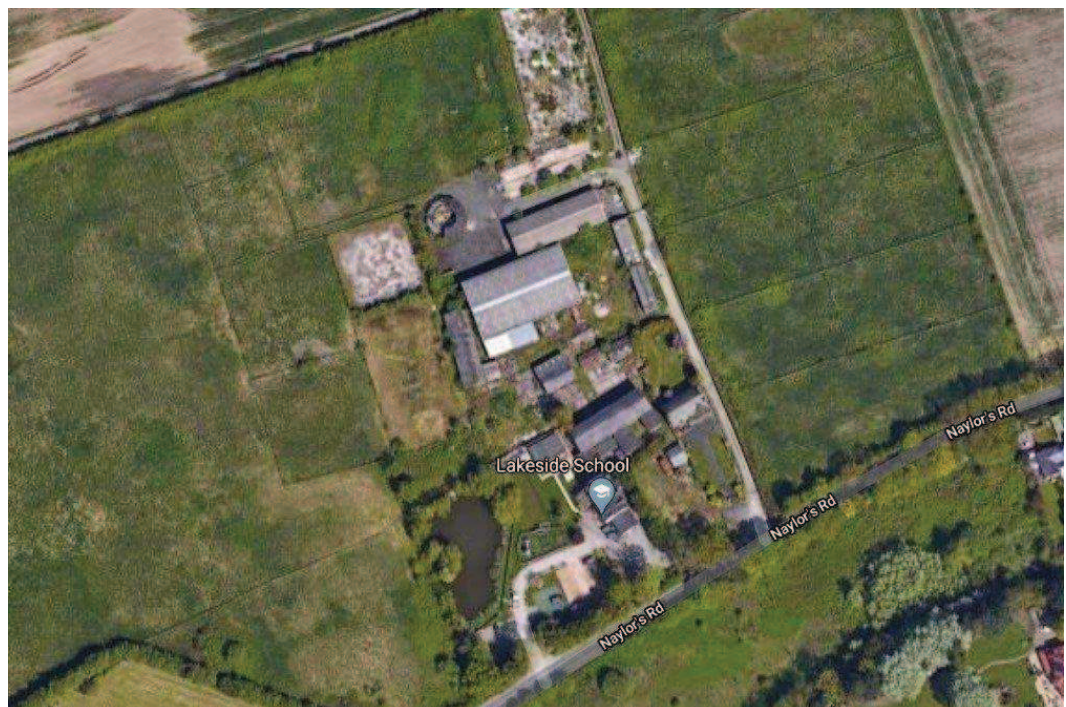


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Phase 1

PRELIMINARY RISK ASSESSMENT

**LAKESIDE SCHOOL,
NAYLORS ROAD, LIVERPOOL**



For

The Witherslack Group



Phase 1 Preliminary Risk Assessment

LAND LOCATED ADJACENT LAKESIDE SCHOOL, NAYLORS LANE, LIVERPOOL

FOR

The Witherslack Group

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Table of Contents

Executive Summary

1	Introduction	5
2	Site Location & Description	6
3	Site History.....	8
4	Site Setting.....	5
5	Preliminary Contamination Conceptual Model	9
6	Conclusions	13

List of Appendices

Appendix	Description
A	Site Plans
B	Historical Plans
C	GroundSure Geo-EnviroInsight Report
D	Site Photographs

Executive Summary

Site Description	The site is located to the North side of Naylor road, and contains a former riding school and the current Lakeside School complex. The site is up to 25000m ³ in area. The site is rectangular in shape and is relatively level. The site contains the existing school buildings and a menagerie of building structures that formed the former riding school.
Purpose of the Preliminary Risk Assessment	This report has been prepared to produce a preliminary conceptual model for the site to identify any potentially significant pollutant linkages associated with contamination and ground gas and with consideration to the proposed new school facility.
Site History	The earliest available historical maps (1850) show the southern half of the site to be occupied by Wheat Hill Farm with vacant fields to the North. Several ponds are also present. Circa 1892 one of the ponds has ceased to exist. A further outbuilding is present in 1927. There are evident further changes to buildings between 1950 and 1956 with the presence of silos also seen. Significant changes start to appear from 1964 with the presence of new buildings and agricultural buildings, the silos disappear in 1968. The school buildings are evident to the South West of the site in 1986.
Geology	The site is not considered to be overlain with made ground. The published geology indicates that Glacial Till (Boulder Clay) overlies the site, which typically contains sandy, stony, silty clay. The clays are of low permeability. The underlying solid geology comprises the Wilmslow Sandstone Formation which generally comprises red-brown sandstone which is fine to medium grained.
Mining	Information in the Enviro+GeoInsight Report states that the site is not located within a coal mining area as defined by the Coal Authority
Radon	The site is not located in a radon affected area and no protective measures are required.
Groundwater	The superficial deposits which overlie the site is classified as a Secondary (Undifferentiated) Aquifer. The underlying bedrock is classified as a Principal Aquifer and the Enviro+GeoInsight Report indicates the site is located within Zone 3 of a designated Source Protection Zone. The Enviro+GeoInsight Report indicates that there are no groundwater abstractions located within 250 m of the site.

Surface Water	A pond is located in the south-west part of the site. The nearest potentially significant watercourse is a (possible) drainage ditch which contains water all year round located some 120 m south-east of the site
Landfills and Waste	The information presented in the Enviro+GeoInsight Report indicates that there are no current/historic landfill or waste management sites within 250 m of the site. A waste exemption has been registered within 250 m of the site.
Local Authority Pollution Prevention and Controls	There are no Part A(2), Part B or IPPC Authorised Activities located within 250 m of the site There are 2 potentially significant contaminative industrial sites located within 250 m of the site, the closest of which refers to a telecommunications mast located some 207 m west of the site.
Sensitive Land Use	The site is not affected by any of the ecological systems identified as a statutory receptor in the DETR Circular 01/2006.
Unexploded Ordnance	The regional unexploded bomb risk map indicates that the site is located in an area at Moderate risk from possible Unexploded Ordnance (UXO) resulting from the Second World War.
Contemporary Trade Directory	There are 11 possible 'significant pollutant linkages' associated with the site. The most likely are related to previous land usage.
Preliminary Contamination Conceptual Model	The background information indicates there are likely areas of made ground and infilled ground beneath the site. The nature and extent of any made-ground is currently unknown and it could contain contaminants of concern.
Recommendations	Site investigation consisting the drilling of a series of boreholes will need to be carried out to fully characterise the shallow ground conditions. Following a review of ground conditions encountered, representative samples will be submitted for chemical testing and gas monitoring probes will need to be installed. The site investigation data will need to be assessed as part of a quantitative risk assessment to identify significant risks and inform the remediation strategy (if required).

1. INTRODUCTION

1.1 APPOINTMENT

- 1.1.1 Thomas Consulting Limited have been commissioned by The Witherslack Group to prepare a Preliminary Risk Assessment for the land encompassing and located adjacent to Lakeside School, Naylor Street, Liverpool (hereafter referred to as 'the site') to assess potential risks associated with contamination and ground gas with respect to the proposed development at the site).
- 1.1.2 The site location and site layout are presented on Thomas Consulting's Drawings. Copies of these drawing are presented in Appendix A.

1.2 PROPOSED DEVELOPMENT

- 1.2.1 The report has been prepared to support a planning application for the demolition of the existing farm buildings and construction of a new school block and associated infrastructure (including reconfiguration of the existing car park).
- 1.2.2 At this stage, the provided plans do not detail the extent of soft landscaping to be located at the site. This assessment will assume soft landscaped areas will be present as part of the redevelopment in order to provide a conservative assessment of the risks from contamination at the site. However, if further information becomes available regarding the proposed development further amendments to this report may be required.
- 1.2.3 The proposed structures to be demolished are provided on C4 Projects drawing entitled 'Enlarged Site Plan – Proposed Demolitions' (Drawing No: 20034-C4P-AB-ZZ-DR-A-0310-P01, dated: 13.04.20). The proposed 'Site Plan As Proposed' (Drawing No: 20034-C4P-AB-ZZ-DR-A-0511-P01', dated: 13.04.20).

1.3 PROPOSED DEVELOPMENT

- 1.3.1 This report provides the details of the works undertaken by Thomas Consulting to assess the potential risks from contamination considering the change of use.
- 1.3.2 To achieve the objective Thomas Consulting will undertake the following:
- Carry out a site inspection and take photographs
 - Review the available relevant background information for the site, including:
 - Recent Ordnance Survey Map
 - Coal Authority Website
 - BGS Web Page
 - Site Specific GroundSure Reports
 - Site Specific Historical Maps
 - Zetica UXO website

- Develop a preliminary conceptual site model in accordance with guidance to identify potentially significant pollutant linkages specific to the proposed development
- Establish areas of potential concern based on identified risks and/or potential risks
- Identify any actions required to assess or reduce the risks identified

1.4 LIMITATIONS

- 1.4.1 The conclusions and recommendations presented in this report are the result of our professional interpretation of the information currently available. Thomas Consulting reserves the right to amend the conclusions and recommendations if further information becomes available.
- 1.4.2 However, it should be noted that much of the information has been derived from reports written by others and Thomas Consulting takes no responsibility for the accuracy of that information. Notwithstanding the above, the reports reviewed have all been written by professional environmental consultants with a duty of care to provide relevant and accurate information.

2. SITE LOCATION & DESCRIPTION

2.1 Site Location

- 2.1.1 The site is located to the north of Naylors Road, Liverpool, approximately 9.8 km north-east of Widnes and some 11.1 km east of Liverpool. Access to the site is from Naylors Road to the south of the site.
- 2.1.2 The National Grid Reference for the centre of the site is 343762, 389367. The site location is illustrated on Thomas Consulting Drawings, a copy of which is presented in Appendix A.

2.2 Site Layout & Description

- 2.2.1 The general site layout is shown on Thomas Consulting Drawing, a copy of which is presented in Appendix A.
- 2.2.2 The site is occupied by a roughly rectangular shaped plot of land of approximately 21500 m³ which is currently occupied by a school (south-west), a residential property (south-east), a cluster of farm buildings (centre, north/east of centre and north east of the site) and farm yard/scrub areas (to the west of the centre and north-west of the site). Given that the site is currently subjected to various land uses Thomas Consulting has considered it prudent to zone the site into a number of distinct parcels for the purpose of describing the site.

Lakeside School – South-West of the Site

- 2.2.3 This area is to be retained in its existing use as part of the re-development with only minor changes in configuration taking place to the existing car park at the site. Therefore, the walkover was not focused in this area. However, a brief description of the site obtained from Google Earth Landsat images is provided herein.
- 2.2.4 The main school buildings (housing the existing school classrooms and associated facilities) are located in the north-east of this area with a large pond occupying the north-west. A play area is present in the centre of the site and tarmacadam and car parking areas are located in the south of the Lakeside school portion of this area of the site. The remaining areas at the site are occupied by well-kept grass landscaped areas.

Whitehill House – South-East of the Site

- 2.2.5 A large detached residential property and its associated garage occupy the centre of this portion of the site. Both are of brick construction with a slate roof and at the time of the site walkover the garage showed signs of fire damage. A grassed rear garden is located to the north of the property which predominantly contained grassed areas with a burnt pergola in the northernmost part of the garden area.
- 2.2.6 A front garden is situated to the south-west of the garage. At the time of the site walkover the front garden housed fly tipped furniture (south-east), metal shipping container (adjacent to the south-western corner of the garage) builders waste (north of the garage). A driveway lies to the south of the residential property which forms a gated access to this part of the site from Naylor's Road.

Cluster of farm buildings – Centre, north/east of centre and north-east of the site

- 2.2.7 A series of brick-built outbuildings with possible asbestos cement roofs are present in the south of this area. A series of stockpile of rubble, glass and brick and bitumen was present to the south of these buildings and fly tipped steel/timber were also present in this area. A large corrugated steel building dominates the central of this portion this area to the south of which tanks and metal containers are located. A further oblong shaped building is present in the eastern boundary of this area were a stockpile of stone chippings and burned trees was also present. Two further barn buildings are located to the north and west of the central corrugated steel structure. A concrete slab is present in the north-westernmost part of this area which at the time of the site walkover contained fly tipped materials, remnants of a burned-out vehicle/burned tyres. A round cattle shed of wood construction (suspected asbestos cement roof) is present in north-western most part of the site. Thomas Consulting understand that all of the farm buildings described herein are to be demolished. All asbestos should be assessed for the presence of asbestos containing materials (ACMs) and this should be removed prior to demolition works. A further site access point is located on the eastern boundary in this area.

Yard/Scrub Areas (West of centre and North-West of the site)

- 2.2.8 Two scrub/yard areas separated by a row of trees and a line of fencing are located in the north-west and west of the centre of the site, respectively. Ash/flint surfacing overlies the north-western scrub area which is overlain with moss in parts and generally devoid of any other features. Moss and bare ground overlies the scrubland to the west of the centre of the site with an area of detritus and builders rubbish in the south of this area and an ash pile from a recent fire in the centre.

2.3 Surrounding Land Use

- 2.3.1 Naylor Road is located immediately south of the site, beyond which a golf course is located. Fields are located to the north-east and west of the site. An education facility lies approximately 120 m south-west of the site, beyond which residential properties are located. The M62 motorway lies approximately 250 m north of the site.

3. SITE HISTORY

- 3.1 The history of the site has been established using historical OS maps supplied by Groundsure. A selection of the maps reviewed is presented in Appendix B.

1850

- 3.2 The earliest available maps show the southern half of the site to be occupied by Wheat Hill Farm with vacant fields occupying the northern half of the site. At this time, large farm building was present in the south-east of the site and three ponds and associated landscaped areas were present in the south-west of the site. Naylor Lane marks the southern site boundary. The areas surrounding the site are predominantly occupied by agricultural fields with several ponds located within 250 m of the site (closest 50 m north-east). A pair of semi-detached houses are located circa 100 m south-east of the site.

1892

- 3.3 The 1892 maps show one of the ponds in the south-west of the site to no longer be present (possibly infilled) and four buildings are located to the north-east of the centre of the site. There are no significant changes to the land surrounding the site.

1927

- 3.4 The 1927 maps show that a further outbuilding has been added to the north of the site.

1950 - 1956

- 3.5 The 1950 and 1956 maps show the buildings in the north-east of the centre of the site to have changed configuration. Two rounded silos are now also present in the area. The two remaining ponds present in the south-west of the site no appear to have been adjoined. Newby House is situated approximately 110 m south-east of the site. A golf course lies approximately 120 m south-east of the site.

1964

- 3.6 The 1964 maps show no significant changes to the site. Two large residential properties lie some 170 m east of the site.

1968

- 3.7 The 1968 map show that further large agricultural buildings have been added in the north-west and north of the site. The silos are no longer present to the north-east of the centre of the site.

1986

- 3.8 The 1986 maps show no significant changes to the site. Wheathill School is situated some 100 m south-west of the site beyond which some 170 m south-west residential properties are located.

2003

- 3.9 The 2003 maps show that the two oblong shaped buildings in the north of the site are no longer present. A building in the south of the centre of the site is marked 'Lakeside'.

2010-2020

- 3.10 The 2010 and 2020 maps show further farm buildings in the north of the centre of the site. An unspecified round structure (possible round hay rack) is present in the north of the site.

4. ENVIRONMENTAL SETTING

- 4.0.1 An Enviro+GeoInsight Report has been obtained from Groundsure and information provided in this report has been used within this section. A copy of the report is presented in Appendix C.

4.1 GEOLOGY

- 4.1.1 The site geology is illustrated in the Enviro+GeoInsight Report which has sourced data from several sources including British Geological Society (BGS), BRITPITS database and the Coal Authority. A copy of the Enviro+GeoInsight Report is presented in Appendix C.

- 4.1.2 In addition, Thomas Consulting has sought site investigation information from the BGS website. However, there were no exploratory locations to view within 250 m of the site.

Made Ground

- 4.1.3 According to the Enviro+GeoInsight Report there is no made ground overlying the site.
- 4.1.4 However, considering that agricultural buildings have historically occupied much of the site, the presence of made ground at the site is considered highly likely. Furthermore, the site walkover encountered evidence of made ground at the surface overlying the site.

Superficial Geology

- 4.1.5 The Enviro+GeoInsight Report states that the superficial geology comprises Glacial Till (Boulder Clay) which typically comprises of 'sandy and silty, stony clay with non-persistent beds'. This strata generally has a low permeability.

Bedrock

- 4.1.6 The underlying solid geology comprises of the Wilmslow Sandstone Formation which generally comprises 'red-brown to brick-red, fine- to medium-grained, generally pebble-free, cross-bedded sandstones, with sporadic siltstones.'

Linear Features

- 4.1.7 There are no faults or linear features located on site. However, a 'normal fault; inferred; crossmarks on downthrow side' is located some 244 m west of the site.

4.2 MINING & GROUND STABILITY

4.2.1 Information in the Enviro+GeoInsight Report states that the site is not located within a coal mining area as defined by the Coal Authority.

4.2.2 The Enviro+GeoInsight Report provides hazard ratings associated with ground subsidence at the site, as summarised below:

Shrink-Swell Clay:	Very Low
Landslides:	Very Low
Ground Dissolution of Soluble Rocks:	Negligible
Compressible Deposits:	Negligible
Collapsible Deposits:	Very Low
Running Sands:	Very Low

4.2.3 It can be seen from the above that the site is unlikely to be affected by natural ground instability.

4.3 HYDROGEOLOGY

4.3.1 The superficial deposits which overlie the site are classified by the EA as a 'Secondary (Undifferentiated) Aquifer'. These formations are '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'.

4.3.2 The underlying bedrock is classified as 'Principal Aquifer' which is described as having '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.'

4.3.3 The Enviro+GeoInsight Report indicates that the site is located within Zone 3 of a Source Protection Zone (Total Catchment).

4.3.4 There are no groundwater abstractions within 250 m of the site.

4.3.5 The risks from groundwater flooding on site is medium to high.

4.4 HYDROLOGY

4.4.1 A pond is located in the south-west part of the site. The nearest potentially significant watercourse is a (possible) drainage ditch which contains water all year round located some 120 m south-east of the site.

4.4.2 There are no surface water abstractions located within 250 m of the site.

4.4.3 There are no licensed water discharge consents located within 250 m of the site.

4.4.4 According to Groundsure the majority of the site is not at risk from flooding. However, an area in the east of the site is at risk of a 1 in 30-year flood event to a depth of 0.3 to 1.0 m. None of the site is not located within Flood Risk Zone 2 or 3.

4.5 CONTAMINATED LAND & LANDFILL ACTIVITIES

4.5.1 Information provided in the Enviro+GeoInsight Report indicates that there are no current/historic landfill or waste management sites within 250 m of the site.

4.5.2 Moreover, a waste exemption has been registered within 250 m of the site. These are summarised within Table 4-1.

Distance/Direction	Category/Sub-Category/Description
77 m North	Storage of Sludge On a Farm

Table 4-1. Summary of Waste Exemptions Present Within 250 m of the Site

4.5.3 There are no EA recorded pollution incidents located on site or within 250 m of the site.

4.5.4 There are no Part A(2), Part B or IPPC Authorised Activities located within 250 m of the site.

4.5.5 There are 2 potentially significant contaminative industrial sites located within 250 m of the site, the closest of which refers to a telecommunications mast located some 207 m west of the site.

4.6 SENSITIVE LAND USES

4.6.1 The site is not affected by any of the ecological systems identified as a statutory receptor in the DETR Circular 01/2006.

4.7 RADON

4.7.1 Groundsure reports that 'less than 1% of homes are above the action trigger level' and that 'no radon protective measures are necessary in the construction of new dwellings or extensions'.

4.8 UNEXPLODED ORDNANCE

4.8.1 The regional unexploded bomb risk map from Zetica indicates that the site is located in an area at Moderate risk from possible Unexploded Ordnance (UXO) resulting from the Second World War.

4.8.2 The Zetica UXO Risk Map is presented in Figure 4-1 below.

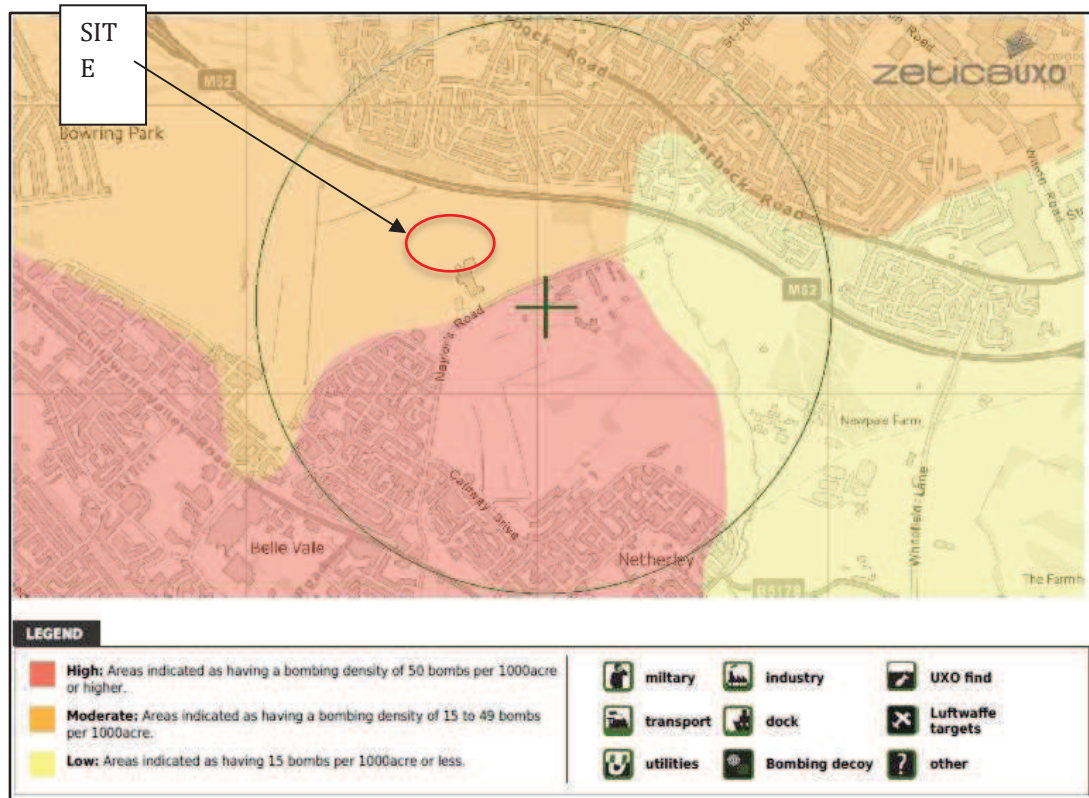


Figure 4-1. Zetica UXO Map

Source: <https://zeticauxo.com/downloads-and-resources/risk-maps/>

4.8.3 Consideration to the Moderate classification should be given if any intrusive site investigation and/or groundworks are to be carried out.

5. PRELIMINARY CONTAMINATION CONCEPTUAL MODEL

5.1 GENERAL

5.1.1 This section identifies the potential contaminants of concern, sources, pathways and receptors that may be associated with the site based on its known history and the current condition and with respect to the re-development of the site for a new school facility and associated infrastructure.

5.1.2 This information is used to develop a conceptual model which is a qualitative description of potential sources of environmental pollutants, the pathways by which they are transported and the receptors:

- i) Potential sources of contamination: these include any actual or potentially contaminating materials and activities, located either on or in the vicinity of the site
- ii) Potential pathways for contamination migration: these comprise the routes or mechanisms by which contaminants may migrate from the source to the receptor including environmental migration pathways and human health exposure pathways
- iii) Potential receptors of contamination: these include future land users, ecological systems, water resources and property.

5.2 POTENTIAL CONTAMINANTS OF CONCERN

5.2.1 Based on the earliest available maps from 1850 the southern half of the site was occupied by Wheat Hill Farm with vacant fields occupying the northern half of the site. At this time, a large farm building was present in the south-east of the site and three ponds and associated landscaped areas were present in the south-west of the site. By 1892 one of the ponds in the south-west of the site was no longer be present (possibly infilled). At this time, a further four buildings were present to the north-east of the centre of the site. A further outbuilding was added in the north of the site in circa 1927. Further changes in configuration have taken place to the site since 1950 with the two remaining ponds present in the south-west of the site appearing to make up a single large pond. Two rounded silos were present in the centre between 1950 and 1968. A building in the south of the centre of the site marked 'Lakeside' (the current school) has been present since 2003.

5.2.2 Considering the historical development of Wheat Hill Farm at the site, it is considered highly likely that made ground is present. This could have been imported to level the site prior to construction of the properties at the site or could be left following their

demolition. The properties may have had basements that have been infilled with the demolition rubble.

- 5.2.3 Localised contamination from fuel oils and greases associated with the storage and repair of farm machinery may be present in areas where farm buildings may have stood for long periods. It is acknowledged that some of the remaining farm building on site has a hardstanding concrete floor which would minimise impact to the underlying ground.
- 5.2.4 Furthermore, considering the age of the existing/former farm buildings at the site it is possible that oil fired boilers were used for heating/hot water and there may have been an associated kerosene oil tank. Although the presence/location of any such tank is unknown, consideration should be given the potential for localised contamination of organic contamination.
- 5.2.5 Furthermore, the site walkover indicated the presence of a number of stockpiles of demolition material, fly-tipped scrap materials and ash piles across the site. All of these features may contain contaminants of concern. A composite plan (Thomas Consulting Drawing No 20730) showing the aforementioned point sources of contamination, is provided on the drawing entitled 'Key areas of potential contaminants of concern' a copy of which is presented in Appendix A. Thomas Consulting cannot rule out that further sources of contamination may be present on the site for which no background information is available.
- 5.2.6 The potential contaminants of concern that may be present at the site are summarised below:

Contaminants Associated with Made Ground	
Arsenic	Zinc
Cadmium	Sulphate
Chromium	Cyanide
Copper	Phenols
Lead	Polycyclic Aromatic Hydrocarbons (PAHs)
Mercury	Total Petroleum Hydrocarbons (TPHCWG)
Nickel	Asbestos
Selenium	pH
Contaminants Associated with Kerosene Tanks & Fuel oil/Grease Spills	
Total Petroleum Hydrocarbons (TPHCWG)	SVOCs
BTEX Compounds	VOCs

Table 5-1. Potential Contaminants of Concern

- 5.2.7 It should be noted that the above list represents a broad range of potential contaminants of concern. Additional contaminants of concern may be present if ground conditions

differ from those anticipated and/or visual or olfactory evidence for contamination is encountered.

- 5.2.8 Potential source of ground gas from on site are considered to be minimal. However, if the site investigation/groundworks proves significant thickness of made ground (>3 m) or natural strata has a high organic content, it may be necessary to re-assess the potential risks from ground gas.

5.3 POTENTIAL PATHWAYS

- 5.3.1 The pathways through which contaminants may reach receptors are in part dependent by the nature and behaviour of the contaminant and the intended end use of the site.

- 5.3.2 The following potential pathways have been identified with respect to the existing site condition, the environmental setting and the construction of a new school block and associated infrastructure at the site (including landscaped areas to provide a conservative assessment); all of which are assessed in the conceptual model:

- Ingestion of contaminated soil/home grown vegetables (Landscaped Areas Only)
- Inhalation of contaminative dust including asbestos fibres
- Dermal contact (Landscaped Areas Only)
- Indoor inhalation of organic vapours and ground gas
- Dissolution or suspension (leaching) of contaminants into pore waters affecting plant growth
- Dissolution or suspension (leaching) of contaminants from site soils leading to lateral migration within perched waters to off-site receptors. Potential significant pathways include more permeable layers within the made ground/natural strata, underground services and piles/foundations.
- Dissolution or suspension (leaching) of contaminants from site soils leading to contamination of groundwater.
- Contamination affecting the integrity of service pipelines by direct contact
- Buildings affected by direct contact with elevated concentrations of sulphate and/or extreme pH

5.4 RECEPTORS

- 5.4.1 Potential site-specific receptors that may be affected by contamination at the site are listed below:

Future Site Users

- 5.4.2 Future pupils and staff at the site could be at risk from contamination present at the site.
- 5.4.3 Potential risks are associated with the inhalation of contaminated dust, asbestos fibres and direct contact. Furthermore, Thomas Consulting cannot rule out that some of the landscaped areas at the site will not be used to grow produce for use at the school. These risks are all associated with the landscaped areas only.

- 5.4.4 Furthermore, risk to human health also exist from the indoor inhalation of organic vapours and ground gas.

Construction Workers

- 5.4.5 The primary risks to construction workers are associated with shallow excavations as asbestos could be present. Asbestos fibres (if present) can be released into the atmosphere during earthworks in the yard area of the development.
- 5.4.6 Standard personal protective equipment and site-specific risk assessments and method statements should reduce risks associated with other contaminants of concern due to short exposure duration.

Off Site Receptors

- 5.4.7 Off site receptors include nearby home owners, business users and business owners. Human health could be at risk if asbestos fibres are released during the re-development.

Flora

- 5.4.8 Heavy metals can be phytotoxic and if present can represent a potential risk to flora in the garden areas.

Buildings & Services

- 5.4.9 The integrity of service pipes can be affected by concentrations of organic contamination.

Controlled Waters

- 5.4.10 An unnamed pond is present at the site. This represents a potential receptor. Furthermore, a unnamed watercourse (possibly a drainage ditch) which contains water all year round is located some 119 m south-east of the site. Given its distance from the site, this watercourse is not considered a potentially significant receptor.
- 5.4.11 The superficial strata (Boulder Clay) is classified by the EA as a 'Secondary (Undifferentiated) Aquifer'. This strata is relatively impermeable, and any water trapped/held within the deposits are not considered to represent a sensitive receptor.
- 5.4.12 The underlying bedrock is classified as a Principal Aquifer and is unlikely to be impacted due to the presence of laterally continuous Boulder Clay which will inhibit vertical migration of contamination to the underlying bedrock. However, it will be prudent to carry out site investigation to prove the presence of Boulder Clay at the site.
- 5.4.13 The site is located within Zone 3 of a Source Protection Zone (Total Catchment). There are no groundwater abstractions within 250 m of the site.

5.5 PRELIMINARY CONCEPTUAL MODEL

- 5.5.1 A number of possible 'significant pollutant linkages' have been identified associated with the site.
- 5.5.2 Potential risks relating to the potential harm to the health of humans and/or domestic pets both on and off site due to the potential for direct contact with contaminants in the made ground and the ingestion of contaminated soil/dust (**Link 1**).
- 5.5.3 There is also the possibility of windblown particulates being inhaled by people/animals both on site and off site (**Link 2**).
- 5.5.4 Home grown produce could be affected by ground contamination (**Link 3**) and human health could be at risk by the ingestion of home grown produce affected by contamination (**Link 4**).
- 5.5.5 Human health could be at risk by the inhalation of hazardous ground gases (**Link 5**) and/or volatile contamination migrating into properties on site (**Link 6**).
- 5.5.6 Property and services could be affected by direct contact to high concentrations of contaminants (**Link 7**) and/or build-up of potentially explosive gases/organic vapours (**Link 8**).

- 5.5.7 Dissolution or suspension (leaching) of contaminants from site soils leading to lateral migration within perched permeable layers (**Link 9**) within the made ground/natural strata, underground services and foundations leading to impact on the surface water quality of the existing pond at the site (**Link 10**).
- 5.5.8 Dissolution or suspension (leaching) of contaminants from site soils leading to impact on the underlying Principal Aquifer within the bedrock. (**Link 11**).
- 5.5.9 Site investigation is required to identify site specific conditions and assess the risks associated with each identified plausible pollutant linkage.

6. RECOMMENDATIONS

- 6.1 Based on the findings of the Preliminary Risk Assessment herein, a number of potential risks associated with contamination and ground gas have been identified with respect to the demolition of the existing farm buildings at the site and the construction of a new school block and associated infrastructure at the site (including landscaped areas to provide a conservative assessment);
- 6.2 A site wide quantitative risk assessment will be required to fully assess the potential risks from contamination and inform the requirements for any remediation/mitigation works that may be required. The site investigation will also be required as part of a geotechnical assessment to inform foundation design and possibly drainage options.
- 6.3 Thomas Consulting recommend that the following works should be undertaken:

Site Investigation
- 6.4 The investigation should comprise the drilling of a series of boreholes and the excavation of a number of trial pits. The exploratory locations should be targeted and non-targeted to determine ground conditions associated with specific activities and to ascertain site wide conditions.
- 6.5 Ground conditions should be recorded by an experienced geological engineer and representative samples recovered for laboratory testing (chemical and geotechnical). In-situ strength testing (SPTs/ shear vane) should be carried out.
- 6.6 Shallow groundwater samples should be recovered if encountered during the site investigation works.

Chemical Testing

- 6.7 Following a review of the ground conditions encountered, a selection of samples will be tested for the contaminants of concern listed in Table 5-1 of this report. If visual or olfactory evidence of contamination is encountered during the site investigation, then it may be necessary to undertake additional testing.
- 6.8 All testing will be carried out by a UKAS accredited laboratory to MCERTS standard (where available).

Geotechnical Testing

- 6.9 Samples of natural clay should be tested for Plasticity Index and natural moisture content to assess potential issues with heave due to presence of clay.

Reporting

- 6.10 The investigation findings should be assessed in accordance with current UK policy and guidance to identify any potentially significant pollutant linkages and determine the requirements for mitigation and/or remediation. The data will also be assessed to provide recommendations for foundation design.
- 6.11 The works undertaken will be detailed in a Site Investigation & Ground Assessment report along with full justifications for the assessment and the conclusions/recommendations.

Asbestos Survey

- 6.12 Each building should be assessed for the presence of asbestos prior to demolition or refurbishment. Any asbestos should be removed site and disposed of at a licenced facility.

Additional Considerations

- 6.13 We would also recommend that consideration is given to the requirements of the water supply service provider and the completion of the UKWIR risk assessment for water pipe selection.

APPENDIX A: SITE PLANS



LEGEND

— SITE LOCATION

REV	DESCRIPTION	DATE	BY

Thomas Consulting

CIVIL, STRUCTURAL, GEOTECHNICAL AND
CONTAMINATION ENGINEERS

32 EATON AVENUE, MATRIX PARK,
BUCKSHAW VILLAGE, CHORLEY, PR7 7NA,

Tel: 01772 299040
Fax: 01772 457860



CLIENT.

JOB TITLE.

WITHERSLACK, LAKESIDE

DRAWING TITLE.

SITE LOCATION

SCALE © A3. NTS	DRAWN BY. D.E.	APPROVED BY. M.B.	DATE. 10/07/20
--------------------	-------------------	----------------------	-------------------

DRAWING No.	REV.
-------------	------



LEGEND

RED LINE BOUNDARY

REV	DESCRIPTION	DATE	BY

Thomas Consulting
CIVIL, STRUCTURAL, GEOTECHNICAL AND
CONTAMINATION ENGINEERS

32 EATON AVENUE, MATRIX PARK,
BUCKSHAW VILLAGE, CHORLEY, PR7 7NA,

Tel: 01772 299040
Fax: 01772 457860



CLIENT.

JOB TITLE.

WITHERSLACK, LAKESIDE

DRAWING TITLE.

SITE BOUNDARY

SCALE © A3.
N'TS

DRAWN BY.
D.E.

APPROVED BY.
M.B.

DATE.
10/07/20

DRAWING No.

REV.

-

APPENDIX B: HISTORICAL PLANS

Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: County Series

Map date: 1849-1850

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1846
Revised N/A
Edition 1849
Copyright N/A
Levelled N/A



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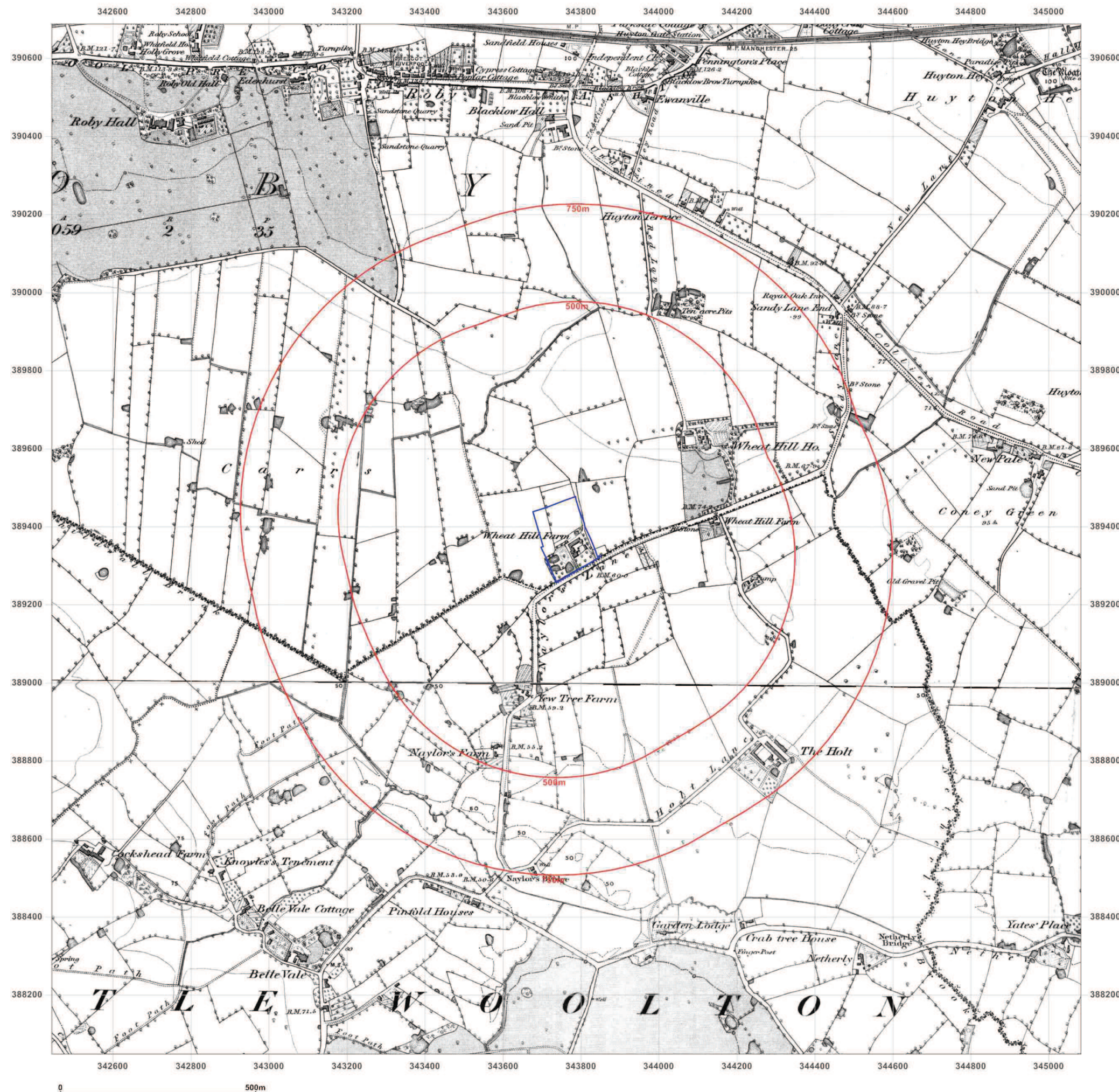


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Production date: 10 June 2020

Map legend available at:
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Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

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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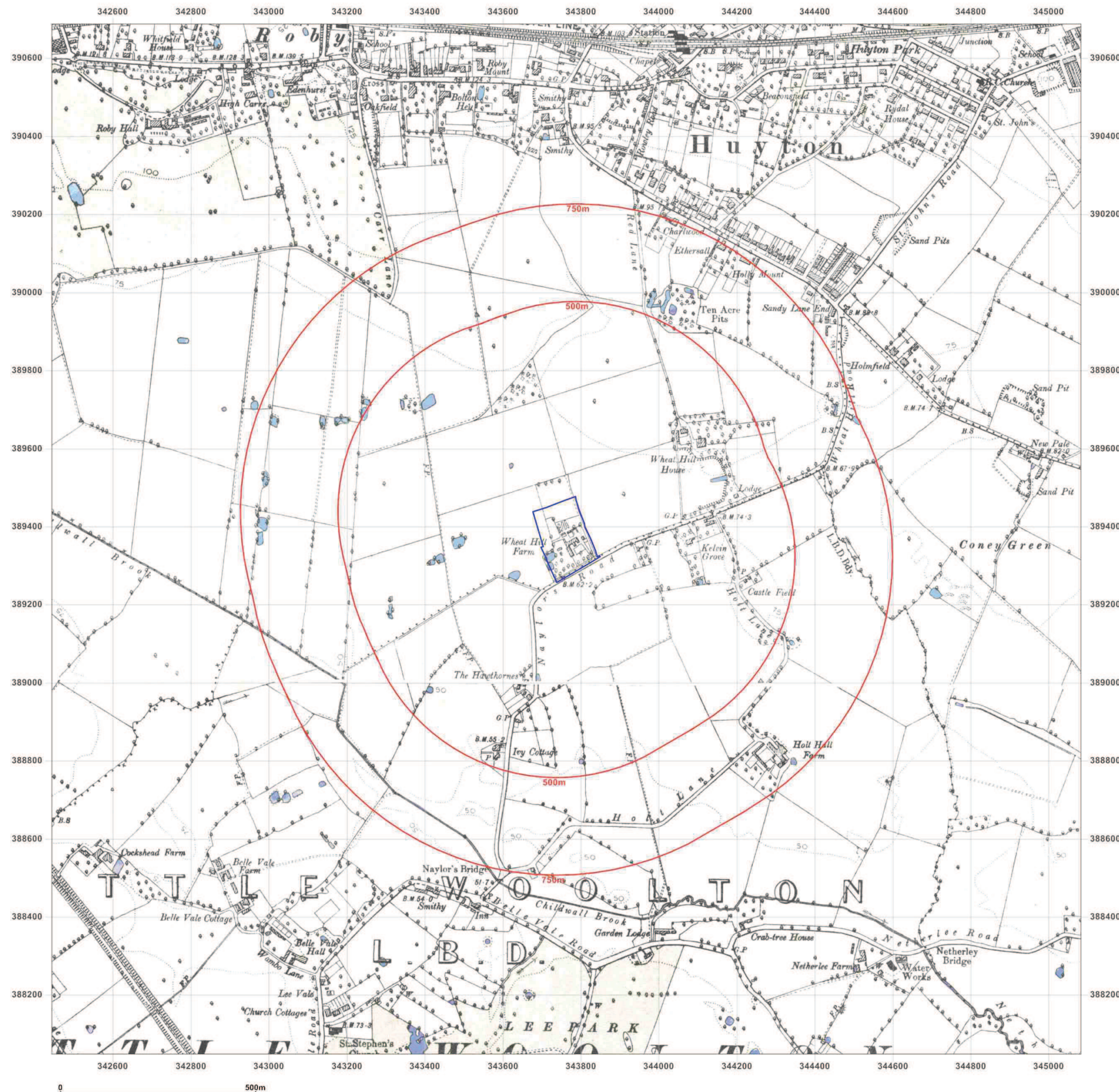


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Production date: 10 June 2020

Map legend available at:
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Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: County Series

Map date: 1904-1906

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1891
Revised 1904
Edition N/A
Copyright N/A
Levelled N/A



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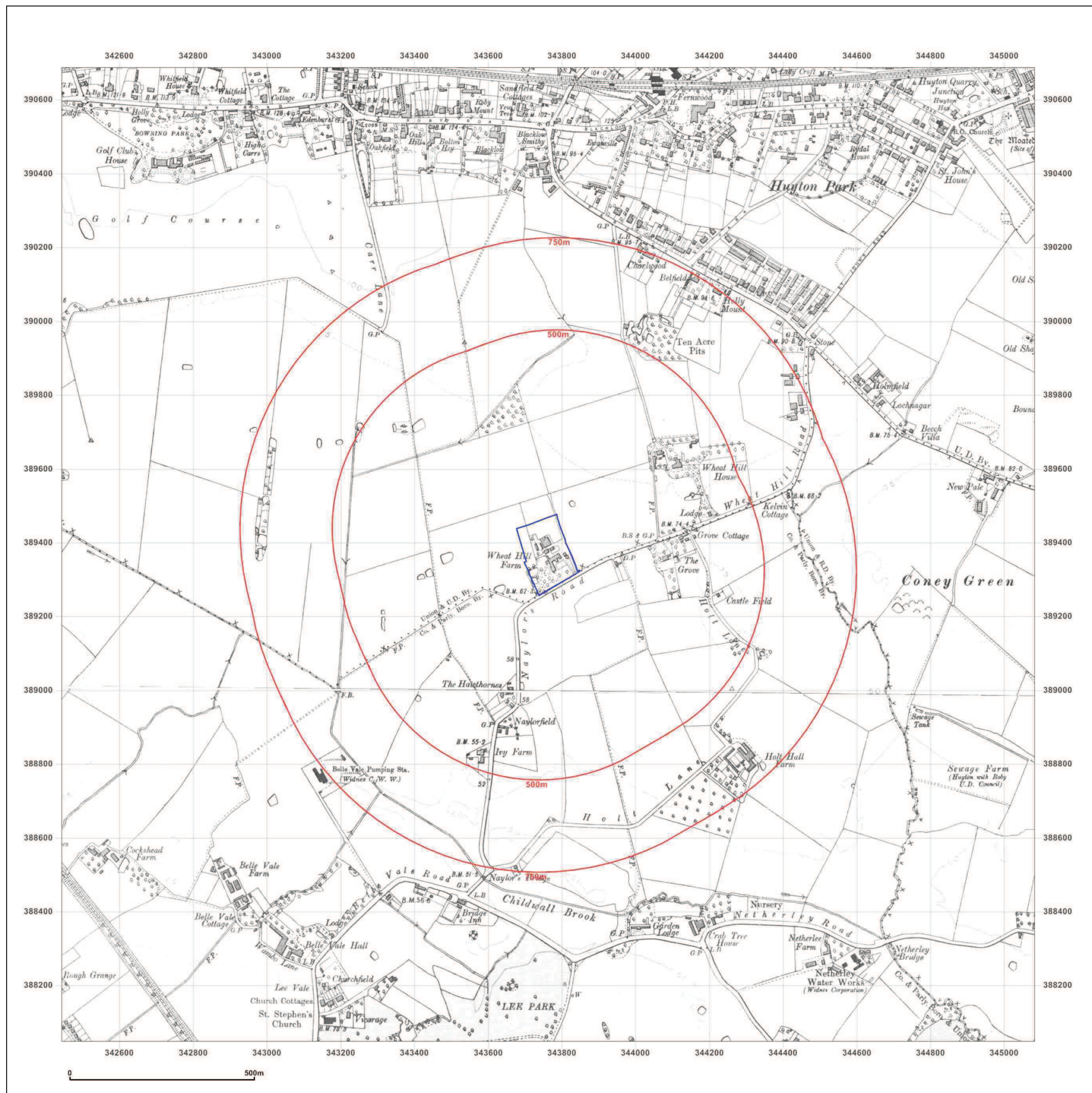
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Site Details:

Lakeside School, Liverpool, L27 2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: County Series

Map date: 1925

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1846
Revised 1925
Edition N/A
Copyright N/A
Levelled N/A



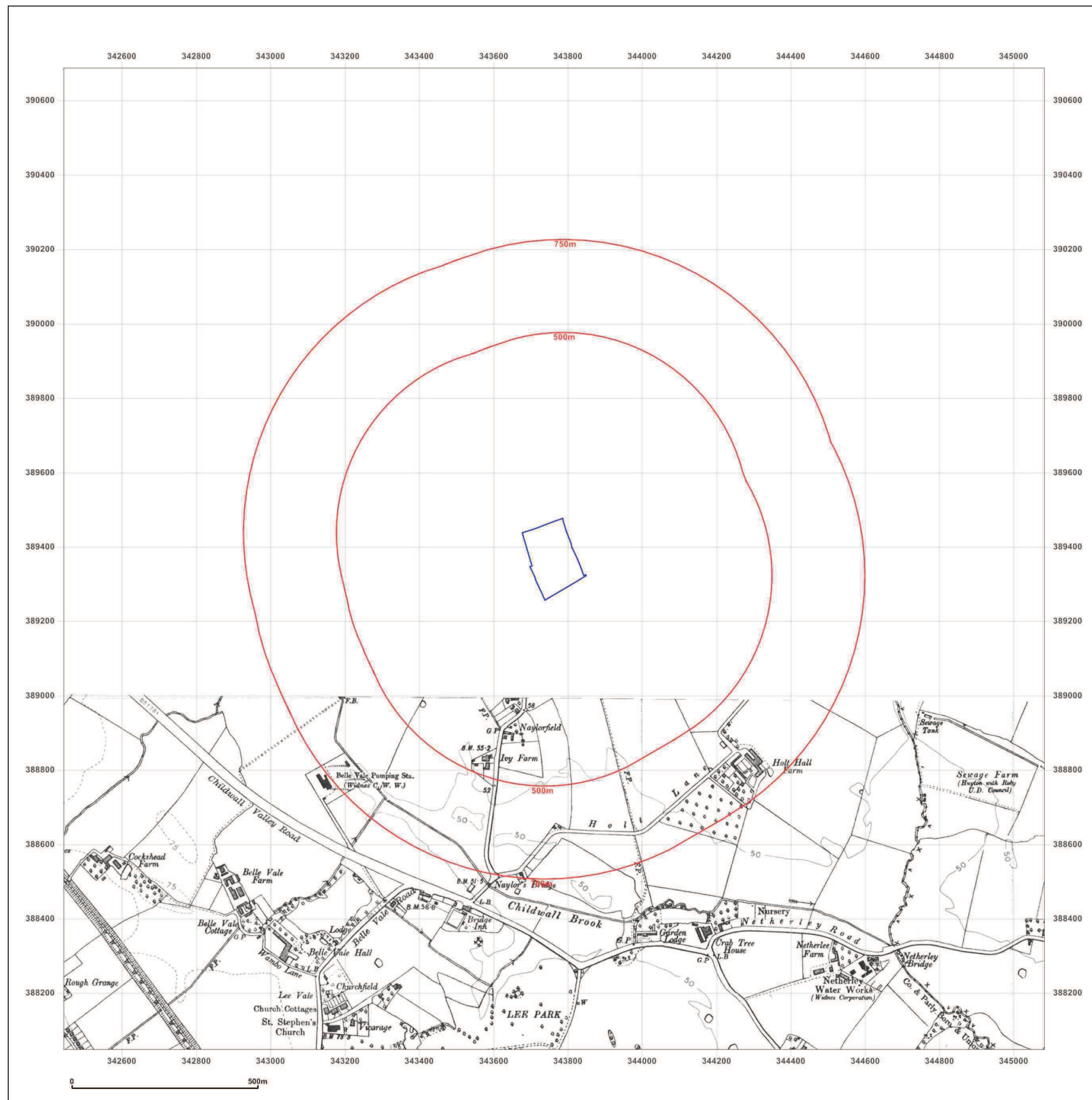
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Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1846
Revised 1938
Edition N/A
Copyright N/A
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Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: Provisional

Map date: 1955-1956

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1947
Revised 1955
Edition 1956
Copyright N/A
Levelled N/A

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

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



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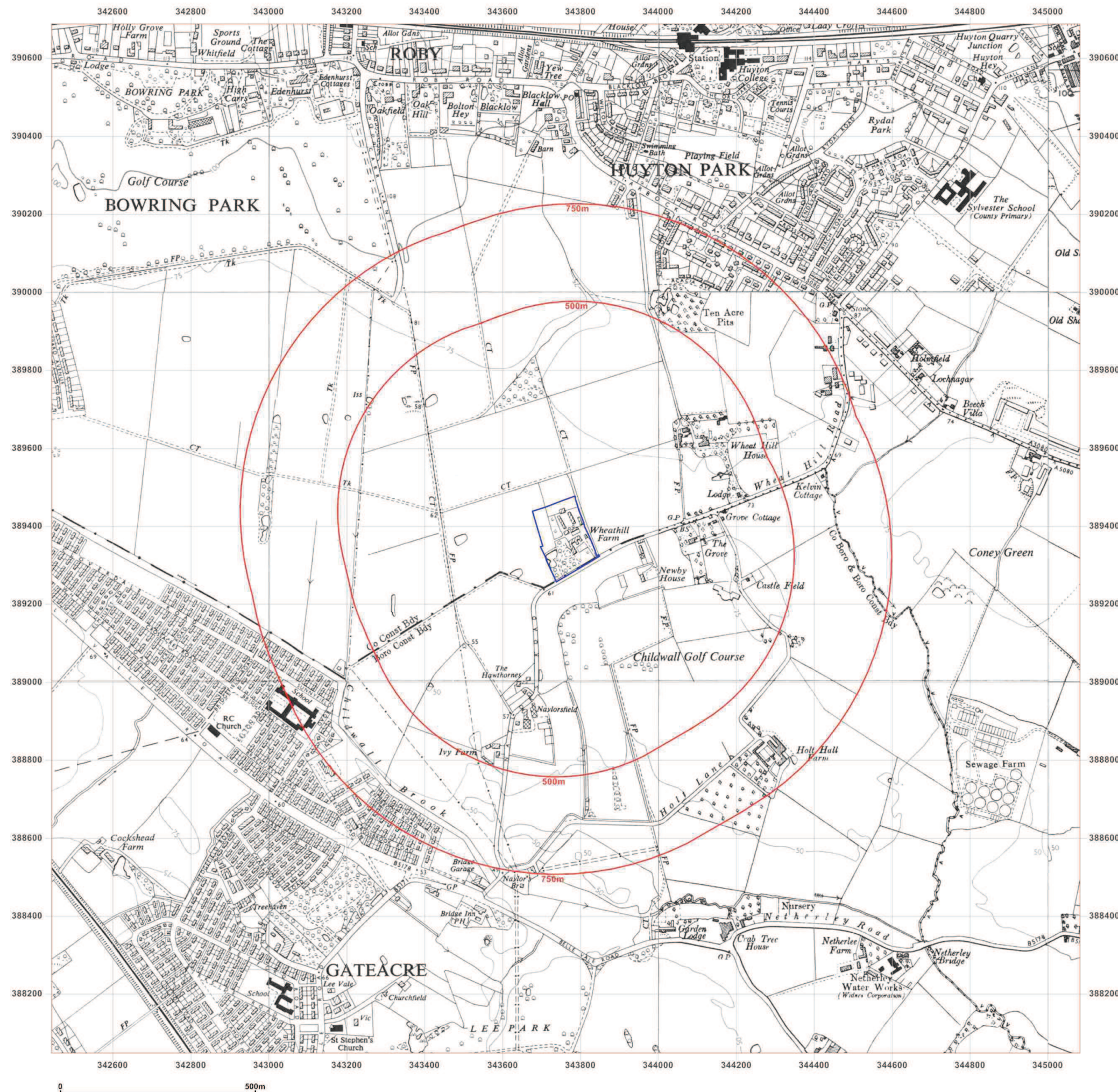


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Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: Provisional

Map date: 1965-1967

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1966
Revised 1966
Edition N/A
Copyright N/A
Levelled N/A

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

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



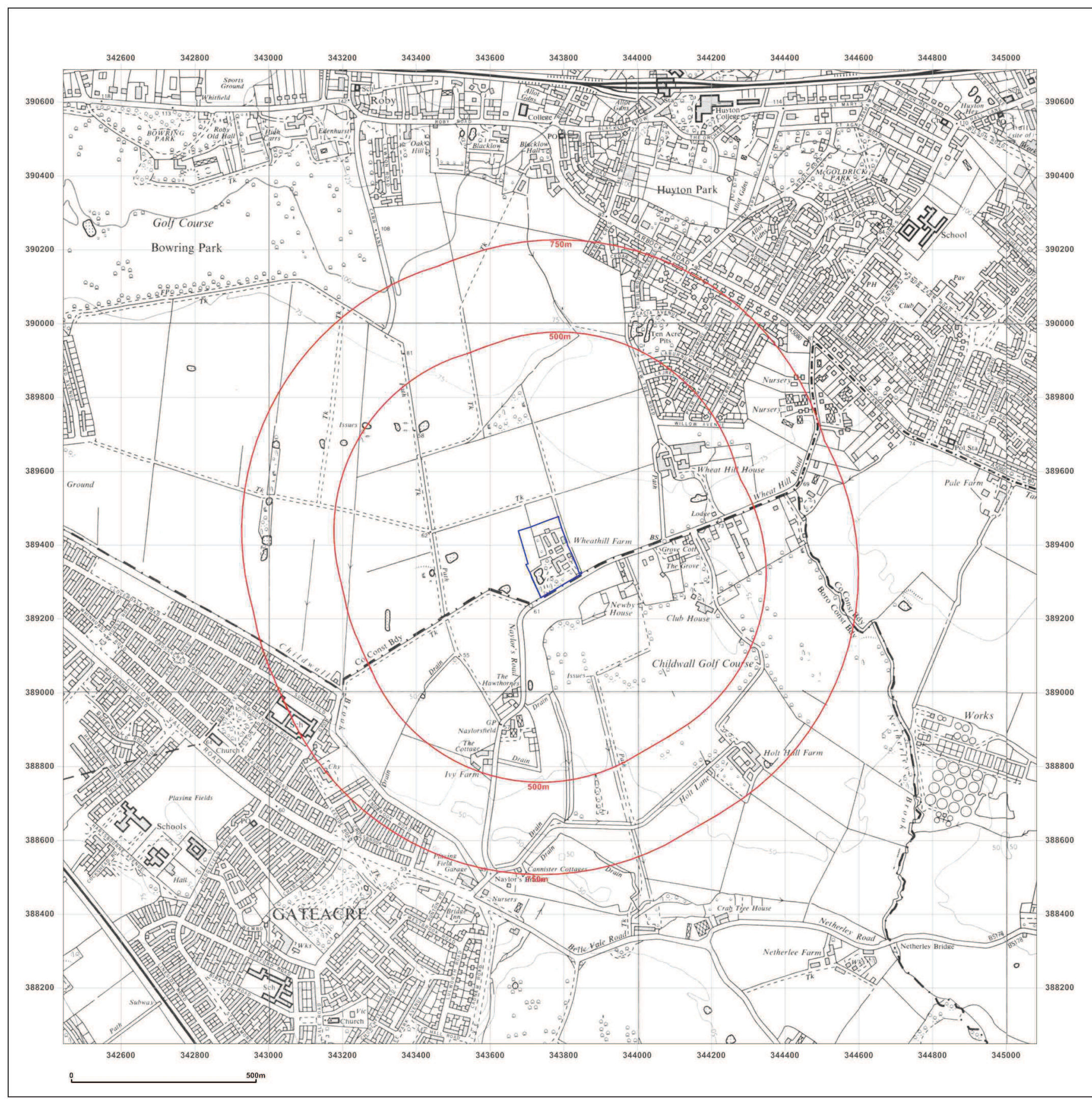
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Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

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 1975
Revised 1978
Edition N/A
Copyright 1978
Levelled 1964

Surveyed 1973
Revised 1974
Edition N/A
Copyright 1974
Levelled 1955

Surveyed 1975
Revised 1977
Edition N/A
Copyright 1977
Levelled 1964



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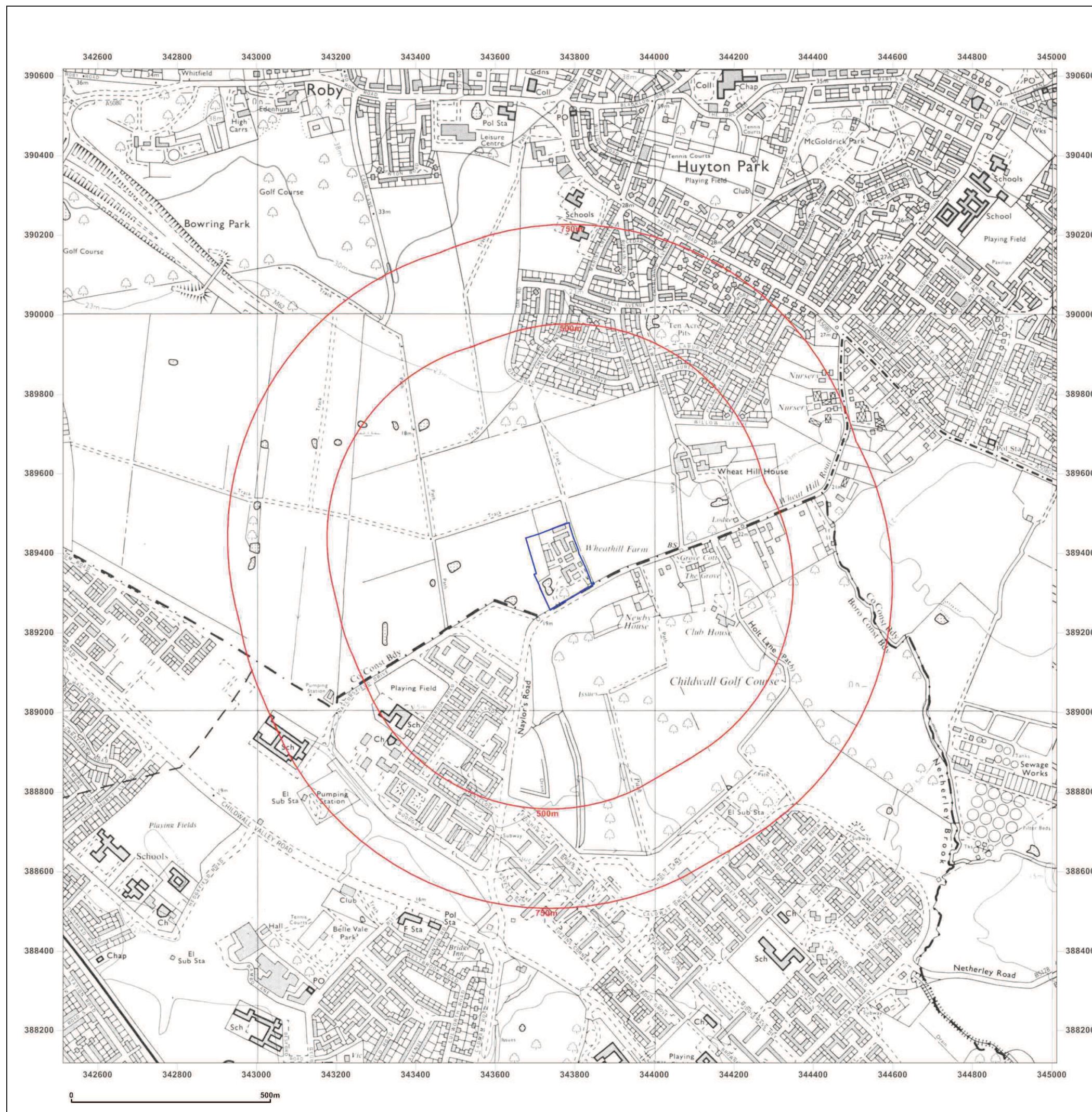


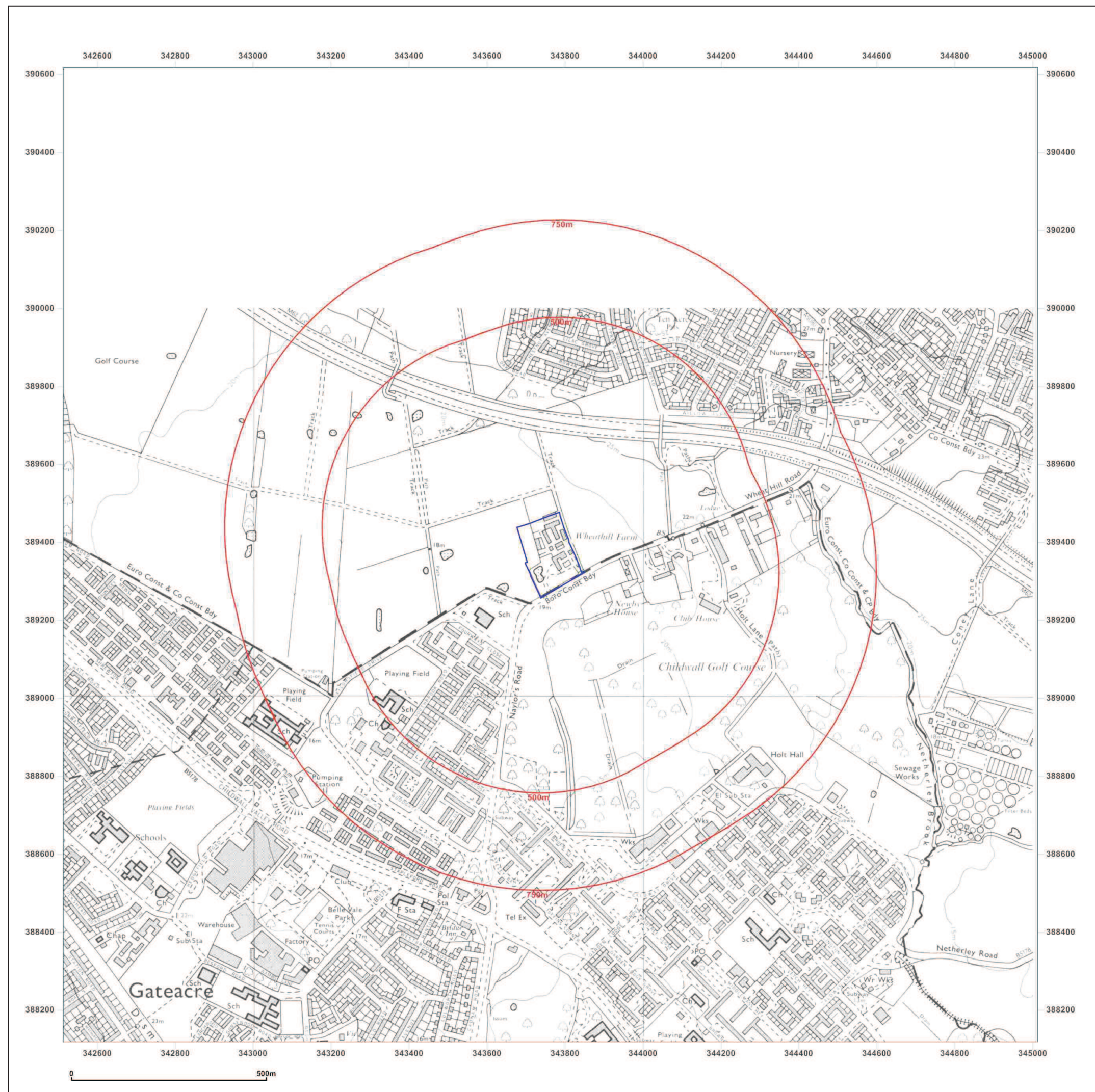
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Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid
Map date: 1980
Scale: 1:10,000
Printed at: 1:10,000



Surveyed 1979
Revised 1980
Edition N/A
Copyright N/A
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Site Details:

Lakeside School, Liverpool, L27
2YA

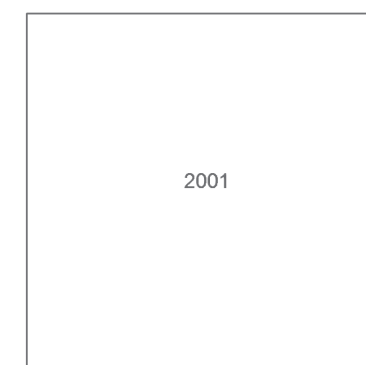
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Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000



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Site Details:

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Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid
Map date: 2010
Scale: 1:10,000
Printed at: 1:10,000



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Site Details:

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Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid

Map date: 2020

Scale: 1:10,000

Printed at: 1:10,000



2020



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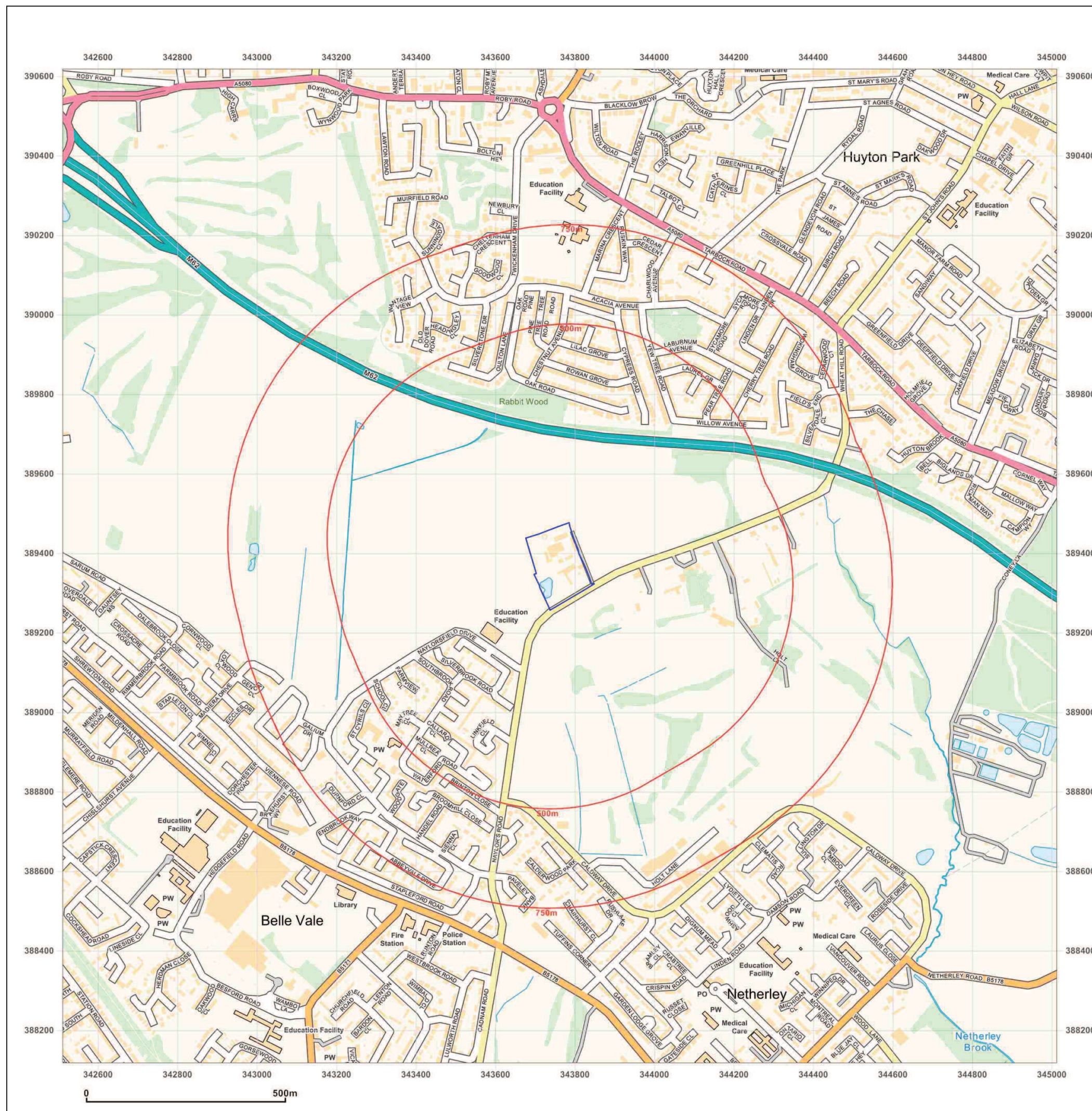


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Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

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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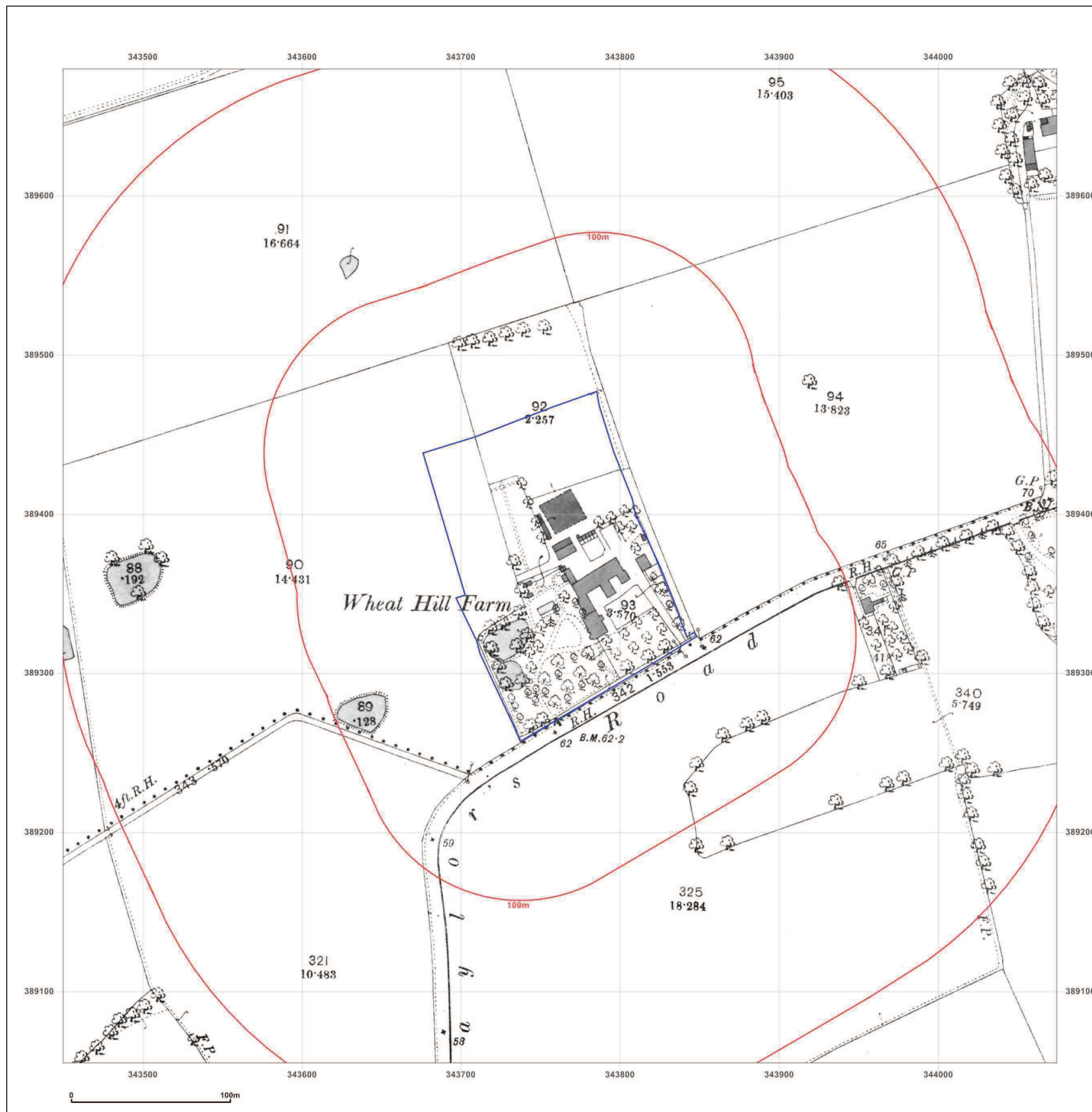


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Site Details:

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2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

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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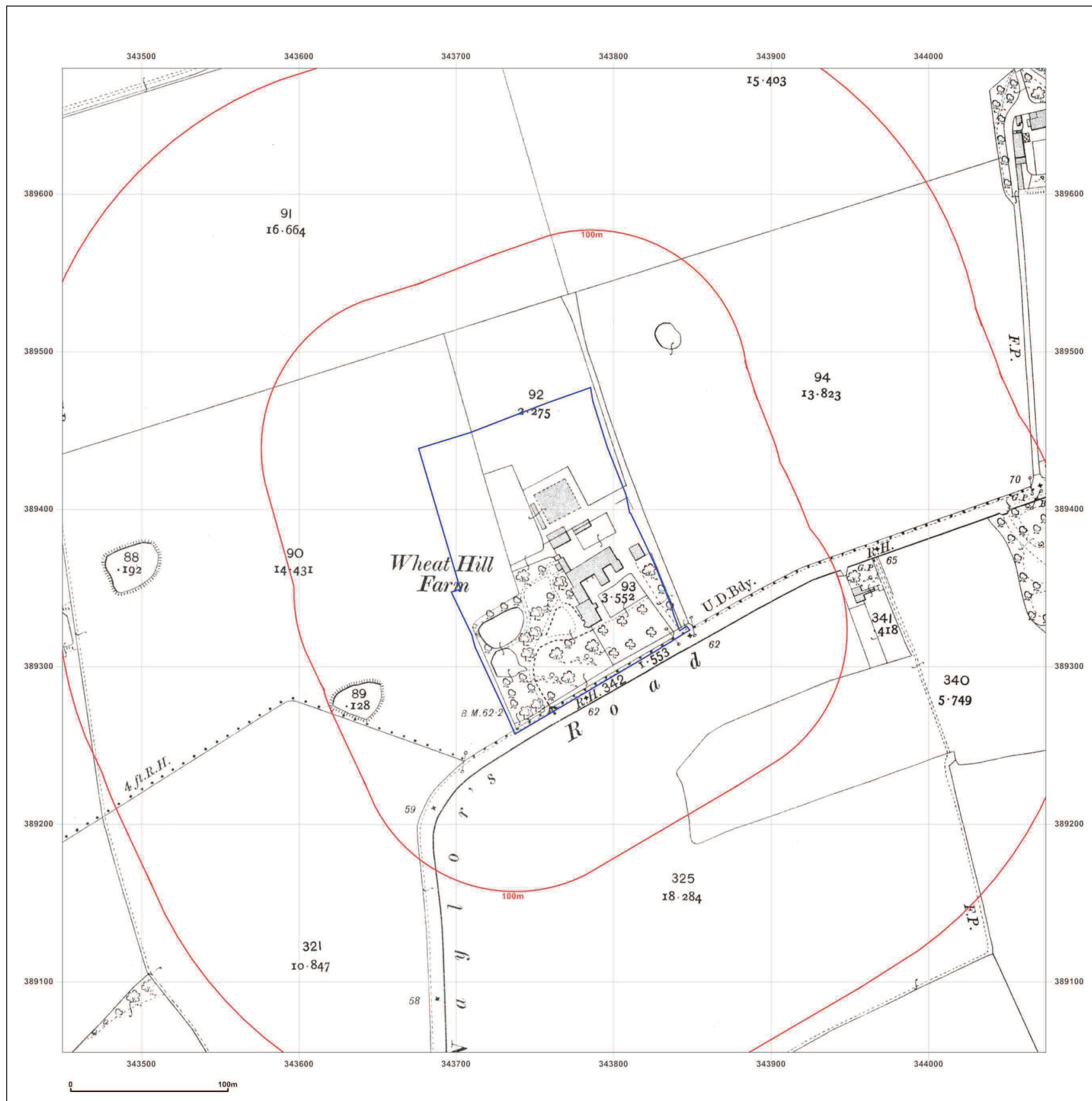


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Site Details:

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2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

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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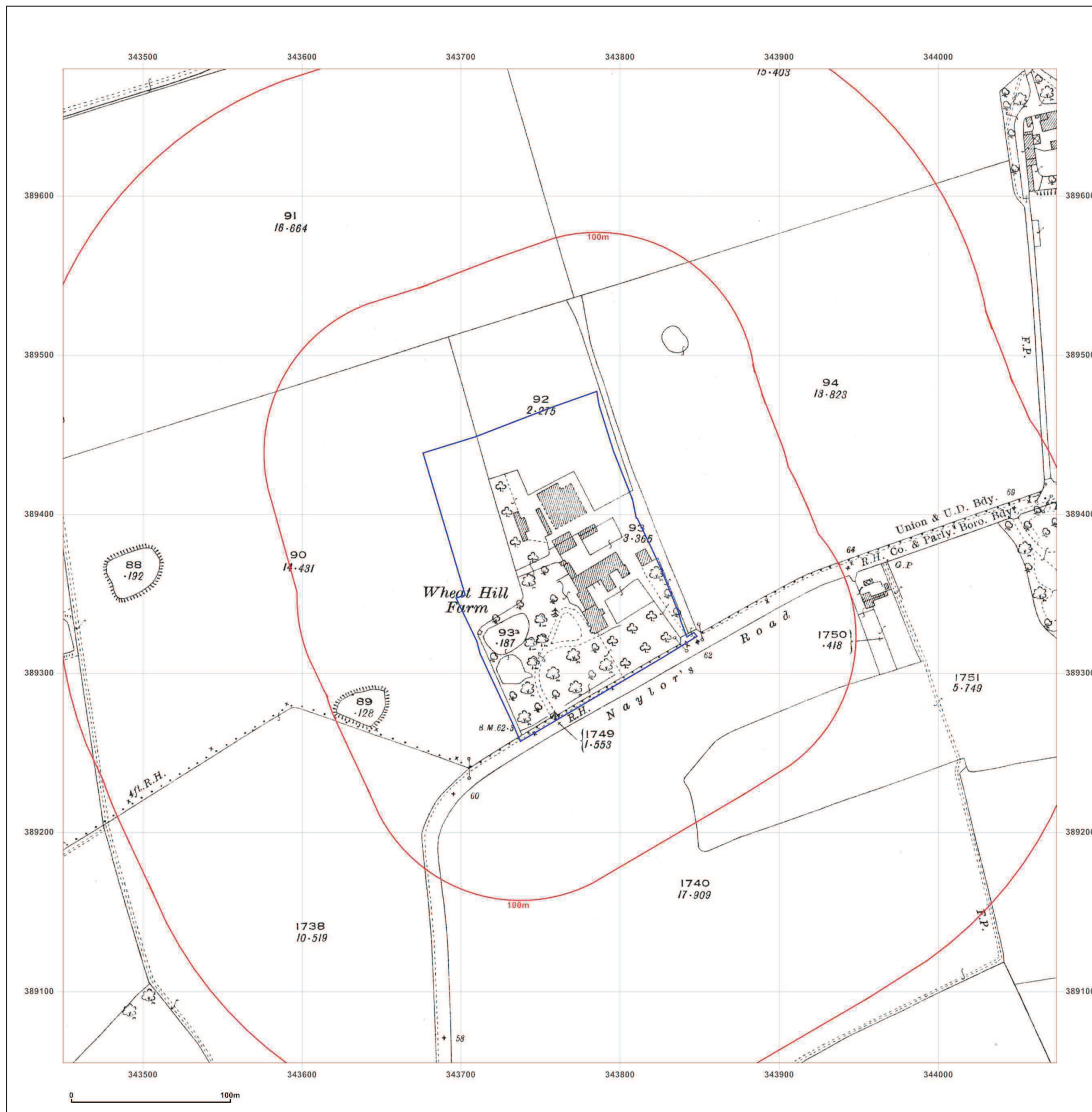


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Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid

Map date: 1950

Scale: 1:1,250

Printed at: 1:2,000



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:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid

Map date: 1950

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1950
Revised 1950
Edition N/A
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Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid
Map date: 1951-1956
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 1956
Revised 1956
Edition N/A
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Site Details:

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Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid

Map date: 1960-1964

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1964
Revised 1964
Edition N/A
Copyright 1966
Levelled 1960

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



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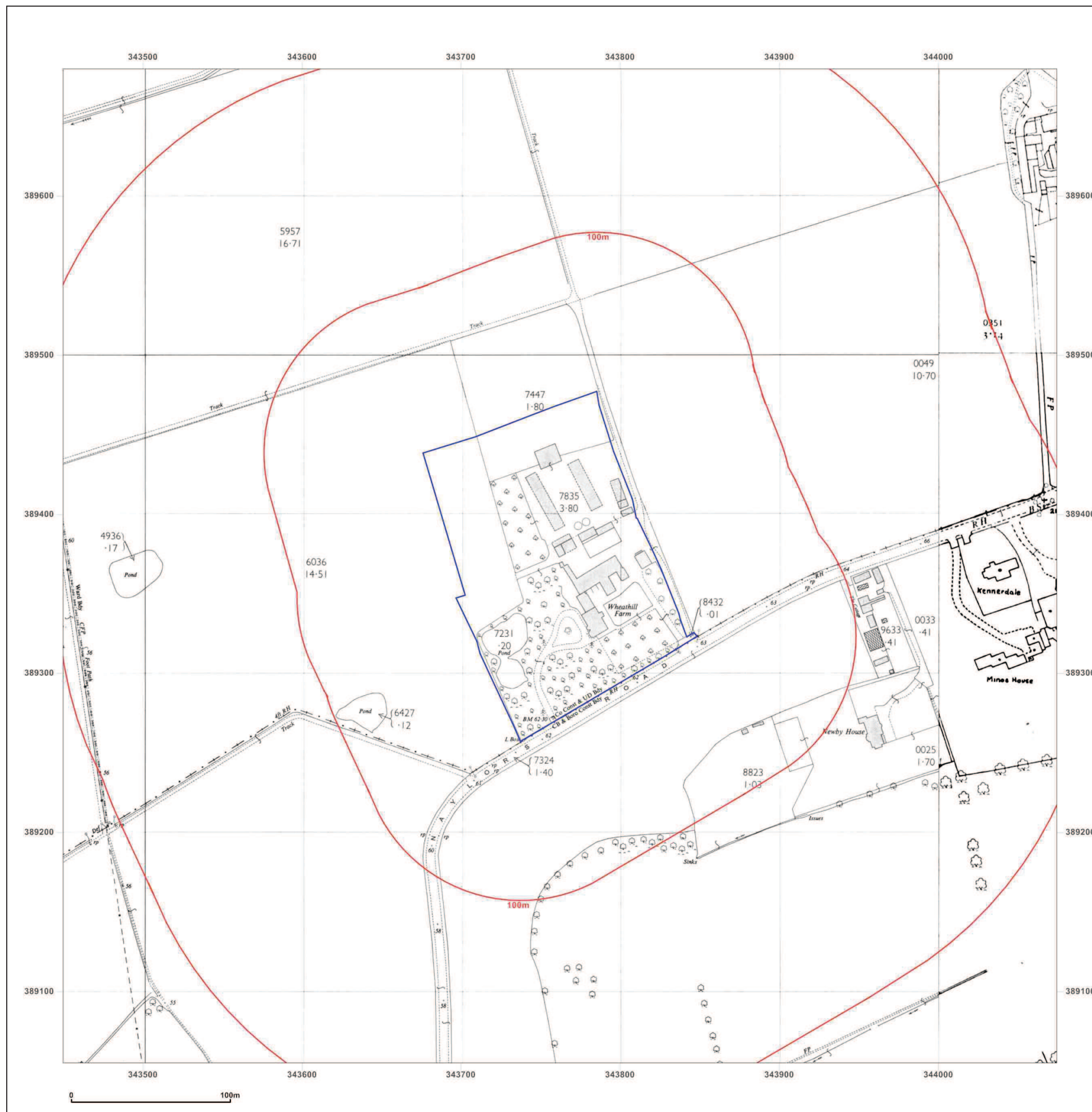


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Site Details:

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2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid

Map date: 1966

Scale: 1:2,500

Printed at: 1:2,500



Surveyed N/A
Revised N/A
Edition N/A
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Site Details:

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2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid

Map date: 1965-1968

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1950
Revised 1964
Edition N/A
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Levelled 1960

Surveyed 1968
Revised 1968
Edition N/A
Copyright 1968
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Site Details:

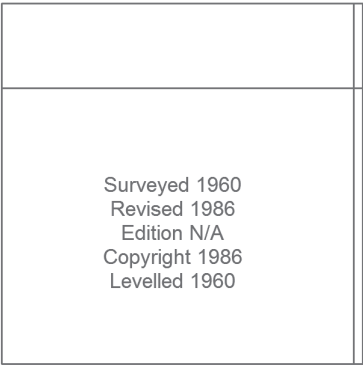
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2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid
Map date: 1983-1986
Scale: 1:1,250
Printed at: 1:2,000



Surveyed 1956
Revised 1982
Edition N/A
Copyright 1983
Levelled 1960



Surveyed 1960
Revised 1986
Edition N/A
Copyright 1986
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Site Details:

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2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

Map Name: National Grid

Map date: 1990-1993

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1990
Revised 1990
Edition N/A
Copyright 1990
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

Surveyed 1993
Revised 1993
Edition N/A
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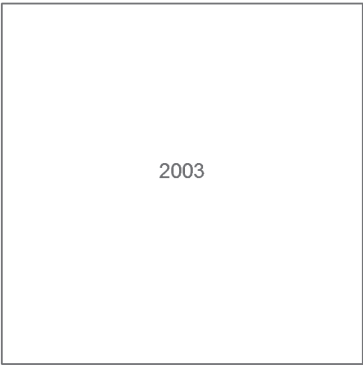


Site Details:

Lakeside School, Liverpool, L27
2YA

Client Ref: 29721
Report Ref: CMAPS-CM-880862-29721-100620HIS
Grid Ref: 343762, 389367

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



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APPENDIX C: GROUNDSURE GEOENVIROINSIGHT REPORT

Lakeside School, Liverpool, L27 2YA

Order Details

Date: 10/06/2020
Your ref: 29721
Our Ref: CMAPS-CM-880862-29721-100620EDRGEO
Client: CENTREMAPS

Site Details

Location: 343762 389367
Area: 2.15 ha
Authority: [Knowsley Metropolitan Borough Council](#),
[Liverpool City Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.13

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Contact us with any questions at:

info@groundsure.com

08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
14	<u>1.1</u>	<u>Historical industrial land uses</u>	0	0	0	1	-
15	<u>1.2</u>	<u>Historical tanks</u>	1	0	0	3	-
15	<u>1.3</u>	<u>Historical energy features</u>	0	0	0	11	-
16	<u>1.4</u>	<u>Historical petrol stations</u>	0	0	0	2	-
16	1.5	Historical garages	0	0	0	0	-
17	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
18	<u>2.1</u>	<u>Historical industrial land uses</u>	0	0	0	1	-
19	<u>2.2</u>	<u>Historical tanks</u>	3	0	0	8	-
19	<u>2.3</u>	<u>Historical energy features</u>	0	0	0	30	-
21	<u>2.4</u>	<u>Historical petrol stations</u>	0	0	0	4	-
21	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
22	3.1	Active or recent landfill	0	0	0	0	-
22	3.2	Historical landfill (BGS records)	0	0	0	0	-
23	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
23	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
23	3.5	Historical waste sites	0	0	0	0	-
23	3.6	Licensed waste sites	0	0	0	0	-
23	<u>3.7</u>	<u>Waste exemptions</u>	0	0	1	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
25	<u>4.1</u>	<u>Recent industrial land uses</u>	0	0	2	-	-
26	<u>4.2</u>	<u>Current or recent petrol stations</u>	0	0	0	1	-
26	4.3	Electricity cables	0	0	0	0	-
26	4.4	Gas pipelines	0	0	0	0	-
26	4.5	Sites determined as Contaminated Land	0	0	0	0	-



26	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
27	4.7	Regulated explosive sites	0	0	0	0	-
27	4.8	Hazardous substance storage/usage	0	0	0	0	-
27	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
27	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
27	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
28	4.12	Radioactive Substance Authorisations	0	0	0	0	-
28	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	0	2	-
28	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	-
29	4.17	List 2 Dangerous Substances	0	0	0	0	-
29	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	0	1	-
30	4.19	Pollution inventory substances	0	0	0	0	-
30	4.20	Pollution inventory waste transfers	0	0	0	0	-
30	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
31	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
32	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
33	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
34	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
34	5.5	Groundwater vulnerability- local information	None (within 0m)				
35	5.6	<u>Groundwater abstractions</u>	0	0	0	0	9
38	5.7	Surface water abstractions	0	0	0	0	0
38	5.8	<u>Potable abstractions</u>	0	0	0	0	7
40	5.9	<u>Source Protection Zones</u>	1	0	0	1	-
41	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
42	6.1	<u>Water Network (OS MasterMap)</u>	0	0	2	-	-



43	6.2	<u>Surface water features</u>	1	0	2	-	-
43	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
43	6.4	<u>WFD Surface water bodies</u>	0	0	0	-	-
44	6.5	<u>WFD Groundwater bodies</u>	2	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
45	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
45	7.2	Historical Flood Events	0	0	0	-	-
45	7.3	Flood Defences	0	0	0	-	-
45	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
46	7.5	Flood Storage Areas	0	0	0	-	-
47	7.6	Flood Zone 2	None (within 50m)				
47	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
48	8.1	<u>Surface water flooding</u>	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
50	9.1	<u>Groundwater flooding</u>	High (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
51	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
52	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
52	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
52	10.4	Special Protection Areas (SPA)	0	0	0	0	0
52	10.5	National Nature Reserves (NNR)	0	0	0	0	0
53	10.6	<u>Local Nature Reserves (LNR)</u>	0	0	0	0	1
53	10.7	Designated Ancient Woodland	0	0	0	0	0
53	10.8	Biosphere Reserves	0	0	0	0	0
53	10.9	Forest Parks	0	0	0	0	0
54	10.10	Marine Conservation Zones	0	0	0	0	0
54	10.11	<u>Green Belt</u>	1	1	0	0	1
54	10.12	Proposed Ramsar sites	0	0	0	0	0



54	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
55	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
55	10.15	Nitrate Sensitive Areas	0	0	0	0	0
55	10.16	<u>Nitrate Vulnerable Zones</u>	1	0	1	0	2
56	10.17	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
57	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
58	11.1	World Heritage Sites	0	0	0	-	-
58	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
58	11.3	National Parks	0	0	0	-	-
58	11.4	Listed Buildings	0	0	0	-	-
59	11.5	Conservation Areas	0	0	0	-	-
59	11.6	Scheduled Ancient Monuments	0	0	0	-	-
59	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
60	12.1	<u>Agricultural Land Classification</u>	Urban (within 250m)				
61	12.2	Open Access Land	0	0	0	-	-
61	12.3	<u>Tree Felling Licences</u>	0	1	1	-	-
61	12.4	Environmental Stewardship Schemes	0	0	0	-	-
61	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
62	13.1	Priority Habitat Inventory	0	0	0	-	-
62	13.2	Habitat Networks	0	0	0	-	-
62	13.3	Open Mosaic Habitat	0	0	0	-	-
62	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
63	14.1	<u>10k Availability</u>	Identified (within 500m)				
64	14.2	Artificial and made ground (10k)	0	0	0	0	-
65	14.3	<u>Superficial geology (10k)</u>	1	0	0	0	-

66	14.4	Landslip (10k)	0	0	0	0	-
67	14.5	<u>Bedrock geology (10k)</u>	1	0	1	2	-
68	14.6	<u>Bedrock faults and other linear features (10k)</u>	0	0	1	1	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
69	15.1	<u>50k Availability</u>	Identified (within 500m)				
70	15.2	Artificial and made ground (50k)	0	0	0	0	-
70	15.3	Artificial ground permeability (50k)	0	0	-	-	-
71	15.4	<u>Superficial geology (50k)</u>	1	0	0	0	-
72	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
72	15.6	Landslip (50k)	0	0	0	0	-
72	15.7	Landslip permeability (50k)	None (within 50m)				
73	15.8	<u>Bedrock geology (50k)</u>	1	0	0	3	-
74	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
74	15.10	<u>Bedrock faults and other linear features (50k)</u>	0	0	0	2	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
75	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence					
76	17.1	<u>Shrink swell clays</u>	Very low (within 50m)				
77	17.2	<u>Running sands</u>	Very low (within 50m)				
78	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
79	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
80	17.5	<u>Landslides</u>	Very low (within 50m)				
81	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
82	18.1	Natural cavities	0	0	0	0	-
83	18.2	BritPits	0	0	0	0	-
83	18.3	<u>Surface ground workings</u>	6	0	13	-	-
84	18.4	Underground workings	0	0	0	0	0
84	18.5	Historical Mineral Planning Areas	0	0	0	0	-



84	18.6	Non-coal mining	0	0	0	0	0
84	18.7	Mining cavities	0	0	0	0	0
85	18.8	JPB mining areas	None (within 0m)				
85	18.9	Coal mining	None (within 0m)				
85	18.10	Brine areas	None (within 0m)				
85	18.11	Gypsum areas	None (within 0m)				
85	18.12	Tin mining	None (within 0m)				
86	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
87	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
88	20.1	<u>BGS Estimated Background Soil Chemistry</u>	1	1	-	-	-
88	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
88	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
89	21.1	Underground railways (London)	0	0	0	-	-
89	21.2	Underground railways (Non-London)	0	0	0	-	-
89	21.3	Railway tunnels	0	0	0	-	-
89	21.4	Historical railway and tunnel features	0	0	0	-	-
89	21.5	Royal Mail tunnels	0	0	0	-	-
90	21.6	Historical railways	0	0	0	-	-
90	21.7	Railways	0	0	0	-	-
90	21.8	Crossrail 1	0	0	0	0	-
90	21.9	Crossrail 2	0	0	0	0	-
90	21.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 22/04/2019

Site Area: 2.15ha



Recent site history - 2016 aerial photograph



Capture Date: 21/04/2016

Site Area: 2.15ha



Recent site history - 2005 aerial photograph

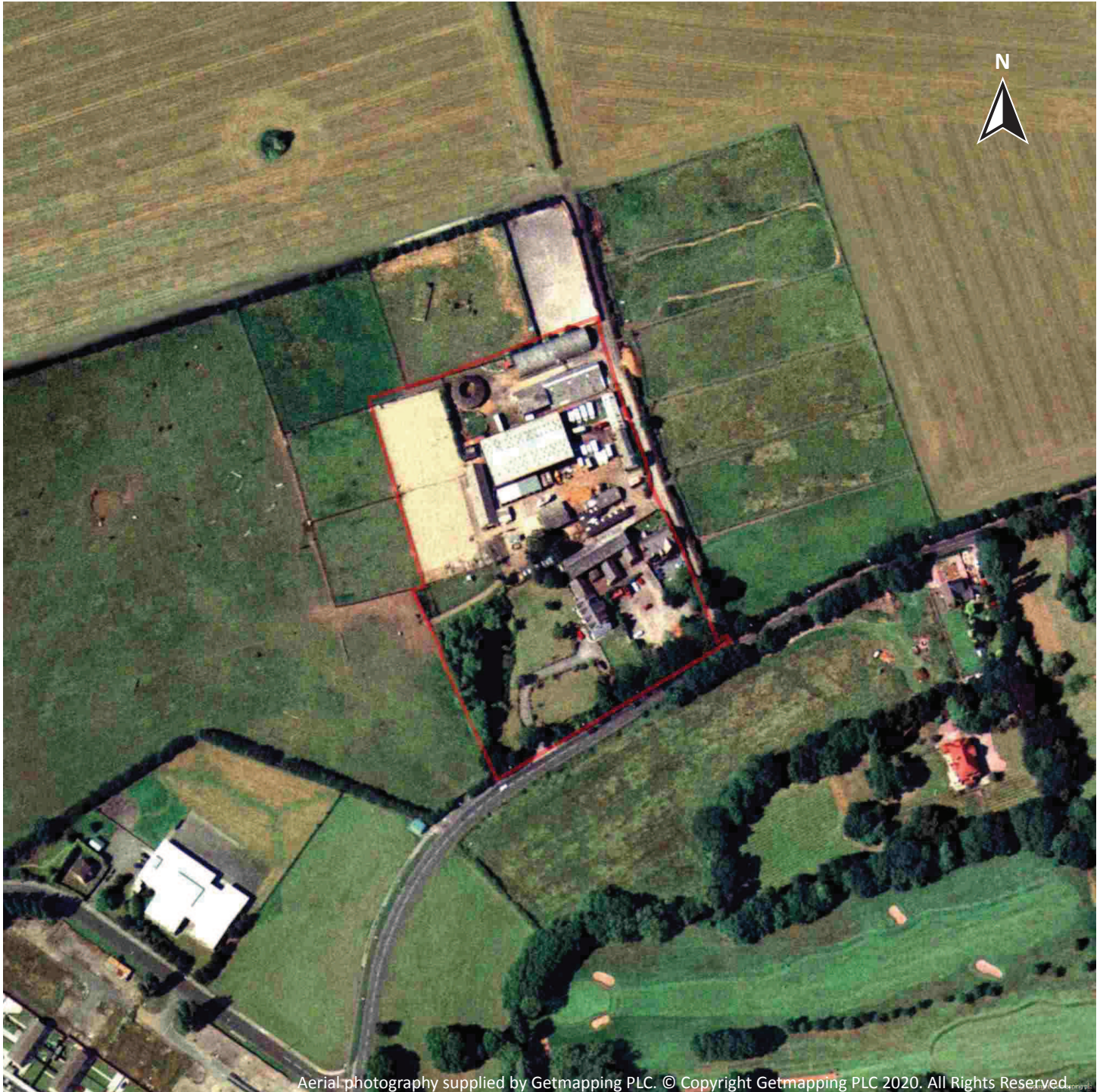


Capture Date: 02/09/2005

Site Area: 2.15ha



Recent site history - 2001 aerial photograph



Capture Date: 01/05/2001

Site Area: 2.15ha



Recent site history - 2000 aerial photograph



Capture Date: 21/07/2000

Site Area: 2.15ha



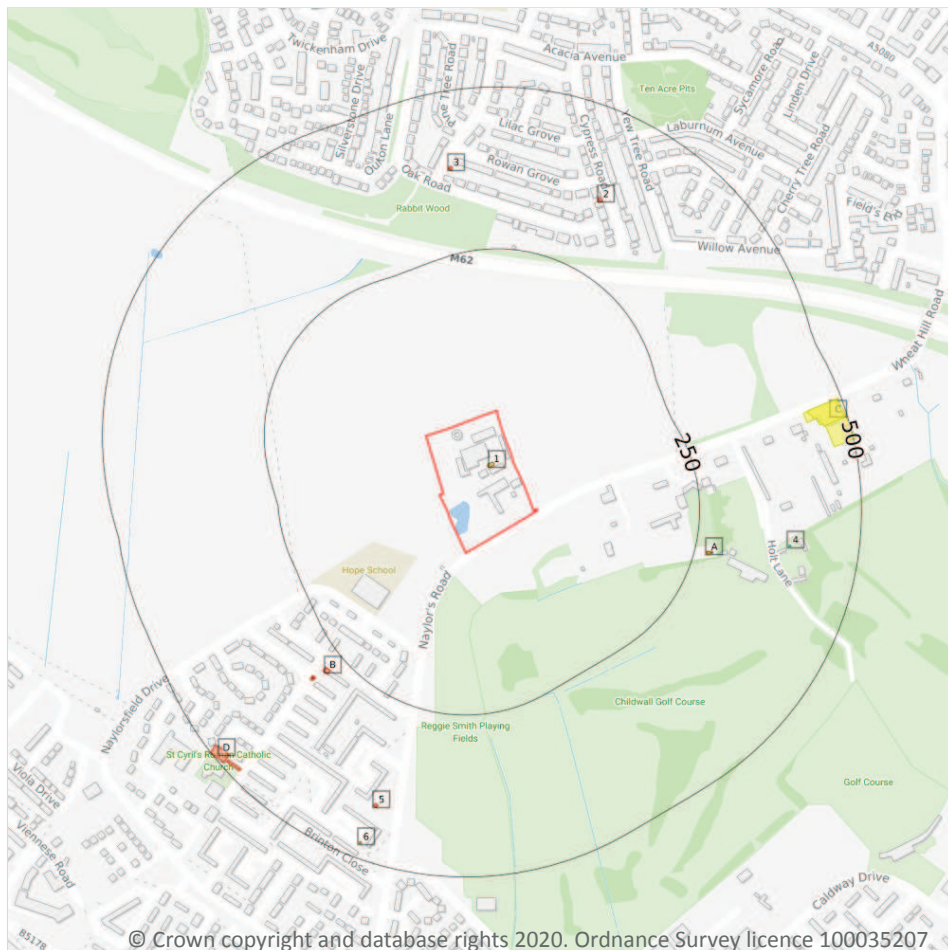
OS MasterMap site plan



Site Area: 2.15ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

1

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 14**

ID	Location	Land use	Dates present	Group ID
4	392m E	Pump	1851	826841



This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

4

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 14**

ID	Location	Land use	Dates present	Group ID
1	On site	Tanks	1950 - 1964	131752
A	268m E	Tanks	1956	123639
A	269m E	Tanks	1960 - 1993	143985
6	474m S	Unspecified Tank	1951 - 1958	135983

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

11

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 14**

ID	Location	Land use	Dates present	Group ID
B	277m SW	Electricity Substation	1986	61572
B	302m SW	Electricity Substation	1968	79019
B	302m SW	Electricity Substation	1993	82583
B	305m SW	Electricity Substation	1985	73708
B	305m SW	Electricity Substation	1994	65739
B	305m SW	Electricity Substation	1996	77911



ID	Location	Land use	Dates present	Group ID
2	358m NE	Electricity Substation	1977 - 1997	66573
3	378m N	Electricity Substation	1977 - 1997	80519
5	411m S	Electricity Substation	1968 - 1999	76315
D	480m SW	Electricity Substation	1978	61573
D	481m SW	Electricity Substation	1993 - 1999	77971

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

2

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'.

Features are displayed on the Past land use map on **page 14**

ID	Location	Land use	Dates present	Group ID
C	437m E	Filling Station	1960 - 1979	1667
C	443m E	Filling Station	1993	1582

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.



1.6 Historical military land

Records within 500m

0

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

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



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

Records within 500m	1
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Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
1	392m E	Pump	1851	826841

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

11

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 18**

ID	Location	Land Use	Date	Group ID
A	On site	Tanks	1950	131752
A	On site	Tanks	1964	131752
A	On site	Tanks	1950	131752
B	268m E	Tanks	1956	123639
B	269m E	Tanks	1993	143985
B	271m E	Tanks	1979	143985
B	271m E	Tanks	1979	143985
B	271m E	Tanks	1960	143985
H	474m S	Unspecified Tank	1951	135983
H	474m S	Unspecified Tank	1958	135983
H	474m S	Unspecified Tank	1951	135983

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

30

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 18**

ID	Location	Land Use	Date	Group ID
C	277m SW	Electricity Substation	1986	61572
C	302m SW	Electricity Substation	1968	79019
C	302m SW	Electricity Substation	1993	82583



ID	Location	Land Use	Date	Group ID
C	305m SW	Electricity Substation	1985	73708
C	305m SW	Electricity Substation	1996	77911
C	305m SW	Electricity Substation	1994	65739
D	358m NE	Electricity Substation	1996	66573
D	358m NE	Electricity Substation	1997	66573
D	359m NE	Electricity Substation	1990	66573
D	360m NE	Electricity Substation	1977	66573
E	378m N	Electricity Substation	1996	80519
E	378m N	Electricity Substation	1997	80519
E	379m N	Electricity Substation	1990	80519
E	379m N	Electricity Substation	1977	80519
F	411m S	Electricity Substation	1968	76315
F	412m S	Electricity Substation	1968	76315
F	412m S	Electricity Substation	1974	76315
F	412m S	Electricity Substation	1994	76315
F	412m S	Electricity Substation	1996	76315
F	412m S	Electricity Substation	1997	76315
F	412m S	Electricity Substation	1994	76315
F	412m S	Electricity Substation	1999	76315
F	412m S	Electricity Substation	1990	76315
I	480m SW	Electricity Substation	1978	61573
I	481m SW	Electricity Substation	1996	77971
I	481m SW	Electricity Substation	1994	77971
I	481m SW	Electricity Substation	1993	77971
I	481m SW	Electricity Substation	1998	77971
I	481m SW	Electricity Substation	1999	77971
I	481m SW	Electricity Substation	1994	77971

This data is sourced from Ordnance Survey / Groundsure.



2.4 Historical petrol stations

Records within 500m

4

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'.

Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
G	437m E	Filling Station	1979	1667
G	437m E	Filling Station	1979	1667
G	437m E	Filling Station	1960	1667
G	443m E	Filling Station	1993	1582

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

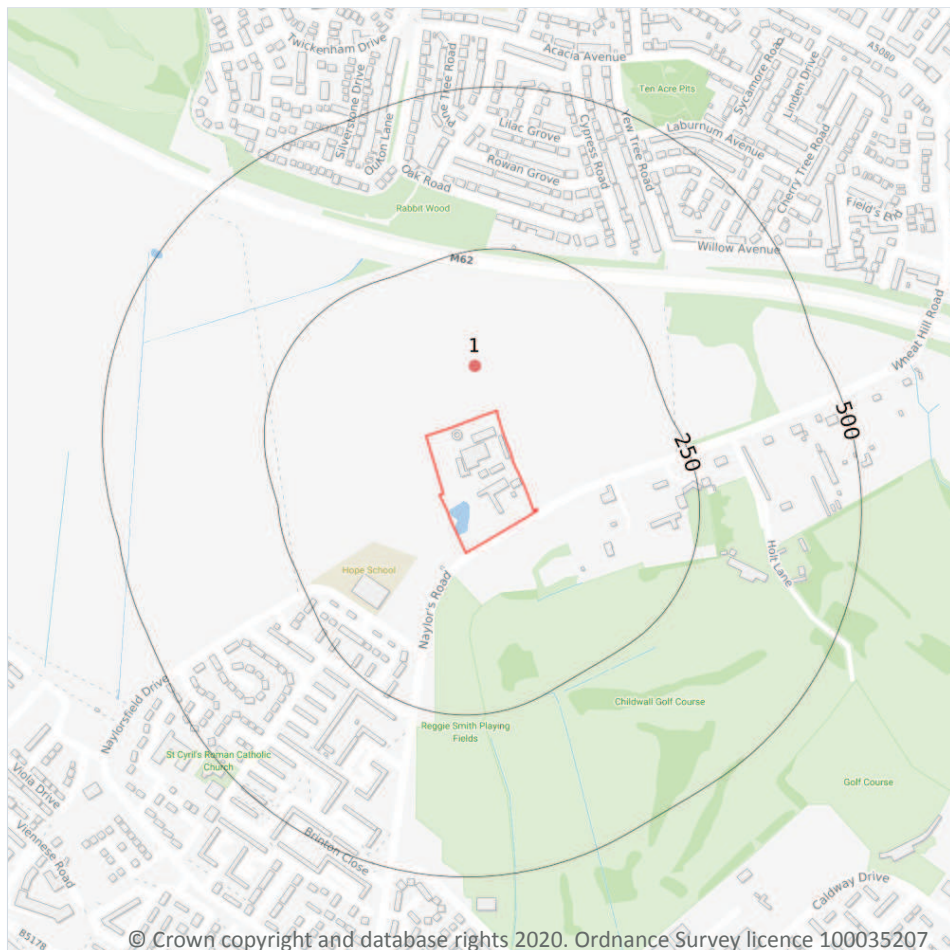
0

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

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- 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**1**

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 22**

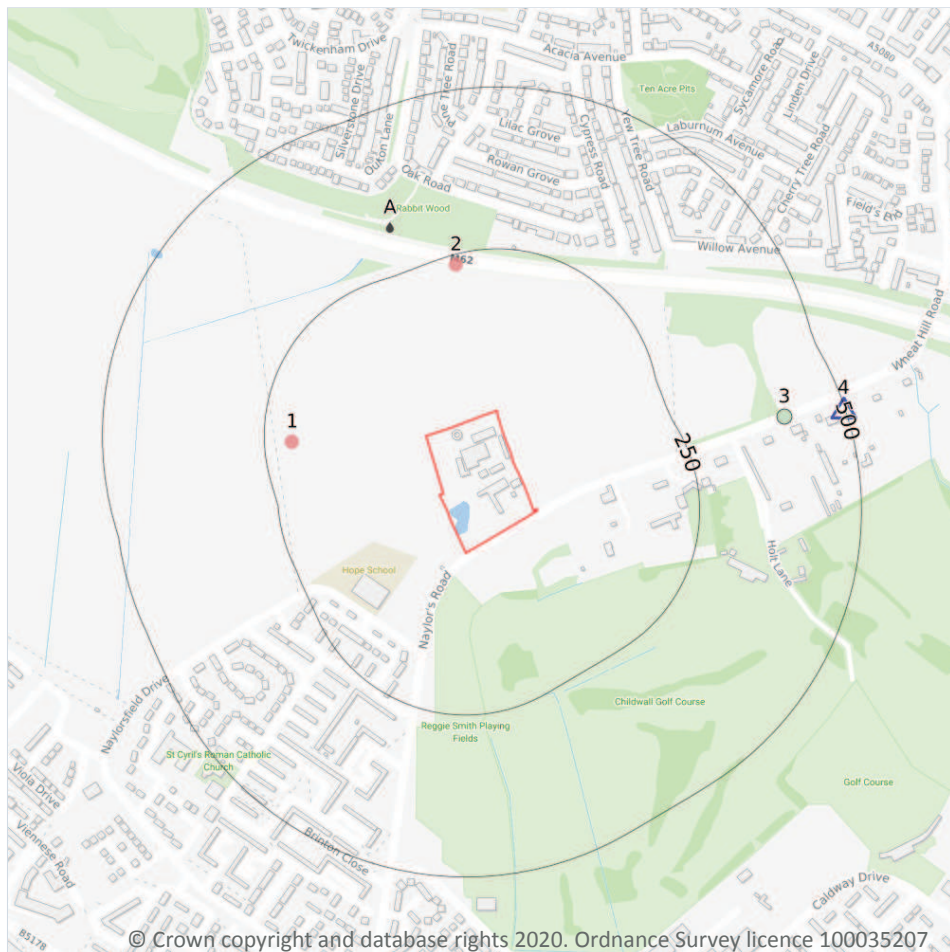
ID	Location	Site	Reference	Category	Sub-Category	Description
1	77m N	-	WEX152707	Storing waste exemption	On a Farm	Storage of sludge



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
- ◆ Licensed Discharges to controlled waters
- 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 25**

ID	Location	Company	Address	Activity	Category
1	207m W	Mast	Merseyside, L27	Telecommunications Features	Infrastructure and Facilities
2	234m N	Gantry	Merseyside, L27	Travelling Cranes and Gantries	Industrial Features

This data is sourced from Ordnance Survey.



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 25**

ID	Location	Company	Address	LPG	Status
4	498m E	UNBRANDED	Wheathill Road, Huyton, Liverpool, Merseyside, L36 5US	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

2

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

Features are displayed on the Current industrial land use map on **page 25**

ID	Location	Address	Details	
A	322m N	BRENTMEN DEVELOPMENT SWO, OAK ROAD, ROBY, NEAR HUYTON, MERSEYSIDE	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991165 Permit Version: 1 Receiving Water: RIVER ETHEROW (MERSEY)	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 17/06/1987 Revocation Date: 22/10/1992
A	322m N	BRENTMEN DEVELOPMENT SWO, OAK ROAD, ROBY, NEAR HUYTON, MERSEYSIDE	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991165 Permit Version: 2 Receiving Water: RIVER ETHEROW (MERSEY)	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 23/10/1992 Revocation Date: 03/08/1993

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

1

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 25**

ID	Location	Details	
3	407m E	Incident Date: 04/04/2002 Incident Identification: 68982 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	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.

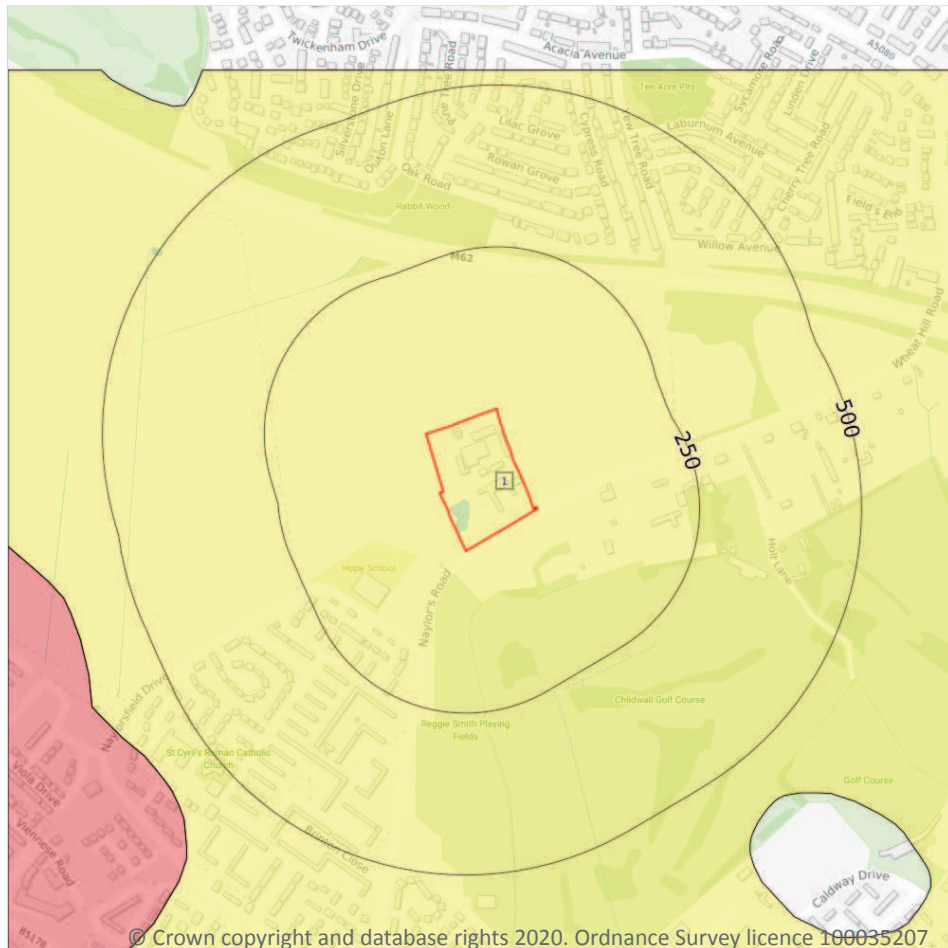
4.21 Pollution inventory radioactive waste

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.

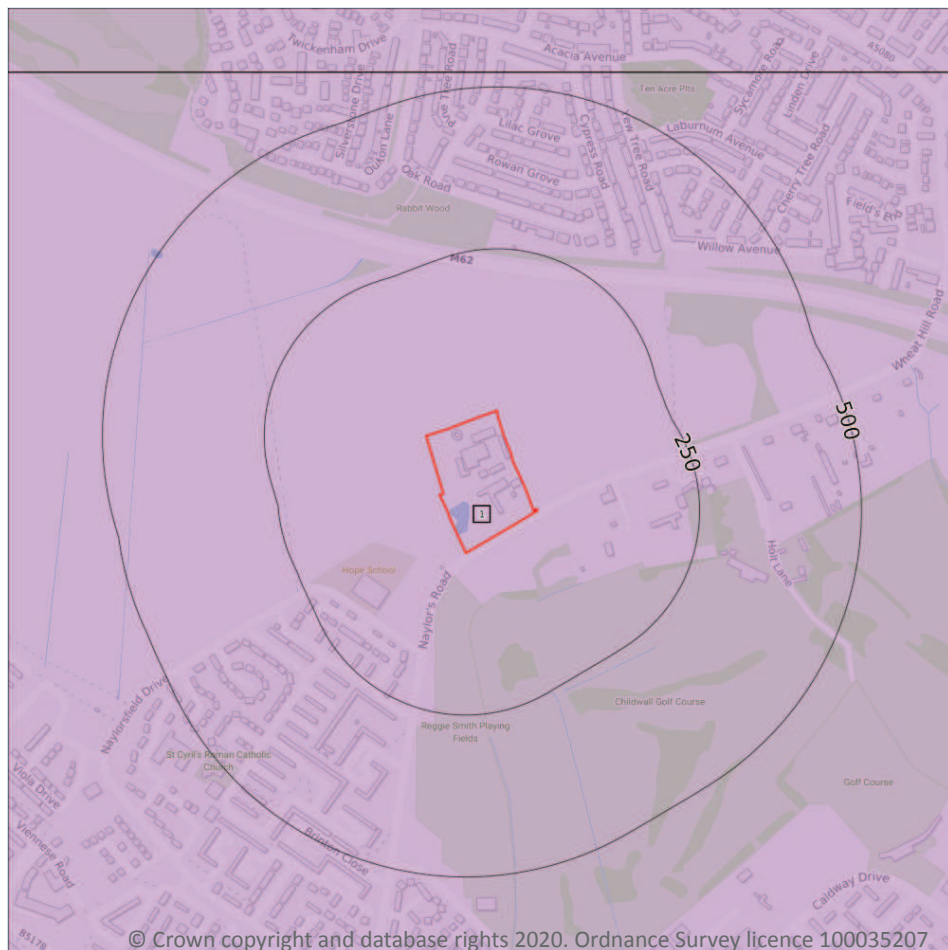
Features are displayed on the Hydrogeology map on **page 31**

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.

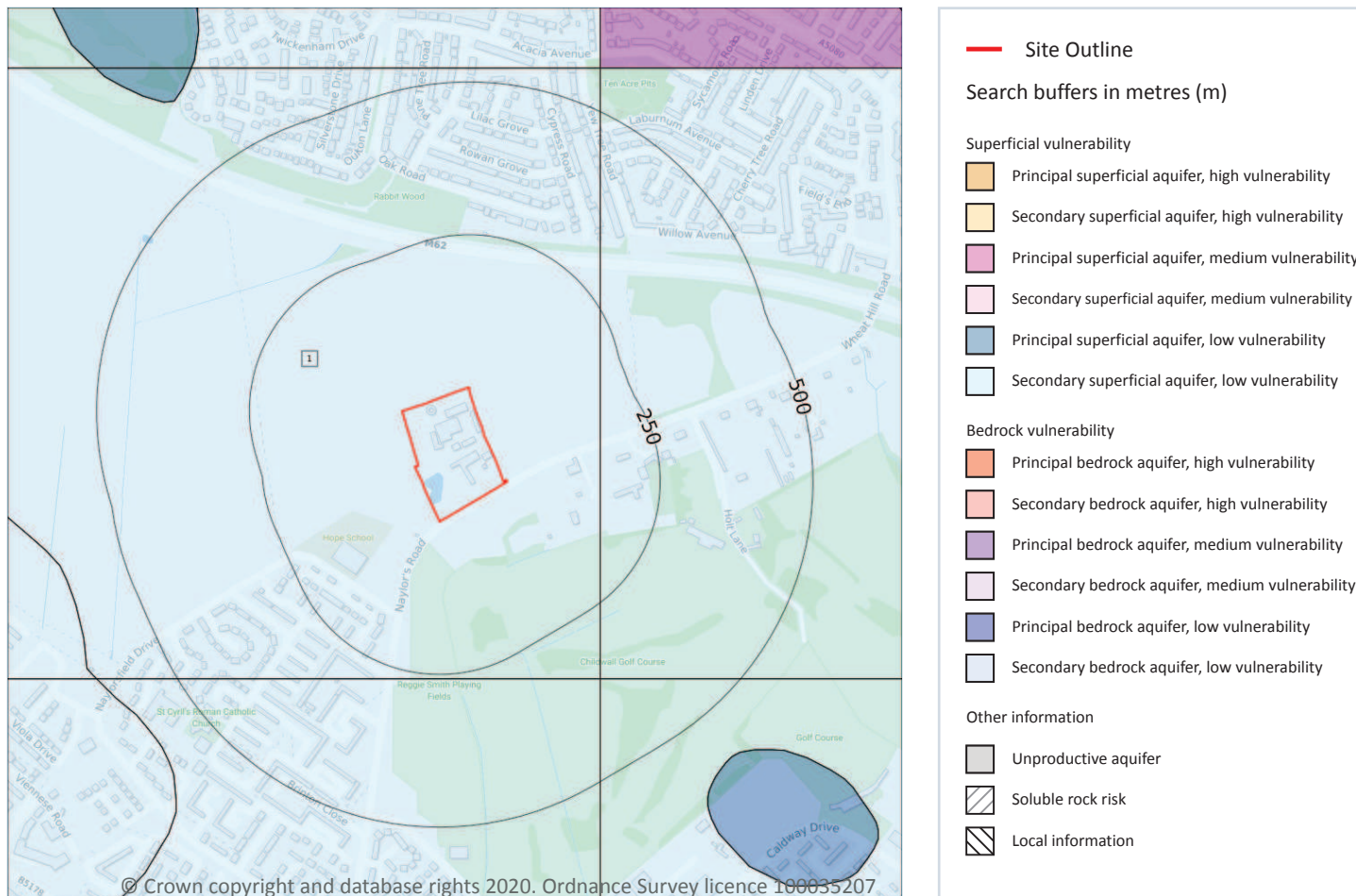
Features are displayed on the Bedrock aquifer map on **page 32**

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



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 33**

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: Mixed

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

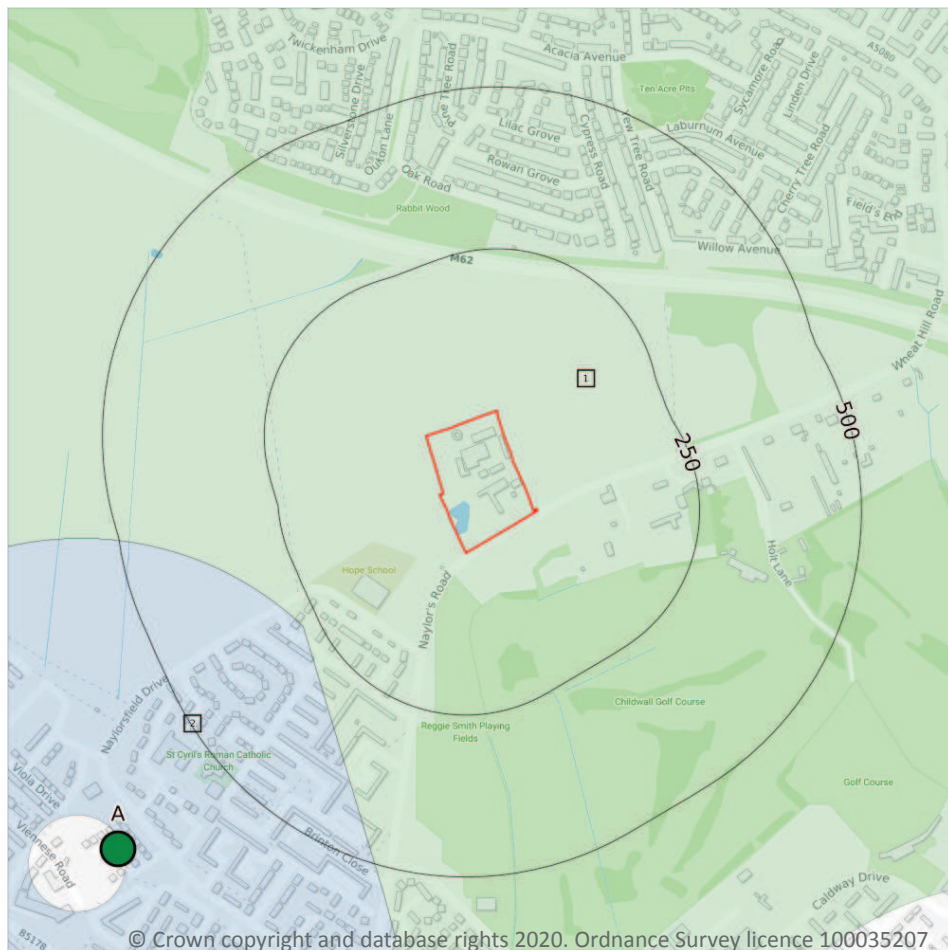
Records on site

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

9

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 35**

ID	Location	Details	
A	705m SW	Status: Historical Licence No: 2569028013 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLES (2) AT BELLE VALE PUMPING STATION, LIVERPOOL" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 343200 Northing: 388800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
A	705m SW	Status: Active Licence No: 2569028013 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLES (2) AT BELLE VALE PUMPING STATION, LIVERPOOL Data Type: Point Name: United Utilities Water Ltd Easting: 343200 Northing: 388800	Annual Volume (m ³): 1,573,000 Max Daily Volume (m ³): 5,500 Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1351m SE	Status: Historical Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLES (3) AT NETHERLEY PUMPING STATION, LIVERPOOL" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 344600 Northing: 388200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1351m SE	Status: Historical Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLES (3) AT NETHERLEY PUMPING STATION, LIVERPOOL Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 344600 Northing: 388200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -



ID	Location	Details	
-	1351m SE	Status: Active Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLES X 3 AT NETHERLEY PUMPING STATION LIVERPOOL Data Type: Point Name: United Utilities Water Ltd Easting: 344600 Northing: 388200	Annual Volume (m ³): 4,127,000 Max Daily Volume (m ³): 11,400 Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1367m S	Status: Historical Licence No: 2569028022 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE AT LEE PARK GOLF CLUB, GATEACRE, LIVERPOOL" Data Type: Point Name: LEE PARK GOLF CLUB Easting: 343730 Northing: 387890	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/02/1997 Expiry Date: - Issue No: 100 Version Start Date: 21/02/1997 Version End Date: -
-	1367m S	Status: Historical Licence No: 2569028022 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLE AT LEE PARK GOLF CLUB, GATEACRE, LIVERPOOL" Data Type: Point Name: LEE PARK GOLF CLUB Easting: 343730 Northing: 387890	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/02/1997 Expiry Date: - Issue No: 100 Version Start Date: 21/02/1997 Version End Date: -
-	1367m S	Status: Active Licence No: 2569028022 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT LEE PARK GOLF CLUB, GATEACRE, LIVERPOOL Data Type: Point Name: LEE PARK GOLF CLUB LTD (THE) Easting: 343730 Northing: 387890	Annual Volume (m ³): 13,829.55 Max Daily Volume (m ³): 92.27 Original Application No: - Original Start Date: 21/02/1997 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -



ID	Location	Details	
-	1367m S	Status: Active Licence No: 2569028022 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT LEE PARK GOLF CLUB, GATEACRE, LIVERPOOL Data Type: Point Name: LEE PARK GOLF CLUB LTD (THE) Easting: 343730 Northing: 387890	Annual Volume (m ³): 13,829.55 Max Daily Volume (m ³): 92.27 Original Application No: - Original Start Date: 21/02/1997 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	0
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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	7
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Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 35**

ID	Location	Details	
A	705m SW	Status: Historical Licence No: 2569028013 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLES (2) AT BELLE VALE PUMPING STATION, LIVERPOOL" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 343200 Northing: 388800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -

ID	Location	Details	
A	705m SW	Status: Active Licence No: 2569028013 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLES (2) AT BELLE VALE PUMPING STATION, LIVERPOOL Data Type: Point Name: United Utilities Water Ltd Easting: 343200 Northing: 388800	Annual Volume (m ³): 1,573,000 Max Daily Volume (m ³): 5,500 Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1351m SE	Status: Historical Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLES (3) AT NETHERLEY PUMPING STATION, LIVERPOOL" Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 344600 Northing: 388200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1351m SE	Status: Historical Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLES (3) AT NETHERLEY PUMPING STATION, LIVERPOOL Data Type: Point Name: UNITED UTILITIES WATER PLC Easting: 344600 Northing: 388200	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -
-	1351m SE	Status: Active Licence No: 2569028012 Details: Potable Water Supply - Direct Direct Source: Ground Water - North West Region Point: BOREHOLES X 3 AT NETHERLEY PUMPING STATION LIVERPOOL Data Type: Point Name: United Utilities Water Ltd Easting: 344600 Northing: 388200	Annual Volume (m ³): 4,127,000 Max Daily Volume (m ³): 11,400 Original Application No: - Original Start Date: 23/03/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/09/2001 Version End Date: -



ID	Location	Details	
-	1367m S	Status: Historical Licence No: 2569028022 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE AT LEE PARK GOLF CLUB, GATEACRE, LIVERPOOL" Data Type: Point Name: LEE PARK GOLF CLUB Easting: 343730 Northing: 387890	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/02/1997 Expiry Date: - Issue No: 100 Version Start Date: 21/02/1997 Version End Date: -
-	1367m S	Status: Active Licence No: 2569028022 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT LEE PARK GOLF CLUB, GATEACRE, LIVERPOOL Data Type: Point Name: LEE PARK GOLF CLUB LTD (THE) Easting: 343730 Northing: 387890	Annual Volume (m ³): 13,829.55 Max Daily Volume (m ³): 92.27 Original Application No: - Original Start Date: 21/02/1997 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2008 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	2
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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 35**

ID	Location	Type	Description
1	On site	3	Total catchment
2	276m SW	2	Outer catchment

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



5.10 Source Protection Zones (confined aquifer)

Records within 500m

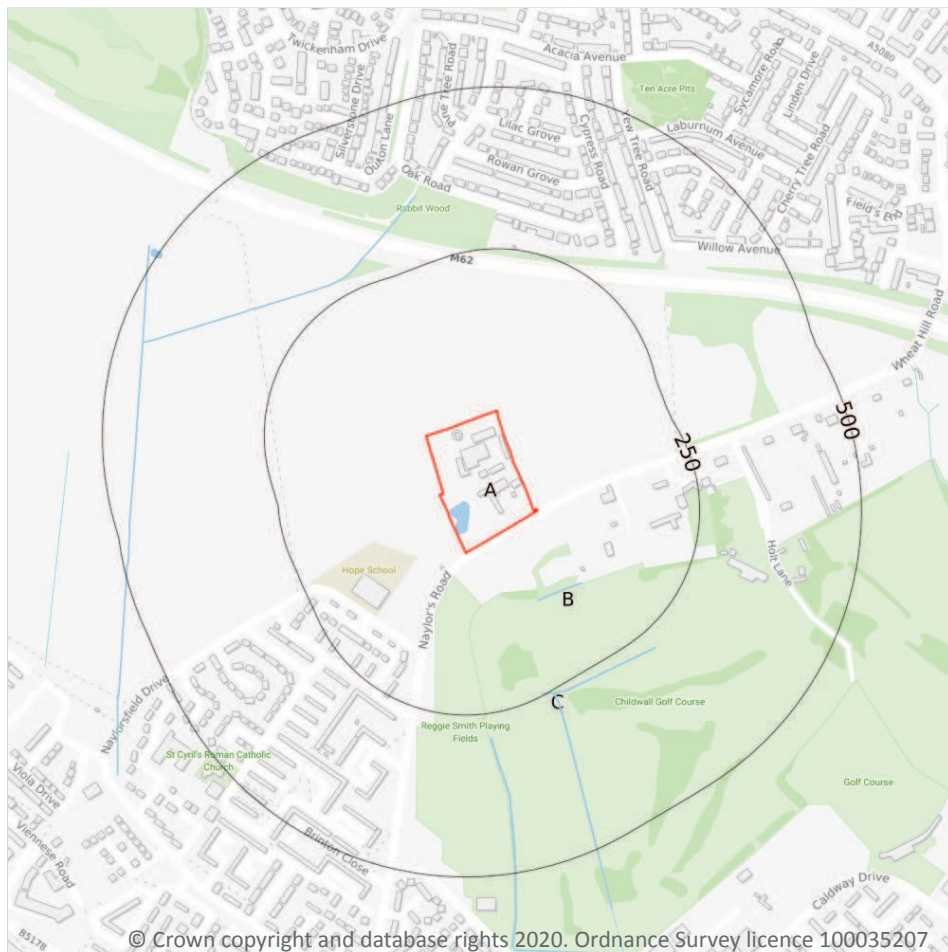
0

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

2

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

Features are displayed on the Hydrology map on **page 42**

ID	Location	Type of water feature	Ground level	Permanence	Name
B	119m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
C	248m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

3

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

Features are displayed on the Hydrology map on **page 42**

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 42**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
A	On site	River WB catchment	Netherley Brook	GB112069060680	Ditton	Lower Mersey

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 42**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	613m E	River	Netherley Brook	GB112069060680	Moderate	Good	Moderate	2016

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

6.5 WFD Groundwater bodies

Records on site	2
------------------------	----------

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 42**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers	GB41201G101700	Poor	Poor	Poor	2015
A	On site	Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers	GB41201G101700	Poor	Poor	Poor	2016

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 Sea (RoFRaS)

Records within 50m

0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; 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).

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

1 in 30 year, 0.3m - 1.0m

Highest risk within 50m

1 in 30 year, 0.3m - 1.0m

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

Features are displayed on the Surface water flooding map on **page 48**

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

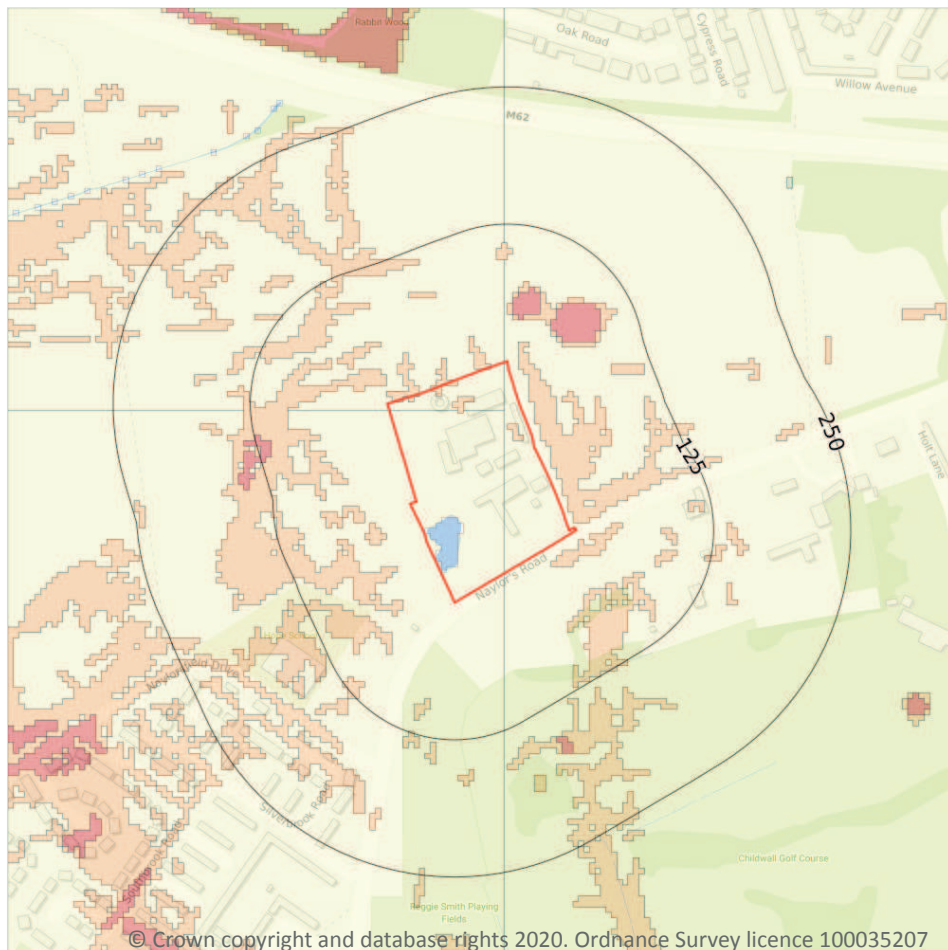
The table below shows the maximum flood depths for a range of return periods for the site.

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

This data is sourced from 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-High

Highest risk within 50m

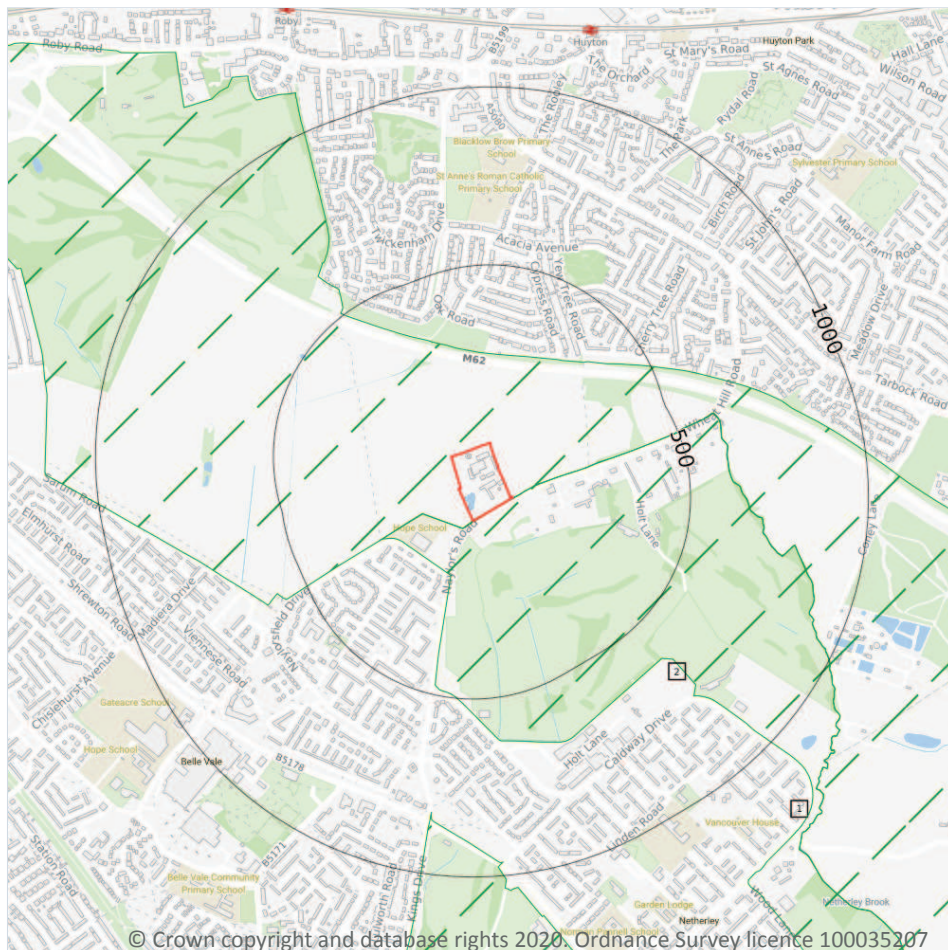
High

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

Features are displayed on the Groundwater flooding map on **page 50**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- + Local Nature Reserves (LNR)
- ▨ Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m

1

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

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Data source
-	1888m W	Childwall Woods & Fields	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m

0

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

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

10.8 Biosphere Reserves

Records within 2000m

0

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

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

10.9 Forest Parks

Records within 2000m

0

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

This data is sourced from the Forestry Commission.



10.10 Marine Conservation Zones

Records within 2000m

0

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

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

10.11 Green Belt

Records within 2000m

3

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

Features are displayed on the Environmental designations map on **page 51**

ID	Location	Name	Local Authority name
1	On site	Liverpool and Manchester	Knowsley
2	1m SE	Liverpool and Manchester	Liverpool
3	831m S	Liverpool and Manchester	Liverpool

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

4

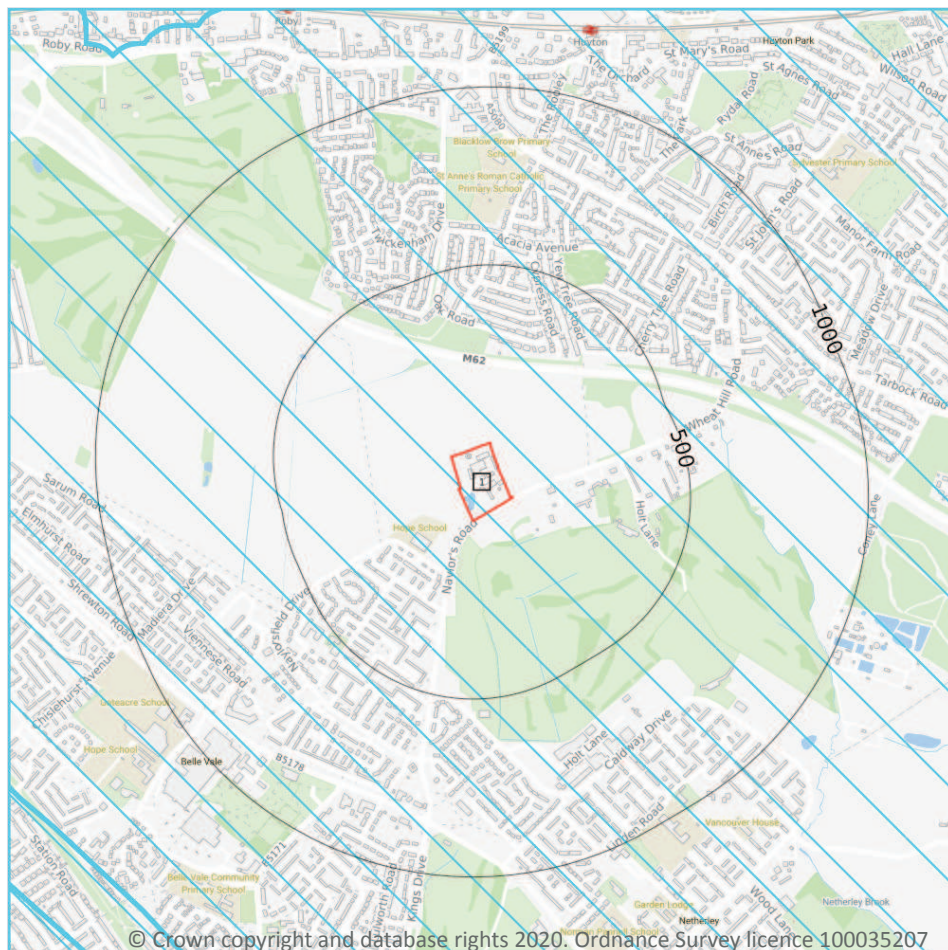
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	S640	Existing
244m E	Dittton Brook (Halewood to Mersey Estuary) NVZ	Surface Water	S640	Existing
1089m NW	ALT NVZ	Surface Water	S642	Existing
1164m N	ALT NVZ	Surface Water	S642	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 56**

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 > 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 (NB This does not include discharges to mains sewer which are unlikely to pose a risk at this location).

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0
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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 English Heritage, 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 English Heritage, 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 English Heritage, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m

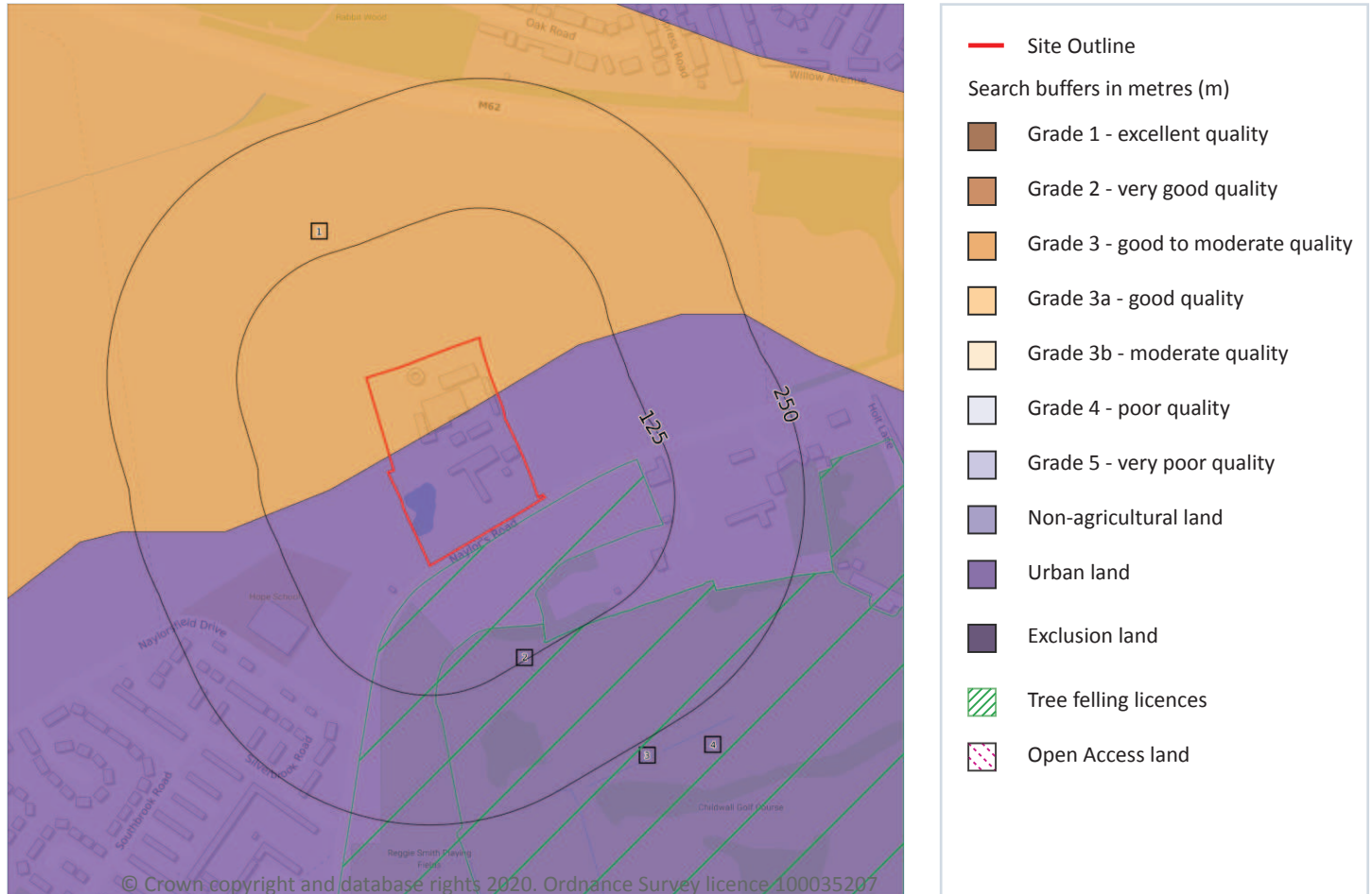
0

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 English Heritage, Cadw and Historic Environment Scotland.



12 Agricultural designations



12.1 Agricultural Land Classification

Records within 250m

2

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 60**

ID	Location	Classification	Description
1	On site	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.
2	On site	Urban	-

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

2

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.

Features are displayed on the Agricultural designations map on **page 60**

ID	Location	Description	Reference	Application date
3	8m SE	Selective Fell/Thin (Conditional)	010/126/10-11	21/12/2010
4	79m SE	Selective Fell/Thin (Conditional)	010/73/07-08	07/11/2007

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.

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

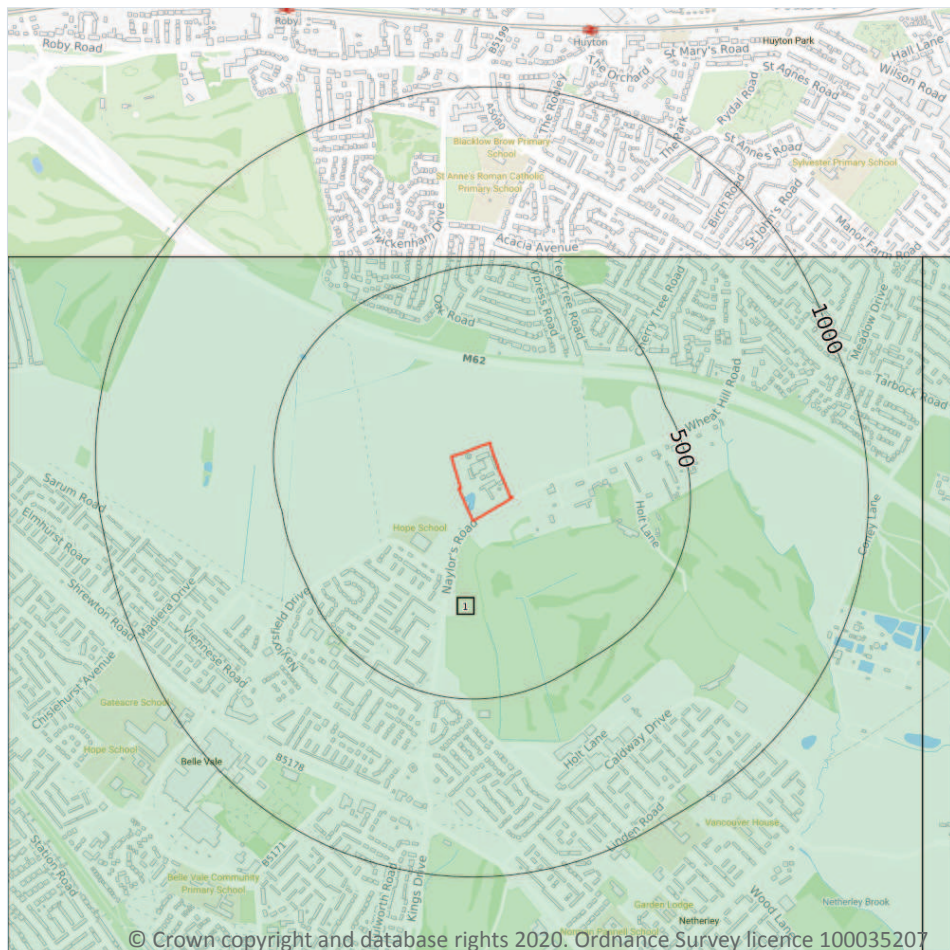
0

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 63**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SJ48NW

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

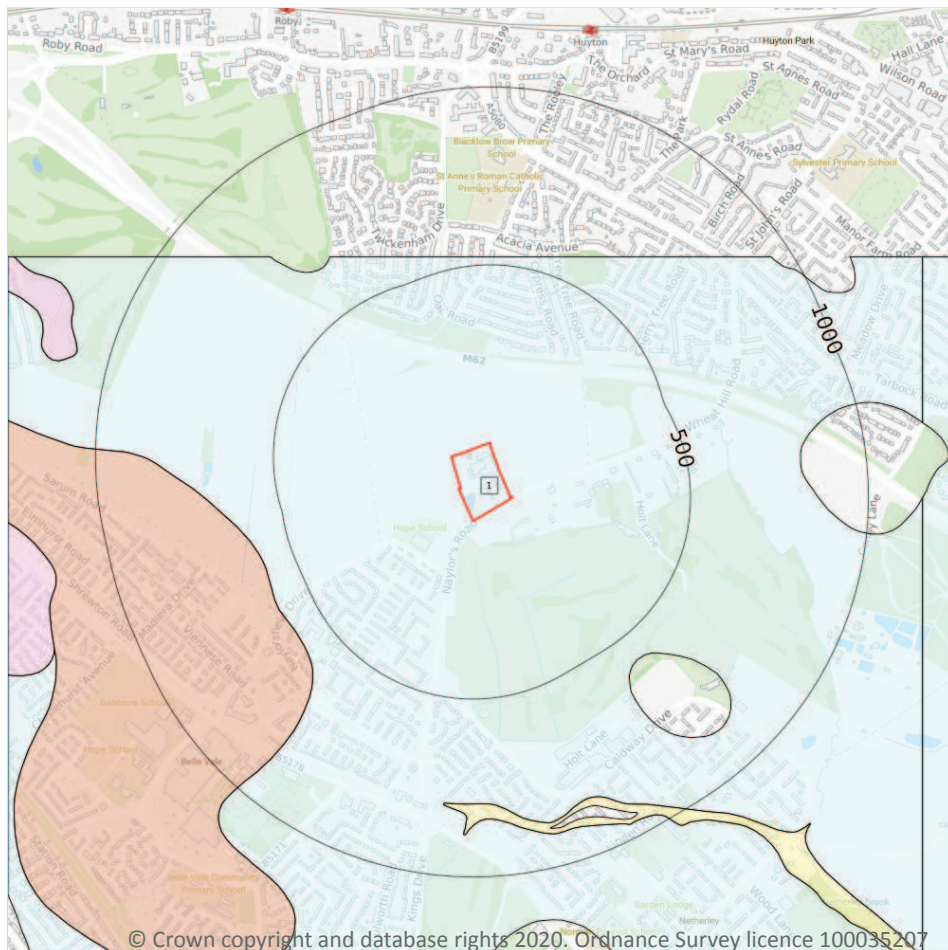
0

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



— Site Outline

Search buffers in metres (m)

▣ Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m

1

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.

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

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

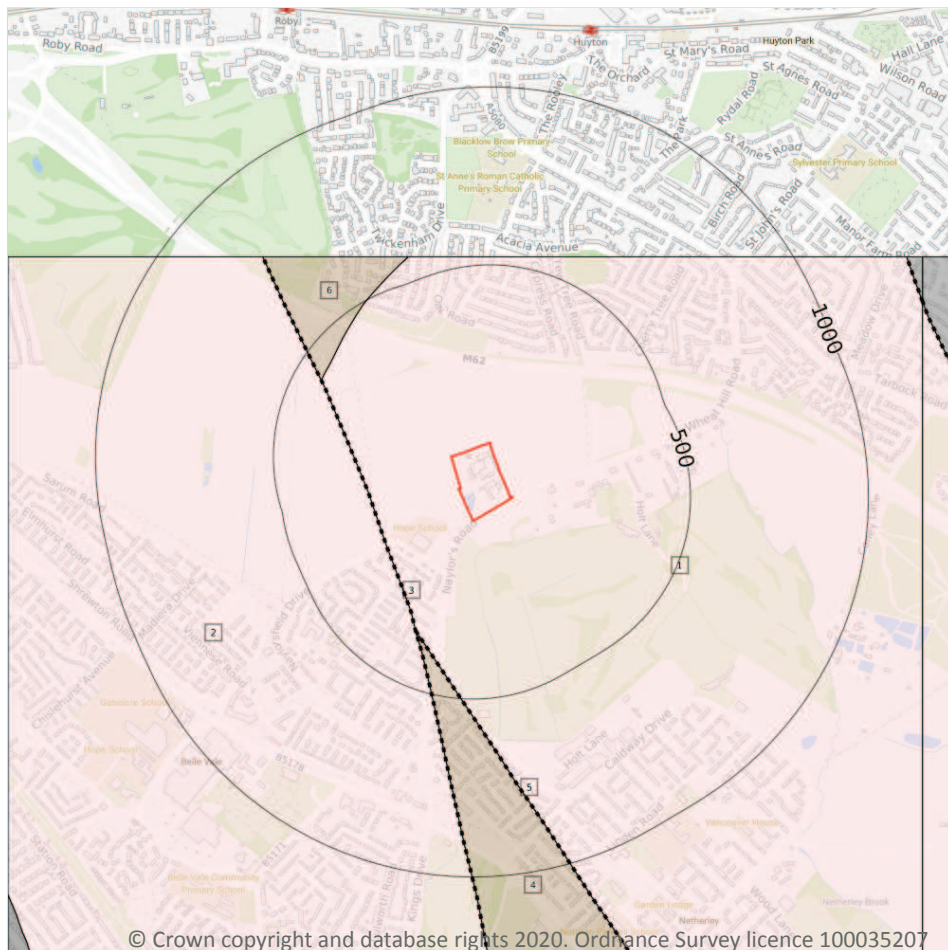
0

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



— Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m

4

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.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 67**

ID	Location	LEX Code	Description	Rock age
1	On site	WLSF-SDST	Wilmslow Sandstone Formation - Sandstone	Early Triassic Epoch
2	244m W	WLSF-SDST	Wilmslow Sandstone Formation - Sandstone	Early Triassic Epoch
4	348m SW	KNSF-SDST	Kinnerton Sandstone Formation - Sandstone	Early Triassic Epoch
6	424m NW	KNSF-SDST	Kinnerton Sandstone Formation - Sandstone	Early Triassic Epoch



This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

2

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.

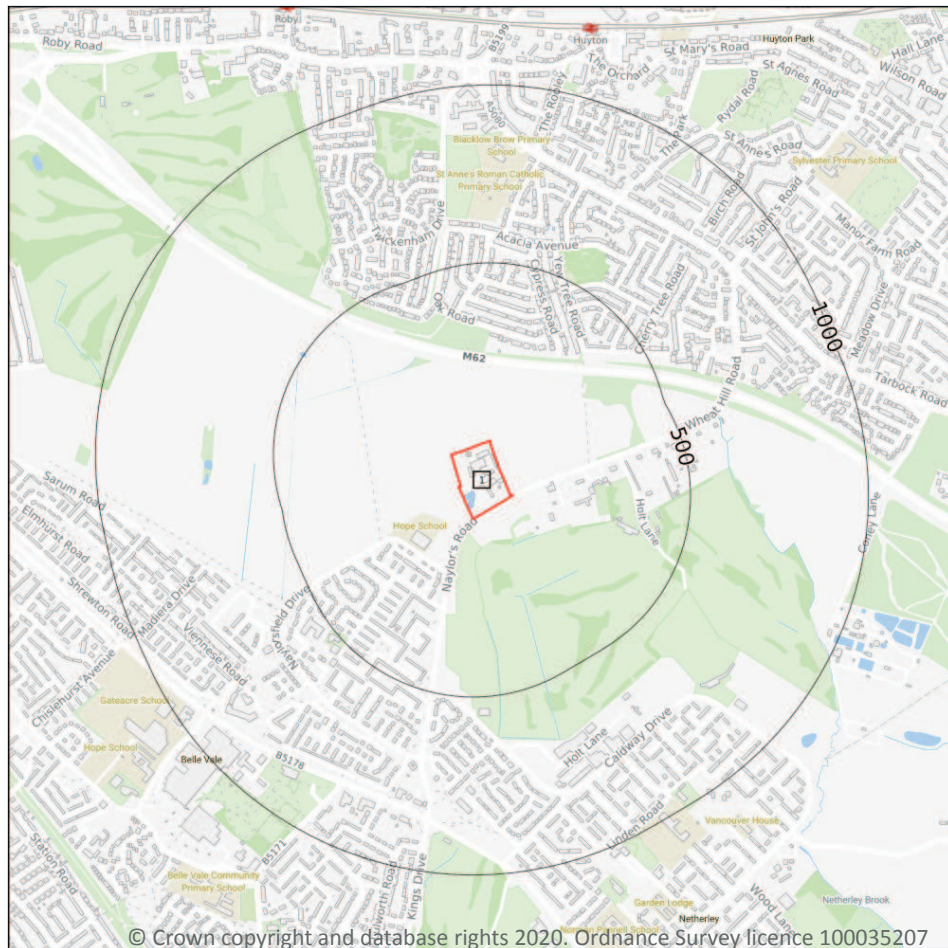
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 67**

ID	Location	Category	Description
3	244m W	FAULT	Normal fault, inferred; crossmarks on downthrow side
5	348m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side

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 69**

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

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

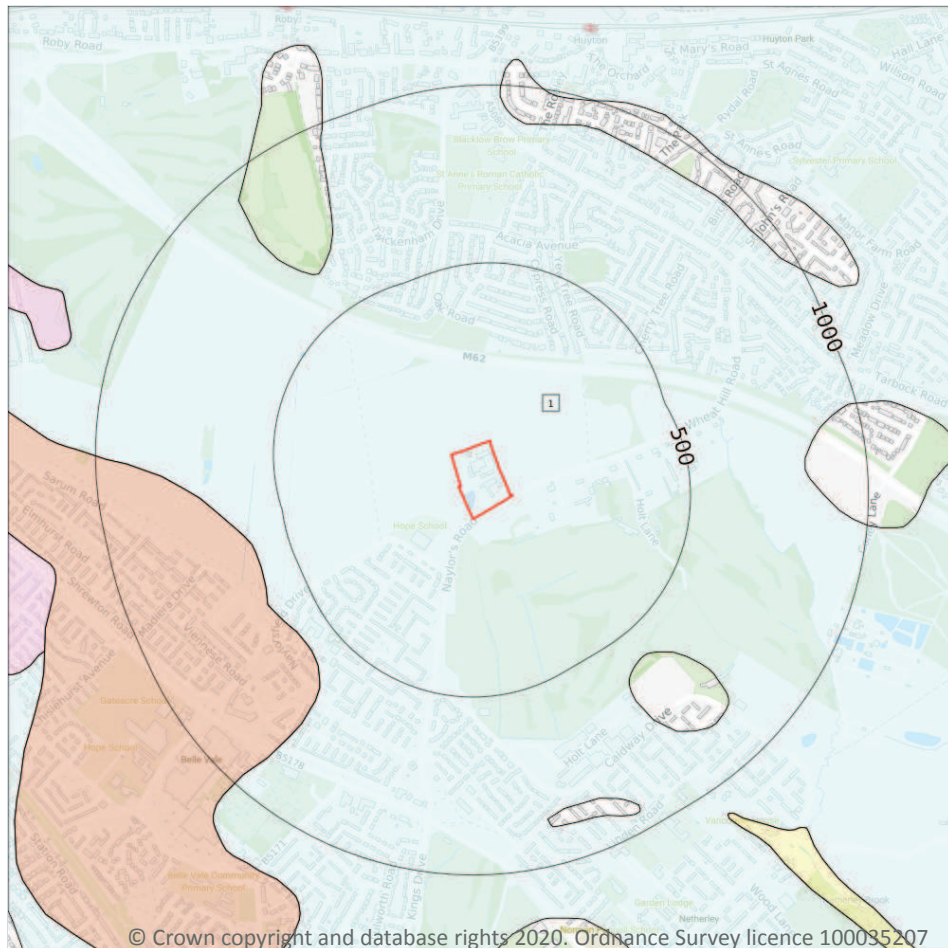
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

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 71**

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)

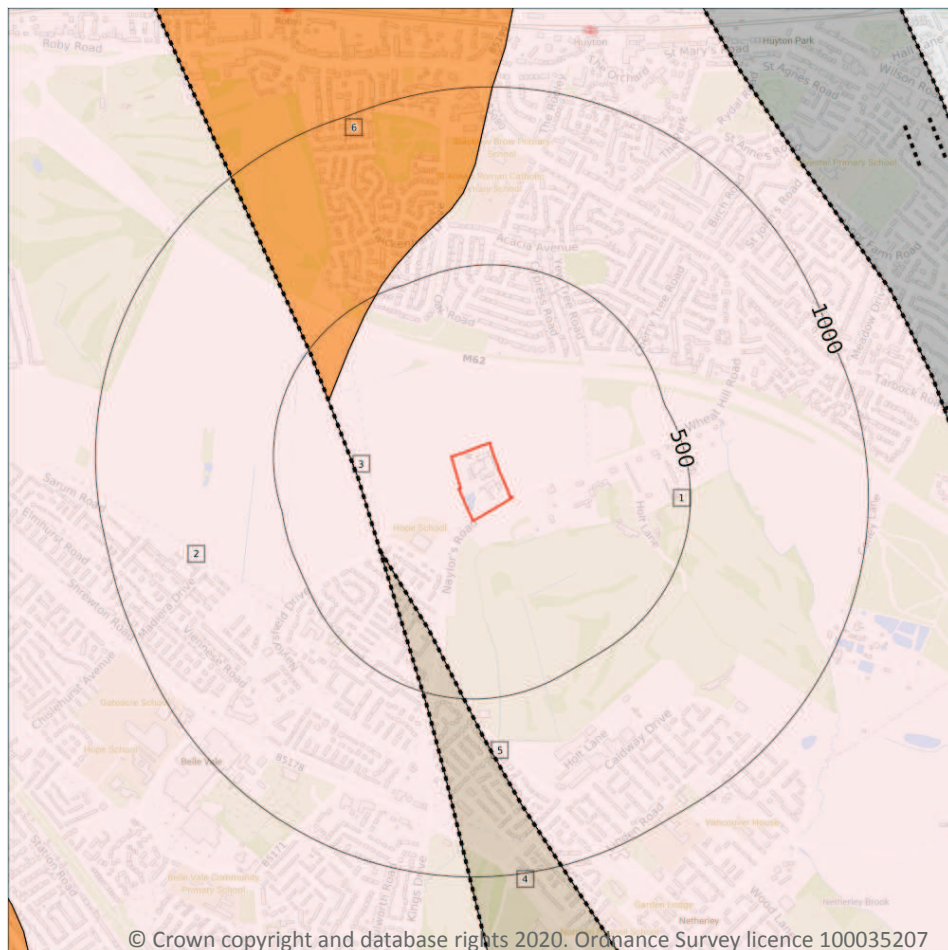
Records within 50m**0**

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

4

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

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

ID	Location	LEX Code	Description	Rock age
1	On site	WLSF-SDST	WILMSLOW SANDSTONE FORMATION - SANDSTONE	-
2	262m W	WLSF-SDST	WILMSLOW SANDSTONE FORMATION - SANDSTONE	-
4	266m SW	KNSF-SDST	KINNERTON SANDSTONE FORMATION - SANDSTONE	-
6	379m NW	CHES-PESST	CHESTER FORMATION - SANDSTONE, PEBBLY (GRAVELLY)	OLENEKIAN

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

2

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.

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

ID	Location	Category	Description
3	262m W	FAULT	Fault, inferred
5	266m SW	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.



16 Boreholes

16.1 BGS Boreholes

Records within 250m

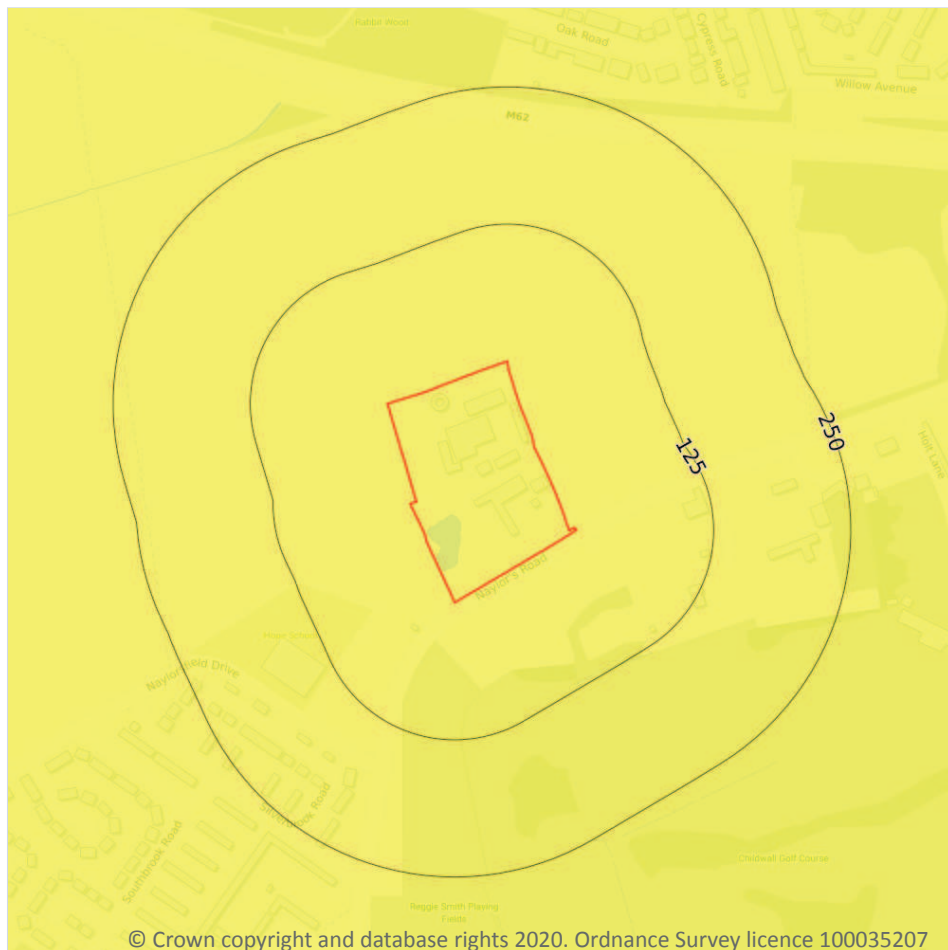
0

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

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



— Site Outline
Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m

1

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

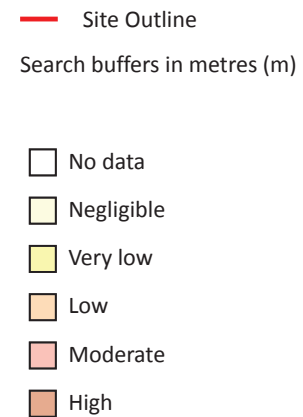
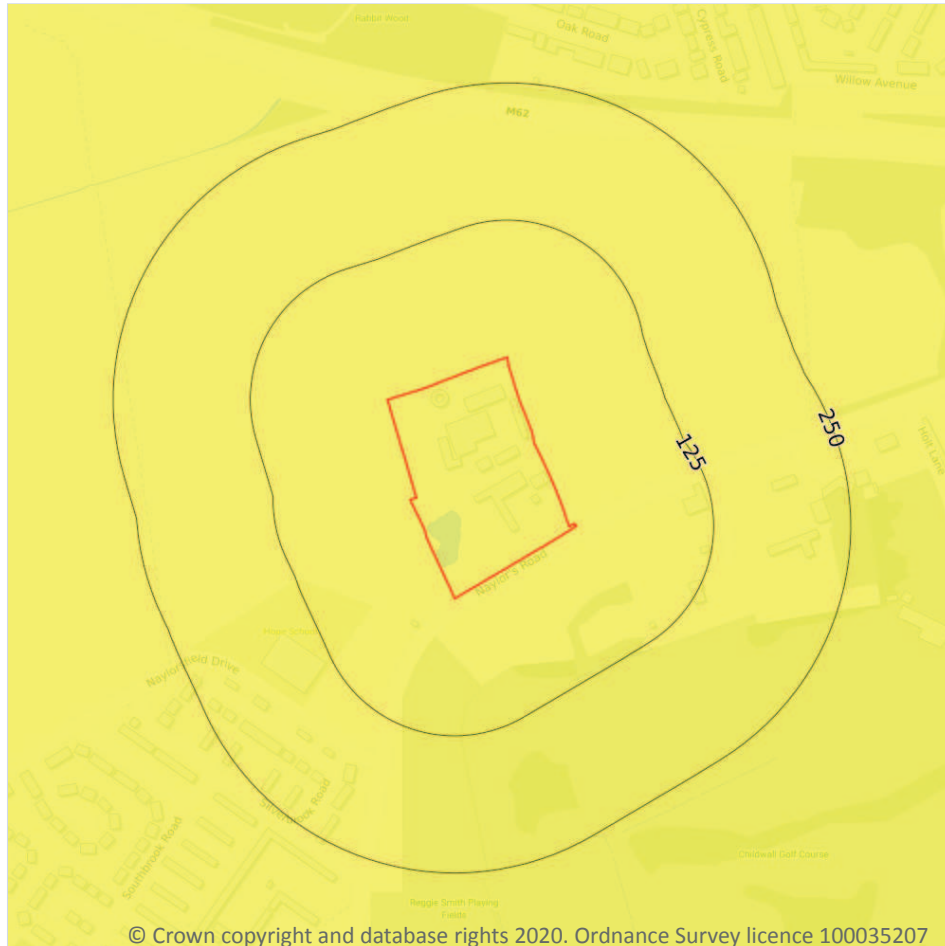
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 76**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



17.2 Running sands

Records within 50m

1

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

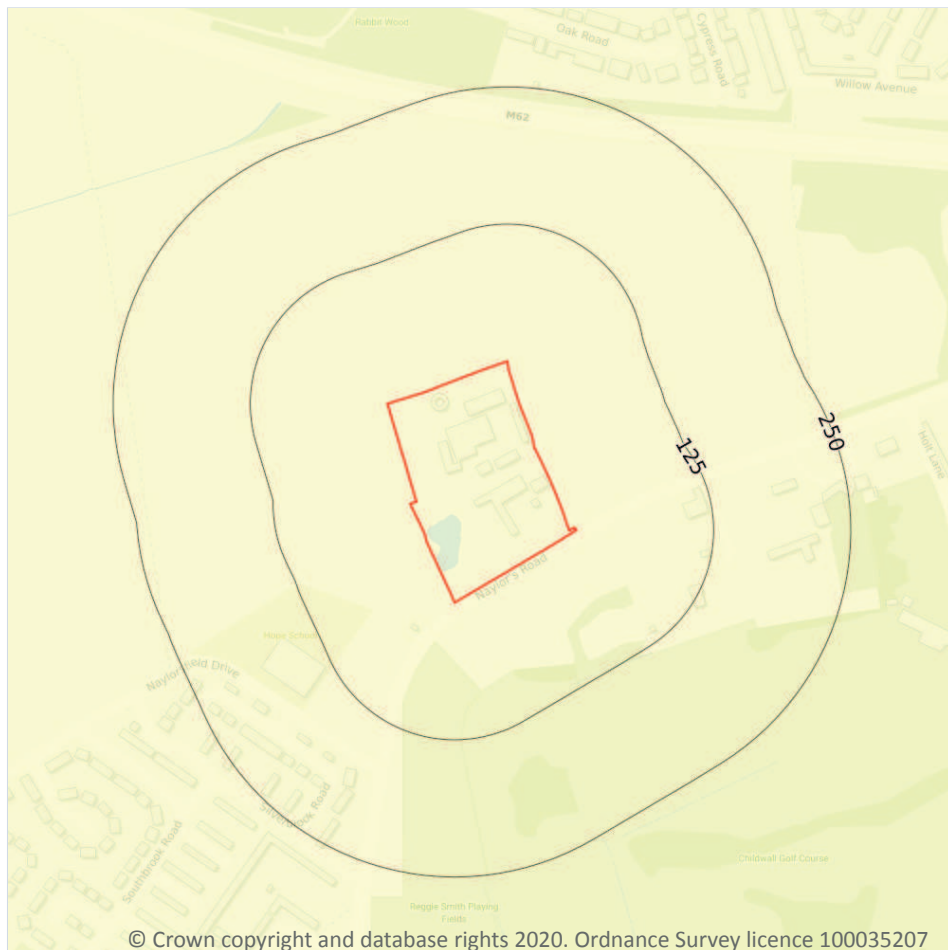
Features are displayed on the Natural ground subsidence - Running sands map on **page 77**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



— Site Outline
Search buffers in metres (m)

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

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17.3 Compressible deposits

Records within 50m

1

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

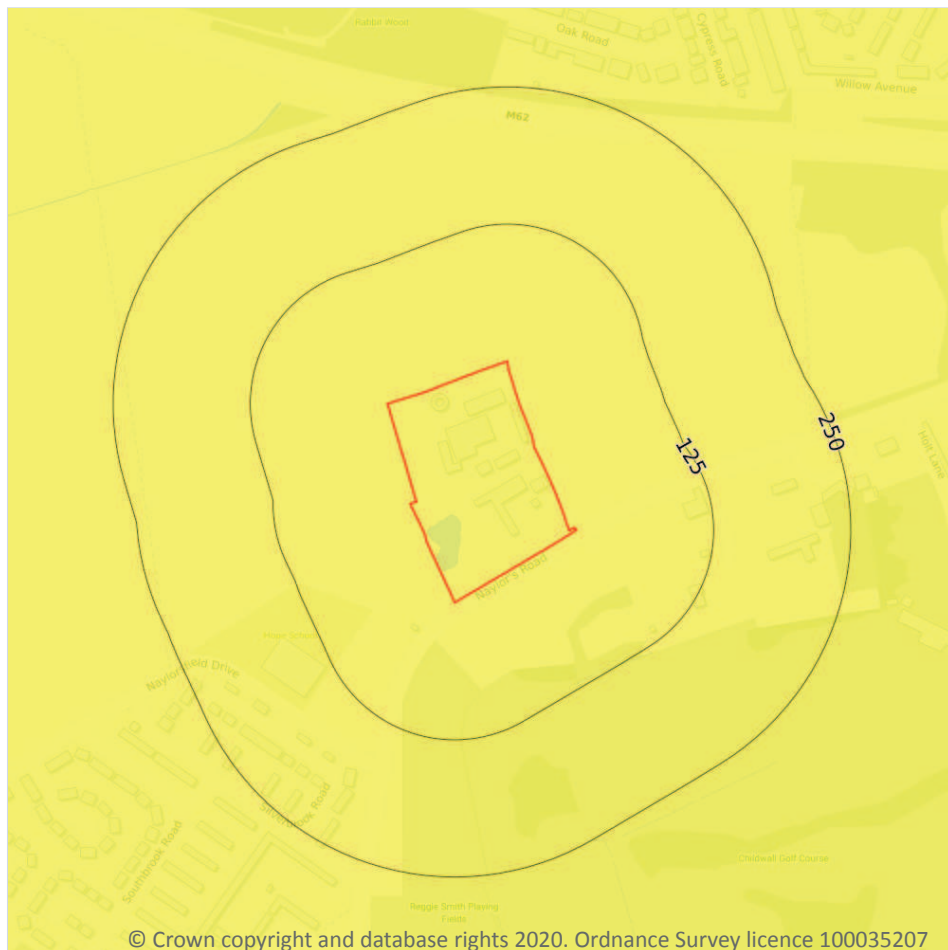
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 78**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



— Site Outline
Search buffers in metres (m)

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

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17.4 Collapsible deposits

Records within 50m

1

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

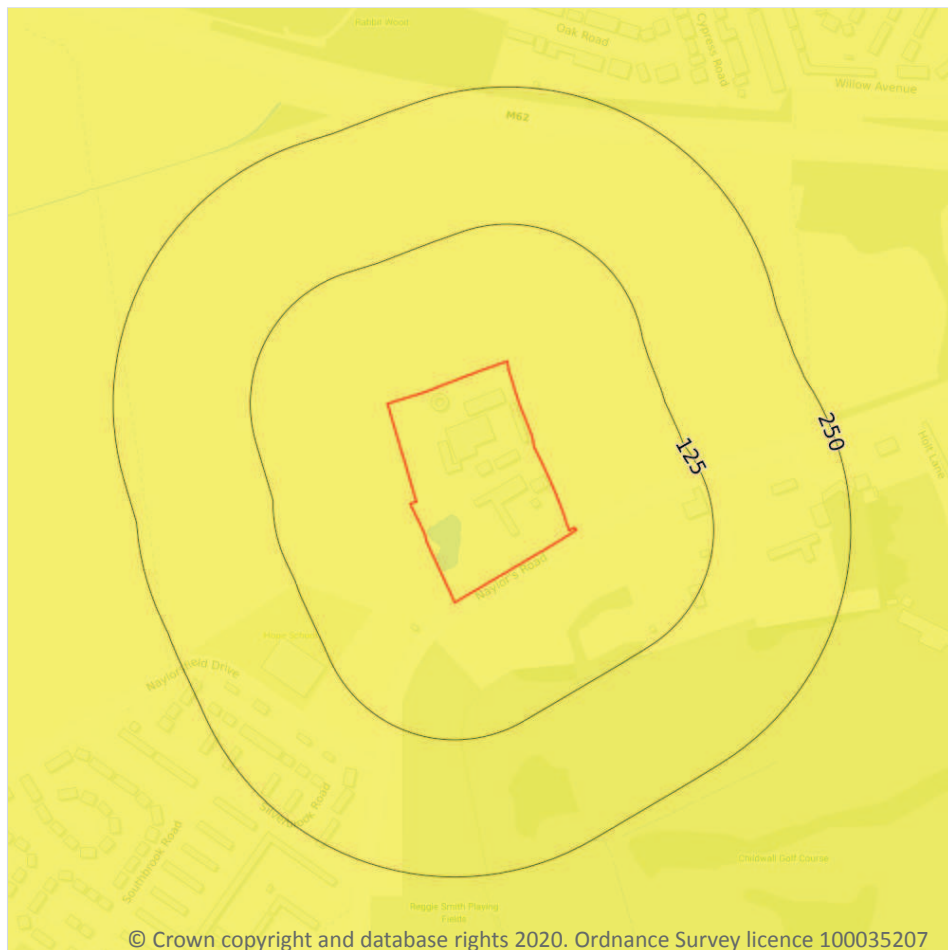
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 79**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



— Site Outline
Search buffers in metres (m)

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

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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.

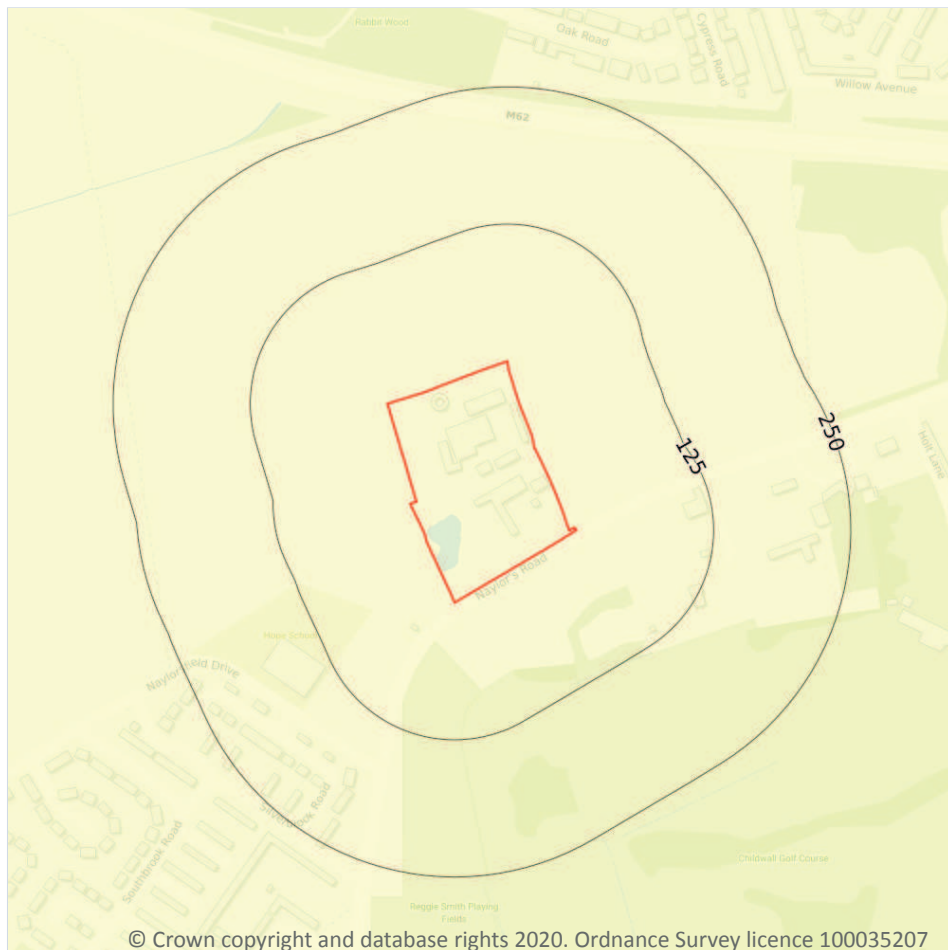
Features are displayed on the Natural ground subsidence - Landslides map on **page 80**

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



— Site Outline
Search buffers in metres (m)

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

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17.6 Ground dissolution of soluble rocks

Records within 50m

1

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

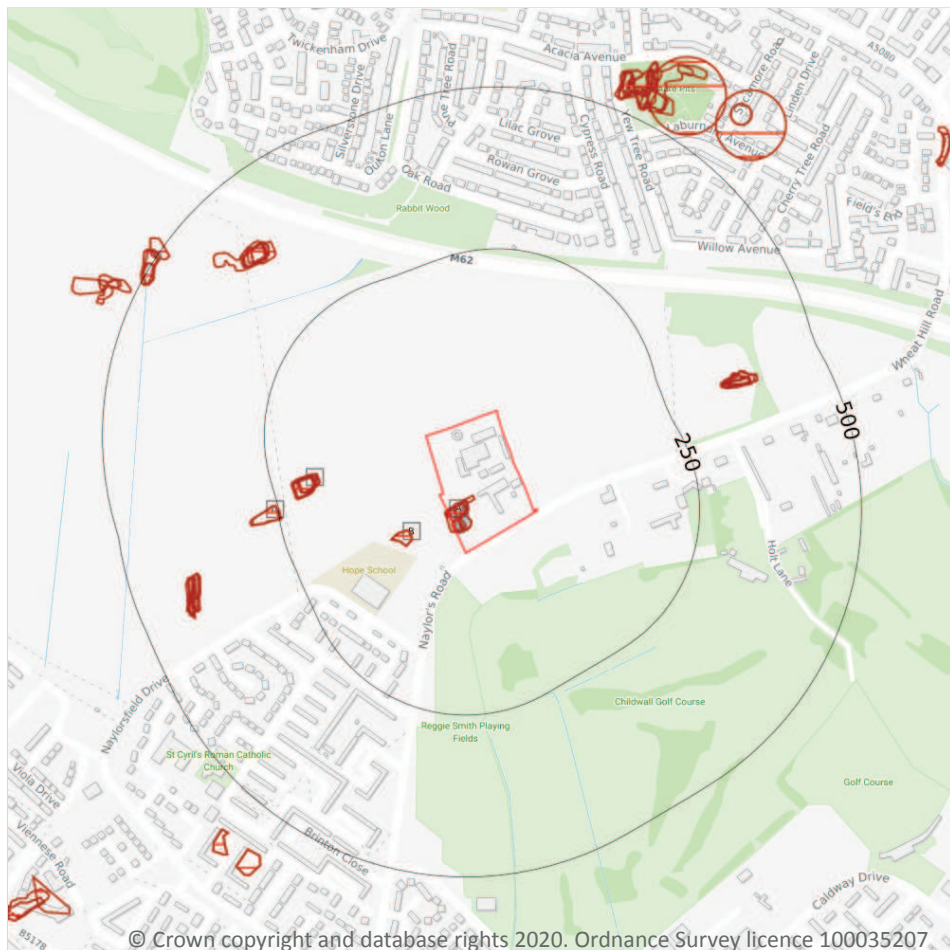
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 81**

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

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- 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 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 Peter Brett Associates (PBA).

18.2 BritPits

Records within 500m

0

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.

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

19

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, ground workings and natural cavities map on **page 82**

ID	Location	Land Use	Year of mapping	Mapping scale
A	On site	Ponds	1891	1:10560
A	On site	Pond	1967	1:10560
A	On site	Pond	1955	1:10560
A	On site	Pond	1980	1:10000
A	On site	Pond	1974	1:10000
A	On site	Ponds	1938	1:10560
B	64m SW	Pond	1967	1:10560
B	64m SW	Pond	1980	1:10000
B	64m SW	Pond	1974	1:10000
C	178m W	Pond	1967	1:10560
C	178m W	Pond	1980	1:10000
C	178m W	Pond	1974	1:10000
C	182m W	Pond	1955	1:10560
C	183m W	Pond	1938	1:10560
C	185m W	Pond	1925	1:10560
C	185m W	Pond	1906	1:10560
C	185m W	Pond	1925	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
C	188m W	Pond	1891	1:10560
D	247m W	Ponds	1938	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 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.

18.5 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 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 Peter Brett Associates (PBA).



18.8 JPB mining areas

Records on site	0
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Areas which could be affected by former coal mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0
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Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.10 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.

18.11 Gypsum areas

Records on site	0
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Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
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Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.



18.13 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).



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

Records on site	1
-----------------	---

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 87**

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

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

2

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 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
23m N	15 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.

20.2 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.

20.3 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.



21 Railway infrastructure and projects

21.1 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.

21.2 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.

21.3 Railway tunnels

Records within 250m**0**

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 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.

21.5 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.

21.6 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.

21.7 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.

21.8 Crossrail 1

Records within 500m

0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 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.

21.10 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: <https://www.groundsure.com/terms-and-conditions-jan-2020/>.



APPENDIX D: SITE PHOTOGRAPHS

Lakeside School – Site Walkover 12th June 2020.

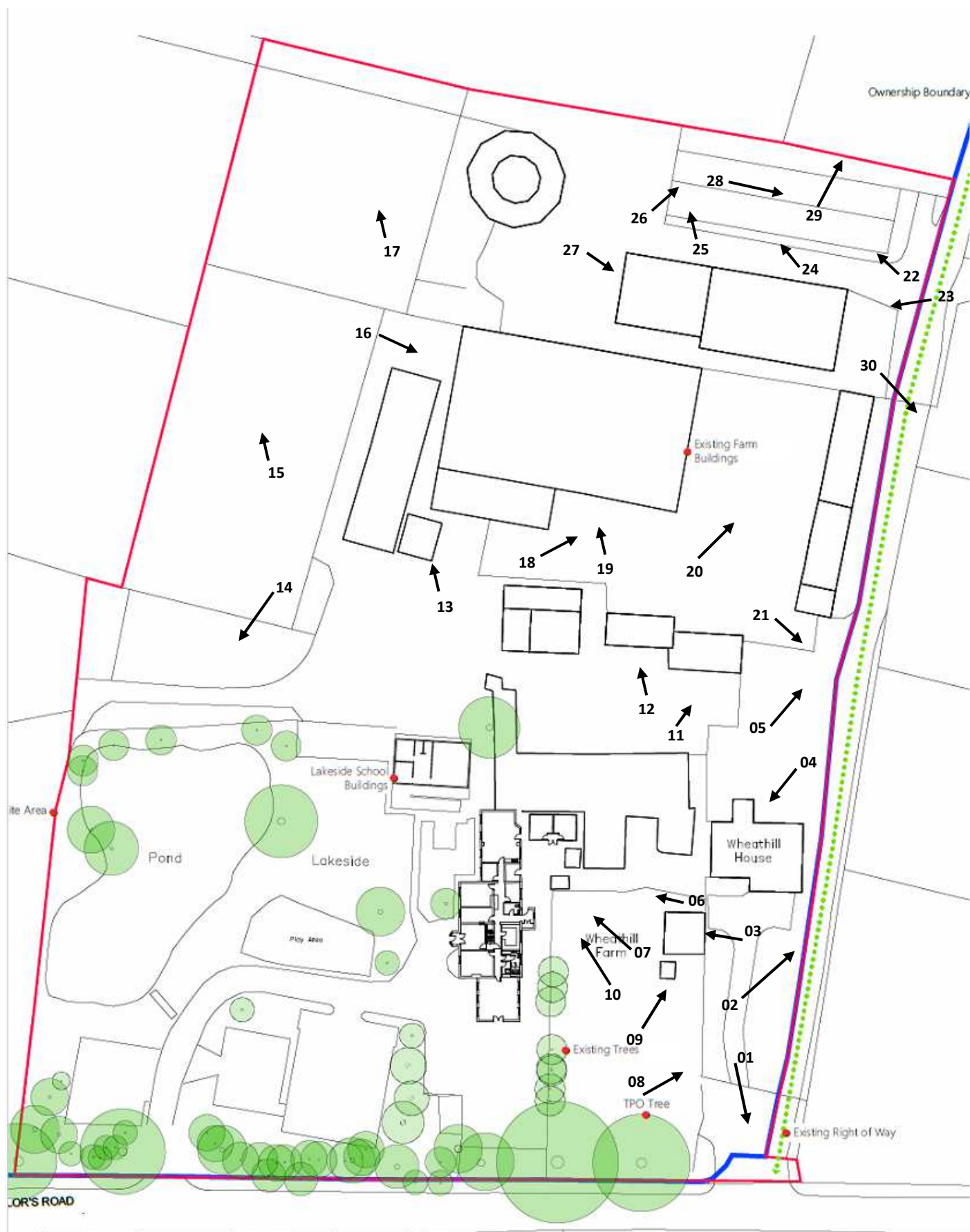


Photo:

Notes:



Photo 01: Driveway to Whitehill House at South East



Photo 02: Eastern Boundary to Residential Property. Property is of brick construction with a slate roof.



Photo 03: Fire damage to garage



Photo 04: Fire debris to rear of House



Photo 05: Fire damaged trees and pergola to house rear garden



Photo 06: Builders waste present in front garden area belonging to Whitehill House (south-eastern section of the site)



Photo 07: Conifer cuttings tipped in front garden area belonging to Whitehill House (south-eastern section of the site)



Photo 08: Furniture and household waste dumped in front garden area belonging to Whitehill House (south-eastern section of the site)



Photo 09: 2No. metal containers present in front garden area belonging to Whitehill House (south-eastern section of the site). Contents Unknown



Photo 10: General detritus behind conifer offcuts present in front garden area belonging to Whitehill House (south-eastern section of the site)



Photo 11: Rubble/steel/timber detritus located in the area encompassing the cluster farm buildings and associated yard areas



Photo 12: Brick & general rubble, including glass and bitumen located in the area encompassing the cluster farm buildings and associated yard areas



Photo 13: Burnt remains of portable trailer building located in the area encompassing the cluster farm buildings and associated yard areas



Photo 14: General detritus & builders rubbish located in the yard areas present in the west of the site.



Photo 15: Ash pile from previous bonfire located in the yard areas present in the west of the site.

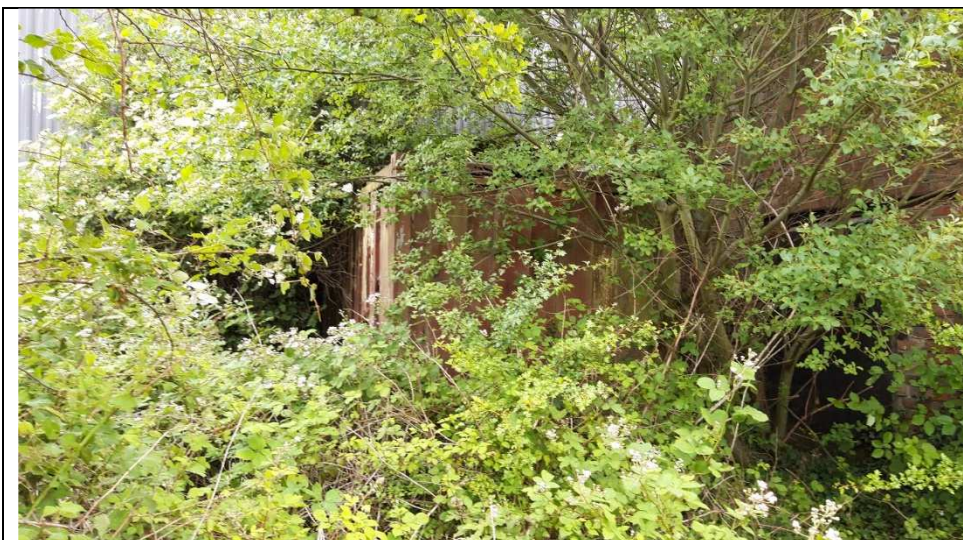


Photo 16: Steel container located in the area encompassing the cluster farm buildings and associated yard areas – contents unknown



Photo 17: Ash within flint surfacing materials located in the yard areas present in the west of the site.

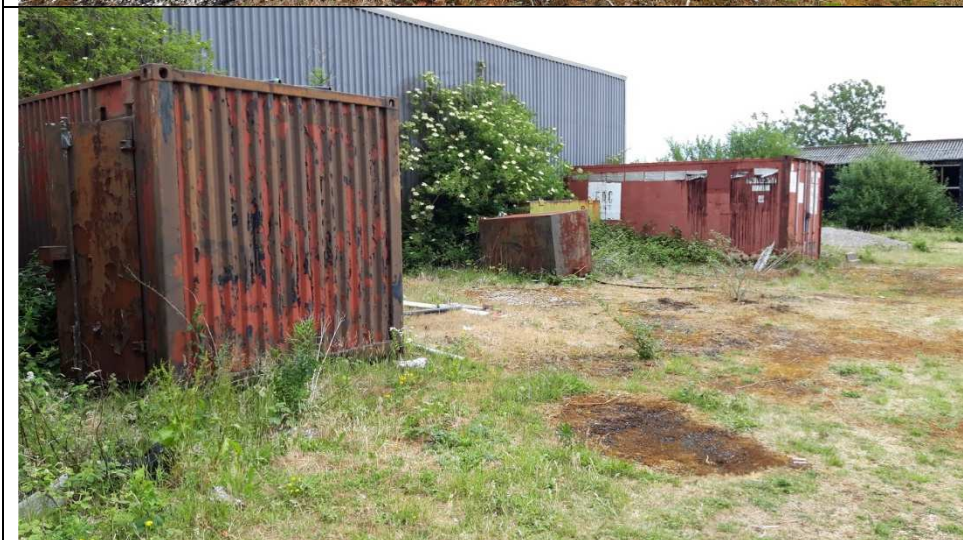


Photo 18: Steel containers and tanks located in the area encompassing the cluster farm buildings and associated yard areas (contents unknown)



Photo 19: General detritus located in the area encompassing the cluster farm buildings and associated yard areas



Photo 20: Stone chippings & general detritus located in the area encompassing the cluster farm buildings and associated yard areas



Photo 21: Burnt trees and debris to main site access at East located in the area encompassing the cluster farm buildings and associated yard areas



Photo 22: Fly tipping located in the area encompassing the cluster farm buildings and associated yard areas (north-east of the site)



Photo 23: Fly tipping of vehicle tyres located in the area encompassing the cluster farm buildings and associated yard areas (north-east of the site)



Photo 24: Partial remains of burnt out vehicle located in the area encompassing the cluster farm buildings and associated yard areas (north-east of the site)



Photo 25: Detritus and burnt materials (possibly tyres) located in the area encompassing the cluster farm buildings and associated yard areas (north-east of the site)



Photo 26: Detritus and burnt materials (possibly tyres) located in the area encompassing the cluster farm buildings and associated yard areas (north-east of the site)



Photo 27: General detritus located in the area encompassing the cluster farm buildings and associated yard areas (north-east of the site)



Photo 28: Fly tipped materials located in the area encompassing the cluster farm buildings and associated yard areas (north-east of the site)



Photo 29: Fly tipped materials located in the area encompassing the cluster farm buildings and associated yard areas (north-east of the site)



Photo 30: Fly tipped materials located in the area encompassing the cluster farm buildings and associated yard areas (north-east of the site)