11.6		Cas @ 45'6"	
52'0" B2				11.6		Water Nil	
54'0" M12				11.6		OWC Water	
56'0" U10				11.6		Nil	
57'6" A9				11.6		Nil	
59'0" M13				11.6		Nil	
12'0" 62'0"				11.6		Nil	
REMARKS: BOREHOLE COMPLETED AT 62'0"				C. B. R.		COMPACTION	
* Moisture Content only - 12.8				Air Voids Type		B.S. 1377 No	
Sample Depth M.C. % D.W. SG.				TOP BOTTOM Value		Max. Dry Density Optm. M.C.	
				0.1 0.2 0.1 0.2			

5149SW/21 BH 5742/1

CONTRACT. LANCASHIRE YORKSHIRE MOTORWAY M62							SHEET No. 1		
LOCATION. BOWRING PARK TO TARBOCK (Site 1)							No. of sheets. 2		
CLIENT. SJ 49 SW/21 4240.9050 MINISTRY OF TRANSPORT				PERCUSSION U D B SPT.			Casing. Size to. Size to. 6" 17'6" H 60'0"		
Weather. FINE				ROTIARY Cored runs O/H			M.C. % Type of Test Core Rec. %		
STRATUM.(Scale: ¼ inch to 1 foot) Thickness 2 Depth 3 Sample no. 4 SPT. Blow Count (N) LL/PL/PI				GRADING % PASSING SIEVE 3" 1½" ¾" ⅜" ⅙" N.7 25 52 100 200			TAQ. or UCT. Bulk Density p.c.f. Shear /o° p.s.f. Dev. Stress p.s.i. Lat. Pres. p.s.i. UCT. Stren. p.s.f. Shear/Lº p.s.f.		
				LEGEND			RESULTS OF ANY OTHER TESTS.		
Top soil									
Firm brown sandy stony clay									
Stiff brown sandy stony clay									
Coarse hard red micaceous sandstone cross stratified yellow bands									
Continued on Sheet 2									
REMARKS:				C. B. R.			COMPACTION		
Sample Depth M.C. % D.W. SG.				Air Voids Type			TOP BOTTOM Value		
							B.S. 1377 No Max. Dry Density Optm M.C.		

[illegible]

5549SW/28

BH. 574111

CONTRACT. LANCASHIRE YORKSHIRE MOTORWAY M62										SHEET No. 1			
LOCATION. BOWRING PARK TO TARBOCK (Site 1)										No. of sheets. 2			
CLIENT. SJ 49 SW/28 4253.9047 MINISTRY OF TRANSPORT				PERCUSSION U D SPT. B		Casing. Size to. Size to. 6" 10'0" H 60'0"		Ground level. 108.26		Commenced. 10/5/68			
Weather. FAIR				ROTARY Cored runs O/H		M.C. % Type of Test Core Rec. %		GRADING % PASSING SIEVE 3" 1 1/2" 2" 3" 4" 5" 6" 8" 10" N.7 25 52 100 200		TAQ. or UCT. Bulk Density p.c.f. Shear /o ^o p.s.f. Dev. Stress p.s.i. Lat. Pres. Stren. p.s.i. p.s.f. UCT Shear L ^o p.s.f.			
STRATUM (Scale: 1/4 inch to 1 foot)				SPT. Blow Count (N) LL/PL/PI		LEGEND		RESULTS OF ANY OTHER TESTS.		WATER REMARKS.			
1 Thickness		2 Depth		3 Sample No.		4		5		6			
Top soil		1'0"								Damp			
Firm/stiff mottled brown clay		2'6"		M1				19.4					
		3'6"		U1		28/13/15 (CL)		16.2 TAQ		134.0 20.4 20			
		5'0"		A1				15.0		139.7 24.2 40			
		6'0"						15.3		130.9 37.1 60			
		6'6"		P1		12.11.131.4 (50)		13.6		732/9.00			
Weathered red sandstone		6'6"								Damp			
		3'0"		P2		75 for 3" (total)		12.7		Water added			
Coarse medium/hard red sandstone highly micaceous with soft yellow sandstone bands		10'0"						Nil		Water table not encountered			
		12'0"								SHELL & AUGER COMPLETED 20/5/68			
		17'0"								ROTARY DRILLING COMMENCED 17/7/68			
		20'0"						60					
		25'0"						60					
		21'0"		30'0"									
Continued on Sheet 2													
REMARKS:				Sample Depth		M.C. % D.W.		SG.		C. B. R.		COMPACTION	
										TOP BOTTOM		B.S. 1377 No	
										0.1 0.2 0.1 0.2		Max. Dry Density	
										Value		Optm M.C.	

SJ49SW/28 BH. 5741/1

[illegible]

SS49SW/31 BH. 5741/4

CONTRACT. LANCASHIRE YORKSHIRE MOTORWAY M62										SHEET No. 1	
LOCATION. BOWRING PARK TO TARBOCK (Site 1)										No. of sheets 2	
CLIENT. SJ 49 SW/31 4251.9036 MINISTRY OF TRANSPORT				PERCUSSION U D SPT B		Casing. Size to. Size to. 6" 13'6" H 62'0"		Ground level. 102.70			
Weather. FAIR				ROTARY Cored runs O/H		M.C. % Type of Test Core Rec. %		GRADING % PASSING SIEVE 3" 1 1/2" 3/4" 3/8" 1/4" N.7 25 52 100 200		TAQ. or UCT. Bulk Density p.c.f. Shear /o ^a p.s.f. Dev. Stress p.s.i. Lat. Pres. Stren. p.s.i. UCT Pres. Stren. p.s.i. Shear/L ^o p.s.f.	
STRATUM (Scale: 1/4 inch to 1 foot)				SRT. Blow Count (N) LL/PL/PI		LEGEND		RESULTS OF ANY OTHER TESTS		WATER REMARKS	
1 Thickness		2 Depth		3 Sample No.		4		6		10	
Top soil		2'0"								Damp	
Firm brown very sandy stony clay		2'0"		M1				16.2			
		2'6"		U1				14.8		TAQ	
		4'0"		A1				13.9		132.0 28.0 20	
								14.5		134.8 41.8 40	
										132.7 58.9 60	
										768/15.50	
		7'0"		M2				16.3			
		8'0"		U2				16.2		TAQ	
		9'6"		A2				16.2		132.9 13.3 20	
		10'0"						15.5		133.1 14.3 40	
										134.2 25.7 60	
										590/5.50 Damp	
Weathered red sandstone		10'6"		P1		8.8, 9.20 (45)		12.3			
		2'0"		12'0"						Water added	
Coarse hard yellow/red micaceous and iron stained sandstone		13'0"		P2		75 for 3" (total)		10.0			
		15'0"						30		Water table not encountered SHELL & AUGER COMPLETED 17/5/68 ROTARY DRILLING COMMENCED 21/7/68	
		20'0"						40			
		25'0"						60			
		30'0"									
		19'0"		31'0"							



BGS ID: 165958 : BGS Reference: SJ49SW31
British National Grid (27700) : 342510,390360

SW49SW/31 BH 5741/4

Contact BGS: ngdc@bgs.ac.uk



		RECORD OF WELL		For Institute use only Licence No.	
		At <u>Bourne Park OBH</u>		N <u>SJ49/56</u>	
		Town or Village			
		County			
EXACT SITE OF WELL		Six-inch National Grid sheet and reference		<u>SJ 4245 9030</u>	
		For			
		State whether owner, tenant, builder, contractor, consultant, etc.:			
		Address (if different from above)			
		Level of ground surface above sea level (O.D.)		ft (.....m)	
DELETE		If well top is not at ground level state how far		above: below: ft (.....m)	
AS		SHAFT		ft (.....m); diameter.....ft (.....m);	
NECESSARY		HEADINGS (please attach details—dimensions and directions)			
		BORE		ft (.....m); diameter: at top.....in (.....mm); at bottom.....in (.....mm)	
		Full details of permanent lining tubes (position, length, inner and outer diameters, plain slotted etc.):			
		Water struck at depths of		ft (.....m) below well top	
TEST CONDITIONS		Rest level of water		ft (.....m) above* below well top. Suction at.....ft (.....m)	
		Yield on.....hours* days' test pumping at.....galls per.....(.....l/s) with depression to.....ft (.....m) below well top. Recovery to rest level in.....mins* hours			
		Capacity of pump		g.p.h. (.....l/s)	
		Date of measurements			
NORMAL CONDITIONS		DESCRIPTION OF PERMANENT PUMPING EQUIPMENT:			
		Make and/or type		Motive power.....	
		Capacity.....galls (.....m ³) per hour. Suction at.....ft (.....m) below well top. Amount pumped.....galls (.....m ³) per day. Estimated consumption.....galls (.....m ³) per week			
		Well made by		Date of sinking.....	
		ADDITIONAL NOTES		ANALYSIS (please attach copy if available)	
LOG OF STRATA OVERLEAF					

Received from NWNA

Date 20-2-81

Observation well.....

Recorder.....

FR log.....

Site marked on

1" map.....

6" map—Grid Sheet.....
(use symbol)

Copy to.....

Date.....

INSTITUTE OF GEOLOGICAL SCIENCES
HYDROGEOLOGY UNIT
EXHIBITION ROAD
LONDON SW7 2DE

IGS 2494 10 000 7/79



For Institute use only

GEOLOGICAL
CLASSIFICATION

NATURE OF STRATA

If measurements start below ground surface, state how far.

THICKNESS

DEPTH

Feet

Inches

Metres

Feet

Inches

Metres

Fill

1.00

1.00

Boulder clay

10.50

11.50

Bunter T-bbble Beds

20.67

?

Classification by NWWA.

APPENDIX 7

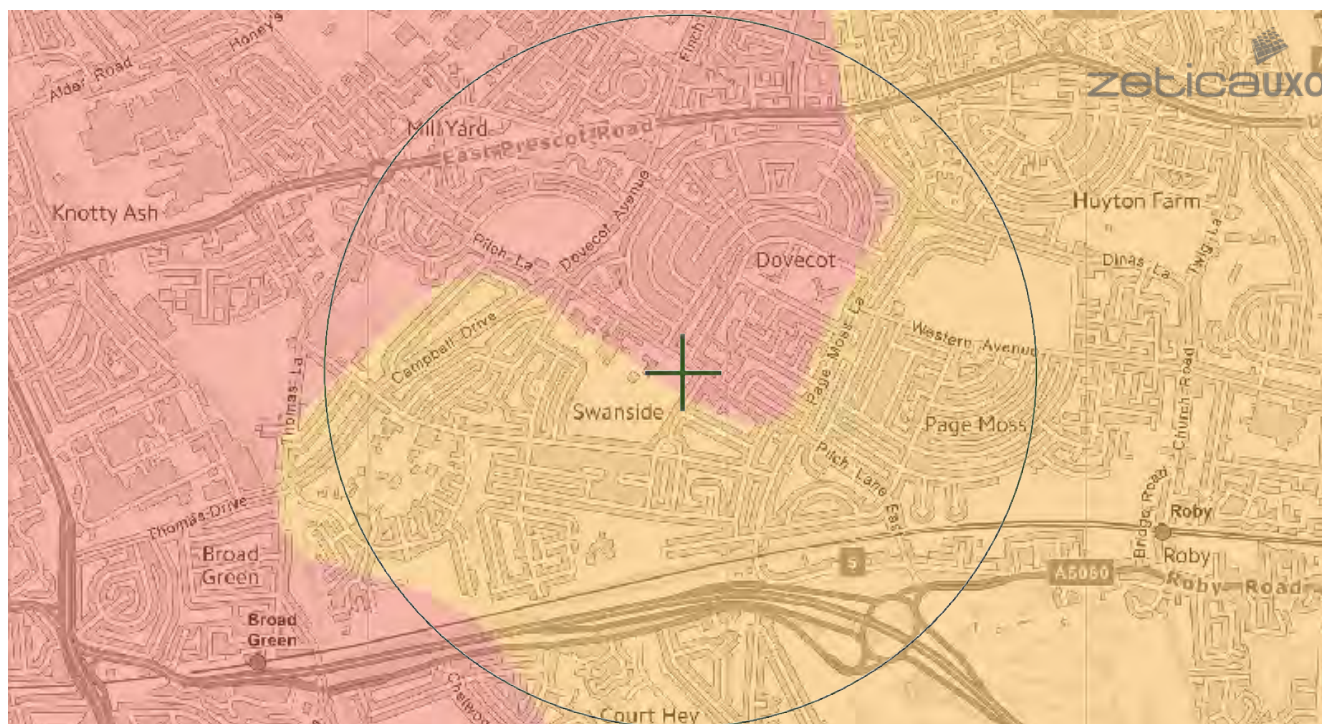
ZETICA UXO RISK MAP AND A PRELIMINARY UXO RISK ASSESSMENT REPORT

UNEXPLODED BOMB RISK MAP



SITE LOCATION

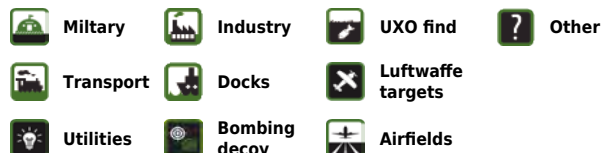
Map Centre: 341842,391149



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.



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](#).

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgement. The copyright remains with Zetica Ltd.

STAGE 1 PRELIMINARY UXO RISK ASSESSMENT

Report Ref: PRA-25-2682 | Author: WS | Reviewer: CB



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

Client: IGE Consulting Ltd.
Project: Pilch Lane, Liverpool
Date: 18/03/2025

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 41846 91132 **What3Words:** cape.takes.extra

Location: Situated in Huyton, within the county of Lancashire, approximately 1.2km north-east of Broad Green railway station.

Site Composition: The Site comprises an area of open brownfield land, with hardstanding in the north.

Surroundings: The Site is bound to the north by Pilch Lane, to the east by residential structures on Mayfair Avenue, to the south by open ground, and to the west by St Margaret Mary’s Church



THE PROPOSED WORKS

Site Investigation (SI) Works	SI works will likely comprise window sample boreholes to 6m bgl, trial pits to 4m bgl and potentially cable percussion boreholes to 15m bgl.
Development Works	The proposed development is the construction of approximately 32 low-rise residential properties.

SITE HISTORY

Pre-WWII	The Site comprised open, undeveloped ground, likely agricultural in nature.
WWII-era	The Boundary Hotel pub has been constructed in the north-east of the Site, with associated bowling greens in the south. An associated pavilion has been constructed along the southern border.
Post-WWII	In 2010, the pub in the north-west of the Site, and the pavilion in the south had been cleared. This potentially disturbed ground to a shallow (1-2m bgl) depth within the footprint of the pub.

ENEMY ACTION DURING WWI

WWI German Bombing	Huyton experienced no air raids during WWI.
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ENEMY ACTION DURING WWII	
British District Bombing Density Statistics	The Site is situated on the administrative border between the WWII-era County Borough of Liverpool and the Urban District of Huyton with Roby, which sustained 91.5 bombs / 1,000 acres and 22.3 bombs / 1,000 acres respectively, moderate-to-high and low-to-moderate bombing densities.
Evidence of Bomb Strikes	No bombing incidents recorded on Site in consulted sources. The closest bomb strike comprises a 50kg HE bomb strike approximately 240m to the south-east.
Evidence of Bomb Damage	No immediately obvious evidence of bomb damage identified on Site or in the immediate surrounds. Ground disturbances are visible in the open ground immediately south of the Site; although, these do not appear consistent with the appearance of craters resulting from bomb damage.
Local Bombing Decoy Sites	None within a significant distance. The closest recorded decoy was approximately 4.4km north-east.
Local German Bombing Targets	The closest identifiable primary Luftwaffe target was a water works approximately 2.9km north-west of the Site. Railway infrastructure approximately 460m 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 86 th Liverpool (Stoneycroft) HG Battalion will have been active locally during WWII. The possibility that the Site was accessed by armed HG troops on patrol cannot be discounted at this stage due its open, undeveloped nature during WWII.
Historic or Current Military Activity	Seven small huts are visible within the grounds of the church, approximately 20m south-west of the Site. Whilst these resemble the type of huts utilised by the military, no evidence has been found to suggest any military activity occurred in the area. As they were present within the grounds of a church, they may have been constructed to house civilians who had been rendered homeless by bombing, although no information to confirm their exact purpose could be found.
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 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.
UXO Finds	n/a

LIKELIHOOD OF UXB DETECTION

Access Levels	Access levels were likely frequent in the north of the Site owing to the presence of the pub, and less frequent in the southern extent, although it should be noted that this will have depended on the use of the bowling greens.
Ground Cover	The ground cover in the north of the Site was conducive to the visual detection of UXBs, whilst the ground cover in the south was likely unconducive to the detection of UXBs, although the open ground appears well maintained in WWII-era photography.

RISK MITIGATING FACTORS

Likelihood of UXO Remaining	The risk associated with (any) very shallow or shallow buried UXO will have likely been partially mitigated. The risk associated with (any) buried UXO almost certainly remains unmitigated.
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CONCLUSIONS

German UXO:

- No evidence of German bombing within a significant distance of the Site has been identified; the closest bombing incident was a 50kg HE bomb recorded approximately 240m to the south-east.
- Whilst the ground cover in the south of the Site was potentially unconducive to the detection of UXBs, access and monitor levels are anticipated to have been frequent and regular, given the undamaged pub on Site and the adjacent Church and residential structures.
- Given the lack of evidence suggesting the Site was affected by bombing, the chance of encountering a German UXB on Site is not considered to be elevated above the 'background level' for the region, 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. Seven small huts are visible 30m south-west of the Site; however no evidence could be found to suggest these were utilised by the military.
- It is possible that an unexploded British AA shell struck the Site during WWII. Any such UXO could have penetrated the ground on 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	

IGE

consulting

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