Cuerden Hall

Phase 1 Preliminary Risk Assessment

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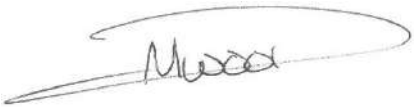
M Wood MSci (hons) Geo-Environmental Engineer		11/03/2021

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Executive Summary

Appointment	In February 2021, Curtins were instructed by Purcell UK (client) to undertake a Phase 1 Preliminary Geo-Environmental Assessment or 'desk study' at Cuerden Hall, Preston. This report has been undertaken in support of the proposed development on-site comprising the refurbishment of the existing country house including infill of the existing courtyard and swimming pool. The proposed development includes construction of a new swimming pool and refurbishment of the main house which includes several self-contained residential units, stables, cycle store, spa, and treatment rooms, living and entertainment rooms, catering spaces and landscaping.
Current Site Status	The development site currently comprises Cuerden House which includes the main house and stable block, located in the south eastern portion of the site with an approximate area of 75,000 square feet. The wider site is approximately 6.4 hectares and includes areas of hardstanding, landscaped gardens, and protected woodlands. Cuerden Hall currently comprises a three-storey house and basement to the east. The western portion of the house consists of stables, storage areas and servants' quarters, set around a rectangular courtyard.
Site History	Before the earliest available mapping was available, the site comprised a single building in the footprint of the current Cuerden Hall building. The present building dates from 1717, with a large extension to the east wing of the property circa 1816. From the earliest available mapping (circa 1848) the site consists of Cuerden Hall in the south east of the site area. Most of the site comprises woodland as part of the Lady Hoghton's Plantation and Mr. Wilbraham's Wood. The driveway to the house traverses east to west across the site. A tunnel undercuts the driveway north-south in the west of the site. In the 1890s the house is extended to the west and a parking/hard standing area is constructed along the northern edge of the house. The footprint of the house is as it is now in the present day. In the early 1900s during the First World War, the hall was adapted for use as an infirmary for troops, and between 1 Map 1915 and 8 June 1917 it as known as Cuerden Hall Auxiliary Hospital. In the 1930s and 1940s, during the Second World War, the estate was requisitioned by the Ministry of Defense and converted into an Army Educated Centre. Later becoming the British Army Divisional Head Quarters of the Anti-Aircraft Command. In the late 1960s and 1970s the estate was taken over by the Lancashire Development Corporation and established its headquarters, constructing new offices and car parks in the grounds. Several small rectangular buildings (assumed offices) have been constructed to the west of the main house. By 2001 these buildings have been demolished. In the 1980s, an electrical substation is identified within the western portion of the site. In 1985, the hall became a Sure Ryder Care Home for patients with neurological conditions. The surrounding area is vastly the wider Cuerden Hall Estate grounds and has historically utilised similar uses as the site itself, military and residential.
Geology	The British Geological Society records indicate that the site is predominately underlain by superficial deposits of Till, which is underlain by bedrock geology of the Sherwood Sandstone Group (eastern portion) and the Tarporley Siltstone Formation (western portion).
Hydrogeology	The site is underlain by Secondary Undifferentiated Aquifer associated with the superficial deposits, a Primary Aquifer associated with the Sherwood Sandstone Group, and a Secondary B Aquifer associated with the Tarporley Siltstone Formation. The site is not situated within any Environment Agency defined Source Protection Zone (SPZ). There are no licensed groundwater abstractions present within 500m of the development area.
Hydrology	Reference to the Environment Agency web site shows the site is located within the catchment of the Lostock US Farington Weir, with the specific river water body being the River Lostock. The current (2019 cycle 2) overall status under the Water Framework Directive is 'moderate'. The nearest surface watercourse to the subject site is a small stream located 4m south of the site boundary. The River Lostock is located 220m east of the site, which traverses north-south past the site. There are no surface water abstractions within 500m of the subject site. There are no active or historical discharge consents on-site nor have pollution incidents to controlled waters been recorded on-site.

Initial Ground Contamination Assessment	The desk study information indicates that the site is within am EA designated Flood Risk Zone 1.
	The qualitative risk assessment (QRA) determined an overall **Low to Moderate** level of risk to future site users and ground gases associated with the proposed development. The QRA concluded that further requirements comprising a generic quantitative risk assessment (GQRA) are required to determine the potential contamination risk on-site.
Recommendations	In summary, the following recommendations are made: • Undertake an intrusive ground investigation to support civil and structural design; and • Undertake GQRA for human health and ground gases. It is further recommended that this work is completed in advance of any development works taking place.

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Appendices

1.0 Introduction

1.1 Project Background

In February 2021, Curtins were instructed by Purcell UK (client) to undertake a Phase 1 Preliminary Geo-Environmental Assessment or 'desk study' at Cuerden Hall, Preston.

This report has been undertaken in support of the proposed development on-site comprising the refurbishment of the existing country house including infill of the existing courtyard and swimming pool. The proposed development includes construction of a new swimming pool and refurbishment of the main house which includes several self-contained residential units, stables, cycle store, spa and treatment rooms, living and entertainment rooms, catering spaces and landscaping. The proposed development masterplan at the time of writing is presented in Appendix A.

Consequently, a Phase 1 Preliminary Geo-Environmental Assessment is required to support a planning application for the proposed development and determine potential contamination risk on-site.

1.2 Scope

The Preliminary Geo-Environmental Assessment is intended to provide an overview of the geo-environmental setting of the site. The report will develop a working preliminary conceptual ground model for the site as well as present an initial assessment of geo-environmental risks that could be presented to the future development of the site.

Specifically, the PRA provides an initial assessment of the site with regard to:

a) Potential contamination of the site from historical and/or current use.

b) The potential impact on the wider environment from historical and/or current use.

c) The potential impact from surrounding land uses and other environmental factors.

d) Potential risks associated with geological features such as faulting, mineral extraction, mining, and land instability.

e) The location of apparent sub-surface structures that may affect the proposed redevelopment.

f) The location of above-surface features that may affect the proposed redevelopment.

The PRA is a desk-based exercise written using information provided from a desk based environmental study and any information made available to Curtins from the Client. The PRA can be utilised to inform the requirement for, and extent of, any future intrusive investigation work.

2.0 Desk Study

This desk study has been undertaken using the following data sources and publicly available information:

- Groundsure Report (1)
- British Geological Survey (2) (3)
- Environmental Agency Data (4)
- Historical Landfill Data (5)
- UK Radon Maps (6); and,
- Groundsure Enviro Data Reviewer (7).

Copies of reports and any other supporting information are presented in Appendix B.

2.1 Current Setting

The development site currently comprises Cuerden House which includes the main house and stable block, located in the south eastern portion of the site with an approximate area of 75,000 square feet. The wider site is approximately 6.4 hectares and includes areas of hardstanding, landscaped gardens, and protected woodlands. Cuerden Hall currently comprises a three-storey house and basement to the east. The western portion of the house consists of stables, storage areas and servants' quarters, set around a rectangular courtyard. The development site location plan is presented in Figure 2.1 below.

Figure 2.1 *Site Location Plan (approximate development boundary in blue, National Grid Reference 365308,423932)*

2.2 Surrounding Land Use

The immediate surrounding land use to the development site is highlighted in Table 2.2.

Table 2.2 *Surrounding Area*

Surrounding Area	N	Woodland and open grassed areas
	E	Woodland and open grassed areas
	S	Woodland and open grassed areas with commercial properties
	W	Residential housing

3.0 Site History

A review of the available historical mapping (1) and freely available information for the development area and surrounding area (<200m) has been undertaken. The historical change of the development area and surroundings are presented below in Table 3.0 and Table 3.1 respectively.

Table 3.0 *Previous Site Uses and Potential Sources of Contamination*

Date	Description	Potential Sources of Contamination
Pre-mapping	Before the earliest available mapping was available, the site comprised a single building in the footprint of the current Cuerden Hall building (evidence of this original building still exists in the basement of the current building). The present building dates from 1717, with a large extension to the east wing of the property circa 1816.	Uncontrolled deposition of Made Ground associated with construction.
1840s to 1900s	From the earliest available mapping (circa 1848) the site consists of Cuerden Hall in the south east of the site area. A water pump is located in the courtyard to the west of the main house and there are 2 greenhouses or conservatories on the southern exposure. Most of the site comprises woodland as part of the Lady Hoghton's Plantation and Mr. Wilbraham's Wood. The driveway to the house traverses east to west across the site. A tunnel undercuts the driveway north-south in the west of the site. In the 1890s the house is extended to the west and a parking/hard standing area is constructed along the northern edge of the house. A reservoir is present in the northeast corner of the site. The footprint of the house is as it is now in the present day.	Uncontrolled deposition of Made Ground associated with construction. Potential leakage and spillages of hydrocarbons associated with car parking use.
1900s-1960s	In the early 1900s during the First World War, the hall was adapted for use as an infirmary for troops, and between 1 Map 1915 and 8 June 1917 it as known as Cuerden Hall Auxiliary Hospital. In the 1930s and 1940s, during the Second World War, the estate was requisitioned by the Ministry of Defense and converted into an Army Educated Centre. Later becoming the British Army Divisional Head Quarters of the Anti-Aircraft Command.	Uncontrolled deposition of Made Ground associated with construction. Potential contamination or leakages/spillages associated with infirmary. Potential contaminants or dangerous materials associated with on-site military presence.
1960s to Present day	In the late 1960s and 1970s the estate was taken over by the Lancashire Development Corporation and established its headquarters, constructing new offices and car parks in the grounds. Several small rectangular buildings (assumed offices) have been constructed to the west of the main house. By 2001 these buildings have been demolished. The reservoir in the north east of the site is identified as marshland from the 1960s. In the 1980s, an electrical substation is identified within the western portion of the site. In 1985, the hall became a Sure Ryder Care Home for patients with neurological conditions.	Uncontrolled deposition of Made Ground associated with construction and demolition. Potential contamination or leakages/spillages associated with care home. Potential leakage and spillages of hydrocarbons associated with car parking use. Presence of PCBs from on-site electrical substation.

Table 3.1 *Surrounding Land Uses and Potential Sources of Contamination*

Date	Description	Potential Sources of Contamination
1860s to 1890s	From the earliest available mapping, the surrounding area has predominately comprised undeveloped land with open grassland and woodland. River Lostock is located 200m east of the site. A fishpond is located 50m southeast of the site. Three water pumps are located approximately 200m south and southwest of the site. A sand pit is located immediately to the south of the site. Several buildings are located immediately to the south (arranged around a courtyard) and 200m south (Berkeley Farm) and are indicated to include 'hot houses' and greenhouses. A straight road traverses north-south through the centre of the site, part of which consists of a tunnel which undercuts the site access road running east-west. The 'Clock House' is located 100m west of the site which includes several small buildings and tanks. In the 1890s a reservoir has been constructed 400m east of the site. The sand it is no longer present, presumably infilled.	Uncontrolled deposition of Made Ground associated with construction.
1900s to 1950s	In the early 1900s, sewage beds are indicated 250m north east of the site. A possible sand pit or pond is located 50m south of the site. By the 1920s, tanks are no longer recorded on the map at the 'Clock House'. By the 1950s numerous small rectangular buildings have been constructed between the east and west portions of the site. The developed area to the south of the site has been extended to include several small rectangular buildings. A row of small rectangular buildings has been constructed to the southeast of the site. (These are developed within the wider Cuerden Hall Estate are potentially associated with the military presence and activities.	Uncontrolled deposition of Made Ground associated with construction and demolition. Potential contaminants or dangerous materials associated with off-site military presence.
1960s	In the 1960s the sewage beds are no longer noted on the map. The M6 is now under construction 100m to the north west of the site, traversing northeast to southwest. In the late 1960s and 1970s the estate was taken over by the Lancashire Development Corporation and established its headquarters, constructing new offices and car parks in the grounds. Circa 1967, the buildings between the east and west portions of the site have been demolished and replaced by tennis courts and residential housing. The buildings immediately to the south of the site have also been demolished and new square buildings constructed in their place. The rectangular buildings to the southeast of the site have also been demolished. By the 1970s, residential housing has been developed in the area between the east and west portions of the site. In the 1980s, an electrical substation is identified 50m to the south of the site.	Uncontrolled deposition of Made Ground associated with construction and demolition. Presence of PCBs from nearby electrical substation.

Limited information is available relating to the site history before the 1860s when the first ordnance survey maps were produced. Potential sources of on-site contamination are further discussed in Section 5.0.

3.1 Detailed Unexploded Ordnance (UXO) Risk Assessment

The likelihood of UXO being encountered on a development site is influenced by a number of factors including: the proximity to strategic targets, the nature of the development works being undertaken and

evidence of local damage in the post-war periods amongst others. In general accordance with CIRIA Report C681 (Stone et al 2009). In order to determine the likelihood of UXO being present on a site, a step-wise risk assessment process is followed. This process is outlined within CIRIA C681 Unexploded Ordnance: A Guide for the Construction Industry.

During the First World War the Hall was adapted for use as an infirmary for troops, and between 1 May 1915 and 8 June 1917 it was known as Cuerden Hall Auxiliary Hospital. During the Second World War, the estate was requisitioned by the Ministry of Defence and converted into an Army Education Centre. Later, it became the British Army Divisional Headquarters of the Anti-Aircraft Command. In 1958, the Hall was sold to the Ministry of Defence and it became the Army's Headquarters North West District between 1967 and 1977.

Although the site has had a long history of occupation by the military, a review of historical mapping, as detailed in Table 3.1, did not highlight any bombing targets pre-WWII nor indications of bombing within the area i.e. ruins etc post WWII. Furthermore, reference to Unexploded Bomb (UXB) Maps, provided by Zetica UXO (8), indicated that the site is within an area deemed **Low Risk** with regards to potential for unexploded ordnance.

Given that above, the production of a UXO Risk Management Plan is recommended for all future works on-site.

4.0 Geology, Hydrogeology and Hydrology

4.1 Geology

A study of the Groundsure report (1) and British Geological Survey (BGS) 1:50,000 mapping records (Bedrock and Superficial Editions) for Preston (Sheet 75) (3) indicates the following geological succession underlying the site:

Table 4.1 *Geological/Hydrogeological Succession*

Geology	Associated Hydrogeological Classification
Worked Ground deposits are recorded on geological mapping in the north east areas of the site (historic reservoir).	N/A
Superficial deposits are recorded as Till, Devensian comprising sedimentary deposits.	Secondary Aquifer – Undifferentiated[1]
Bedrock deposits in the eastern portion of the site are recorded as the **Sherwood Sandstone Group (SSG)** likely to comprise sandstone.	Principal Aquifer[2]
Bedrock deposits in the western portion of the site are recorded as the **Tarporley Siltstone Formation (TSF)**, comprising interbedded mudstone siltstone, and sandstone.	Secondary B Aquifer[3]

Notes:
1. These aquifers are cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.
2. 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.
3. Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.

4.1.1 Historical BGS Borehole Records

A review of historical BGS borehole records (2), recorded several historical boreholes within 500m of the development area. The nearest was located approximately 50m southeast of the site (SD52SE613) and recorded the following:

- Ground level to 0.20m bgl: Topsoil
- 0.2m to 1.0m: Sandy stony CLAY (potential Till)
- 1.0 to 3.5m: Bouldery CLAY (potential Till)
- 3.5m to 5.8m: SAND and GRAVEL (potential Till)
- 5.8m to 20.2: Interbedded SAND, CLAY and GRAVEL (potential Sherwood Sandstone Group)

Ground water seepage was recorded at 14.9m bgl.

4.2 Hydrogeology

The site is not situated within any Environment Agency defined Source Protection Zone (SPZ).

There are no licensed groundwater abstractions present within 500m of the development area.

The groundwater body beneath the western portion of the site (West Lancashire Quaternary Sand and Gravel Aquifers) is currently classified under the Water Framework Directive as 'Good'.

The groundwater body beneath the eastern portion of the site (Fylde Permo-Triassic Sandstone Aquifers) is currently classified under the Water Framework Directive as 'Poor'.

4.3 Hydrology

Reference to the Environment Agency web site shows the site is located within the catchment of the Lostock US Farington Weir, with the specific river water body being the River Lostock. The current (2019 cycle 2) overall status under the Water Framework Directive is 'moderate'.

The nearest surface watercourse to the subject site is a small stream located 4m south of the site boundary. The River Lostock is located 220m east of the site, which traverses north-south past the site.

There are no surface water abstractions within 500m of the subject site.

There are no active or historical discharge consents on-site nor have pollution incidents to controlled waters been recorded on-site. There are three historical licensed discharges to controlled waters consents within 250m of the site. The discharge consents consist of sewage discharges – final/treated effluent, located 95m south and 135m south, and miscellaneous emergency discharges northwest. These are discharged to tributary water courses of the River Lostock.

4.4 Flood Risk

The desk study information indicates that the site is within an Environment Agency designated Flood Risk Zone 1.

4.5 Mining or Mineral Extraction

A review of the Groundsure (1) report indicated that there is no record of historical mining or mineral extraction on site. There is however a sand pit recorded in the ordnance survey maps located immediately south of the site, which is not listed in the Groundsure report.

There are several records of surface and underground workings recorded on site. These are related to the reservoir located in the northeast of the site and the tunnel beneath the access road in the west of the site.

4.6 Natural Ground Subsidence

The Groundsure report (1) confirms that there is low to no hazard from the following ground stability hazards on the site: collapsible ground, compressible ground, ground dissolution, landslide, running sands, and shrink/swell clays.

4.7 Ground Gas and Radon

There is an active landfill located 183m northwest of the subject site (1) (5). The recorded operator is J A Jackson Contractors and is identified by Groundsure Enviro Data Viewer (7) as Lydiate Lane Quarry and accepts inert waste.

Radon information within the Groundsure report (1) and the Public Health England radon mapping confirms that the site is in a lower probability radon area, where less than 1% of properties are estimated to be above the radon action level. On this basis, basic radon protection measures are not considered necessary within the construction of new dwellings or extensions and radon protection risk assessments have not been considered further.

4.8 Regulatory Data

Information in the Groundsure Report (1), relating to various regulatory controls has been reviewed, with a summary presented below in Table 4.8.

Table 4.8 *Regulatory information within 250m of the site*

Regulatory Data	Distance from Site	Details
Historical Landfill Sites	>250m	None recorded within 250m of the subject site.
Local Authority Recorded Landfill Sites	>250m	None recorded within 250m of the subject site
Local Authority Pollution Prevention and Controls	>250m	None recorded within 250m of the subject site.
Registered Waste Exemptions	On site	Treating Wase Exemption: Sorting and de-naturing of controlled drugs for disposal.
Registered Waste Transfer Sites	>250m	None recorded within 250m of the subject site.
Registered Waste Treatment or Disposal Sites	>250m	None recorded within 250m of the subject site.
Licensed Waste Management Facilities	>250m	None recorded within 250m of the subject site.
Fuel Station Entries	>250m	None recorded within 250m of the subject site.

Regulatory Data	Distance from Site	Details
Registered Radioactive Substances	>250m	None recorded within 250m of the subject site.

4.9 Contemporary Trade Directory Entries

There are no contemporary trade directory entries registered for the site.

There is an electrical substation on site in the western portion of the site, and another located approximately 50m southwest of the footprint of Cuerden Hall House in the eastern portion of the site.

5.0 Preliminary Conceptual Site Model & Qualitative Risk Assessment

The Conceptual Site Model (CSM) and Qualitative Risk Assessment (QRA) are presented in the table within this section.

The CSM details the source-pathway-receptor linkages or potential contaminant linkages (PCLs) that have been identified for the site. The QRA details the associated level of risk relating to these PCLs.

The CSM and QRA concern the major risks to human health and controlled waters with additional, more specific risk assessment protocols contained within the main body of this reporting, as detailed in Section 5.1 below.

The QRA follows the framework outlined within CIRIA C552 which is summarised within Appendix C.

The 'risk rating' within the QRA refers to the risk that the source, pathway, receptor linkage or PCL is complete. Unless specifically stated it does not necessarily refer to an immediate risk and is intended to be used as a tool to assess the necessity for further assessment/investigation.

5.1 Additional Risk Assessments

The following risk assessments, listed below, are not included within the main CSM and QRA but none-the-less can be of critical importance to the onward development of the site.

- The risk presented by **Unexploded Ordnance** is discussed in Section 3.1.
- The risk presented by **Radon** is discussed and assessed in Section 4.7

Under current health and safety legislation, employers are required to carry out their own appropriate risk assessments and mitigation to protect themselves and their employees, other human receptors and the environment from potential contamination. Such risks must be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015 which require that potential risks to human health and the environment from construction activities are appropriately identified and all necessary steps taken to eliminate / manage that risk. It has been assumed that any future construction works on site will be undertaken in compliance with these requirements and therefore construction workers involved in the building works at the site have been discounted as a human receptor in the conceptual site model.

- The table below represents the first stage in the land quality risk assessment process: The Qualitative Risk Assessment.
- In order for a development site to be deemed 'suitable for use', the level of risk needs to be brought down to acceptable levels, i.e. low to negligible risk. The purpose of each stage of risk assessment is ultimately to establish, if there is a requirement for additional levels of assessment to be made in order to have sufficient confidence to support a risk characterisation or management decision, e.g. remedial action.
- In the absence of specific site data a Generic Quantitative Risk Assessment is invariably recommended.

Conceptual Site Model			Qualitative Risk Assessment			
Source	**Pathway(s)**	**Receptor(s)**	**Consequence (Potential Severity)**	**Likelihood of Occurrence**	**Risk Rating**	**Action**
On-site sources of potential contamination: Uncontrolled deposition of Made Ground associated with various phases of construction and demolition. Potential clinical waste associated with infirmary/hospital use or dangerous materials associated with on-site military presence.	**Inhalation of vapours/dust/fibres and direct contact/ingestion of soils and homegrown produce**	**End users of site (Residential)** **Residents, visitors, and trespassers**	**Medium** Chronic health risk	**Low Likelihood** The development area has undergone several phases of construction and demolition and has been utilised for several different uses including an infirmary during WWI, a military education centre and headquarters during WWII, and most recently a care home. Consequently, the underlying Made Ground deposits likely to comprise solid phase contaminants (i.e. ash, clinker, asbestos) which has the potential to present a risk to future site users in areas of soft landscaping, with hardstanding likely to break any contaminant pathways. Given the above and historical site use, it is considered a low to moderate potential risk to future site users when considered the sensitivity of the proposed land use (Residential).Consequently, it is recommended that a Generic Quantitative Risk Assessment (GQRA) is undertaken as part of the ground investigation to further determine the risk.	**Low to Moderate**	**GQRA as part of the ground investigation.**
Potential leakage and spillages of hydrocarbons associated with car parking use. Potential presence of PCBs from on site electrical substation. *Potential contaminants of concern associated with the above sources include, amongst others; hydrocarbons including diesel range organics from fuel spillages, polycyclic aromatic hydrocarbons arising from incomplete combustion and a wide range of inorganic compounds including metals and non-metals and asbestos.*	**Vertical and horizontal migration through the Made Ground and residual soils** May occur due to processes including capillary action.	**Controlled waters (Groundwater and Surface Water)** Principal Aquifer – Bedrock (SSG). Secondary B Aquifer – Bedrock (TSF). Secondary Aquifer (Undifferentiated) – Superficial (Till) Nearest watercourse 4m south. River Lostock 220m east	**Medium** Pollution of sensitive water resources	**Low Likelihood** Made Ground deposits related to historical phases of construction and demolition are likely to be present on site. These are likely to comprise solid phase contaminants and potential Asbestos fibres as opposed to gross mobile phase contaminants. If and where, contaminants would be present within such Made Ground would likely be as solid phase contaminants in granular material (i.e. ash, PCBs from nearby electrical substations) and consequently, the mechanism for contaminant migration would be through 'leaching' in areas of soft landscaping. Consequently, at this stage given the potential for solid, mobile phase and inorganic contaminants directly overlying the Principal and Secondary A Aquifer there is a potential contaminative risk to groundwater.	**Low to Moderate**	**Confirmation of no gross or mobile phase contamination as part of the ground investigation**
Off-site sources of potential contamination: Potential presence of PCBs from electrical substation 50m south of the site. Potential contaminants or dangerous materials associated with off-site military presence.	**Horizontal migration through the Made Ground/superficial deposits,** followed by **Inhalation of vapours**	**End users of site** Site users, visitors, and trespassers	**Medium** Chronic health risk	**Unlikely** The immediate surrounding area is vastly the wider Cuerden Hall Estate and historically has comprised similar uses as the site itself, military and residential and are considered equivalent to no greater contaminant sources than on-site sources. As such it is considered unlikely that off-site sources have the potential to migrate onto the site and present a potential risk to future site users.	**Low**	**GQRA as part of the ground investigation.**
Potential on- and off-site sources of ground gases Uncontrolled deposition of Made Ground within localised areas. Active landfill/quarry located <250m west of site.	**Vertical and horizontal migration through existing service corridors and the underlying residual soils**	**End users of site** Staff, residents, visitors, and trespassers	**Severe** Acute health risk	**Low Likelihood** It is anticipated that Made Ground thickness on-site is likely to vary from localised areas less than 1.0m thickness and areas greater than 1.0m thickness, as part of the estate's development. It is likely that in terms of 'gassing potential' the Made Ground would be considered 'inert' due to the phases of development being residential in purpose. Based on the above, it is considered a low likelihood that ground gases would present a risk to future site users, with a GQRA as part of the ground investigation to further determine the risk.	**Low**	**GQRA as part of the ground investigation.**

6.0 Conclusions & Recommendations

The qualitative risk assessment (QRA) determined an overall Low to Moderate level of risk to future site users and ground gases associated with the proposed development. The QRA concluded that further requirements comprising a generic quantitative risk assessment (GQRA) are required to determine the potential contamination risk on-site.

It is recommended that the GQRA are conducted as part of a ground investigation in support of the engineering design of the proposed development an outline scope for which is detailed in the section hereafter

In summary, the following recommendations are made:

- Undertake an intrusive ground investigation to support civil and structural design; and,
- Undertake a GQRA for human health and ground gases.

It is further recommended that this work is completed in advance of any development works taking place.

7.0 References

1) **Groundsure Report** *Groundsure Report. Ref. GS-7614210* January 2021

2) **British Geological Survey** *BGS Opengeoscience, https://www.bgs.ac.uk/data/mapViewers/home.html* accesssed January 2021

3) **British Geological Survey** *BGS 1:50,000 Geological Mapping, Solid and Drift - Sheet No.75, Preston* 1996

4) **Environment Agency** *Environment Agency Data, www.magic.defra.gov.uk*accessed January 2021

5) **Environment Agency** *Historical Landfill Data, https://data.gov.uk/dataset/17edf94f-6de3-4034-b66b-004ebd0dd010/historic-landfill-sites*accessed January 2021

6) **Public Health England** *UK Radon Atlas, https://www.ukradon.org/*accessed March 2021

7) **Groundsure Enviro Data Viewer** *Groundsure, https://groundsure.io* accessed March 2021

Appendices

Appendix A **Drawings**

Appendix B **Supporting Information**

Appendix C **Risk Assessment Rationale**

Appendix A Drawings

NOTES

Do not scale from drawing to ascertain dimensions.

Any error or omission must be reported to Ominic Design Limited before proceeding with any work.

All displayed dimensions and levels should be verified on site by the contractor prior to commencement of work.

LEGEND

- Wooded area
- Grass– lawn
- Planted area
- Building
- Paves / road areas

355992m

424127m

561 562 563 564 565

241

240

239

423816m

356538m

Wigan Lodge Wood

58.5m

Subway

El Sub Sta

Wilbraham's Wood

Path (um)

Lady Hoghton's Plantation

Entrance

Cuerden Hall

SD

Tennis Courts

CUERDEN CLOSE

Pond

Drain

63.1m

El Sub Sta

FS

20 0 20 40 60 80 100

N

No.	REVISION	DATE
A	Drawing re-scaled from A4 to A1	27/9/10

Sue Ryder Care

Cuerden Hall
Preston

Existing Site Plan

DATE	DRAWN	APPROVED
26/09/10	IDG	IDG

FILE REF: 100803_CUE.dwg

SCALE	DATE PLOTTED	PLOTTED
1:600 @ A0		

JOB No	DRAWING No	REV
100803	112/75/1	

SIGNED:

NAME:

DEPARTMENT:

AS SURVEYED

TEL: 07947 877759
EMAIL: ENQUIRIES@OMINICDESIGN.CO.UK
OMINIC DESIGN LIMITED : 20 AUSTIN ROAD : ORPINGTON : KENT : BR5 2BU

OMINIC

Cuerden Ground Floor Plan as proposed

1:100 @ A0

0 1m 2m 3m 4m 5m 6m

Appendix B Supporting Information

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

CAFE, CUERDEN HALL, SHADY LANE, CUERDEN, BAMBER BRIDGE, PR5 6AZ

Order Details

Date: 01/03/2021

Your ref: Cuerden_Hall

Our Ref: GS-7614210

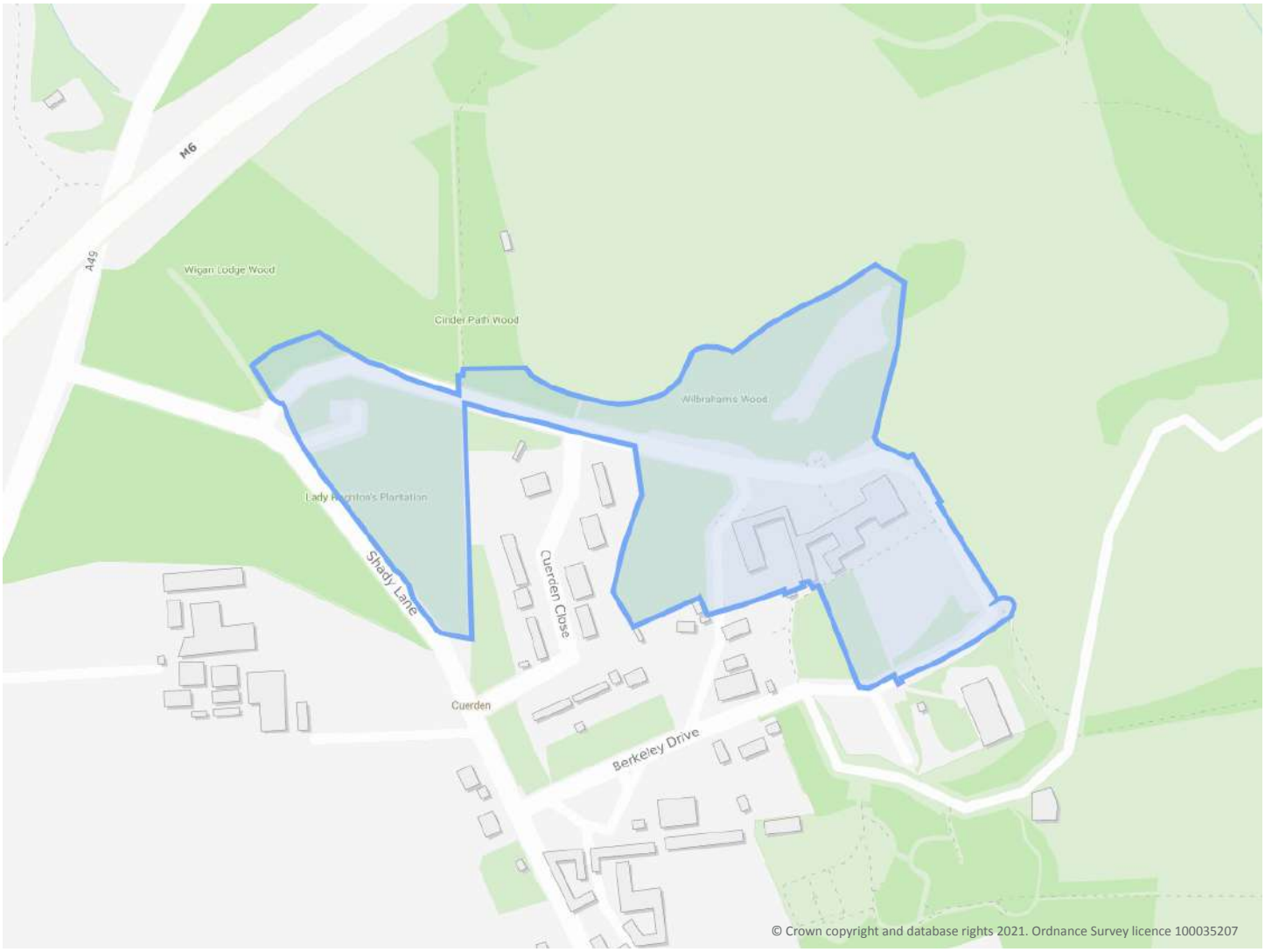
Client: Curtins Consulting

Site Details

Location: 356308 423932

Area: 6.39 ha

Authority: Chorley Council



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	1.1	Historical industrial land uses	5	2	5	18	-
16	1.2	Historical tanks	0	0	3	0	-
16	1.3	Historical energy features	0	0	1	0	-
17	1.4	Historical petrol stations	0	0	0	0	-
17	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	2.1	Historical industrial land uses	12	4	7	28	-
20	2.2	Historical tanks	0	0	4	0	-
21	2.3	Historical energy features	0	0	3	0	-
21	2.4	Historical petrol stations	0	0	0	0	-
21	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	1	0	-
24	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
24	3.5	Historical waste sites	0	0	0	0	-
24	3.6	Licensed waste sites	0	0	0	0	-
25	3.7	Waste exemptions	3	12	32	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
30	4.1	Recent industrial land uses	0	1	2	-	-
31	4.2	Current or recent petrol stations	0	0	0	0	-
31	4.3	Electricity cables	0	0	0	0	-
31	4.4	Gas pipelines	0	0	0	0	-
31	4.5	Sites determined as Contaminated Land	0	0	0	0	-

31	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
32	4.7	Regulated explosive sites	0	0	0	0	-
32	4.8	Hazardous substance storage/usage	0	0	0	0	-
32	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
32	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
32	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
33	4.12	Radioactive Substance Authorisations	0	0	0	0	-
33	**4.13**	**Licensed Discharges to controlled waters**	0	0	3	1	-
34	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
34	4.15	Pollutant release to public sewer	0	0	0	0	-
34	4.16	List 1 Dangerous Substances	0	0	0	0	-
34	4.17	List 2 Dangerous Substances	0	0	0	0	-
34	**4.18**	**Pollution Incidents (EA/NRW)**	0	1	0	2	-
35	4.19	Pollution inventory substances	0	0	0	0	-
35	4.20	Pollution inventory waste transfers	0	0	0	0	-
35	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
36	**5.1**	**Superficial aquifer**	Identified (within 500m)				
38	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
40	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
42	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
42	5.5	Groundwater vulnerability- local information	None (within 0m)				
43	**5.6**	**Groundwater abstractions**	0	0	0	0	14
47	**5.7**	**Surface water abstractions**	0	0	0	0	3
48	5.8	Potable abstractions	0	0	0	0	0
48	5.9	Source Protection Zones	0	0	0	0	-
48	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
49	**6.1**	**Water Network (OS MasterMap)**	0	1	5	-	-

50	**6.2**	**Surface water features**	0	1	6	-	-
50	**6.3**	**WFD Surface water body catchments**	1	-	-	-	-
51	**6.4**	**WFD Surface water bodies**	0	0	1	-	-
51	**6.5**	**WFD Groundwater bodies**	2	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
53	7.1	Risk of Flooding from Rivers and Sea (RoFRaS)	None (within 50m)				
53	7.2	Historical Flood Events	0	0	0	-	-
53	7.3	Flood Defences	0	0	0	-	-
53	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
54	7.5	Flood Storage Areas	0	0	0	-	-
55	7.6	Flood Zone 2	None (within 50m)				
55	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding	
56	**8.1**	**Surface water flooding**	1 in 30 year, 0.3m - 1.0m (within 50m)

Page	Section	Groundwater flooding	
58	**9.1**	**Groundwater flooding**	Low (within 50m)

Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
59	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
60	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
60	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
60	10.4	Special Protection Areas (SPA)	0	0	0	0	0
60	10.5	National Nature Reserves (NNR)	0	0	0	0	0
61	**10.6**	**Local Nature Reserves (LNR)**	0	0	0	0	2
61	10.7	Designated Ancient Woodland	0	0	0	0	0
61	10.8	Biosphere Reserves	0	0	0	0	0
61	10.9	Forest Parks	0	0	0	0	0
62	10.10	Marine Conservation Zones	0	0	0	0	0
62	**10.11**	**Green Belt**	1	0	1	0	1
62	10.12	Proposed Ramsar sites	0	0	0	0	0

62	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
63	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
63	10.15	Nitrate Sensitive Areas	0	0	0	0	0
63	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
64	**10.17**	**SSSI Impact Risk Zones**	2	-	-	-	-
65	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
66	11.1	World Heritage Sites	0	0	0	-	-
67	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
67	11.3	National Parks	0	0	0	-	-
67	**11.4**	**Listed Buildings**	3	0	1	-	-
68	11.5	Conservation Areas	0	0	0	-	-
68	11.6	Scheduled Ancient Monuments	0	0	0	-	-
68	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
69	**12.1**	**Agricultural Land Classification**	Grade 3b (within 250m)				
70	12.2	Open Access Land	0	0	0	-	-
70	**12.3**	**Tree Felling Licences**	0	0	1	-	-
70	**12.4**	**Environmental Stewardship Schemes**	0	0	3	-	-
71	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
72	**13.1**	**Priority Habitat Inventory**	9	3	27	-	-
74	**13.2**	**Habitat Networks**	0	0	1	-	-
74	13.3	Open Mosaic Habitat	0	0	0	-	-
75	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
76	**14.1**	**10k Availability**	Identified (within 500m)				
77	**14.2**	**Artificial and made ground (10k)**	1	2	5	14	-
79	**14.3**	**Superficial geology (10k)**	1	0	3	11	-

80	14.4	Landslip (10k)	0	0	1	0	-
81	14.5	Bedrock geology (10k)	2	1	0	1	-
82	14.6	Bedrock faults and other linear features (10k)	0	0	0	1	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
83	15.1	50k Availability	Identified (within 500m)				
84	15.2	Artificial and made ground (50k)	0	0	0	1	-
85	15.3	Artificial ground permeability (50k)	0	0	-	-	-
86	15.4	Superficial geology (50k)	1	0	4	9	-
87	15.5	Superficial permeability (50k)	Identified (within 50m)				
87	15.6	Landslip (50k)	0	0	0	0	-
88	15.7	Landslip permeability (50k)	None (within 50m)				
89	15.8	Bedrock geology (50k)	2	0	1	1	-
90	15.9	Bedrock permeability (50k)	Identified (within 50m)				
90	15.10	Bedrock faults and other linear features (50k)	0	0	0	1	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
91	16.1	BGS Boreholes	0	2	19	-	-
Page	Section	Natural ground subsidence					
93	17.1	Shrink swell clays	Very low (within 50m)				
94	17.2	Running sands	Very low (within 50m)				
95	17.3	Compressible deposits	Negligible (within 50m)				
96	17.4	Collapsible deposits	Very low (within 50m)				
97	17.5	Landslides	Low (within 50m)				
99	17.6	Ground dissolution of soluble rocks	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
100	18.1	Natural cavities	0	0	0	0	-
101	18.2	BritPits	0	0	0	4	-
102	18.3	Surface ground workings	8	4	18	-	-
103	18.4	Underground workings	8	0	0	0	0
104	18.5	Historical Mineral Planning Areas	0	0	1	0	-

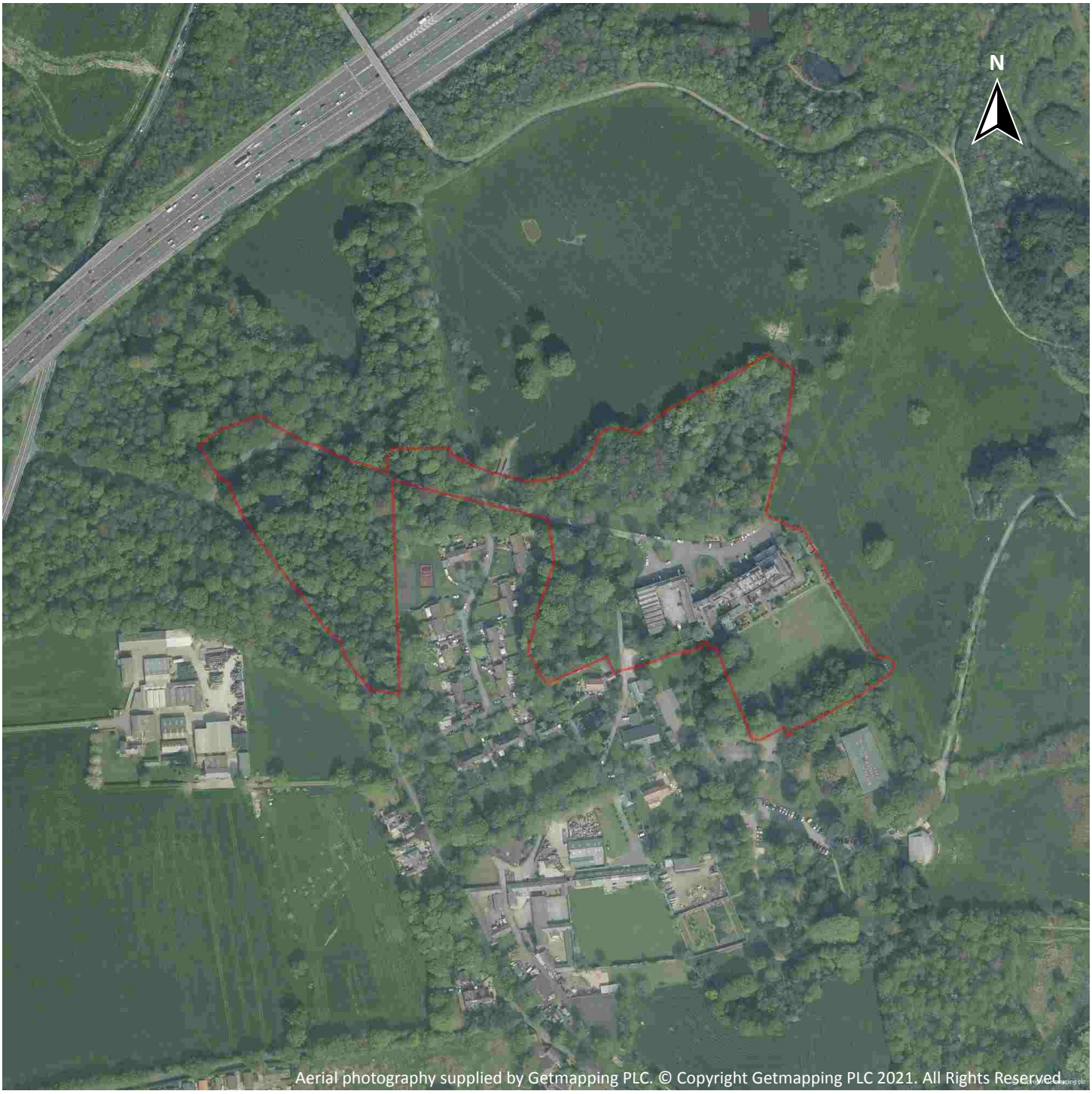
104	**18.6**	**Non-coal mining**	0	0	0	0	1
104	18.7	Mining cavities	0	0	0	0	0
105	**18.8**	**JPB mining areas**	Identified (within 0m)				
105	18.9	Coal mining	None (within 0m)				
105	18.10	Brine areas	None (within 0m)				
105	18.11	Gypsum areas	None (within 0m)				
106	18.12	Tin mining	None (within 0m)				
106	18.13	Clay mining	None (within 0m)				

Page	Section	Radon					
107	**19.1**	**Radon**	Less than 1% (within 0m)				

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
108	**20.1**	**BGS Estimated Background Soil Chemistry**	7	10	-	-	-
109	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
109	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
110	21.1	Underground railways (London)	0	0	0	-	-
110	21.2	Underground railways (Non-London)	0	0	0	-	-
111	21.3	Railway tunnels	0	0	0	-	-
111	**21.4**	**Historical railway and tunnel features**	15	0	0	-	-
112	21.5	Royal Mail tunnels	0	0	0	-	-
112	21.6	Historical railways	0	0	0	-	-
112	21.7	Railways	0	0	0	-	-
112	21.8	Crossrail 1	0	0	0	0	-
112	21.9	Crossrail 2	0	0	0	0	-
113	21.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 22/04/2019

Site Area: 6.39ha

Recent site history - 2015 aerial photograph

Capture Date: 22/04/2015

Site Area: 6.39ha

Recent site history - 2007 aerial photograph

Capture Date: 02/06/2007

Site Area: 6.39ha

Recent site history - 2001 aerial photograph

Capture Date: 07/05/2001

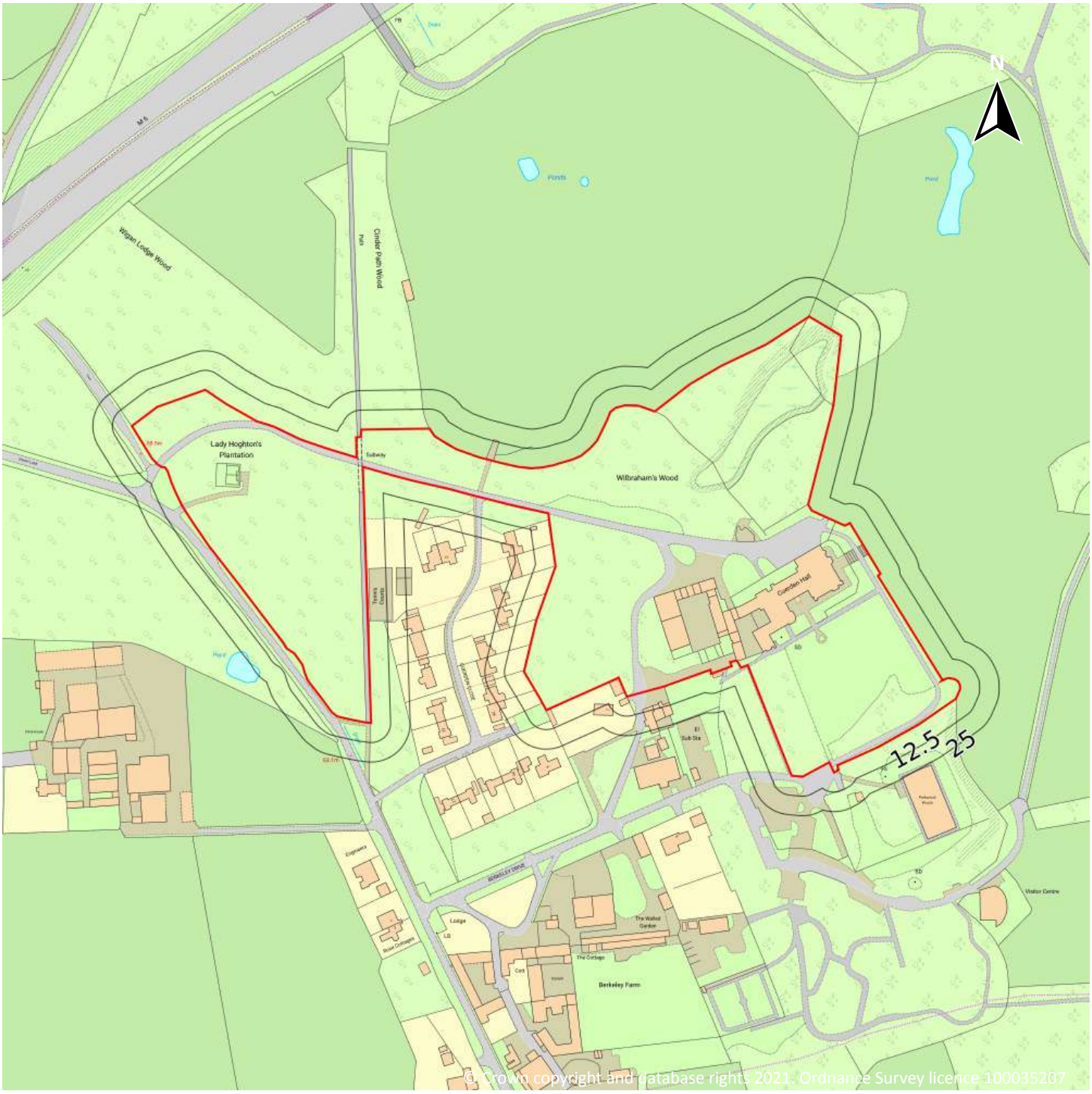
Site Area: 6.39ha

Recent site history - 2000 aerial photograph

Capture Date: 08/05/2000

Site Area: 6.39ha

OS MasterMap site plan



Site Area: 6.39ha

1 Past land use

Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

1.1 Historical industrial land uses

Records within 500m	30

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
1	**On site**	**Unspecified Heap**	**1967 - 1990**	**779966**

ID	Location	Land use	Dates present	Group ID
A	**On site**	**Tunnel**	**1967 - 1990**	**717604**
A	**On site**	**Tunnel**	**1909 - 1931**	**733323**
A	**On site**	**Tunnel**	**1955**	**739058**
A	**On site**	**Tunnel**	**1893**	**771143**
B	35m S	Unspecified Pit	1967 - 1983	731514
B	36m S	Unspecified Pit	1955	754053
B	57m S	Unspecified Pit	1909 - 1931	716583
C	117m SW	Unspecified Tanks	1909	666031
C	138m SW	Unspecified Tanks	1909	666034
D	217m E	Sewage Beds	1955	652053
D	220m E	Sewage Beds	1909 - 1931	790916
E	251m NE	Cuttings	1909 - 1938	761671
E	255m NE	Cuttings	1938	782210
E	292m NE	Cuttings	1955	697645
4	313m NW	Cuttings	1967 - 1990	722224
F	379m E	Boat House	1931	668290
F	381m E	Boat House	1967	714652
F	381m E	Boat House	1955	698936
F	382m E	Boat House	1973	725895
G	389m NW	Unspecified Ground Workings	1938	647051
G	396m NW	Unspecified Pit	1909	716956
G	396m NW	Unspecified Pit	1892	722172
G	396m NW	Unspecified Pit	1929	740433
G	396m NW	Unspecified Pit	1938	789302
G	402m NW	Unspecified Pit	1967 - 1990	724042
G	402m NW	Unspecified Pit	1955	779552
G	406m NW	Unspecified Ground Workings	1938	647050
G	408m NW	Unspecified Pit	1929 - 1938	695729

ID	Location	Land use	Dates present	Group ID
G	408m NW	Old Sand Pit	1892 - 1909	787086

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**3**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, 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
C	116m SW	Unspecified Tank	1911	79666
C	138m SW	Unspecified Tank	1893 - 1911	96766
3	232m SW	Unspecified Tank	1893	79665

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**1**

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

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

ID	Location	Land use	Dates present	Group ID
2	54m W	Electricity Substation	1985 - 1993	59226

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped

Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

2.1 Historical industrial land uses

Records within 500m	51

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

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

ID	Location	Land Use	Date	Group ID
A	**On site**	**Tunnel**	**1967**	**717604**
A	**On site**	**Tunnel**	**1973**	**717604**
A	**On site**	**Tunnel**	**1983**	**717604**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Tunnel**	**1990**	**717604**
A	**On site**	**Tunnel**	**1955**	**739058**
A	**On site**	**Tunnel**	**1931**	**733323**
A	**On site**	**Tunnel**	**1909**	**733323**
A	**On site**	**Tunnel**	**1893**	**771143**
B	**On site**	**Unspecified Heap**	**1967**	**779966**
B	**On site**	**Unspecified Heap**	**1973**	**779966**
B	**On site**	**Unspecified Heap**	**1983**	**779966**
B	**On site**	**Unspecified Heap**	**1990**	**779966**
C	35m S	Unspecified Pit	1967	731514
C	35m S	Unspecified Pit	1973	731514
C	35m S	Unspecified Pit	1983	731514
C	36m S	Unspecified Pit	1955	754053
C	57m S	Unspecified Pit	1931	716583
C	57m S	Unspecified Pit	1909	716583
E	117m SW	Unspecified Tanks	1909	666031
E	138m SW	Unspecified Tanks	1909	666034
F	217m E	Sewage Beds	1955	652053
F	220m E	Sewage Beds	1931	790916
F	227m E	Sewage Beds	1909	790916
G	251m NE	Cuttings	1938	761671
G	251m NE	Cuttings	1929	761671
G	251m NE	Cuttings	1909	761671
G	255m NE	Cuttings	1938	782210
G	292m NE	Cuttings	1955	697645
H	313m NW	Cuttings	1967	722224
H	313m NW	Cuttings	1973	722224
H	313m NW	Cuttings	1983	722224

ID	Location	Land Use	Date	Group ID
H	313m NW	Cuttings	1990	722224
I	379m E	Boat House	1931	668290
I	381m E	Boat House	1967	714652
I	381m E	Boat House	1955	698936
I	382m E	Boat House	1973	725895
J	389m NW	Unspecified Ground Workings	1938	647051
J	396m NW	Unspecified Pit	1892	722172
J	396m NW	Unspecified Pit	1938	789302
J	396m NW	Unspecified Pit	1929	740433
J	396m NW	Unspecified Pit	1909	716956
J	402m NW	Unspecified Pit	1967	724042
J	402m NW	Unspecified Pit	1973	724042
J	402m NW	Unspecified Pit	1983	724042
J	402m NW	Unspecified Pit	1990	724042
J	402m NW	Unspecified Pit	1955	779552
J	406m NW	Unspecified Ground Workings	1938	647050
J	408m NW	Unspecified Pit	1938	695729
J	408m NW	Unspecified Pit	1929	695729
J	408m NW	Old Sand Pit	1892	787086
J	408m NW	Old Sand Pit	1909	787086

This data is sourced from Ordnance Survey / Groundsure.

2.2 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. 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
E	116m SW	Unspecified Tank	1911	79666
E	138m SW	Unspecified Tank	1893	96766
E	138m SW	Unspecified Tank	1911	96766
1	232m SW	Unspecified Tank	1893	79665

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**3**

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
D	54m W	Electricity Substation	1985	59226
D	54m W	Electricity Substation	1985	59226
D	57m S	Electricity Substation	1993	59226

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill

3.1 Active or recent landfill

Records within 500m	1

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

Features are displayed on the Waste and landfill map on **page 23**

ID	Location	Details	
1	183m NW	Operator: J A Jackson Contractors (Leyland) Limited Site Address: Lydiate Lane Quarry, Lydiate Lane, Leyland, PR25 4UB	WML Number: 104817 EPR Reference: WAS172 Landfill type: L05: Inert LF Status: Modified IPPC Reference: - EPR Number: EA/EPR/LB3834AE/V004

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	47

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

Features are displayed on the Waste and landfill map on **page 23**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	**On site**	**CUERDEN HALL, SHADY LANE, BAMBER BRIDGE, PRESTON, PR5 6AZ**	**WEX206658**	**Treating waste exemption**	**Not on a farm**	**Sorting and de-naturing of controlled drugs for disposal**
A	**On site**	**Cuerden Hall, Shady Lane, Bamber Bridge, PR5 6AZ**	**WEX045948**	**Treating waste exemption**	**Not on a farm**	**Sorting and de-naturing of controlled drugs for disposal**
A	**On site**	**Cuerden Hall Shady Lane Preston Lancashire PR5 6AZ**	**EPR/VF0535LZ/A001**	**Treating waste exemption**	**Non-Agricultural Waste Only**	**Sorting and de-naturing of controlled drugs for disposal**
B	50m S	Site	EPR/DE5444UM/A001	Disposing of waste exemption	Both agricultural and non-agricultural waste	Deposit of waste from dredging of inland waters
B	50m S	Site	EPR/DE5444UM/A001	Disposing of waste exemption	Both agricultural and non-agricultural waste	Burning waste in the open
B	50m S	Site	EPR/DE5444UM/A001	Storing waste exemption	Both agricultural and non-agricultural waste	Storage of waste in a secure place
B	50m S	Site	EPR/DE5444UM/A001	Treating waste exemption	Both agricultural and non-agricultural waste	Aerobic composting and associated prior treatment
B	50m S	Site	EPR/DE5444UM/A001	Treating waste exemption	Both agricultural and non-agricultural waste	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising

ID	Location	Site	Reference	Category	Sub-Category	Description
B	50m S	Site	EPR/DE5444UM/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste in construction
B	50m S	Site	EPR/DE5444UM/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of mulch
B	50m S	Site	EPR/DE5444UM/A001	Using waste exemption	Both agricultural and non-agricultural waste	Spreading of plant matter to confer benefit
B	50m S	Site	EPR/DE5444UM/A001	Using waste exemption	Both agricultural and non-agricultural waste	Burning of waste as a fuel in a small appliance
B	50m S	Site	EPR/DE5444UM/A001	Using waste exemption	Both agricultural and non-agricultural waste	Use of waste for a specified purpose
B	50m S	Site	EPR/DE5444UM/A001	Treating waste exemption	Non-Agricultural Waste Only	Treatment of kitchen waste in a wormery
B	50m S	Site	EPR/DE5444UM/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in the construction of entertainment or educational installations etc
C	142m SW	Clock House Farm Wigan Road PRESTON PR5 6AT	EPR/KH0170QY/A001	Disposing of waste exemption	Agricultural Waste Only	Deposit of waste from dredging of inland waters
C	142m SW	Clock House Farm Wigan Road PRESTON PR5 6AT	EPR/KH0170QY/A001	Disposing of waste exemption	Agricultural Waste Only	Burning waste in the open
C	142m SW	Clock House Farm Wigan Road PRESTON PR5 6AT	EPR/KH0170QY/A001	Storing waste exemption	Agricultural Waste Only	Storage of waste in a secure place

ID	Location	Site	Reference	Category	Sub-Category	Description
C	142m SW	Clock House Farm Wigan Road PRESTON PR5 6AT	EPR/KH0170QY/A001	Treating waste exemption	Agricultural Waste Only	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
C	142m SW	Clock House Farm Wigan Road PRESTON PR5 6AT	EPR/KH0170QY/A001	Treating waste exemption	Agricultural Waste Only	Recovery of scrap metal
C	142m SW	Clock House Farm Wigan Road PRESTON PR5 6AT	EPR/KH0170QY/A001	Using waste exemption	Agricultural Waste Only	Use of waste in construction
C	142m SW	Clock House Farm Wigan Road PRESTON PR5 6AT	EPR/KH0170QY/A001	Using waste exemption	Agricultural Waste Only	Spreading waste on agricultural land to confer benefit
C	142m SW	Clock House Farm Wigan Road PRESTON PR5 6AT	EPR/KH0170QY/A001	Using waste exemption	Agricultural Waste Only	Use of mulch
C	142m SW	Clock House Farm Wigan Road PRESTON PR5 6AT	EPR/KH0170QY/A001	Using waste exemption	Agricultural Waste Only	Spreading of plant matter to confer benefit
C	142m SW	Clock House Farm Wigan Road PRESTON PR5 6AT	EPR/KH0170QY/A001	Using waste exemption	Agricultural Waste Only	Use of waste for a specified purpose
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX193997	Using waste exemption	On a Farm	Use of waste in construction
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX193997	Using waste exemption	On a Farm	Use of waste for a specified purpose
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX193997	Using waste exemption	On a Farm	Spreading waste on agricultural land to confer benefit
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX193997	Using waste exemption	On a Farm	Spreading of plant matter to confer benefit
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX193997	Disposing of waste exemption	On a Farm	Deposit of waste from dredging of inland waters
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX193997	Disposing of waste exemption	On a Farm	Burning waste in the open
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX193997	Storing waste exemption	On a Farm	Storage of waste in a secure place

ID	Location	Site	Reference	Category	Sub-Category	Description
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX253722	Using waste exemption	On a farm	Use of waste for a specified purpose
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX110331	Using waste exemption	On a farm	Use of waste for a specified purpose
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX038906	Disposing of waste exemption	On a farm	Deposit of waste from dredging of inland waters
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX038906	Disposing of waste exemption	On a farm	Burning waste in the open
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX038906	Storing waste exemption	On a farm	Storage of waste in a secure place
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX038906	Treating waste exemption	On a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX038906	Treating waste exemption	On a farm	Recovery of scrap metal
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX038906	Using waste exemption	On a farm	Use of waste in construction
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX038906	Using waste exemption	On a farm	Spreading waste on agricultural land to confer benefit
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX038906	Using waste exemption	On a farm	Use of mulch
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX038906	Using waste exemption	On a farm	Spreading of plant matter to confer benefit
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX038906	Using waste exemption	On a farm	Use of depolluted end-of-life vehicles for vehicle parts
C	175m SW	CLOCK HOUSE FARM, WIGAN ROAD, BAMBER BRIDGE, PRESTON, PR5 6AT	WEX038906	Using waste exemption	On a farm	Use of waste for a specified purpose

ID	Location	Site	Reference	Category	Sub-Category	Description
2	194m S	Lovell Shady Lane, Wigan Lane, Clayton Le Woods, Chorley, PR5 6AU	WEX136312	Using waste exemption	Not on a farm	Use of waste in construction
3	239m S	WILLOW GREEN (HOUSING DEVELOPMENT), PARKHURST AVENUE, CLAYTON-LE-WOODS, LEYLAND, PR25 5TB	WEX251760	Using waste exemption	Not on a farm	Use of waste in construction

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

4 Current industrial land use

Site Outline

Search buffers in metres (m)

Recent industrial land uses

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	3

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 30**

ID	Location	Company	Address	Activity	Category
A	47m S	Electricity Sub Station	Lancashire, PR5	Electrical Features	Infrastructure and Facilities
1	149m SW	P J Fork Trucks Ltd	The Walled Garden, Berkeley Drive, Bamber Bridge, Preston, Lancashire, PR5 6BY	Lifting and Handling Equipment	Industrial Products
2	177m W	Gantry	Lancashire, PR5	Travelling Cranes and Gantries	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

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	4

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

Features are displayed on the Current industrial land use map on **page 30**

ID	Location	Address	Details	
B	95m S	ENGINEERS COTTAGE, SHADY LANE, BAMBER BRIDGE, PRESTON, LANCASHIRE, PR5 6AU	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 01835 Permit Version: 1 Receiving Water: TRIB OF LOSTOCK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 28/10/1959 Effective Date: 28/10/1959 Revocation Date: -
B	135m S	ROSE COTTAGE, SHADY LANE, BAMBER BRIDGE, PRESTON, LANCASHIRE, PR5 6AU	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 011637 Permit Version: 1 Receiving Water: TRIB OF RIVER LOSTOCK	Status: PRE NRA LEGISLATION WHERE ISSUE DATE 01-SEP-89 (HISTORIC ONLY) Issue date: 17/12/1968 Effective Date: 17/12/1968 Revocation Date: -
3	208m NW	CUERDEN HALL PS, BAMBER BRIDGE, CHORLEY	Effluent Type: MISCELLANEOUS DISCHARGES - EMERGENCY DISCHARGES Permit Number: 017190417 Permit Version: 1 Receiving Water: TRIB RIVER LOSTOCK	Status: LAPSED UNDER SCHEDULE 23 ENVIRONMENT ACT 1995 Issue date: - Effective Date: 12/10/1992 Revocation Date: 01/10/1996
5	348m SW	SWISS COTTAGE STP, WIGAN ROAD, CUERDEN	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 011717 Permit Version: 1 Receiving Water: TRIB RIVER LOSTOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 21/08/1992 Revocation Date: 21/08/1992

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	3

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 30**

ID	Location	Details	
A	33m SW	Incident Date: 17/06/2002 Incident Identification: 85321 Pollutant: Specific Waste Materials Pollutant Description: Tyres	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
4	334m NE	Incident Date: 23/08/2017 Incident Identification: 1549999 Pollutant: Agricultural Materials and Wastes Pollutant Description: Slurry and Dilute Slurry	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
6	373m S	Incident Date: 21/03/2001 Incident Identification: 655 Pollutant: Specific Waste Materials Pollutant Description: Vehicles and Vehicle Parts	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

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.

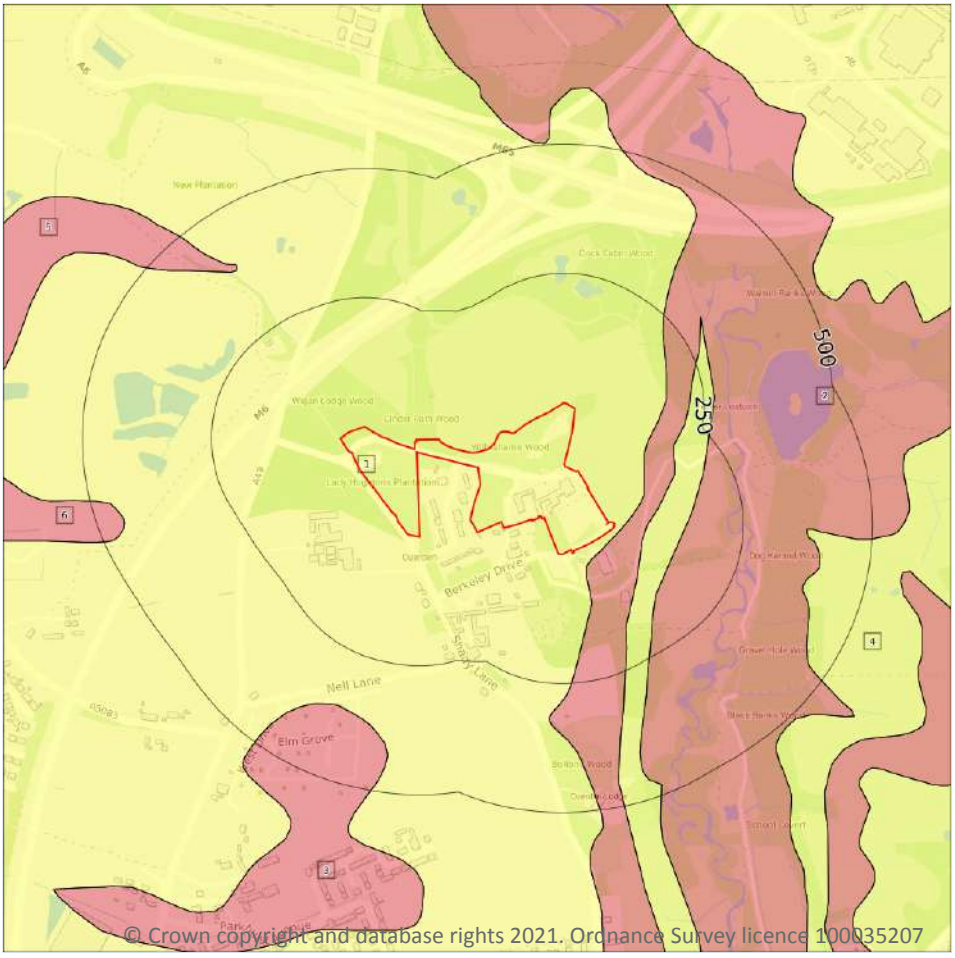
4.21 Pollution inventory radioactive waste

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	6

Aquifer status of groundwater held within superficial geology.

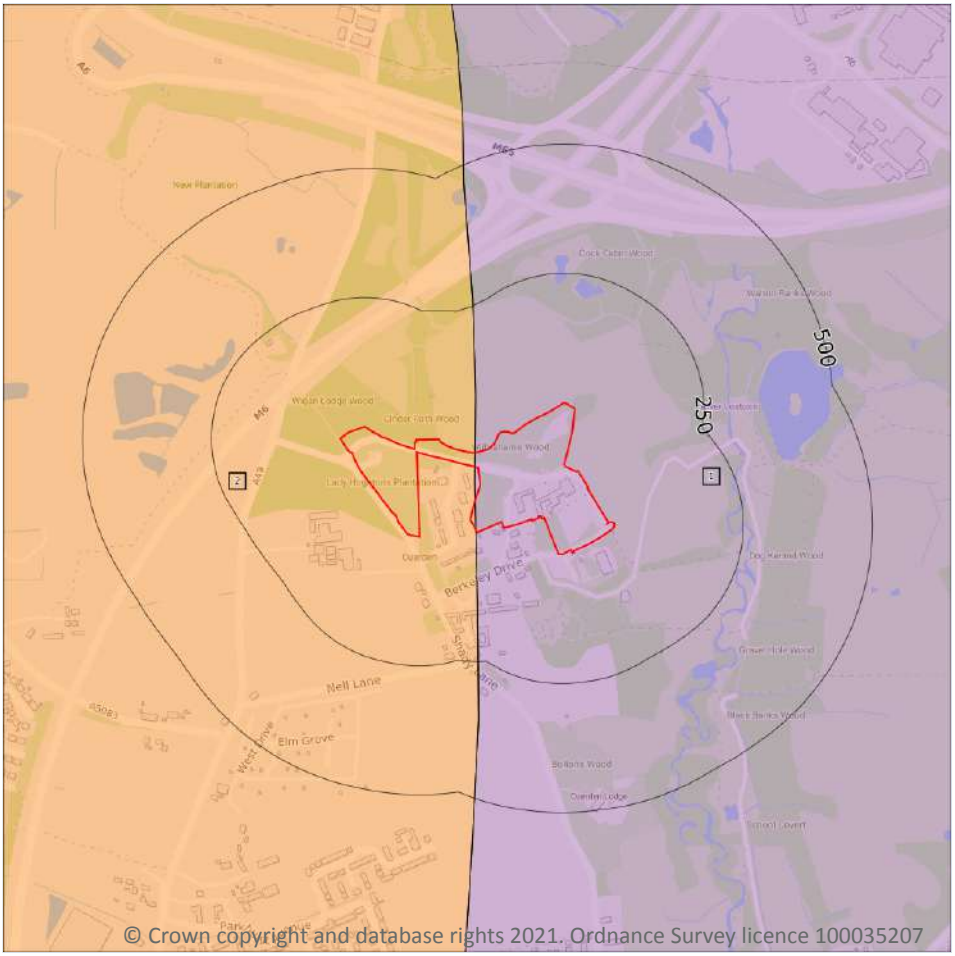
Features are displayed on the Hydrogeology map on **page 36**

ID	Location	Designation	Description
1	**On site**	**Secondary Undifferentiated**	**Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type**
2	12m SE	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

ID	Location	Designation	Description
3	357m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	374m E	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
5	382m NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
6	447m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Bedrock aquifer



Site Outline

Search buffers in metres (m)

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

5.2 Bedrock aquifer

Records within 500m	2

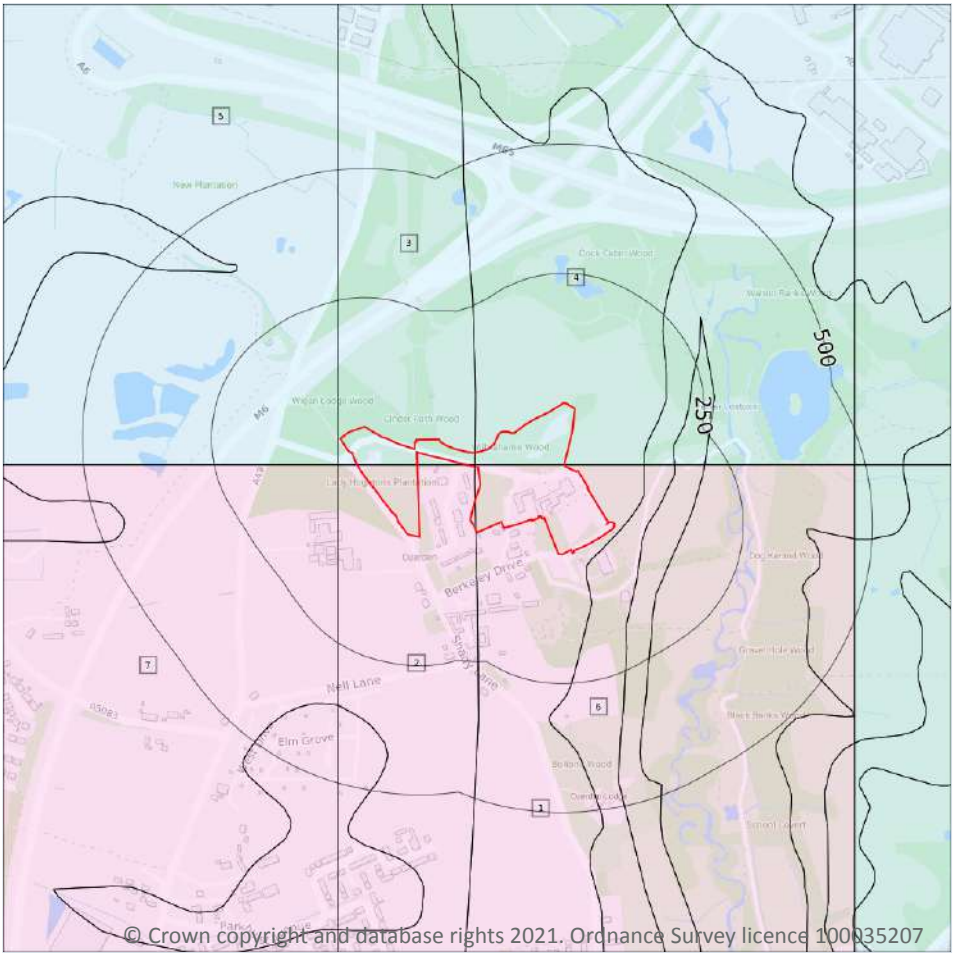
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 38**

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	On site	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

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

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

Other information
- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	7

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 40**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: 40-70% Dilution value: >550mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
2	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Intermediate Infiltration value: 40-70% Dilution value: >550mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures**
3	**On site**	**Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: 40-70% Dilution value: >550mm/year**	**Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures**
4	**On site**	**Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: 40-70% Dilution value: >550mm/year**	**Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
5	4m W	Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: >550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
6	12m SE	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Intermediate Infiltration value: 40-70% Dilution value: >550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
7	33m SW	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

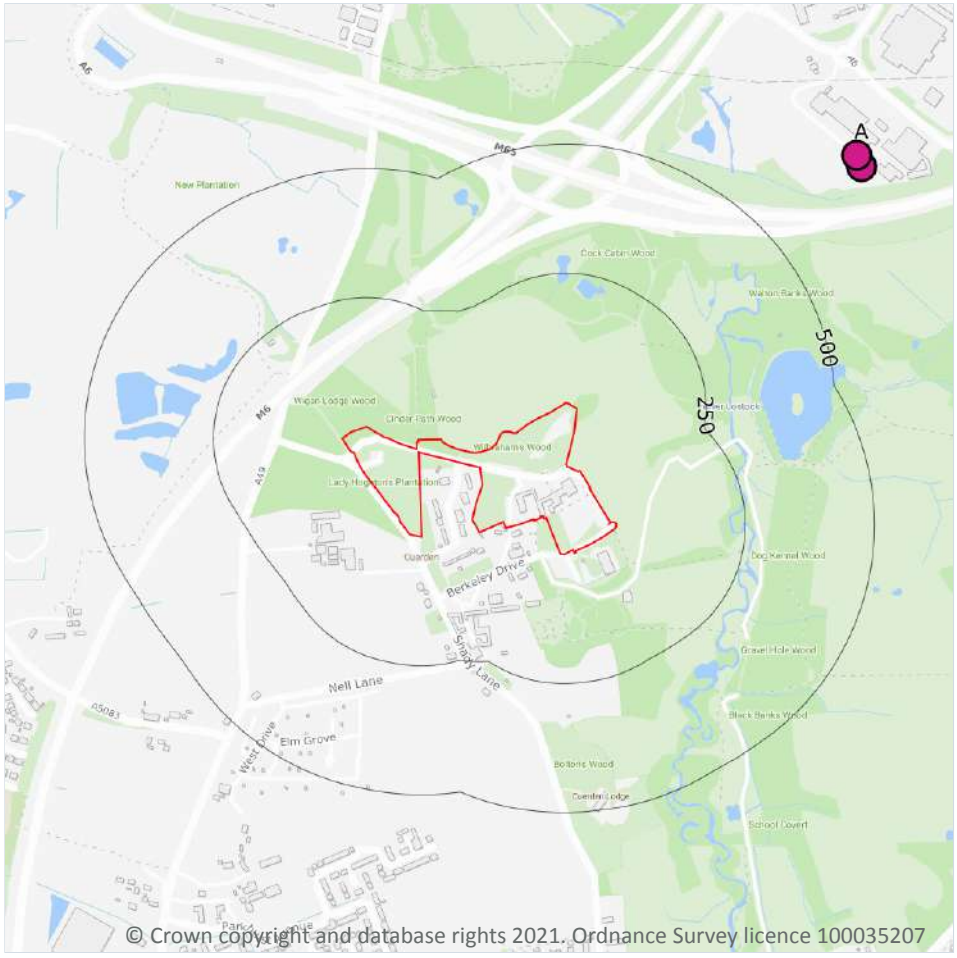
5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones



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
- 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	14

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 43**

ID	Location	Details	
A	722m NE	Status: Historical Licence No: 2670212021 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT BAMBER BRIDGE, PRESTON Data Type: Point Name: DUNBIA (PRESTON) Easting: 357009 Northing: 424577	Annual Volume (m^3): 312000 Max Daily Volume (m^3): 900 Original Application No: - Original Start Date: 25/02/2004 Expiry Date: 31/03/2016 Issue No: 3 Version Start Date: 27/05/2014 Version End Date: -
A	722m NE	Status: Active Licence No: 2670212021/R01 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT BAMBER BRIDGE, PRESTON Data Type: Point Name: DUNBIA (PRESTON) LTD Easting: 357009 Northing: 424577	Annual Volume (m^3): 312,000 Max Daily Volume (m^3): 900 Original Application No: - Original Start Date: 01/04/2016 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 01/04/2019 Version End Date: -
A	731m NE	Status: Historical Licence No: 2670212021 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT BAMBER BRIDGE, PRESTON Data Type: Point Name: DUNBIA (PRESTON) Easting: 357000 Northing: 424600	Annual Volume (m^3): 156000 Max Daily Volume (m^3): 450 Original Application No: - Original Start Date: 25/02/2004 Expiry Date: 31/03/2016 Issue No: 2 Version Start Date: 01/04/2007 Version End Date: -
-	797m W	Status: Historical Licence No: 2670212022 Details: Mineral Washing Direct Source: Ground Water - North West Region Point: BOREHOLE IN FARINGTON, LEYLAND Data Type: Point Name: Wheale Environmental Limited Easting: 355221 Northing: 423902	Annual Volume (m^3): 80000 Max Daily Volume (m^3): 500 Original Application No: - Original Start Date: 05/02/2009 Expiry Date: 31/03/2016 Issue No: 2 Version Start Date: 26/11/2009 Version End Date: -
-	797m W	Status: Active Licence No: NW/070/0212/001 Details: Mineral Washing Direct Source: Ground Water - North West Region Point: BOREHOLE IN FARINGTON, LEYLAND Data Type: Point Name: J A Jackson Contractors (Leyland) Ltd Easting: 355221 Northing: 423902	Annual Volume (m^3): 80,000 Max Daily Volume (m^3): 500 Original Application No: - Original Start Date: 16/09/2011 Expiry Date: 31/03/2023 Issue No: 2 Version Start Date: 26/11/2018 Version End Date: -

ID	Location	Details	
-	1197m W	Status: Historical Licence No: 2670212007 Details: Boiler Feed Direct Source: Ground Water - North West Region Point: BOREHOLE AT FARINGTON HOUSE Data Type: Point Name: DUNLOP ENERKA BELTING LTD Easting: 354840 Northing: 423770	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/07/1998 Version End Date: -
-	1197m W	Status: Historical Licence No: 2670212007 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT FARINGTON HOUSE Data Type: Point Name: DUNLOP ENERKA BELTING LTD Easting: 354840 Northing: 423770	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/07/1998 Version End Date: -
-	1501m W	Status: Historical Licence No: 2670212007 Details: Boiler Feed Direct Source: Ground Water - North West Region Point: RESERVOIR AT CENTURION WAY FED BY TWO BOREHOLES INTO U/GRO Data Type: Point Name: DUNLOP ENERKA BELTING LTD Easting: 354510 Northing: 423900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/07/1998 Version End Date: -
-	1501m W	Status: Historical Licence No: 2670212007 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT CENTURION WAY, FARINGTON" Data Type: Point Name: HIFLEX FLUID HANDLING GROUP LIMITED Easting: 354510 Northing: 423900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 11/04/2002 Version End Date: -

ID	Location	Details	
-	1501m W	Status: Historical Licence No: 2670212007 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: RESERVOIR AT CENTURION WAY FED BY TWO BOREHOLES INTO U/GRO Data Type: Point Name: HIFLEX FLUID HANDLING GROUP LIMITED Easting: 354510 Northing: 423900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 11/04/2002 Version End Date: -
-	1501m W	Status: Historical Licence No: 2670212007 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT CENTURION WAY, FARINGTON Data Type: Point Name: HIFLEX FLUID HANDLING GROUP LIMITED Easting: 354510 Northing: 423900	Annual Volume (m^3): 219026 Max Daily Volume (m^3): 600.07 Original Application No: - Original Start Date: 18/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 11/04/2002 Version End Date: -
-	1501m W	Status: Historical Licence No: 2670212007 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: RESERVOIR AT CENTURION WAY FED BY 2 BOREHOLES Data Type: Point Name: HIFLEX FLUID HANDLING GROUP LIMITED Easting: 354510 Northing: 423900	Annual Volume (m^3): 219026 Max Daily Volume (m^3): 600.07 Original Application No: - Original Start Date: 18/03/1966 Expiry Date: - Issue No: 102 Version Start Date: 11/04/2002 Version End Date: -
-	1800m W	Status: Historical Licence No: 2670212007 Details: Boiler Feed Direct Source: Ground Water - North West Region Point: BOREHOLE AT CENTURION WAY,FARINGTON Data Type: Point Name: DUNLOP ENERKA BELTING LTD Easting: 354210 Northing: 423900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/07/1998 Version End Date: -

ID	Location	Details	
-	1800m W	Status: Historical Licence No: 2670212007 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT CENTURION WAY,FARINGTON Data Type: Point Name: DUNLOP ENERKA BELTING LTD Easting: 354210 Northing: 423900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/03/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/07/1998 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m **3**

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.

Features are displayed on the Abstractions and Source Protection Zones map on **page 43**

ID	Location	Details	
-	1511m W	Status: Historical Licence No: 2670212018 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "HOT WELL ADJ TO STORAGE RES@ CENTURION WAY,FARINGTON,LEYLAND" Data Type: Point Name: HIFLEX FLUID HANDLING GROUP LIMITED Easting: 354500 Northing: 423900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/11/1974 Expiry Date: - Issue No: 102 Version Start Date: 22/11/2001 Version End Date: -
-	1511m W	Status: Historical Licence No: 2670212018 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: HOT WELL ADJ TO STORAGE RES@ CENTURION WAY,FARINGTON,LEYLAND Data Type: Point Name: LANCASHIRE PROPERTY MANAGEMENT LTD Easting: 354500 Northing: 423900	Annual Volume (m^3): 5000600 Max Daily Volume (m^3): 16365.6 Original Application No: - Original Start Date: 27/11/1974 Expiry Date: - Issue No: 103 Version Start Date: 23/12/2003 Version End Date: -

ID	Location	Details	
-	1791m W	Status: Active Licence No: 2670212017 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: HIGH ASH RESERVOIR AT LEYLAND Data Type: Point Name: LANCASHIRE COUNTY ENTERPRISES (INDUSTRIAL DEVELOPMENT) LTD Easting: 354300 Northing: 423500	Annual Volume (m^3): 181,840 Max Daily Volume (m^3): 1,145.59 Original Application No: - Original Start Date: 10/04/1974 Expiry Date: - Issue No: 101 Version Start Date: 05/07/2002 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	0

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

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

5.9 Source Protection Zones

Records within 500m	0

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

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

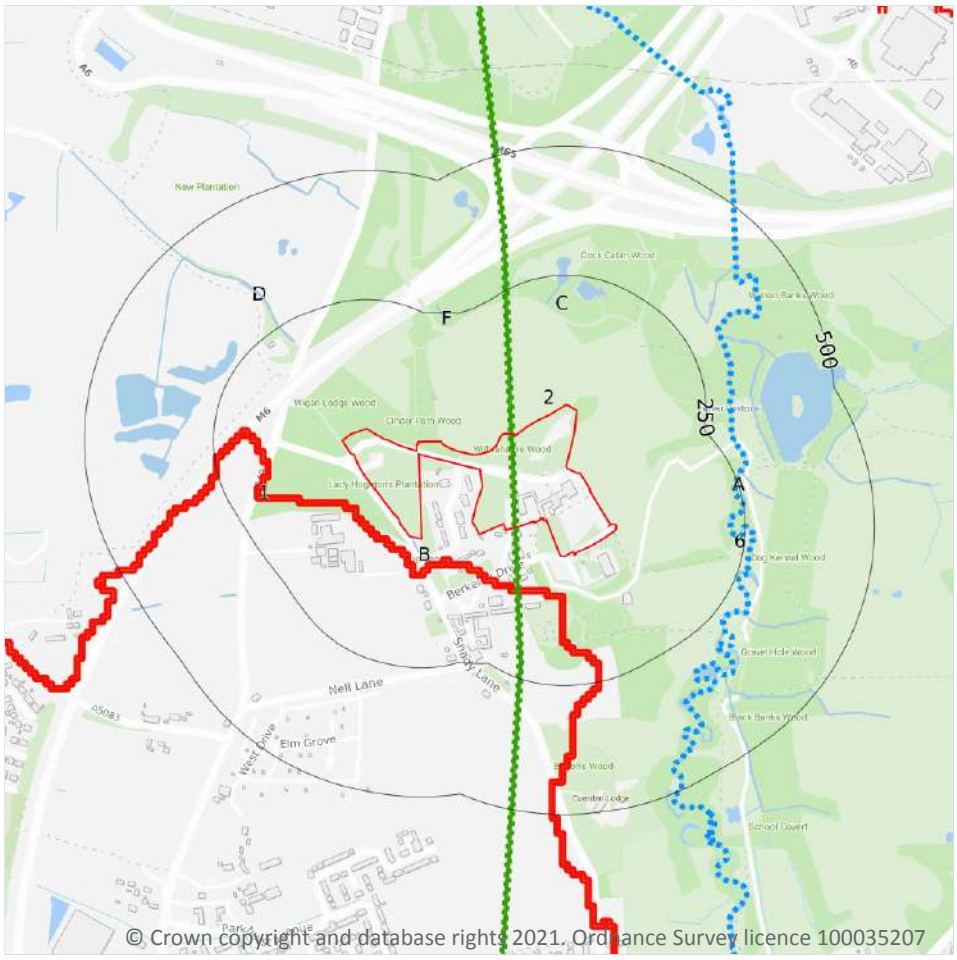
5.10 Source Protection Zones (confined aquifer)

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	**6**

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 49**

ID	Location	Type of water feature	Ground level	Permanence	Name
B	4m S	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	200m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	208m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
6	220m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Lostock
C	230m N	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	244m N	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	7

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 49**

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 49**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
2	**On site**	**River WB catchment**	**Lostock US Farington Weir**	**GB112070064911**	**Yarrow and Lostock**	**Douglas**

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 49**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
5	221m E	River	Lostock US Farington Weir	GB112070064911	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 49**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	**On site**	**West Lancashire Quaternary Sand and Gravel Aquifers**	**GB41202G912700**	**Good**	**Good**	**Good**	**2015**
A	**On site**	**Fylde Permo-Triassic Sandstone Aquifers**	**GB41201G100500**	**Good**	**Good**	**Good**	**2015**

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.

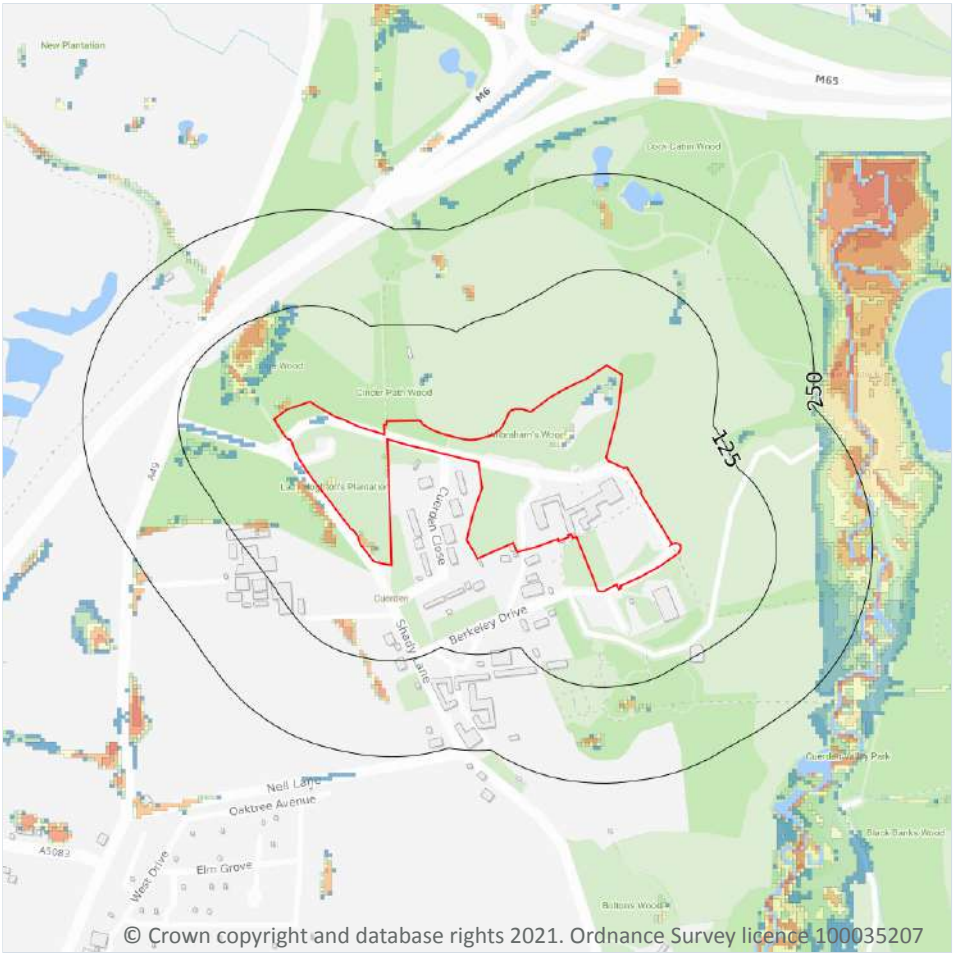
7.7 Flood Zone 3

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 56**

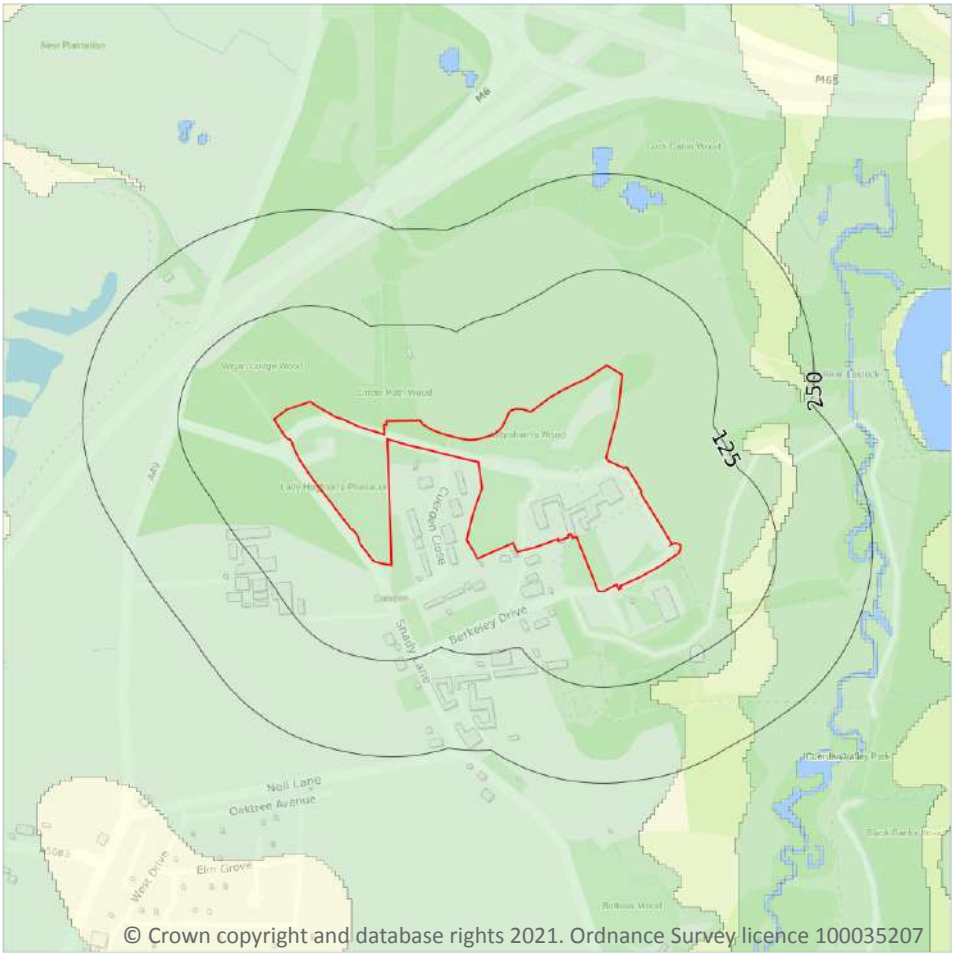
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

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

9.1 Groundwater flooding

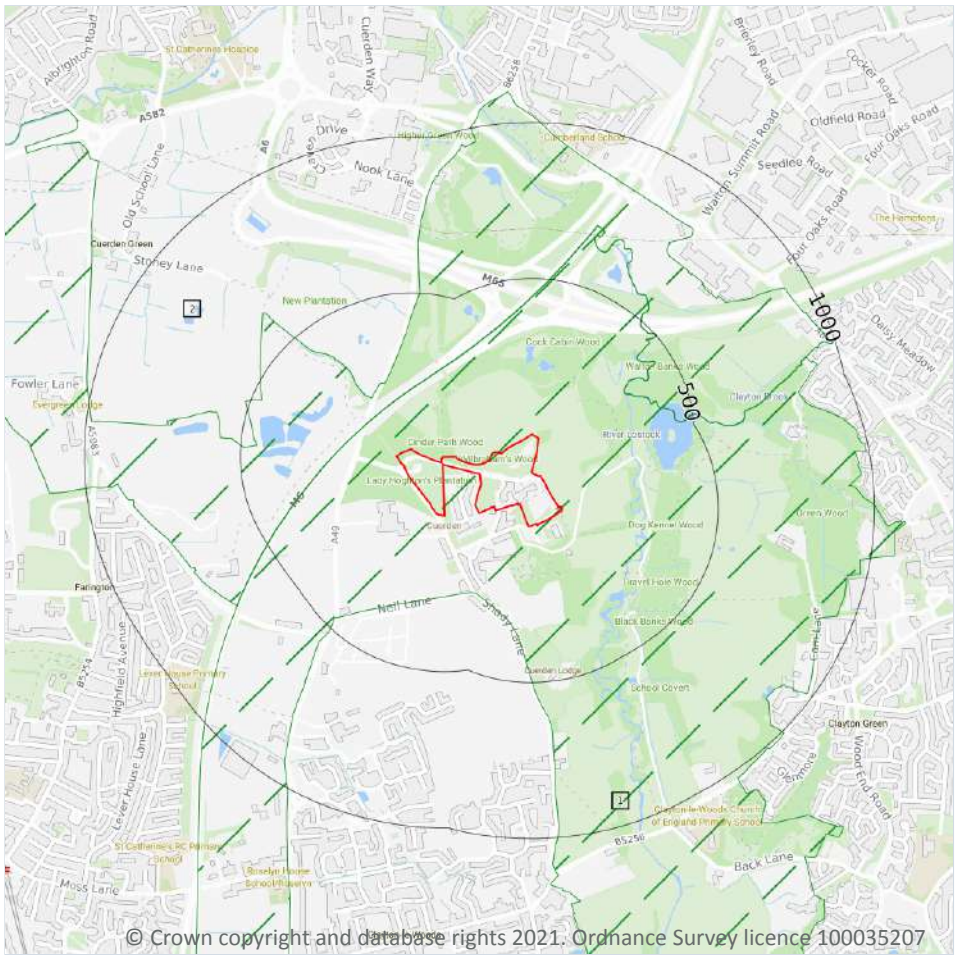
Highest risk on site	**Low**
Highest risk within 50m	**Low**

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 58**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



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	2

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 59**

ID	Location	Name	Data source
-	1855m NW	Preston Junction	Natural England
-	1966m N	Preston Junction	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 59**

ID	Location	Name	Local Authority name
1	**On site**	**Liverpool and Manchester**	**Chorley**
2	142m NW	Liverpool and Manchester	South Ribble
-	1868m S	Liverpool and Manchester	South Ribble

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.

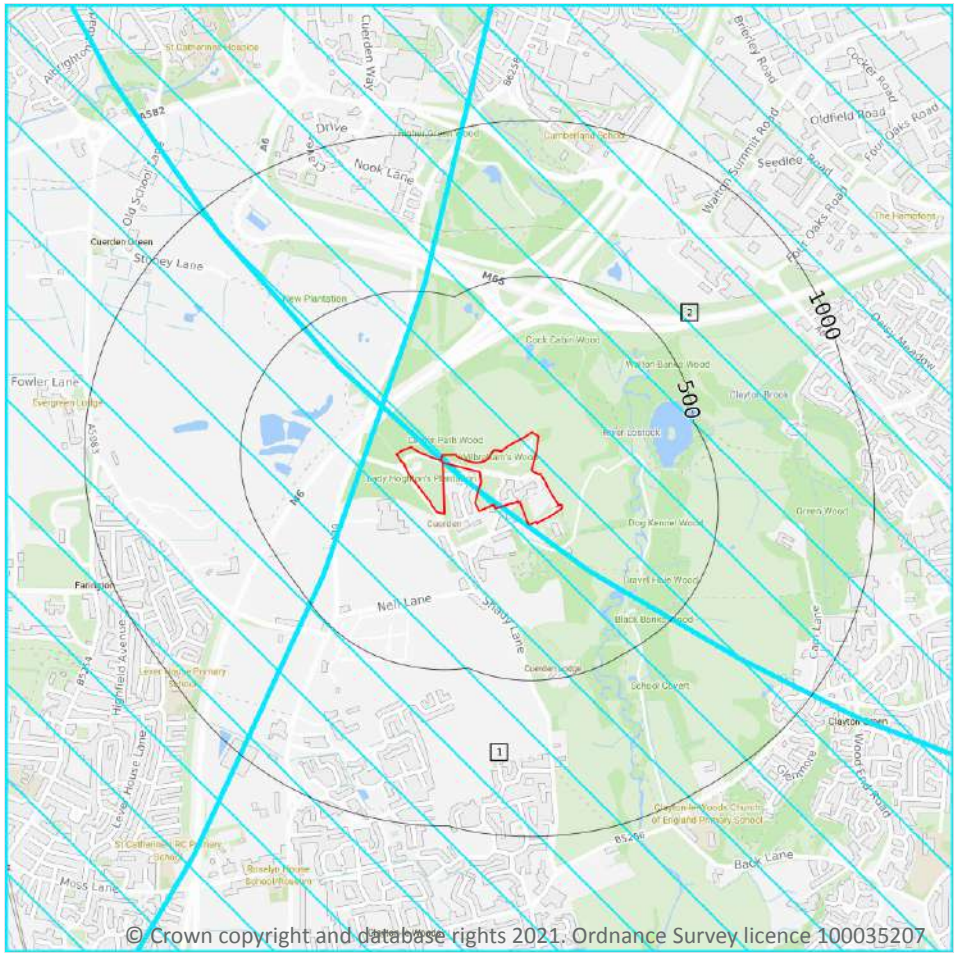
10.16 Nitrate Vulnerable Zones

Records within 2000m	0

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.

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

SSSI Impact Zones and Units



10.17 SSSI Impact Risk Zones

Records on site	2

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 64**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Airports, helipads and other aviation proposals.**
2	On site	**Infrastructure - Airports, helipads and other aviation proposals.** **Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500t.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations

Site Outline

Search buffers in metres (m)

- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

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	4

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.

Features are displayed on the Visual and cultural designations map on **page 66**

ID	Location	Name	Grade	Reference Number	Listed date
1	**On site**	**Iron Gates At Foot Of Terrace Steps To East Of Cuerden Hall, Cuerden, Chorley, Lancashire, PR5**	**II**	**1281343**	**21/02/1984**
A	**On site**	**Stable Block Attached To West End Of Cuerden Hall, Cuerden, Chorley, Lancashire, PR5**	**II**	**1072455**	**21/02/1984**
A	**On site**	**Cuerden Hall, Cuerden, Chorley, Lancashire, PR5**	**II***	**1362174**	**21/02/1984**
2	178m SW	Clock House Farmhouse, Cuerden, Chorley, Lancashire, PR5	II	1204186	21/02/1984

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.

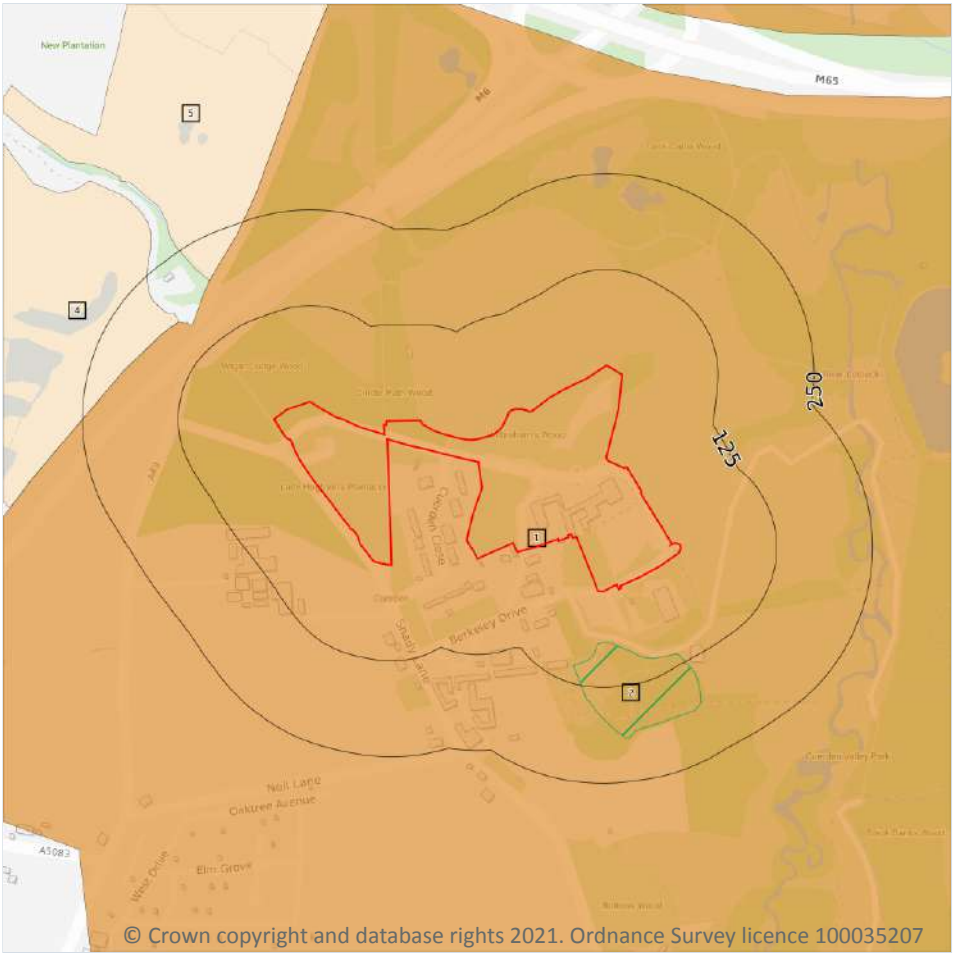
11.7 Registered Parks and Gardens

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



Site Outline

Search buffers in metres (m)

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

12.1 Agricultural Land Classification

Records within 250m	3

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 69**

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.**

ID	Location	Classification	Description
4	178m NW	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.
5	197m NW	Grade 3b	Moderate quality agricultural land. Land capable of producing moderate yields of a narrow range of crops, principally cereals and grass or lower yields of a wider range of crops or high yields of grass which can be grazed or harvested over most of the year.

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	**1**

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 69**

ID	Location	Description	Reference	Application date
2	67m S	Selective Fell/Thin (Conditional)	010/81/01-02	10/04/2002

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	**3**

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment.

Location	Reference	Scheme	Start Date	End date
177m NE	AG00395303	Entry Level plus Higher Level Stewardship	01/12/2012	30/11/2022
223m SE	AG00395303	Entry Level plus Higher Level Stewardship	01/12/2012	30/11/2022
238m N	AG00395303	Entry Level plus Higher Level Stewardship	01/12/2012	30/11/2022

This data is sourced from Natural England.

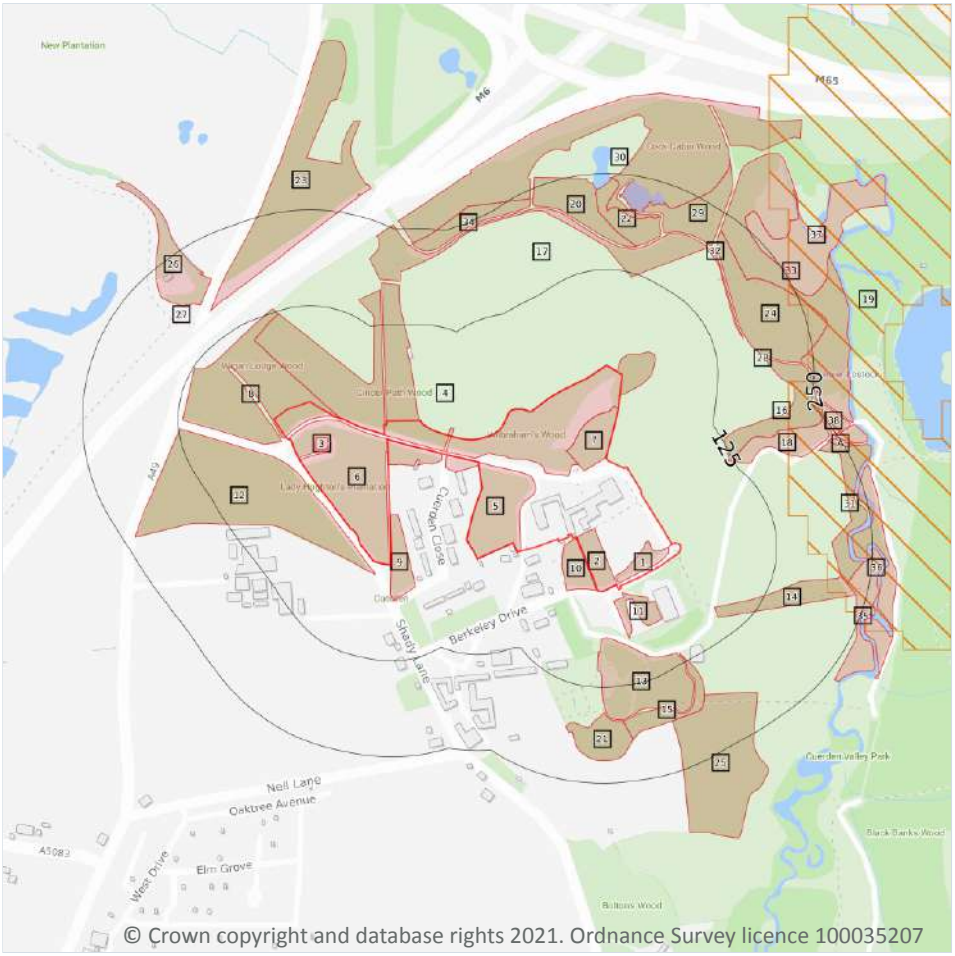
12.5 Countryside Stewardship Schemes

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



Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks

Primary Habitat
Restorable Habitat
Associated Habitats
Habitat Restoration-Creation
Network Enhancement Zone 1
Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	39

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

Features are displayed on the Habitat designations map on **page 72**

ID	Location	Main Habitat	Other habitats
1	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	On site	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
5	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
6	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
7	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
8	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
9	**On site**	**Deciduous woodland**	**Main habitat: DWOOD (INV > 50%)**
10	1m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
11	6m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
12	8m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
13	60m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
14	85m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
15	113m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
16	120m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%); GQSIG (INV > 50%)
17	120m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
18	128m NE	Good quality semi-improved grassland	Main habitat: GQSIG (INV > 50%)
20	157m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
21	158m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
22	160m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
23	163m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
24	166m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%); GQSIG (INV > 50%)
25	175m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
26	177m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
27	179m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
28	182m E	Good quality semi-improved grassland	Main habitat: GQSIG (INV > 50%)
29	189m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
30	195m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
31	197m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%); GQSIG (INV > 50%)
32	199m NE	Good quality semi-improved grassland	Main habitat: GQSIG (INV > 50%)
33	204m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%); GQSIG (INV > 50%)

ID	Location	Main Habitat	Other habitats
34	221m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
35	222m E	Good quality semi-improved grassland	Main habitat: GQSIG (INV > 50%)
36	223m E	Good quality semi-improved grassland	Main habitat: GQSIG (INV > 50%); Additional: LMEAD (FEP 50%)
A	235m NE	Good quality semi-improved grassland	Main habitat: GQSIG (INV > 50%)
37	243m NE	Good quality semi-improved grassland	Main habitat: GQSIG (INV > 50%)
38	245m NE	Good quality semi-improved grassland	Main habitat: GQSIG (INV > 50%)
A	246m NE	Good quality semi-improved grassland	Main habitat: GQSIG (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	**1**

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.

Features are displayed on the Habitat designations map on **page 72**

ID	Location	Type	Habitat
19	146m E	Network Enhancement Zone 1	Not specified

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.

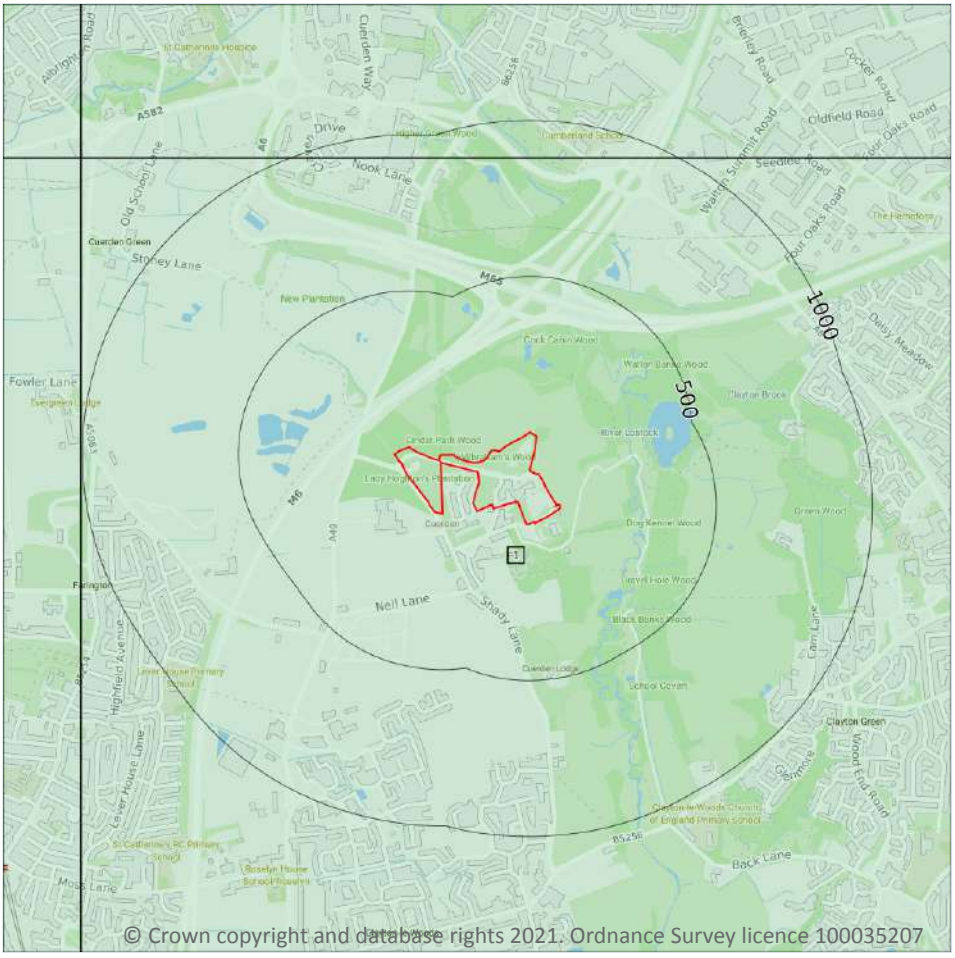
13.4 Limestone Pavement Orders

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

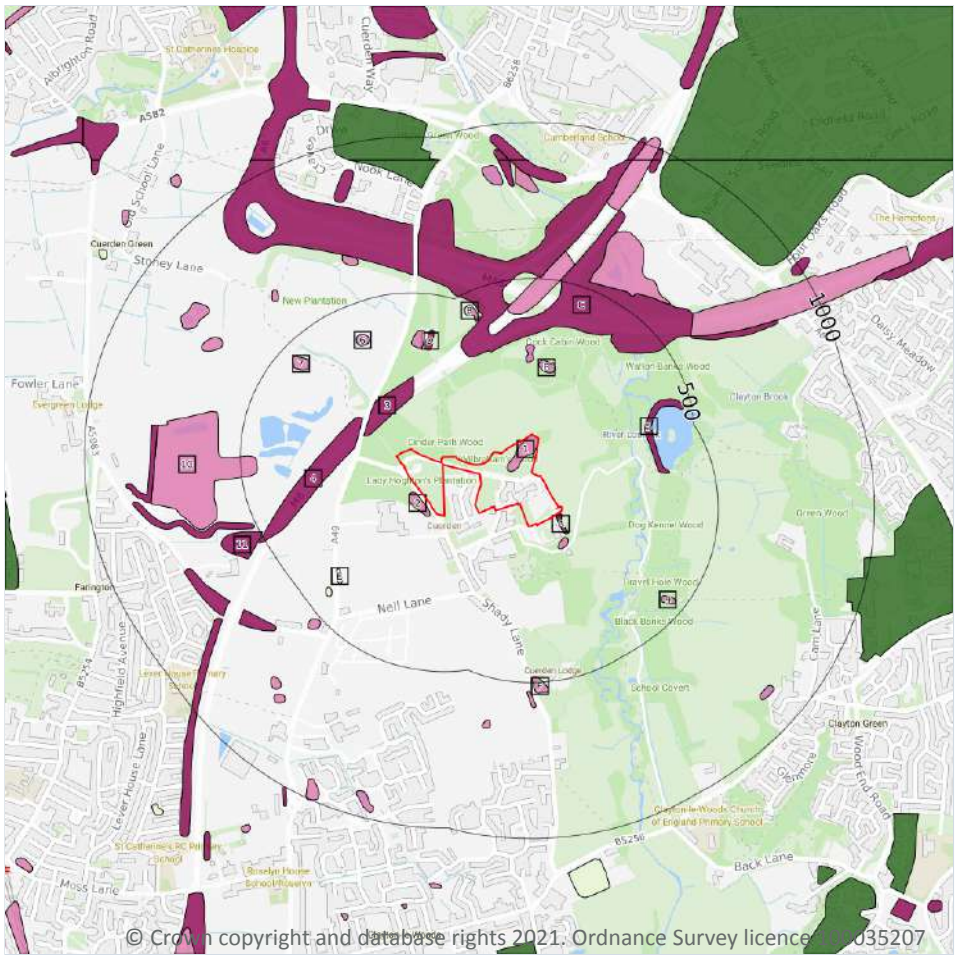
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 76**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**SD52SE**

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	22

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.

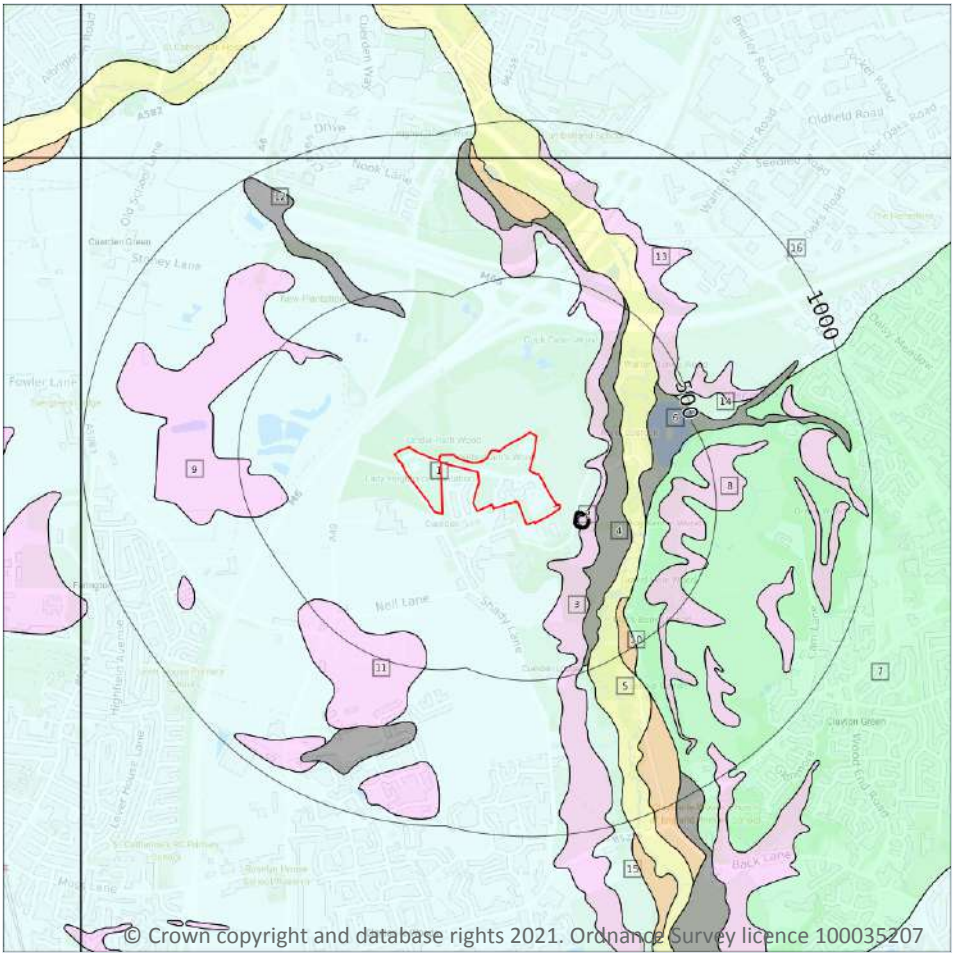
Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 77**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**WGR-VOID**	**Worked Ground (Undivided)**	**Void**
A	0m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	13m SW	WGR-VOID	Worked Ground (Undivided)	Void
A	76m SE	WGR-VOID	Worked Ground (Undivided)	Void

ID	Location	LEX Code	Description	Rock description
3	109m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	137m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
B	205m N	WGR-VOID	Worked Ground (Undivided)	Void
B	231m N	WGR-VOID	Worked Ground (Undivided)	Void
C	295m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
D	323m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
D	325m N	WGR-VOID	Worked Ground (Undivided)	Void
5	330m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
E	356m SW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
6	363m N	WGR-VOID	Worked Ground (Undivided)	Void
C	387m N	WGR-VOID	Worked Ground (Undivided)	Void
7	400m NW	WGR-VOID	Worked Ground (Undivided)	Void
8	403m NW	WGR-VOID	Worked Ground (Undivided)	Void
E	415m SW	WMGR-ARTDP	Infilled Ground	Artificial Deposit
9	423m SE	WGR-VOID	Worked Ground (Undivided)	Void
10	447m W	WGR-VOID	Worked Ground (Undivided)	Void
F	481m S	WGR-VOID	Worked Ground (Undivided)	Void
11	494m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

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 **15**

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 79**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-CSVZ**	**Till, Devensian - Clay, Sandy, Gravelly, Silty (unlithified Deposits Coding Scheme)**	**Clay, Sandy, Gravelly, Silty**
3	66m SE	GFDUD-XSVZ	Glaciofluvial Deposits, Devensian - Sand, Gravel And Silt	Sand, Gravel And Silt
4	116m E	HEAD-CVZS	Head - Gravelly Silty Sandy Clay	Clay, Gravelly, Silty, Sandy

ID	Location	LEX Code	Description	Rock description
5	198m E	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
6	262m E	HEAD-CVZS	Head - Gravelly Silty Sandy Clay	Clay, Gravelly, Silty, Sandy
7	278m E	HMGDD-XCSV	Hummocky (moundy) Glacial Deposits, Devensian - Clay, Sand And Gravel	Clay, Sand And Gravel
8	316m E	GFDUD-XSVZ	Glaciofluvial Deposits, Devensian - Sand, Gravel And Silt	Sand, Gravel And Silt
9	343m NW	GFDUD-XSVZ	Glaciofluvial Deposits, Devensian - Sand, Gravel And Silt	Sand, Gravel And Silt
10	349m SE	RTD1-XCZSV	River Terrace Deposits, 1 - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
11	394m S	GFDUD-XSVZ	Glaciofluvial Deposits, Devensian - Sand, Gravel And Silt	Sand, Gravel And Silt
12	415m N	HEAD-CVZS	Head - Gravelly Silty Sandy Clay	Clay, Gravelly, Silty, Sandy
13	422m NE	GFDUD-XSVZ	Glaciofluvial Deposits, Devensian - Sand, Gravel And Silt	Sand, Gravel And Silt
14	462m E	TILLD-CSVZ	Till, Devensian - Clay, Sandy, Gravelly, Silty (unlithified Deposits Coding Scheme)	Clay, Sandy, Gravelly, Silty
15	481m S	TILLD-CSVZ	Till, Devensian - Clay, Sandy, Gravelly, Silty (unlithified Deposits Coding Scheme)	Clay, Sandy, Gravelly, Silty
16	485m E	TILLD-CSVZ	Till, Devensian - Clay, Sandy, Gravelly, Silty (unlithified Deposits Coding Scheme)	Clay, Sandy, Gravelly, Silty

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m **1**

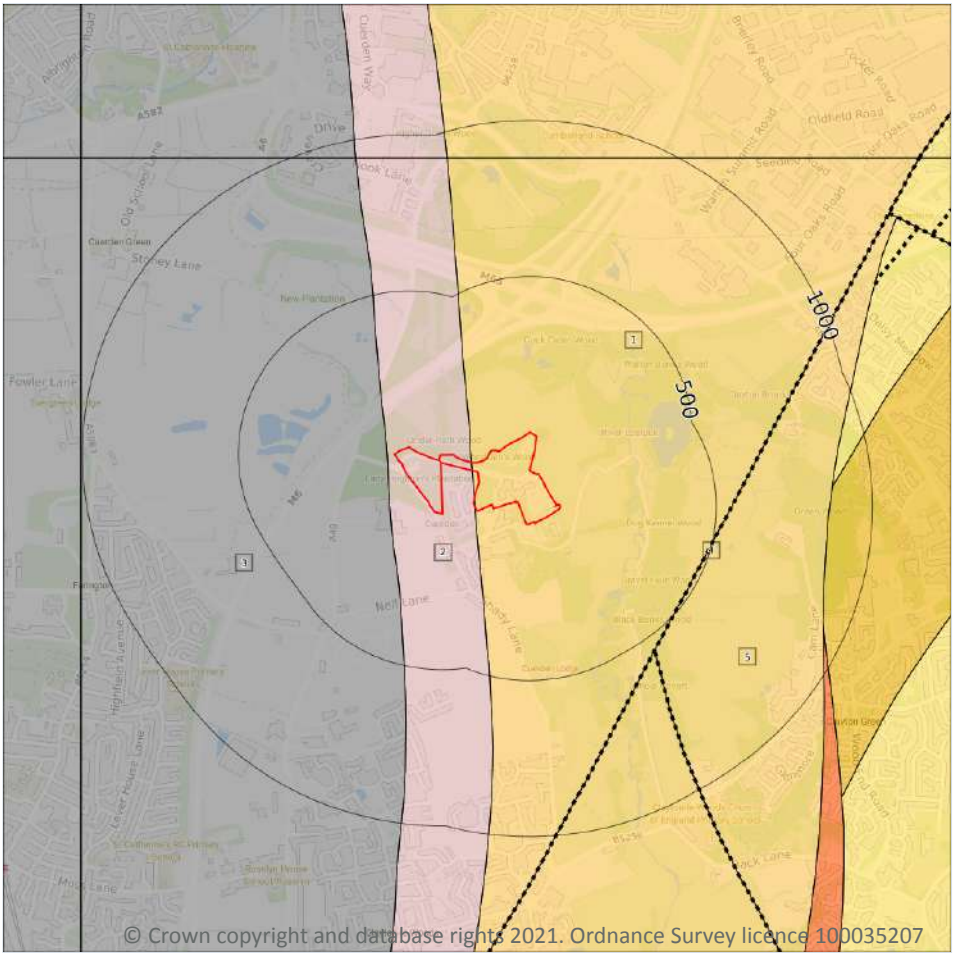
Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 79**

ID	Location	LEX Code	Description	Rock description
2	57m SE	SLIP-UKNOWN	Landslide Deposits	Unknown/unclassified Entry

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 81**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**SSG-SDST**	**Sherwood Sandstone Group - Sandstone**	**Ladinian Age - Late Permian Epoch [Obsolete name]**
2	**On site**	**TPSF-SISD**	**Tarporley Siltstone Formation - Siltstone And Sandstone**	**Anisian Age - Olenekian Age**
3	24m W	SIM-MDHA	Sidmouth Mudstone Formation - Mudstone And Halite-stone	Carnian Age - Olenekian Age

ID	Location	LEX Code	Description	Rock age
5	483m SE	SSG-SDST	Sherwood Sandstone Group - Sandstone	Ladinian Age - Late Permian Epoch [Obsolete name]

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	**1**

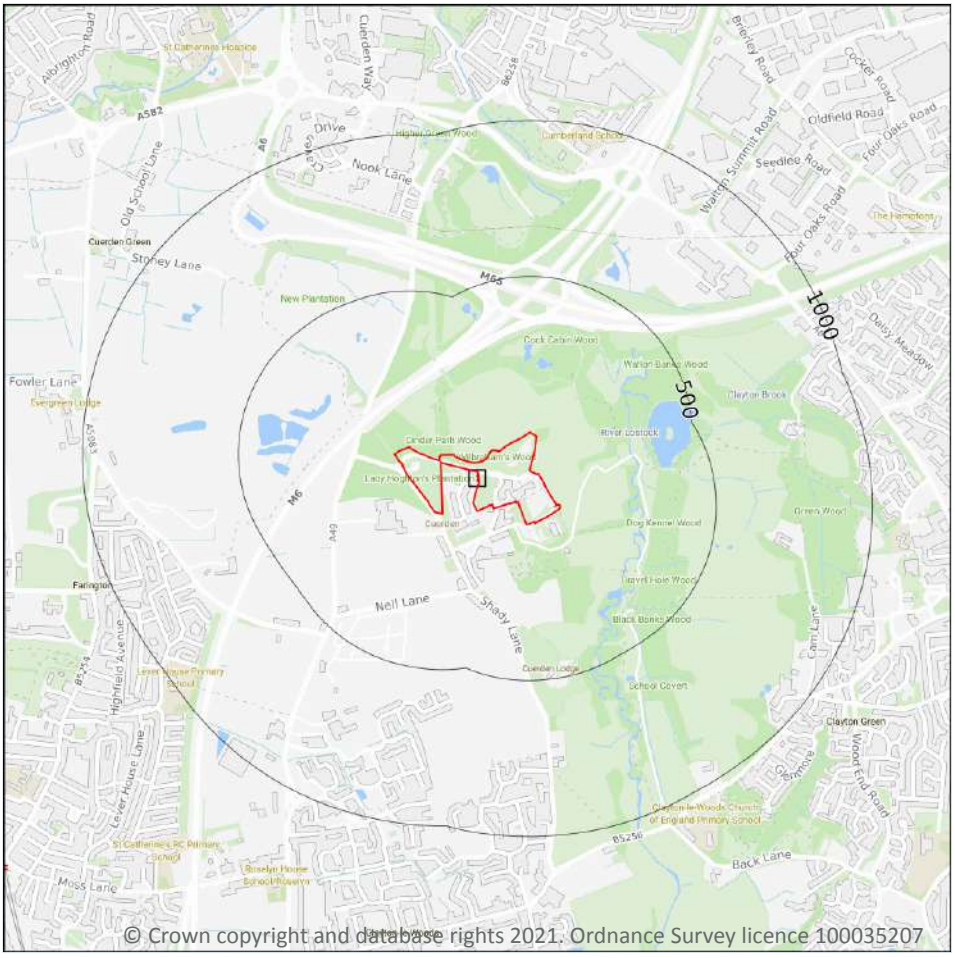
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 81**

ID	Location	Category	Description
4	483m SE	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

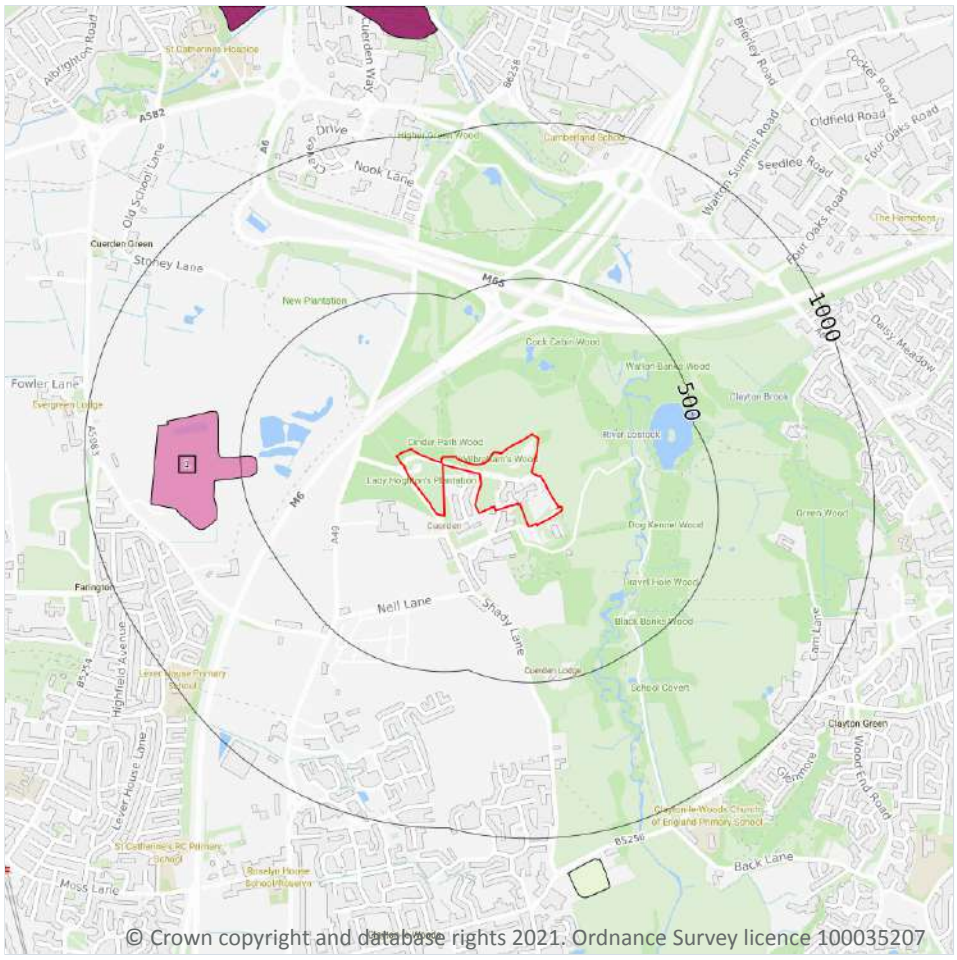
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 83**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**Full**	**Full**	**Full**	**EW075_preston_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	1

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.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 84**

ID	Location	LEX Code	Description	Rock description
1	447m W	WGR-VOID	WORKED GROUND (UNDIVIDED)	VOID

This data is sourced from the British Geological Survey.

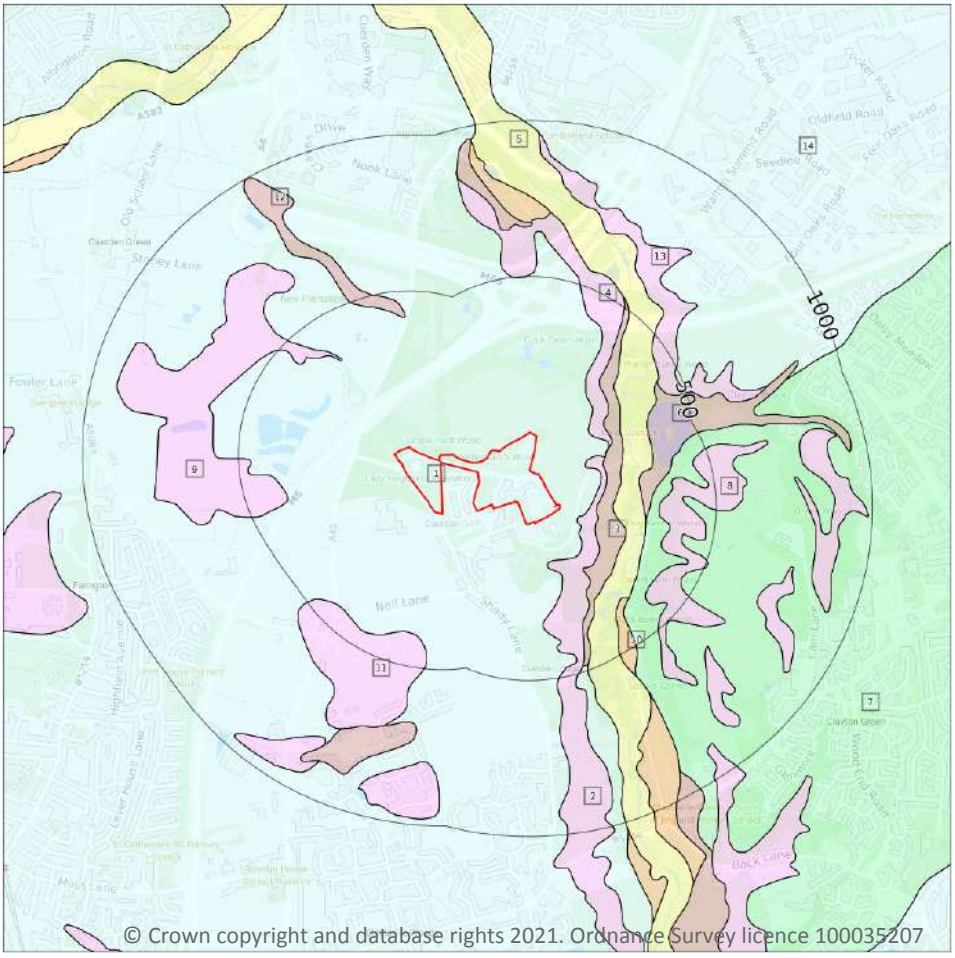
15.3 Artificial ground permeability (50k)

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 **14**

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 86**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-DMTN**	**TILL, DEVENSIAN**	**DIAMICTON**
2	66m SE	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
3	116m E	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL

ID	Location	LEX Code	Description	Rock description
4	167m E	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
5	169m E	ALV-XCSV	ALLUVIUM	CLAY, SAND AND GRAVEL
6	262m E	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
7	278m E	HMGDD-XCSV	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	CLAY, SAND AND GRAVEL
8	316m E	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
9	344m NW	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
10	349m SE	RTD1-XCZSV	RIVER TERRACE DEPOSITS, 1	CLAY, SILT, SAND AND GRAVEL
11	393m S	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
12	415m N	HEAD-XCZSV	HEAD	CLAY, SILT, SAND AND GRAVEL
13	423m NE	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
14	485m E	TILLD-DMTN	TILL, DEVENSIAN	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.

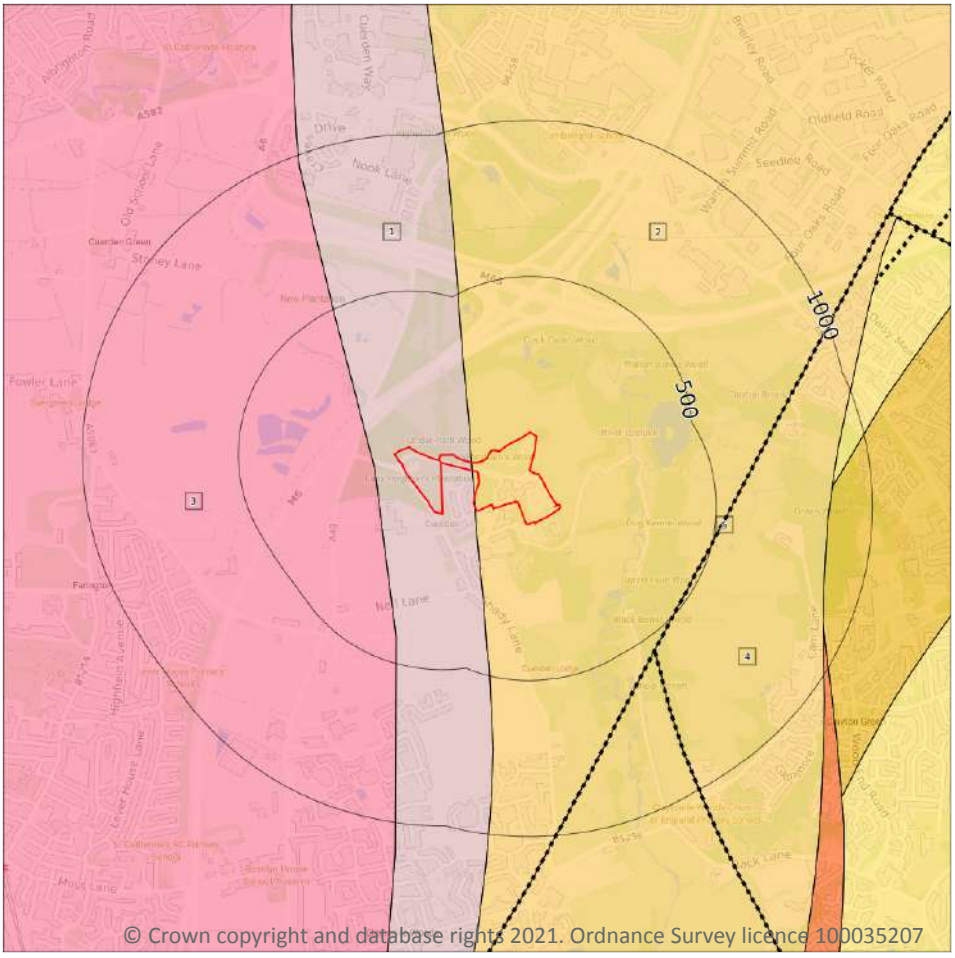
15.7 Landslip permeability (50k)

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 89**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**TPSF-MDSS**	**TARPORLEY SILTSTONE FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE**	**OLENEKIAN**
2	**On site**	**SSG-SDST**	**SHERWOOD SANDSTONE GROUP - SANDSTONE**	**-**
3	73m W	SNM-MDST	SINGLETON MUDSTONE MEMBER - MUDSTONE	-

ID	Location	LEX Code	Description	Rock age
4	483m SE	SSG-SDST	SHERWOOD SANDSTONE GROUP - SANDSTONE	-

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	**2**

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	**Fracture**	**Low**	**Low**
On site	**Mixed**	**High**	**High**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	**1**

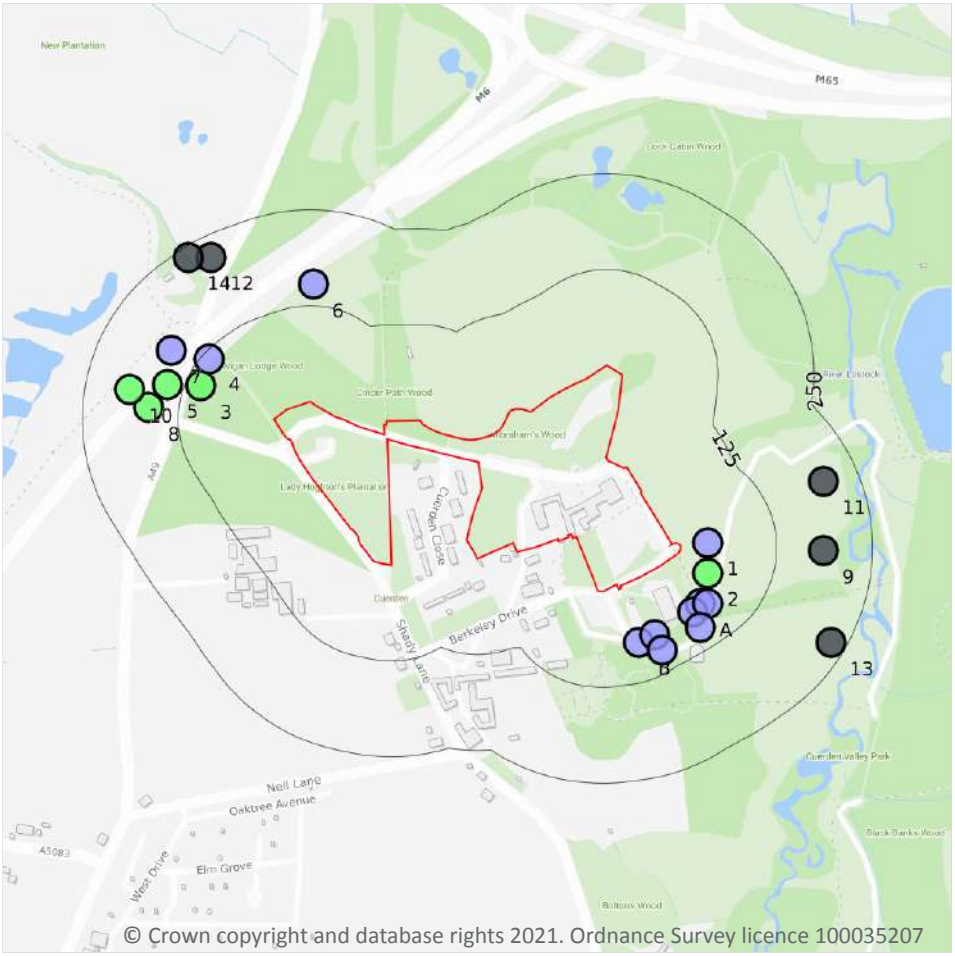
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 89**

ID	Location	Category	Description
5	483m SE	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	21

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.

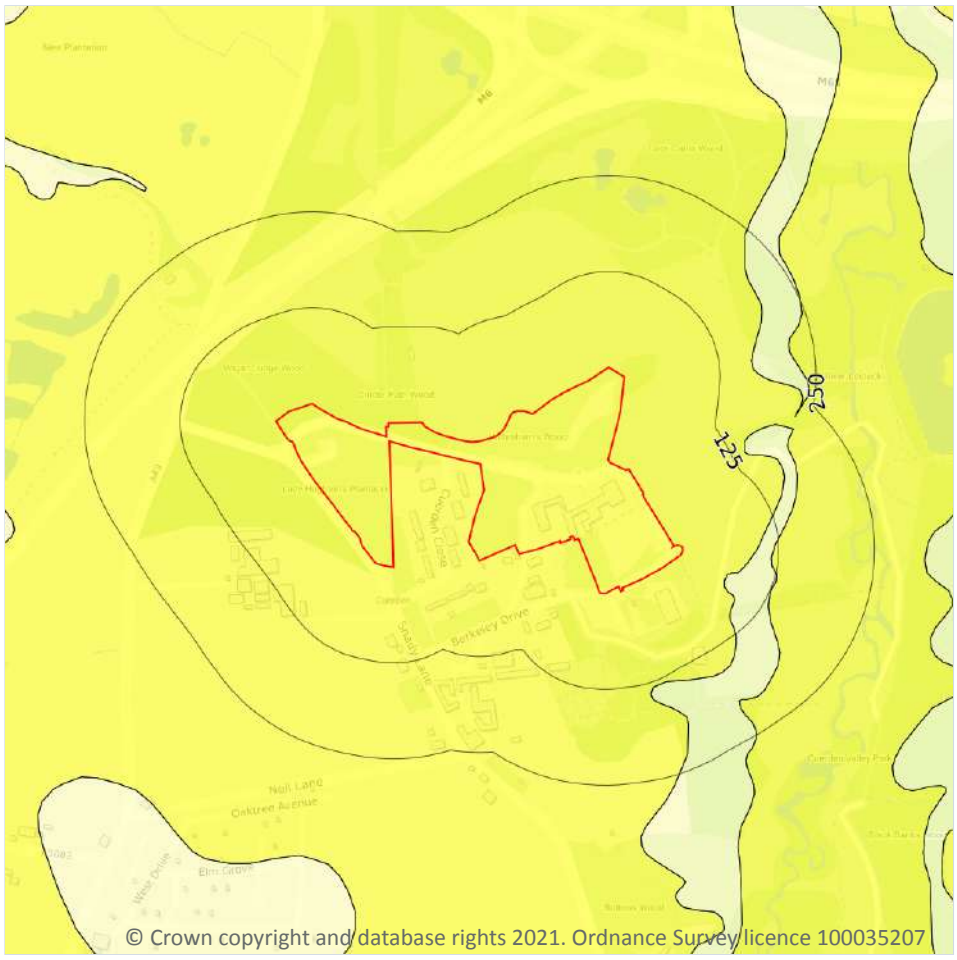
Features are displayed on the Boreholes map on **page 91**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	36m E	356570 423890	CUERDEN PAVILION LANCS 3	3.0	N	17119323
2	46m SE	356570 423850	CUERDEN PAVILION LANCS 2	20.2	N	17119322
A	71m SE	356560 423810	CUERDEN PAVILION LANCS 1	4.0	N	17119321

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	73m SE	356550 423800	CUERDEN PAVILION OFFICE EXT CLDC 2A	6.5	N	17119316
B	74m S	356480 423760	CUERDEN PAVILION OFFICE EXT CLDC 6A	5.0	N	17119320
B	75m SE	356500 423770	CUERDEN PAVILION OFFICE EXT CLDC 5A	7.5	N	17119319
A	76m SE	356570 423810	CUERDEN PAVILION OFFICE EXT CLDC 3A	4.0	N	17119317
A	95m SE	356560 423780	CUERDEN PAVILION OFFICE EXT CLDC 1A	10.0	N	17119315
B	97m SE	356510 423750	CUERDEN PAVILION OFFICE EXT CLDC 4A	4.8	N	17119318
3	105m NW	355909 424095	BLACKBURN STH BYPASS Y304	20.0	N	10975
4	116m NW	355920 424130	M6 JUNCTION 28-29 BH20	10.0	N	11122
5	146m W	355865 424096	BLACKBURN STH BYPASS Y302	25.0	N	10974
6	153m N	356055 424227	BLACKBURN STH BYPASS TP.X334	3.0	N	10938
7	161m NW	355870 424140	M6 JUNCTION 28-29 TP 18	0.0	N	11116
8	164m W	355841 424066	BLACKBURN STH BYPASS SG17	15.0	N	11044
9	186m E	356720 423880	LOSTOCK VALLEY F W SEWER 37/37A-B	-	Y	N/A
10	192m W	355816 424090	BLACKBURN STH BYPASS SG18	15.0	N	11045
11	204m NE	356720 423970	LOSTOCK VALLEY F W SEWER 36	-	Y	N/A
12	222m NW	355922 424262	ZONE 2 CUERDEN BAMBER BRIDGE TP33	-	Y	N/A
13	230m SE	356730 423760	LOSTOCK VALLEY F W SEWER 38/38A-B	-	Y	N/A
14	237m NW	355892 424262	ZONE 2 CUERDEN BAMBER BRIDGE TP32	-	Y	N/A

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

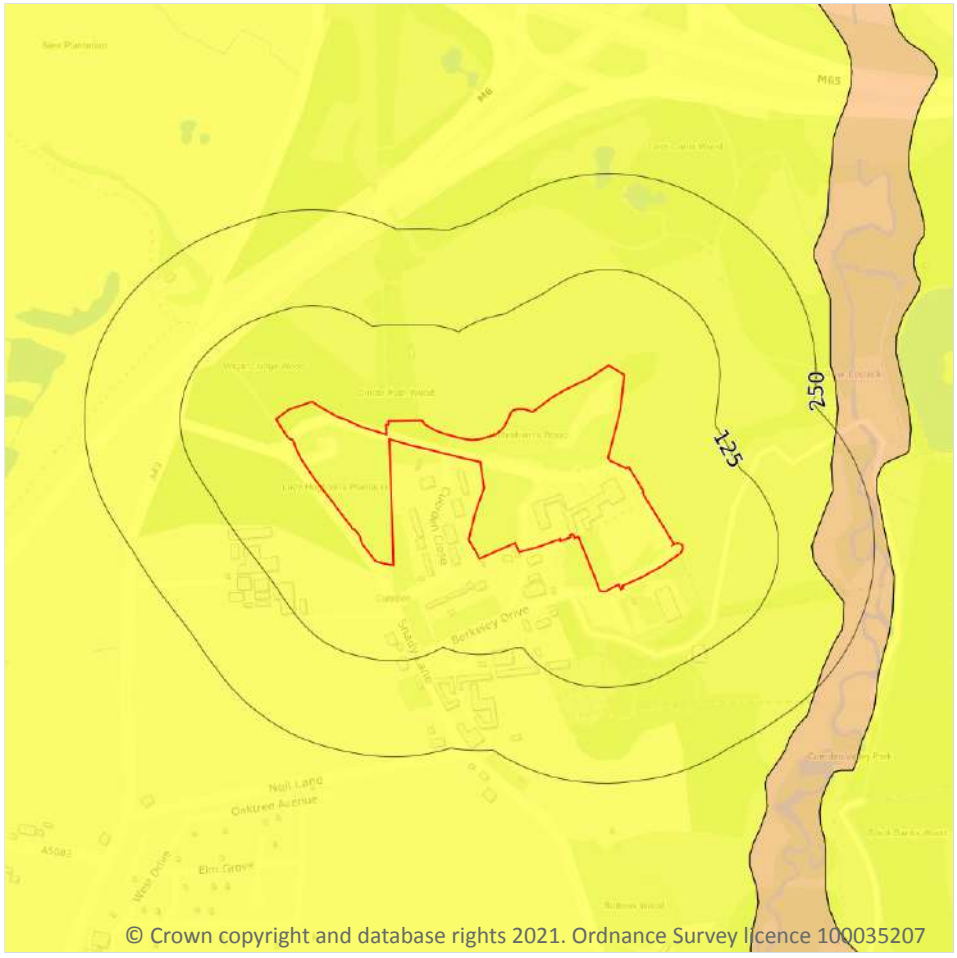
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 93**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

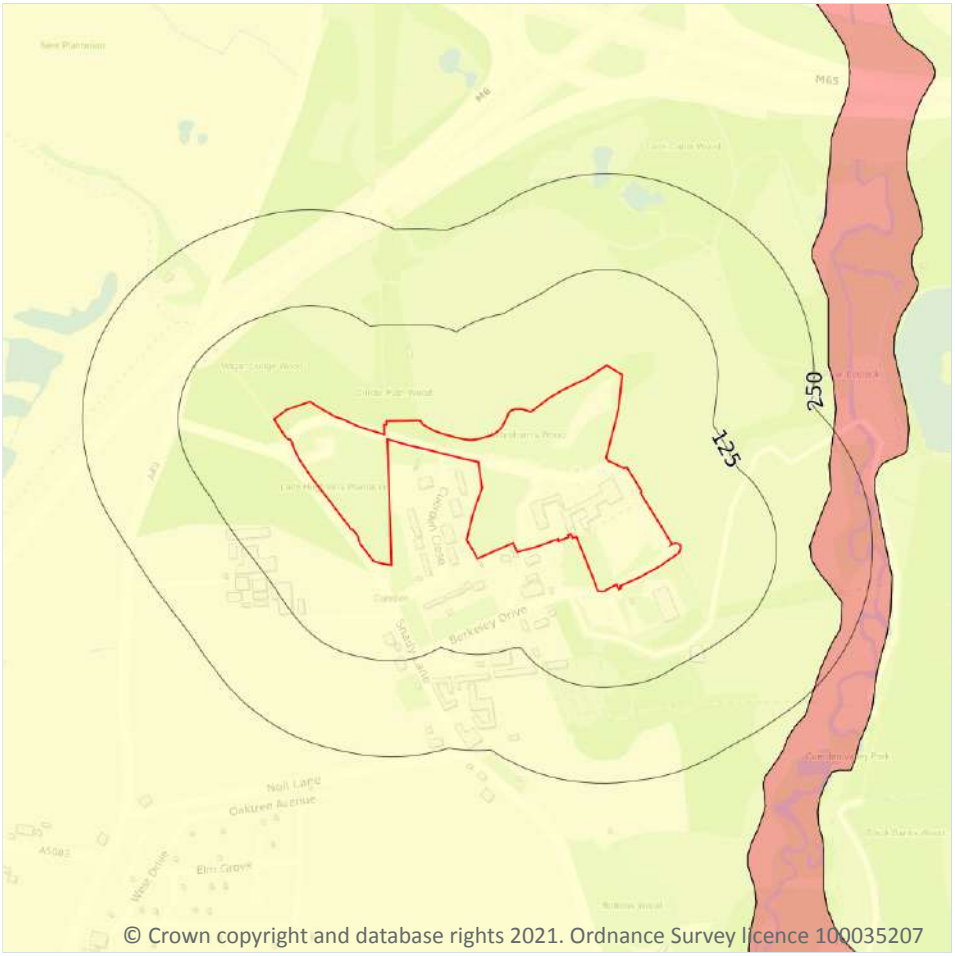
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 94**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

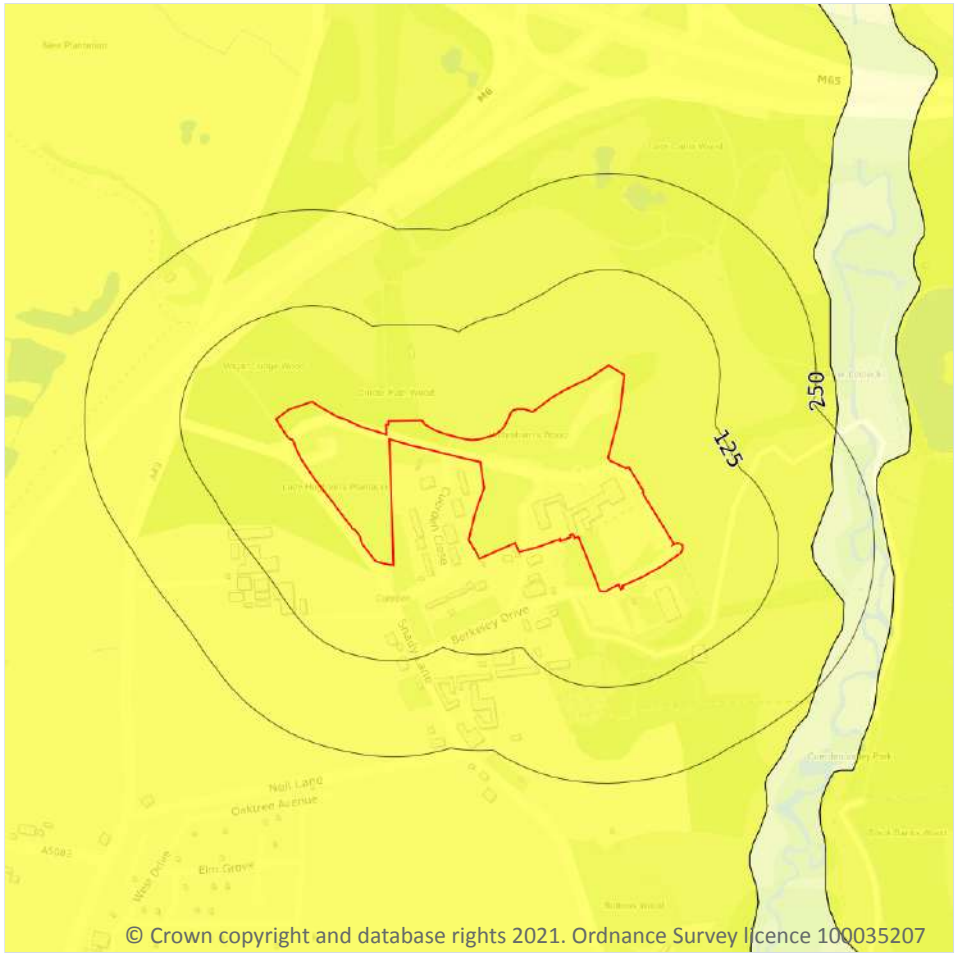
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 95**

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

17.4 Collapsible deposits

Records within 50m	1

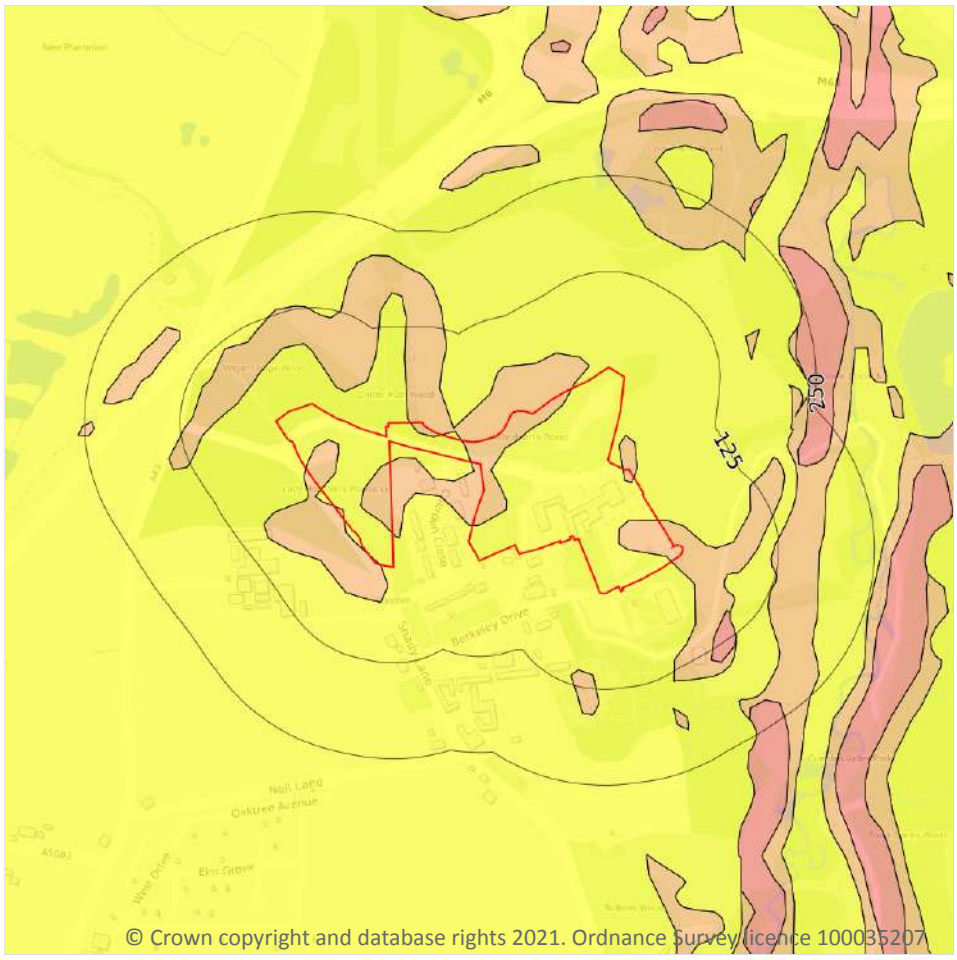
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 96**

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



17.5 Landslides

Records within 50m	2

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.

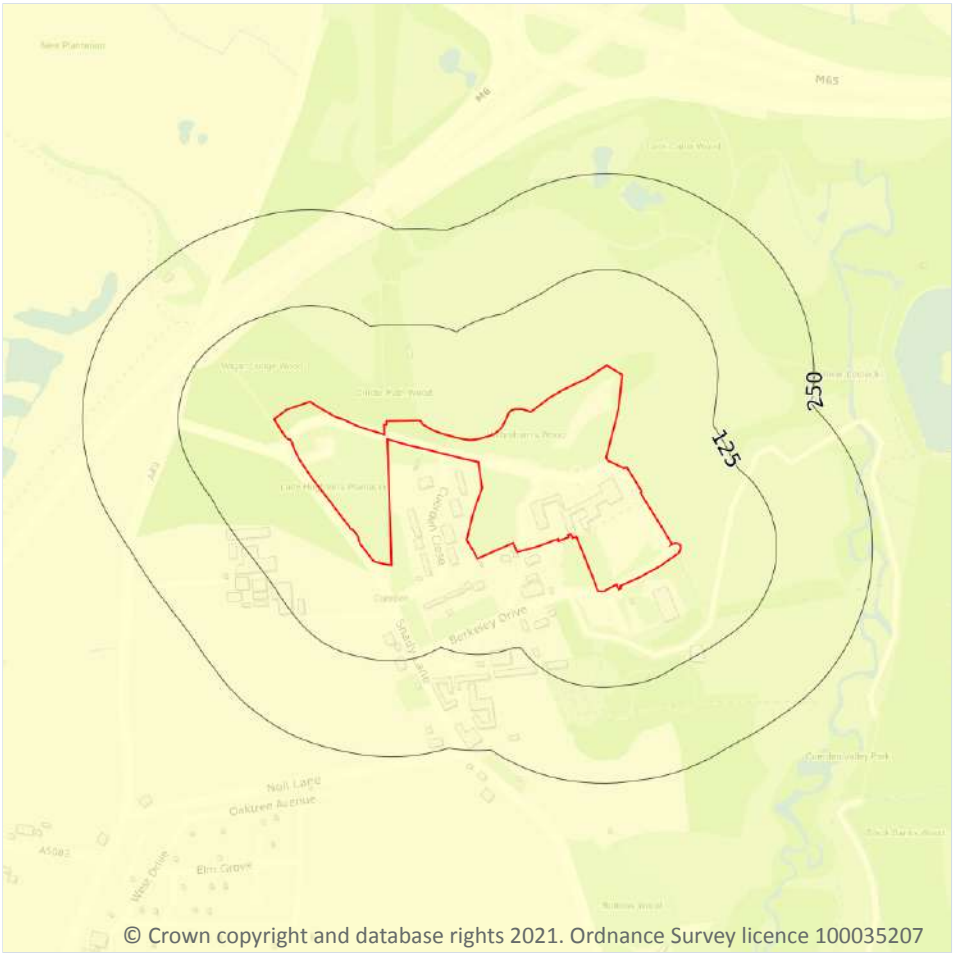
Features are displayed on the Natural ground subsidence - Landslides map on **page 97**

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.**

Location	Hazard rating	Details
On site	**Low**	**Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

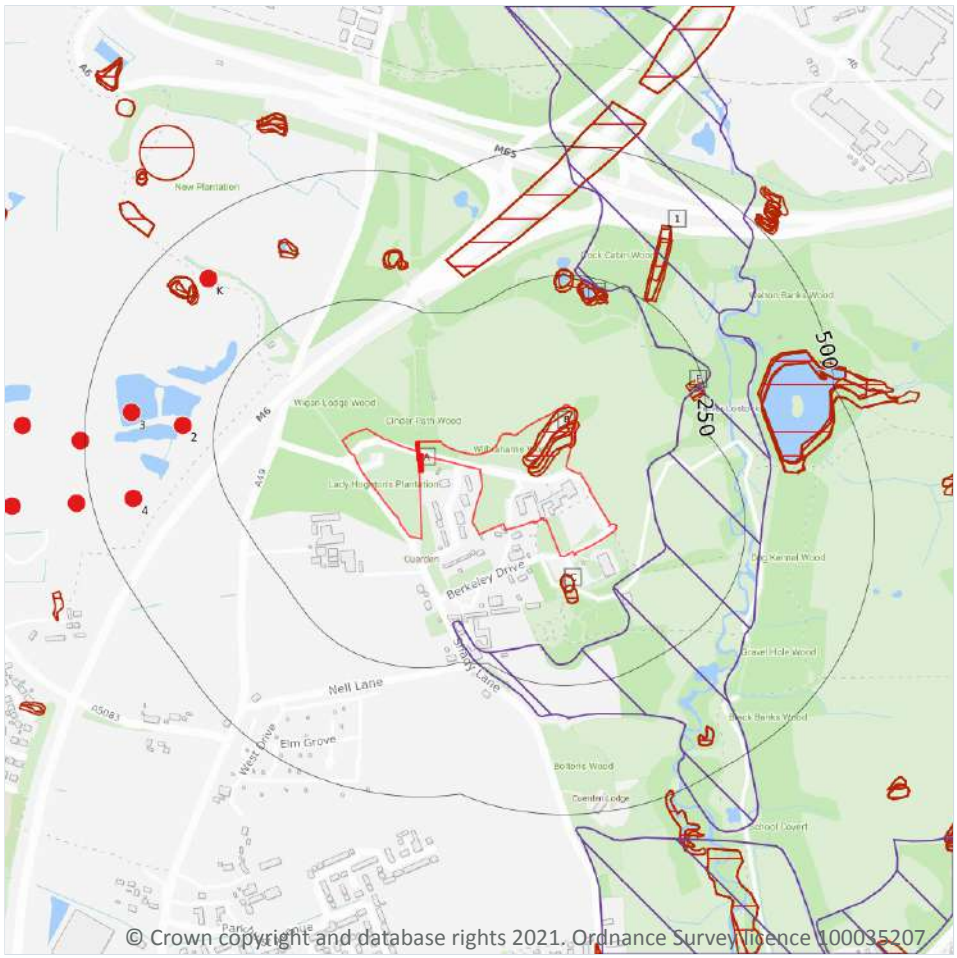
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 99**

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	4

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 100**

ID	Location	Details	Description
2	310m W	Name: Lydiate Lane Quarry Address: Cuerden, Leyland, PRESTON, Lancashire Commodity: Sand & Gravel Status: Active	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which is actively extracting mineral products, or in the case of wharfs and rail depots, is actively handing minerals
K	406m NW	Name: Cuerden Hall Sand Pit Address: Farington, LEYLAND, Lancashire Commodity: Sand Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
3	412m W	Name: Lydiate Lane Quarry Address: Cuerden, Leyland, PRESTON, Lancashire Commodity: Sand & Gravel Status: Inactive	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, is not extracting minerals, but which still has a valid planning permission to do so, and can restart at any time. May be considered Mothballed by operator.May be considered to have Active or Dormant planning permission
4	419m W	Name: Lydiate Lane Quarry Address: Cuerden, Leyland, PRESTON, Lancashire Commodity: Sand & Gravel Status: Inactive	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, is not extracting minerals, but which still has a valid planning permission to do so, and can restart at any time. May be considered Mothballed by operator.May be considered to have Active or Dormant planning permission

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	30

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 100**

ID	Location	Land Use	Year of mapping	Mapping scale
B	**On site**	**Unspecified Heap**	**1967**	**1:10560**
B	**On site**	**Unspecified Heap**	**1973**	**1:10000**
B	**On site**	**Unspecified Heap**	**1983**	**1:10000**
B	**On site**	**Unspecified Heap**	**1990**	**1:10000**
B	**On site**	**Reservoir**	**1931**	**1:10560**
B	**On site**	**Reservoir**	**1909**	**1:10560**
B	**On site**	**Reservoir**	**1893**	**1:10560**
B	**On site**	**Reservoir**	**1955**	**1:10560**
C	35m S	Unspecified Pit	1967	1:10560
C	35m S	Unspecified Pit	1973	1:10000
C	35m S	Unspecified Pit	1983	1:10000
C	36m S	Unspecified Pit	1955	1:10560
C	57m S	Unspecified Pit	1931	1:10560
C	57m S	Unspecified Pit	1909	1:10560
D	197m N	Pond	1938	1:10560
D	201m N	Pond	1938	1:10560
D	201m N	Pond	1929	1:10560
D	201m N	Pond	1909	1:10560
D	205m N	Ponds	1892	1:10560
D	208m N	Pond	1967	1:10560
D	208m N	Pond	1973	1:10000
D	208m N	Pond	1983	1:10000
D	208m N	Pond	1990	1:10000

ID	Location	Land Use	Year of mapping	Mapping scale
D	208m N	Pond	1955	1:10560
E	217m E	Sewage Beds	1955	1:10560
D	218m N	Pond	1983	1:10000
D	218m N	Pond	1990	1:10000
E	220m E	Sewage Beds	1931	1:10560
D	225m N	Pond	1955	1:10560
E	227m E	Sewage Beds	1909	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	**8**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 100**

ID	Location	Land Use	Year of mapping	Mapping scale
A	**On site**	**Tunnel**	**1931**	**1:10560**
A	**On site**	**Tunnel**	**1909**	**1:10560**
A	**On site**	**Tunnel**	**1893**	**1:10560**
A	**On site**	**Tunnel**	**1967**	**1:10560**
A	**On site**	**Tunnel**	**1973**	**1:10000**
A	**On site**	**Tunnel**	**1983**	**1:10000**
A	**On site**	**Tunnel**	**1990**	**1:10000**
A	**On site**	**Tunnel**	**1951**	**1:10560**

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	1

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.

Features are displayed on the Mining, ground workings and natural cavities map on **page 100**

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
1	77m E	Cuerdon Hall Estate	Sand and gravel	Surface mineral working	Refused	Not available

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	1

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).

Features are displayed on the Mining, ground workings and natural cavities map on **page 100**

ID	Location	Name	Commodity	Class	Likelihood
-	899m E	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered

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	1

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

Location	Details
On site	**Whilst outside of an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property. Further details and a quote for services can be obtained by emailing this report to enquiries.gs@jpb.co.uk.**

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 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

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

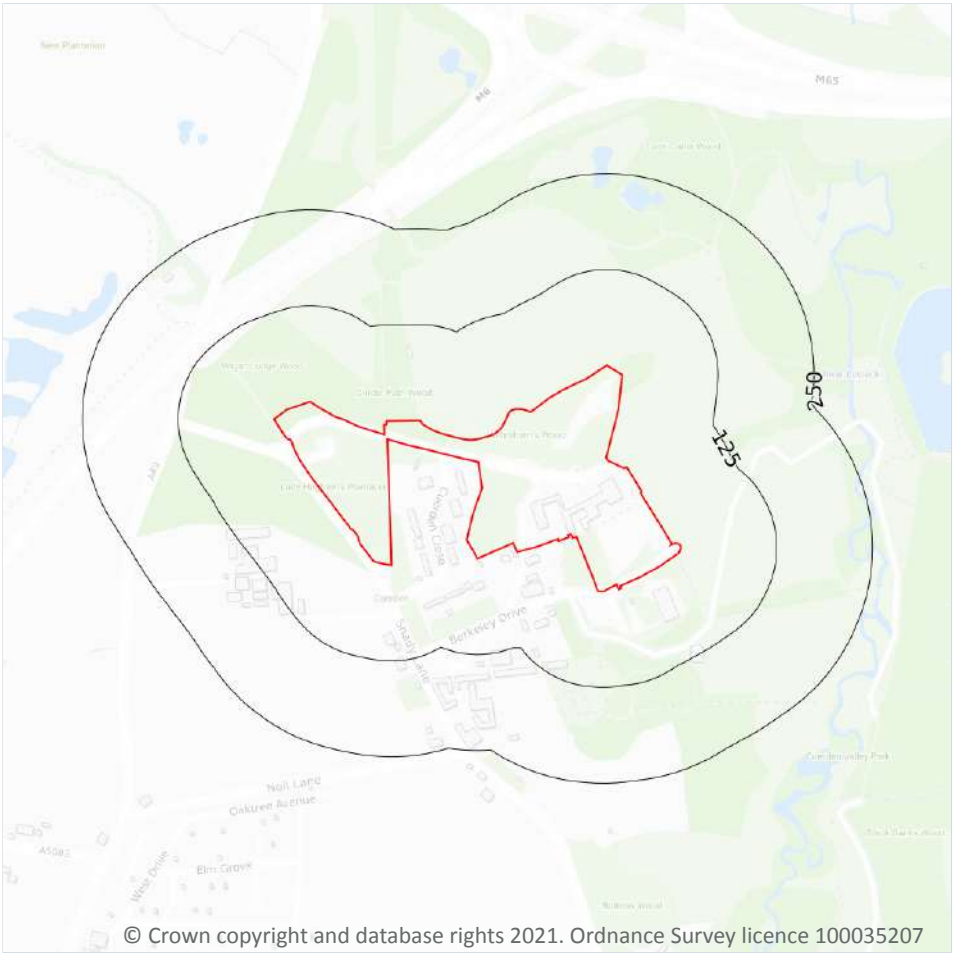
18.13 Clay mining

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).

19 Radon



Site Outline

Search buffers in metres (m)

Greater than 30%

Between 10% and 30%

Between 5% and 10%

Between 3% and 5%

Between 1% and 3%

Less than 1%

19.1 Radon

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 107**

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 **17**

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**15 - 30 mg/kg**
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**
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**
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**
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**
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**
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**
4m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
4m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
12m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
26m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
33m W	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
33m SW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
33m W	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
33m W	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
37m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg
37m NE	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 km^2).

This data is sourced from the British Geological Survey.

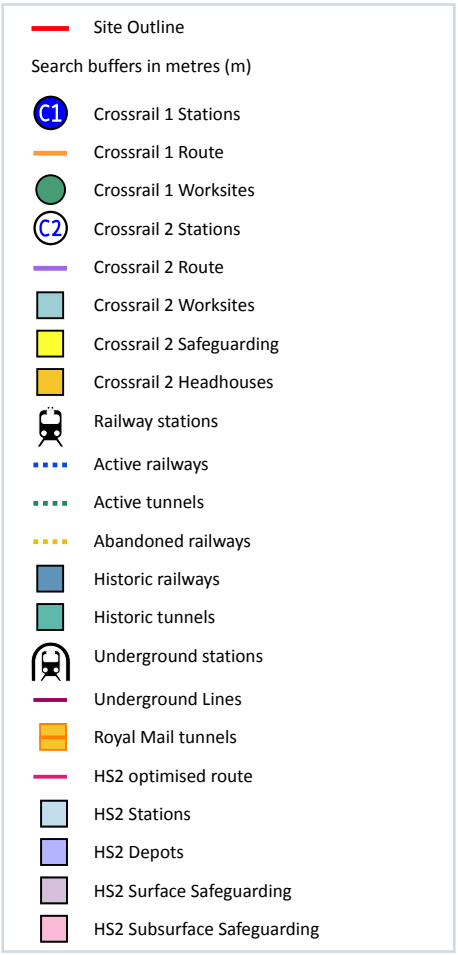
20.3 BGS Measured Urban Soil Chemistry

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 km^2.

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	15

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.

Features are displayed on the Railway infrastructure and projects map on **page 110**

Location	Land Use	Year of mapping	Mapping scale
On site	**Tunnel**	**1987**	**2500**
On site	**Tunnel**	**1893**	**2500**
On site	**Tunnel**	**1911**	**2500**
On site	**Tunnel**	**1931**	**2500**
On site	**Tunnel**	**1989**	**2500**
On site	**Tunnel**	**1963**	**2500**
On site	**Tunnel**	**1993**	**2500**
On site	**Tunnel**	**1931**	**10560**
On site	**Tunnel**	**1909**	**10560**
On site	**Tunnel**	**1893**	**10560**
On site	**Tunnel**	**1967**	**10560**
On site	**Tunnel**	**1973**	**10000**
On site	**Tunnel**	**1983**	**10000**
On site	**Tunnel**	**1990**	**10000**
On site	**Tunnel**	**1955**	**10560**

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.

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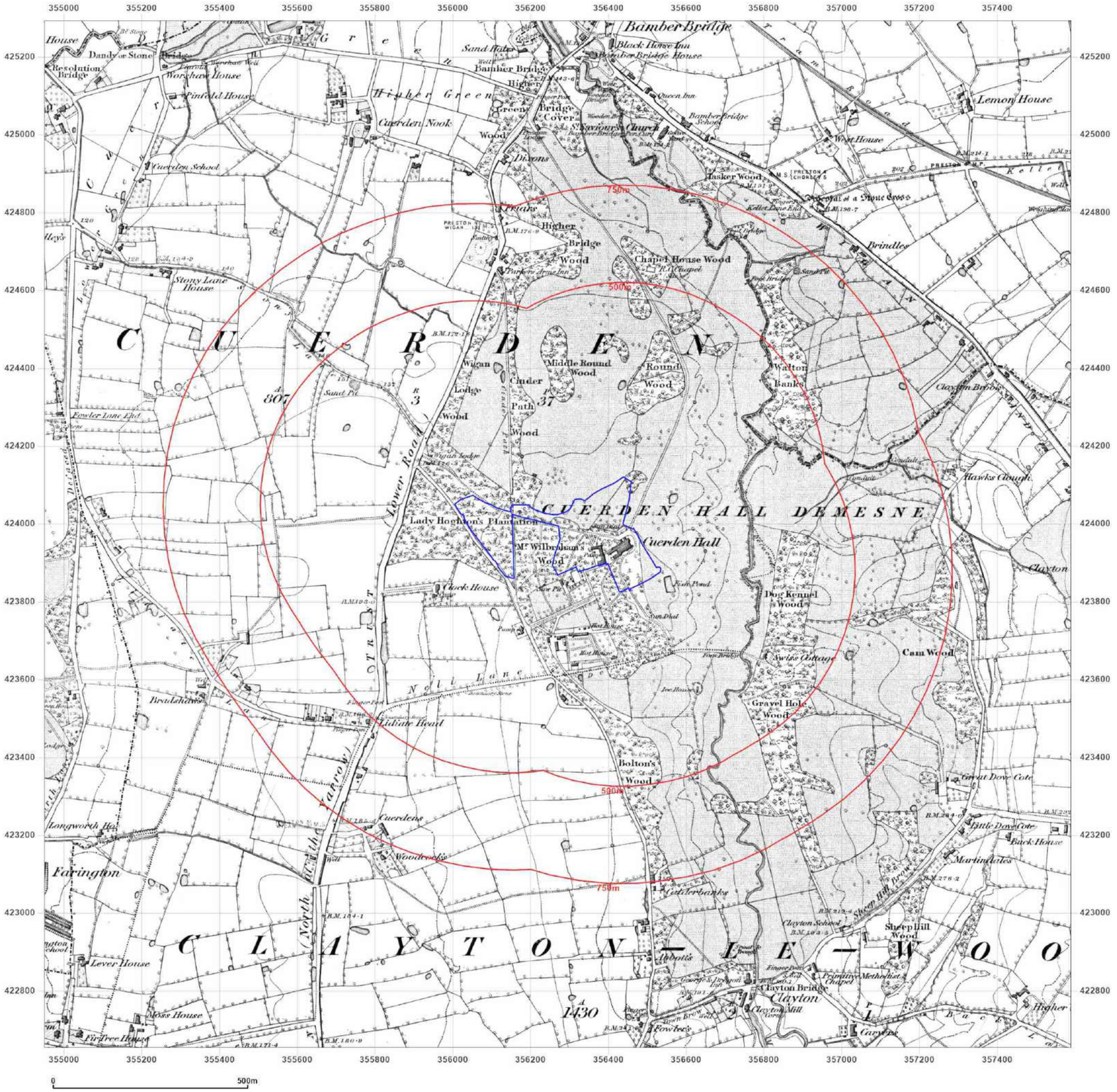

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Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: County Series

Map date: **1848**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1846
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Edition 1848
Copyright N/A
Levelled N/A

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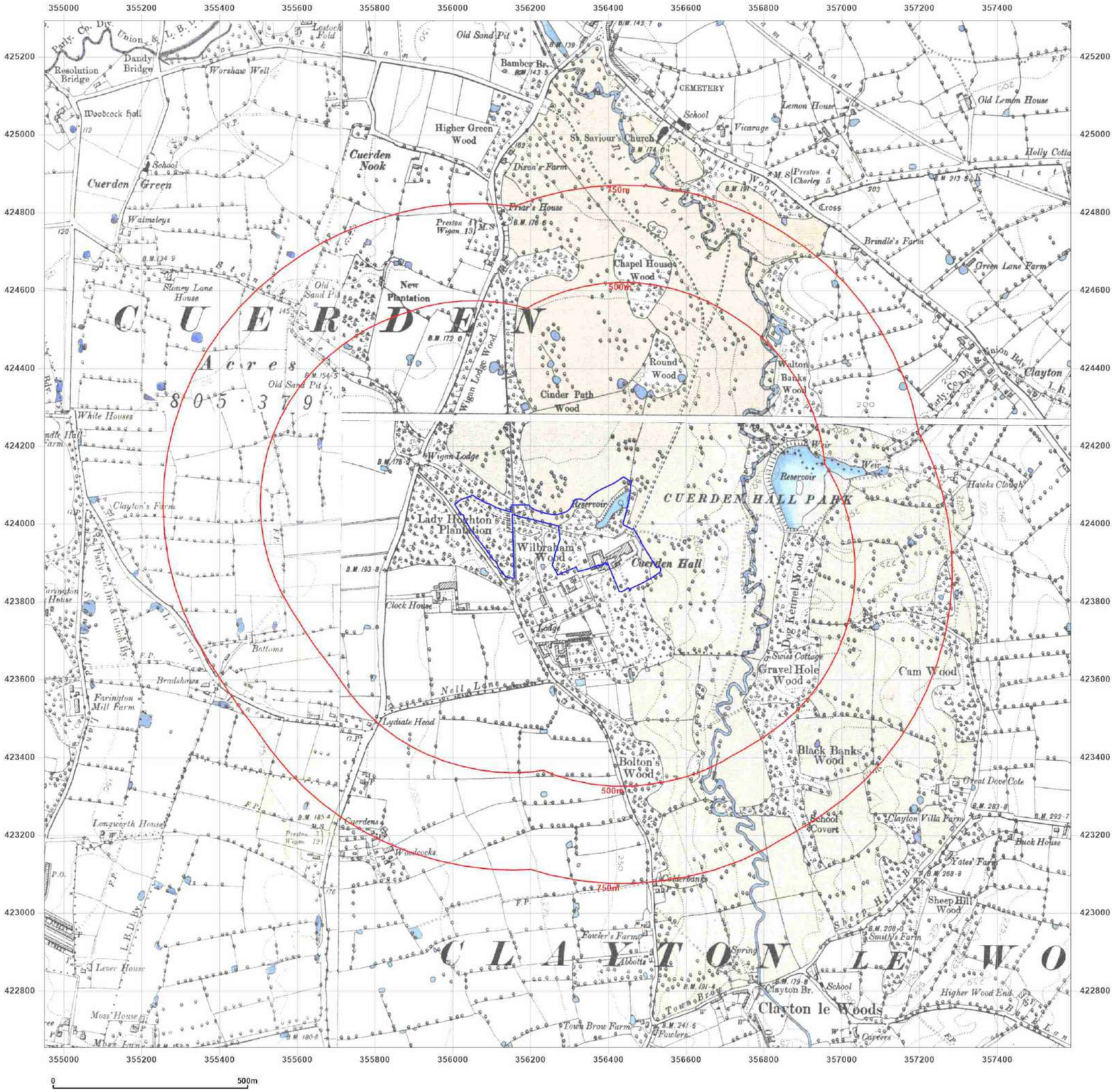

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Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: County Series

Map date: **1892-1893**

Scale: 1:10,560

Printed at: 1:10,560

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

Surveyed 1892
Revised 1892
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Surveyed 1893
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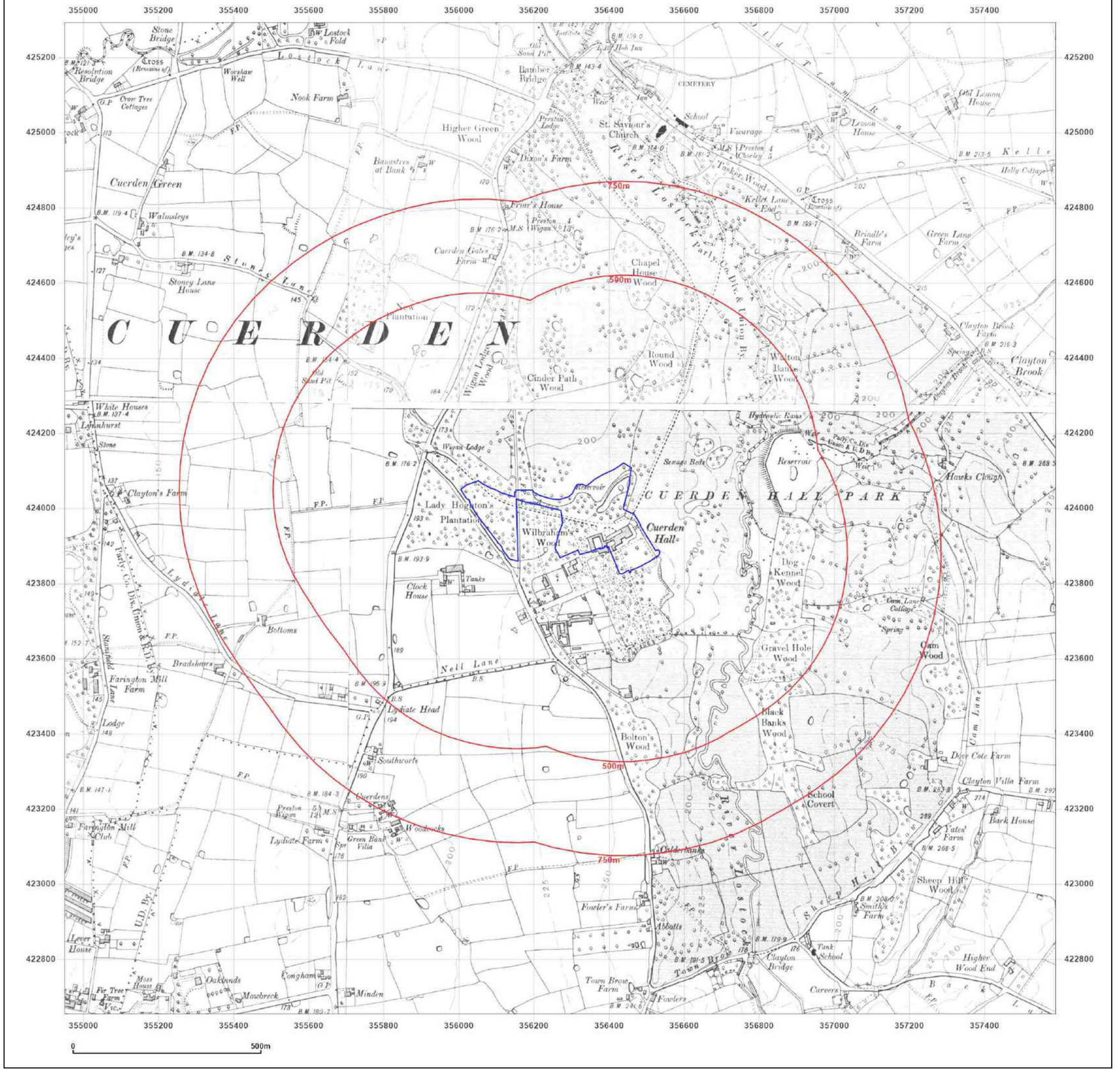

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Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: County Series

Map date: **1909**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1847
Revised 1909
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1909
Edition N/A
Copyright N/A
Levelled N/A

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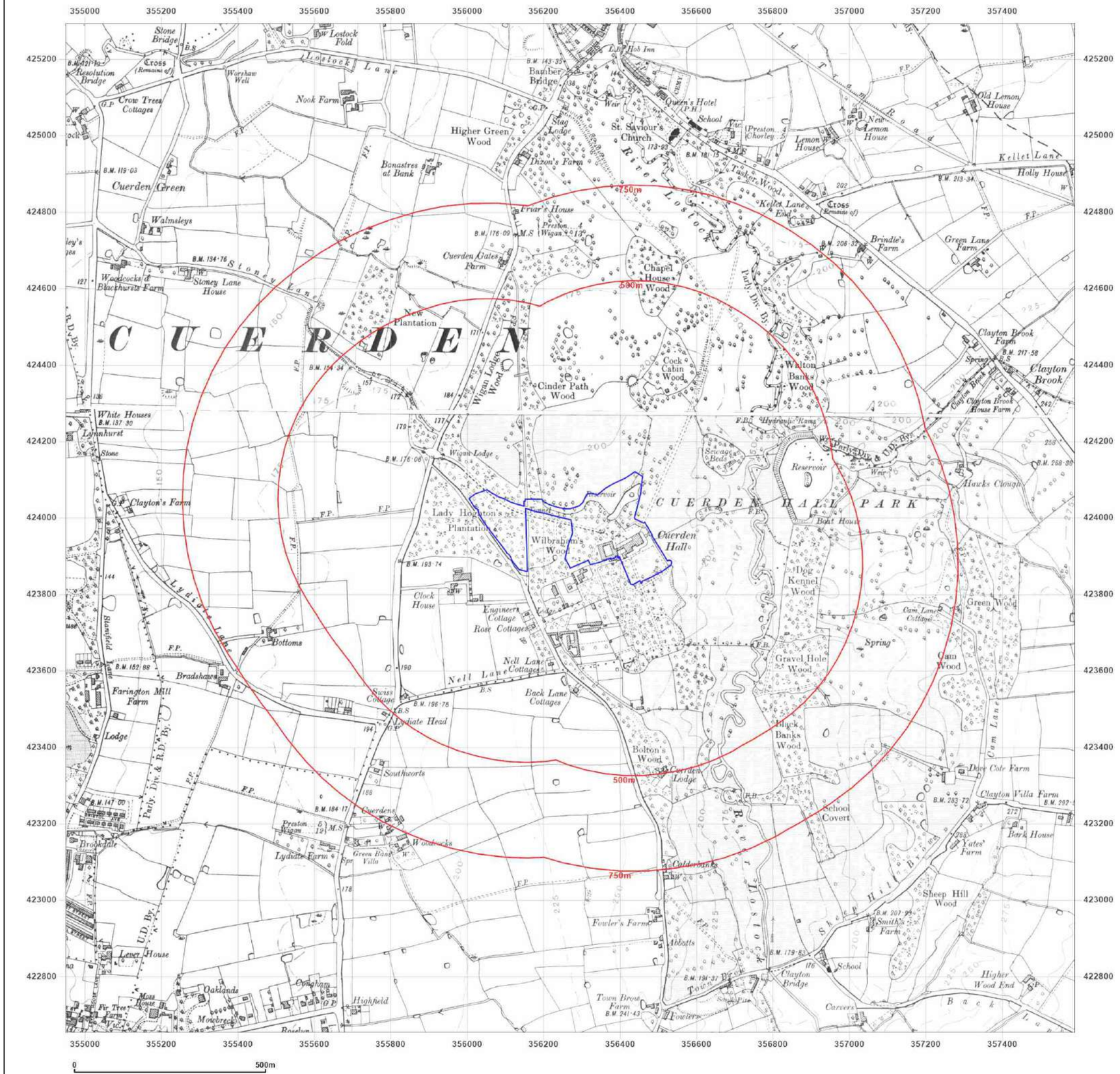

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Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: County Series
Map date: **1928-1931**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed 1847
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1929
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1928
Edition N/A
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Surveyed 1844
Revised 1931
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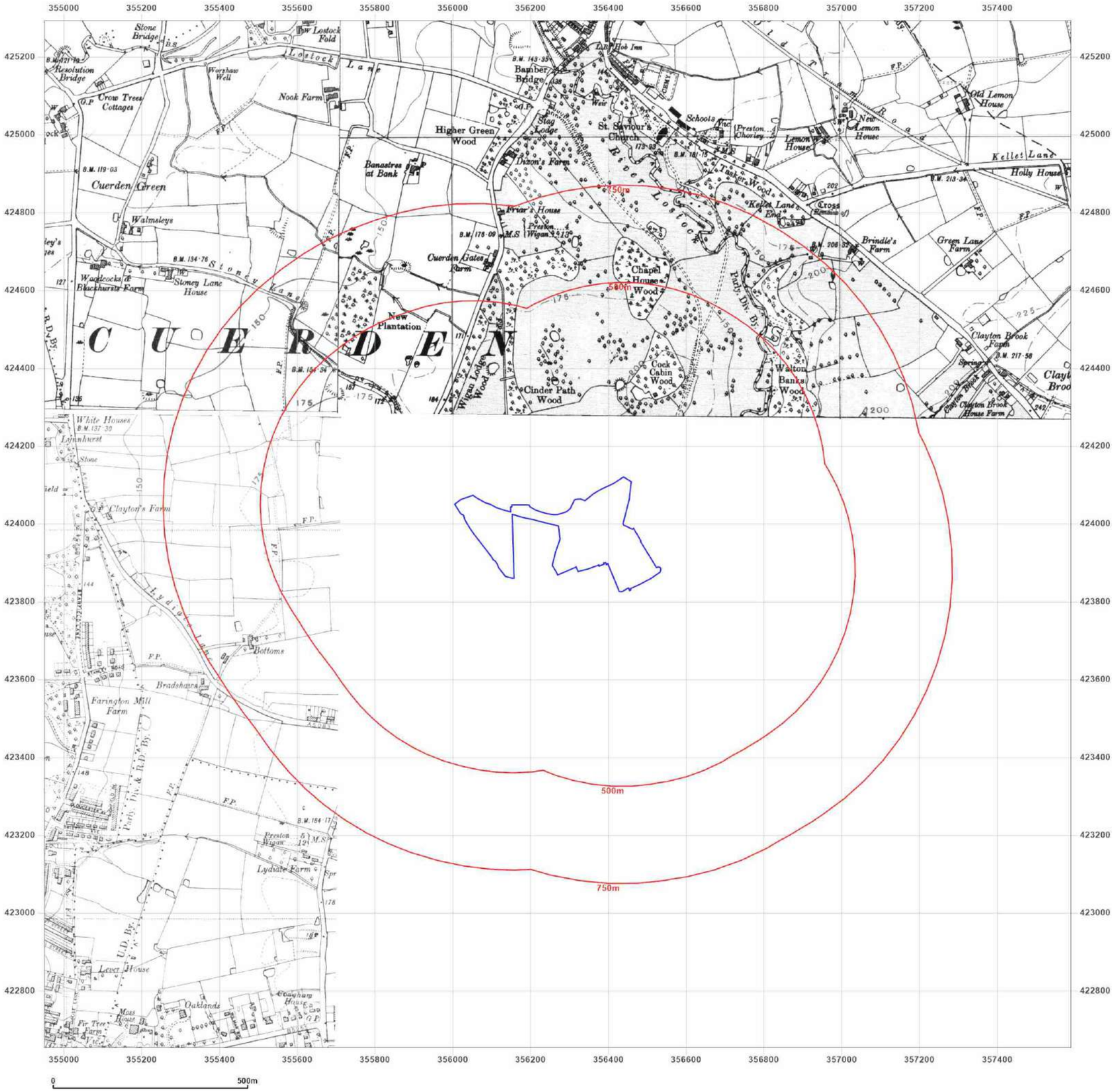

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Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1847
Revised 1938
Edition N/A
Copyright N/A
Levelled 1927

Surveyed 1844
Revised 1938
Edition N/A
Copyright N/A
Levelled 1927

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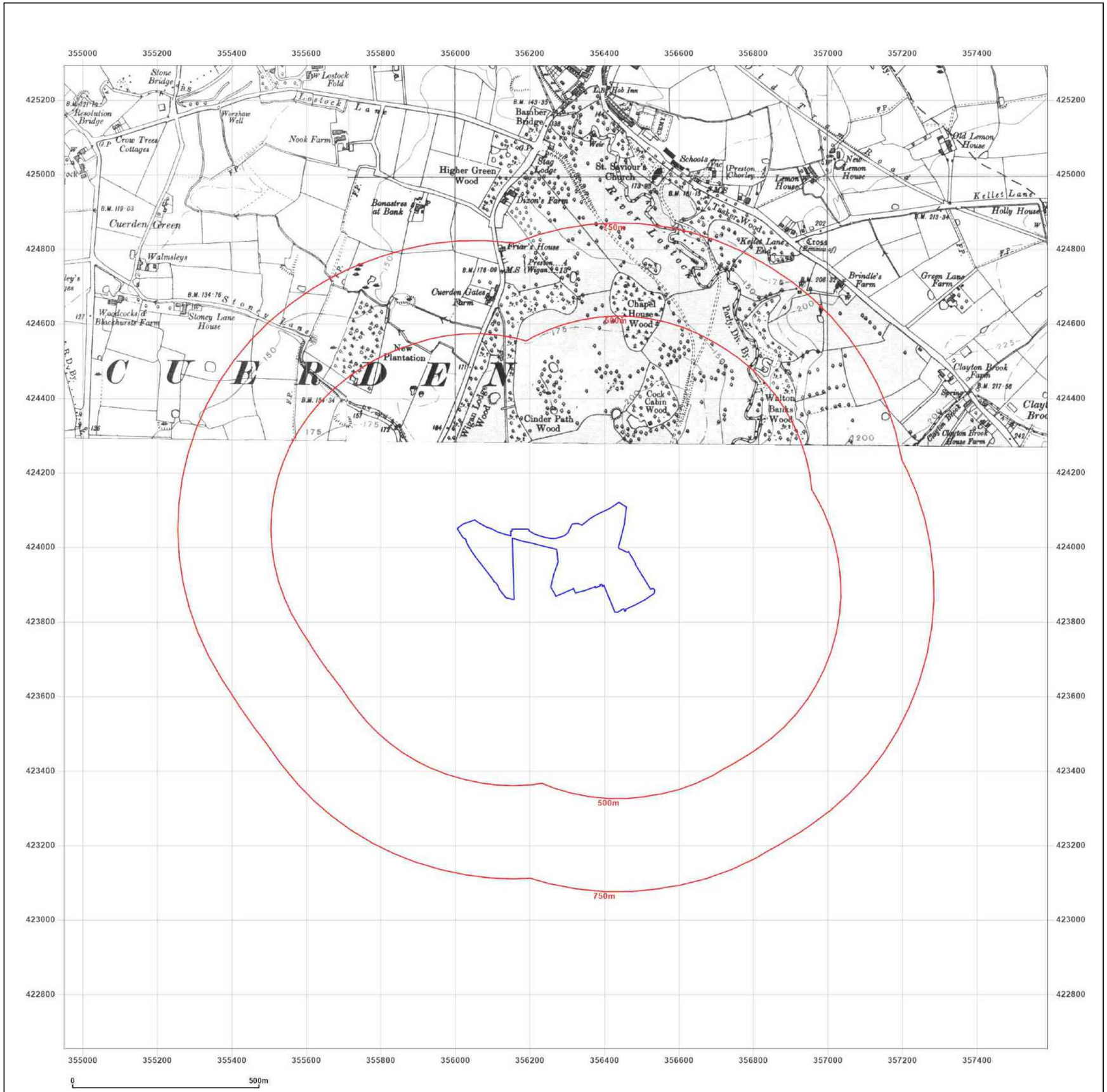

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Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

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

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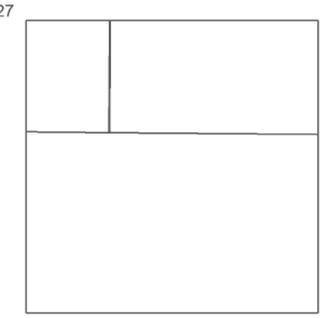
Revised 1938
Edition N/A
Copyright N/A
Levelled 1927

Surveyed 1844
Revised 1938
Edition N/A
Copyright N/A
Levelled 1927



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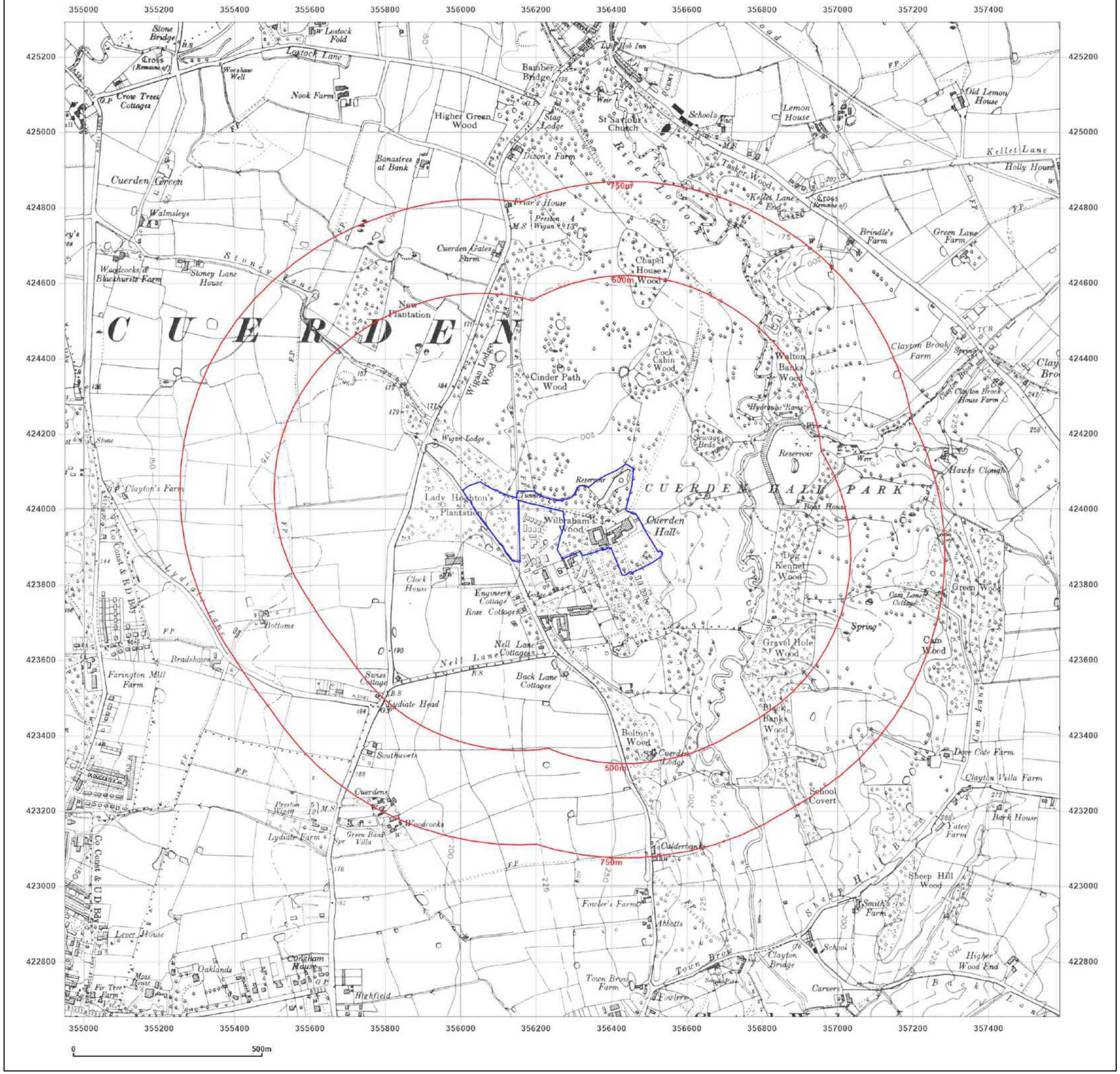

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Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: Provisional

Map date: **1955-1956**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1951
Revised 1955
Edition N/A
Copyright N/A
Levelled N/A

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

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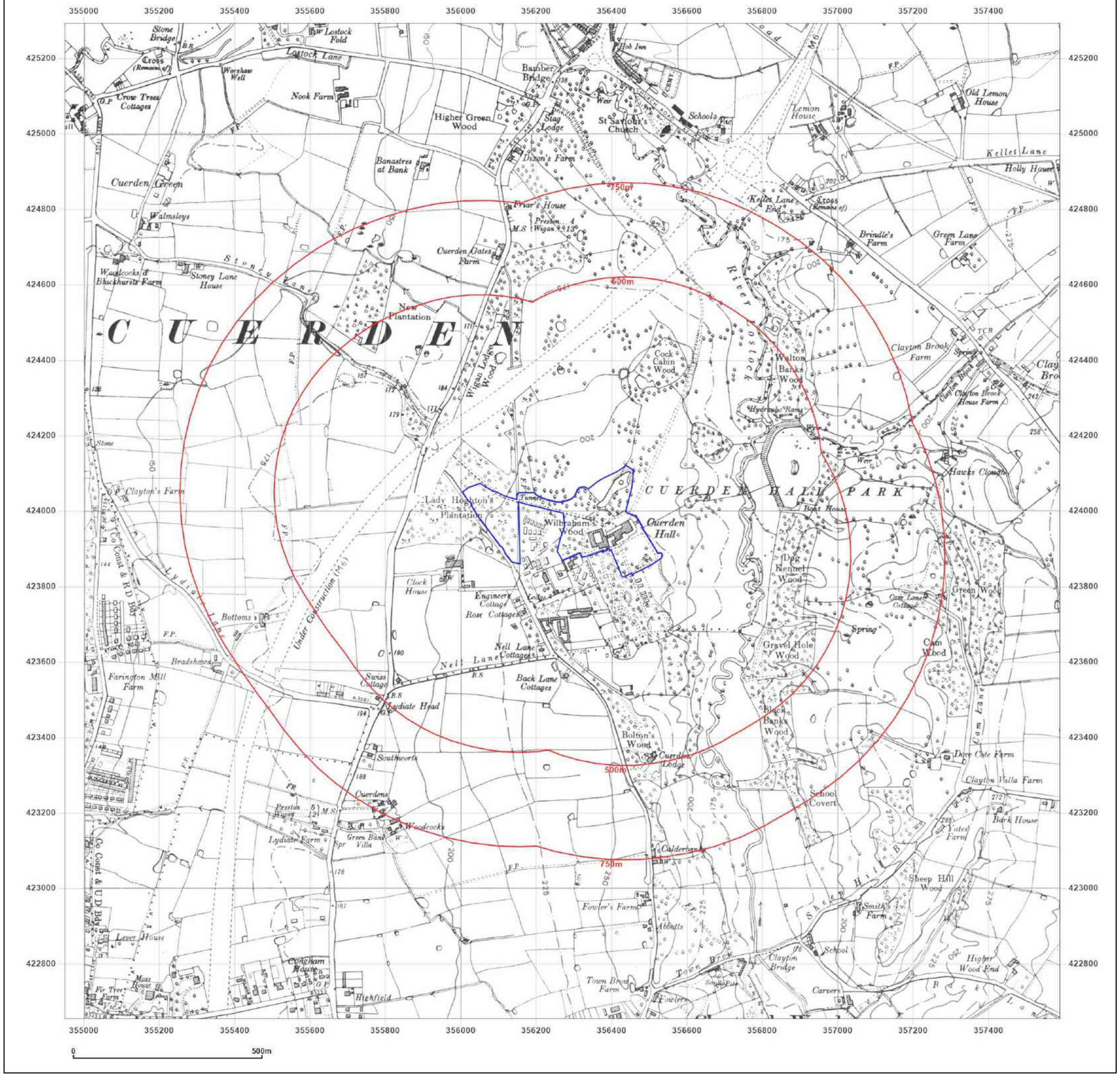

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Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: Provisional
Map date: **1958-1962**
Scale: 1:10,560
Printed at: 1:10,560

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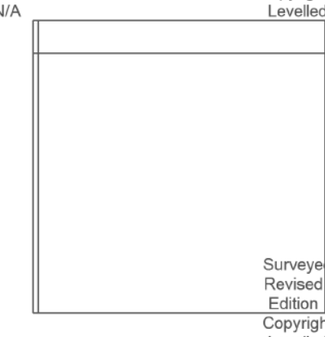
Surveyed 1951
Revised 1958
Edition N/A
Copyright 1955
Levelled N/A

Surveyed N/A
Revised 1962
Edition N/A
Copyright 1956
Levelled N/A



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Edition 1955
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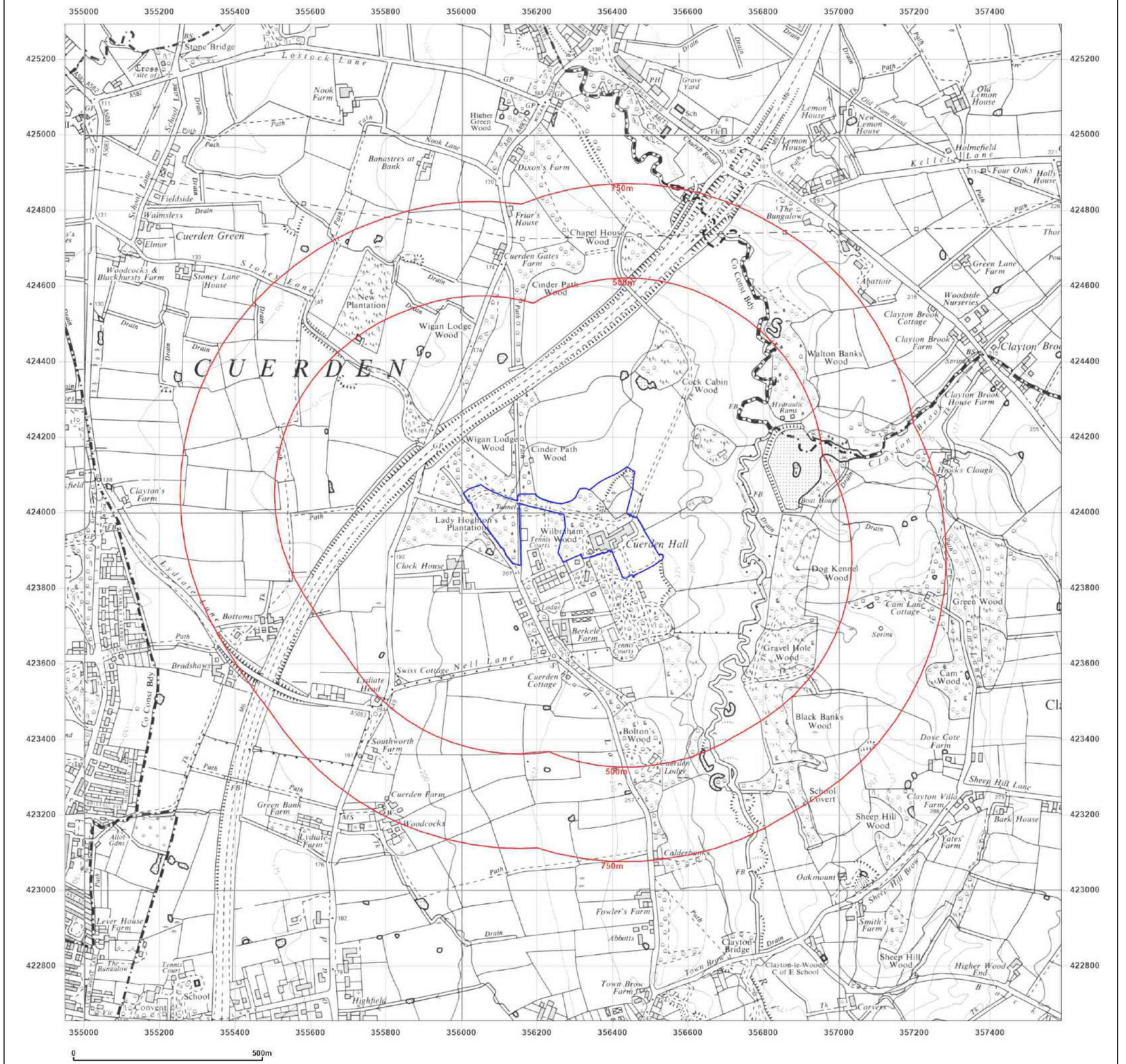

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Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: Provisional
Map date: **1967-1968**
Scale: 1:10,560
Printed at: 1:10,560

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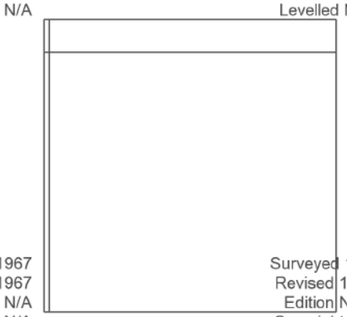
Surveyed 1968
Revised 1968
Edition N/A
Copyright N/A
Levelled N/A

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



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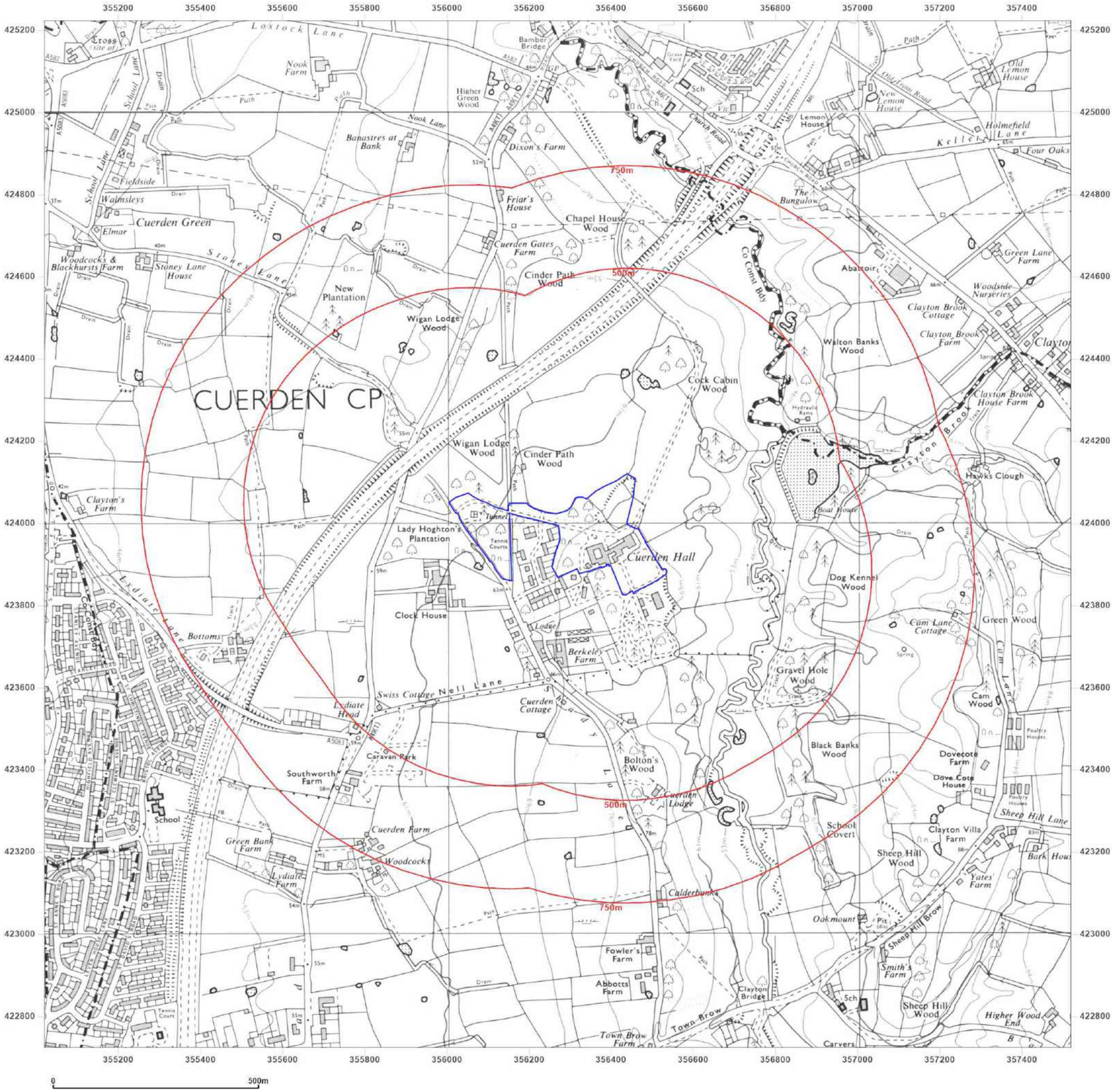

Groundsure INSIGHTS

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Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: National Grid

Map date: **1973-1974**

Scale: 1:10,000

Printed at: 1:10,000

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

Surveyed 1973
Revised 1973
Edition N/A
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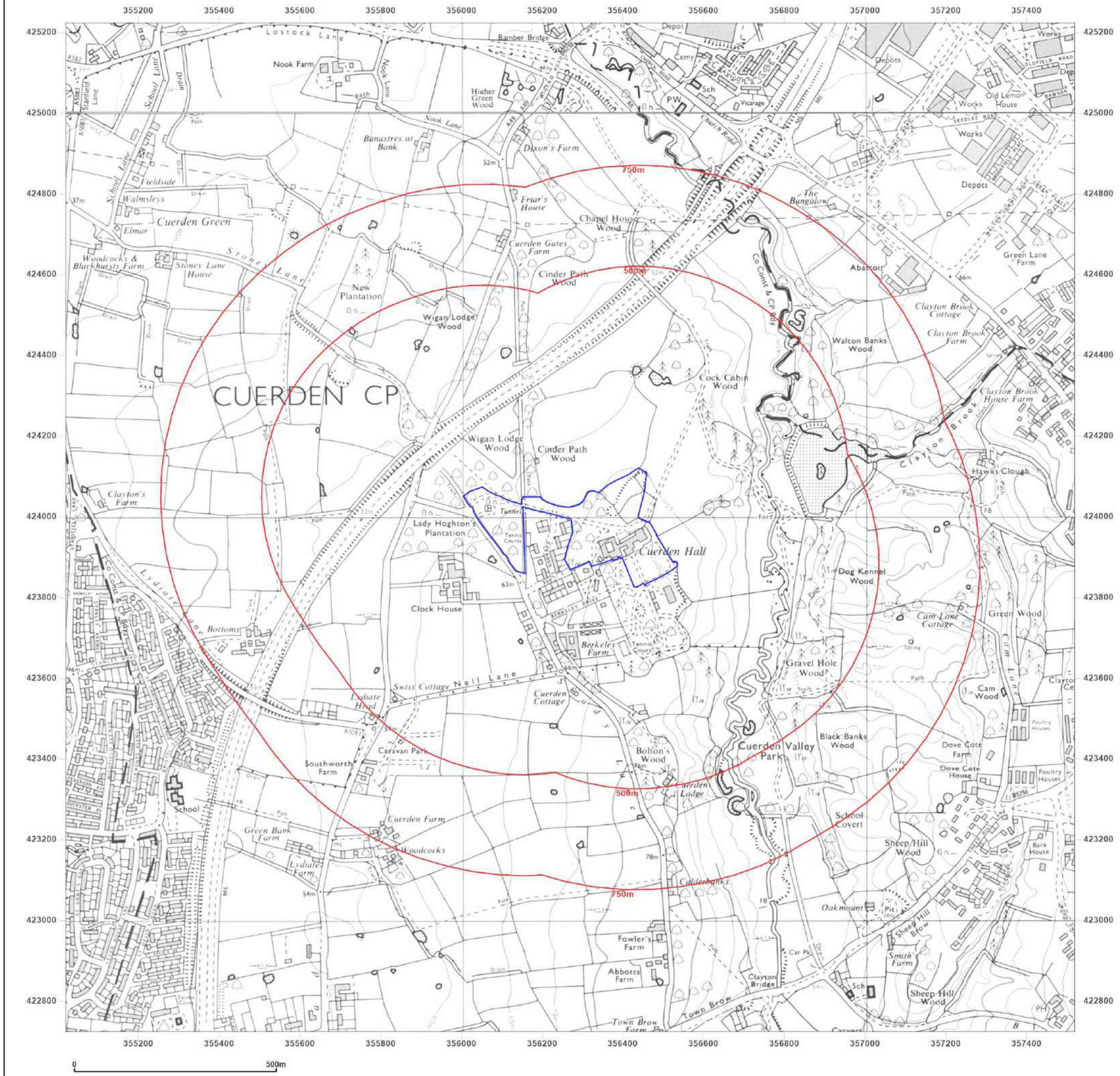

Groundsure INSIGHTS

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Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: National Grid

Map date: **1983-1987**

Scale: 1:10,000

Printed at: 1:10,000

N
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Copyright N/A
Levelled N/A

Surveyed 1982
Revised 1983
Edition N/A
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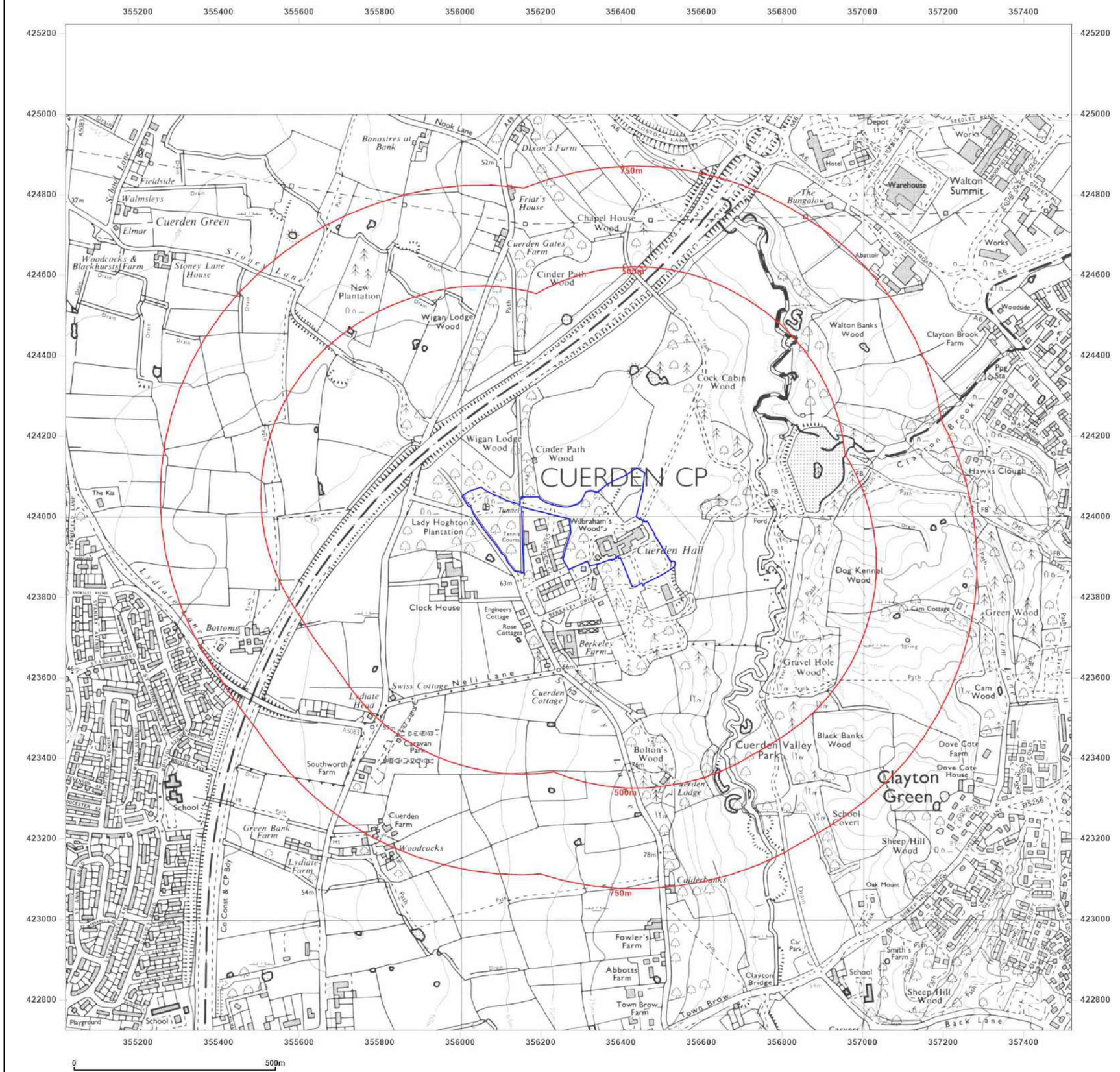

Groundsure INSIGHTS

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Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: National Grid

Map date: **1990**

Scale: 1:10,000

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Surveyed 1990
Revised 1990
Edition N/A
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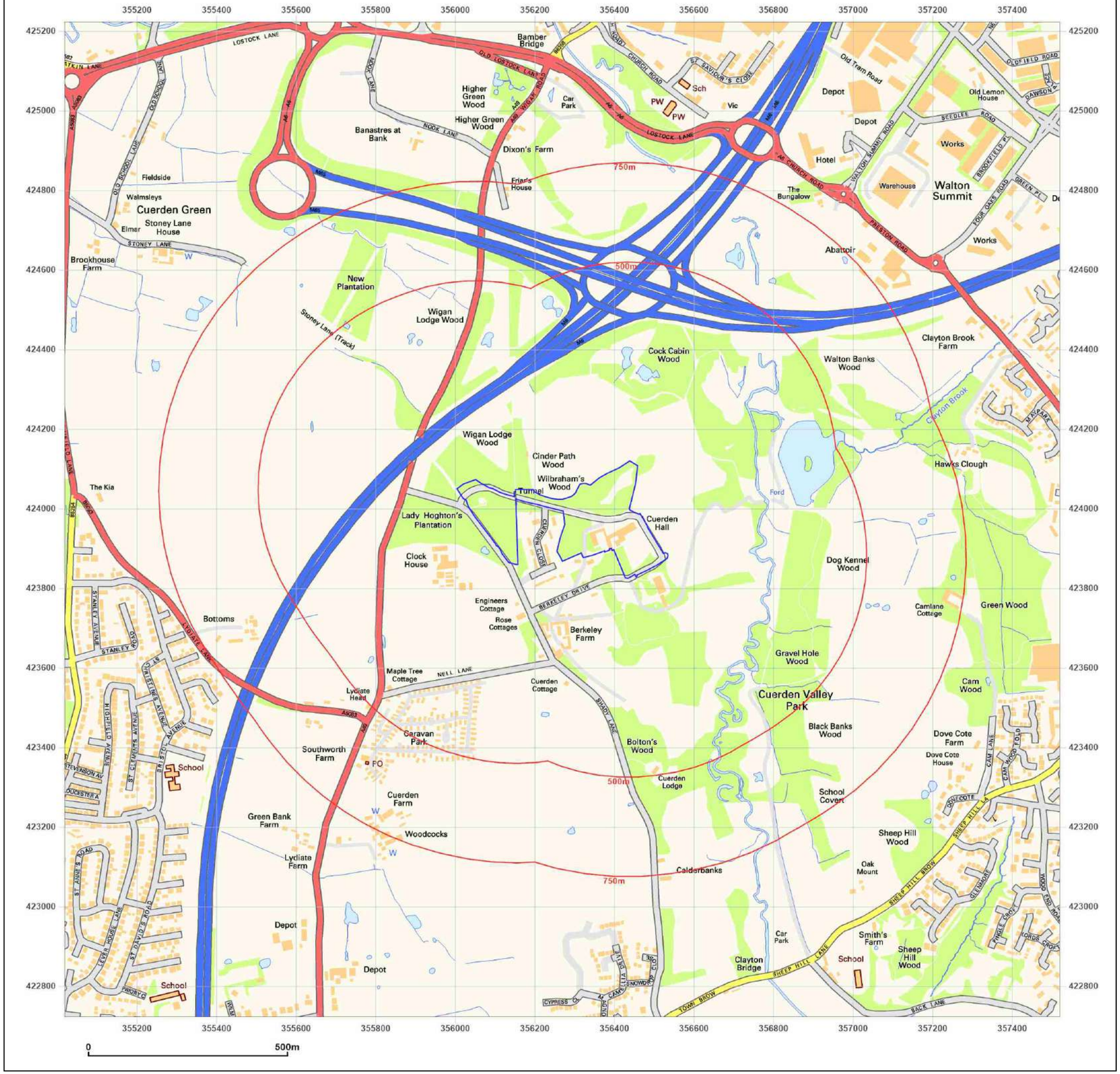

Site Details:

CAFE, CUERDEN HALL, SHADY LANE, CUERDEN, BAMBER BRIDGE, PR5 6AZ

Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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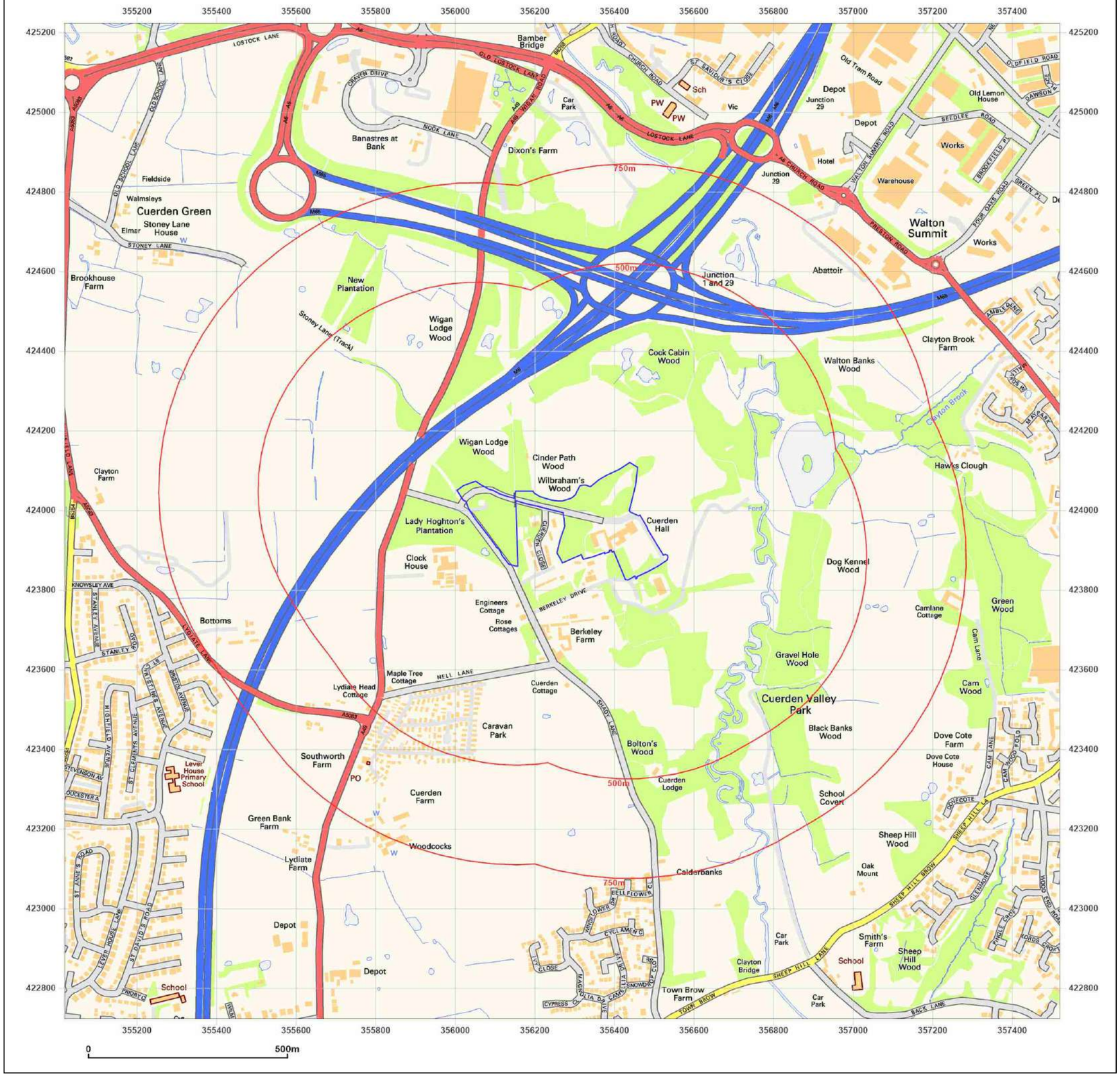

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Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

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

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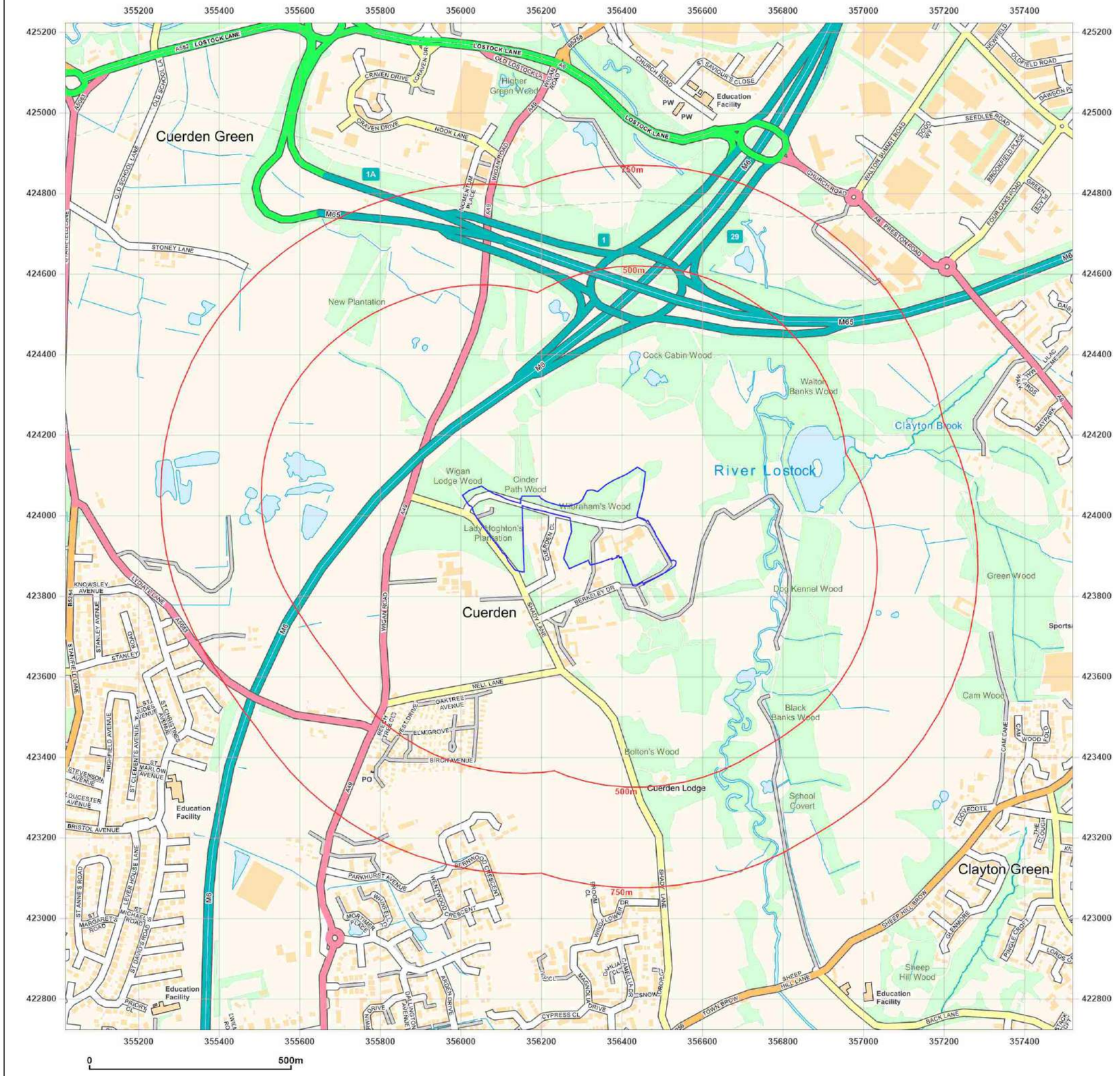

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Site Details:

CAFE, CUERDEN HALL, SHADY LANE, CUERDEN, BAMBER BRIDGE, PR5 6AZ

Client Ref: Cuerden_Hall
Report Ref: GS-7614209
Grid Ref: 356269, 423973

Map Name: National Grid
Map date: **2021**
Scale: 1:10,000
Printed at: 1:10,000

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Appendix C Risk Assessment Rationale

The site-specific qualitative risk assessment of environmental harm, as detailed in Section 5.0 of this reporting, is summarised in the table presented hereafter; the principle being to establish connecting links between a hazardous source to a potential receptor via an exposure pathway.

The assessment corresponds with the total site area.

Risk assessment is the process of collating known information on a hazard or set of hazards in order to estimate actual or potential risk to receptors. The receptor may be humans, a water resource, a sensitive local ecosystem or future construction materials. Receptors can be connected to the hazardous source by one or several exposure pathways such as direct contact for example. Risks are generally managed by isolating the receptor or intercepting the exposure pathway or by isolating or removing the hazard.

Without the three essential components of a source, pathway and receptor there can be no risk. Therefore the presence of hazard on a site does not necessarily mean there is a risk.

By considering where a viable pathway exists which connects a source with a receptor the risk assessment in Section 3.0 and the table presented hereafter identifies where pollutant linkage exists. If there is no pollutant linkage there is no risk and only where a pollutant linkage is established does the risk assessment consider the level of risk.

The risk assessment considers the likelihood of a particular event taking place (accounting for the presence of the hazard and receptor and the integrity of the exposure pathway) in conjunction with the severity of the potential consequence (accounting for the potential severity of the hazard and the sensitivity of the receptor).

In the risk assessment the consequence of the hazard has been classified as severe or medium or mild or minor and the probability (likelihood) of the circumstances actually occurring classified as high likelihood or likely or low likelihood or unlikely.

The consequences and probabilities are subsequently cross-correlated to give a qualitative estimation of the risk using Department of the Environment risk classifications as detailed in the table below and as referenced in CIRIA C552.

		Consequence			
		Severe	**Medium**	**Mild**	**Minor**
Probability (Likelihood)	**High Likelihood**	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

In accordance with DoE guidance, the following categorisation of **consequence** has been developed.

Classification	Definition	Examples
Severe	Short-term (acute) risk to human health likely to result in "significant harm" as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem or organisation forming part of such ecosystem.	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Explosion, causing building collapse (can also equate to a short-term human health risk if buildings are occupied).
Medium	Chronic damage to Human Health. Pollution of sensitive water resources. A significant change in a particular ecosystem or organism forming part of such ecosystem.	Concentration of a contaminant from site exceeds the generic or site-specific assessment criteria. Leaching of contaminants from a site to a Principal or Secondary A aquifer. Death of a species within a designated nature reserve. Lesser toxic and asphyxiate effects
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services. Damage to sensitive buildings/structures/services or the environment.	Pollution of non-classified groundwater (inc. Secondary B aquifers). Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	Harm, although not necessarily significant harm, which may result in a financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing, etc). Easily repairable effects of damage to buildings, structures and services.	The presence of contaminants at such concentrations that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discoloration of concrete.

In accordance with DoE guidance, the following categorisation of **probability** has been developed.

Classification	Definition
High Likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

In accordance with DoE guidance, the following categorisation of **risk** has been developed.

Classification	Definition
Very High Risk	There is a *high probability* that *severe harm* could arise to a designated receptor from an identified hazard at the site without appropriate further action.
High Risk	*Harm* is *likely to arise* to a designated receptor from an identified hazard at the site without appropriate further action.
Moderate Risk	*It is possible* that without appropriate further action *harm could arise* to a designated receptor. It is relatively *unlikely* that any such harm would be *severe,* and if any harm were to occur it is *more likely* that such harm would be *relatively mild.*
Low Risk	*It is possible* that *harm could arise* to a designated receptor from an identified hazard. It is *likely* that, at worst, if any harm was realised any effects would be *mild.*
Very Low Risk	The presence of an identified hazard does not give rise to the potential to cause harm to a designated receptor.

The term 'risk' in this instance refers to the risk that the source, pathway, receptor linkage for a given source of contamination is complete. It does not refer to immediate risk to individuals or features present on the site from potential contaminants and is intended to be used as a tool to assess the necessity of further investigation.

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