



Ground Condition Consultants

BELMONT CLOSE, BARNET, EN4 9LS

GROUND CONDITION DESK TOP STUDY

SEPTEMBER 2023

Prepared for
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Desk Top Study	
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1.0	20/09/2023	Desk Top Study
2.0	27/09/2023	Addition of EHO Comments Section 2.8

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0. EXECUTIVE SUMMARY

Brief	The brief was to use the information provided in an Environmental Database Search and by the Client relating to the site to assess and report on the findings with respect to potential ground contamination and potential associated future liabilities in accordance with the Preliminary Risk Assessment procedure outlined in Land Contamination Risk Management (LCRM), published by the Environment Agency.
Current Site Status	The site is located off Belmont Close, Barnet, EN4 9LS and comprises a block of garages with associated hard-standing areas and limited soft landscaped areas. The site is located in a mainly residential area with residential properties to the north, west and south of the site. Mixed commercial and residential properties are located to the east of the site.
Site History	<p>The historical maps from 1866 to 2023 show the site to be first developed (on undeveloped land) with the block of garages (existing/current layout) on a map extract dated from 1936. No significant changes to the site are shown on later map extracts.</p> <p>A Vicarage, located circa 30m to the north-west of the site, is shown from 1896 to 1936, a grave yard 100m to the north west and schools circa 110m to the west and north from the earliest record to present, but otherwise the immediate surrounding areas remained largely undeveloped until the 1930's/1940's when the site was developed. The extract dated from 1936 also show residential properties to the north, east and south and the newly constructed Cockfosters Station circa 90m to the northeast and a hall 30m north of the site. Further residential development is shown on map extracts dated from the 1960's both to the west and east of the site. No significant changes to the immediate surrounding areas are shown on later map extracts.</p>
Geology	Records indicate the site to overlie superficial Dollis Hill Gravel Member (sand and gravel). The extracts indicate that superficial deposits of the Lowestoft Formation Diamicton (clay, silt, sand gravel) may be present in south-eastern corner of the site. The underlying bedrock geology comprise Claygate Member (clay, silt and sand).
Hydrogeology	The Environment Agency Groundwater Vulnerability Map extracts indicate the site to be overlying a superficial Secondary A Aquifer and Secondary Undifferentiated Aquifer, interpreted as the Dollis Hill Gravel Member and Lowestoft Formation. The underlying Claygate Member is also classified as a Secondary A Aquifer.
Hydrology	The nearest identified surface water feature to the site is an un-named watercourse present 240m east of the site.
Conclusions and Recommendations	<p>The conceptual model, based on information obtained as part of the preliminary risk assessment, identified the following potential contaminant sources:</p> <ul style="list-style-type: none"> • Potential for reduced quality Made Ground to be present beneath the site, including asbestos, from the construction of the current building. Due to the age of the structures, there is potential for asbestos to be present in the superstructure and therefore for off-cut fragments to be present in the soil. • Potential for a range of organic and inorganic contaminants to be present in the soil from the long term use of the site as a vehicle storage and parking garage, particularly from oil and fuel hydrocarbons. • Potential for ground gas generation, if significant thicknesses of Made Ground or organic rich soils are present. <p>It should be noted that additional sources of contamination may become apparent during any future investigation and development of the site.</p> <p>T</p>

he risks to the health of future site users from contamination, in the context of the proposed redevelopment of the site, have been assessed to be very low to moderate in relation to the proposed use of the site and risks to controlled waters have been assessed to be very low. It is therefore recommended that these risks are investigated further with an intrusive site investigation..

This sheet is intended to provide a summary only of the initial indicative assessment study of the site in relation to ground contamination. It does not provide a definitive engineering analysis for the purposes of costing or construction, and is subject to the limitation of the agreed brief.

1. INTRODUCTION

1.1 INSTRUCTION

Ground Condition Consultants Ltd. (GCC) was commissioned by Camden Court Management Ltd in September 2023 to undertake a Ground Condition Desk Top Study of a site located at Belmont Close, Barnet, EN4 9LS.

The brief was to use the information provided in an Environmental Database Search and by the Client relating to the site to assess and report on the findings with respect to potential ground contamination and potential associated future liabilities in accordance with the Preliminary Risk Assessment procedure outlined in Land Contamination Risk Management (LCRM), published by the Environment Agency.

This report is prepared in line with the agreed brief and is subject to the report conditions shown in Appendix 1.

1.2 LEGAL CONTEXT

Part IIA of the Environmental Protection Act 1990 (inserted by Section 57 of the Environment Act 1995) provides a regime for the control of specific threats to health or the environment from land contamination. In accordance with the Act and the statutory guidance document 'The Contaminated Land (England) Regulations 2000', the definition of contaminated land is intended to embody the concept of risk assessment. Within the meaning of the Act, land is only "contaminated land" where it appears to the Regulatory Authority, by reason of substances within or under the land, that:

- Significant harm is being caused, or there is a significant possibility of such harm being caused; or
- Pollution of controlled waters is being, or is likely to be, caused."

Inherent in this definition is the requirement for contamination risk assessment to be undertaken on a site specific basis, as the potential for harm is determined by the site's end use and its specific environmental setting.

The guidance defines "risk" as the combination of:

- The probability, or frequency, of occurrence of a defined hazard (for example, exposure of a property to a substance with the potential to cause harm); and
- The magnitude (including the seriousness) of the consequences.

While Part IIA of the Environmental Protection Act provides a risk based approach to the identification and remediation of land where contamination poses an unacceptable risk

to human health or the environment, the regime does not take into account future uses. New developments are therefore controlled by the planning regime, with reference to the National Planning Policy Framework (NPPF), rather than directly by Part IIA of the Environmental Protection Act.

The NPPF is based on the principal that the site should be suitable for its new use, taking account of ground conditions, including from natural hazards or former activities and states that “Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner”. The NPPF also links the planning and Part IIA regimes by stating that “after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990”. Key components of the Part IIA regime, such as the definition of Contaminated Land and the associated risk based assessment approach, are therefore considered to also be applicable to the planning regime.

1.3 METHODOLOGY

This report has been prepared in accordance with published Environment Agency guidance (‘Land Contamination Risk Management (LCRM)’). LCRM provides the technical framework for structured decision making about land contamination and builds on previous work carried out under the Contaminated Land Research Programme (of the former Department of the Environment) and the Model Procedures for the Management of Land Contamination – Contaminated Land Report (CLR) 11. LCRM has adopted and refined the well recognised methodology and terminology that has been used in contaminated land risk assessment for a number of years.

1.3.1. Pollutant linkage concept

In the context of land contamination, there are three essential elements to any risk:

- A **contaminant source** – a substance that is in, on or under the land and has the potential to cause harm or to cause pollution of controlled waters.
- A **receptor** – in general terms, something that could be adversely affected by a contaminant, such as people, an ecological system, property, or a water body.
- A **pathway** – a route or means by which a receptor can be exposed to, or affected by, a contaminant.

Each of these elements can exist independently, but they create a risk only where they are linked together, so that a particular contaminant affects a particular receptor through

a particular pathway. This kind of linked combination of contaminant–pathway–receptor is described as a pollutant linkage.

1.3.2. Conceptual model

An important thread throughout the overall process of risk assessment is the need to formulate and develop a **conceptual model** for the site, which supports the identification and assessment of pollutant linkages. A conceptual model represents the characteristics of the site in diagrammatic or written form that shows the possible relationships between contaminants, pathways and receptors (pollutant linkages).

1.3.3. Risk assessment

LCRM advocates a phased approach to risk assessment comprising the following in order, as necessary:

Preliminary Risk Assessment – a desk study consisting of a review of documentary, anecdotal and site walk over evidence.

Generic Quantitative Risk Assessment (GQRA) - comparison of contaminant concentrations obtained from site investigation with generic assessment criteria.

Detailed Quantitative Risk Assessment (DQRA) - comparison of contaminant concentrations obtained from site investigation with site-specific assessment criteria.

This document constitutes a Preliminary Risk Assessment.

1.4 PROPOSED USE

It is currently understood that two to three storey residential properties (6no.) are to be constructed above the existing garage block (to remain) and that each house/property will have an outside space.

A change in the site use from that currently proposed may result in the need for re-assessment of risk criteria and the conclusions and recommendations resulting from the risk assessment could therefore significantly change.

1.5 REPORT SCOPE AND LIMITATIONS

This report is based upon a review of readily available historical and current information, a site walkover survey, geological and hydrogeological maps and information from an environmental database search. The assessment is based on the proposed use stated in Section 1.4 and the outcomes of this assessment could change if the end uses change.

The information contained in this report is intended for the use of the Camden Court Management Ltd. GCC can take no responsibility for the use of this information by any other party or for uses other than that described in this report.

2. PRELIMINARY RISK ASSESSMENT

2.1 SITE LOCATION AND DESCRIPTION

The site is located off Belmont Close, Barnet, EN4 9LS and comprises a block of garages with associated hard-standing areas and limited soft landscaped areas.

The site is located in a mainly residential area with residential properties to the north, west and south of the site. Mixed commercial and residential properties are located to the east of the site.

2.2 SITE HISTORY

The historical maps from 1866 to 2023 show the site to be first developed (on undeveloped land) with the block of garages (existing/current layout) on a map extract dated from 1936. No significant changes to the site are shown on later map extracts.

A Vicarage, located circa 30m to the northwest of the site, is shown from 1896 to 1936, a grave yard 100m to the northwest and schools circa 110m to the west and north from the earliest record to present, but otherwise the immediate surrounding areas remained largely undeveloped until the 1930's/1940's when the site was developed. The extract dated from 1936 also show residential properties to the north, east and south and the newly constructed Cockfosters Station circa 90m to the northeast and a hall 30m north of the site. Further residential development is shown on map extracts dated from the 1960's both to the west and east of the site. No significant changes to the immediate surrounding areas are shown on later map extracts.

2.3 DOCUMENTATED GROUND CONDITIONS

Ground conditions recorded in readily available sources are summarised below.

2.3.1. Geology

Reference to the British Geological Survey (BGS) Map extracts (see Appendix 2) indicates the majority of the site to overlie superficial Dollis Hill Gravel Member (sand and gravel). The extracts indicate that superficial deposits of the Lowestoft Formation Diamicton (clay, silt, sand gravel) may be present in south-eastern corner of the site. The underlying bedrock geology comprise Claygate Member (clay, silt and sand).

2.3.2. Hydrogeology

The Environment Agency Groundwater Vulnerability Map extracts (see Appendix 2) indicate the site to be overlying a superficial Secondary A Aquifer and Secondary Undifferentiated Aquifer, interpreted as the Dollis Hill Gravel Member and Lowestoft Formation. The underlying Claygate Member is also classified as a Secondary A Aquifer.

Secondary A Aquifers are 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.

Secondary Undifferentiated Aquifer designation is assigned where it is not possible to attribute either category A or category B to a rock or soil 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 or soil type.

The site is not located within a Groundwater Source Protection Zone.

2.3.3. Hydrology

The nearest identified surface water feature to the site is an unnamed Inland River, located approximately 240m to the east of the site. The watercourse is noted to contain water year round in normal circumstances.

2.3.4. Radon

Radon is a naturally occurring radioactive gas which may be harmful to human health. Radon is generally released into the atmosphere in areas underlain by granite and limestone. Harmful concentrations of radon may build up if it becomes trapped in an enclosed space such as a building.

BGS/Public Health England data presented within the Groundsure Report indicates that the percentage of houses exceeding the Action Levels for Radon in this area is less than 1%. Therefore, the property is in a Radon Affected Area, as defined by the Health Protection Agency (HPA), but radon protection measures are not necessary in new dwellings or extensions.

2.4 ENVIRONMENTAL DATA SEARCH

A search of an environmental database was undertaken together with information from various other organisations as part of the desk study and is summarised in the following sections. The following summary is generally limited to locations within 250m of the site boundaries unless it is considered that installations or activities beyond that range could potentially have an impact on the site or be affected by the redevelopment of the site.

Table 2.1. Data search results

Discharge consents	There are no recorded active water discharge consents within 250m of the site.
Pollution incidents	There is a pollution incident recorded within 250m of the site. <ul style="list-style-type: none"> • 194m to the northeast, dated 19/08/23. No impact (category 4) to land, air and water from contaminated water/suspended solids.
Water abstractions	There are no recorded groundwater or surface water abstractions within 250m of the site.
Fuel Stations	There are is a recorded fuel stations within 250m of the site. <ul style="list-style-type: none"> • BP Service Station Located approximately 130m (on Cockfosters Rd) to the north of the site.
Landfill Sites	There are no recorded landfill sites within 250m of the site.

2.5 UNEXPLODED ORDNANCE

Reference to risk mapping for unexploded ordnance in the area, presented in Appendix 2, indicates that the site is situated in an area of low risk of unexploded ordnance. As the existing site structures predate WW2 and the local area is not known to have been utilised by allied forces or subject to heavy bombardment during the war, the site is noted to be of low risk and that there is no greater probability of encountered UXO than anywhere else in the UK. Therefore, intrusive investigations, where required are anticipated to be able to proceed without requirement for special precautions.

2.6 MINING AND NATURAL GROUND HAZARDS

2.6.1. Mining

The site is located in an area that is not likely to have been affected by mining.

2.6.2. Natural Ground Hazards

The following ground hazards were identified:

Compressible ground stability hazards – Negligible hazard

BGS Notes: Compressible strata are not thought to occur.

Collapsible ground stability hazards – Very Low hazard

BGS Notes: Deposits with potential to collapse when loaded and saturated are unlikely to be present.

Ground dissolution stability hazards – Negligible hazard

BGS Notes: Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

Landslide ground stability hazard – Very Low hazard

BGS Notes: Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

Shrinking or swelling clay ground stability hazard – Moderate hazard

BGS Notes: Ground conditions predominantly high plasticity.

Running sand ground stability hazards – Very Low hazard

BGS Notes: Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

2.7 DEPARTMENT OF ENVIRONMENT – INDUSTRY PROFILES

The Department of the Environment Industry Profiles do not cover the current or former uses of the site.

2.8 REGULATOR CONSULTATION

A request for information has been submitted to Enfield Council for any records they hold that may be relevant to the assessment of contamination on the site. Subsequently telephone communications with Enfield Council EHO confirmed that the site and surrounds are not designated as or under investigation as Part 2a Contaminated Sites, there are no records of fuel storage tanks in the vicinity and there are no historical land uses or pollution incidents of concern within the vicinity.

3. CONCEPTUAL SITE MODEL

3.1 SOURCES

The conceptual model, based on information obtained as part of the preliminary risk assessment, identified the following potential contaminant sources:

- Potential for reduced quality Made Ground to be present beneath the site, including asbestos, from the construction of the current building. Due to the age of the structures, there is potential for asbestos to be present in the superstructure and therefore for off-cut fragments to be present in the soil.
- Potential for a range of organic and inorganic contaminants to be present in the soil from the long term use of the site as a vehicle parking area, particularly from oil and fuel hydrocarbons.
- Potential for ground gas generation, if significant thicknesses of Made Ground are present or high organic content is present within Made Ground or natural deposits.

The off-site petrol filling station, railway station and cemetery have been considered as potential sources of contamination but are considered to be sufficiently distant from the site as to not be significant.

It should be noted that additional sources of contamination may become apparent during any future investigation and development of the site.

3.2 PATHWAYS

The key environmental pathways and exposure routes by which potentially toxic substances can reach the identified potential receptors are considered to be:

- Inhalation of vapours and gas
- Inhalation of dust
- Direct contact
- Ingestion
- Lateral or vertical migration

3.3 RECEPTORS

Receptors that may be affected by the potential contamination are:

- Future site users
- Secondary Aquifers
- Proposed water supply pipes

Construction workers have been excluded from this assessment on the basis that they are subject to health and safety at work regulations and are expected to use appropriate personal protective equipment (PPE).

4. RISK ASSESSMENT

4.1 RISK ASSESSMENT PROCEDURE

By considering the sources, pathways and receptors (pollutant linkages), an assessment of the human health/ environmental risks is made with reference to the significance and degree of the risk. This assessment is based on consideration of whether the source contamination can reach a receptor and hence whether it is of major or minor significance.

The risk assessment has been undertaken with reference to BS10175 and CIRIA Document C552: Contaminated Land Risk assessment 'A Guide to Good Practice'. The risk assessment has been carried out by assessing the severity of the potential consequence, taking into account both the potential magnitude of the hazard and the sensitivity of the target, based on the categories given overleaf.

Table 4.1. Sensitivity of receptor

Category	Examples
High	Residential with gardens/Groundwater Source Protection Zone
Medium	Residential without gardens/Principal (Major) Aquifer/sensitive watercourse
Low	Commercial and industrial use/Secondary (Minor) Aquifer
Very Low	Construction and maintenance workers/non-sensitive watercourse

Table 4.2. Magnitude of impact

Category	Examples
Gross Impact	Heavily contaminated gasworks or industrial site, hazardous waste landfill
Moderate Impact	Major leaks and spills from fuel infrastructure (e.g. petrol stations), domestic waste landfill
Slight Impact	Minor leaks and spills from fuel infrastructure, 'inert' waste landfills
No Impact	No identified or suspected contamination

Table 4.3. Level of severity for potential hazard

Magnitude of Impact	Sensitivity of receptor			
	High	Medium	Low	Very Low
Gross Impact	Severe	Medium	Mild	Minor
Moderate Impact	Medium	Mild	Minor	Minor
Slight Impact	Mild	Minor	Minor	Minor
No Impact	Minor	Minor	Minor	Minor

The likelihood of an event (probability) takes into account both the presence of the hazard and target and the integrity of the pathway and has been assessed based on the categories given below.

Table 4.4. Probability of risk definition

Category	Definition
High likelihood	Pollutant linkage may be present, and risk is almost certain to occur in long term, or there is evidence of harm to the receptor
Likely	Pollutant linkage may be present, and it is probable that the risk will occur over the long term
Low likelihood	Pollutant linkage may be present, and there is a possibility of the risk occurring, although there is no certainty that it will do so
Unlikely	Pollutant linkage may be present, but the circumstances under which harm would occur are improbable

The potential severity of the risk and the probability of the risk occurring have been combined in accordance with the following matrix in order to give a level of risk for each potential hazard.

Table 4.5. Level of risk for potential hazard definition

Probability of risk	Potential severity			
	Severe	Medium	Mild	Minor
High Likelihood	Very high	High	Moderate	Low/ Moderate
Likely	High	Moderate	Low/ Moderate	Low
Low likelihood	Moderate	Low/ Moderate	Low	Very low
Unlikely	Low/ Moderate	Low	Very low	Very low

The assessment is discussed below in terms of plausible pollutant linkages. A complete assessment of the pollutant linkages is presented in Table 4.6 overleaf.

A description of these risk classifications and likely action required are given in CIRIA 552 as:

Very high risk – High probability that severe harm could arise to a designated receptor from an identified hazard OR there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in substantial liability. Urgent investigation and remediation are likely to be required.

High risk – Harm is likely to arise to a designated receptor from an identified hazard. This risk, if realised, is likely to result in substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the long term.

Moderate risk – It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation is normally required to clarify risks and to determine potential liability. Some remedial works may be required in the long term.

Low risk – It is possible that harm could arise to a designated receptor from an identified hazard but it is likely that this harm, if realised, would at worst normally be mild.

Very low risk – It is a low possibility that harm could arise to a designated receptor. In the event of such harm being realised it is not likely to be severe.

4.2 POLLUTANT LINKAGE ASSESSMENT

The following assessment is based on the proposed redevelopment scenario of the site for residential with gardens end use.

Table 4.6. Pollutant Linkage Assessment

Source	Pathway	Receptor	Severity	Likelihood	Risk Level
Potential for asbestos containing materials and fibres in on-site Made Ground	Inhalation	Future Users	Medium	Likely	Moderate
Potential for reduced quality Made Ground (ex. asbestos)	Direct contact Ingestion Inhalation	Future Users	Mild	Likely	Low/ Moderate
	Direct Contact	Water supply pipes	Minor	Likely	Low
	Lateral or vertical migration	Secondary A Aquifer	Mild	Low Likelihood	Low
Potential for ground gas generation from Made Ground	Vertical migration leading to inhalation	Future Users	Mild	Low Likelihood	Low

4.2.1. Asbestos in soil

As the current buildings were constructed during the period when asbestos was a common component of building materials, there is a potential that asbestos containing materials are present within the Made Ground as a result of off cuts dropped during the construction process.

Where buildings and hard standing are present in the proposed development, these will form a barrier separating the future site users from asbestos contaminated soil. The main exposure pathway will therefore be in any areas of soft landscaping or unsurfaced areas. The risk via this exposure pathway has been assessed to be moderate due to the high sensitivity of the proposed end use.

It is therefore recommended that these risks are investigated further.

4.2.2. Reduced quality Made Ground

The garage use of the site is not likely to have resulted in the gross contamination of Made Ground but the associated activities, such as storage and parking of vehicles, could potentially result in moderate quantities of a variety of organic and inorganic contaminants, in addition to the asbestos discussed above.

As associated potential contamination is likely to be low volume, the risks to the health of the future users are considered to be low/moderate but potentially still significant, given the high sensitivity of end use. The potential also exists for these contaminants to leach into the underlying groundwater.

It is recommended that these risks are investigated further.

4.2.3. Ground Gas

While no landfills or other obvious sources of ground gas have been identified on or in the vicinity of the site, the potential exists for locally thick Made Ground deposits to be present and for organic rich Made Ground or natural soils to be present. If such deposits are present and have a high organic matter content, they could potentially generate significant quantities of ground gas (methane and/or carbon dioxide).

It is recommended that this risk is further investigated initially with an assessment of the thickness and composition of any Made Ground then with ground gas monitoring, if necessary.

5. CONCLUSIONS AND RECOMMENDATIONS

The conceptual model, based on information obtained as part of the preliminary risk assessment, identified the following potential contaminant sources:

- Potential for reduced quality Made Ground to be present beneath the site, including asbestos, from the construction of the current building. Due to the age of the structures, there is potential for asbestos to be present in the superstructure and therefore for off-cut fragments to be present in the soil.
- Potential for a range of organic and inorganic contaminants to be present in the soil from the long term use of the site as a vehicle storage and parking garage, particularly from oil and fuel hydrocarbons.
- Potential for ground gas generation, if significant thicknesses of Made Ground or organic rich soils are present.

It should be noted that additional sources of contamination may become apparent during any future investigation and development of the site.

The risks to the health of future site users from contamination, in the context of the proposed redevelopment of the site, have been assessed to be **very low to moderate** in relation to the proposed use of the site and risks to controlled waters have been assessed to be **very low**. It is therefore recommended that these risks are investigated further with an intrusive site investigation.

FIGURE 1: LOCATION PLAN

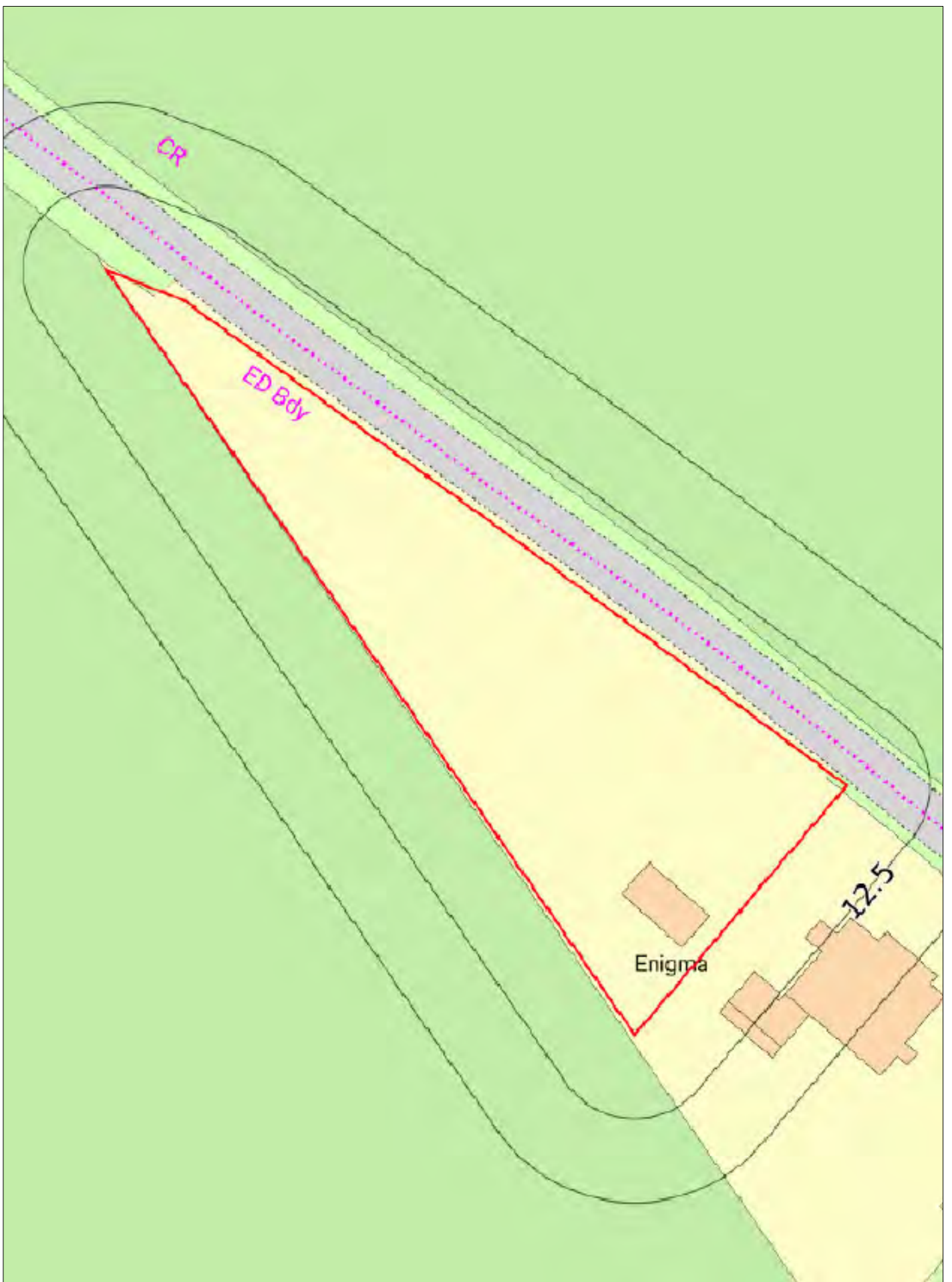


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client
 GENTIAN DEVELOPMENTS
 site FORMER SHIP CAFE, SHOTATTON,
 SHREWSBURY
 title
 SITE LOCATION PLAN

scale	NTS	drawn by	AP	checked by	RP
date	20 SEP 2023	job no	J23-070		
drawing number	FIGURE 1			rev.	-

FIGURE 2: LAYOUT PLAN



Ground Condition Consultants Ltd
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 Telephone 07971 450113
 ask@groundcc.co.uk www.groundcc.co.uk

client
GENTIAN DEVELOPMENTS

site
**FORMER SHIP CAFE, SHOTATTON,
 SHREWSBURY**

title
EXISTING LAYOUT PLAN

scale	NTS	drawn by	AP	checked by	RP
date	20 SEP 2023	job no	J23-070		
drawing number	FIGURE 2			rev.	-

APPENDIX 1: REPORT CONDITIONS

This report is produced solely for the benefit of **Camden Court Management Ltd** and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report refers, within the limitations stated, to the condition of the Site at the time of the inspections. No warranty is given as to the possibility of future changes in the condition of the Site.

This report is based on a visual Site inspection, study of readily accessible referenced historical records, information supplied by those parties noted in the text and preliminary discussions with local and Statutory Authorities. Some of the opinions are based on unconfirmed data and information and are presented in good faith without exhaustive clarification. Where ground contamination is suspected but no physical Site test results are available to confirm this, the report must be regarded as initial advice only, and further assessment should be undertaken prior to detailed activities related to the Site. Where test results undertaken by others have been made available these can only be regarded as a limited sample. The possibility of the presence of contaminants, not revealed by this research cannot be discounted.

Whilst confident in the findings detailed within this report because there are no exact UK definitions of these matters, being subject to risk analysis, we are unable to give categorical assurances that they will be accepted by Authorities or Funds etc. without question, as such bodies may have unpublished, often more stringent objectives. This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to Ground Condition Consultants Ltd. In time improved practices or amended legislation may necessitate a re-assessment.

The report is necessarily limited to those aspects of land contamination specifically reported on and no liability is accepted for any other aspect especially concerning gradual or sudden pollution incidents that may occur. The opinions expressed cannot be absolute due to the limitations of time and resources within the context of the agreed brief and the possibility of unrecorded previous use and abuse of the Site and adjacent Sites. The report concentrates on the Site as defined in the report and provides an opinion on surrounding Sites. If migrating pollution or contamination (past or present) exists this can only practically be better assessed following extensive on and off Site intrusive investigations and monitoring.

APPENDIX 2: GROUNDSURE REPORT

THE SHIP CAFE, CAFE AND PREMISES, A5 FROM BASCHURCH JUNCTION B4397 TO LONG OAK JUNCTION, SHOTATTON, RUYTON XI TOWNS, SY4 1JH

Order Details

Date: 18/09/2023
Your ref: J23-070
Our Ref: GS-KOQ-RJM-2J7-TGB

Site Details

Location: 335917 322809
Area: 0.35 ha
Authority: [Shropshire Council - Unitary](#) ↗



[Summary of findings](#)

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[Aerial image](#)

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[OS MasterMap site plan](#)

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Summary of findings

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



23	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
23	4.7	Regulated explosive sites	0	0	0	0	-
23	4.8	Hazardous substance storage/usage	0	0	0	0	-
23	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
23	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
24	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
24	4.12	Radioactive Substance Authorisations	0	0	0	0	-
24	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
24	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
24	4.15	Pollutant release to public sewer	0	0	0	0	-
25	4.16	List 1 Dangerous Substances	0	0	0	0	-
25	4.17	List 2 Dangerous Substances	0	0	0	0	-
25	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
25	4.19	Pollution inventory substances	0	0	0	0	-
25	4.20	Pollution inventory waste transfers	0	0	0	0	-
26	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
27 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
29 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
30 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
31	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
31	5.5	Groundwater vulnerability- local information	None (within 0m)				
32 >	5.6 >	Groundwater abstractions >	0	0	0	2	15
36 >	5.7 >	Surface water abstractions >	0	0	0	0	1
37 >	5.8 >	Potable abstractions >	0	0	0	0	1
37	5.9	Source Protection Zones	0	0	0	0	-
37	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
38	6.1	Water Network (OS MasterMap)	0	0	0	-	-



38	6.2	Surface water features	0	0	0	-	-
39 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
39 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
40 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
41	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
41	7.2	Historical Flood Events	0	0	0	-	-
41	7.3	Flood Defences	0	0	0	-	-
42	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
42	7.5	Flood Storage Areas	0	0	0	-	-
43	7.6	Flood Zone 2	None (within 50m)				
43	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
44 >	8.1 >	Surface water flooding >	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
46 >	9.1 >	Groundwater flooding >	Low (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
47	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
47	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
47	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
47	10.4	Special Protection Areas (SPA)	0	0	0	0	0
48	10.5	National Nature Reserves (NNR)	0	0	0	0	0
48	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
48	10.7	Designated Ancient Woodland	0	0	0	0	0
48	10.8	Biosphere Reserves	0	0	0	0	0
49	10.9	Forest Parks	0	0	0	0	0
49	10.10	Marine Conservation Zones	0	0	0	0	0
49	10.11	Green Belt	0	0	0	0	0
49	10.12	Proposed Ramsar sites	0	0	0	0	0



49	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
50	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
50	10.15	Nitrate Sensitive Areas	0	0	0	0	0
50 >	10.16 >	<u>Nitrate Vulnerable Zones ></u>	2	0	0	0	2
51 >	10.17 >	<u>SSSI Impact Risk Zones ></u>	1	-	-	-	-
52	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
53	11.1	World Heritage Sites	0	0	0	-	-
53	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
53	11.3	National Parks	0	0	0	-	-
53	11.4	Listed Buildings	0	0	0	-	-
54	11.5	Conservation Areas	0	0	0	-	-
54	11.6	Scheduled Ancient Monuments	0	0	0	-	-
54	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	<u>Agricultural designations ></u>	On site	0-50m	50-250m	250-500m	500-2000m
55 >	12.1 >	<u>Agricultural Land Classification ></u>	Grade 3 (within 250m)				
56	12.2	Open Access Land	0	0	0	-	-
56 >	12.3 >	<u>Tree Felling Licences ></u>	0	0	1	-	-
56	12.4	Environmental Stewardship Schemes	0	0	0	-	-
56	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
57	13.1	Priority Habitat Inventory	0	0	0	-	-
57	13.2	Habitat Networks	0	0	0	-	-
57	13.3	Open Mosaic Habitat	0	0	0	-	-
57	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	<u>Geology 1:10,000 scale ></u>	On site	0-50m	50-250m	250-500m	500-2000m
58 >	14.1 >	<u>10k Availability ></u>	Identified (within 500m)				
59	14.2	Artificial and made ground (10k)	0	0	0	0	-
60	14.3	Superficial geology (10k)	0	0	0	0	-

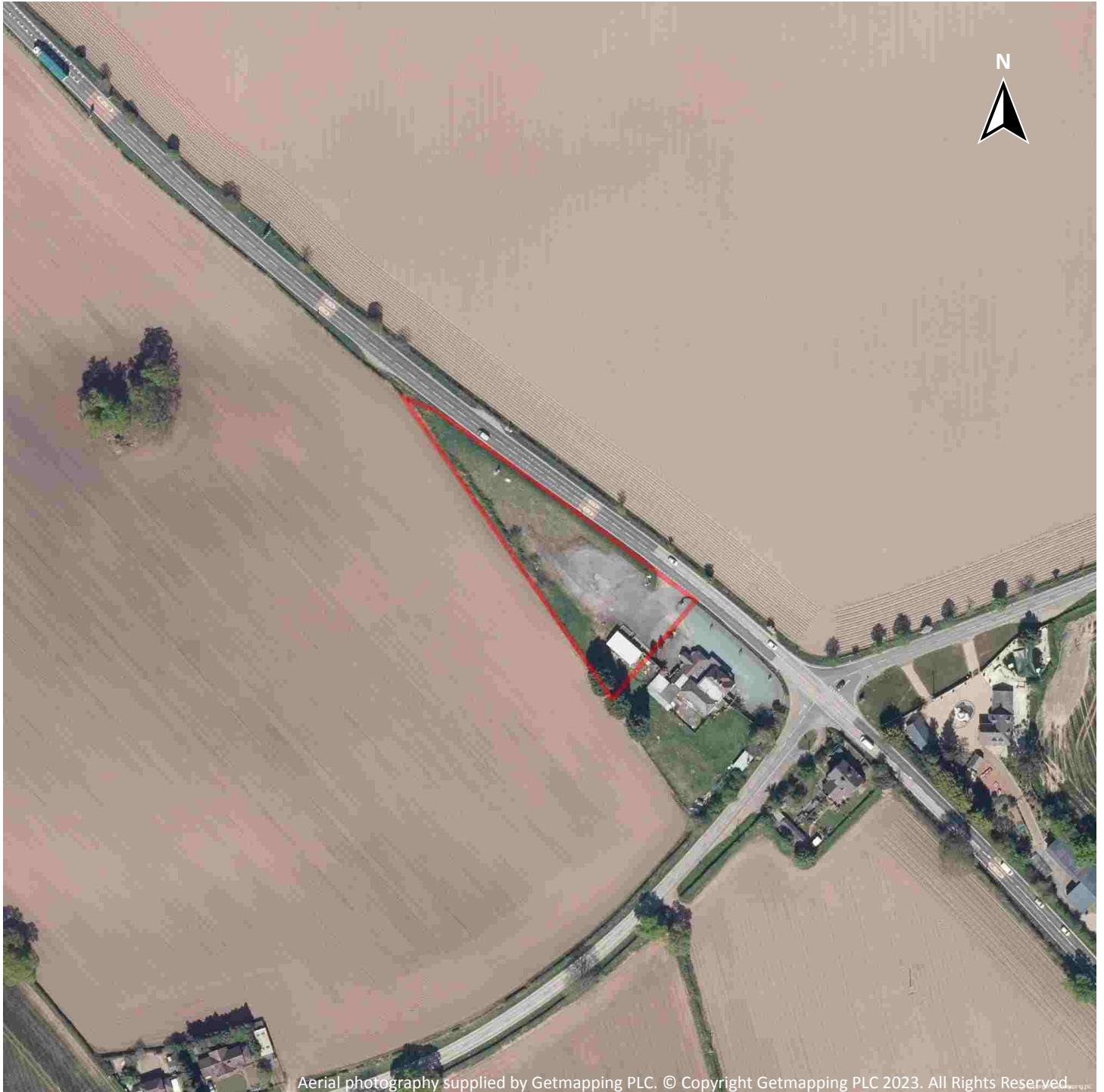
60	14.4	Landslip (10k)	0	0	0	0	-
61	14.5	Bedrock geology (10k)	0	0	0	0	-
61	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
62 >	15.1 >	50k Availability >	Identified (within 500m)				
63	15.2	Artificial and made ground (50k)	0	0	0	0	-
63	15.3	Artificial ground permeability (50k)	0	0	-	-	-
64 >	15.4 >	Superficial geology (50k) >	0	1	1	1	-
65 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
65	15.6	Landslip (50k)	0	0	0	0	-
65	15.7	Landslip permeability (50k)	None (within 50m)				
66 >	15.8 >	Bedrock geology (50k) >	1	0	0	0	-
67 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
67	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
68	16.1	BGS Boreholes	0	0	0	-	-
Page	Section	Natural ground subsidence >					
69 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
70 >	17.2 >	Running sands >	Very low (within 50m)				
72 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
73 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
74 >	17.5 >	Landslides >	Very low (within 50m)				
75 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
77 >	18.1 >	BritPits >	0	0	0	1	-
78	18.2	Surface ground workings	0	0	0	-	-
78	18.3	Underground workings	0	0	0	0	0
78	18.4	Underground mining extents	0	0	0	0	-
78	18.5	Historical Mineral Planning Areas	0	0	0	0	-



79	18.6	Non-coal mining	0	0	0	0	0
79	18.7	JPB mining areas	None (within 0m)				
79	18.8	The Coal Authority non-coal mining	0	0	0	0	-
79	18.9	Researched mining	0	0	0	0	-
80	18.10	Mining record office plans	0	0	0	0	-
80	18.11	BGS mine plans	0	0	0	0	-
80	18.12	Coal mining	None (within 0m)				
80	18.13	Brine areas	None (within 0m)				
80	18.14	Gypsum areas	None (within 0m)				
81	18.15	Tin mining	None (within 0m)				
81	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
82	19.1	Natural cavities	0	0	0	0	-
82	19.2	Mining cavities	0	0	0	0	0
82	19.3	Reported recent incidents	0	0	0	0	-
82	19.4	Historical incidents	0	0	0	0	-
83	19.5	National karst database	0	0	0	0	-
Page	Section	<u>Radon</u> >					
84 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	<u>Soil chemistry</u> >	On site	0-50m	50-250m	250-500m	500-2000m
86 >	21.1 >	BGS Estimated Background Soil Chemistry >	1	5	-	-	-
86	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
87	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
88	22.1	Underground railways (London)	0	0	0	-	-
88	22.2	Underground railways (Non-London)	0	0	0	-	-
88	22.3	Railway tunnels	0	0	0	-	-
88	22.4	Historical railway and tunnel features	0	0	0	-	-
88	22.5	Royal Mail tunnels	0	0	0	-	-

89	22.6	Historical railways	0	0	0	-	-
89	22.7	Railways	0	0	0	-	-
89	22.8	Crossrail 1	0	0	0	0	-
89	22.9	Crossrail 2	0	0	0	0	-
89	22.10	HS2	0	0	0	0	-

Recent aerial photograph

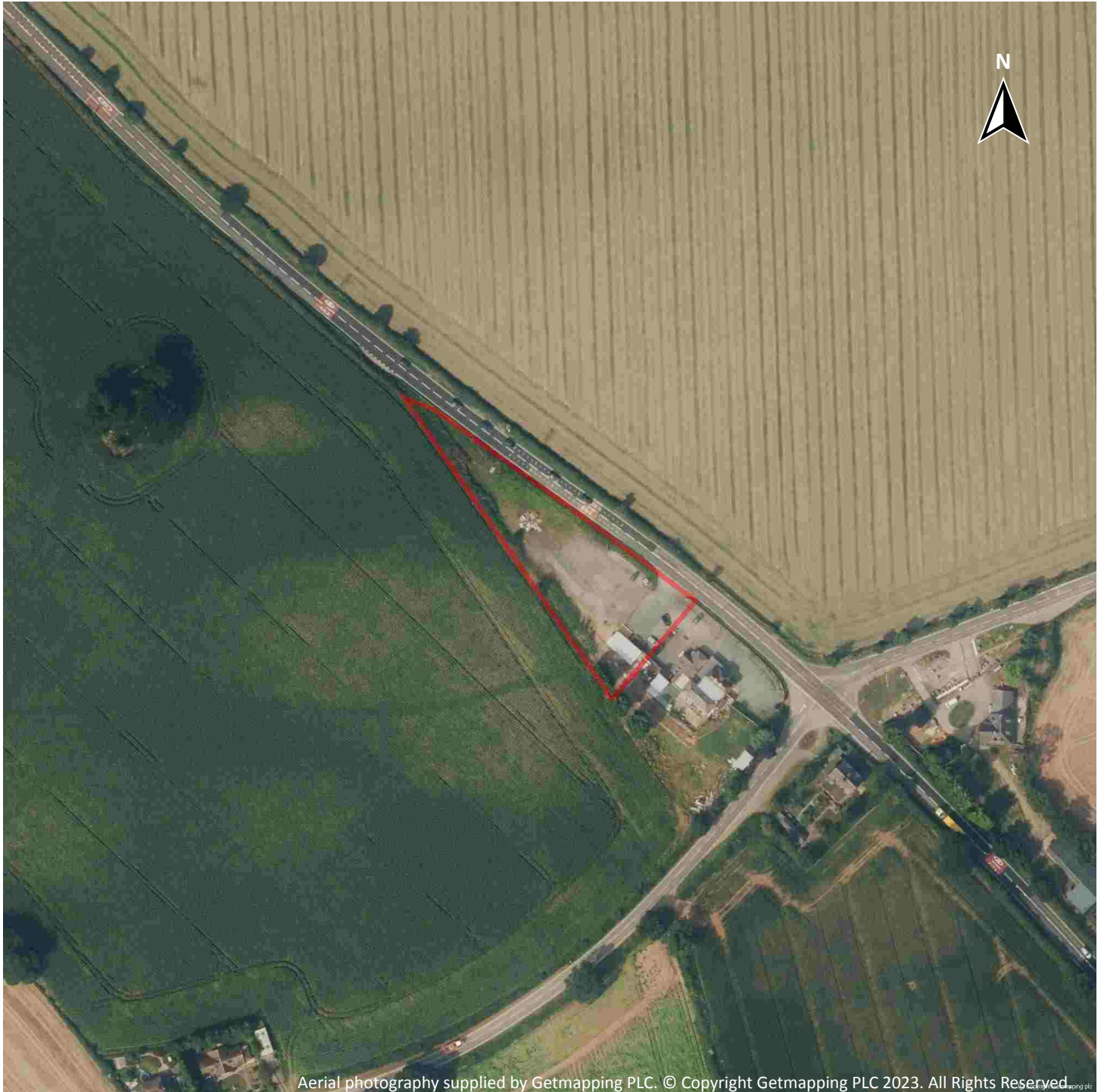


Capture Date: 20/04/2020

Site Area: 0.35ha



Recent site history - 2016 aerial photograph

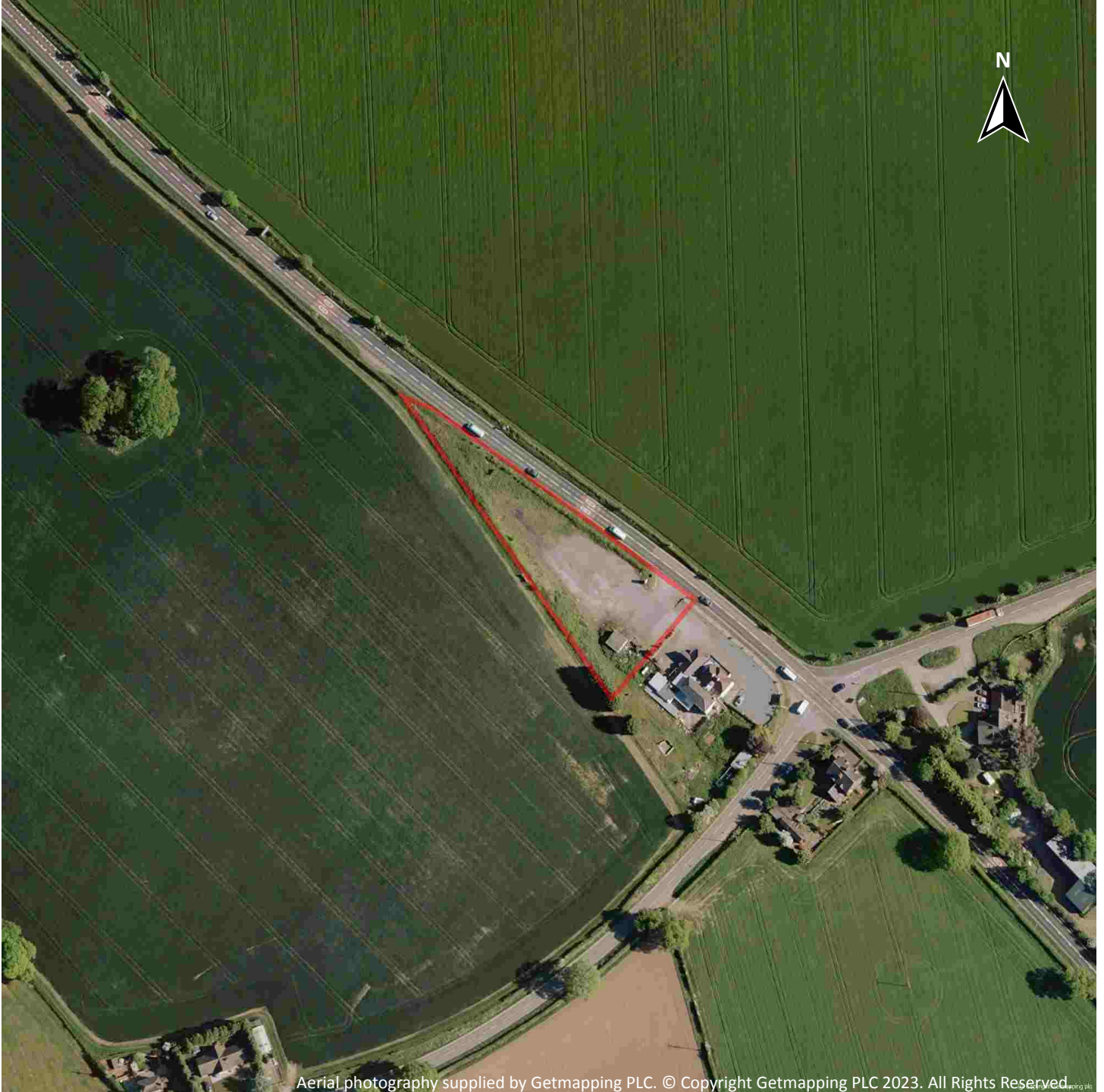


Capture Date: 16/08/2016

Site Area: 0.35ha



Recent site history - 2010 aerial photograph

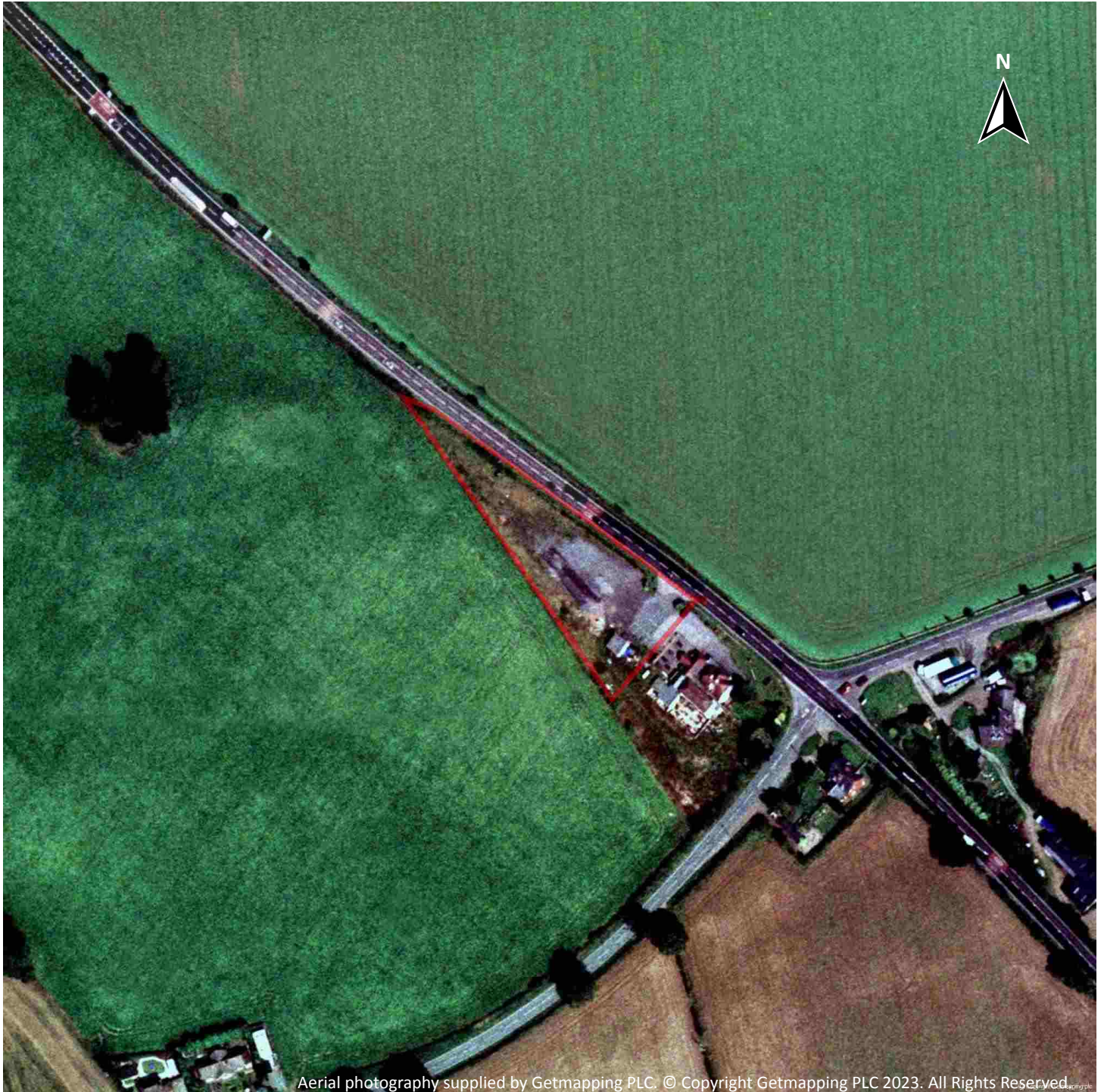


Capture Date: 23/05/2010

Site Area: 0.35ha



Recent site history - 2001 aerial photograph



Capture Date: 01/05/2001

Site Area: 0.35ha



Recent site history - 2000 aerial photograph



Capture Date: 11/09/2000

Site Area: 0.35ha



OS MasterMap site plan

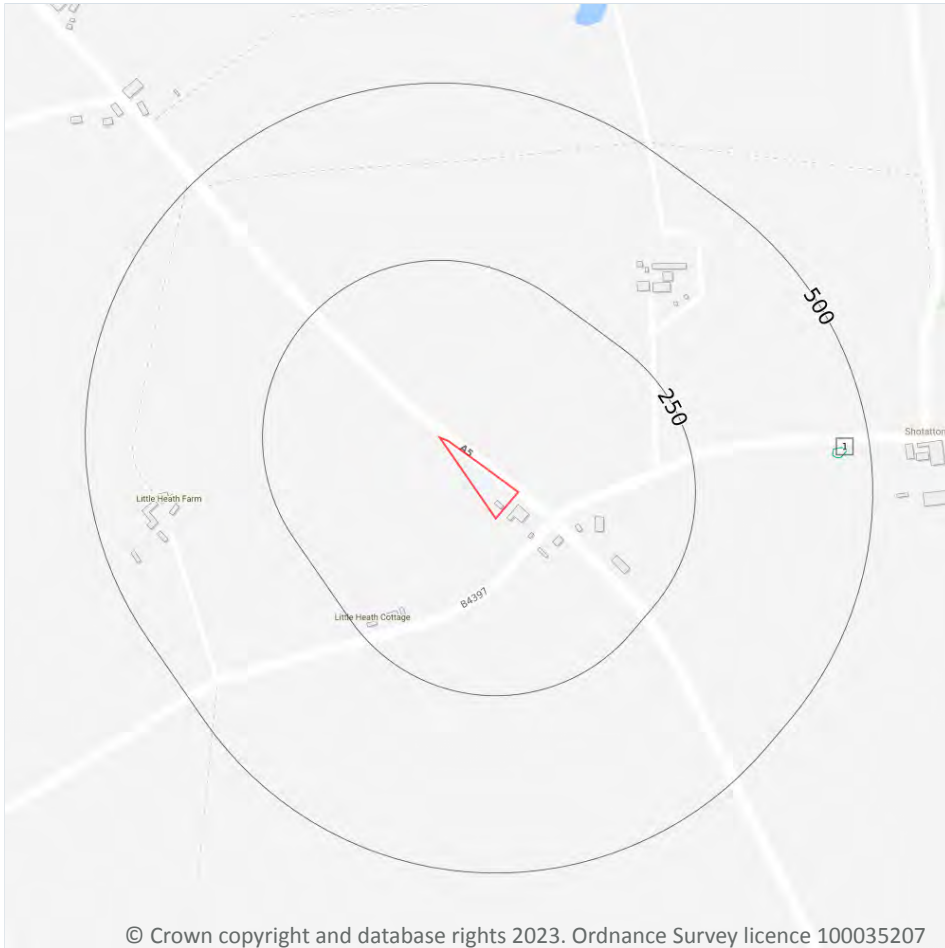


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Site Area: 0.35ha



1 Past land use



Site Outline

Search buffers in metres (m)

 Historical industrial land uses

1.1 Historical industrial land uses

Records within 500m **1**

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

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

ID	Location	Land use	Dates present	Group ID
1	447m E	Gravel Pit	1881	807639

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m

0

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



This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

0

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

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



2 Past land use - un-grouped



— Site Outline

Search buffers in metres (m)

 Historical industrial land uses

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2.1 Historical industrial land uses

Records within 500m

1

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 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
1	447m E	Gravel Pit	1881	807639

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

0

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'.

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m

0

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

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m

0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

0

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

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

3.5 Historical waste sites

Records within 500m

0

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

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



3.6 Licensed waste sites

Records within 500m

0

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

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

3.7 Waste exemptions

Records within 500m

0

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.

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



4 Current industrial land use

4.1 Recent industrial land uses

Records within 250m	0
---------------------	---

Current potentially contaminative industrial sites.

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

0

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

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

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

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

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m

0

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

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

4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

0

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

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

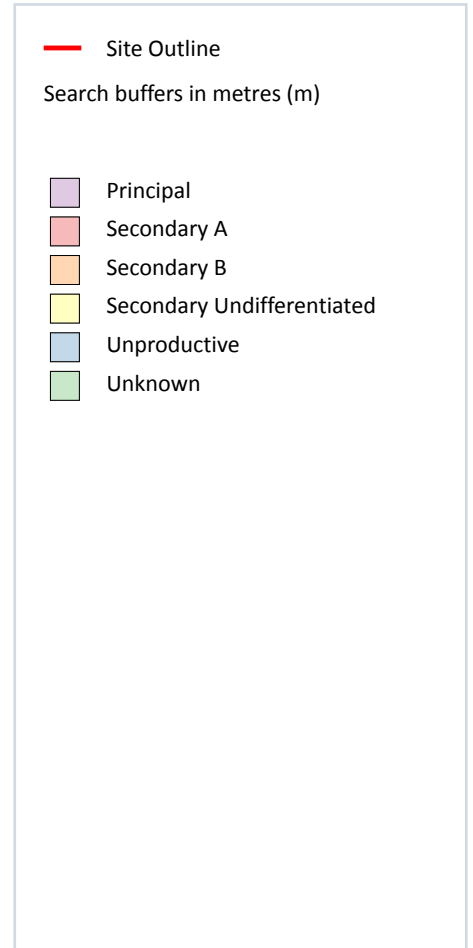
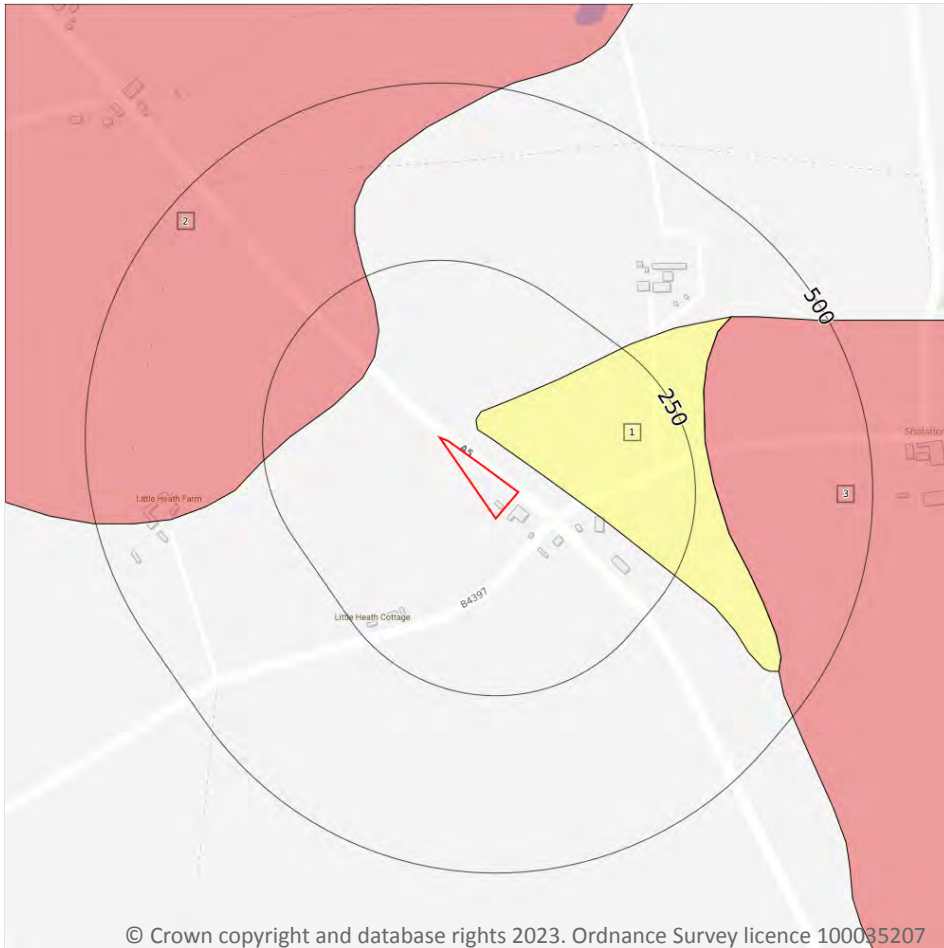
0

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



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5.1 Superficial aquifer

Records within 500m

3

Aquifer status of groundwater held within superficial geology.

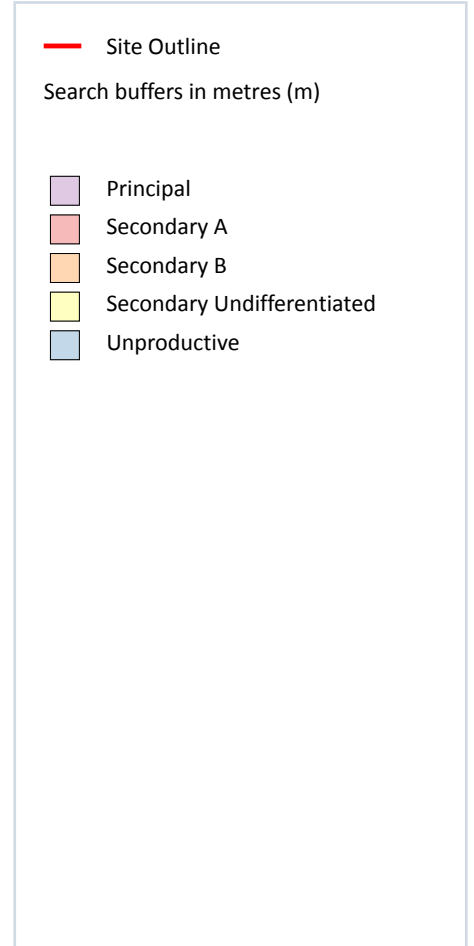
Features are displayed on the Hydrogeology map on [page 27 >](#)

ID	Location	Designation	Description
1	37m N	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	138m 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

ID	Location	Designation	Description
3	272m E	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m

1

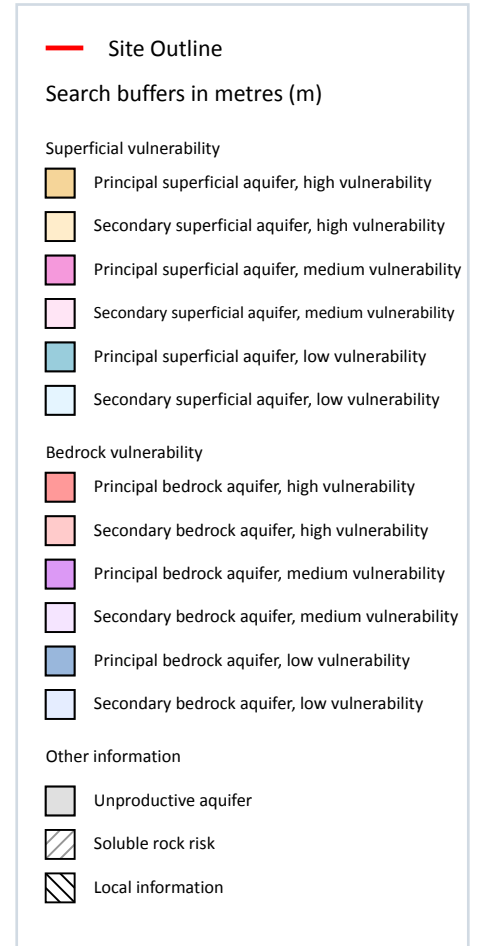
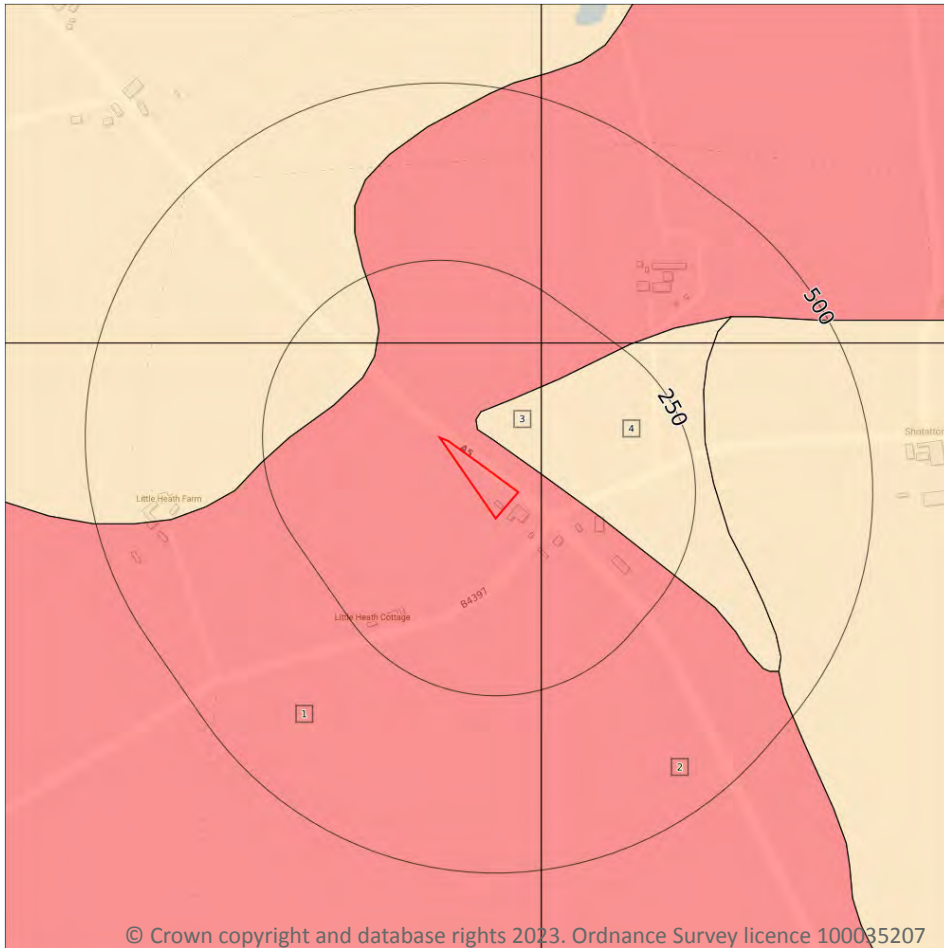
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 29 >](#)

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

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

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

4

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 30](#) >

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Intergranular
2	32m E	Summary Classification: Principal bedrock aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: High	Vulnerability: High Aquifer type: Principal Flow mechanism: Intergranular
3	37m N	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: No Data	Vulnerability: High Aquifer type: Principal Flow mechanism: Intergranular
4	41m E	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: High	Vulnerability: High Aquifer type: Principal Flow mechanism: Intergranular

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site

0

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

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

5.5 Groundwater vulnerability- local information

Records on site

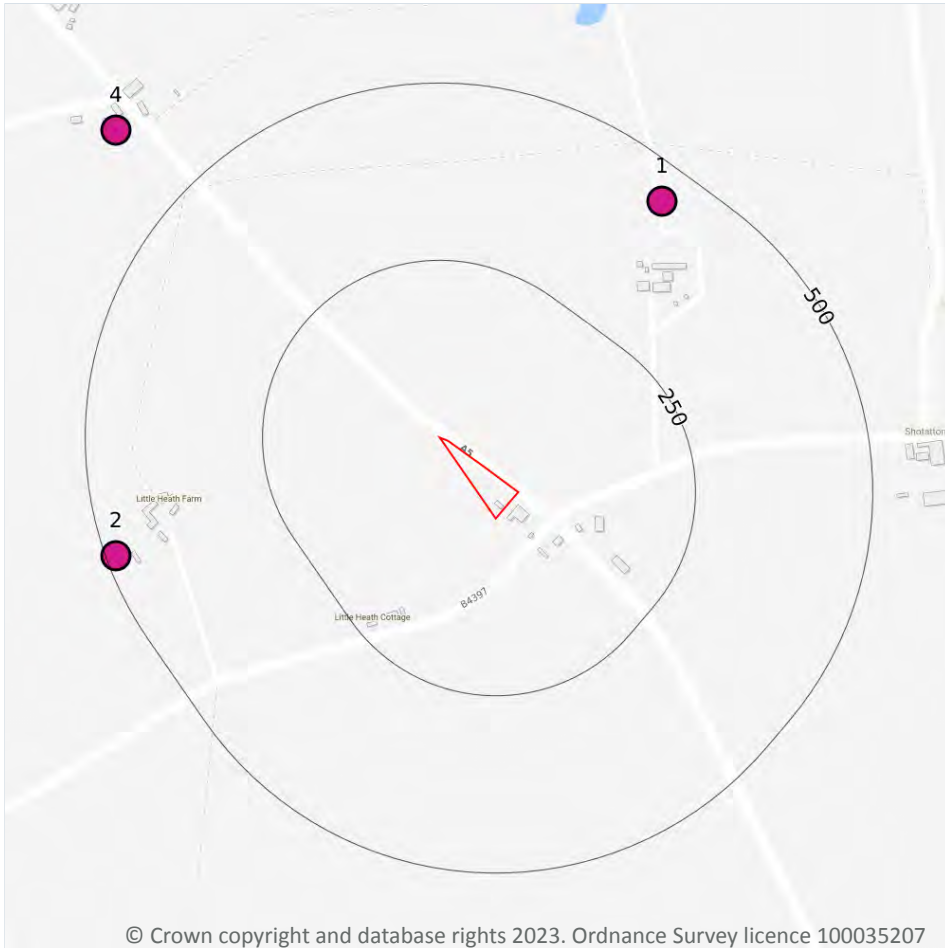
0

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

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



Abstractions and Source Protection Zones



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5.6 Groundwater abstractions

Records within 2000m

17

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 32 >](#)

ID	Location	Details	
1	450m NE	Status: Active Licence No: 18/54/03/0180 Details: Spray Irrigation - Direct Direct Source: Groundwater Midlands Region Point: SHOTATTON, SHROPSHIRE - BOREHOLE Data Type: Point Name: MORRIS Easting: 336170 Northing: 323200	Annual Volume (m ³): 100012 Max Daily Volume (m ³): 1114 Original Application No: - Original Start Date: 26/10/1984 Expiry Date: - Issue No: 100 Version Start Date: 23/11/1988 Version End Date: -
2	486m W	Status: Historical Licence No: 18/54/01/0351 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: LITTLE HEATH FARM, KNOCKIN - WELL Data Type: Point Name: MOTTRAM Easting: 335400 Northing: 322700	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 06/07/1967 Expiry Date: - Issue No: 100 Version Start Date: 06/07/1967 Version End Date: -
-	624m E	Status: Active Licence No: 18/54/03/0202 Details: Spray Irrigation - Direct Direct Source: Groundwater Midlands Region Point: MIDDLE FARM, SHOTATTON - BOREHOLE Data Type: Point Name: RM & CME BROWN AND SON Easting: 336590 Northing: 322840	Annual Volume (m ³): 57024 Max Daily Volume (m ³): 1296 Original Application No: - Original Start Date: 31/03/1998 Expiry Date: - Issue No: 100 Version Start Date: 31/03/1998 Version End Date: -
4	629m NW	Status: Historical Licence No: 18/54/01/0077 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: GREY GABLES Data Type: Point Name: ROBINSON Easting: 335400 Northing: 323300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/10/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/12/1971 Version End Date: -
-	694m S	Status: Active Licence No: MD/054/0001/027/R02 Details: Make-Up Or Top Up Water Direct Source: Groundwater Midlands Region Point: KNOCKIN HEATH FARM KNOCKIN OSWESTRY Data Type: Point Name: JC & MW SUCKLEY Easting: 335698 Northing: 322100	Annual Volume (m ³): 73550 Max Daily Volume (m ³): 2200 Original Application No: NPS WR/035482 Original Start Date: 09/12/2022 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 09/12/2022 Version End Date: -



ID	Location	Details	
-	694m S	Status: Active Licence No: MD/054/0001/027/R02 Details: Spray Irrigation - Direct Direct Source: Groundwater Midlands Region Point: KNOCKIN HEATH FARM KNOCKIN OSWESTRY Data Type: Point Name: JC & MW SUCKLEY Easting: 335698 Northing: 322100	Annual Volume (m ³): 73550 Max Daily Volume (m ³): 2200 Original Application No: NPS/WR/035482 Original Start Date: 09/12/2022 Expiry Date: 31/03/2028 Issue No: 1 Version Start Date: 09/12/2022 Version End Date: -
-	694m S	Status: Historical Licence No: MD/054/0001/027 Details: Spray Irrigation - Direct Direct Source: Groundwater Midlands Region Point: KNOCKIN HEATH FARM KNOCKIN OSWESTRY Data Type: Point Name: JC & MW SUCKLEY Easting: 335698 Northing: 322100	Annual Volume (m ³): 73550 Max Daily Volume (m ³): 2200 Original Application No: - Original Start Date: 08/07/2011 Expiry Date: 31/03/2018 Issue No: 2 Version Start Date: 26/09/2014 Version End Date: -
-	694m S	Status: Historical Licence No: MD/054/0001/027 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Groundwater Midlands Region Point: KNOCKIN HEATH FARM KNOCKIN OSWESTRY Data Type: Point Name: JC & MW SUCKLEY Easting: 335698 Northing: 322100	Annual Volume (m ³): 73550 Max Daily Volume (m ³): 2200 Original Application No: - Original Start Date: 08/07/2011 Expiry Date: 31/03/2018 Issue No: 2 Version Start Date: 26/09/2014 Version End Date: -
-	694m S	Status: Historical Licence No: MD/054/0001/027/R01 Details: Spray Irrigation - Direct Direct Source: Groundwater Midlands Region Point: KNOCKIN HEATH FARM KNOCKIN OSWESTRY Data Type: Point Name: JC & MW SUCKLEY Easting: 335698 Northing: 322100	Annual Volume (m ³): 73550 Max Daily Volume (m ³): 2200 Original Application No: - Original Start Date: 01/05/2018 Expiry Date: 31/03/2022 Issue No: 1 Version Start Date: 01/05/2018 Version End Date: -
-	694m S	Status: Historical Licence No: MD/054/0001/027/R01 Details: Make-Up Or Top Up Water Direct Source: Groundwater Midlands Region Point: KNOCKIN HEATH FARM KNOCKIN OSWESTRY Data Type: Point Name: JC & MW SUCKLEY Easting: 335698 Northing: 322100	Annual Volume (m ³): 73550 Max Daily Volume (m ³): 2200 Original Application No: - Original Start Date: 01/05/2018 Expiry Date: 31/03/2022 Issue No: 1 Version Start Date: 01/05/2018 Version End Date: -



ID	Location	Details	
-	694m S	Status: Historical Licence No: MD/054/0001/027/R01L Details: Make-Up Or Top Up Water Direct Source: Groundwater Midlands Region Point: KNOCKIN HEATH FARM KNOCKIN OSWESTRY Data Type: Point Name: JC & MW SUCKLEY Easting: 335698 Northing: 322100	Annual Volume (m ³): 73550 Max Daily Volume (m ³): 2200 Original Application No: NPS/WR/023988 Original Start Date: 01/04/2022 Expiry Date: - Issue No: 1 Version Start Date: 01/04/2022 Version End Date: -
-	694m S	Status: Historical Licence No: MD/054/0001/027/R01L Details: Spray Irrigation - Direct Direct Source: Groundwater Midlands Region Point: KNOCKIN HEATH FARM KNOCKIN OSWESTRY Data Type: Point Name: JC & MW SUCKLEY Easting: 335698 Northing: 322100	Annual Volume (m ³): 73550 Max Daily Volume (m ³): 2200 Original Application No: NPS/WR/023988 Original Start Date: 01/04/2022 Expiry Date: - Issue No: 1 Version Start Date: 01/04/2022 Version End Date: -
-	733m SW	Status: Historical Licence No: 18/54/01/0319 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: KNOCKIN HEATH FARM, OSWESTRY - BOREHOLE Data Type: Point Name: TRUSTEES OF LORD BRADFORDS 1987 SET'MENT Easting: 335600 Northing: 322100	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 13/06/1967 Expiry Date: - Issue No: 100 Version Start Date: 11/07/1994 Version End Date: -
-	863m E	Status: Active Licence No: MD/054/0003/008 Details: Heat Pump Direct Source: Groundwater Midlands Region Point: ABSTRACTION POINT A - BOREHOLE Data Type: Point Name: Mr. Jonathon Yates Easting: 336828 Northing: 322860	Annual Volume (m ³): 55000 Max Daily Volume (m ³): 220 Original Application No: NPS/WR/029933 Original Start Date: 18/09/2019 Expiry Date: 31/03/2034 Issue No: 1 Version Start Date: 18/09/2019 Version End Date: -
-	1365m NW	Status: Historical Licence No: 18/54/01/0156 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: HILL VIEW Data Type: Point Name: EVANS Easting: 334600 Northing: 323400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 09/01/1967 Expiry Date: - Issue No: 100 Version Start Date: 11/04/1990 Version End Date: -



ID	Location	Details	
-	1588m NW	Status: Historical Licence No: 18/54/01/0283 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: SANDFORD HOUSE FARM - BOREHOLE Data Type: Point Name: WHITTINGHAM Easting: 334400 Northing: 323500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 05/06/1967 Expiry Date: - Issue No: 100 Version Start Date: 05/06/1967 Version End Date: -
-	1931m E	Status: Historical Licence No: 18/54/03/0023 Details: General Farming & Domestic Direct Source: Groundwater Midlands Region Point: GRUG HILL FARM - WELL- 1 Data Type: Point Name: GOUGH Easting: 337800 Northing: 323400	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 04/02/1966 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m

1

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 32 >](#)

ID	Location	Details	
-	1769m NW	Status: Active Licence No: 18/54/01/0608 Details: Spray Irrigation - Storage Direct Source: Surface Water Midlands Region Point: WEST FELTON,SHROPSHIRE - WEIR BROOK Data Type: Point Name: SUCKLEY Easting: 334940 Northing: 324380	Annual Volume (m ³): 50000 Max Daily Volume (m ³): 1968 Original Application No: NPS/WR/017566 Original Start Date: 09/05/1995 Expiry Date: - Issue No: 101 Version Start Date: 26/09/2014 Version End Date: -

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



5.8 Potable abstractions

Records within 2000m

1

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

Features are displayed on the Abstractions and Source Protection Zones map on [page 32 >](#)

ID	Location	Details	
-	694m S	Status: Historical Licence No: MD/054/0001/027 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Household Direct Source: Groundwater Midlands Region Point: KNOCKIN HEATH FARM KNOCKIN OSWESTRY Data Type: Point Name: JC & MW SUCKLEY Easting: 335698 Northing: 322100	Annual Volume (m ³): 73550 Max Daily Volume (m ³): 2200 Original Application No: - Original Start Date: 08/07/2011 Expiry Date: 31/03/2018 Issue No: 2 Version Start Date: 26/09/2014 Version End Date: -

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

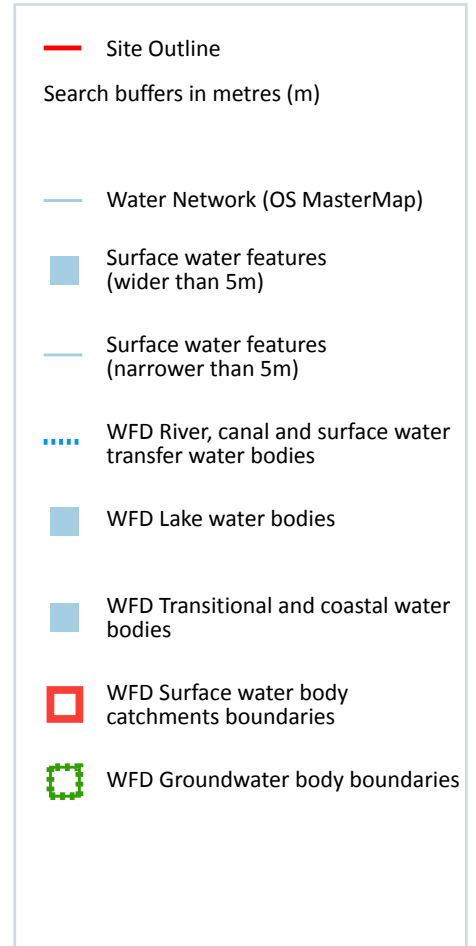
0

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



6.1 Water Network (OS MasterMap)

Records within 250m

0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

0

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

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

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

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

Features are displayed on the Hydrology map on [page 38 >](#)

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Severn - conf Bele Bk to conf Sundorne Bk	GB109054049142	Morda and Severn North Shropshire	Severn Uplands

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 38 >](#)

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	5488m S	River	Severn - conf Bele Bk to conf Sundorne Bk	GB109054049142 ↗	Moderate	Fail	Moderate	2019

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



6.5 WFD Groundwater bodies

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

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

Features are displayed on the Hydrology map on [page 38 >](#)

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	On site	Severn Uplands - PT Sandstone Knockin	GB40901G202300 ↗	Poor	Poor	Good	2019

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m

0

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

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

7.2 Historical Flood Events

Records within 250m

0

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

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

7.3 Flood Defences

Records within 250m

0

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

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



7.4 Areas Benefiting from Flood Defences

Records within 250m

0

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

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

7.5 Flood Storage Areas

Records within 250m

0

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

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



River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m

0

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

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

7.7 Flood Zone 3

Records within 50m

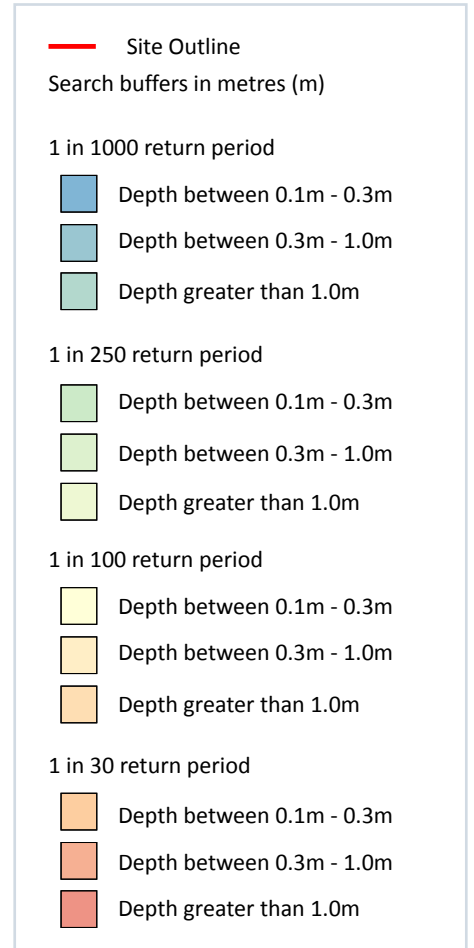
0

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

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



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

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

Features are displayed on the Surface water flooding map on [page 44 >](#)

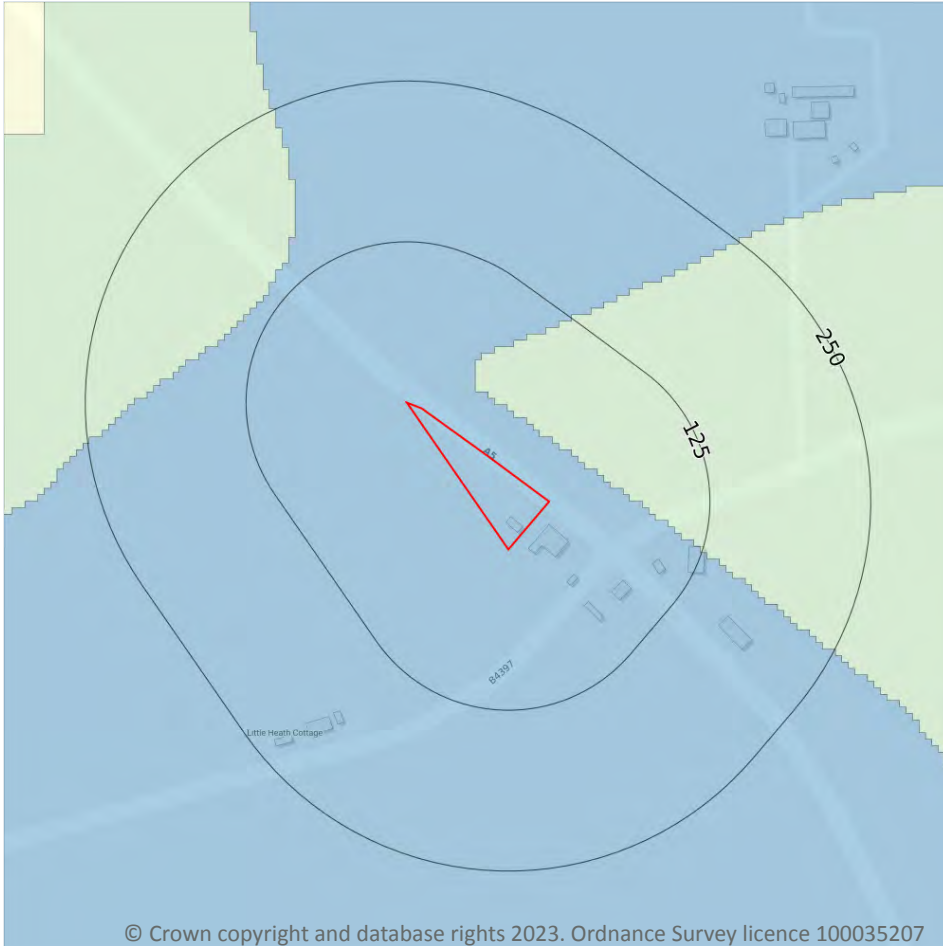
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Negligible

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 46 >](#)

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

0

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

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

10.7 Designated Ancient Woodland

Records within 2000m

0

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

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

10.8 Biosphere Reserves

Records within 2000m

0

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

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



10.9 Forest Parks

Records within 2000m

0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m

0

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

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

10.11 Green Belt

Records within 2000m

0

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

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

10.12 Proposed Ramsar sites

Records within 2000m

0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m

0

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

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



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m

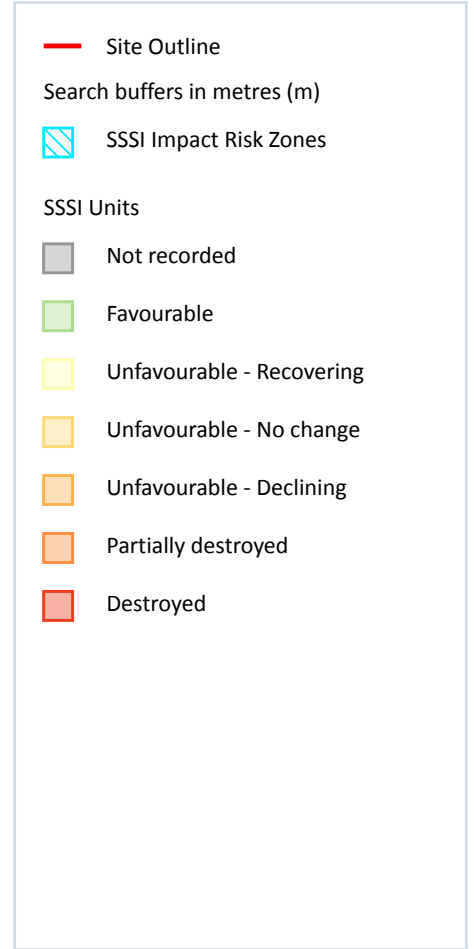
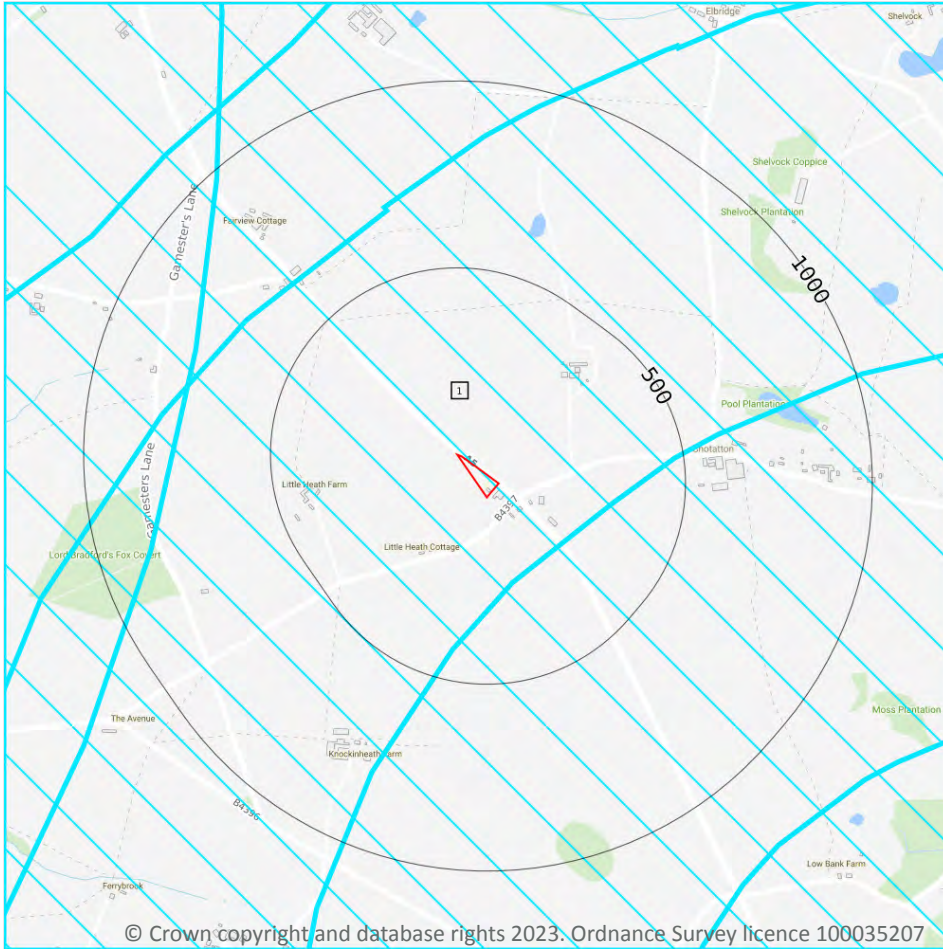
4

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

Location	Name	Type	NVZ ID	Status
On site	Weir Bk - source to conf R Severn NVZ	Surface Water	600	Existing
On site	West Shropshire	Groundwater	153	Existing
1765m W	Weir Bk - source to conf R Severn NVZ	Surface Water	600	Existing
1765m W	West Shropshire	Groundwater	153	Existing

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

1

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

Features are displayed on the SSSI Impact Zones and Units map on [page 51](#) >

ID	Location	Type of developments requiring consultation
1	On site	<p>Infrastructure - Airports, helipads and other aviation proposals.</p> <p>Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction.</p> <p>Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 750m², manure stores > 3500t.</p> <p>Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion</p>

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	0
-----------------------------	----------

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

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

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

0

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



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

11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

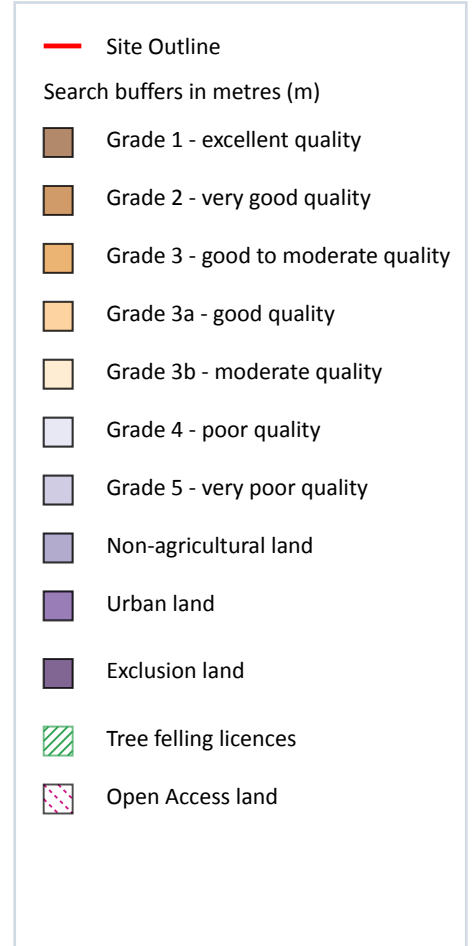
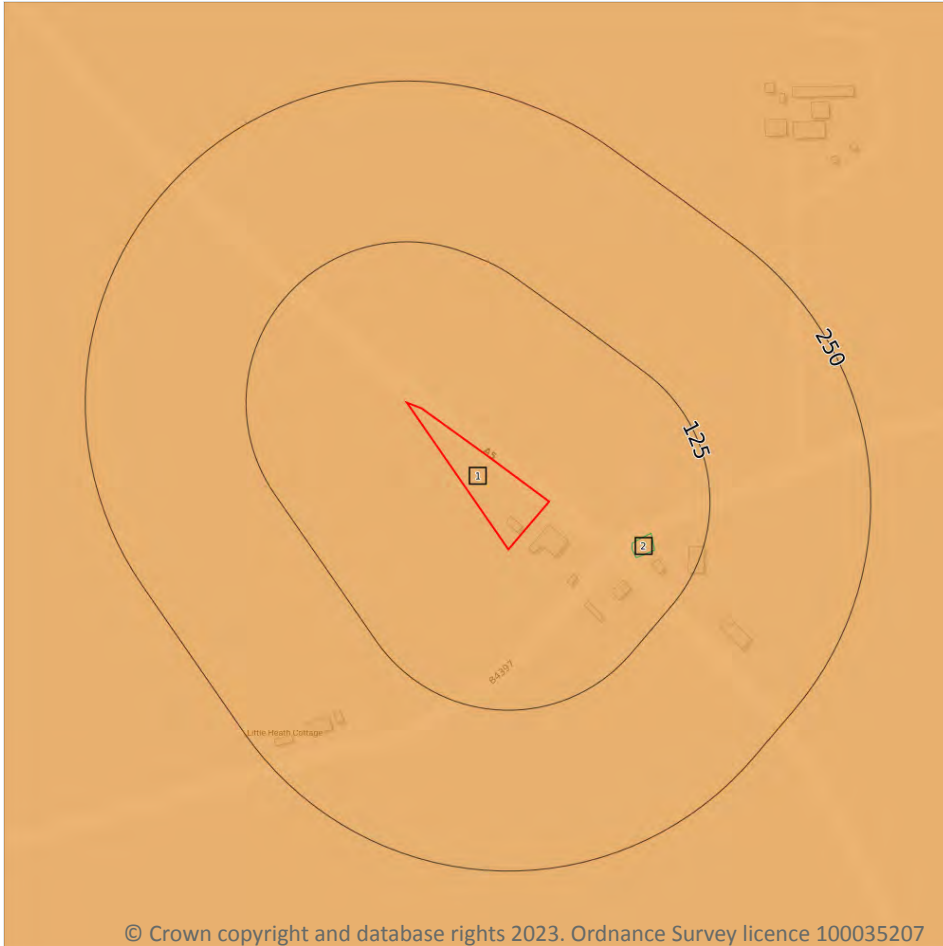
0

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

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



12 Agricultural designations



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12.1 Agricultural Land Classification

Records within 250m

1

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

Features are displayed on the Agricultural designations map on [page 55](#) >

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.

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 55 >](#)

ID	Location	Description	Reference	Application date
2	72m SE	Selective Fell/Thin (Unconditional)	018/366/15-16	-

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m

0

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

This data is sourced from Natural England.



13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m

0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m

0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m

0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m

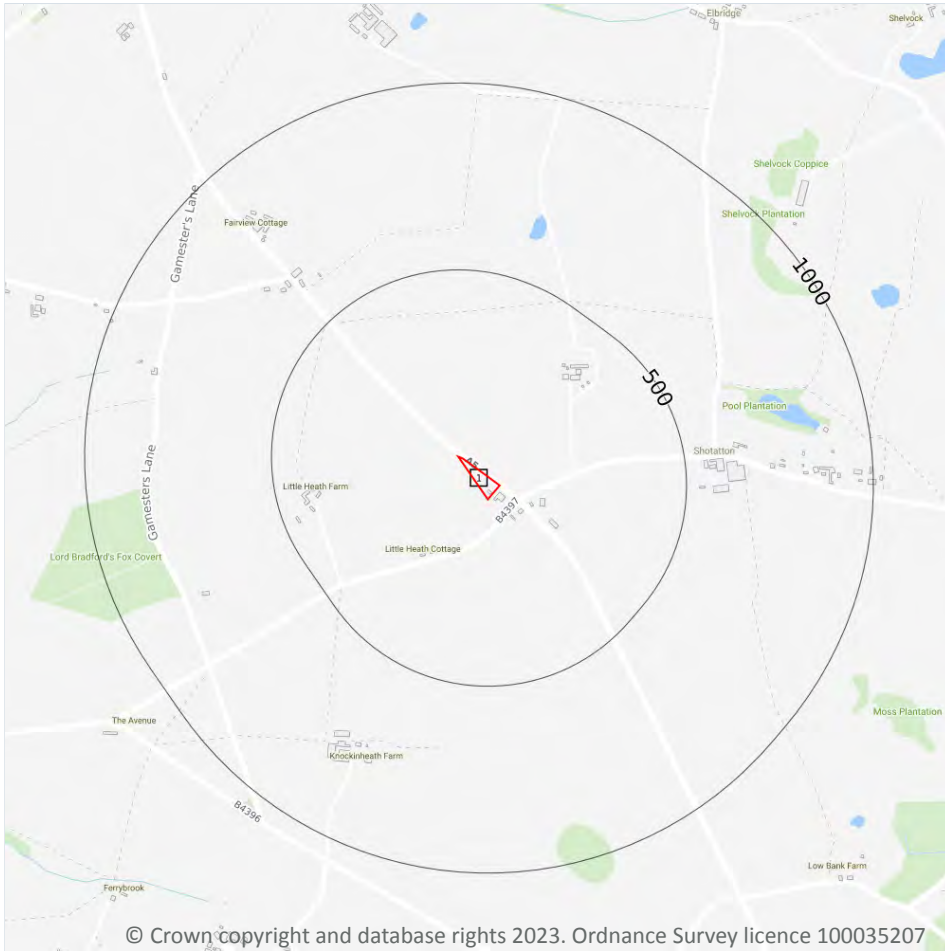
0

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

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
 Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 58 >](#)

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

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

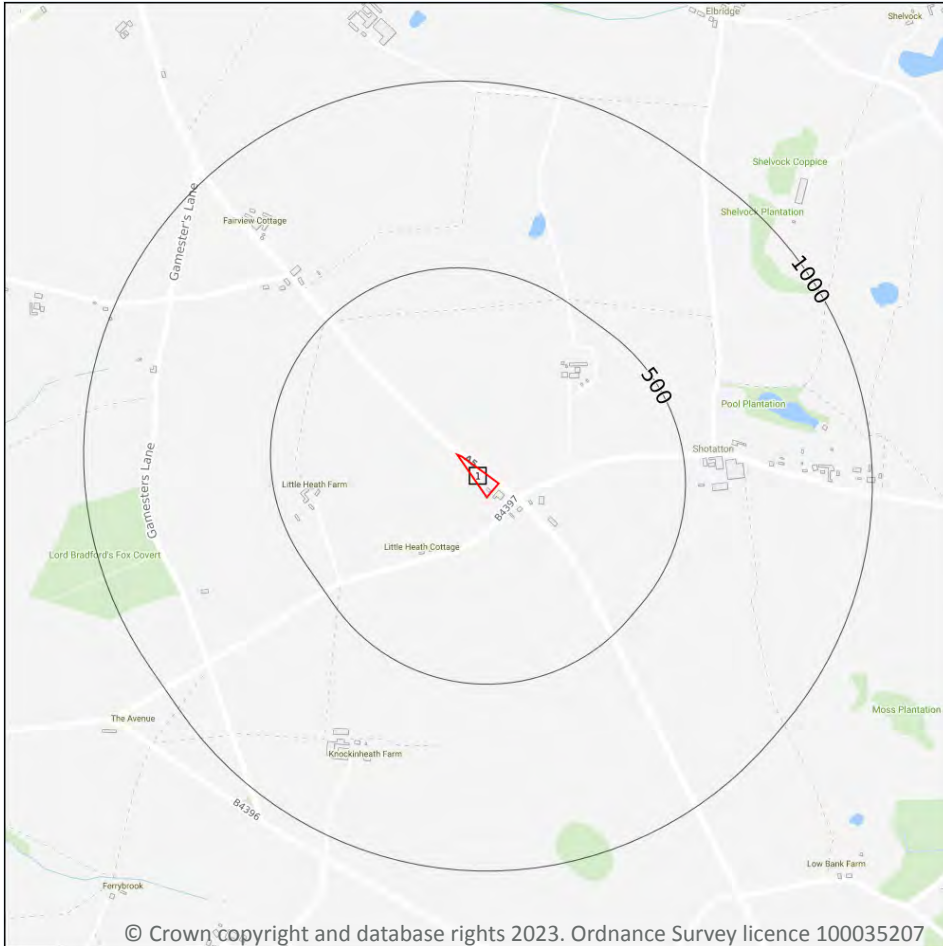
0

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

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline
 Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 62](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW137_oswestry_v4

This data is sourced from the British Geological Survey.

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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

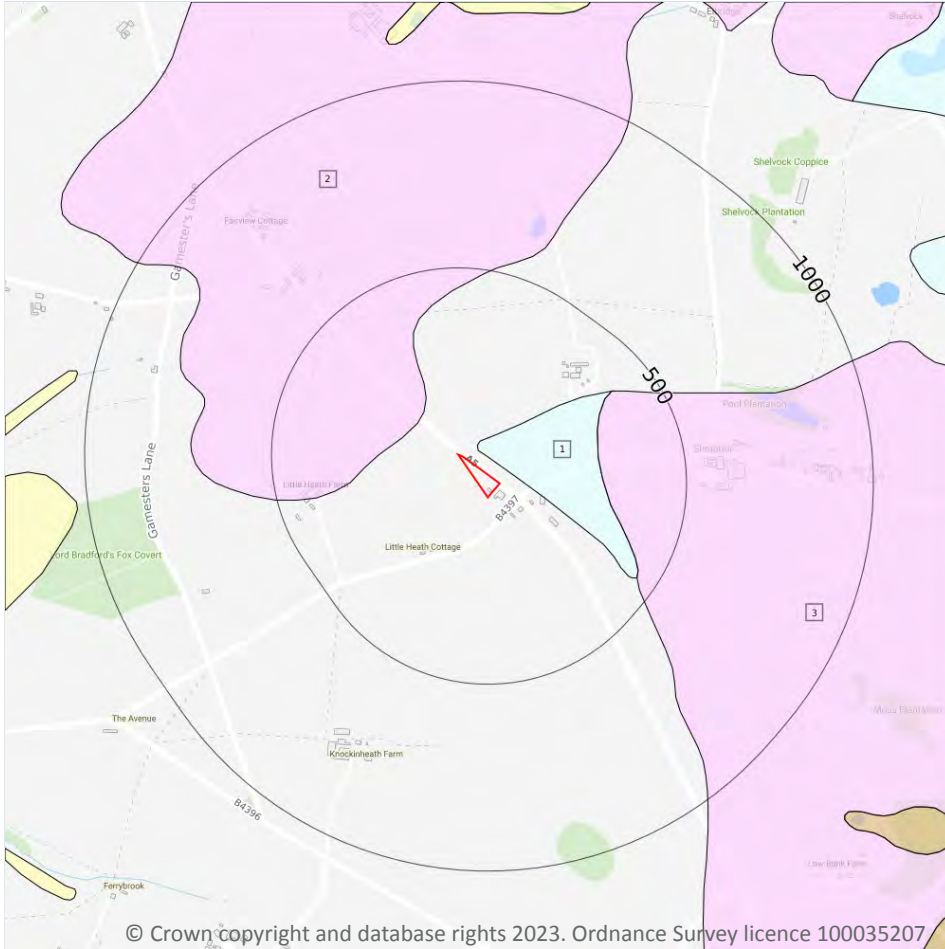
Records within 50m


0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
-  Landslip (50k)
- Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m

3

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 64](#) >

ID	Location	LEX Code	Description	Rock description
1	37m N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	138m NW	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
3	272m E	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

1

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

Location	Flow type	Maximum permeability	Minimum permeability
37m N	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)

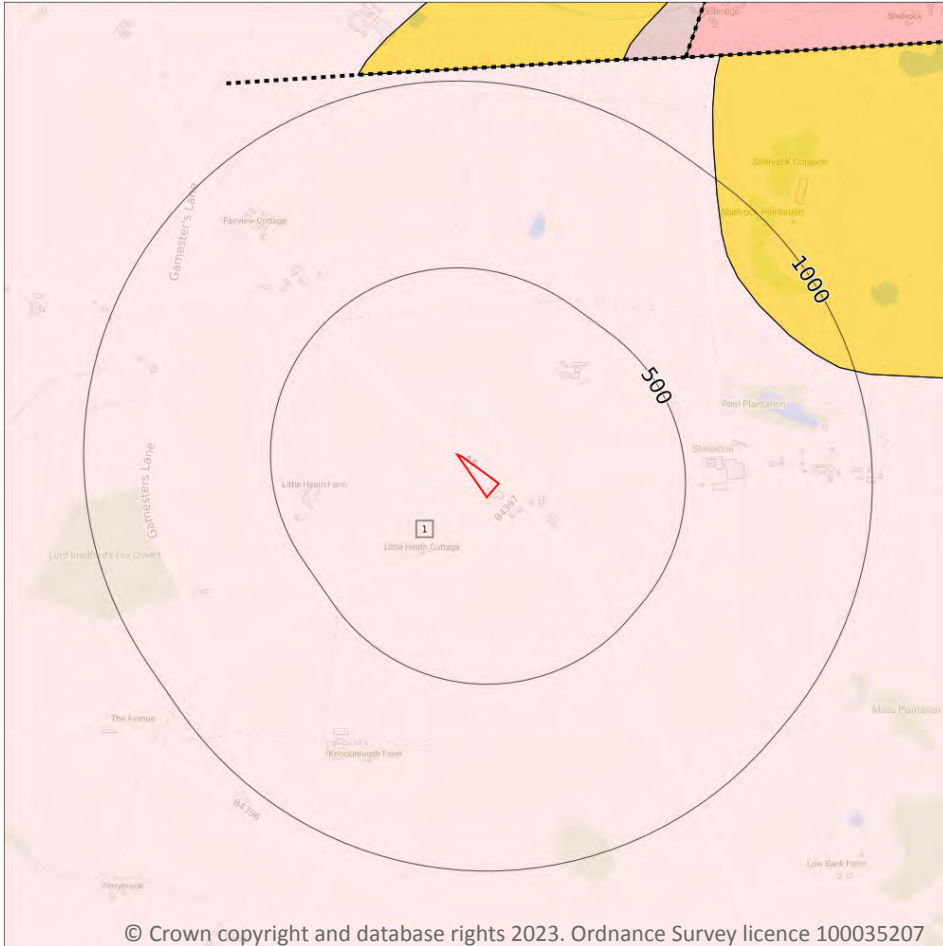
Records within 50m

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.

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15.8 Bedrock geology (50k)

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 66](#) >

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

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1
---------------------------	----------

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	High	High

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	0
----------------------------	----------

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

This data is sourced from the British Geological Survey.

16 Boreholes

16.1 BGS Boreholes

Records within 250m

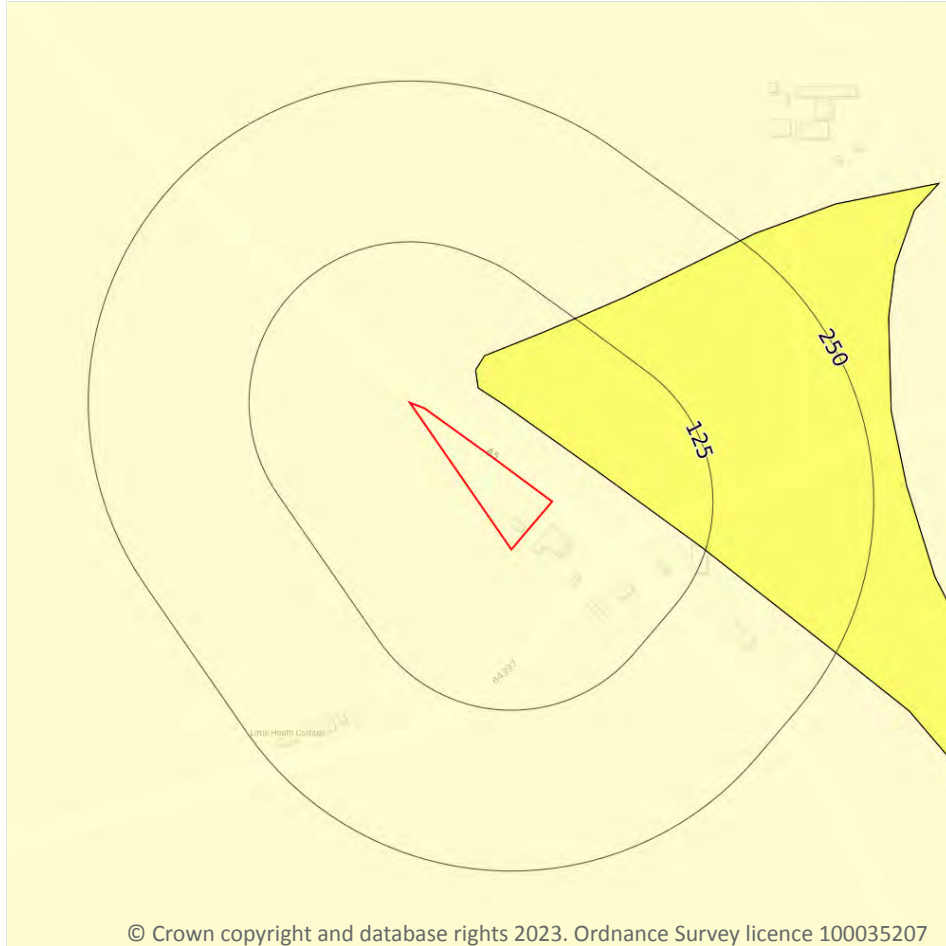
0

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

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



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17.1 Shrink swell clays

Records within 50m

2

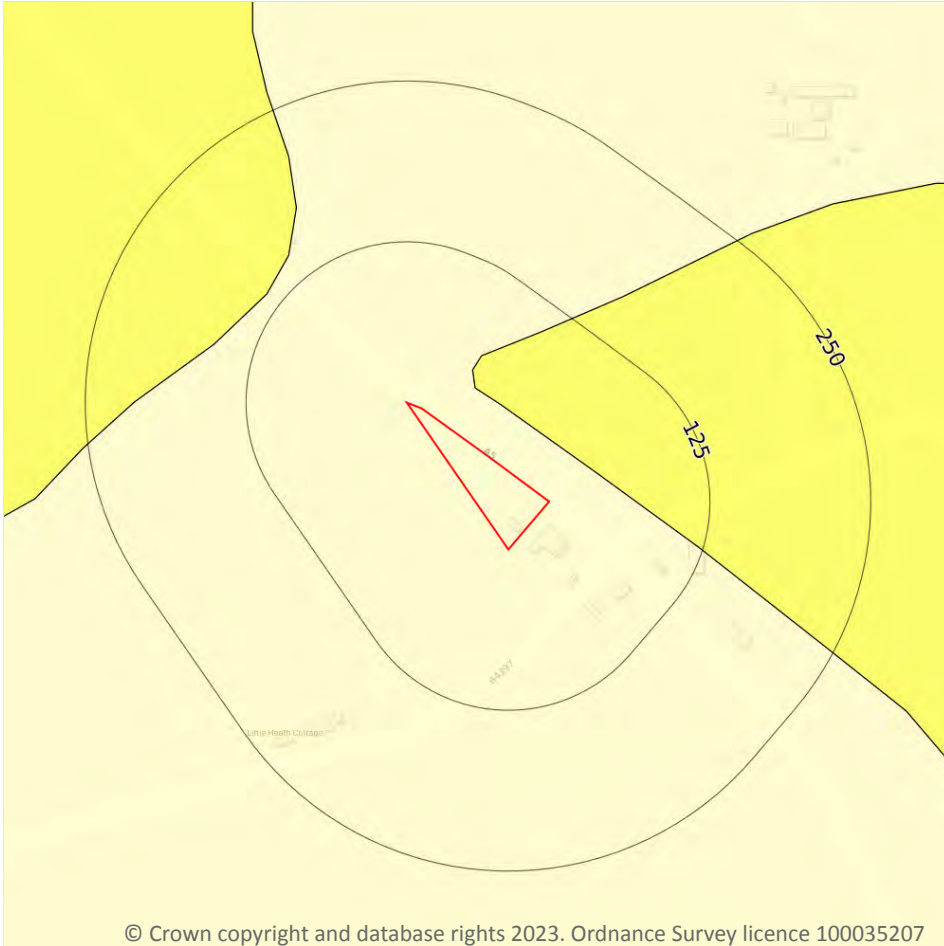
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 69 >](#)

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
37m N	Very low	Ground conditions predominantly low plasticity.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



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17.2 Running sands

Records within 50m

2

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.

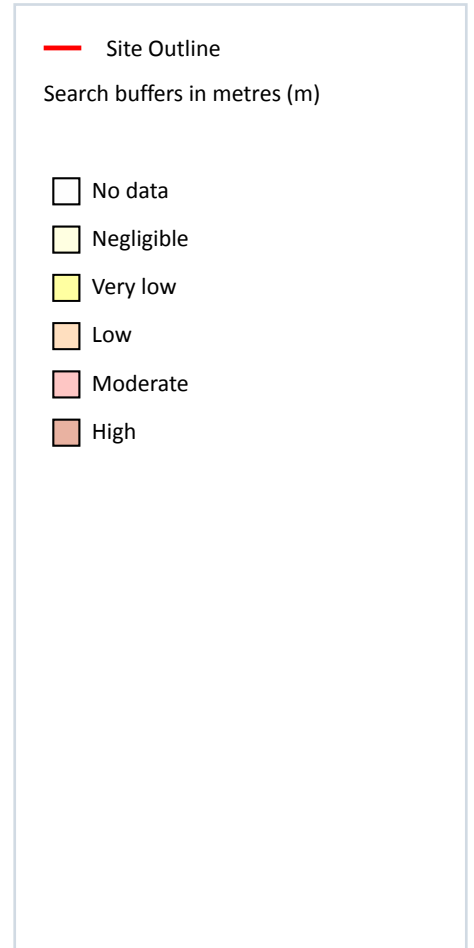
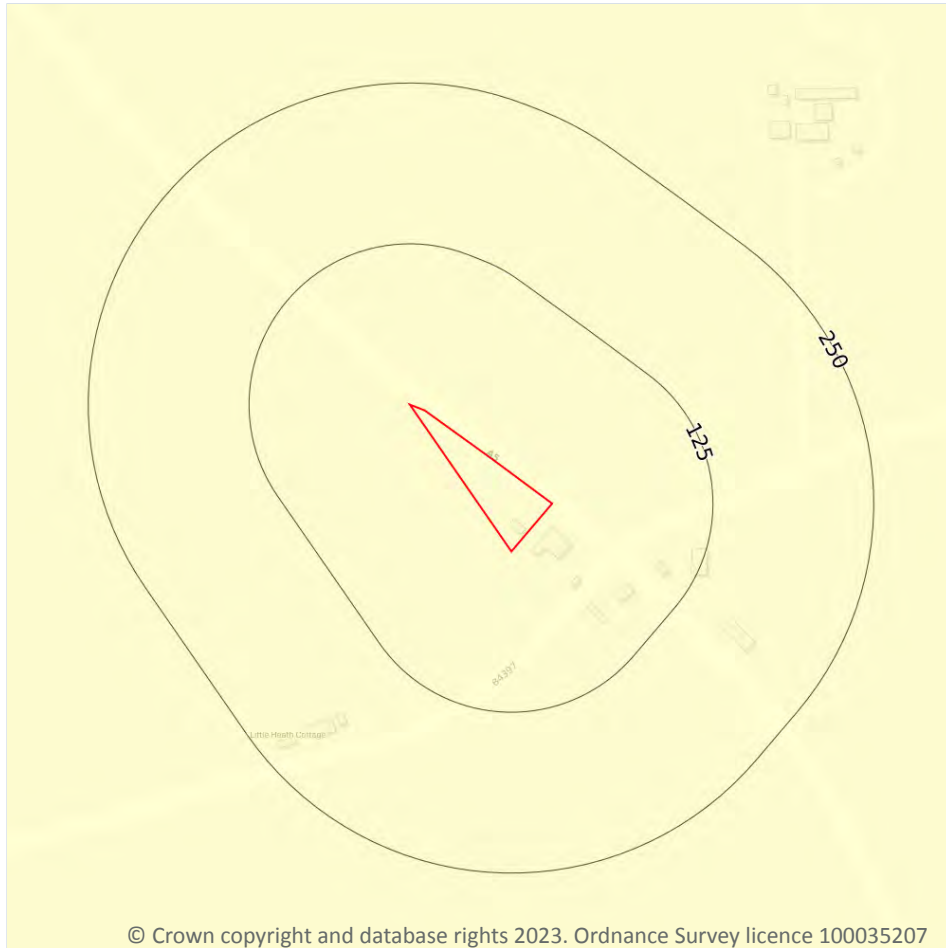
Features are displayed on the Natural ground subsidence - Running sands map on [page 70 >](#)

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

Location	Hazard rating	Details
37m N	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



17.3 Compressible deposits

Records within 50m

1

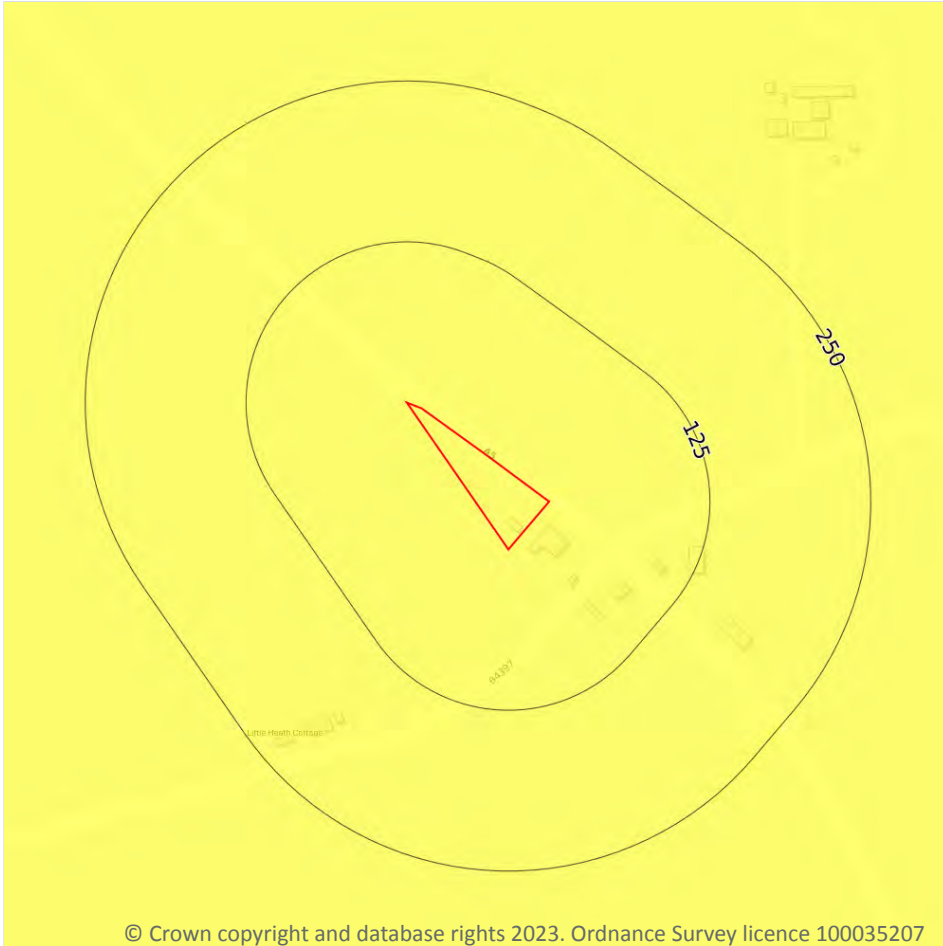
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

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

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



— Site Outline

Search buffers in metres (m)

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

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17.4 Collapsible deposits

Records within 50m

1

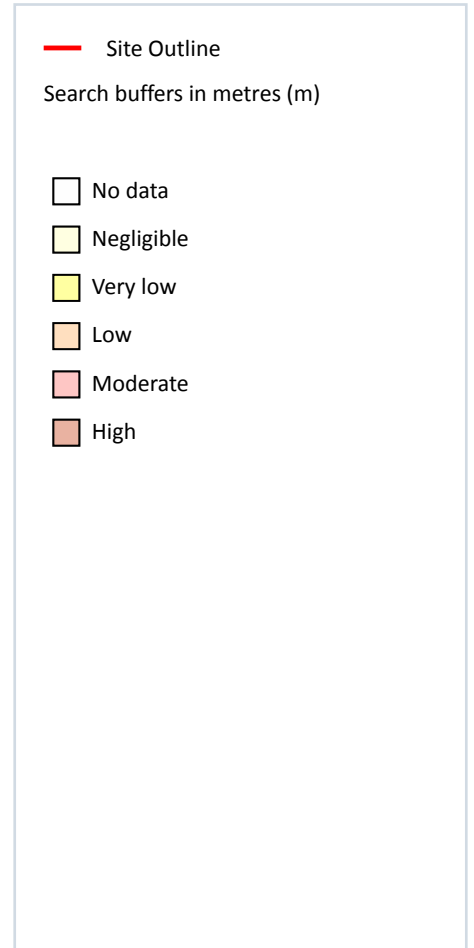
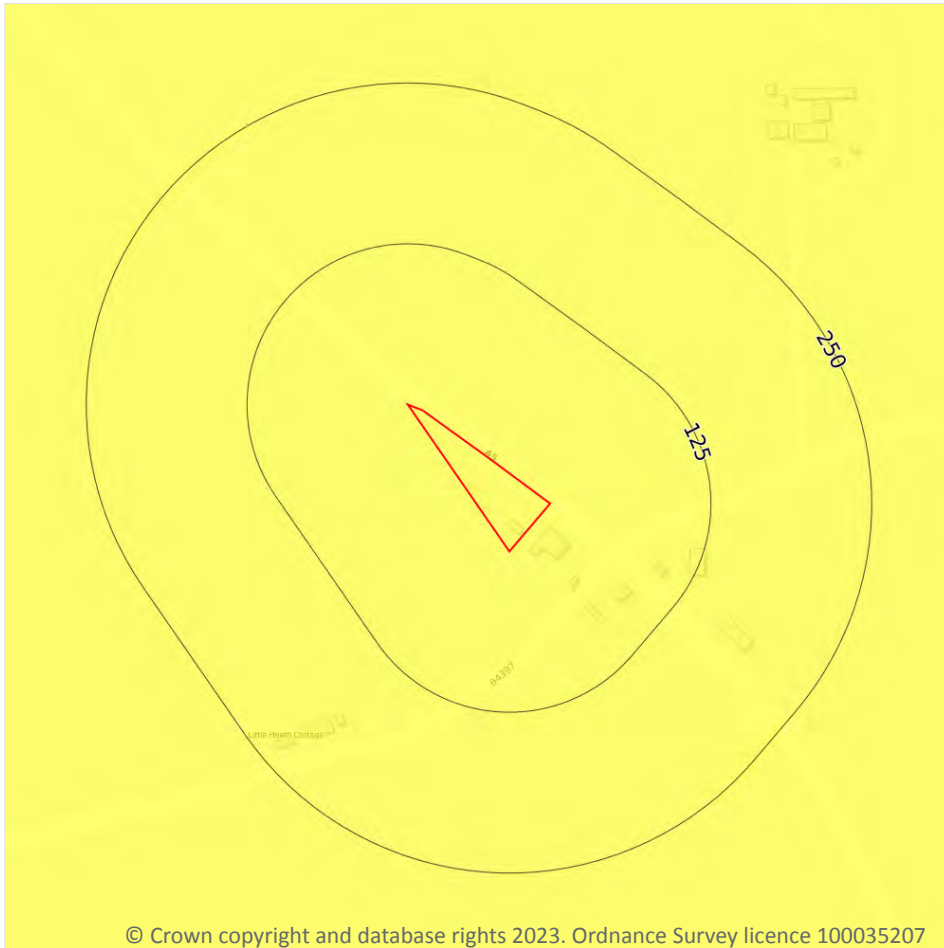
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

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

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

1

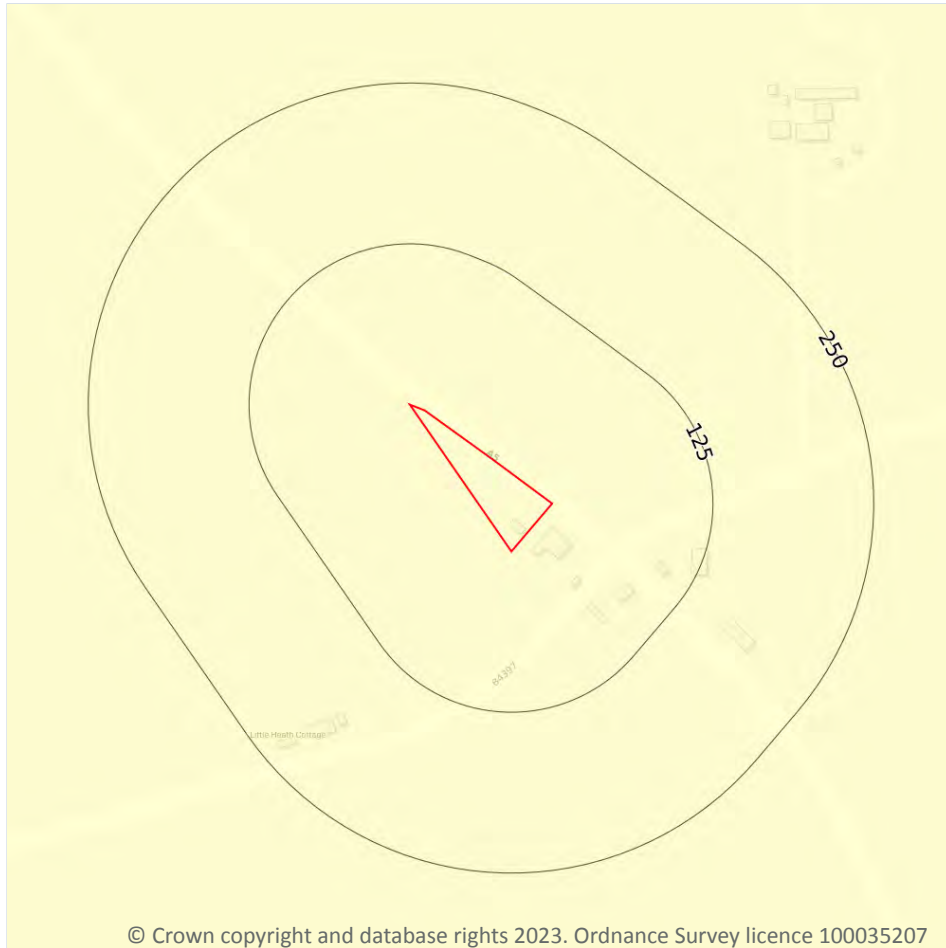
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

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

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



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.

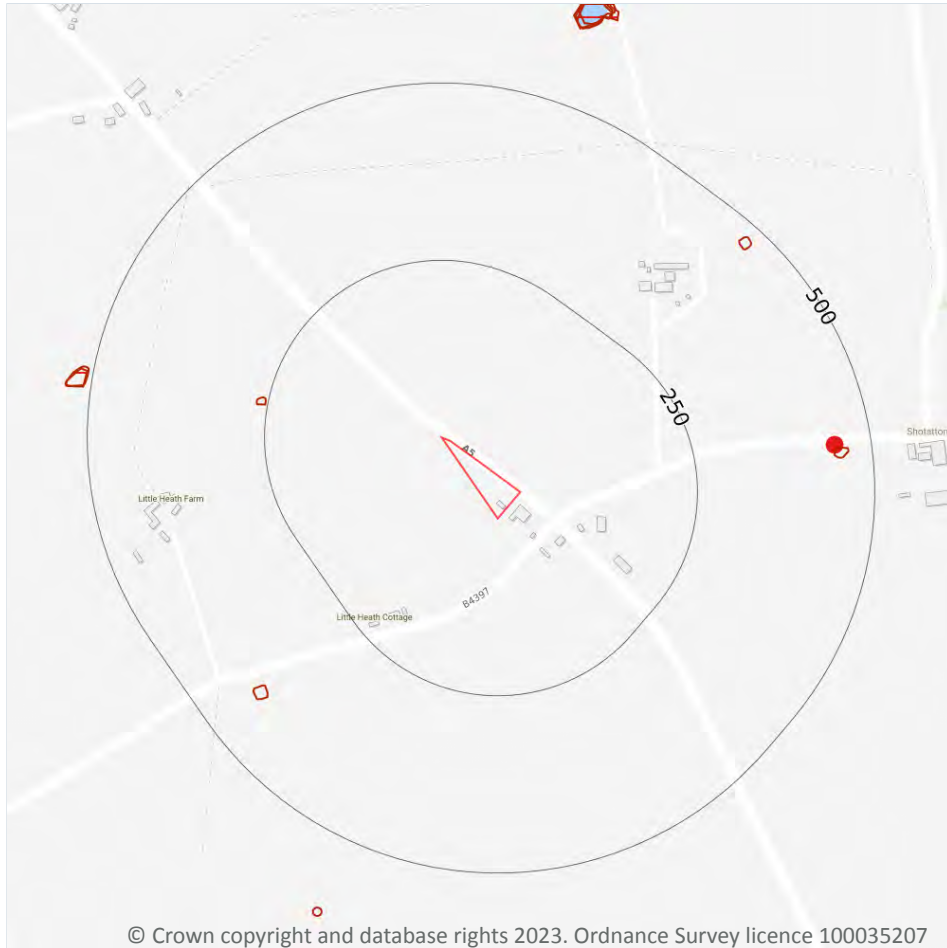
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 75](#)

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

This data is sourced from the British Geological Survey.



18 Mining and ground workings



18.1 BritPits

Records within 500m

1

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

Features are displayed on the Mining and ground workings map on [page 77 >](#)

ID	Location	Details	Description
A	448m E	Name: Shotatton Gravel Pit Address: Brownhill, SHREWSBURY, Shropshire Commodity: Sand & Gravel Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m **0**

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.

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m **0**

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

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m **0**

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

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m **0**

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

This data is sourced from the British Geological Survey.



18.6 Non-coal mining

Records within 1000m

0

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

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site

0

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

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

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m

0

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

This data is sourced from Groundsure.



18.10 Mining record office plans

Records within 500m

0

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

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m

0

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site

0

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

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site

0

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

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

18.14 Gypsum areas

Records on site

0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.



18.15 Tin mining

Records on site

0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site

0

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

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

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

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

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

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

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



This data is sourced from Groundsure.

19.5 National karst database

Records within 500m

0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

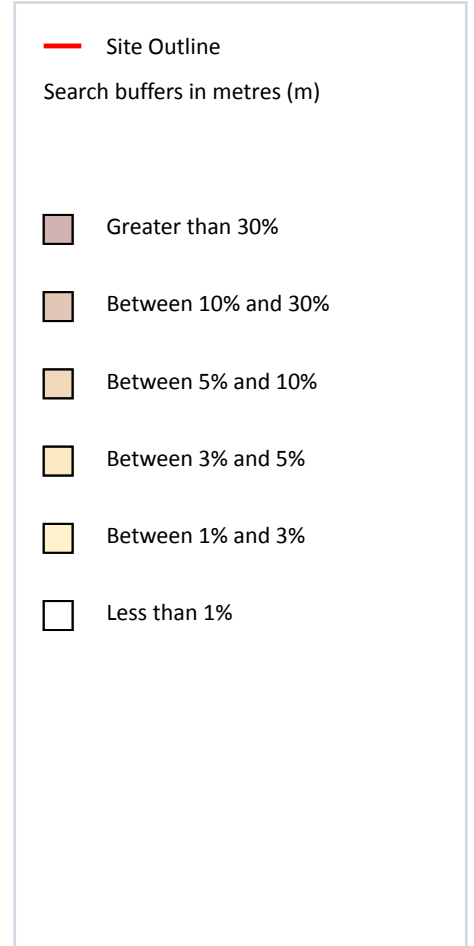
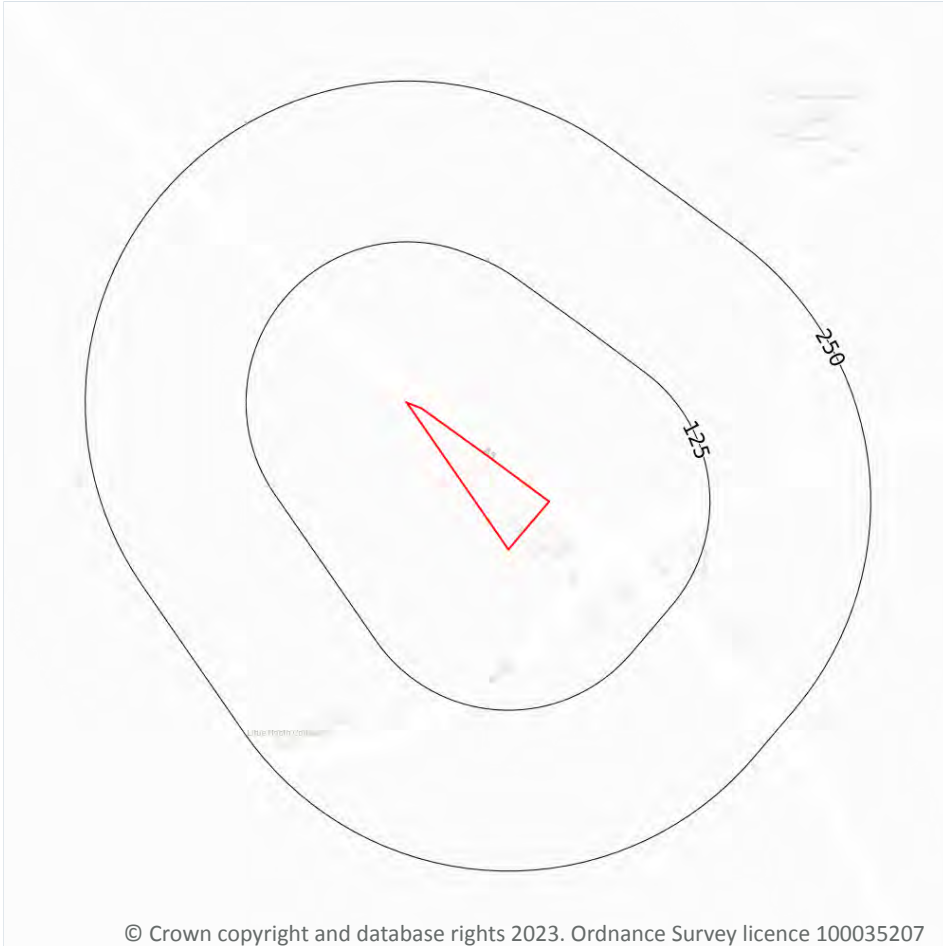
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.



20 Radon



20.1 Radon

Records on site

1

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

Features are displayed on the Radon map on [page 84 >](#)

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

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



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

6

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 mg/kg
33m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 mg/kg
33m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 mg/kg
37m N	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
41m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg
41m E	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	40 - 60 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.



21.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m 0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m 0

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m 0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m 0

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

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m 0

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



This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m **0**

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m **0**

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

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 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.

22.9 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.

22.10 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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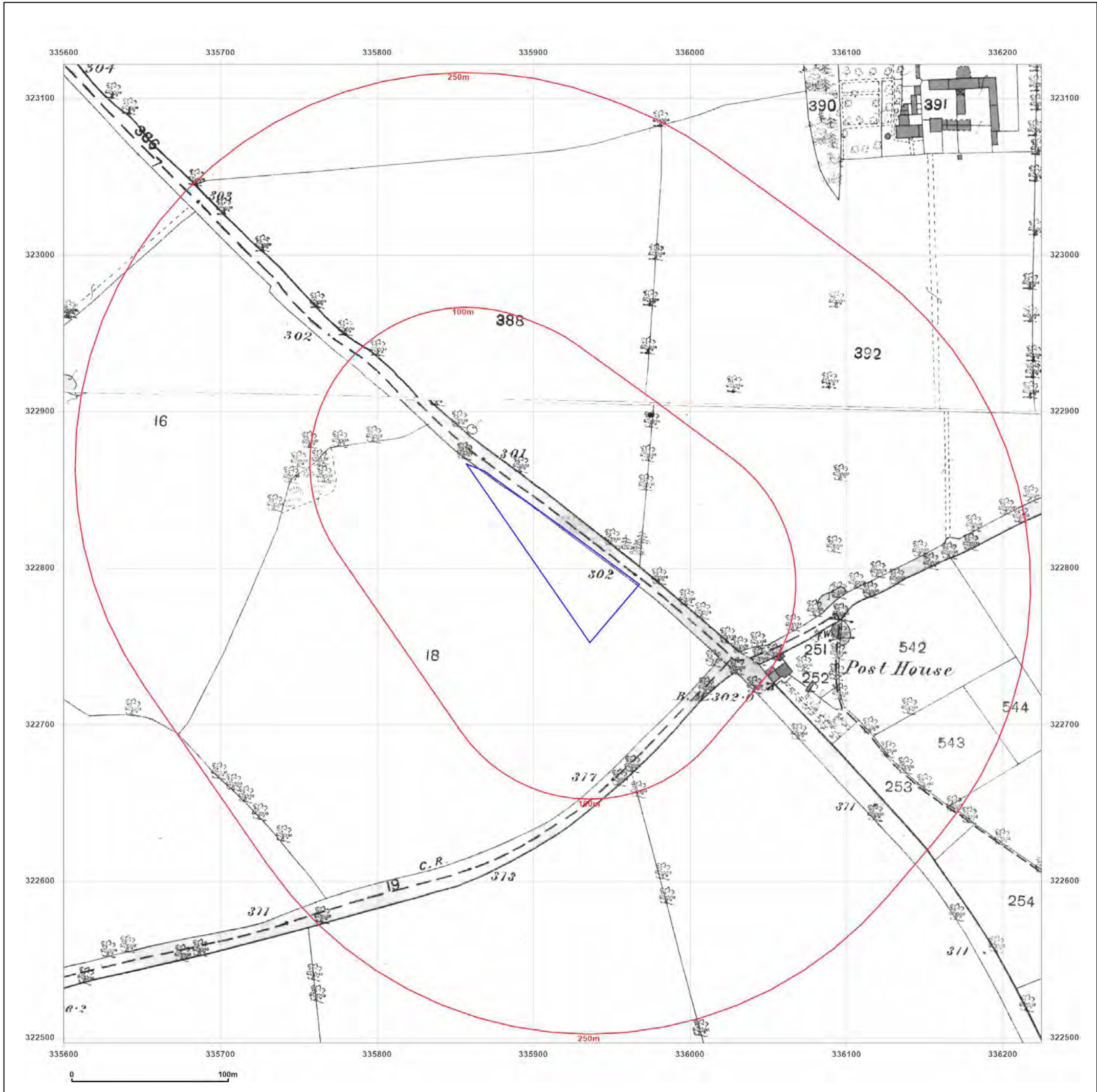
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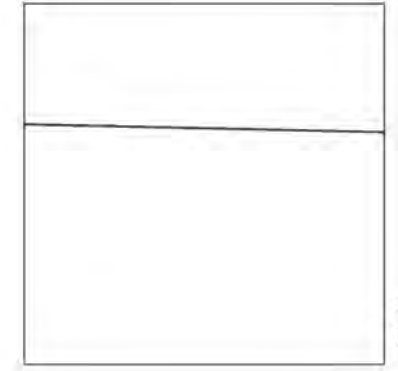
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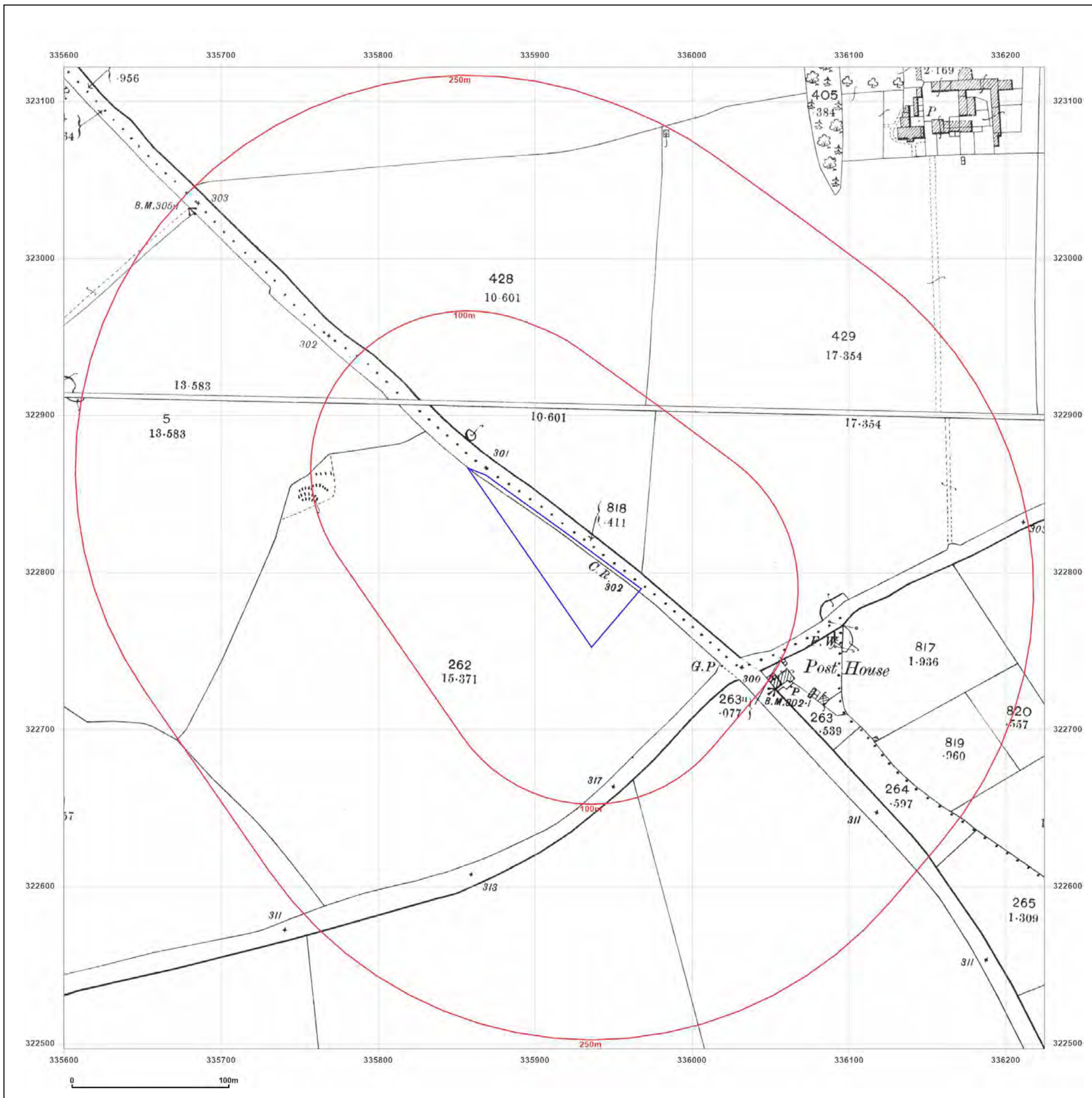
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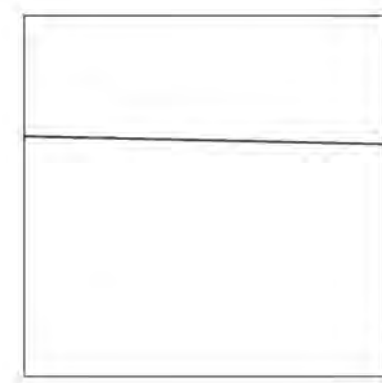
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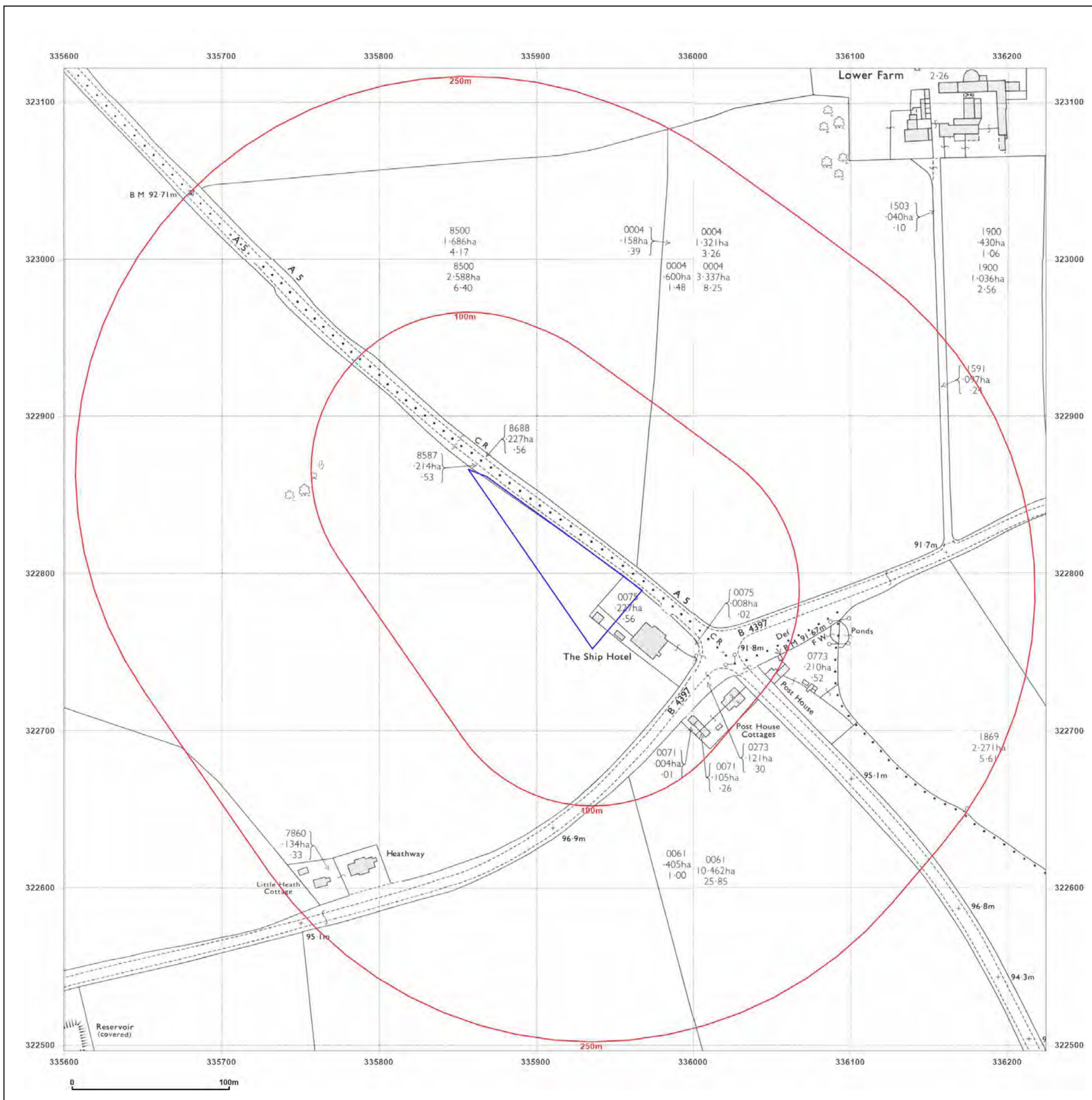


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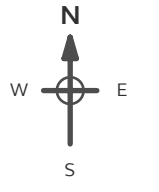


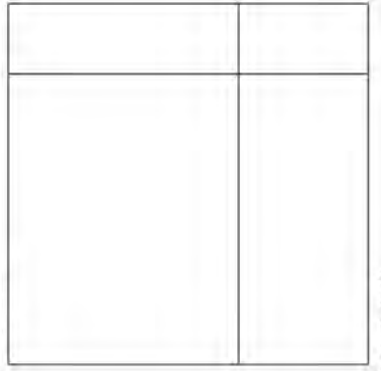
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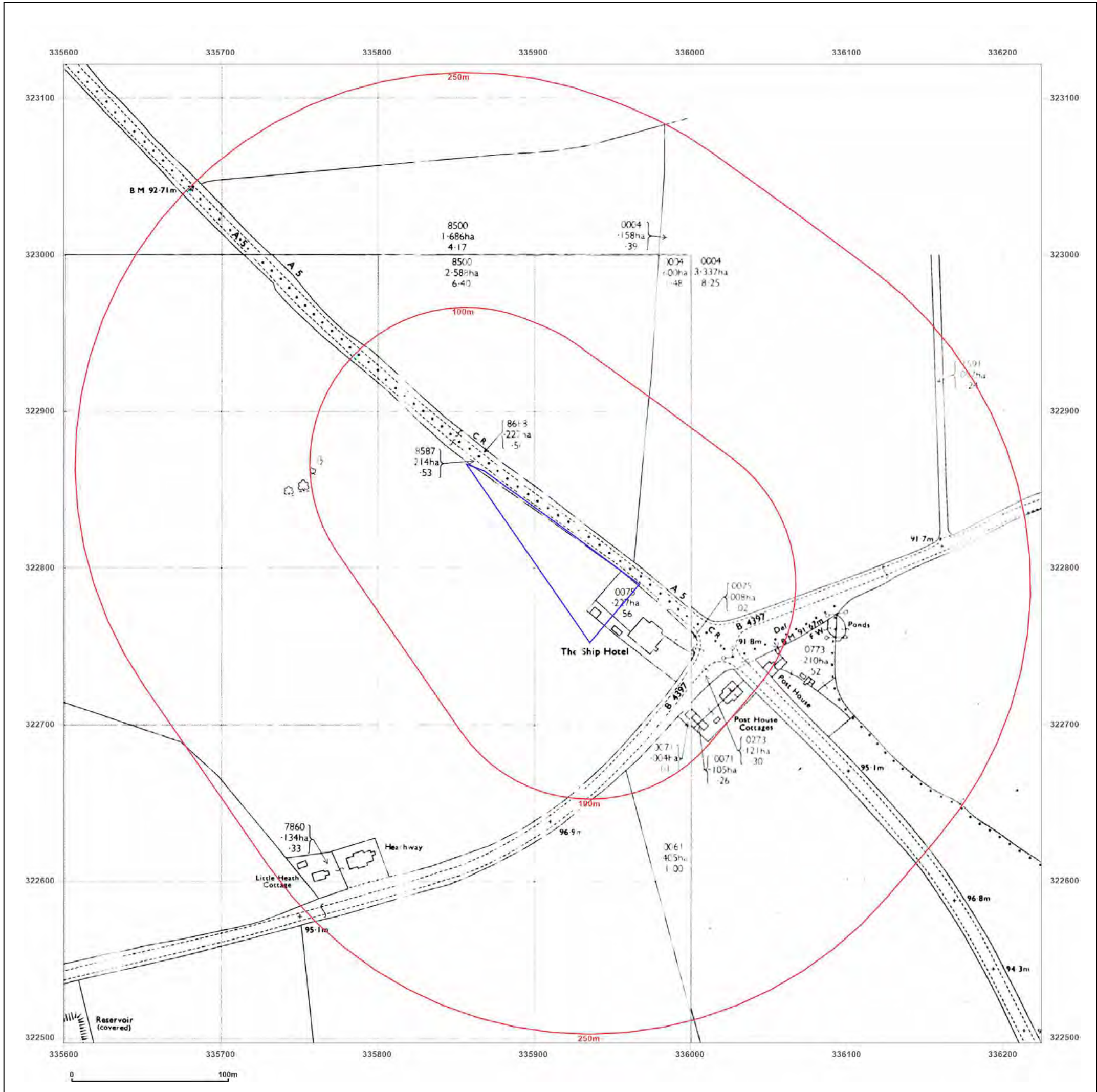


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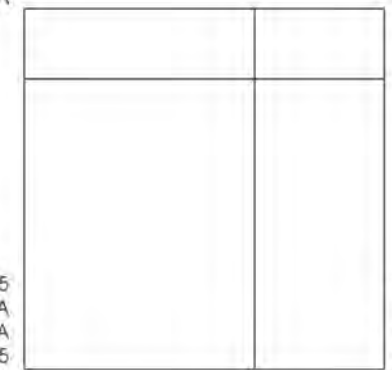
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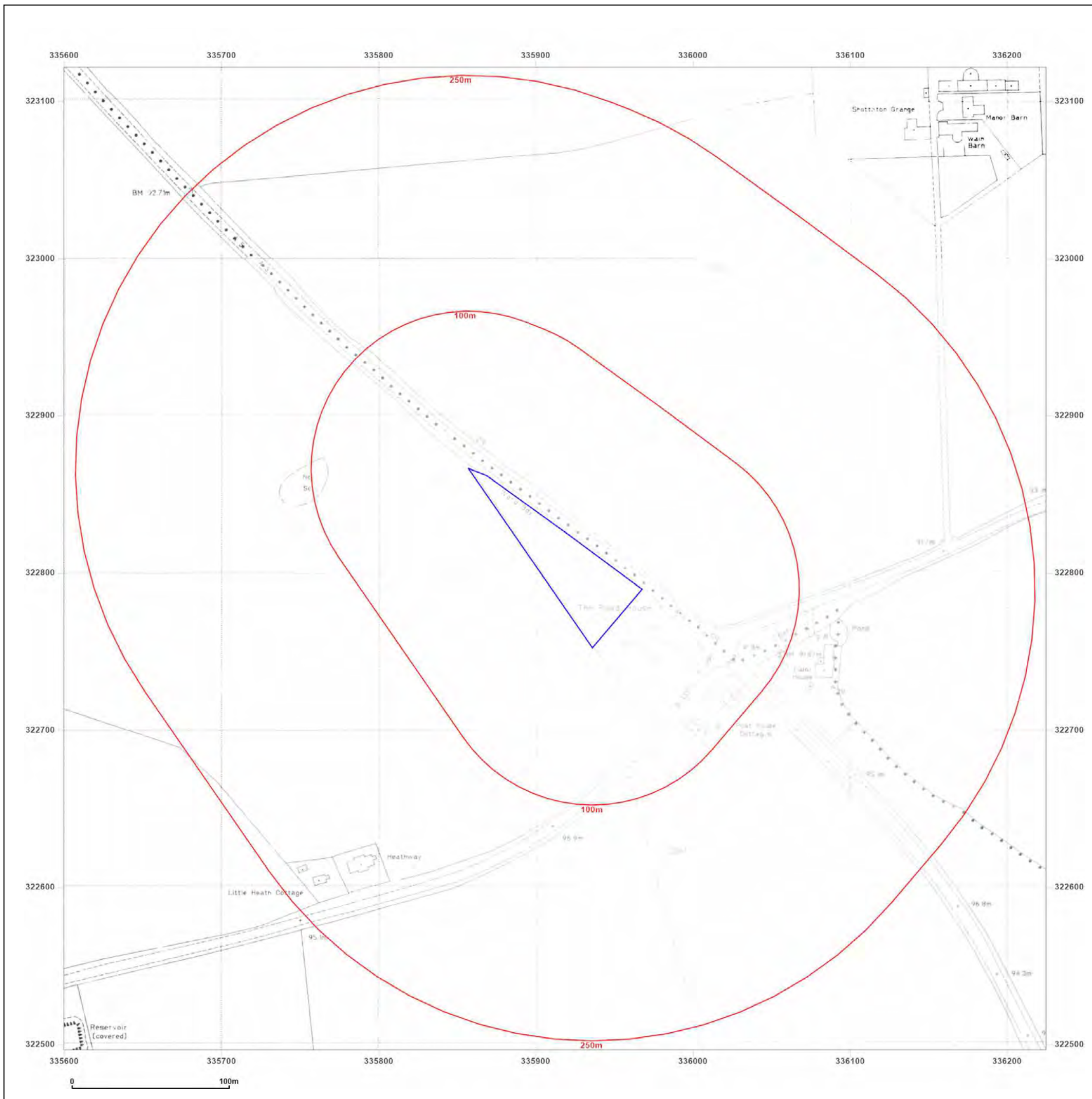


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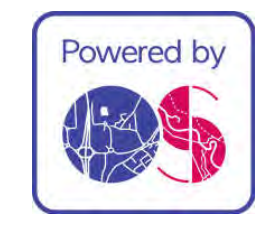
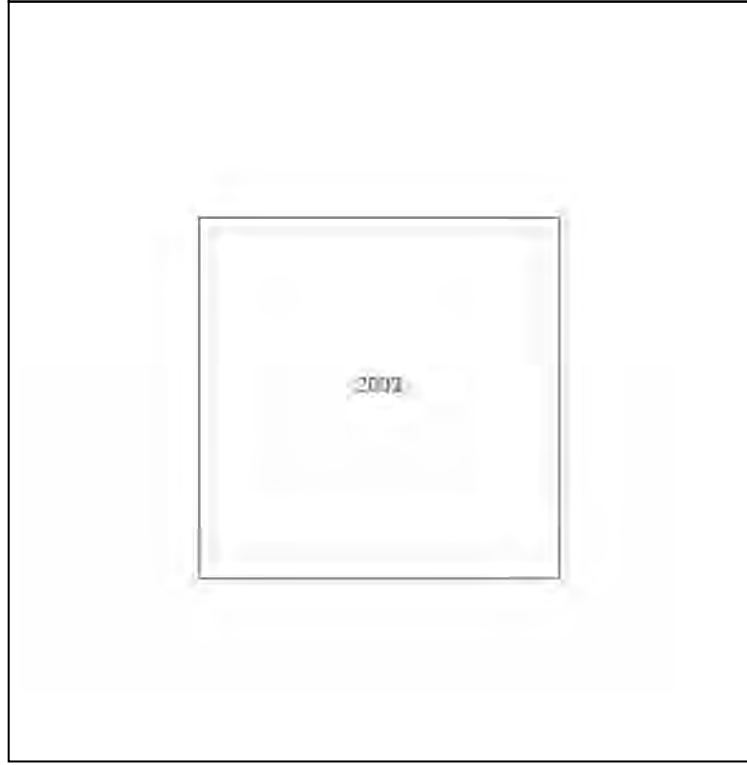
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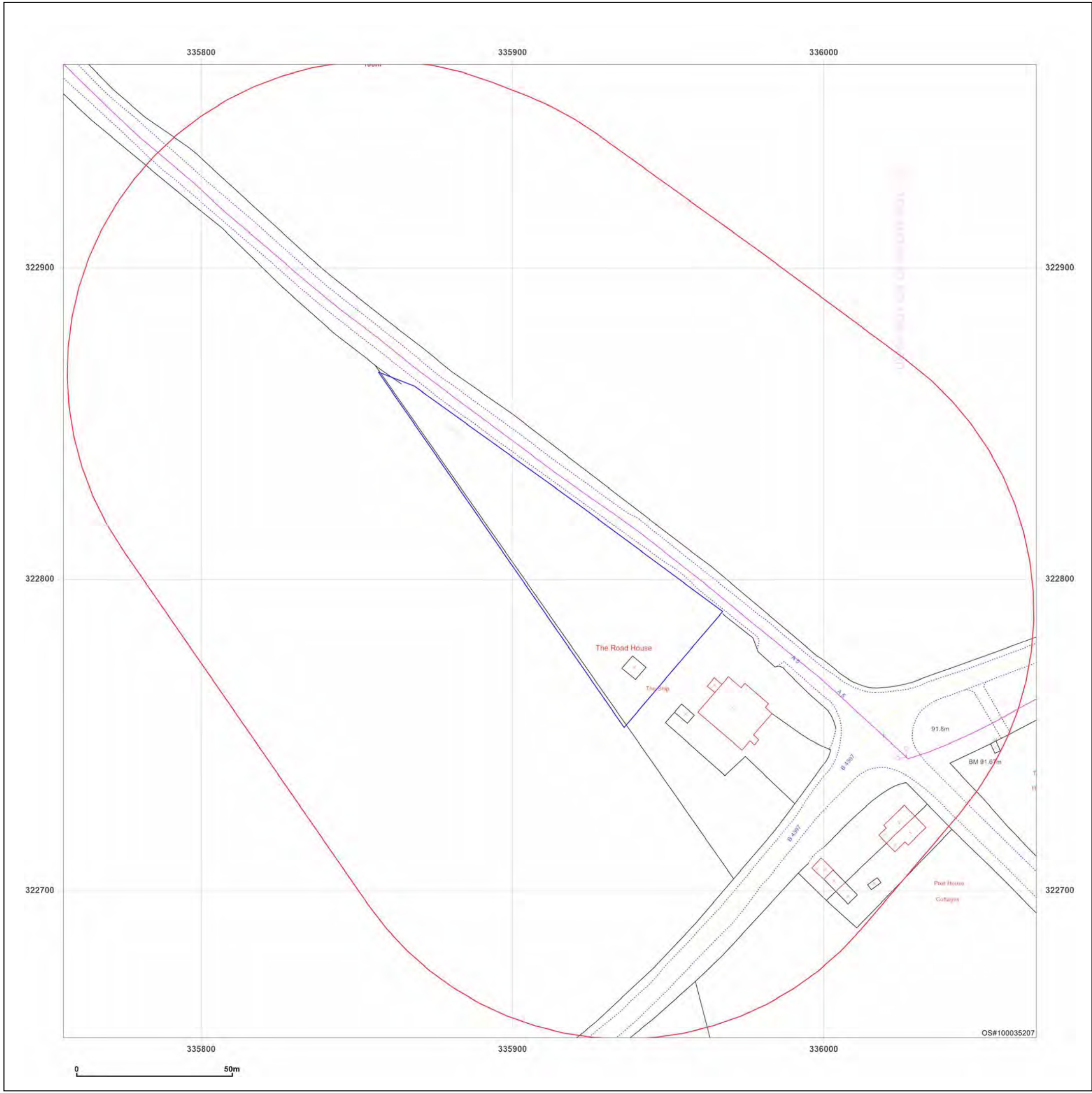


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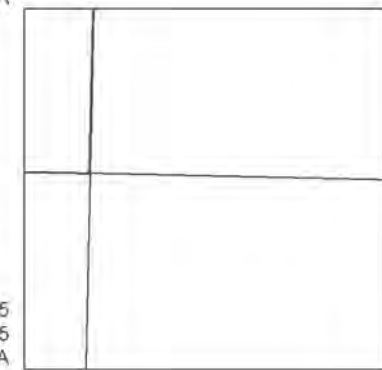
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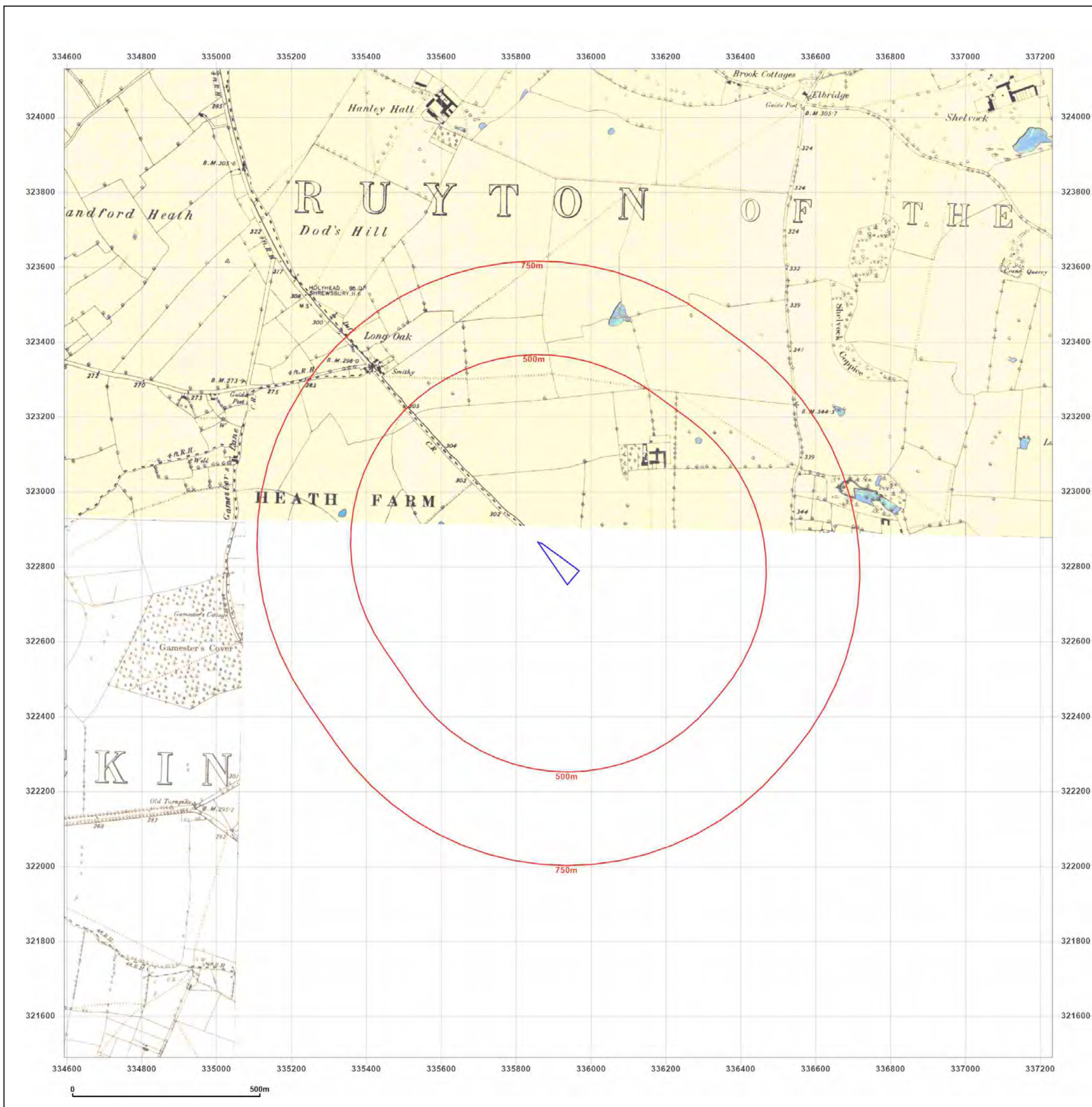


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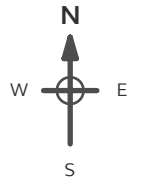
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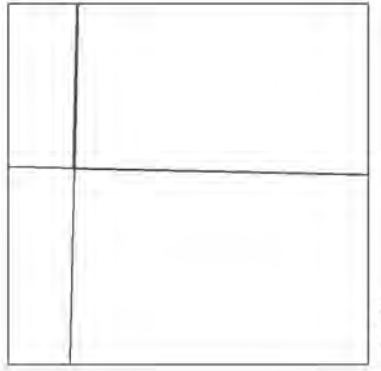


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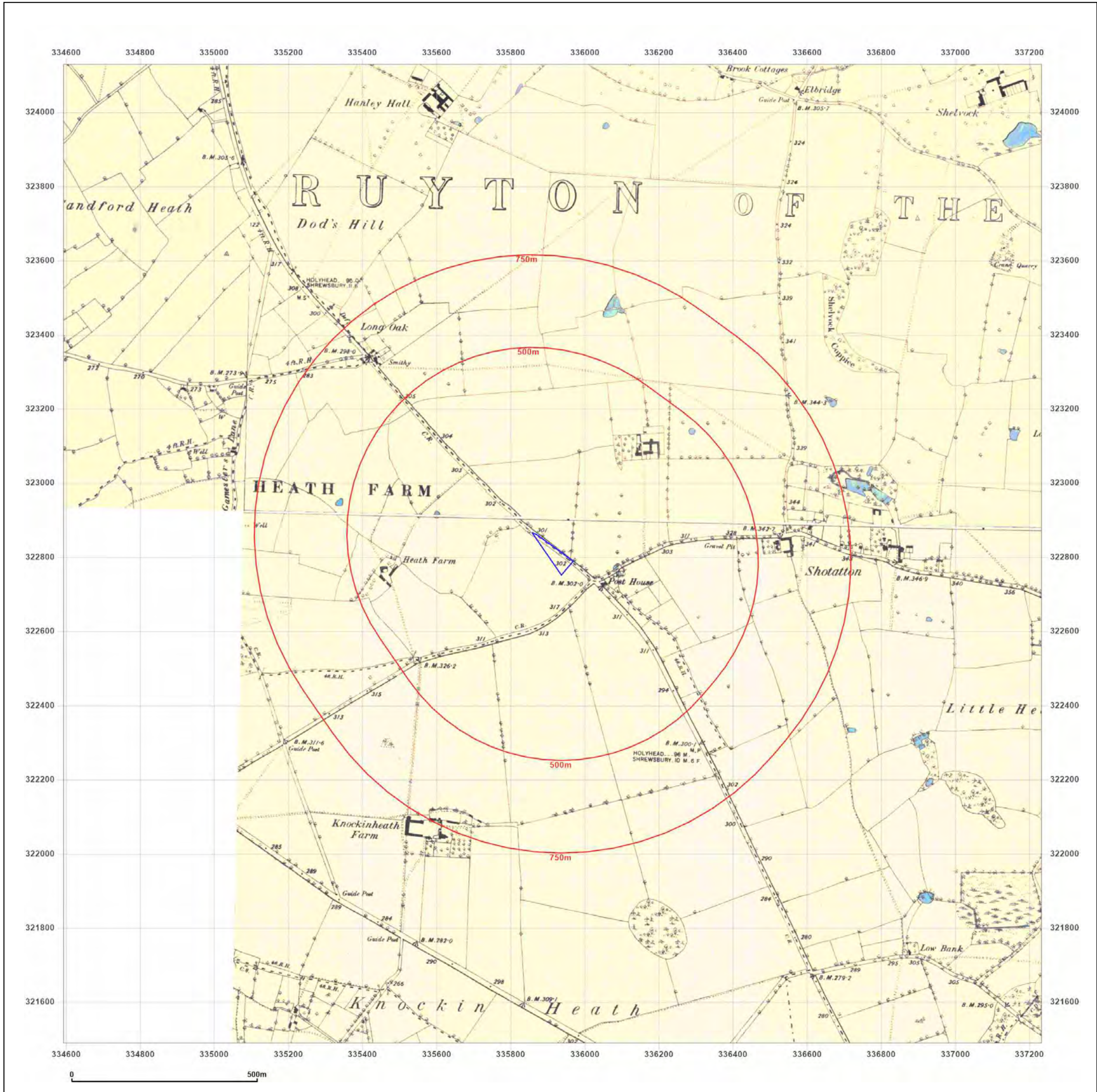
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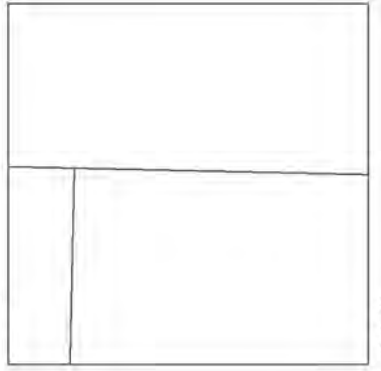
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Map Name: County Series

Map date: 1884-1887

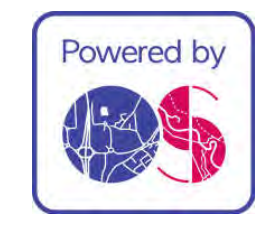
Scale: 1:10,560

Printed at: 1:10,560

Surveyed 1875
 Revised N/A
 Edition N/A
 Copyright N/A
 Levelled N/A

Surveyed 1881
 Revised N/A
 Edition N/A
 Copyright N/A
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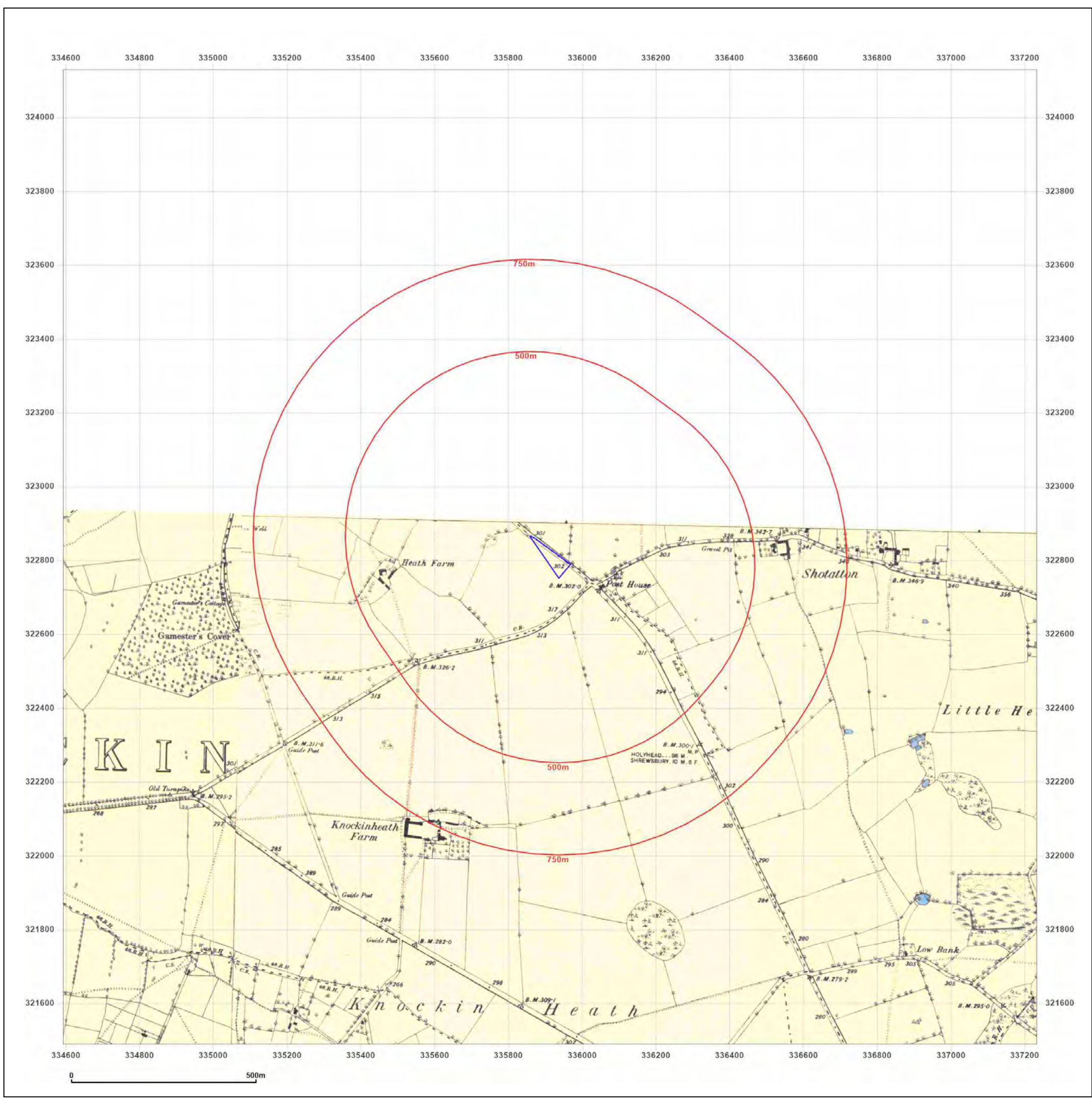


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Site Details:

THE SHIP CAFE, CAFE AND PREMISES, A5 FROM BASCHURCH JUNCTION B4397 TO LONG OAK JUNCTION, SHOTATTON, RUYTON XI TOWNS, SY4 1JH

Client Ref: J23-070
Report Ref: GS-XPA-IAQ-WWA-6SX
Grid Ref: 335912, 322809

Map Name: County Series

Map date: 1900-1902

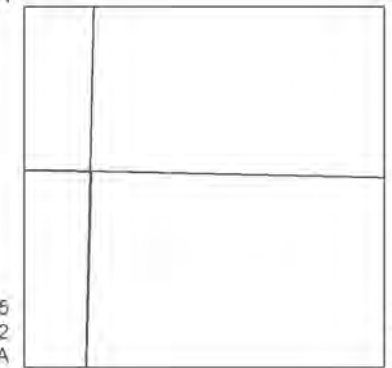
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Surveyed 1875
 Revised 1900
 Edition N/A
 Copyright N/A
 Levelled N/A

Surveyed 1879
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 Edition N/A
 Copyright N/A
 Levelled N/A



Surveyed 1875
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 Edition N/A
 Copyright N/A
 Levelled N/A

Surveyed 1880
 Revised 1902
 Edition N/A
 Copyright N/A
 Levelled N/A

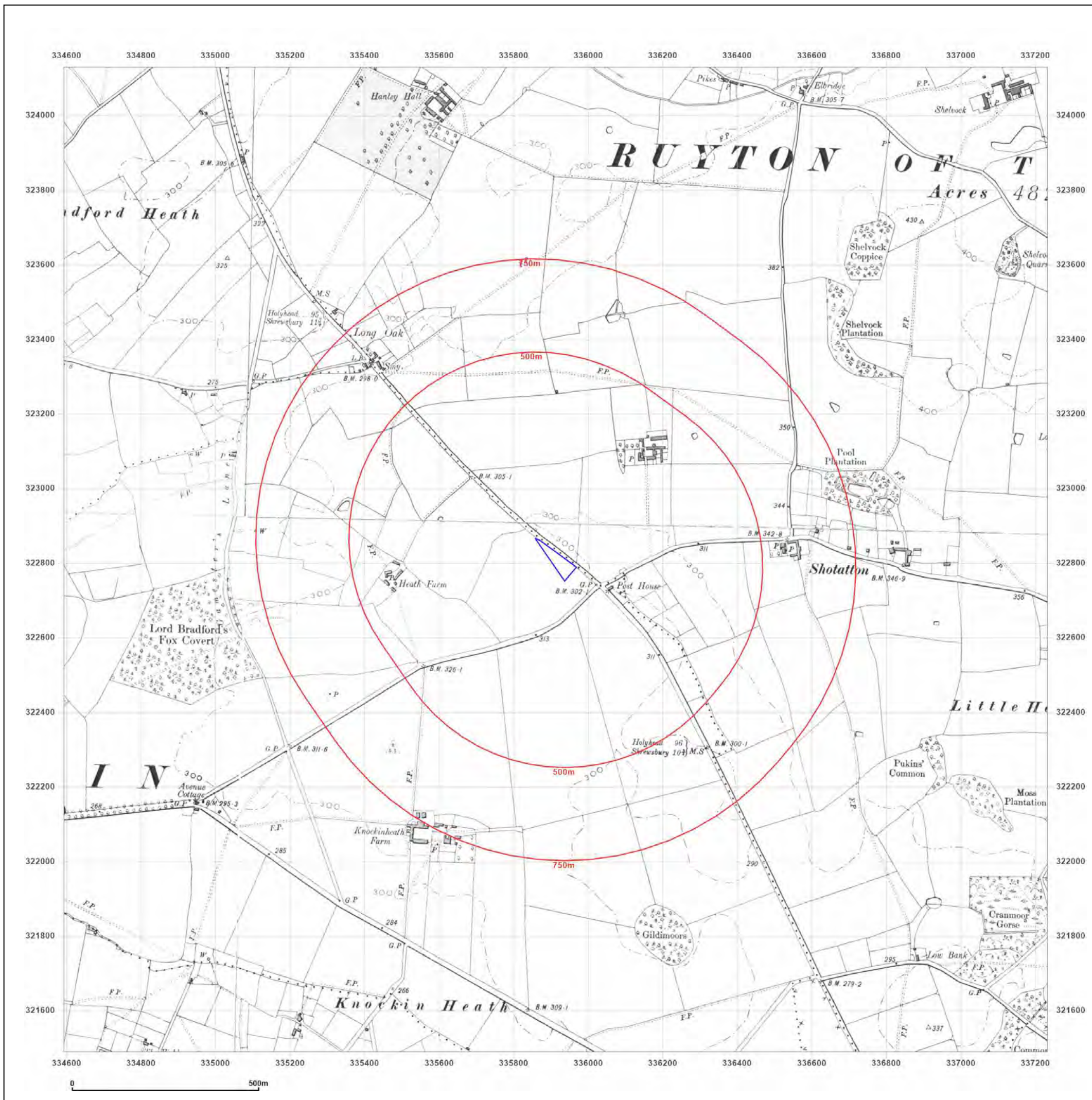


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Client Ref: J23-070
Report Ref: GS-XPA-IAQ-WWA-6SX
Grid Ref: 335912, 322809

Map Name: Provisional

Map date: 1949

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Printed at: 1:10,560



Surveyed 1949
 Revised 1949
 Edition N/A
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 Levelled N/A

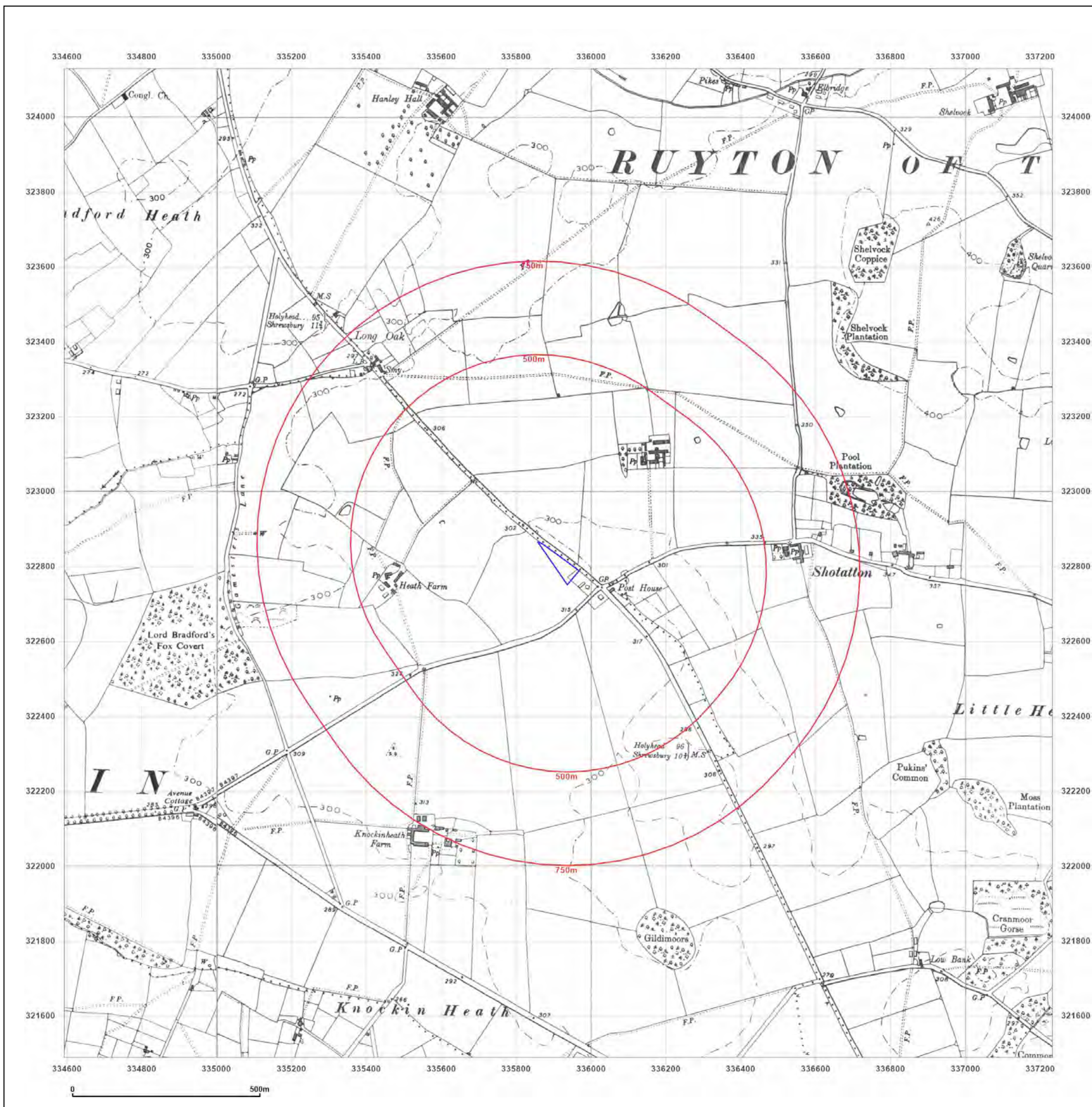


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Site Details:

THE SHIP CAFE, CAFE AND PREMISES, A5 FROM BASCHURCH JUNCTION B4397 TO LONG OAK JUNCTION, SHOTATTON, RUYTON XI TOWNS, SY4 1JH

Client Ref: J23-070
Report Ref: GS-XPA-IAQ-WWA-6SX
Grid Ref: 335912, 322809

Map Name: National Grid

Map date: 1979

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1972
 Revised 1979
 Edition N/A
 Copyright 1979
 Levelled 1973

Surveyed 1974
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 Edition N/A
 Copyright 1979
 Levelled 1973

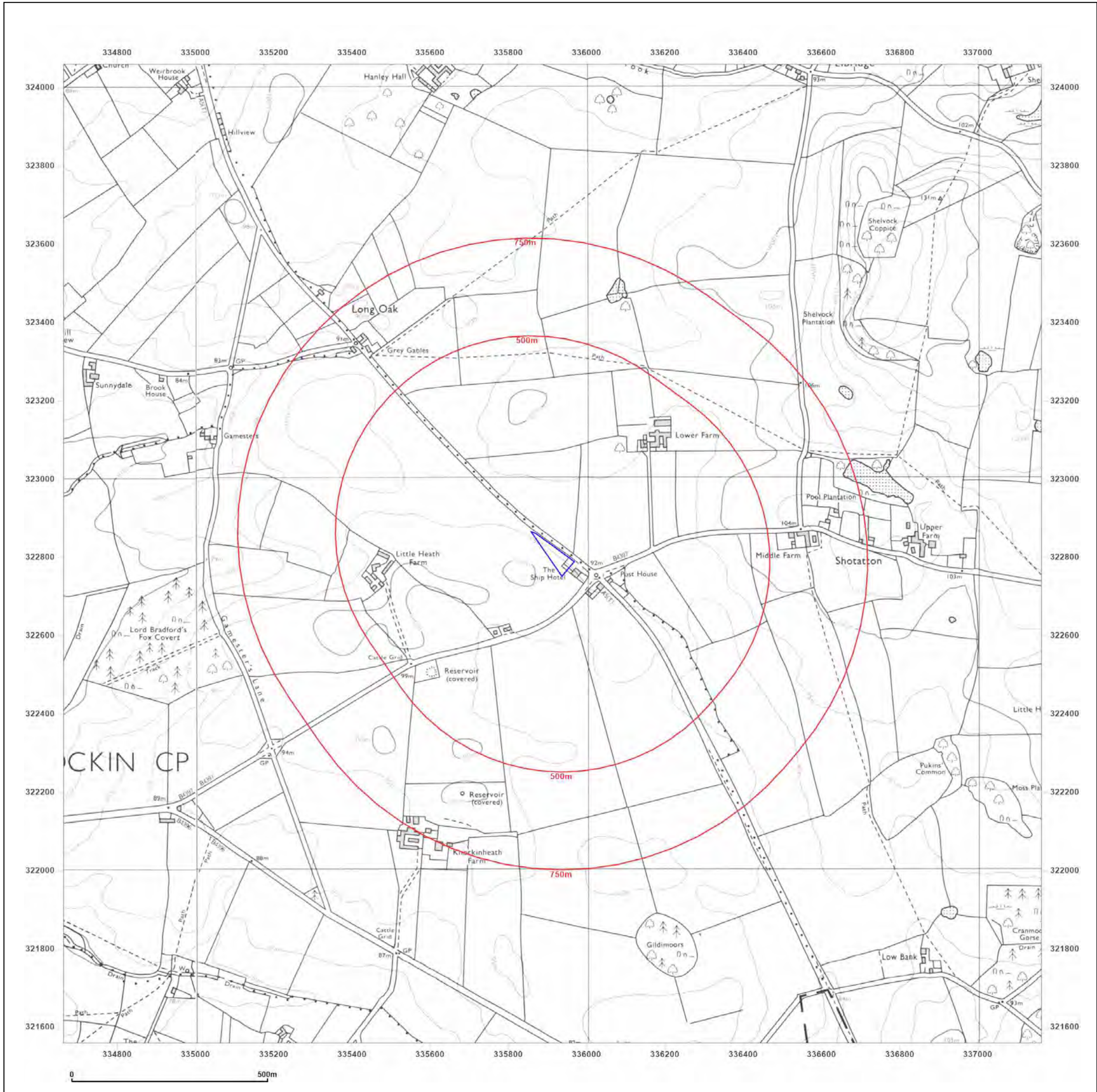


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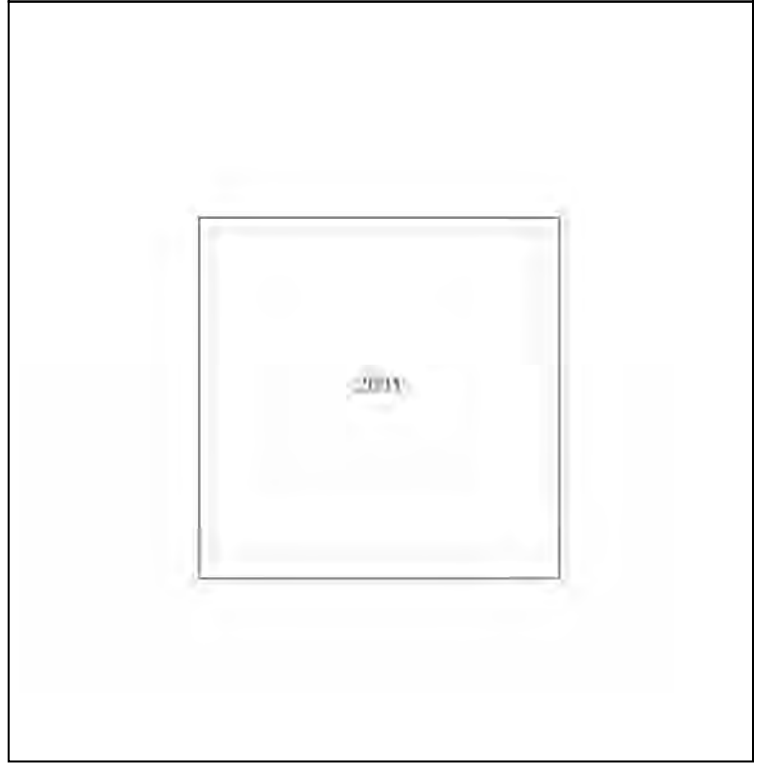
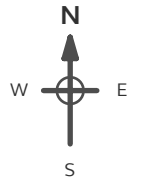


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Client Ref: J23-070
Report Ref: GS-XPA-IAQ-WWA-6SX
Grid Ref: 335912, 322809

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Scale: 1:10,000
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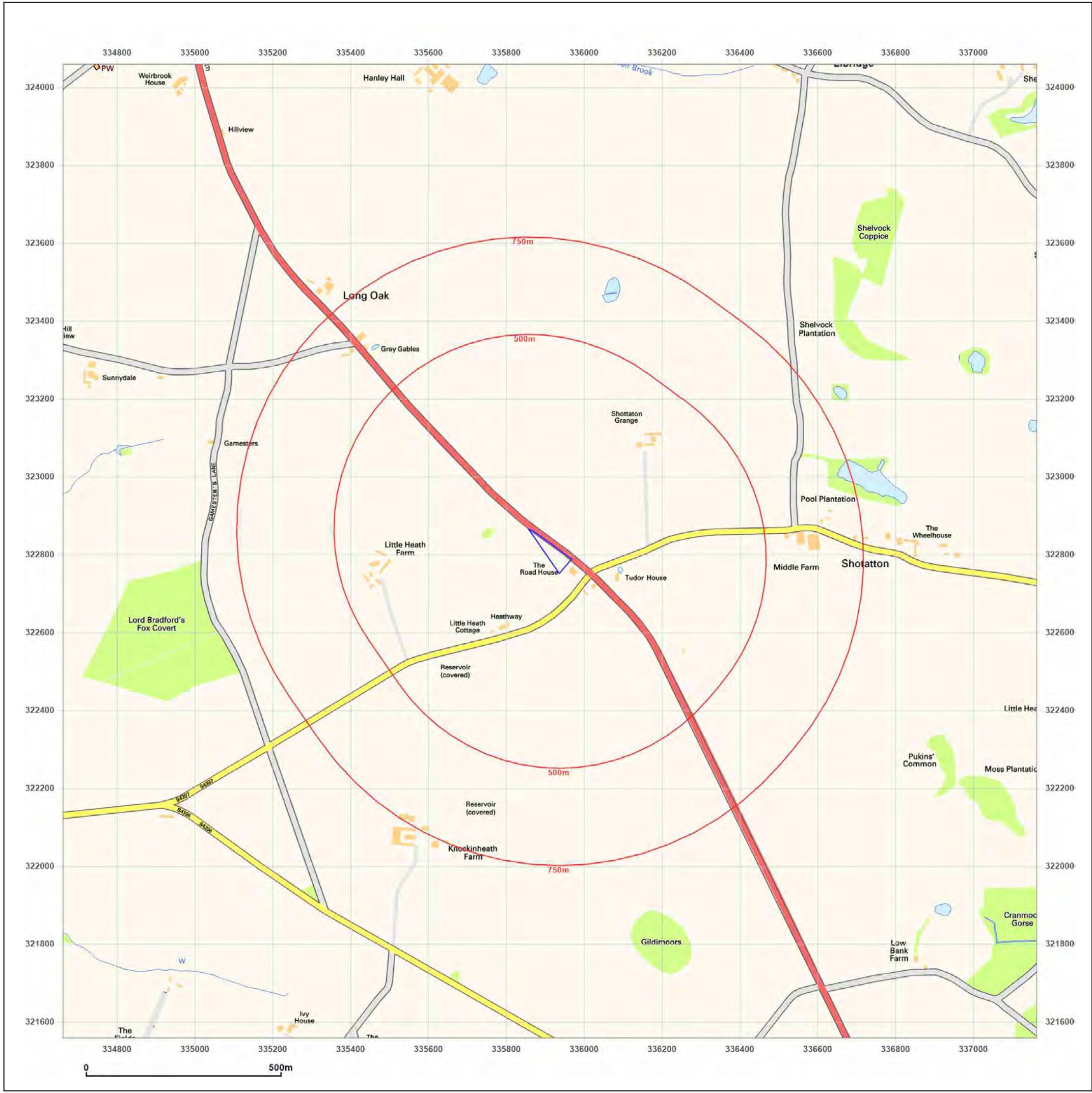


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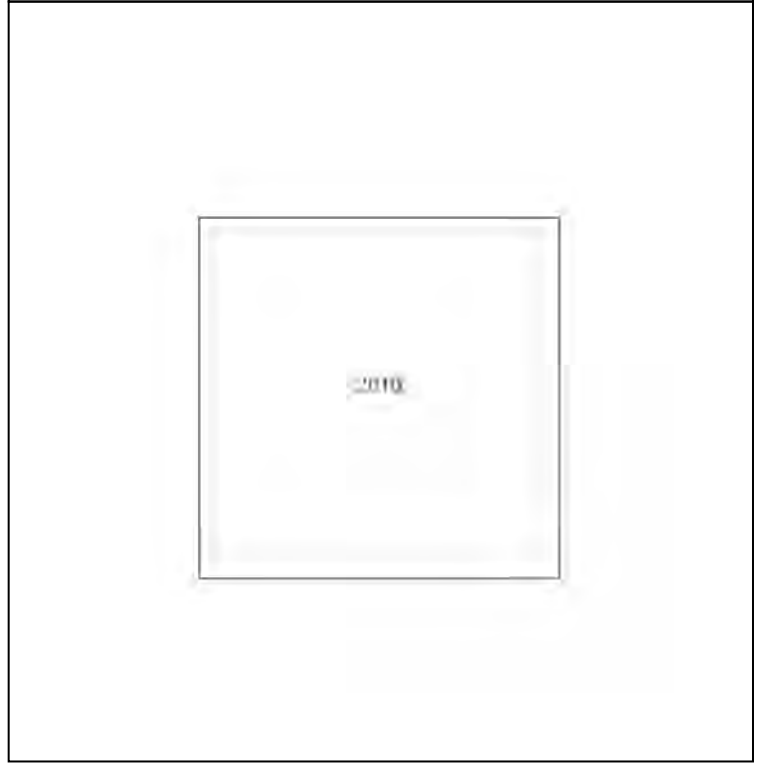
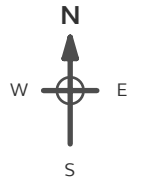


Site Details:

THE SHIP CAFE, CAFE AND PREMISES, A5 FROM BASCHURCH JUNCTION B4397 TO LONG OAK JUNCTION, SHOTATTON, RUYTON XI TOWNS, SY4 1JH

Client Ref: J23-070
Report Ref: GS-XPA-IAQ-WWA-6SX
Grid Ref: 335912, 322809

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



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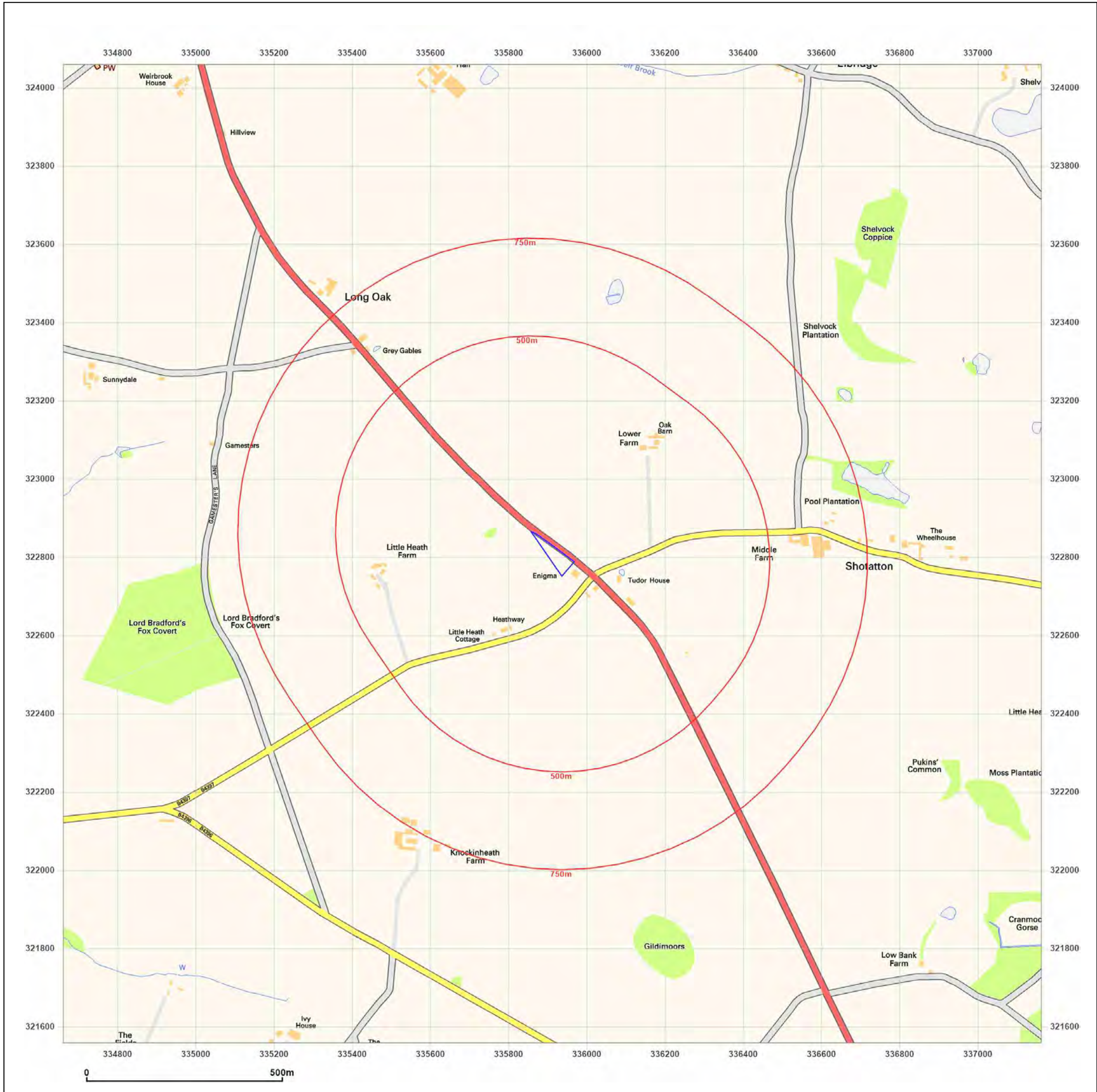


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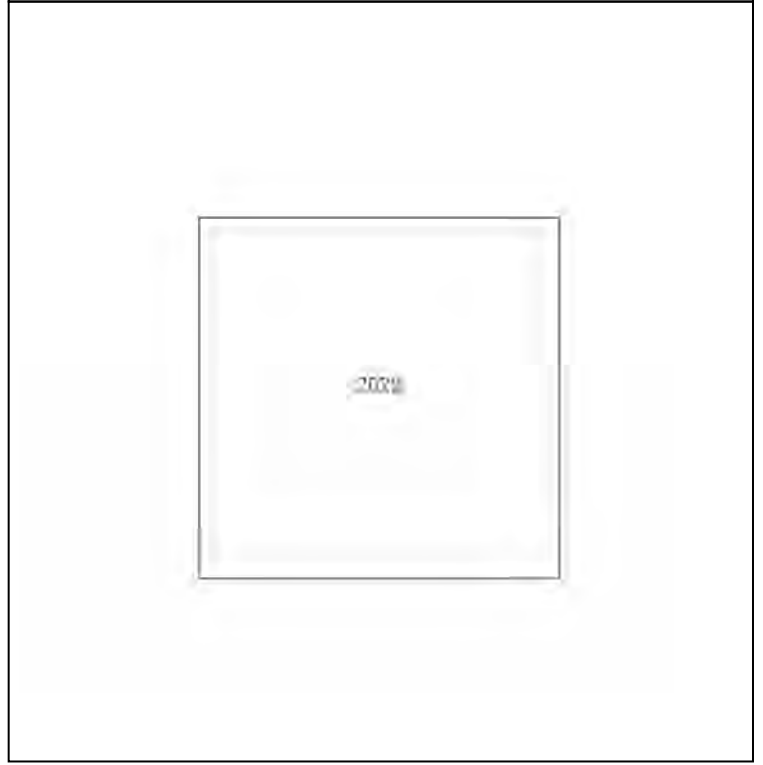
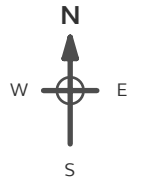


Site Details:

THE SHIP CAFE, CAFE AND PREMISES, A5 FROM BASCHURCH JUNCTION B4397 TO LONG OAK JUNCTION, SHOTATTON, RUYTON XI TOWNS, SY4 1JH

Client Ref: J23-070
Report Ref: GS-XPA-IAQ-WWA-6SX
Grid Ref: 335912, 322809

Map Name: National Grid
Map date: 2023
Scale: 1:10,000
Printed at: 1:10,000



Powered by

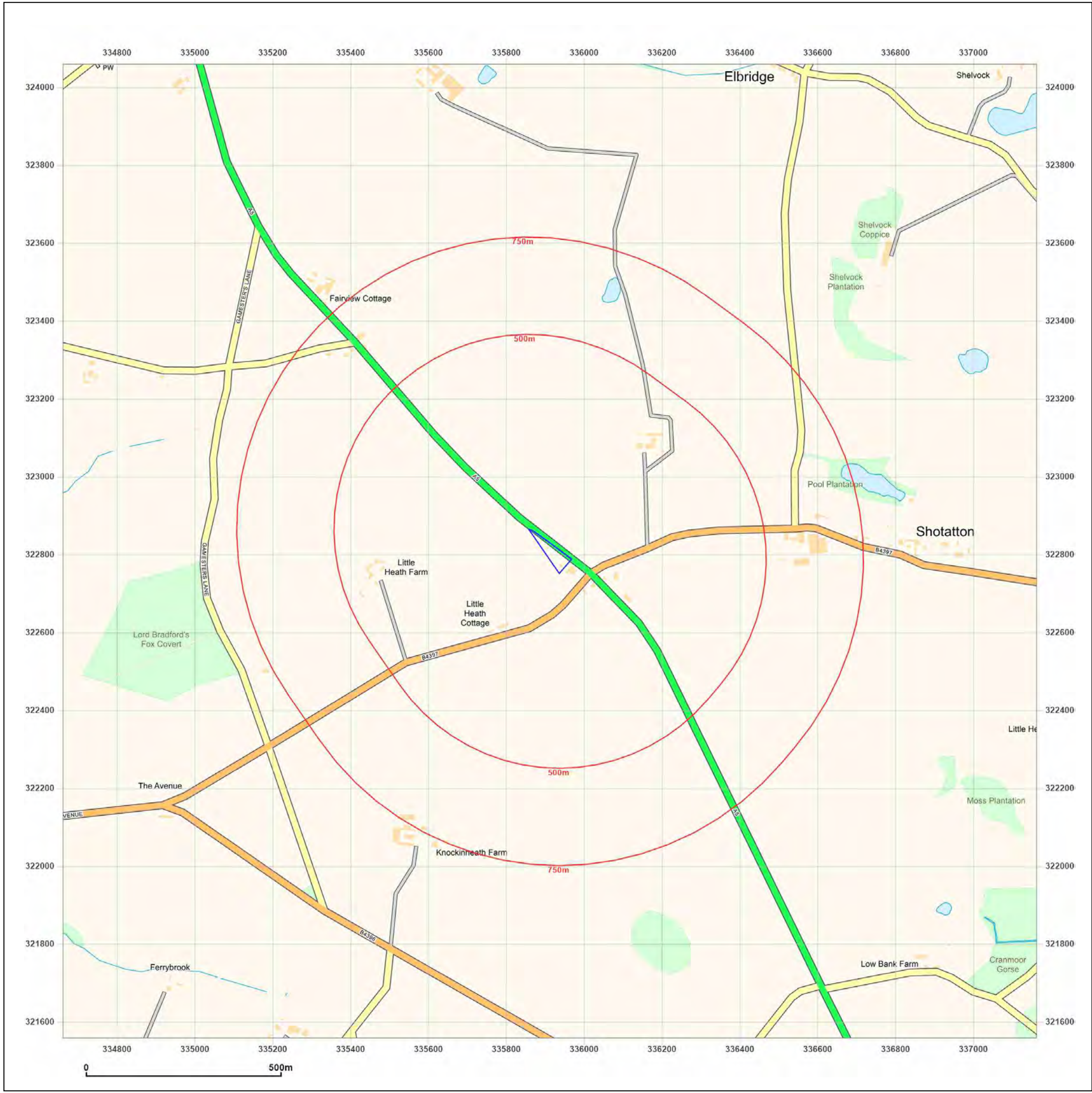


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Map legend available at:
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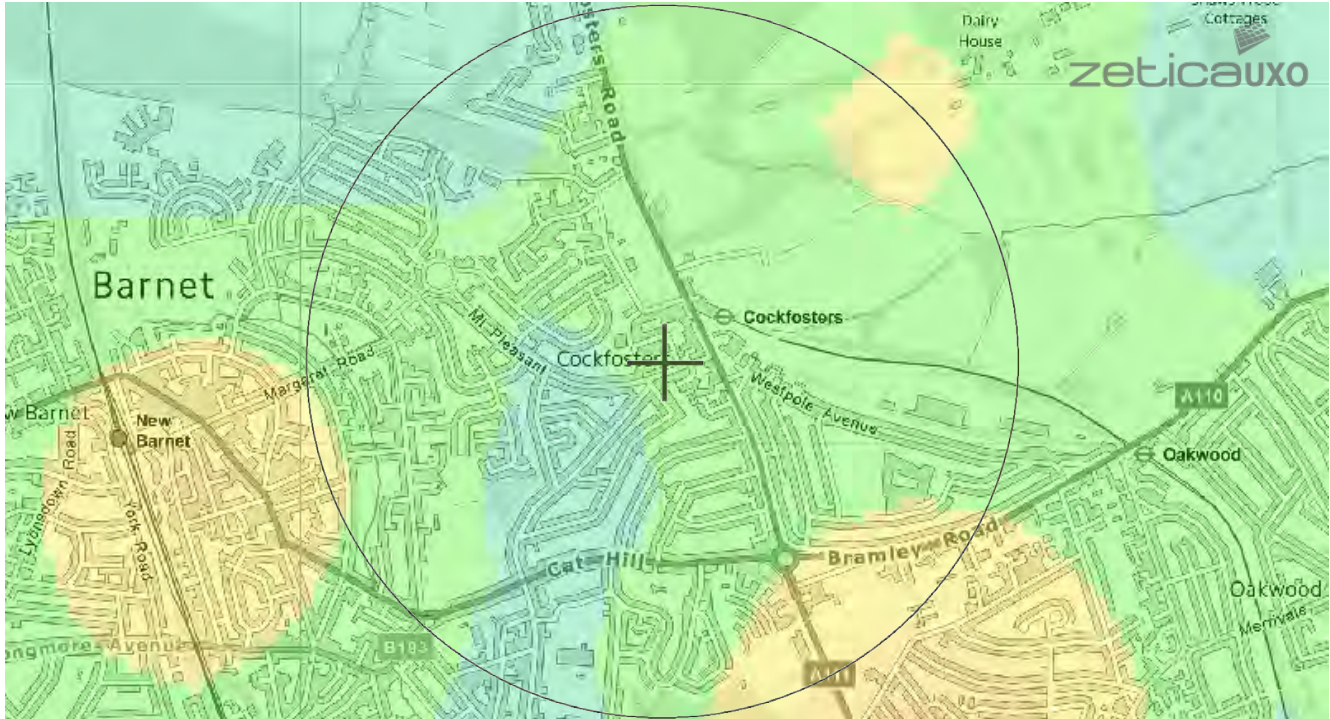


UNEXPLODED BOMB RISK MAP



SITE LOCATION

Location: EN4 9LS,
Map Centre: 528018,196228



LEGEND

London Bomb Risk



- | | | | |
|-----------|-----------------|-------------------|-------|
| military | industry | UXO find | Other |
| transport | dock | Luftwaffe targets | |
| utilities | abandoned bombs | Bombing decoy | |

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

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

Relative UXB risk across London

The relative risk for the London area is established by plotting the recorded bombing densities.

These are represented as counts of high explosive bombs in km2 area. The areas coloured green represent a record of less than 10 bombs per km2.

Compared to other areas of the UK, this still represents a significant density. However, this is much lower than parts of Central London, where the red colouration indicates in excess of 150 bombs falling per km2, representing a very significant bombing density.

What do I do if my site is in a moderate or high density area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites with a moderate or high bombing density.

Similarly, if your site is near to a designated Luftwaffe target or bombing decoy then additional detailed research is recommended.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

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

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

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

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

The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: (<https://zeticauxo.com/downloads-and-resources/risk-maps/>)

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It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.

APPENDIX 3: SITE PHOTOGRAPHS





