Contaminated Land
Air Quality
Environmental Audit

Partnership No: OC 300776

LAND TO THE REAR OF 120 RHOSNENSI LANE, WREXHAM

PHASE 1 CONTAMINATED LAND ASSESSMENT

For: Cliftons of Wrexham Fund

August 2024

R3341-R01-v1

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LAND TO THE REAR OF 120 RHOSNESNI LANE, WREXHAM

PHASE 1 CONTAMINATED LAND ASSESSMENT

CONTENTS

1. Introduction
2. Planning and Legislative Context
3. Scope of Assessment and Information Sources
4. Site Location and Development Proposals
5. Development History and Current Status
6. Site Characterisation
7. Preliminary Conceptual Site Model
8. Conclusions & Recommendations

DRAWING

D01 Historical Mapping 1899
D02 Historical Mapping 1912
D03 Historical Mapping 1937
D04 Historical Mapping 1959
D05 Historical Mapping 1968-1972
D06 Historical Mapping 1990-1992
D07 Historical Mapping 2003

APPENDICES

A Site Location
B Photographic Record
C Groundsure Report (includes Historical Plans)
D UXO Preliminary Desk Based Risk Assessment
E Historical Mapping Table
F Risk Assessment Methodology

EXECUTIVE SUMMARY

Project Reference	R3341-R01-v1
Site Location	Land to the Rear of 120 Rhosnesni Lane, Wrexham, LL12 7NB.
Development Proposals	The proposed development will consist of seven industrial units with associated infrastructure.
Previous Site Investigations	SGP are not aware of any previous site investigations on Site or in the immediate surrounding area.
Ground Conditions / Geology & hydrogeology	The Site was agricultural land since its earliest available mapping (1899) until the 1950s when a printing works was constructed to the immediate east and the Site served as the entrance from Rhosnesni Lane to the north. According to Groundsure mapping the main Site area is underlain by superficial deposits of Glacial Till (Diamicton) but the northern half of the access road from Rhosnesni Lane is underlain by Glaciofluvial deposits of sands and gravels. The whole Site is underlain by bedrock of the Salop Formation. The Site lies on a Secondary A bedrock aquifer. Therefore, groundwater vulnerability is high.
Radon	<1-3% of homes are at or above the action level for radon and hence no radon protection measures are necessary within new buildings.
UXO	The risk of unexploded ordnance is classed as low and further UXO investigation is not required.
Contamination	Shallow deposits of made ground are expected on Site in the areas of the existing and former buildings and as subbase for the hardstanding and wall present on Site. The building in the southwest corner has been present on Site since the 1950s. A detailed internal or external inspection has not been undertaken but it is recognised that the buildings were constructed during a period where asbestos containing materials were widely use and so may be present.
Recommendations	An intrusive investigation should be undertaken across Site to characterise the ground conditions. The investigation should include targeted entries around where contamination may be present, this includes • Former buildings on the northwest and north boundary An asbestos survey should be undertaken in advance of any building demolition works to confirm the presence / absence of ACM. If identified these should be removed and disposed of by an appropriately trained contractor.

1. Introduction

1.1. General

1.1.1. Blueprint Architectural Services (BAS) acting on behalf of Cliftons of Wrexham (Cliftons) has been granted planning consent (ref. P/2022/0181) by Wrexham County Borough Council (WCBC) on 13th February 2024 for the demolition of a structure and construction of seven commercial units to the rear of 120 Rhosnesni Lane, Wrexham, LL12 7NB.

1.1.2. Condition 6 & 7 of the Consent is related to contaminated land and is worded as follows:

Condition 6: No development shall take place until a phased site investigation of the nature and extent of contamination has been carried out and submitted to and approved in writing by the Local Planning Authority. If any contamination is found during the site investigation, no part of the development shall commence until a scheme specifying the measures that will be taken to remediate the site to render it suitable for the development hereby permitted has been submitted to and approved in writing by the Local Planning Authority. The site shall thereafter be remediated in accordance with the approved scheme. If during the course of the development any contamination is found that has not been identified in the site investigation, no further development shall take place on those parts of the site where that contamination has been found until an additional scheme of remediation has been submitted to and approved in writing by the Local Planning Authority for those parts of the site. The relevant parts of the site shall thereafter be remediated in accordance with the additional scheme of remediation.

Condition 7: East part of the site subject to remediation under the scheme(s) approved as part of Condition no. 6 shall not be occupied/used until a Validation Report has been completed in respect of that part of the site and submitted to and approved in writing by the Local Planning Authority.

1.1.3. Cliftons has duly instructed Smith Grant LLP (SGP) to carry out a Phase 1 Contaminated Land Assessment (also referred to as a Preliminary Risk Assessment) to identify any potential constraints with regards to contamination. This report has been produced to partially satisfy Conditions 6 of the planning consent which relates to contaminated land and to inform the scope of an appropriate site investigation if potential contamination sources have been identified.

1.2. Scope of Objectives of the Report

1.2.1. This following report describes the Phase 1 Contaminated Land Assessment undertaken by SGP in accordance with the brief agreed with the client.

1.2.2. The assessment comprises a review of third-party information on the environmental setting of the Site and its previous and current uses with respect to potential risks to the environment or human

health, and a Site inspection. This report contains a qualitative risk assessment with respect to contamination and, where appropriate, makes recommendations for further investigation and remedial actions suitable to the proposed future use of the Site.

1.2.3. SGP is an environmental consultancy specialising in risk assessment and the remediation of contaminated and derelict land.

2. Planning and Legislative Context

2.1. Planning

2.1.1. The overall assessment will be undertaken in accordance with the **Planning Policy Wales (NPW)**[1] and associated **Planning Practice Guidance regarding Land Affected by Contamination (PPG)**[2] which provides guiding principles on how planning can take account of new development on contaminated land. The guidance sets out when contamination may be present, the role of planning when dealing with land which may be contaminated, what a contamination risk assessment may contain and how to determine unacceptable risk. The guidance states that where there is a reason to believe contamination could be an issue, proportionate but sufficient site investigation information should be prepared by a competent person to determine the existing or otherwise of contamination.

2.2. Local Planning Policy Guidance

2.2.1. Wrexham County Borough Council adopted the '**Wrexham Local Development Plan 2013 to 2028**[3]' in December 2023. This sets out the Councils' overall vision, strategic objectives, spatial strategy and strategic planning policies from 2013-2028. It does not contain any specific policies relating to contaminated land. Instead, it refers to the policies set out in the **Planning Policy Wales 2024** (NPW).

2.3. Legislation

2.3.1. Land contamination can harm human health, groundwaters, surface waters, soils, ecosystems and property. As such it is controlled, either directly or indirectly, through a range of legislation, including, but not limited to:

- Part IIA of the Environmental Protection Act 1990: establishes a system for identifying and remediating statutorily defined 'contaminated land' and focuses on addressing contaminated land that meets the specific legal definition and cannot be dealt with via other means, including planning;
- Water Environment Regulations 2017: replaces previous legislation and outlines duties of regulators in relation to characterisation and classification of water bodies, environmental permitting, abstraction and impoundment of water;
- Environmental Permitting Regulations 2016: impose provisions to prevent ground and water contamination from operations requiring an Environmental Permit to operate and

[1] Welsh Government. Planning Policy Wales. Edition 12. Last Updated 13th July 2024
[2] Department for Communities and Local Government, Planning Practice Guidance. Land Affected by Contamination, published 12 June 2014, last updated 22 July 2019
[3] Wrexham Local Development Plan, Wrexham County Borough Council, Adopted 20th December 2023

implement controls for operations relating to the treatment or handling of contaminated soils.

2.3.2. Similarly, when dealing with land that may be unstable, the planning system works alongside several other regimes including Building Regulations and the Coal Authority which has responsibility for public safety risks arising from past coal mining activities.

2.4. National Best Practice and Guidance

2.4.1. The Environment Agency (EA) **Land Contamination: Risk Management Guidance**[4] provides an overarching framework for the assessment and investigation of land contamination. It replaces the previous Contaminated Land Report 11: Model Procedures for the Management of Contaminated Land 2004.

2.4.2. It is designed to be used in a range of regulatory and management contexts such as voluntary remediation, planning, assessing liabilities or under the Part 2A contaminated land regime. The guidance sets out a phased approach to the assessment of land contamination and specifies requirements for reports produced as part of the process, including Preliminary Risk Assessments (PRAs) and Generic and Detailed Quantitative Risk Assessments (GQRAs and DQRAs).

2.4.3. The EA Guidance is supported by, and cross-refers to, an extensive range of additional statutory and non-statutory guidance relating to aspects such as site investigations, protection of groundwater, understanding and managing asbestos, definition of waste and the specific investigation and assessment procedures under Part IIA.

2.4.4. The assessment within this report has taken full account of the above planning context, legislation and best practice guidance and, where necessary, such guidance is referenced.

[4] Land Contamination: Risk Management, issued 8th October 2020, last updated 20th July 2023, www.gov.uk

3. Scope of Assessment and Sources of Information

3.1. Scope of Assessment

3.1.1. In undertaking this assessment, SGP has carried out the following activities:

- Walkover to view the existing site and its setting;
- review of comprehensive historical mapping information;
- review of comprehensive environmental setting information (geology, hydrology, hydrogeology, industrial land uses, mineral excavation / extraction, landfilling / waste management activities);
- review of information relating to potential unexploded ordnance (UXO);
- review of third-party site investigation reports;
- review of development proposals;
- development of preliminary conceptual site model (CSM) with regards to ground contamination; and,
- provision of recommendations for further investigations and mitigation, where deemed necessary.

3.1.2. The information has been used to determine:

i. the potential for any ground contamination to be present on or near the Site due to historical and/or current land uses; and,

ii. the potential for any such contamination to pose a constraint to the proposed use of the Site and / or impact the surrounding environment.

3.1.3. The information has been used to inform the risk assessment and determine if any further work and/or investigations may be required to identify any remedial requirements to ensure the site is suitable for the proposed development with regards to ground contamination.

3.2. Sources of Information

3.2.1. The baseline data has been obtained through a desk top study and Site visit by SGP, primarily through the use of third-party information pertinent to the Site that has been made available for the preparation of this report.

3.2.2. The principal sources of information consulted in the preparation of this report include:

Table 3.1: Information Sources

Date and reference	Author and source	Purpose and information content
Topography, geology, hydrogeology and hydrology		
http://mapapps.bgs.ac.uk [Accessed August 2024]	British Geological Survey.	distribution of geological units at surface including drift and artificial deposits, faults and mineral outcrops, borehole logs.
https://www.ordnancesurvey.co.uk/osmaps/ [Accessed August 2024]	Ordnance Survey (OS), Explorer Map, 1: 10,000	general mapping information including structures, boundaries, ground features, water features etc.
Historical data		
Satellite imagery	Various	recent historical features
Groundsure Report Historical Mapping ref: GS-FUD-3AS-FY (provided in Appendix C)	Groundsure	historical mapping at 1:2,500, and 1: 10,560 scales from 1898 onwards.
Information Review		
Groundsure Report Datasheet GS-IGY-X5Z-9KE-TQG; August 2024 (provided in Appendix C)	Groundsure	hydrological, waste, hazardous substances, geological, land uses, and natural stability hazards based on historical data and geological records.
https://magic.defra.gov.uk/MagicMap [Accessed August 2024]	Defra	web-based interactive map containing information on nature conservation areas, aquifer designations, source protection and nitrate vulnerable zones.
Local Authority Planning Portal (Available at: https://www.wrexham.gov.uk/services/planning-and-building-control) [Accessed August 2024]	Wrexham County Borough Council	Local Authority planning portal used identifying planning permissions for the Site and surrounding properties.
www.zeticauxo.com (provided in Appendix D)	Zetica	unexploded bomb risk mapping and preliminary desk based UXO risk assessment
The Coal Authority interactive mapping: Interactive Map Viewer | Coal Authority (bgs.ac.uk)	The Coal Authority	web-based interactive map containing information on historical coal mining

3.3. Site Inspection

3.3.1. An inspection of the Site and the immediate surrounding area was undertaken by an SGP consultant on 15th August 2024. A photographic record of salient features is provided in Appendix B.

3.4. Previous Investigations

3.4.1. SGP have not been made aware of any previous investigations pertaining to the Site or immediate surrounding area.

4. Site Location and Development Proposals

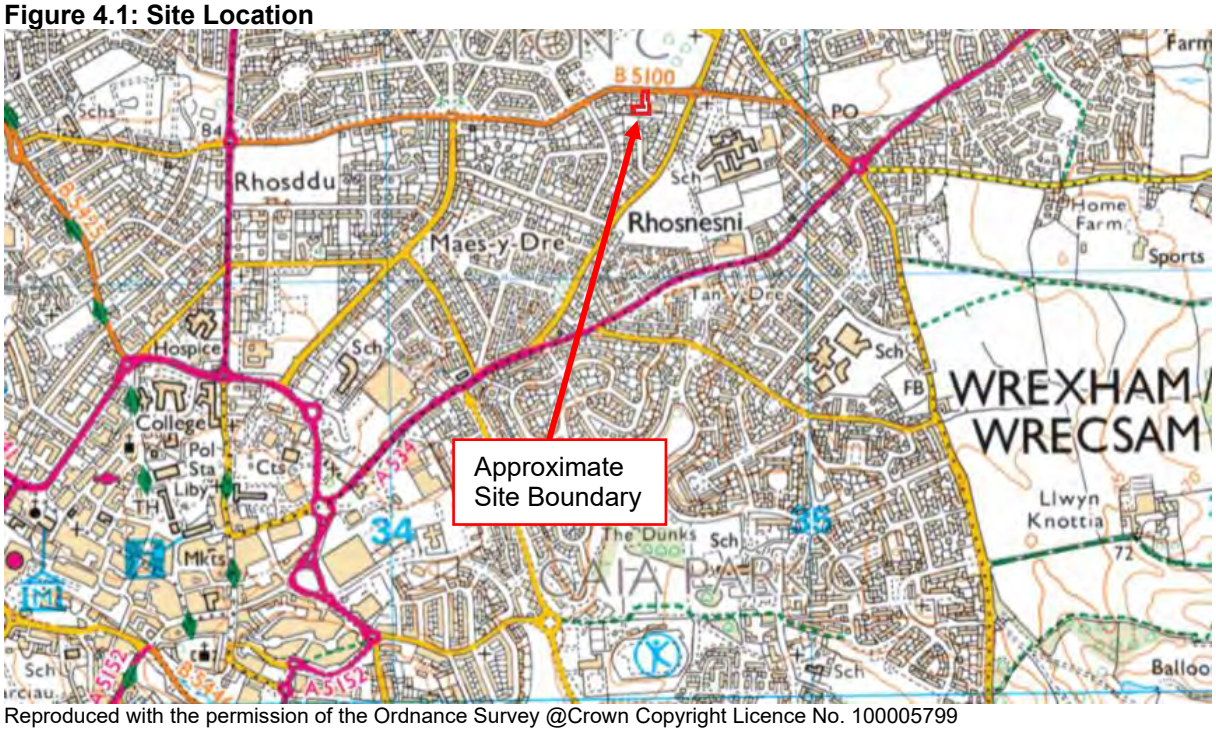
4.1. Site Details and Location

4.1.1. The Site as shown in Figure 4.1 below is located approximately 1.5km to the northwest of Wrexham City Centre, Wrexham.

Table 4.1: Site Details

Address	Land to the Rear of 120 Rhosnesni Lane, Wrexham, LL12 7NB
National Grid Reference	334594, 351400
Local Authority	Wrexham County Borough Council (WCBC)
Site Areas	Approximately 0.21 Ha
Current Use of Site	Storage of materials (west) and vehicle parking for surrounding businesses (east).
Proposed Use	Commercial development – demolition of existing structures and construction of seven commercial units with parking.

Figure 4.1: Site Location



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5. Development History and Current Status

5.1. Historical Development

5.1.1. A summary of significant features, developments and land uses shown on historical Ordnance Survey maps is provided below. The full summary table is provided in Appendix E. Copies of selected maps are provided in Drawings D01-7.

5.1.2. Only key features of interest are summarised below; for full details reference should be made to the complete set of historical mapping, as provided in the Groundsure report (contained in Appendix C):

On Site

- One building is mapped encroaching onto the Site from the immediate north in 1937. However, it is demolished by the following available map in 1959.

- Two buildings are mapped along the northwest boundary and the southwest corner from 1959 coinciding with the construction of the printing works to the east of the Site and a road / track across the centre of the Site linking the works to the on-site buildings. A land boundary is also mapped dividing the Site into two halves and satellite imagery from 2006 shows this to be a wall. The buildings are visible on satellite imagery until 2021 when the building on the north boundary is demolished. The building in the southwest corner remains to present day.

- Satellite imagery shows the Site being used as parking in the east and storage in the west up to present day (2006 to 2024).

Off-site

- Park Farm was located to the immediate northeast of the Site with various buildings and land boundaries intersecting the north of the Site. By 1937, a large building is constructed to the immediate east of the Site. However, by 1959, only one building Park Farm building remains 30m northeast of the Site.

- A printing works is first mapped to the immediate east of the Site in 1959, replacing the large Park Farm building. A retrospective planning permission was granted in 2022 to subdivide existing unit to create additional business units (ref: WRA P/2022/1082). This is now occupied by an animal feed manufacturer, wire harness / cable manufacturer, and mead producer.

- A large building was constructed by the early 1990s to the immediate northeast of the Site and anecdotal information from an internet search (circa 2009) shows this is a bicycle retailer. Planning permission was granted in 2022 (ref: P/2022/0775) to change the use of the building

from retail to a personal training studio (gym). It is understood that the east of the Site is currently used by gym members as parking.

- A garage is first mapped 13m to the east of the access road in 1959. Mapping from the late 1960s shows it has expanded eastwards, replacing former Park Farm buildings. Anecdotal information from an internet search (circa 2009) shows the west half of the garage is occupied by 'Cliftons of Wrexham' a heating and plumbing retailer and the east half is boarded up. Planning permission was granted in 2010 (ref: P/2010/0549) for the removal of the asbestos and tin roofing and refacing of the building with red brick. Satellite imagery shows this was completed by 2012 and it is understood that Cliftons now occupies the entire building and operates a fireplace and media wall retail business.

- A building replaces the last Park Farm building in 1959, 67m to the east. By the 1980s, this is confirmed to be a petrol station with a canopy on the northside and satellite imagery from 2006 shows a car wash on the west side of the building. Anecdotal information from an internet search (circa 2009) shows the petrol station to be closed with signage indicating it was formerly operated by Texaco. No fuel pumps are visible, presumably removed following the closure of the petrol station. A planning application was granted in 2010 (ref: P/2010/0092) to convert the former petrol station into a sandwich shop. The planning application states that, at the time of the application, the former petrol station / adjacent garage (Rays Motors) had been partially dismantled, the vehicle wash was present but unused, and the underground tanks remained in-situ and were filled with concrete. A contaminated land condition (5) requiring a site investigation was placed on the development, but no report is available on the planning portal. Satellite imagery from 2012 shows the canopy and the vehicle wash have been demolished.

5.2. Adequacy of Information

5.2.1. Whilst there are some gaps in the historical map coverage it is considered that the available mapping provides adequate coverage of the Site and immediate surroundings to inform the assessment of potential ground conditions and the contamination status of the Site.

5.3. Present Land Condition

5.3.1. A summary of existing significant features, recent activities and land uses shown on contemporaneous aerial photography, Site inspections and anecdotal evidence is provided in Table 6.3 below.

Table 6.3: Present Land Condition

Site Description	The site can effectively be split into two main areas: East 1. The east of the Site currently serves as an overflow carpark for the neighbouring fitness centre and industrial units. This area is occupied with a mix of hardstanding and gravel. Two surface water drains are located in the northeast and southeast corner with a

	belowground pipe running between. The access road has a recently installed security gate spanning it. <u>West</u> 2. The west of the Site is a small compound area which currently houses stored building materials (bricks, fences, pallets, etc), a small demolition waste stockpile, a small garage used for storage, and a gravel surface.
Boundaries	**North**: Gym to the northeast, a car parking area for flats 112, 114, 116, and 118 Rhosnesni Lane, and wooden fencing onto residential properties to the northwest. **East**: Industrial unit housing an animal feed manufacturer, mead producer, and wire / cable manufacturer. **South**: Stone wall onto residential properties **West**: Wooden fencing on residential properties.
Services	Service plans have not been obtained as part of this study; however, the following observations were noted during the site walkover: Multiple manhole covers were observed in the east of the Site. It is understood that a surface water drainage pipe is present in the east, travelling south between the northeast and southeast corner. A foul water manhole was observed in the northeast corner but continues eastwards off-site.
Structures	A small brick building is located in the southwest corner of the Site. It was being used as storage with bins, pallets, panels, an empty IBC, and bags of sand. A wall was present across the centre of the Site dividing the Site into east and west parcels.
Surfaces / Vegetation	The site is predominantly covered with patched tarmac / gravel. Vegetation was present in the west, in the form of weeds growing through the gravel surface.
Potential Contamination Observations	<u>East</u> Hardstanding was present across the east of the Site and therefore, made ground of limited depth is expected to be present associated with the subbase. <u>West</u> Made ground is likely present beneath the gravel surface along the northern boundary where the former building was located. Whilst not observed, ACM may be present within the small building in the southwest corner due to its age (1950s).

6. Site Characterisation

6.1. The physical setting of the Site has been derived from the review of information detailed in Section 3. Key details are summarised below. For full details reference should be made to the Groundsure Report provided in Appendix C.

Table 6.1: Environmental Setting

Location and topography	The Site is situated 1.5km to the northeast of Wrexham city centre at an approximate elevation of 85m Above Ordnance Datum (AOD) according to spot heights on OS mapping.
Geology / Ground Conditions	BGS, historical OS mapping, and Site observations indicate the potential ground conditions to be: Made ground: BGS mapping does not report the presence of made ground (artificial deposit) on Site. Superficial Deposits: BGS mapping shows the Site to be underlain by Glacial Sands and Gravels. However, the Groundsure report has identified the majority of the Site to be underlain by Glacial Till – Diamicton with the north edge of the access road underlain by Glaciofluvial Sheet Deposits – Devensian. Bedrock: BGS mapping shows the Site to be underlain by the Warwickshire Group – Siltstone and Sandstone with Subordinate Mudstone. However, the Groundsure report states the Site is underlain by the Salop Formation - Mudstone, Sandstone And Conglomerate. Faults: - BGS mapping maps the closest fault approximately 1.52km to the west. However, Groundsure mapping shows an inferred fault 154m to the west. The client stated that a test trial pit was undertaken by themselves in 2023 in the west of the Site which reported clay down to 3m. No log is available as this was completed to assess drainage potential. This is consistent with the superficial deposits stated in the Groundsure report. BGS Records There are three available BGS boreholes record within 250m of the Site boundary, undertaken at St Davids School by Holst & Co. Ltd (Site Investigation Department) for Denbigh County Architect in 1970. These reported the following ground conditions: *SJ35SW1026 – 216m southeast* This reported a layer of topsoil to 0.07m overlaying sands and gravels to 1.3m, alternating layers of silts and clays to 5.97m, underlain by compact sands and gravels to the base at 9.14m.

	SJ35SW1027 – 223m southeast This reported a layer of topsoil to 0.25m overlaying silty sandy clay to 2.3m, alternating layers of clayey silts and silty clays to 4.66m, underlain by compact sands and gravels to the base at 7.8m. *SJ35SW1025 – 248m southeast* This reported a layer of topsoil to 0.15m overlaying compact sand and gravel and compact sand to 2.7m, alternating layers of silty clay and sand to 6.0m, underlain by compact sands and gravels to the base at 7.8m. The sands and gravels identified in the BGS boreholes to the southeast is consistent with the Groundsure report superficial deposit mapping of sands and gravels.
Natural Ground Stability	Compressible ground - **Negligible**
	Running sands – **Very low**
	Shrinking and swelling clays – **Very low**
	Ground dissolution – **Negligible**
	Landslides – **Very low**
	Collapsible ground – **Very low**
Hydrology / Drainage	Rainwater will infiltrate via the surface water drains located in the east of the Site. There are no mapped watercourses within 250m of the Site.
Hydrogeology / Groundwater	The aquifer designations of the underlying geological units are: <u>Superficial Deposits</u>: Glaciofluvial Sheet Deposits (Devensian): Secondary A Glacial Till (diamicton): Secondary undifferentiated Groundwater vulnerability: High <u>Bedrock:</u> Salop Formation: Secondary A Aquifer Groundwater vulnerability: Low There is no groundwater abstractions located within 500m of the Site.
Excavation / Mining	The Site is located within an area of historical coal mining. However, the Coal Authority interactive mapping does not map any mine entries, fissures, zones of influence, probable shallow mineworkings, or historical surface mining within 500m of the Site and is not located within a High Development Risk Area in relation to coal mining.
Landfill / Waste Disposal	The available information does not indicate any evidence that historical landfilling or waste disposal activities have taken place on, or in the immediate vicinity of the Site
Neighbouring Land use / Nearby Contaminative Activities	Neighbouring land was mostly vacant apart from Park Farm to the immediate east / northeast from the earliest available mapping, until major development in the 1950s with a printing works, garage / petrol station, and residential properties being constructed in the surrounding area.

	No pollution incidents have been reported within 250m of the Site.
Radon	Groundsure mapping indicates the east of the Site is an area where less than 1% of properties are at risk. The west of the Site is an area where 1-3% of properties are at risk.
UXO Risk	The Pre-Desk Study UXO Assessment (PDSA) states that no bombing from either Wordl Wars has been identified on Site. During WWII, Wrexham officially recorded 1No. High Explosive (HE) bomb with a bombing density of 0.3 bombs per 405 hectares (ha). A copy of the UXO Assessment is provided in Appendix D.
Nature Conservation	No areas of the Site, or surrounding land within 500m, have been identified as statutory designated nature conservation sites.

7. Preliminary Conceptual Site Model

7.1. Methodology

7.1.1. Information from the desk study has been used to identify the likely source-pathway-target relationships that may exist at the Site during and following the proposed development. Principal factors that may determine potential sources of contaminants at the Site, receptor vulnerability and potential pathways have been identified and each assessed in turn to derive a Conceptual Site Model (CSM).

7.2. On site Sources

7.2.1. Sources of potential on-site contamination have been summarised as follows:

- Made ground: Made ground is expected to be present across the site, associated with materials placed to form a development sub-base for current / former building and areas of hardstanding. Deep deposits are not expected, however the chemistry made ground is uncertain and could contain elevated concentrations of typical urban contaminants. Under proposed development plans, existing areas of hardstanding will remain (or be subject to replacement).

- ACM in building: While not observed on the exterior, due to the age of the building in the southwest corner (1950s) asbestos may be present in the building fabric.

7.3. Off-Site Sources

7.3.1. Significant sources of off-site contamination have been summarised as follows:

- Heavy metals / hydrocarbons: The former printing works to the immediate east may have used inks in their processes which could have contained inorganic pigments / binding agents consisting of heavy metals and hydrocarbon resins. Any spillages or leaks may have impacted the underlying ground.

- Hydrocarbons: The former garage (13m) and petrol station (68m) to the east are a potential source of hydrocarbon contamination if any leaks and spillages occurred during their operation.

7.4. Potential Receptors

7.4.1. The principal vulnerable receptors with respect to potential exposure to any contaminants within the soil and shallow groundwater will be:

- Construction workers who may be exposed to contaminants during preparatory and construction / refurbishment works, maintenance workers and other visitors to Site thereafter.
- Future Site users (including future Site workers and Site visitors).
- Buildings / structures associated with the proposed development and associated infrastructure.
- Controlled waters: underlying principal aquifer within the bedrock and superficial deposits onsite.

7.5. Human Health Risk Assessment

7.5.1. Made ground is likely to be present across the Site (former building on northwest boundary / subbase for hardstanding / existing building in southwest corner) but is likely to be of limited depth and typically of inert materials. Concentrations of contaminants are unlikely to exceed commercial development soil guideline values, and the development plans of widespread hardstanding will provide a physical barrier between future site users and the underlying soils. The main risk to human health is considered to be associated with groundworkers undertaking excavations during preparatory and construction works.

7.5.2. The existing building in the southwest corner was built prior to 1999, when use of all types of asbestos was banned in the UK. Whilst it was not observed during the site walkover, asbestos containing materials (ACM) may be present within the fabric of the building. If ACM is present, demolition works may result in the dispersion of asbestos fibres.

7.5.3. The former printing works to the immediate east may have used inks which contained inorganic pigments / binding agents containing heavy metals and hydrocarbons. However, due to the underlying cohesive deposits of glacial till, any contamination resulting from leaks or spillages are unlikely to have migrated onto the Site. Development proposals for site-wide hardstanding cover will provide a physical barrier to future site users to the site soils in any case.

7.5.4. The former garage / petrol station 13-68m to the east were closed and decommissioned in the late 2000s with the underground fuel storage tanks being backfilled with concrete. It is now operated as a fireplace retailer / sandwich shop. Any spillages or leaks that occurred during their operation as a garage / petrol station are unlikely to have migrated onto Site due to the cohesive underlying deposits of glacial till. Similarly, the migration of any residual fuel vapours through cohesive deposits over such a distance are not expected.

7.6. Property Risk Assessment

7.6.1. The potential for chemical attack on construction materials is highly unlikely, with no sources being identified on Site. While a former petrol station and garage are located to the east, these were closed and decommissioned in the 2000s and the underlying cohesive deposits of glacial till will have limited any migration of hydrocarbon leaks or spillages.

7.7. Controlled Waters Risk Assessment

7.7.1. The Site is in an area of moderate sensitivity as far as groundwater is concerned with the underlying Superficial Deposits supporting a Secondary undifferentiated aquifer and the Bedrock supporting a Secondary A Aquifer. No mobile contaminant sources with the potential to impact controlled waters have been identified and leaching rates of any made ground soils are considered to be negligible, particularly given the extensive hardstanding cover which will be retained under development plans. In any case, the mapped presence of underlying glacial till will limit any vertical migration.

7.8. Preliminary Conceptual Site Model (CSM)

7.8.1. The preliminary CSM has been derived for the Site using the information described above, describing the potential contamination sources, pathways and receptors and is summarised below in Table 7.1.

7.8.2. The approach to the risk assessment summarised below in Table 8.1, follows the methodology presented within Ciria C552 ‘Contaminated Land Risk Assessment A Guide to Good Practice’, further details of which, are provided in Appendix F.

Table 7.1: Preliminary Conceptual Site Model

Receptor	Source / Contaminant	Pathway / Exposure	Severity/ Consequence of Risk	Probability of Risk Occurring	Anticipated Risk (in absence of mitigation)	Further Works Recommended
1. humans – construction workers	Metals / PAHs / petroleum hydrocarbons / asbestos / solvents	dermal contact / ingestion / inhalation – short term exposure	**Mild**	**Low Likelihood:** Made ground of limited depth and inert composition anticipated to be present across the site. Potential for ACM to be present in buildings which if not surveyed and removed prior to demolition could result in fibre release.	**Low Risk**	A Site investigation should be undertaken across the Site to characterise the ground conditions and confirm the chemistry of site soils. Entries should provide good spatial coverage but also include entries along the sites eastern boundary where historical industrial land use (print works , garage and fuel filling station) were located. Appropriate personal protective equipment (PPE), Site management and good housekeeping should be implemented during construction works. Asbestos survey of building in the southwest corner and if asbestos present, removal by a suitable contractor prior to demolition / construction works taking place.

Receptor	Source / Contaminant	Pathway / Exposure	Severity/ Consequence of Risk	Probability of Risk Occurring	Anticipated Risk (in absence of mitigation)	Further Works Recommended
2. humans – future site users / visitors	Metals / PAHs / heavy hydrocarbons / asbestos / solvents	dermal contact / ingestion / inhalation	**Mild**	**Unlikely** – The design proposal includes widespread hardstanding, providing a physical barrier between soils and future site users. In any case, contaminant concentrations that would exceed commercial guideline values are not expected.	**Low Risk**	A Site investigation should be undertaken across the Site to characterise the ground conditions and confirm the chemistry of site soils. Entries should provide good spatial coverage but also include entries along the site's eastern boundary where historical industrial land use (print works, garage and fuel filling station) were located.
	ground gas (methane, carbon dioxide)	accumulation within voids, confined spaces and service runs to asphyxiant and/or otherwise toxic concentrations	**Negligible**	**Unlikely** – No sources of ground gas identified.	**Negligible Risk**	No further works required.
	radon gas from bedrock		**Negligible**	**Unlikely –** <1-3% of homes are estimated to be at or above the Action level.	**Negligible Risk**	No further works required.
	VOC vapours from soil / groundwater sources		**Moderate**	**Low Likelihood** – Hydrocarbons associated with any spills or leaks that occurred at the former garage / petrol station to the east are unlikely to have migrated to Site due to underlying cohesive deposits of glacial till, however a site investigation should be undertaken to confirm this.	**Medium / Low risk**	A Site investigation should be undertaken across the Site to characterise the ground conditions and confirm the chemistry of site soils. Entries should provide good spatial coverage but also include entries along the site's eastern boundary where historical industrial land use (print works, garage and fuel filling station) were located.

Receptor	Source / Contaminant	Pathway / Exposure	Severity/ Consequence of Risk	Probability of Risk Occurring	Anticipated Risk (in absence of mitigation)	Further Works Recommended
3. humans – adjacent site users	Metals / PAHs / heavy hydrocarbons / asbestos / solvents	windblown / dermal contact / ingestion / inhalation	**Moderate**	**Low Likelihood** Significant concentrations of mobile contaminants which could be remobilised during construction works are unlikely to be present. While not observed, there is potential for ACM to be present in the building in the southwest corner which if not surveyed and removed prior to demolition could result in fibre release.	**Low to Medium Risk**	Asbestos survey of building in the southwest required and where asbestos may be present. If identified, removal by a suitably trained contractor prior to demolition. Dust suppression techniques to be used during demolition (after asbestos removal) and during construction works to limit dust generation as required.
4. property / services	ground gas (methane, carbon dioxide)	accumulation within voids, confined spaces and service runs to flammable concentrations	**Negligible**	**Unlikely** – No sources of ground gas identified.	**Negligible Risk**	No further works required.
	pH, sulphate.	chemical attack of buried concrete	**Mild**	**Unlikely –** Soils containing high pH and sulphates are unlikely to be present based on the available information.	**Low Risk**	No further works required.
4. vegetation / landscaping	leachable metals / metalloids may be present within natural soils	plant uptake	**Mild**	**Unlikely** – Vegetation appeared to be in a healthy state during the Site walkover.	**Negligible Risk**	No further works required.

Receptor	Source / Contaminant	Pathway / Exposure	Severity/ Consequence of Risk	Probability of Risk Occurring	Anticipated Risk (in absence of mitigation)	Further Works Recommended
5. ecosystems / protected habitats & species	leachable metals / metalloids / PAHs / hydrocarbons	Aeolian processes via dust deposition	**Negligible**	**Unlikely –** No protected species/habitats within 500m of the Site.	**Low Risk**	No further works required.
6. surface waters	PAHs / hydrocarbons	migration via shallow groundwater / surface water run-off.	**Mild**	**Unlikely** – No surface water receptors are located within 250m of the Site.	**Low Risk**	No further works required.
7. groundwater *Glacial Till* *Salop Formation – Secondary Aquifer (Bedrock)*	leachable metals / metalloids / PAHs / hydrocarbons	migration via saturated zone	**Moderate**	**Unlikely** – A former garage and petrol station are located 13m and 67m to the east. Both were closed / decommissioned in the 2000s with the petrol station belowground tanks being backfilled with concrete. The underlying cohesive deposits of glacial till between the Site and the garage / petrol station will have limited migration of any contamination resulting from leaks or spillages. No sources of contamination with the potential to impact the site have been identified on the site	**Low Risk**	No further works required.

7.9. Other Considerations

Ground Stability – Natural Hazards

7.9.1. According to the Groundsure report, the Site is in an area where risks from collapsible ground, shrinking and swelling clays, running sands, and landslides are considered very low, and risks from compressible and ground dissolution are negligible.

Unexploded Ordnance

7.9.2. The pre-desk study UXO risk assessment (PDSA) shows that while some strategic targets are located within 5km of the Site, there are no records showing the Site was actively bombed. Therefore, no further UXO assessment is required. The PDSA is provided in Appendix D.

8. Conclusions and Recommendations

8.1. Summary

Site

8.1.1. Historical mapping shows the Site to be part of wider agricultural land from the earliest available mapping (1899) before the surrounding area underwent development in the 1930s, including the construction of a long building crossing the north boundary of the Site. This is demolished by the following mapping in 1959, and two buildings are constructed in the west of the Site (southwest corner and northwest boundary) with a wall dividing the Site into two parcels. It is unknown what the buildings were used for at that time but are assumed to be storage related to the neighbouring printing works due to a road / trackway crossing the Site connecting them. The building on the northwest boundary was demolished by 2021 following gravel resurfacing of the west of the Site but the building in the southwest corner remains to present day (2024). At the time of the site walkover, it was being used to store materials such as fence panels, pallets, and an empty IBC. The east of the Site has been used as parking for users of the adjacent businesses since 2006.

Surroundings

8.1.2. The surrounding area remained agricultural land associated with the neighbouring Park Farm until the late 1930s when the surrounding began development with residential properties to the immediate northwest along Rhosnesni Lane and along Borras Road to the east. By 1959, a printing works was constructed to the immediate east of the Site with a road / trackway leading to the buildings in the west of the Site and Park Farm was replaced by a garage and a petrol station, 13m and 67m east, respectively. The surrounding area continued to undergo residential development throughout the 1960s with properties to the immediate south and west of the Site. By the 1990s, a large retail unit was constructed to the immediate northeast of the Site. By the late 2000s the former garage was occupied by a plumbing and central heating retailer and the petrol station had been closed / decommissioned. By 2024, the former printworks hosts a variety of businesses (animal feed manufacturer, wire harness / cable manufacturer, and mead producer), the former petrol station is now a sandwich shop, the former garage is a fireplace retailer, and the former retail unit is now a gym.

8.2. Findings of Contamination Risk Assessment

8.2.1. The use of the Site throughout its history appears to have remained storage / parking since the late 1950s. Made ground is expected to be present across the Site associated with former and existing buildings in the west, a wall dividing the Site in the centre, and subbase below existing areas of hardstanding in the east.

8.2.2. One building is present on Site (southwest corner) and, whilst not observed during the site walkover, potentially asbestos containing materials (ACM) may be present within the fabric of the building, due to its age (built in the 1950s).

8.2.3. A former printing works was located to the immediate east of the Site from the late 1950s. Historically, inks may have contained pigments comprising of heavy metals and hydrocarbon binding agents. Any spillages or leaks of inks into the ground that may have caused contamination would have limited migration onto the Site due to the underlying cohesive deposits of glacial till. By 2021, the former works was split into multiple industrial units for a variety of businesses and the car parking area (south of the former works, east of the Site) was resurfaced with new tarmac.

8.2.4. A former garage and petrol station were located 13m and 67m east of the Site since the late 1950s. By 2009, the petrol station had closed with the underground fuel tanks being decommissioned and backfilled with concrete and the garage was occupied by a plumbing and central heating retailer. By 2024, the petrol station has been converted into a sandwich shop and the former garage is now a fireplace retailer. Any spillages or leaks prior to the closure of the garage and petrol station are unlikely to have migrated to Site due to the underlying cohesive deposits of glacial till between the Site and the source.

8.2.5. Whilst the risks from contamination are largely negligible to low in relation to the site and development proposals which include site-wide hardstanding cover, it is considered appropriate to undertake a limited site investigation to characterise the chemistry of shallow soils across the site and confirm the assumptions made within this report.

8.3. Recommendations

8.3.1. It is recommended that a limited site investigation is undertaken across the Site to characterise the ground conditions. The following scope of works is recommended:

- Drilling of a maximum of 5x window sampler boreholes to 4m or at least 1m in natural soils (whichever is shallowest) to achieve an overall entry spacing of 1 entry per 20m grid spacing
- Collection and submission of 6 samples of made ground soils (or soils exhibiting any contamination indicators) for a suite of typical urban contaminants including: heavy metals, PAH16, fractioned hydrocarbons and asbestos identification
- Logging of ground conditions and screening arisings with a photoionisation detector (PID)
- Production of a quantitative risk assessment with soil chemical test results compared to generic assessment criteria (GACs) based on a commercial land use

8.3.2. An asbestos survey should be undertaken on buildings requiring demolition. If asbestos is identified, this will require removal and disposal by an appropriately trained specialist prior to demolition.

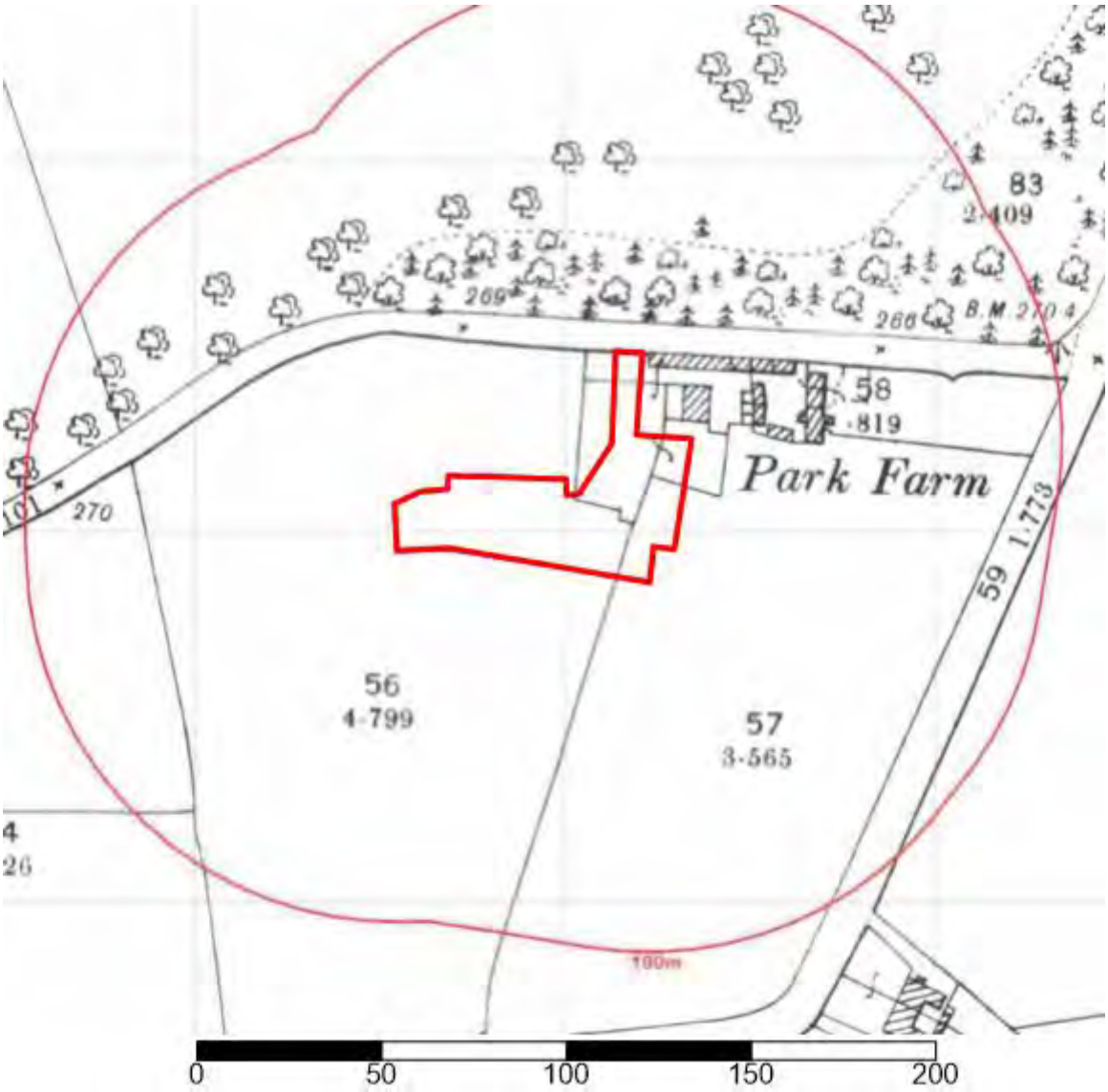
8.4. Limitations

8.4.1. This report has been prepared by SGP for the sole and exclusive use of Cliftons of Wrexham Fund. Reasonable skill, care and diligence has been exercised within the budget available, and in accordance with the technical requirements of the brief. Notwithstanding the efforts made by the professional team in undertaking the assessment and preparing this report, it is possible that other ground conditions and contamination as yet undetected may exist. Reliance on the findings of this report must therefore be limited accordingly. Such reliance must be based on the whole report and not on extracts which may lead to incomplete or incorrect conclusions when taken out of context.

8.4.2. SGP reserves the right to alter any of the foregoing information in the event of new information being disclosed or provided and in the light of changes to legislation, guidelines and responses by the statutory and regulatory authorities.

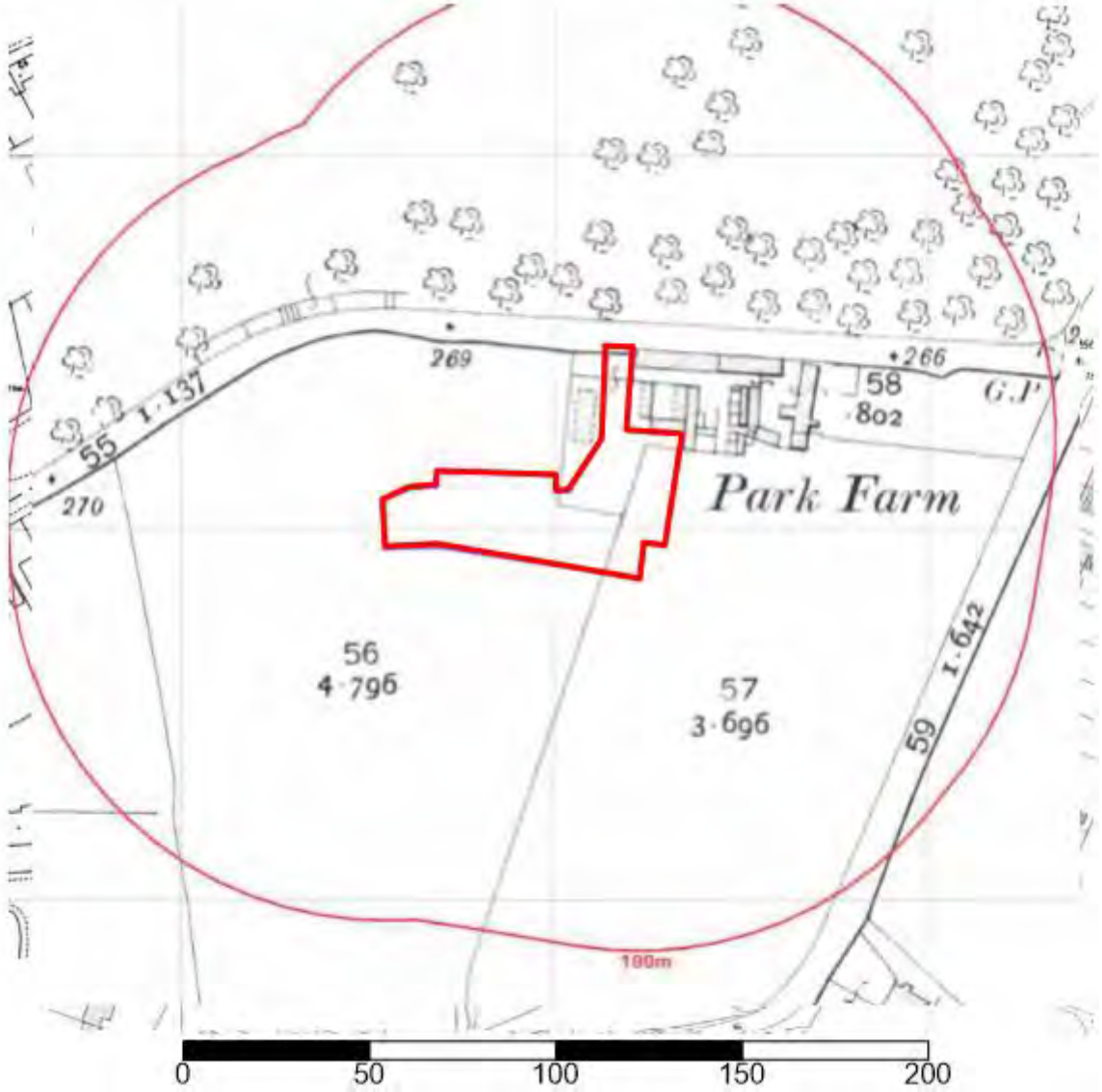
Drawings

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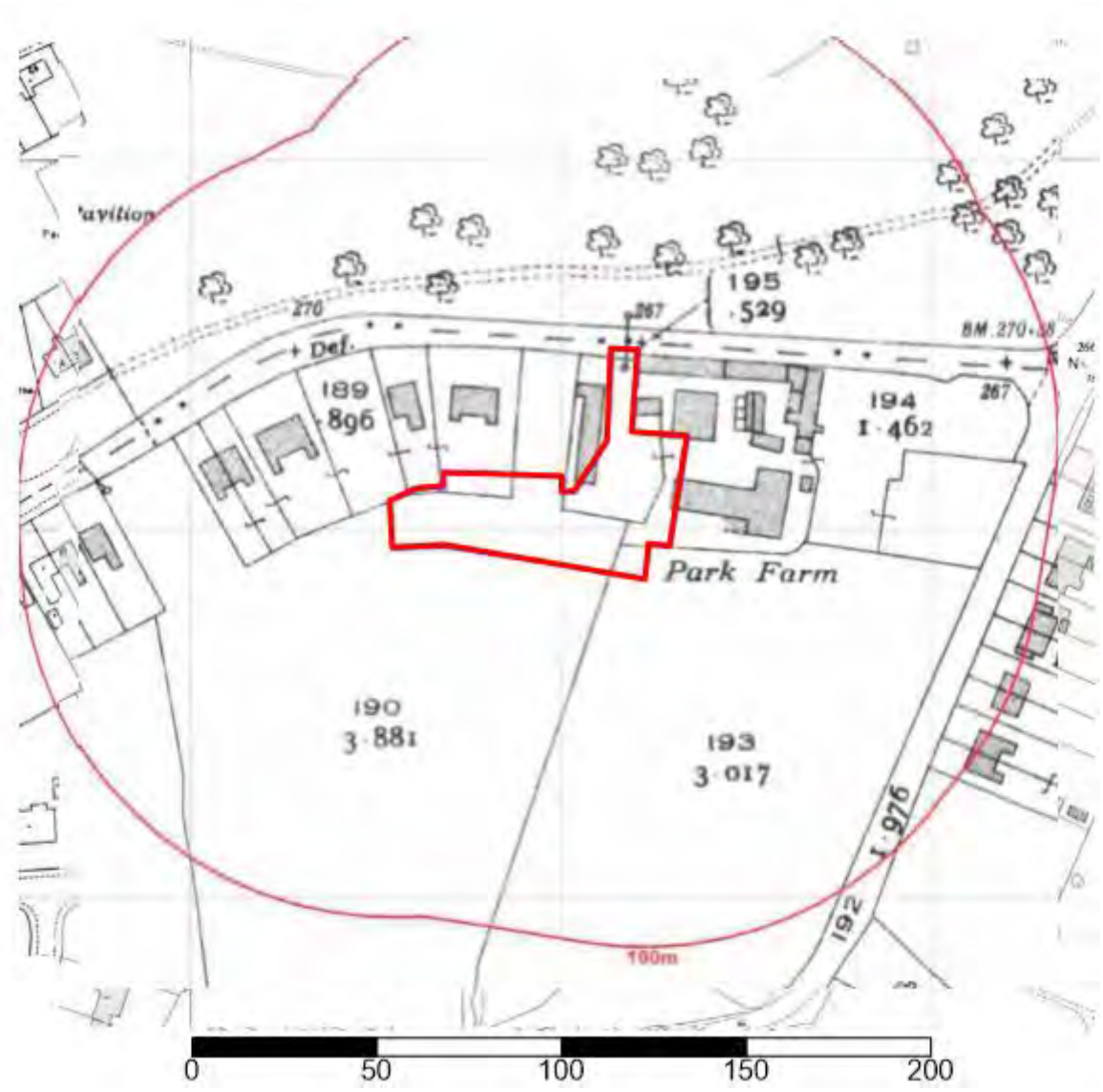
D01: Historical Map – 1899 (1:2,500 scale)

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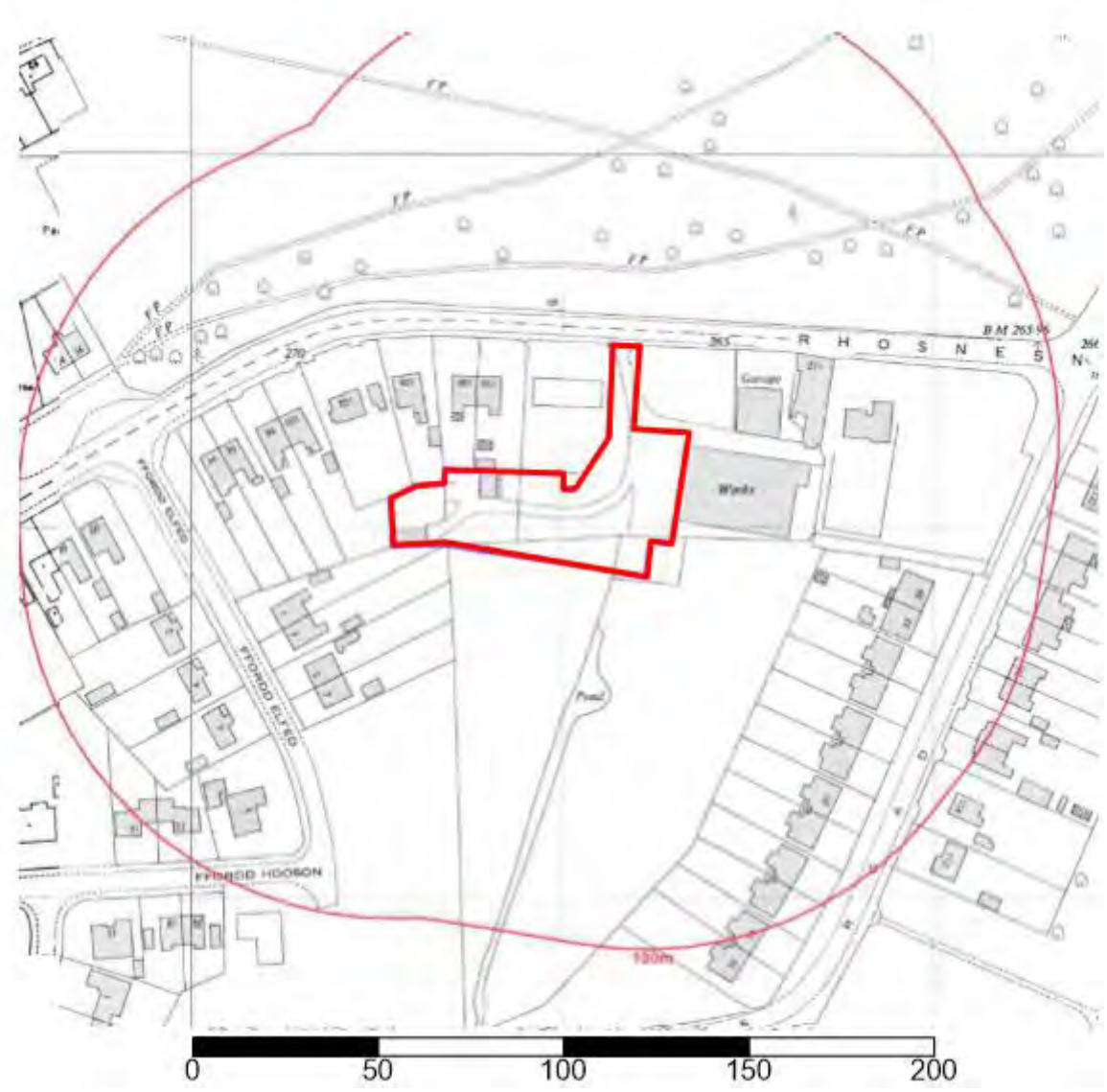
D02: Historical Map – 1912 (1:2,500 scale)

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D03: Historical Map – 1937 (1:2,500 scale)

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D04: Historical Map – 1959 (1:2,500 scale)

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D05: Historical Map – 1968-1973 (1:1,250 scale)

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D06: Historical Map – 1990-1992 (1:1,250 scale)

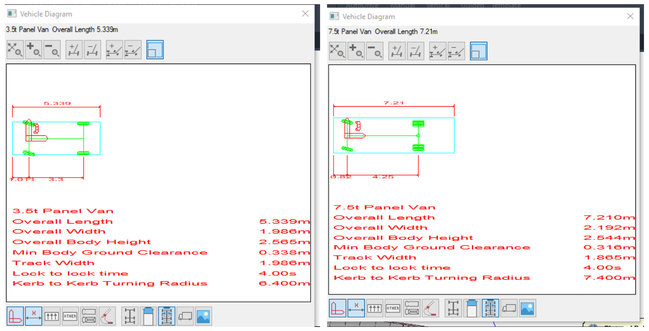
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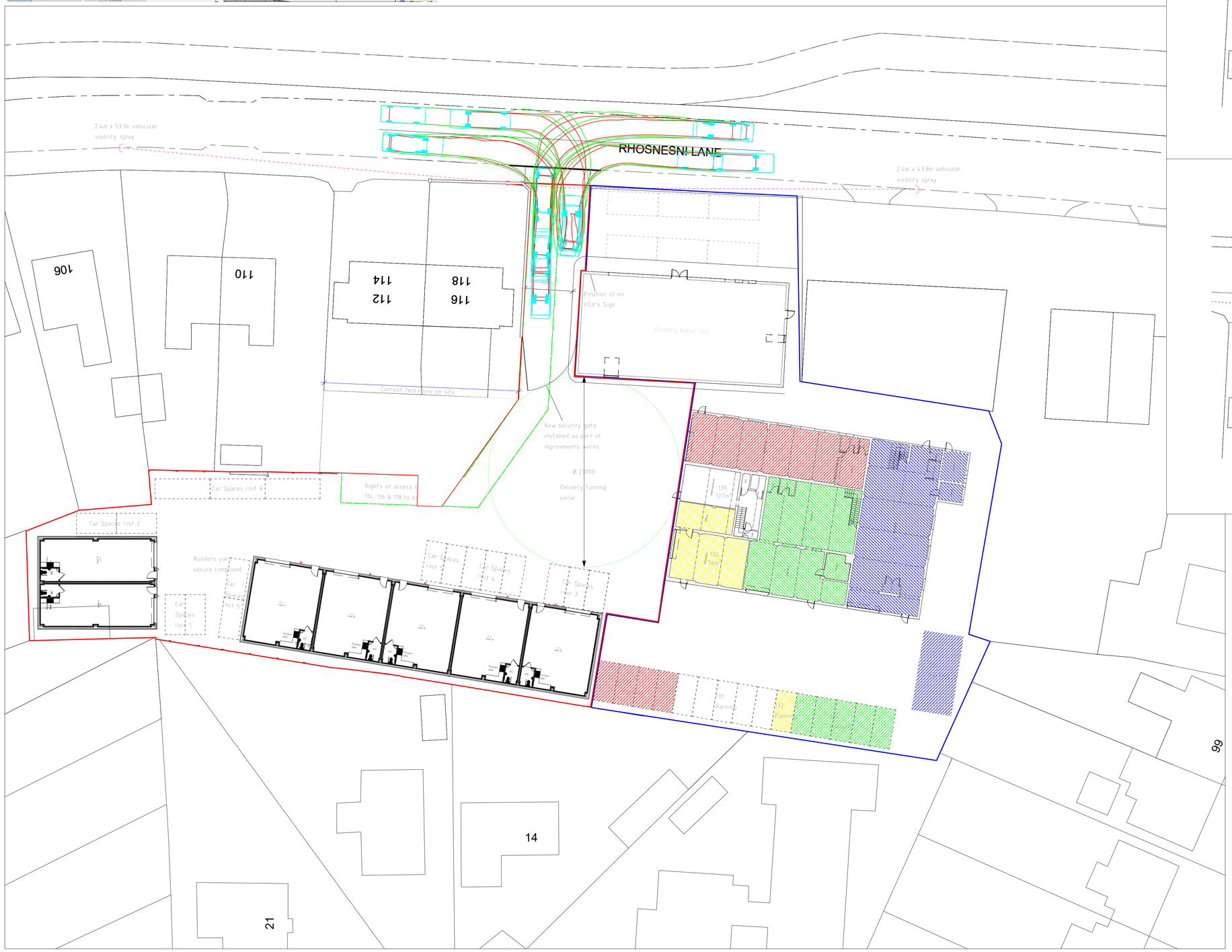


D07: Historical Map – 2003 (1:1,250 scale)

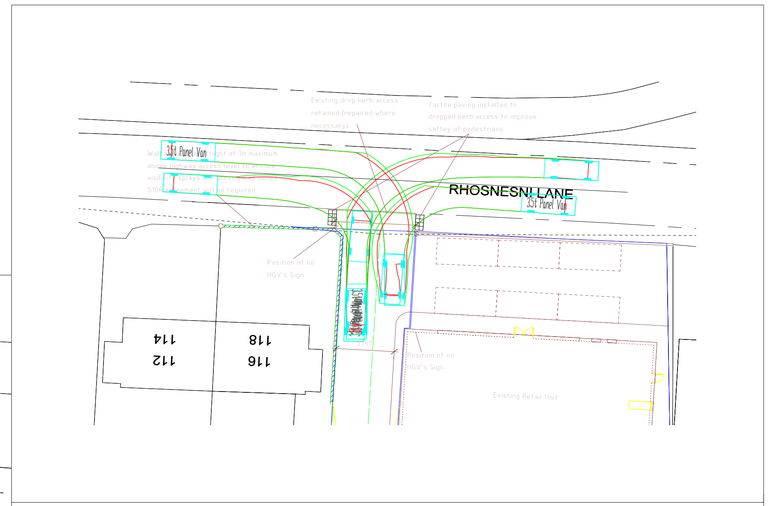
APPENDIX A

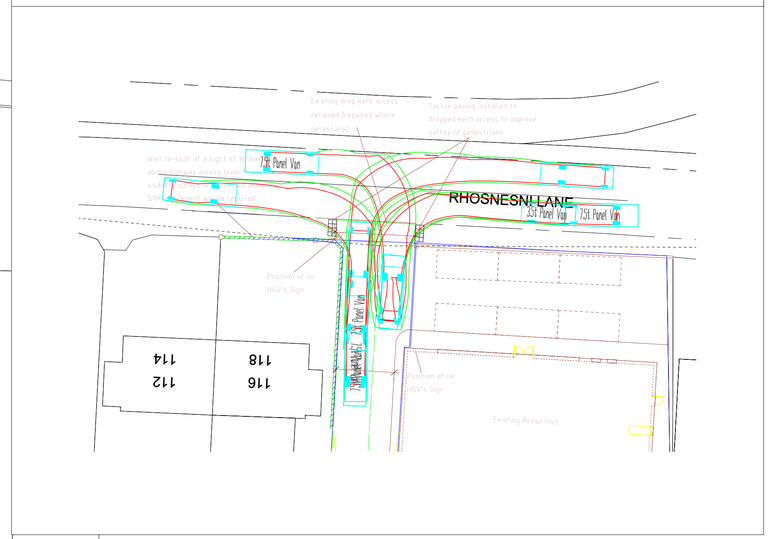
Site Location Plan





Site Plan 1:250





Rev	Date	Detail	Initial
G	07/23	Dropcurbalterations	E.M.J
F	06/23	Swept Path Analysis	D.J.E
E	04/23	Access Improvements	D.J.E
D	03/23	Design Amends	D.J.E
C	09/22	Planning Amends	D.J.E
B	09/22	Planning Amends	D.J.E
A	07/22	Additional information supplied	D.J.E

Project:

Proposed Industrial Units at Land associated with 120 Rhosnesni Lane, Wrexham, LL12 7NB

Title:	Scale: (A1)
Planning: Swept Path Analysis	1:250 & 1:1250

Drawn By:	Date:
D.J.Edwards	Feb 2022
Drawing No: C139/006	Sheet: 2 of 2

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APPENDIX B

Photographic Record

R3341-Land to the rear of 120 Rhosnesni Lane – Site Walkover	
1.  15.08.24 – Access road from Rhosnesni Lane	2.  15.08.24 – View northwards onto Rhosnesi Lane
3.  15.08.24 – Security gate spanning access road	4.  15.08.24 – View southeast across Site from security gate
5.  15.08.24 – View southwest across Site from security gate	6.  15.08.24 – View southwest from northeast corner

7.



15.08.24 – View south from northeast corner

8.



15.08.24 – View northwest from southeast corner

9.



15.08.24 – View east along southern boundary

10.



15.08.24 – View northeast across car park area

11.



15.08.24 – View of entrance to compound area in the west

12.



15.08.24 – Entryway to compound area in the west

13.



15.08.24 View towards southeast corner of compound area

14.



15.08.24 – View towards southwest corner of compound area

15.



15.08.24 – View towards area of former building along north boundary

16.



15.08.24 – Former building remains

17.



15.08.24 – Stored pallets in compound area

18.



15.08.24 – Garage located in the southwest corner

19.



15.08.24 – Materials stored in garage

20.



15.08.24 – North facing exterior of garage

21.



15.08.24 – Bricks stored along northwest boundary

22.



15.08.24 – Small stockpile of demolition waste

23.



15.08.24 – Stored materials in compound area

24.



15.08.24 – Gravel surface in compound area

APPENDIX C

Groundsure Report
(Including Historical Maps)

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

R3341-120 Rhosnesni Lane

Order Details

Date: 14/08/2024

Your ref: R3341-Rear of 120 Rhosnesni Lane

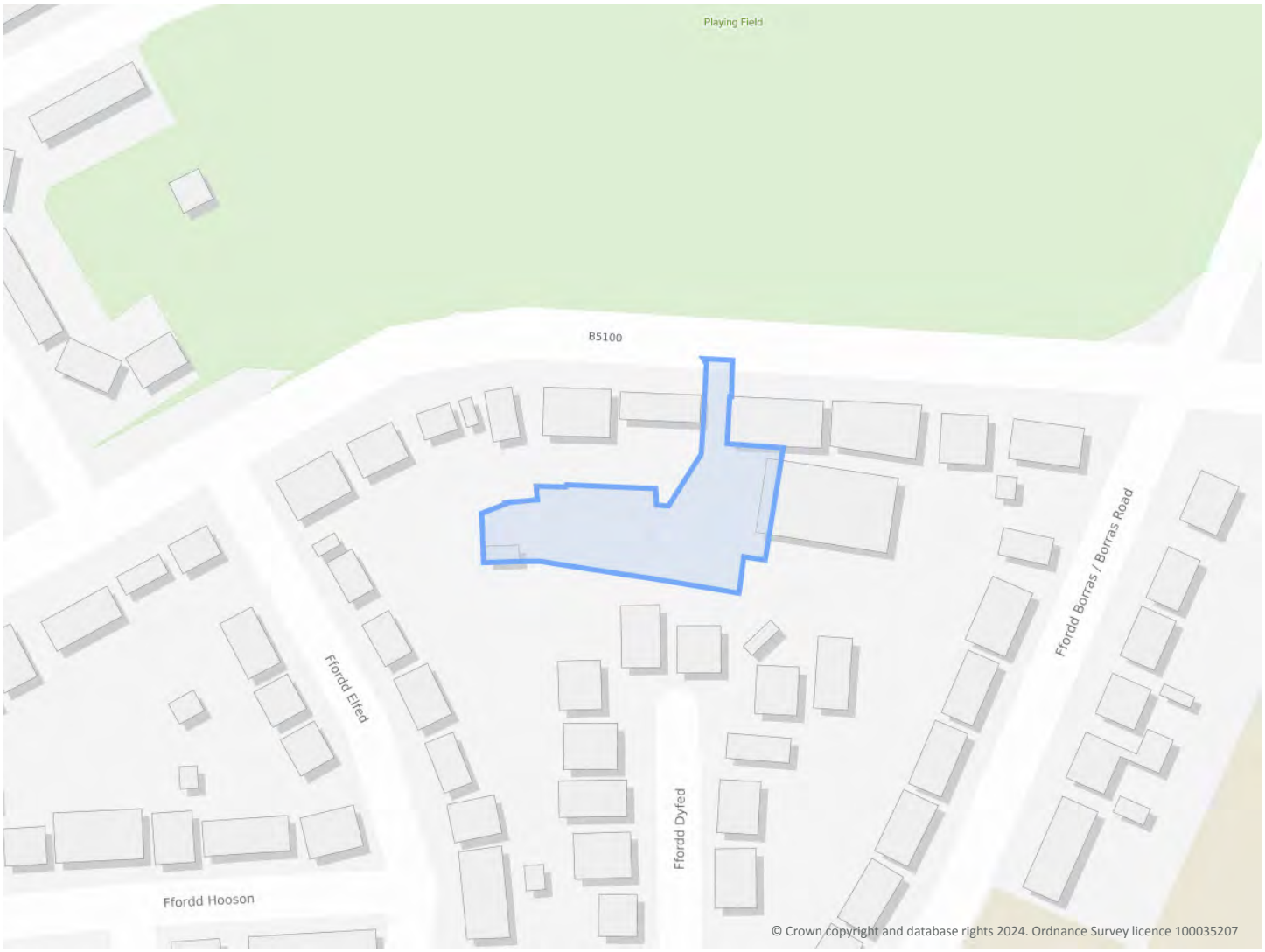
Our Ref: GS-J18-54A-OFC-TMF

Site Details

Location: 334600 351407

Area: 0.21 ha

Authority: Wrecsam - Wrexham County Borough Council ↗



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Summary of findings p. 2 >

OS MasterMap site plan p.14 >

Aerial image p. 9 >

Insight User Guide ↗

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

Certified B Corporation

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	1	0	0	15	-
16 >	1.2 >	Historical tanks >	0	0	0	3	-
17 >	1.3 >	Historical energy features >	0	0	6	9	-
18	1.4	Historical petrol stations	0	0	0	0	-
18 >	1.5 >	Historical garages >	0	3	0	4	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	5	0	0	31	-
21 >	2.2 >	Historical tanks >	0	0	0	4	-
21 >	2.3 >	Historical energy features >	0	0	10	20	-
23	2.4	Historical petrol stations	0	0	0	0	-
23 >	2.5 >	Historical garages >	0	8	0	5	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
24	3.1	Active or recent landfill	0	0	0	0	-
24	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
24	3.5	Historical waste sites	0	0	0	0	-
25	3.6	Licensed waste sites	0	0	0	0	-
25	3.7	Waste exemptions	0	0	0	0	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
26 >	4.1 >	Recent industrial land uses >	0	0	3	-	-
27 >	4.2 >	Current or recent petrol stations >	0	0	1	2	-
27	4.3	Electricity cables	0	0	0	0	-
27	4.4	Gas pipelines	0	0	0	0	-
27	4.5	Sites determined as Contaminated Land	0	0	0	0	-

28	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
28	4.7	Regulated explosive sites	0	0	0	0	-
28	4.8	Hazardous substance storage/usage	0	0	0	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
28	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
29 >	**4.11 >**	**Licensed pollutant release (Part A(2)/B) >**	0	0	0	1	-
29	4.12	Radioactive Substance Authorisations	0	0	0	0	-
29 >	**4.13 >**	**Licensed Discharges to controlled waters >**	0	0	0	2	-
30	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
30	4.15	Pollutant release to public sewer	0	0	0	0	-
30	4.16	List 1 Dangerous Substances	0	0	0	0	-
30	4.17	List 2 Dangerous Substances	0	0	0	0	-
30	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
31	4.19	Pollution inventory substances	0	0	0	0	-
31	4.20	Pollution inventory waste transfers	0	0	0	0	-
31	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	**Hydrogeology >**	On site	0-50m	50-250m	250-500m	500-2000m
32 >	**5.1 >**	**Superficial aquifer >**	Identified (within 500m)				
34 >	**5.2 >**	**Bedrock aquifer >**	Identified (within 500m)				
36 >	**5.3 >**	**Groundwater vulnerability >**	Identified (within 50m)				
37	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
37	5.5	Groundwater vulnerability- local information	None (within 0m)				
38 >	**5.6 >**	**Groundwater abstractions >**	0	0	0	0	3
39 >	**5.7 >**	**Surface water abstractions >**	0	0	0	0	1
40	5.8	Potable abstractions	0	0	0	0	0
40	5.9	Source Protection Zones	0	0	0	0	-
40	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	**Hydrology >**	On site	0-50m	50-250m	250-500m	500-2000m
41	6.1	Water Network (OS MasterMap)	0	0	0	-	-

41	6.2	Surface water features	0	0	0	-	-
42 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
42 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
43 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
44	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
44	7.2	Historical Flood Events	0	0	0	-	-
44	7.3	Flood Defences	0	0	0	-	-
45	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
45	7.5	Flood Storage Areas	0	0	0	-	-
46	7.6	Flood Zone 2	None (within 50m)				
46	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
47 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
49 >	9.1 >	Groundwater flooding >	Moderate (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
50	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
51	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
51	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
51	10.4	Special Protection Areas (SPA)	0	0	0	0	0
51	10.5	National Nature Reserves (NNR)	0	0	0	0	0
52	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
52 >	10.7 >	Designated Ancient Woodland >	0	0	0	0	8
52	10.8	Biosphere Reserves	0	0	0	0	0
53	10.9	Forest Parks	0	0	0	0	0
53	10.10	Marine Conservation Zones	0	0	0	0	0
53	10.11	Green Belt	0	0	0	0	0
53	10.12	Proposed Ramsar sites	0	0	0	0	0

53	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
54	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
54	10.15	Nitrate Sensitive Areas	0	0	0	0	0
54	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
55 >	**10.17 >**	**SSSI Impact Risk Zones >**	1	-	-	-	-
56	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
57	11.1	World Heritage Sites	0	0	0	-	-
57	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
57	11.3	National Parks	0	0	0	-	-
57	11.4	Listed Buildings	0	0	0	-	-
58	11.5	Conservation Areas	0	0	0	-	-
58	11.6	Scheduled Ancient Monuments	0	0	0	-	-
58	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
59	12.1	Agricultural Land Classification	None (within 250m)				
59	12.2	Open Access Land	0	0	0	-	-
59	12.3	Tree Felling Licences	0	0	0	-	-
59	12.4	Environmental Stewardship Schemes	0	0	0	-	-
60	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
61	13.1	Priority Habitat Inventory	0	0	0	-	-
61	13.2	Habitat Networks	0	0	0	-	-
61	13.3	Open Mosaic Habitat	0	0	0	-	-
61	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	**Geology 1:10,000 scale >**	On site	0-50m	50-250m	250-500m	500-2000m
62 >	**14.1 >**	**10k Availability >**	Identified (within 500m)				
63	14.2	Artificial and made ground (10k)	0	0	0	0	-
64 >	**14.3 >**	**Superficial geology (10k) >**	2	0	1	2	-

65	14.4	Landslip (10k)	0	0	0	0	-
66 >	14.5 >	Bedrock geology (10k) >	1	0	0	1	-
67 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	1	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
68 >	15.1 >	50k Availability >	Identified (within 500m)				
69	15.2	Artificial and made ground (50k)	0	0	0	0	-
69	15.3	Artificial ground permeability (50k)	0	0	-	-	-
70 >	15.4 >	Superficial geology (50k) >	2	0	0	0	-
71 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
71	15.6	Landslip (50k)	0	0	0	0	-
71	15.7	Landslip permeability (50k)	None (within 50m)				
72 >	15.8 >	Bedrock geology (50k) >	1	0	0	0	-
73 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
73 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	1	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
74 >	16.1 >	BGS Boreholes >	0	0	3	-	-
Page	Section	Natural ground subsidence >					
76 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
77 >	17.2 >	Running sands >	Very low (within 50m)				
78 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
79 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
80 >	17.5 >	Landslides >	Very low (within 50m)				
81 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
83 >	18.1 >	BritPits >	0	0	0	1	-
84	18.2	Surface ground workings	0	0	0	-	-
84	18.3	Underground workings	0	0	0	0	0
84	18.4	Underground mining extents	0	0	0	0	-
84	18.5	Historical Mineral Planning Areas	0	0	0	0	-

85	18.6	Non-coal mining	0	0	0	0	0
85	18.7	JPB mining areas	None (within 0m)				
85	18.8	The Coal Authority non-coal mining	0	0	0	0	-
85	18.9	Researched mining	0	0	0	0	-
86	18.10	Mining record office plans	0	0	0	0	-
86	18.11	BGS mine plans	0	0	0	0	-
86 >	**18.12 >**	**Coal mining >**	Identified (within 0m)				
86	18.13	Brine areas	None (within 0m)				
87	18.14	Gypsum areas	None (within 0m)				
87	18.15	Tin mining	None (within 0m)				
87	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
88	19.1	Natural cavities	0	0	0	0	-
88	19.2	Mining cavities	0	0	0	0	0
88	19.3	Reported recent incidents	0	0	0	0	-
88	19.4	Historical incidents	0	0	0	0	-
89	19.5	National karst database	0	0	0	0	-
Page	Section	**Radon >**					
90 >	**20.1 >**	**Radon >**	Between 1% and 3% (within 0m)				
Page	Section	**Soil chemistry >**	On site	0-50m	50-250m	250-500m	500-2000m
92 >	**21.1 >**	**BGS Estimated Background Soil Chemistry >**	2	0	-	-	-
92	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
92	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
93	22.1	Underground railways (London)	0	0	0	-	-
93	22.2	Underground railways (Non-London)	0	0	0	-	-
93	22.3	Railway tunnels	0	0	0	-	-
93	22.4	Historical railway and tunnel features	0	0	0	-	-
93	22.5	Royal Mail tunnels	0	0	0	-	-

94	22.6	Historical railways	0	0	0	-	-
94	22.7	Railways	0	0	0	-	-
94	22.8	Crossrail 1	0	0	0	0	-
94	22.9	Crossrail 2	0	0	0	0	-
94	22.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 10/04/2020

Site Area: 0.21ha

Recent site history - 2017 aerial photograph



Capture Date: 07/05/2017

Site Area: 0.21ha

Recent site history - 2009 aerial photograph



Capture Date: 11/05/2009

Site Area: 0.21ha

Recent site history - 2003 aerial photograph



Capture Date: 04/08/2003

Site Area: 0.21ha

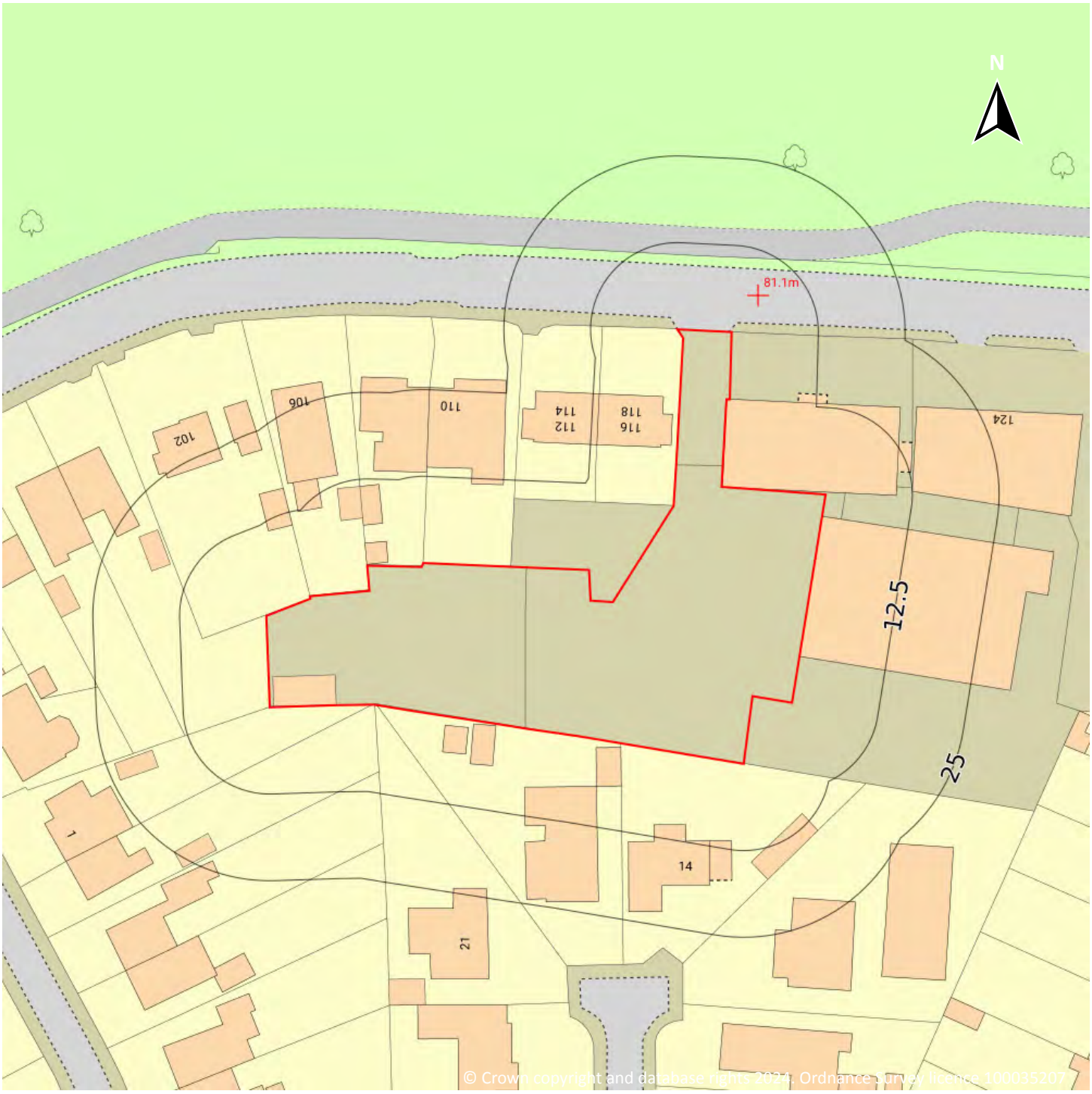
Recent site history - 2000 aerial photograph



Capture Date: 04/09/2000

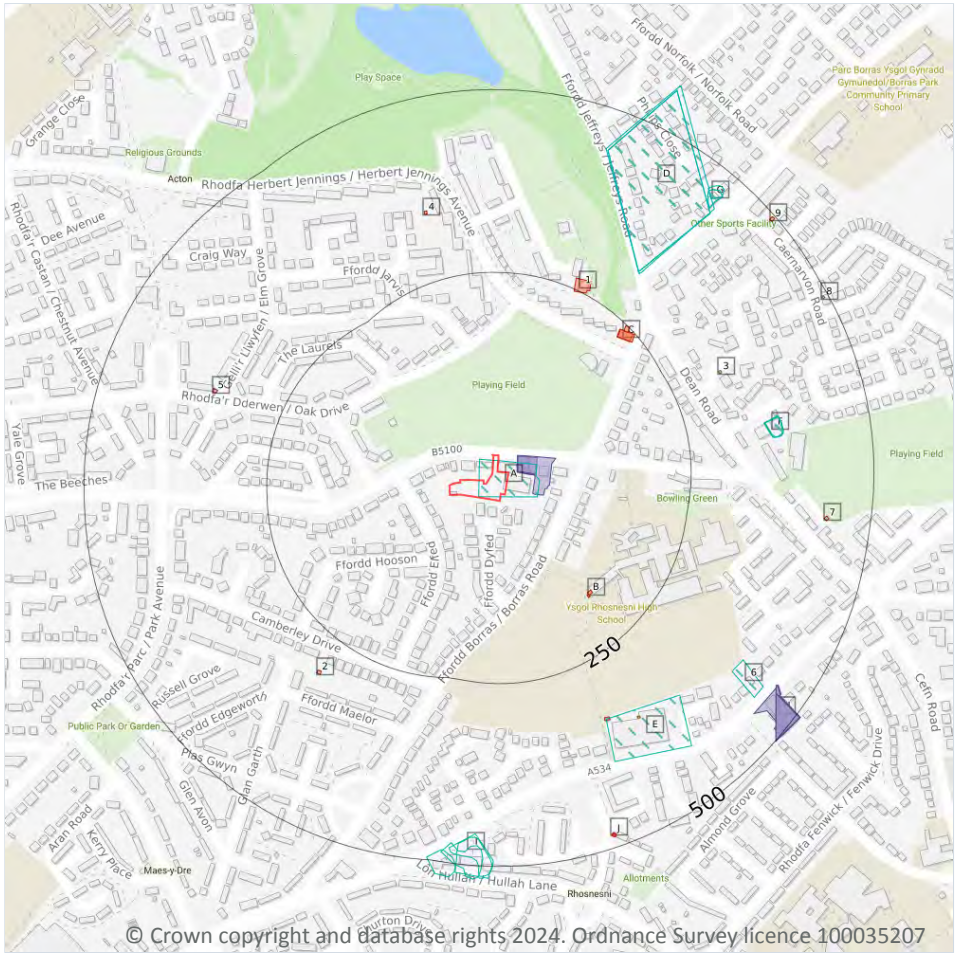
Site Area: 0.21ha

OS MasterMap site plan



Site Area: 0.21ha

1 Past land use



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Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

1.1 Historical industrial land uses

Records within 500m	16

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
A	**On site**	**Unspecified Works**	**1974 - 1992**	**921472**

ID	Location	Land use	Dates present	Group ID
D	315m NE	Nursery	1909 - 1938	902112
D	316m NE	Nursery	1938 - 1949	906294
D	316m NE	Nursery	1898	944706
E	332m SE	Unspecified Factory	1974 - 1989	911788
F	356m E	Unspecified Pit	1938	902797
F	357m E	Unspecified Pit	1938 - 1949	1005984
F	357m E	Unspecified Pit	1909	870481
6	394m SE	Police Station	1964 - 1992	1002710
G	445m NE	Gravel Pit	1898	852165
G	445m NE	Unspecified Pit	1938 - 1949	895739
G	456m NE	Unspecified Pit	1909 - 1938	884133
I	457m S	Old Sand Pit	1909	897246
I	461m S	Old Sand Pit	1938	907711
I	472m S	Sand Pit	1898	827337
I	484m S	Unspecified Heap	1872	843962

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m **3**

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
3	319m NE	Unspecified Tank	1912	118434
E	350m SE	Tanks	1959 - 1960	153562
8	491m NE	Unspecified Tank	1958	118439

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**15**

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
B	173m SE	Electricity Substation	1993 - 1994	78776
B	176m SE	Electricity Substation	1993	77279
C	229m NE	Electricity Substation	1987 - 1990	73581
C	230m NE	Electricity Substation	1967	87572
C	242m NE	Gas Station	1990	67961
1	247m NE	Electricity Substation	1987 - 1990	74091
2	298m SW	Electricity Substation	1990	65078
E	329m SE	Electricity Substation	1993 - 1994	82687
4	342m N	Electricity Substation	1967 - 1990	89365
5	343m W	Electricity Substation	1967 - 1990	88173
7	436m E	Electricity Substation	1967 - 1984	74468
J	479m S	Electricity Substation	1976	79771
J	480m S	Electricity Substation	1990	90145
J	481m S	Electricity Substation	1993	75440
9	492m NE	Electricity Substation	1967 - 1990	80503

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	7

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

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
A	13m E	Garage	1959 - 1960	26733
A	13m E	Garage	1968	23484
A	13m E	Garage	1993 - 1994	24874
H	453m SE	Garage	1960	24993
H	454m SE	Garage	1967 - 1984	24515
H	454m SE	Garage	1958	27645
H	460m SE	Garage	1983	24649

This data is sourced from Ordnance Survey / Groundsure.

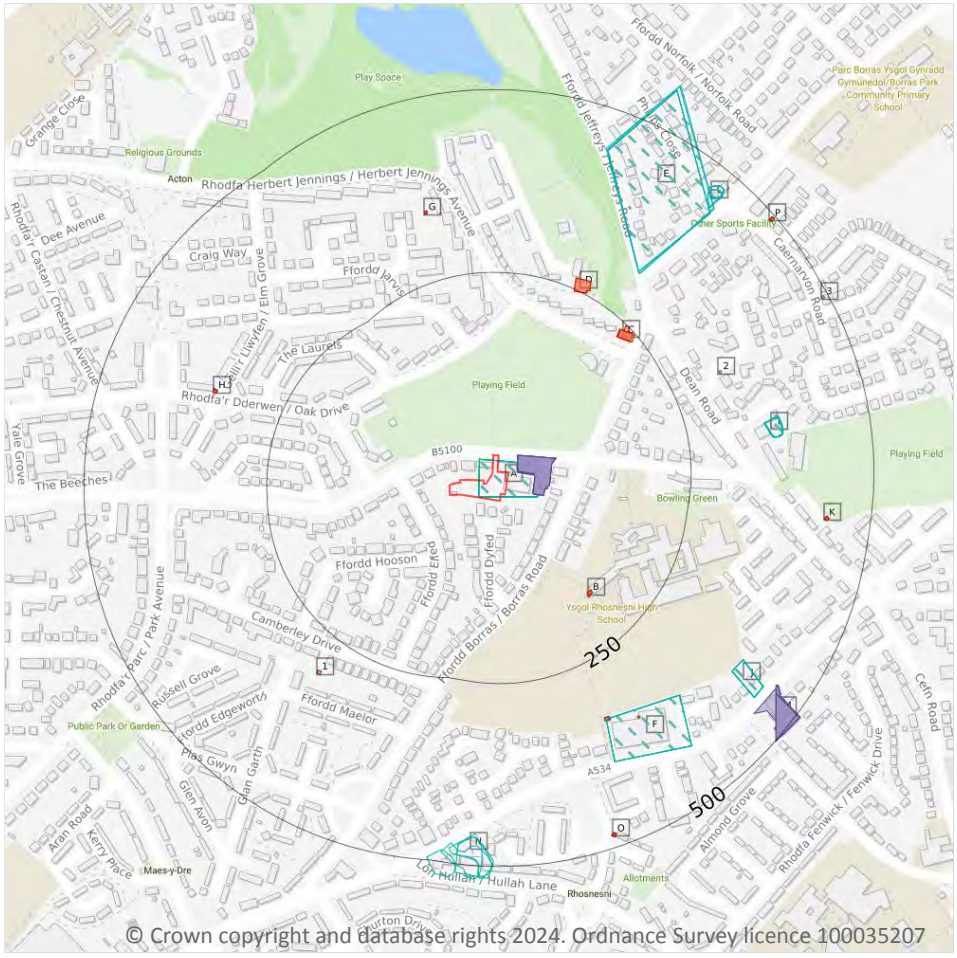
1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped



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2.1 Historical industrial land uses

Records within 500m	36

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

Features are displayed on the Past land use - un-grouped map on **page 19 >**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Unspecified Works**	**1989**	**921472**
A	**On site**	**Unspecified Works**	**1992**	**921472**
A	**On site**	**Unspecified Works**	**1980**	**921472**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Unspecified Works**	**1974**	**921472**
A	**On site**	**Unspecified Works**	**1985**	**921472**
E	315m NE	Nursery	1909	902112
E	315m NE	Nursery	1938	902112
E	316m NE	Nursery	1938	906294
E	316m NE	Nursery	1949	906294
E	316m NE	Nursery	1898	944706
F	332m SE	Unspecified Factory	1989	911788
F	332m SE	Unspecified Factory	1980	911788
F	332m SE	Unspecified Factory	1974	911788
F	332m SE	Unspecified Factory	1985	911788
I	356m E	Unspecified Pit	1938	902797
I	356m E	Unspecified Pit	1938	902797
I	357m E	Unspecified Pit	1938	1005984
I	357m E	Unspecified Pit	1949	1005984
I	357m E	Unspecified Pit	1909	870481
J	394m SE	Police Station	1989	1002710
J	394m SE	Police Station	1992	1002710
J	394m SE	Police Station	1980	1002710
J	394m SE	Police Station	1974	1002710
J	394m SE	Police Station	1985	1002710
J	394m SE	Police Station	1964	1002710
L	445m NE	Unspecified Pit	1938	895739
L	445m NE	Unspecified Pit	1949	895739
L	445m NE	Gravel Pit	1898	852165
L	456m NE	Unspecified Pit	1938	884133
L	456m NE	Unspecified Pit	1938	884133
N	457m S	Old Sand Pit	1909	897246

ID	Location	Land Use	Date	Group ID
L	458m NE	Unspecified Pit	1909	884133
N	461m S	Old Sand Pit	1938	907711
N	462m S	Old Sand Pit	1938	907711
N	472m S	Sand Pit	1898	827337
N	484m S	Unspecified Heap	1872	843962

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m **4**

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

Features are displayed on the Past land use - un-grouped map on **page 19 >**

ID	Location	Land Use	Date	Group ID
2	319m NE	Unspecified Tank	1912	118434
F	350m SE	Tanks	1960	153562
F	350m SE	Tanks	1959	153562
3	491m NE	Unspecified Tank	1958	118439

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m **30**

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

Features are displayed on the Past land use - un-grouped map on **page 19 >**

ID	Location	Land Use	Date	Group ID
B	173m SE	Electricity Substation	1994	78776
B	173m SE	Electricity Substation	1993	78776

ID	Location	Land Use	Date	Group ID
B	173m SE	Electricity Substation	1994	78776
B	176m SE	Electricity Substation	1993	77279
C	229m NE	Electricity Substation	1987	73581
C	229m NE	Electricity Substation	1990	73581
C	230m NE	Electricity Substation	1967	87572
C	242m NE	Gas Station	1990	67961
D	247m NE	Electricity Substation	1987	74091
D	247m NE	Electricity Substation	1990	74091
1	298m SW	Electricity Substation	1990	65078
F	329m SE	Electricity Substation	1994	82687
F	329m SE	Electricity Substation	1993	82687
F	329m SE	Electricity Substation	1993	82687
F	329m SE	Electricity Substation	1994	82687
G	342m N	Electricity Substation	1967	89365
G	342m N	Electricity Substation	1987	89365
G	342m N	Electricity Substation	1990	89365
H	343m W	Electricity Substation	1973	88173
H	343m W	Electricity Substation	1967	88173
H	344m W	Electricity Substation	1990	88173
K	436m E	Electricity Substation	1983	74468
K	437m E	Electricity Substation	1967	74468
K	437m E	Electricity Substation	1984	74468
O	479m S	Electricity Substation	1976	79771
O	480m S	Electricity Substation	1990	90145
O	481m S	Electricity Substation	1993	75440
P	492m NE	Electricity Substation	1987	80503
P	492m NE	Electricity Substation	1990	80503
P	492m NE	Electricity Substation	1967	80503

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	13

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

Features are displayed on the Past land use - un-grouped map on **page 19 >**

ID	Location	Land Use	Date	Group ID
A	13m E	Garage	1960	26733
A	13m E	Garage	1968	23484
A	13m E	Garage	1968	23484
A	13m E	Garage	1959	26733
A	13m E	Garage	1993	24874
A	13m E	Garage	1993	24874
A	13m E	Garage	1994	24874
A	13m E	Garage	1994	24874
M	453m SE	Garage	1960	24993
M	454m SE	Garage	1958	27645
M	454m SE	Garage	1967	24515
M	454m SE	Garage	1984	24515
M	460m SE	Garage	1983	24649

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.

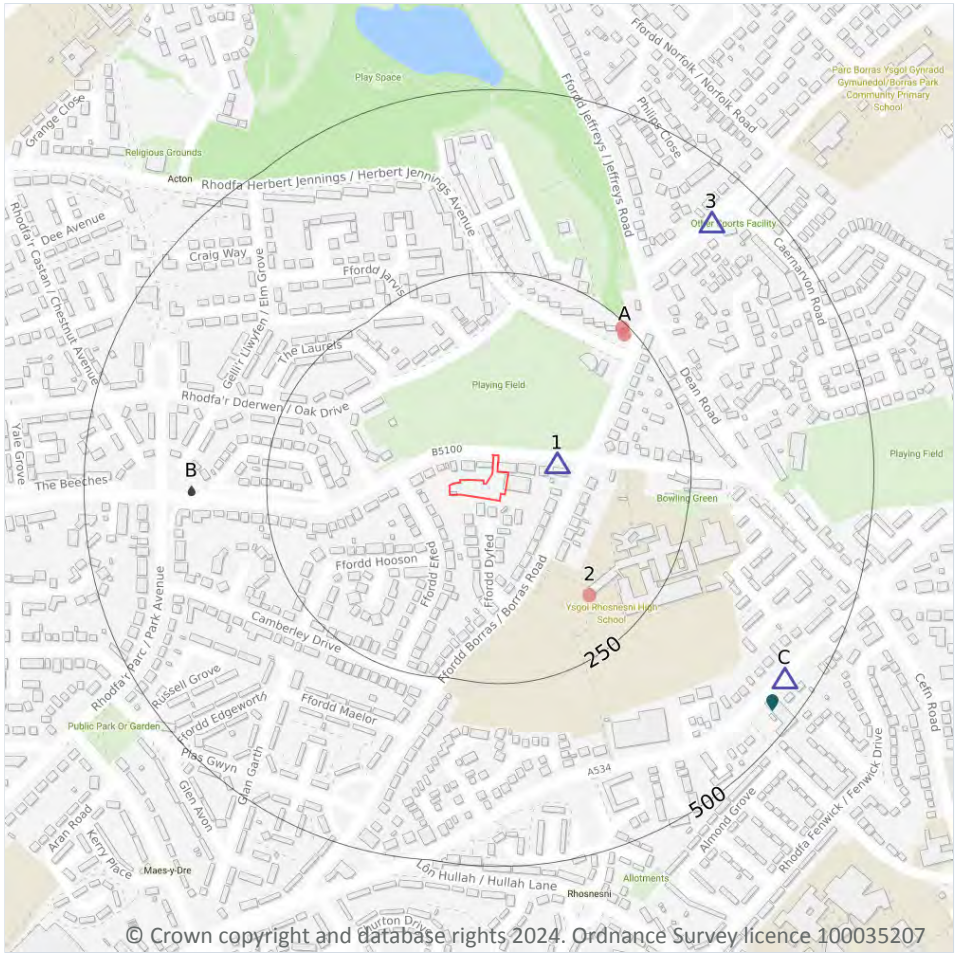
3.7 Waste exemptions

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



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Site Outline

Search buffers in metres (m)

Recent industrial land uses

Current or recent petrol stations

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

Licensed Discharges to controlled waters

4.1 Recent industrial land uses

Records within 250m	3

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 26 >**

ID	Location	Company	Address	Activity	Category
2	178m SE	Electricity Sub Station	Clwyd, LL12	Electrical Features	Infrastructure and Facilities
A	239m NE	Electricity Sub Station	Clwyd, LL12	Electrical Features	Infrastructure and Facilities
A	244m NE	Gas Governor	Clwyd, LL12	Gas Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	3

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 26 >**

ID	Location	Company	Address	LPG	Status
1	67m E	TEXACO	124, Rhosnesni Lane, Wrexham, Wrexham, LL12 7NE	Not Applicable	Obsolete
3	432m NE	OBSOLETE	Borras Park Road, Wrexham, Wrexham, LL12 7TH	Not Applicable	Obsolete
C	457m SE	NISA	194, Holt Road, Llan-Y-Pwll, Wrexham, Wrexham, LL13 9EB	No	Open

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	1

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.

Features are displayed on the Current industrial land use map on **page 26 >**

ID	Location	Address	Details	
C	464m SE	Taurus Service Station (Brooklands), 194 Holt Road, Wrexham, LL13 9EB	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified. Date of enforcement: No Enforcement Notified. Comment: No Enforcement Notified.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	2

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

Features are displayed on the Current industrial land use map on **page 26 >**

ID	Location	Address	Details	
B	354m W	WREXHAM PARK AVENUE - SSO, LL12 7BG	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: CM0175001 Permit Version: 1 Receiving Water: GWENFRO	Status: NEW CONSENT, BY APPLICATION (WRA 91, SECTION 88) Issue date: 20/10/1989 Effective Date: 20/10/1989 Revocation Date: 13/04/2009
B	354m W	WREXHAM PARK AVENUE - SSO, LL12 7BG	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: CM0175001 Permit Version: 2 Receiving Water: GWENFRO	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 14/04/2009 Effective Date: 14/04/2009 Revocation Date: 31/03/2010

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.

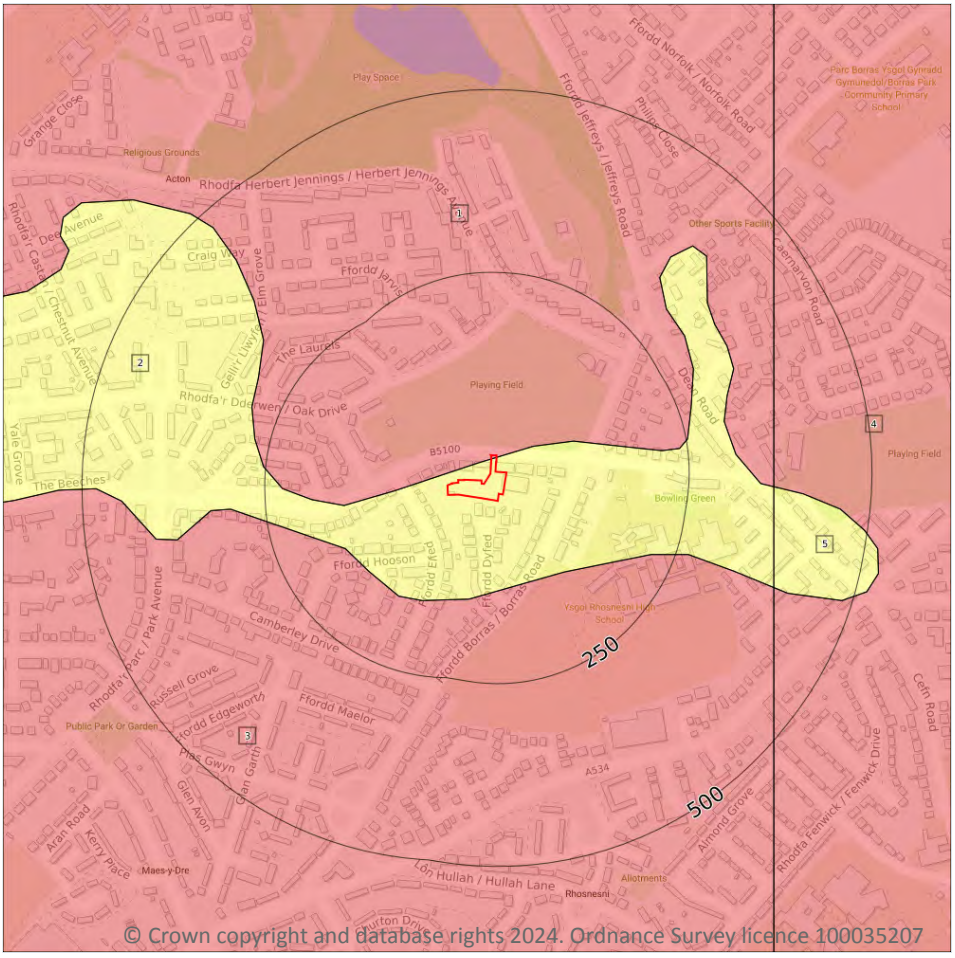
4.21 Pollution inventory radioactive waste

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



5.1 Superficial aquifer

Records within 500m	5

Aquifer status of groundwater held within superficial geology.

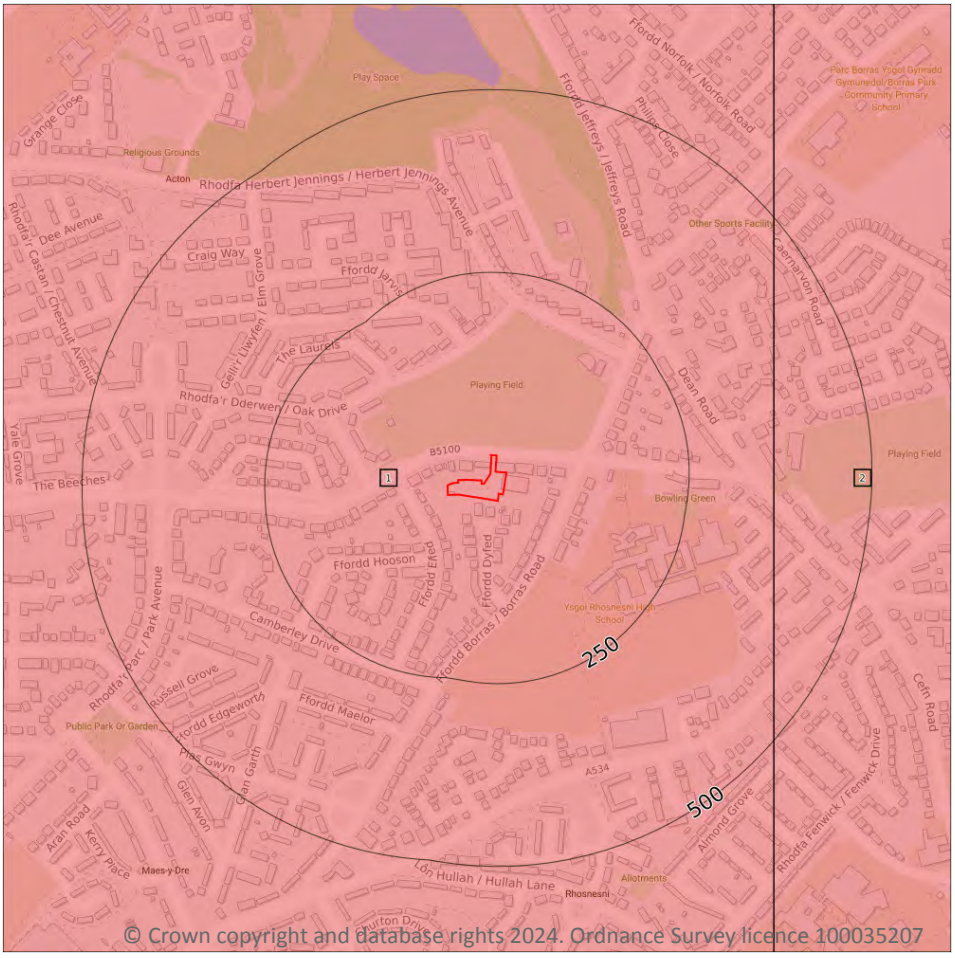
Features are displayed on the Hydrogeology map on **page 32 >**

ID	Location	Designation	Description
1	On site	Secondary 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
2	On site	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	118m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	366m 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
5	366m E	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m	2

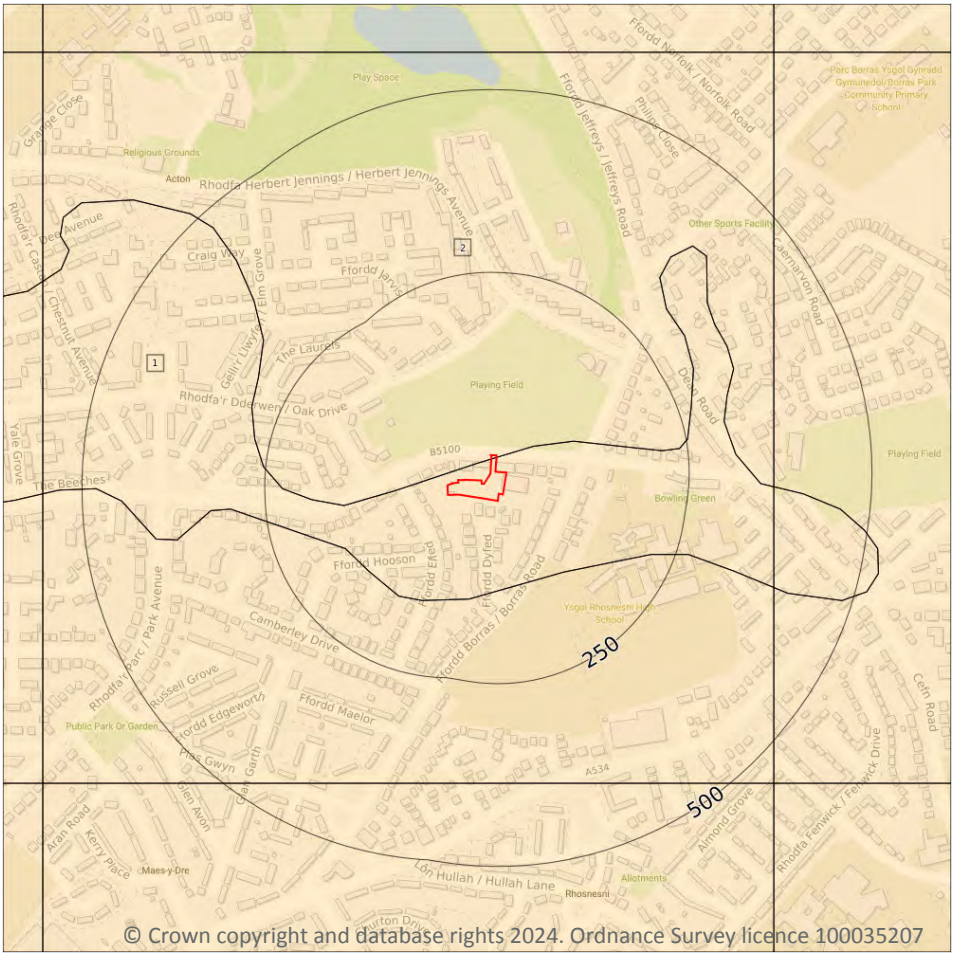
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 34 >**

ID	Location	Designation	Description
1	**On site**	**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**
2	366m 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.

Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m	2

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 36 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	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: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	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: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Secondary Flow mechanism: Well connected fractures

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones



Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	3

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 38 >**

ID	Location	Details	
-	761m S	Status: Historical Licence No: WA/067/0007/0017 Details: Dewatering - Very Low Direct Source: Salop Formation (Warwickshire Group) Point: - Data Type: Poly4 Name: - Easting: 334642 Northing: 350626	Annual Volume (m^3): 27030 Max Daily Volume (m^3): 159.12 Original Application No: - Original Start Date: Dec 16 2020 12:00AM Expiry Date: Mar 31 2021 12:00AM Issue No: - Version Start Date: - Version End Date: -
-	1861m N	Status: Historical Licence No: 24/67/8/0017 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: WELL 2 Data Type: Point Name: Jones Easting: 334640 Northing: 353310	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 09/08/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1995 Version End Date: -
-	1972m N	Status: Historical Licence No: 24/67/8/0017 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: WELL 1 Data Type: Point Name: Jones Easting: 334620 Northing: 353421	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 09/08/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1995 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 38 >**

ID	Location	Details	
-	1770m SW	Status: Historical Licence No: 24/67/7/0147 Details: Effluent/Slurry Dilution Direct Source: EAW Surface Water Point: RIVER GWENFRO Data Type: Point Name: Wrexham County Borough Easting: 333230 Northing: 350220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 24/02/1967 Expiry Date: - Issue No: 100 Version Start Date: 24/02/1967 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	**0**

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

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

5.9 Source Protection Zones

Records within 500m	**0**

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

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

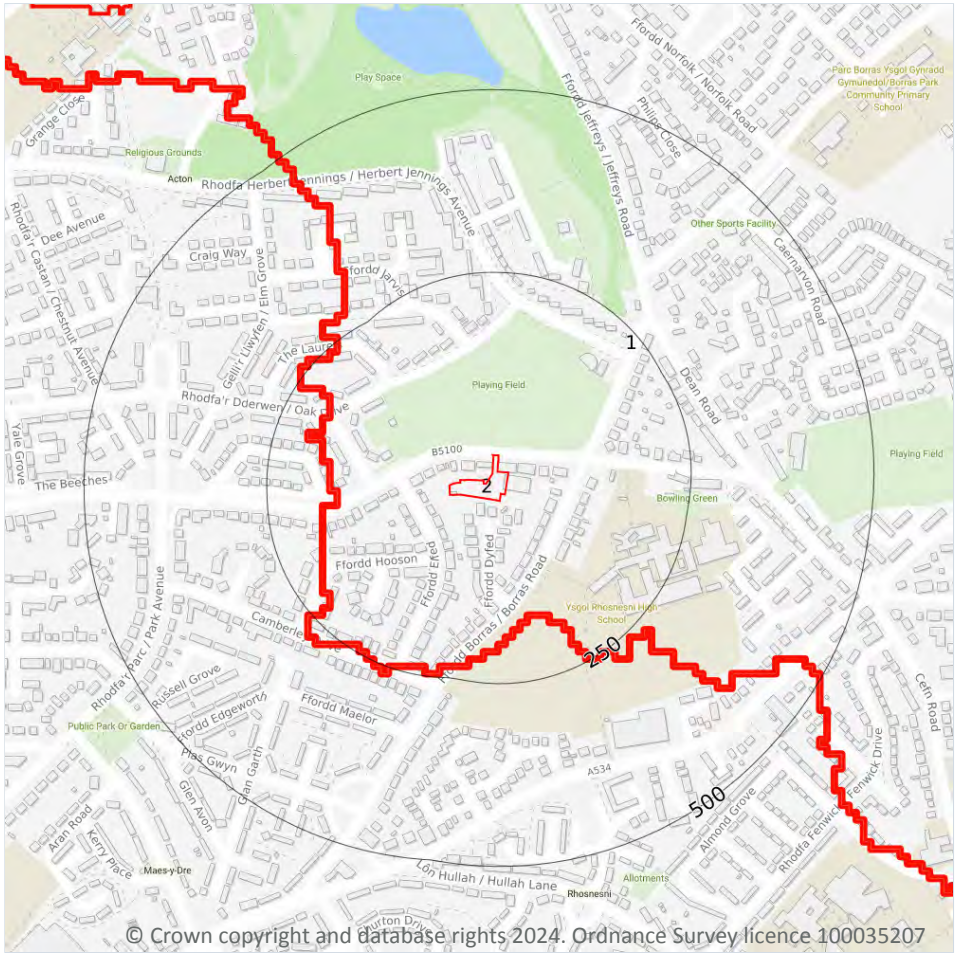
5.10 Source Protection Zones (confined aquifer)

Records within 500m	**0**

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

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

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	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 41 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River WB catchment**	**Clywedog - Dee to Gwenfro**	**GB111067052110**	**Clywedog - Dee**	**Dee**

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.

Features are displayed on the Hydrology map on **page 41 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	2241m S	River	Clywedog - Dee to Gwenfro	GB111067052110	Moderate	Fail	Moderate	2016

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.

Features are displayed on the Hydrology map on **page 41 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	**On site**	**Dee Carboniferous Coal Measures**	**GB41102G204800**	**Poor**	**Poor**	**Good**	**2017**

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

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

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding



Site Outline

Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

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

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

Features are displayed on the Surface water flooding map on **page 47 >**

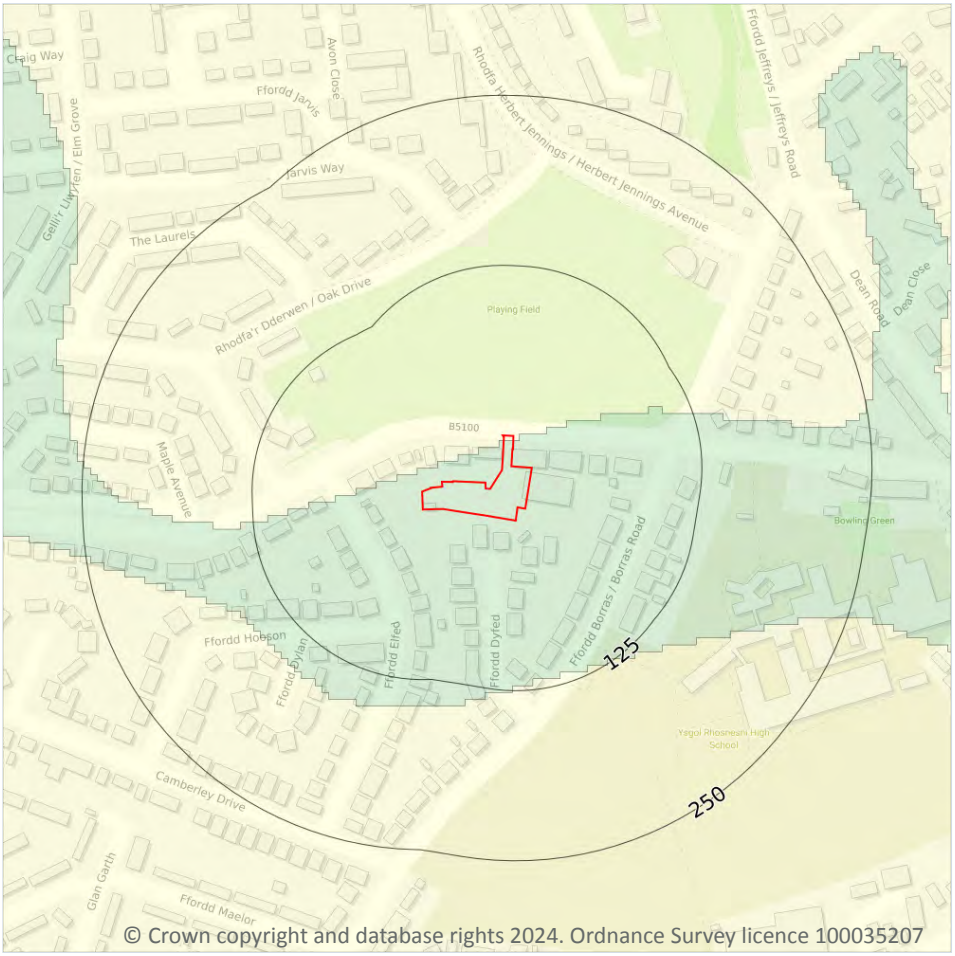
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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



Site Outline

Search buffers in metres (m)

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

9.1 Groundwater flooding

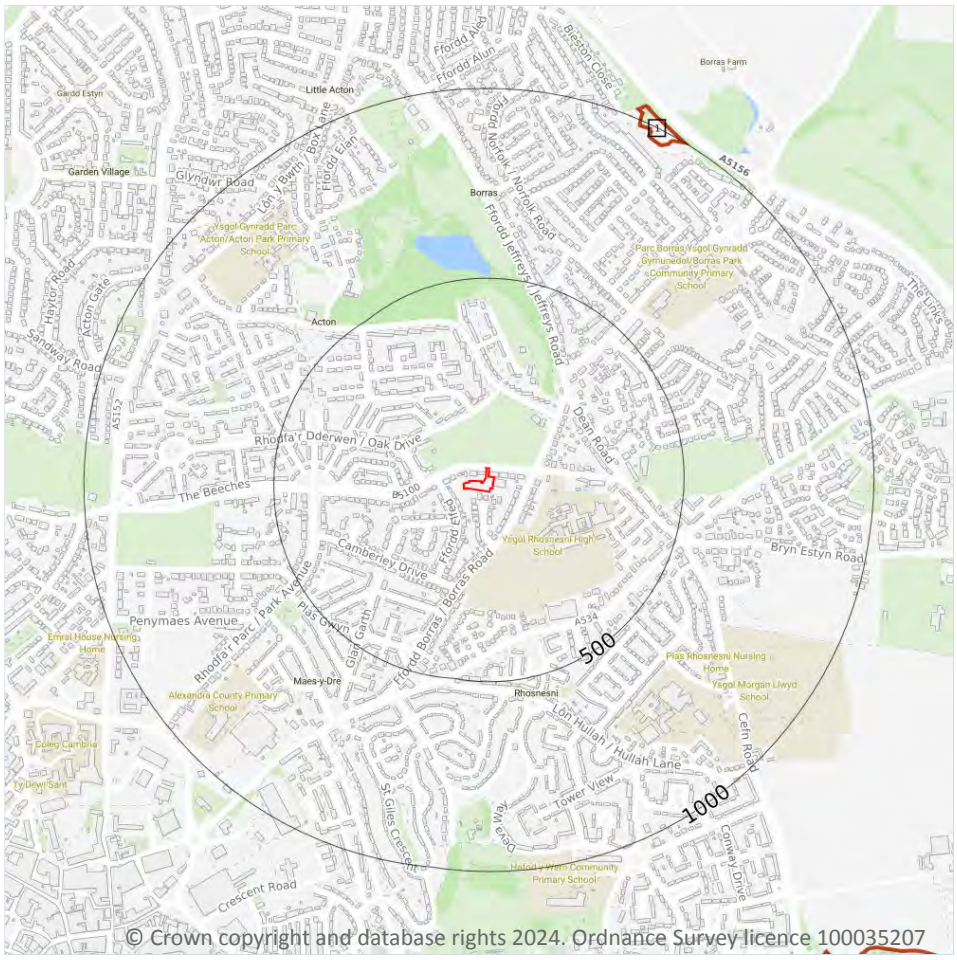
Highest risk on site	**Moderate**
Highest risk within 50m	**Moderate**

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

Features are displayed on the Groundwater flooding map on **page 49 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



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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	8

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.

Features are displayed on the Environmental designations map on **page 50 >**

ID	Location	Name	Woodland Type
1	964m NE	Unknown	Ancient Semi Natural Woodland
-	1382m N	Unknown	Restored Ancient Woodland Site
2	1500m SE	Unknown	Ancient Semi Natural Woodland
-	1542m E	Unknown	Ancient Semi Natural Woodland
-	1582m N	Unknown	Restored Ancient Woodland Site
-	1658m N	Unknown	Restored Ancient Woodland Site
-	1915m E	Unknown	Ancient Semi Natural Woodland
-	1993m SE	Unknown	Ancient Semi Natural Woodland

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.

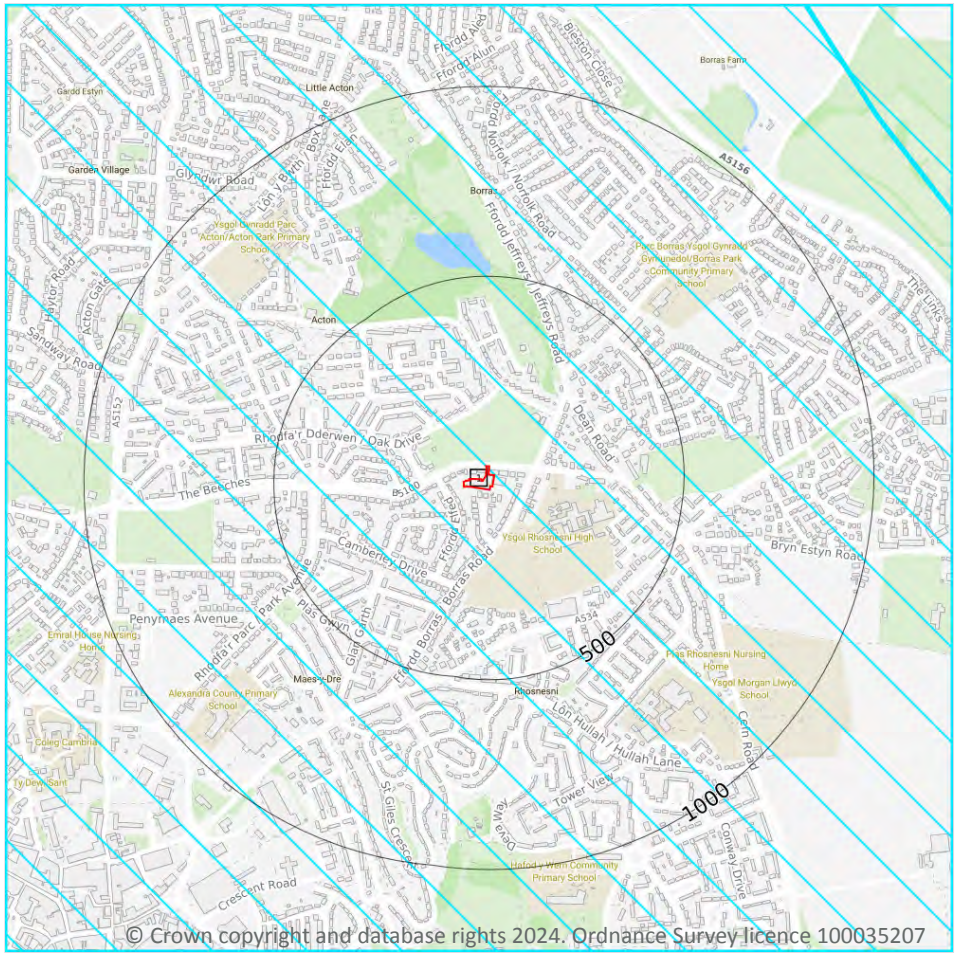
10.16 Nitrate Vulnerable Zones

Records within 2000m	0

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

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

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

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 55 >**

ID	Location	Type of developments requiring consultation
1	On site	**Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.**

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

12.1 Agricultural Land Classification

Records within 250m	0

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.

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

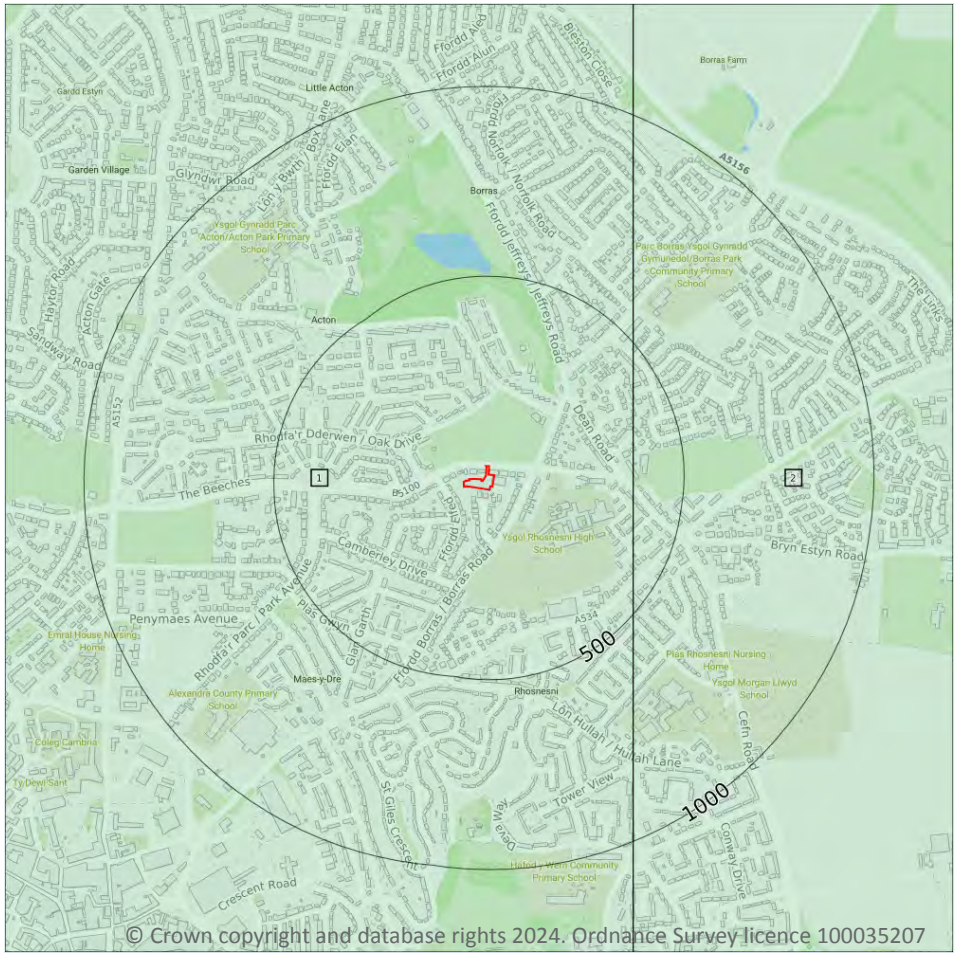
13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



14.1 10k Availability

Records within 500m	2

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 62 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**SJ35SW**
2	366m E	Full	Full	Full	No coverage	SJ35SE

This data is sourced from the British Geological Survey.

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

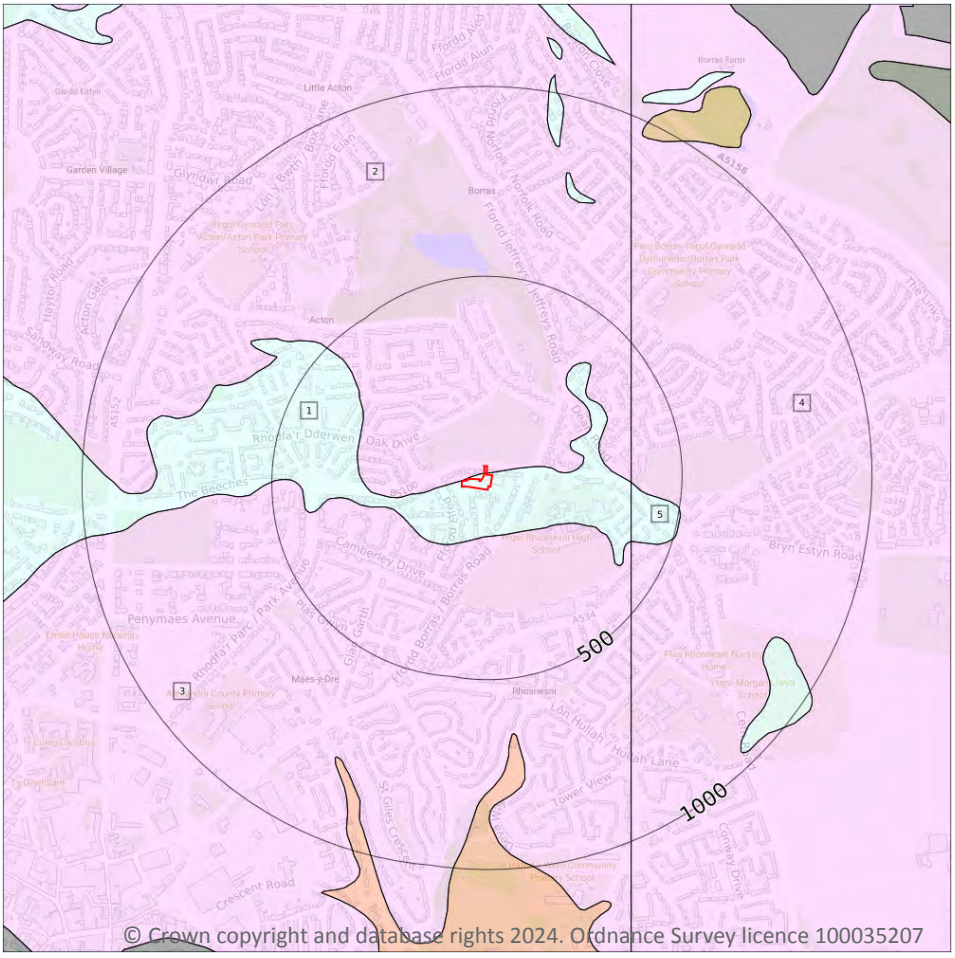
14.2 Artificial and made ground (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m	5

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 64 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILL-DMTN**	**Till - Diamicton**	**Diamicton**
2	**On site**	**GFDU-XSV**	**Glaciofluvial Deposits - Sand And Gravel**	**Sand And Gravel**
3	122m S	GFDU-XSV	Glaciofluvial Deposits - Sand And Gravel	Sand And Gravel
4	366m E	GFDU-XSV	Glaciofluvial Deposits - Sand And Gravel	Sand And Gravel

ID	Location	LEX Code	Description	Rock description
5	366m E	TILL-DMTN	Till - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

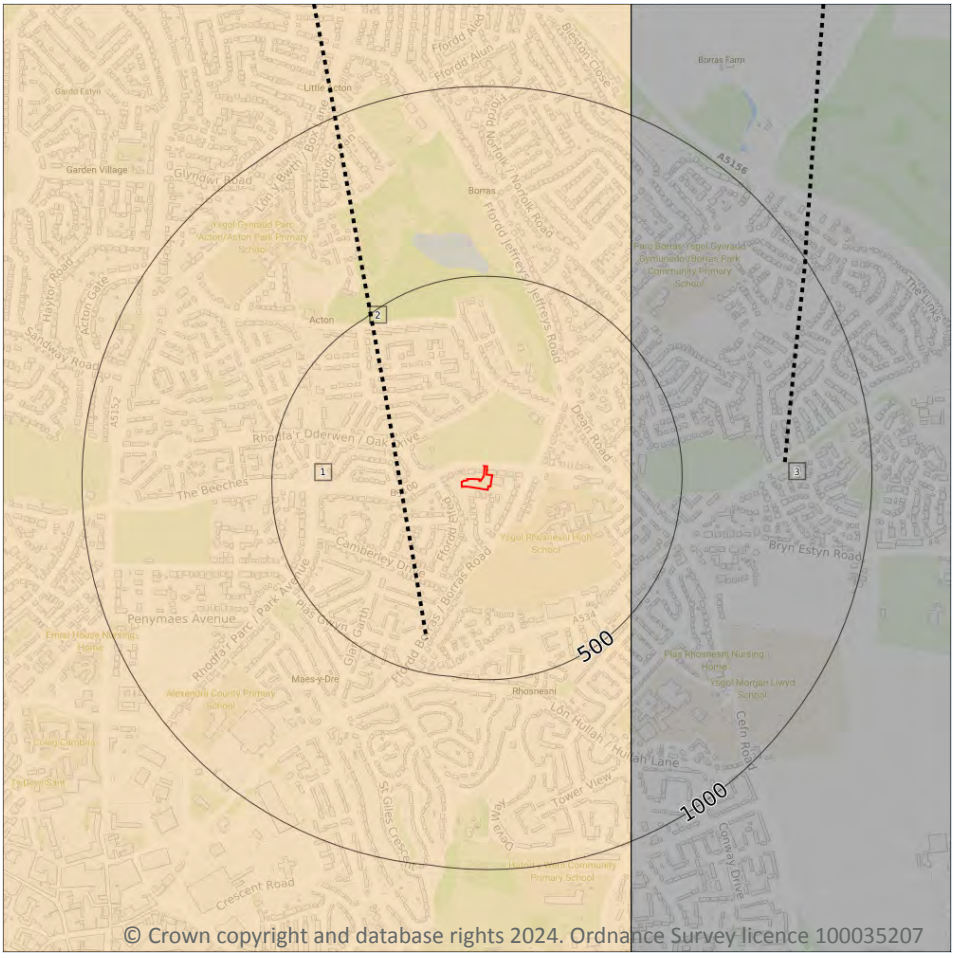
14.4 Landslip (10k)

Records within 500m	**0**

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m	2

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 66 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**SAL-MDSC**	**Salop Formation - Mudstone, Sandstone And Conglomerate**	**Cisuralian Epoch - Westphalian D Sub-age**
3	366m E	SAL-MDST	Salop Formation - Mudstone	Cisuralian Epoch - Westphalian D Sub-age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	**1**

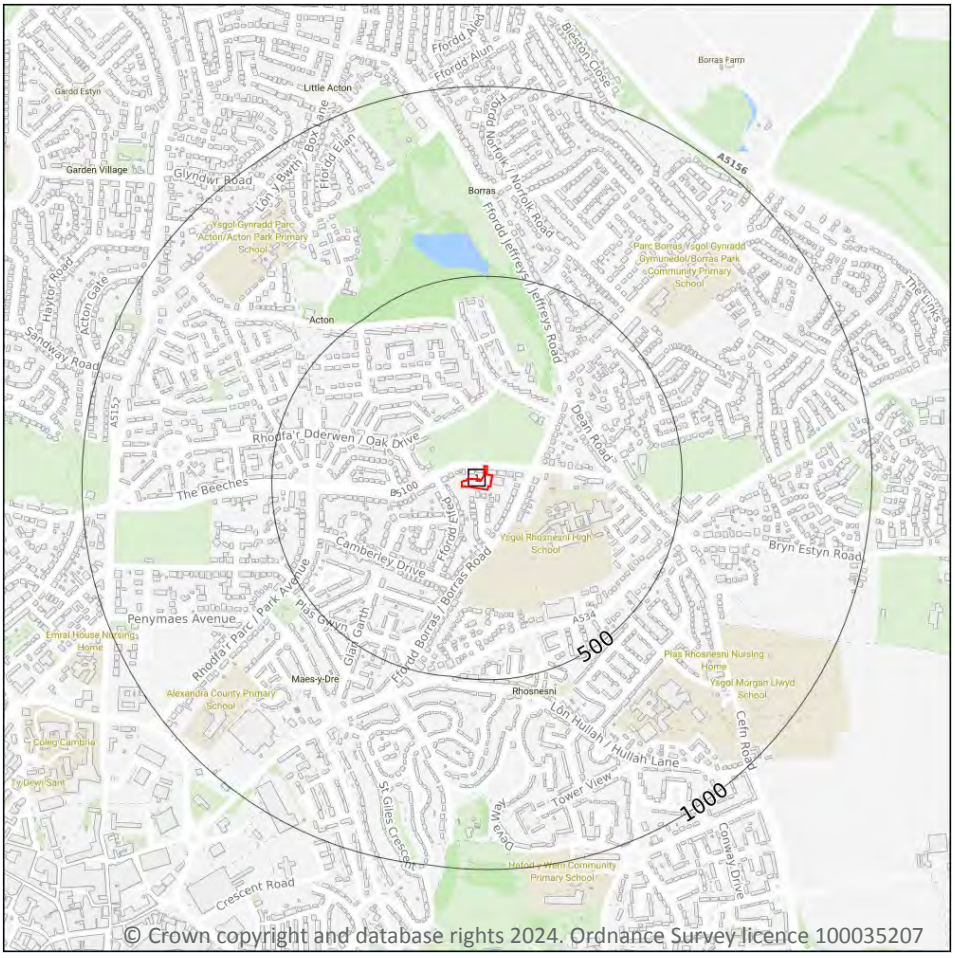
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 66 >**

ID	Location	Category	Description
2	159m W	FAULT	Normal fault, inferred

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



15.1 50k Availability

Records within 500m	1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 68 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW121_wrexham_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.

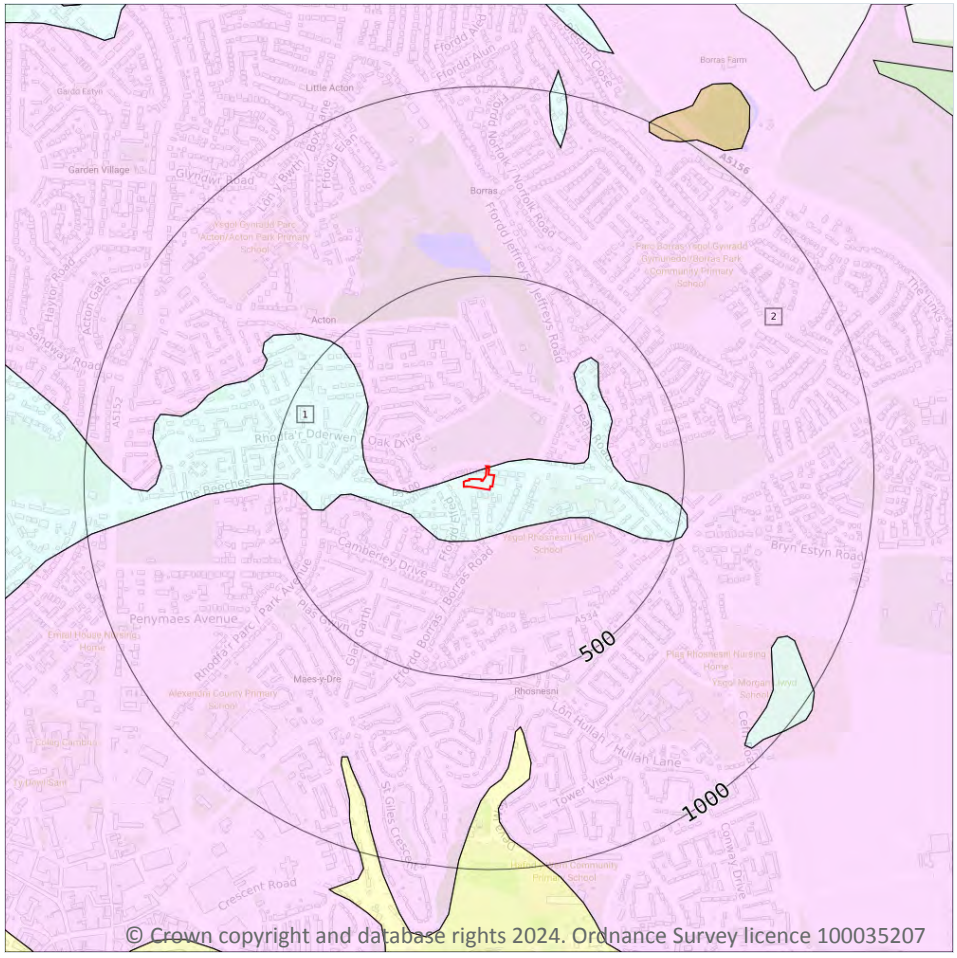
15.3 Artificial ground permeability (50k)

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 **2**

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 70 >**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	On site	GFSDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	2

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

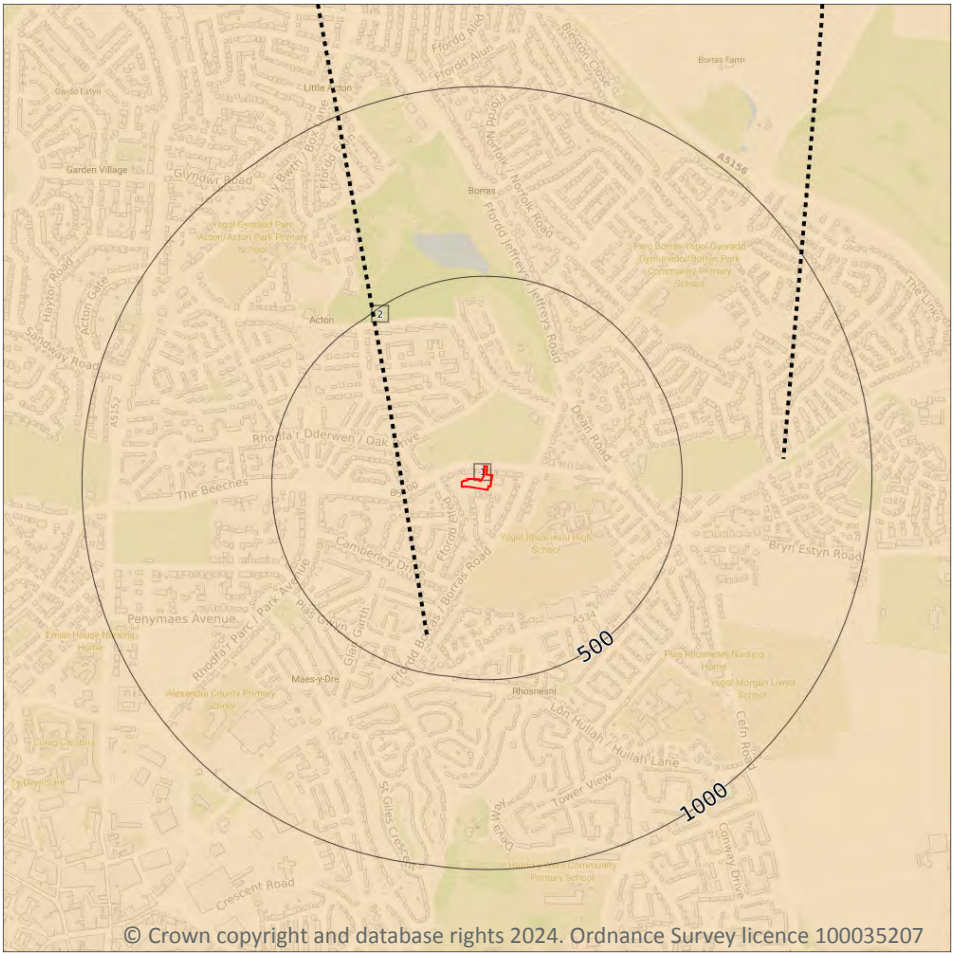
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 72 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**SAL-MDSC**	**SALOP FORMATION - MUDSTONE, SANDSTONE AND CONGLOMERATE**	**WESTPHALIAN**

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Moderate**	**Low**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 72 >**

ID	Location	Category	Description
2	154m W	FAULT	Fault, inferred, displacement unknown

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m **3**

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

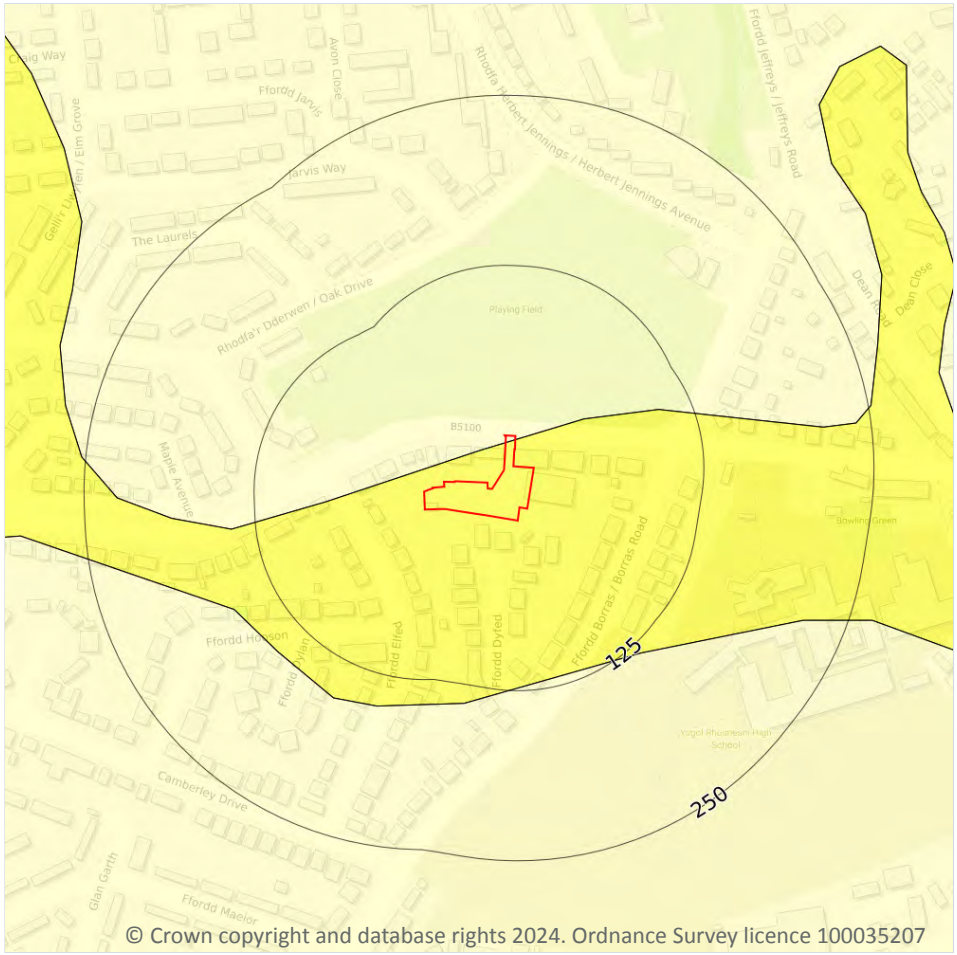
Features are displayed on the Boreholes map on **page 74 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	216m SE	334790 351250	WREXHAM ST DAVIDS 5	9.14	N	12826320 ↗
2	223m SE	334820 351280	WREXHAM ST DAVIDS 6	7.77	N	12826321 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
3	248m SE	334830 351250	WREXHAM ST DAVIDS 4	7.77	N	12826319 ↗

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m	2

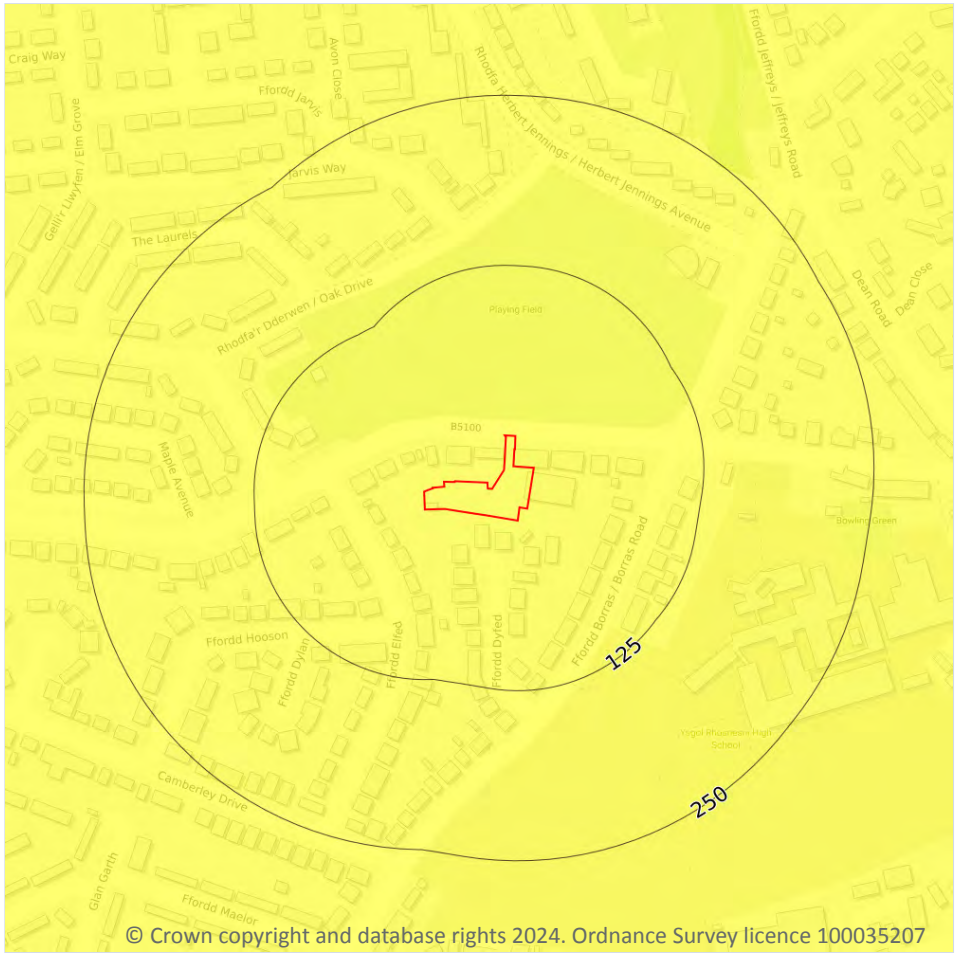
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

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

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

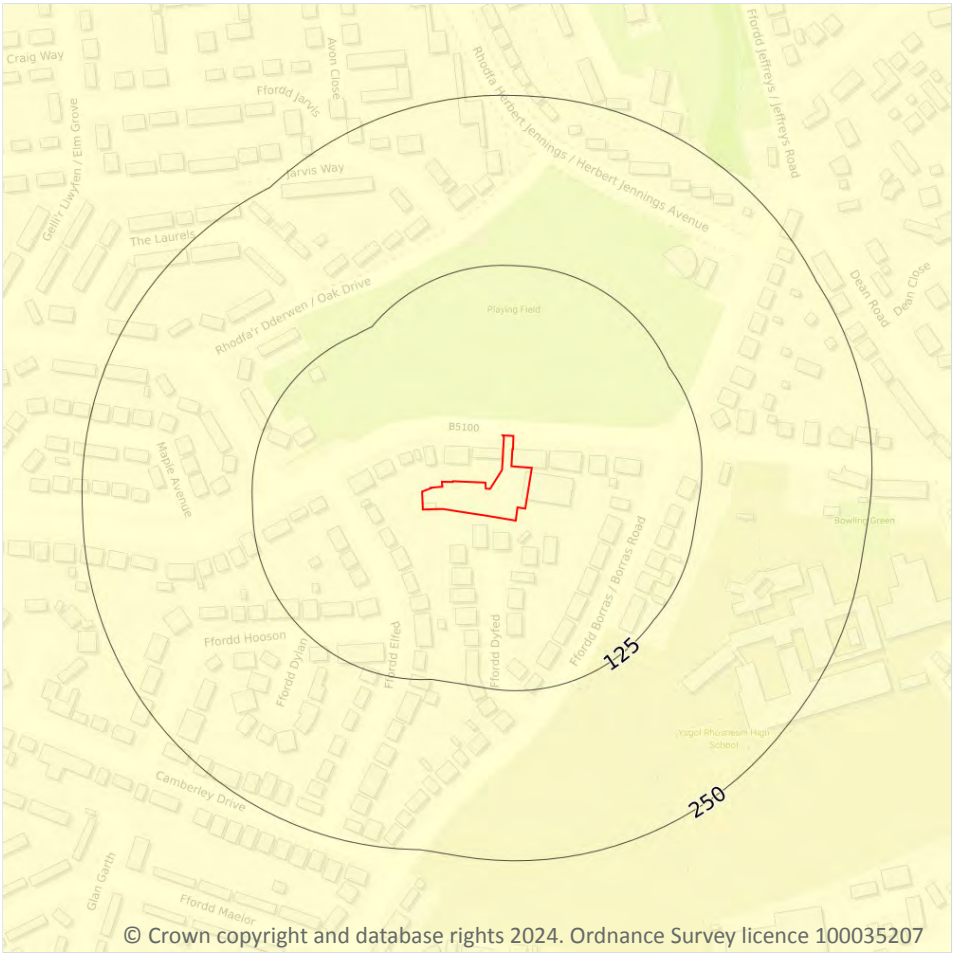
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

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

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

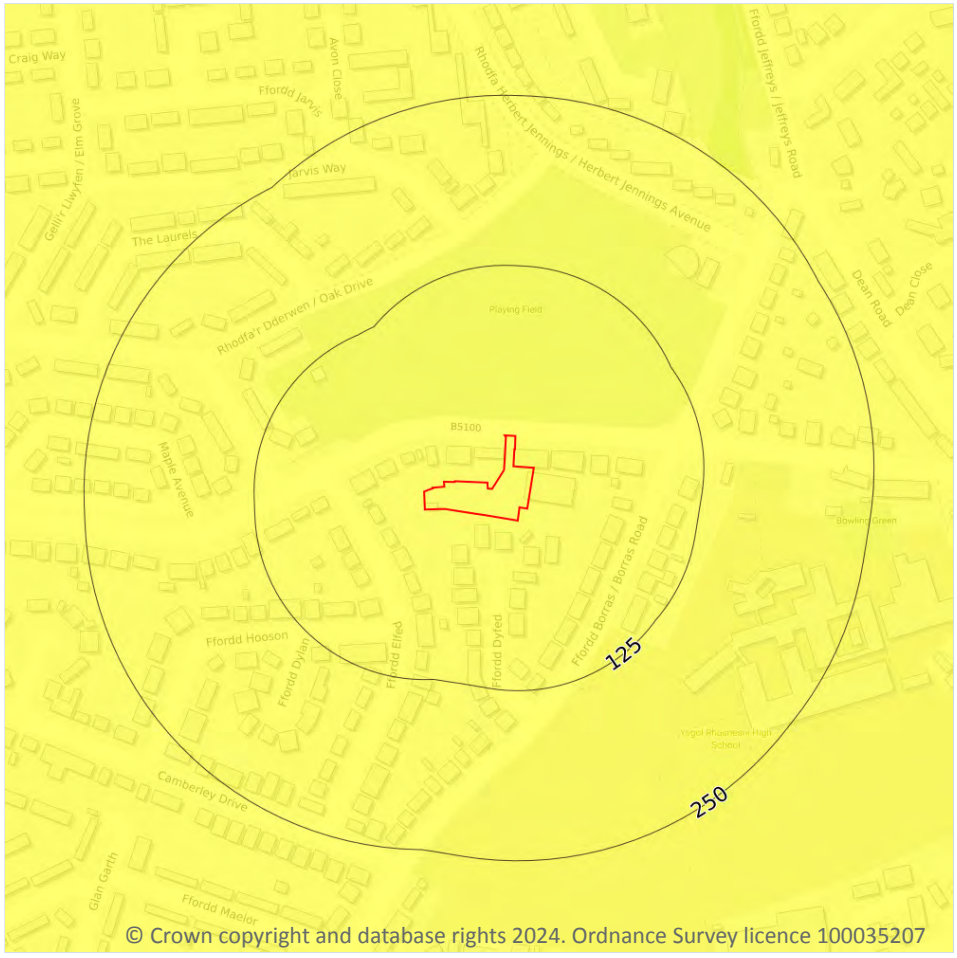
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

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

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

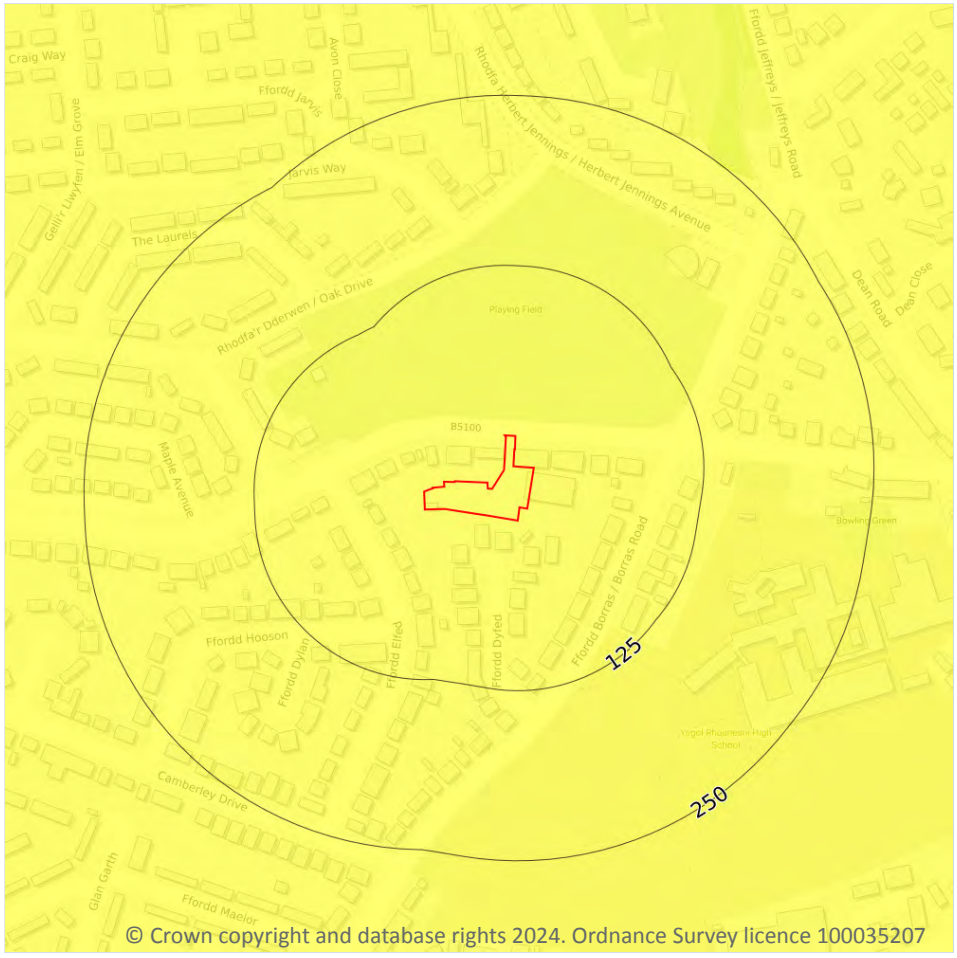
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

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

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

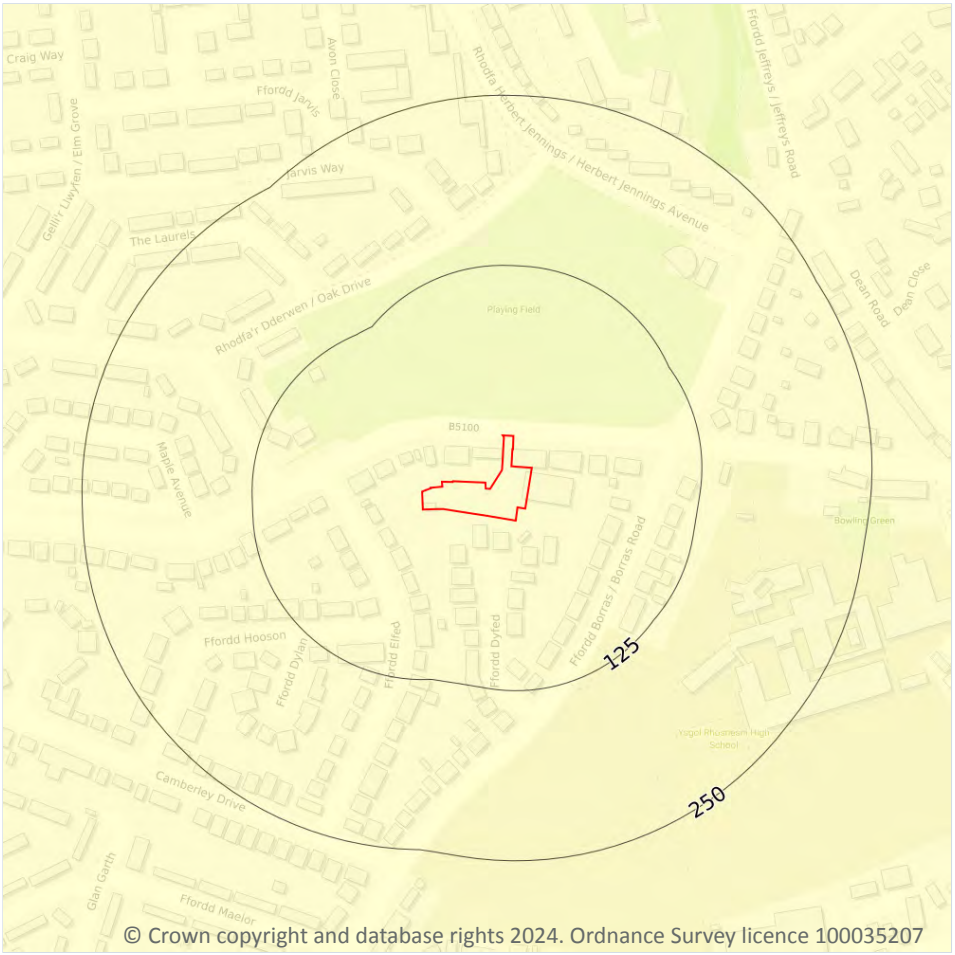
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

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

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

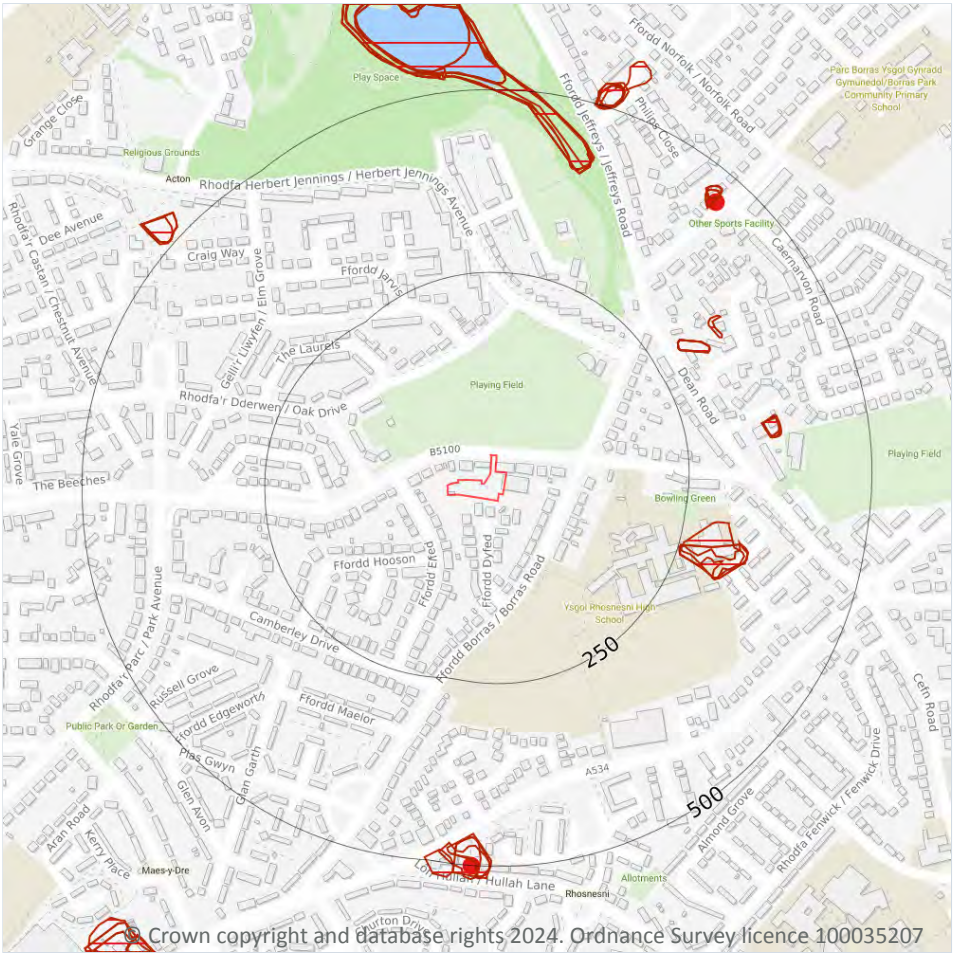
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

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

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

This data is sourced from the British Geological Survey.

18 Mining and ground workings



Site Outline

Search buffers in metres (m)

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

Non Coal Mining

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

18.1 BritPits

Records within 500m	1

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

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

ID	Location	Details	Description
E	459m NE	Name: Apton Nursery Gravel Pit Address: WREXHAM, Denbighshire 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	1

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

Location	Details
On site	**The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.**

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

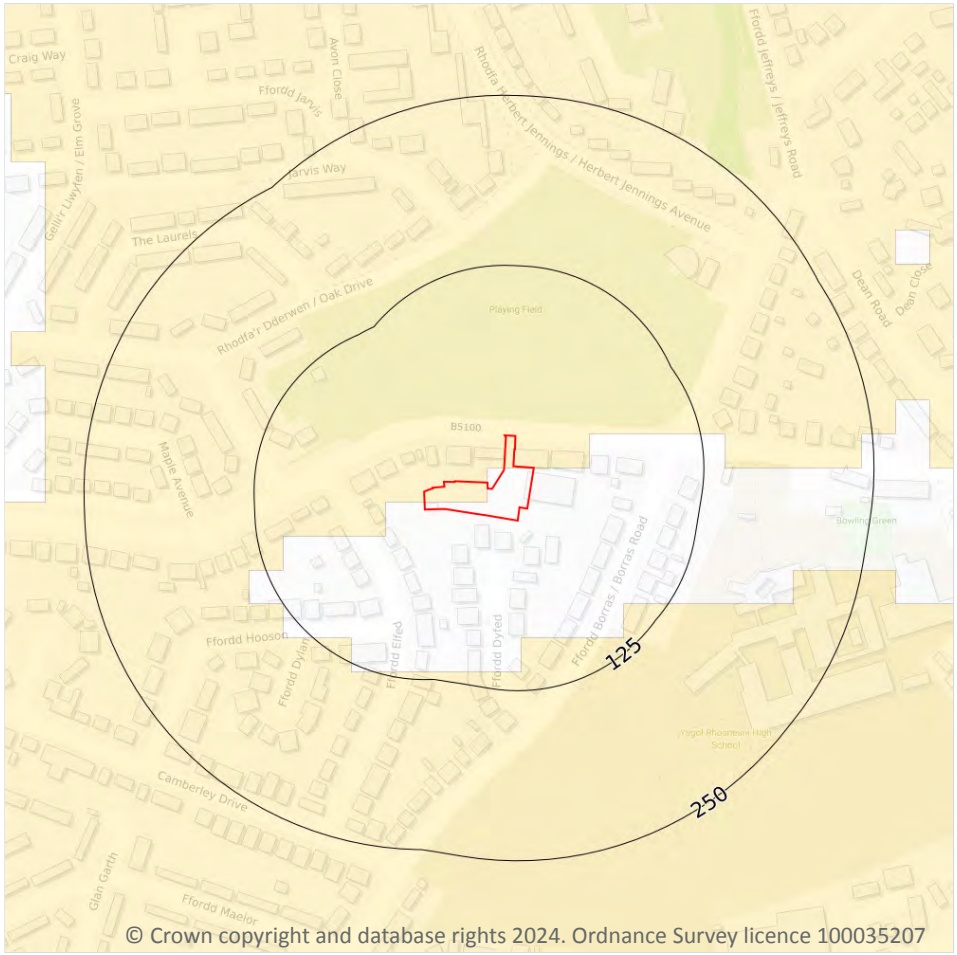
This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

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



Site Outline

Search buffers in metres (m)

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

20.1 Radon

Records on site	2

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

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

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

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 1% and 3%**	**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	2

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 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.

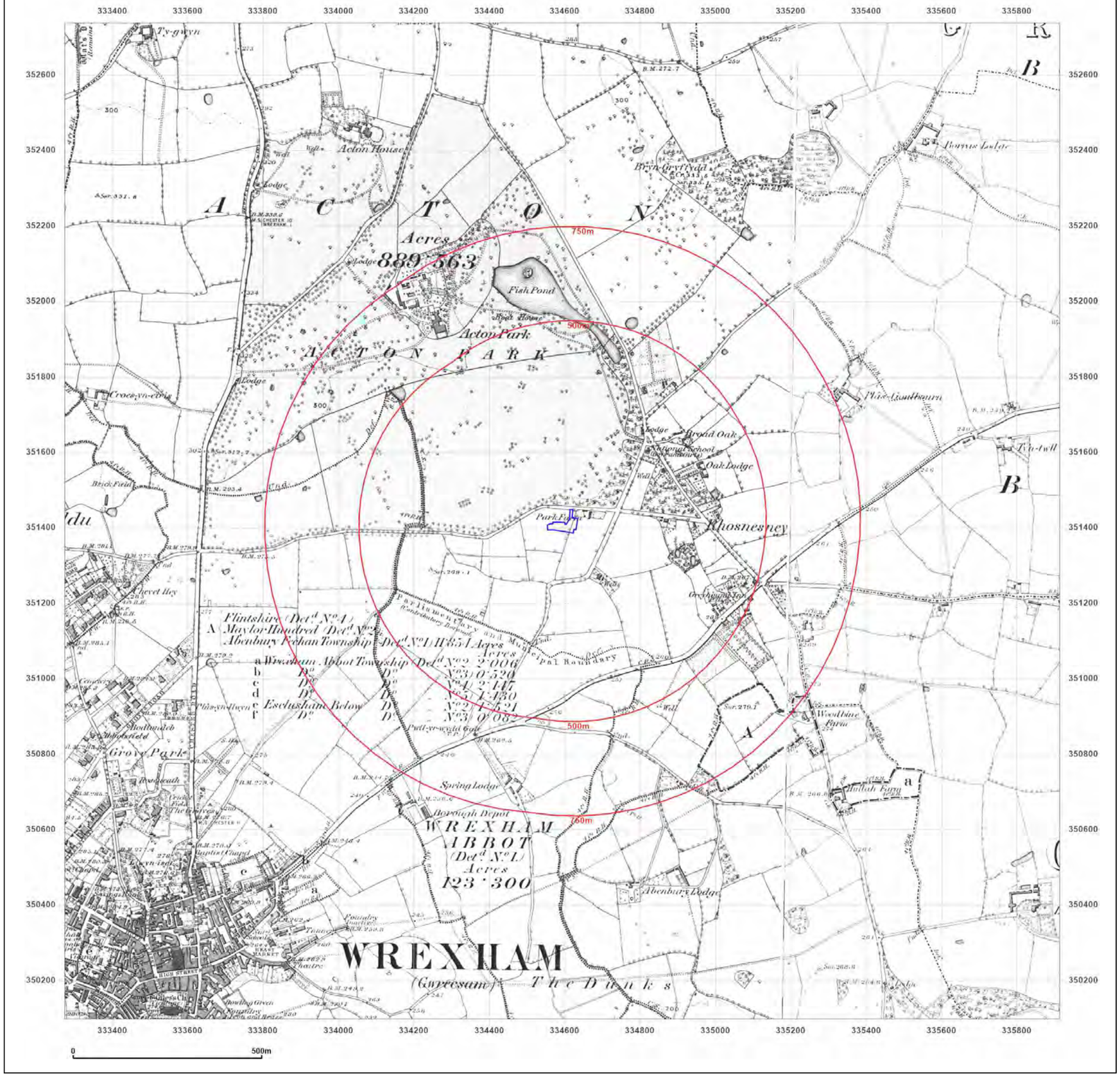
This data is sourced from HS2 ltd.

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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Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

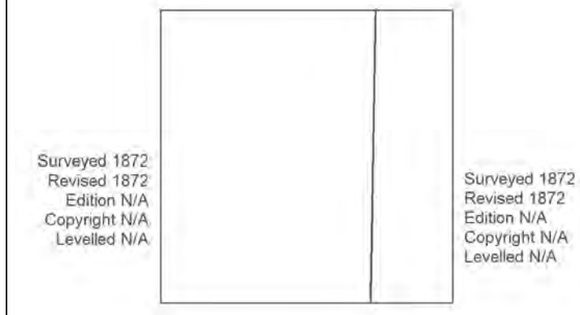
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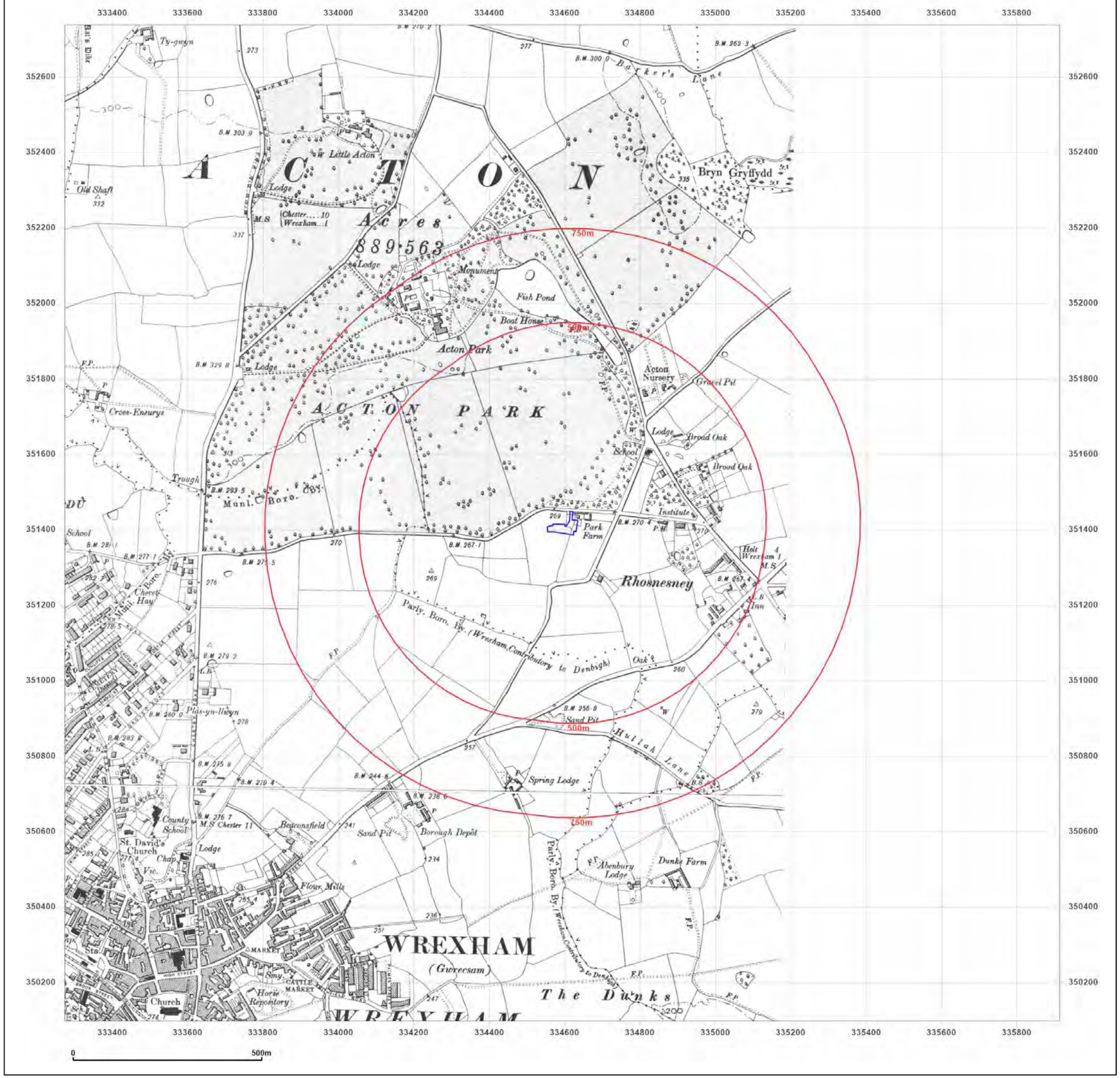
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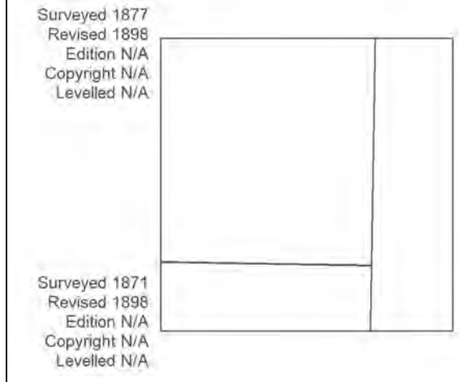
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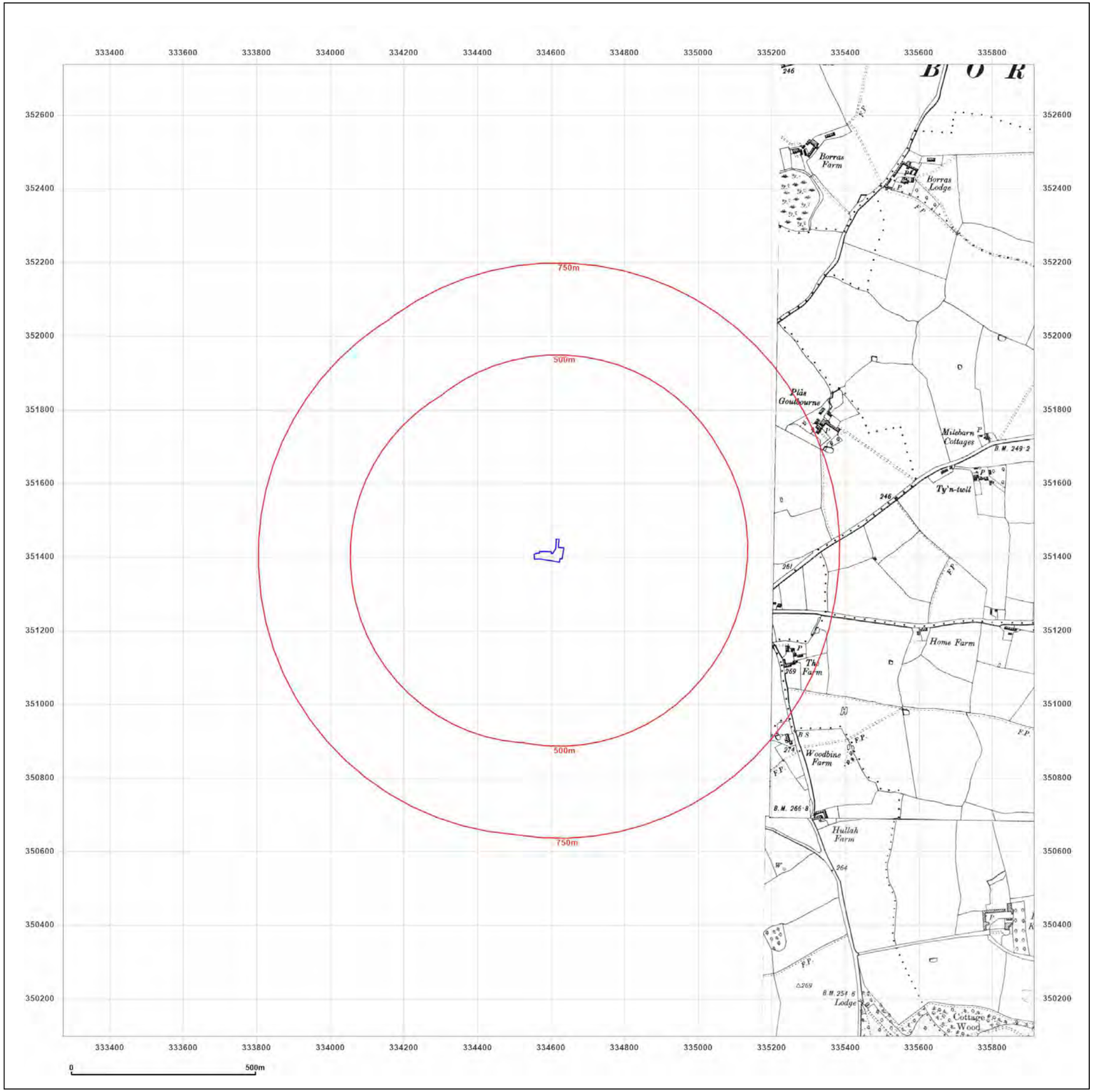
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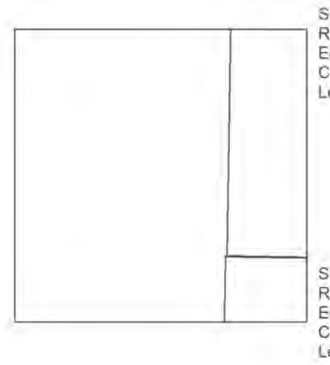
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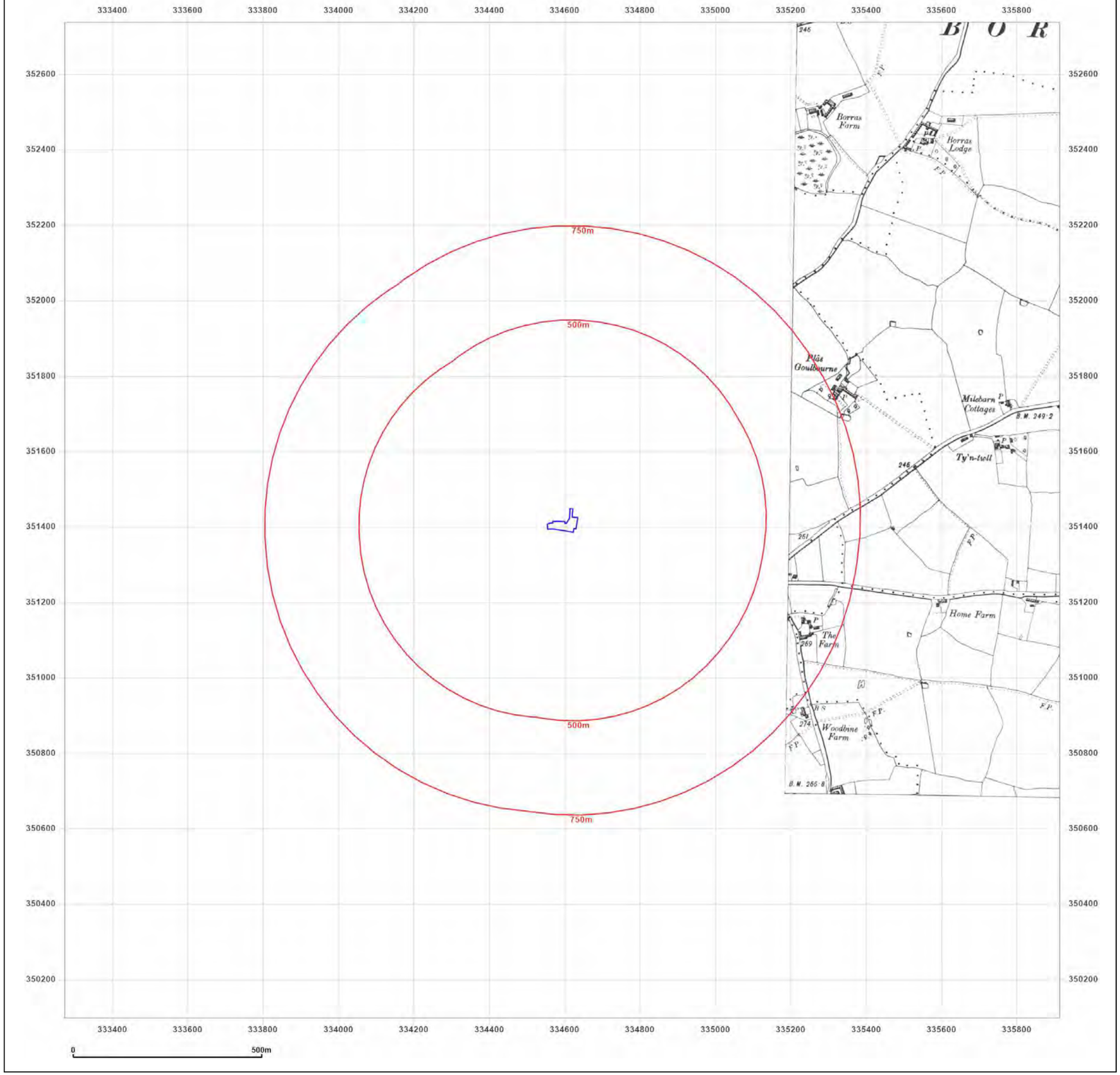
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Grid Ref: 334593, 351417

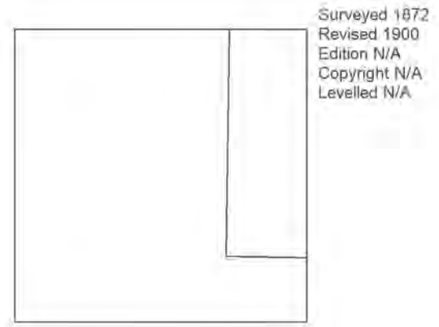
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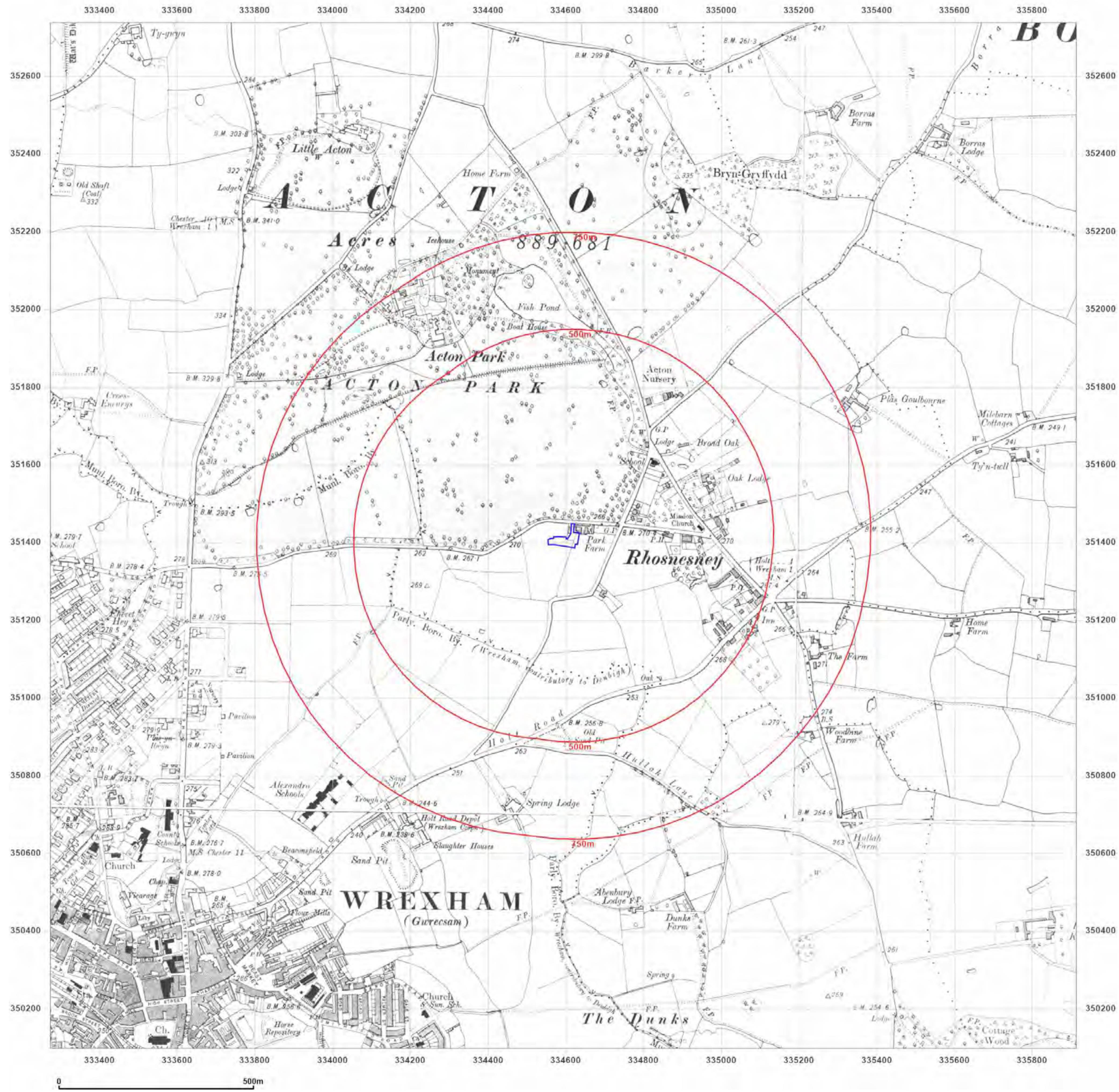
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Map Name: County Series

Map date: **1909-1914**

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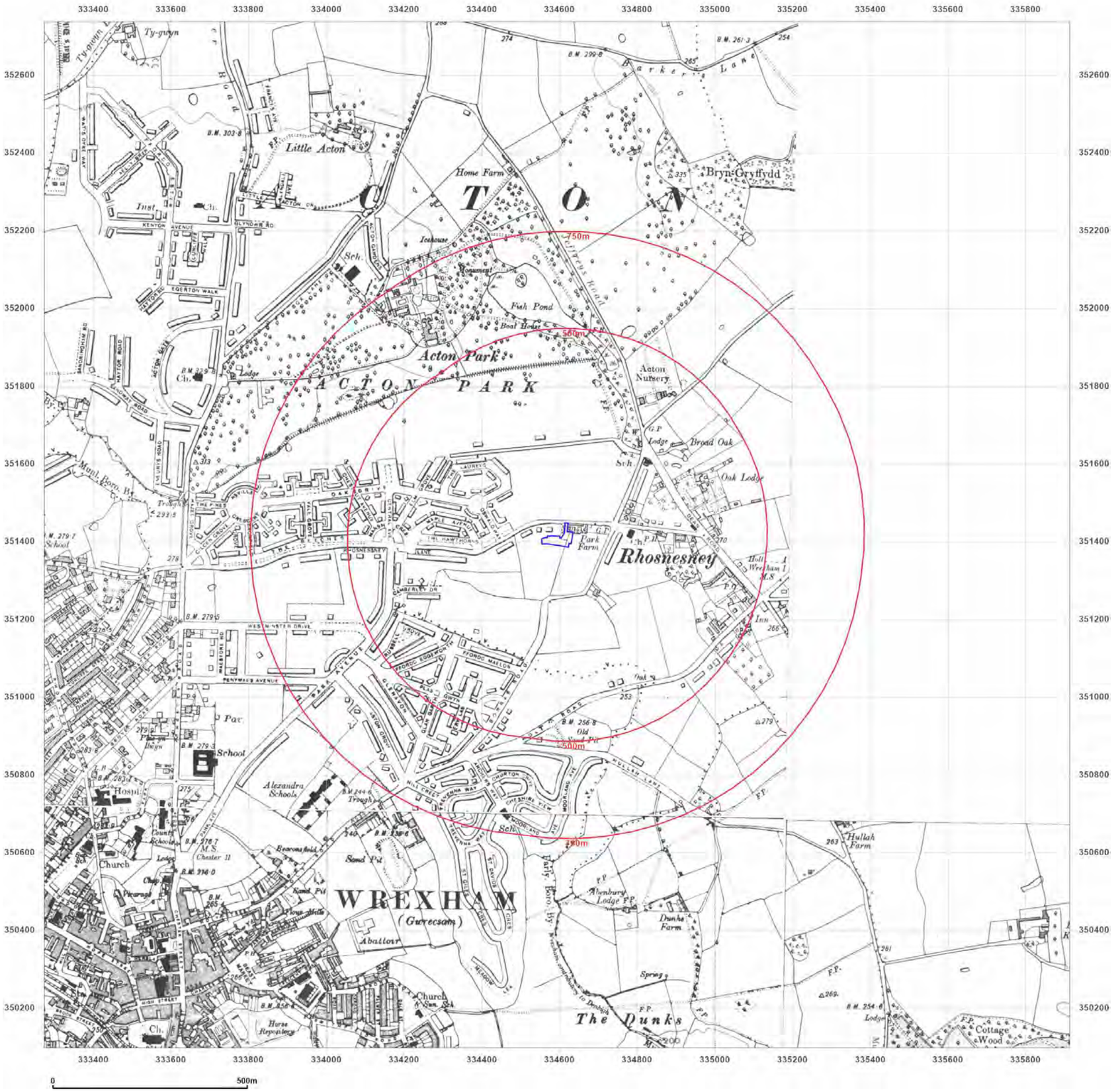
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Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: County Series

Map date: **1938**

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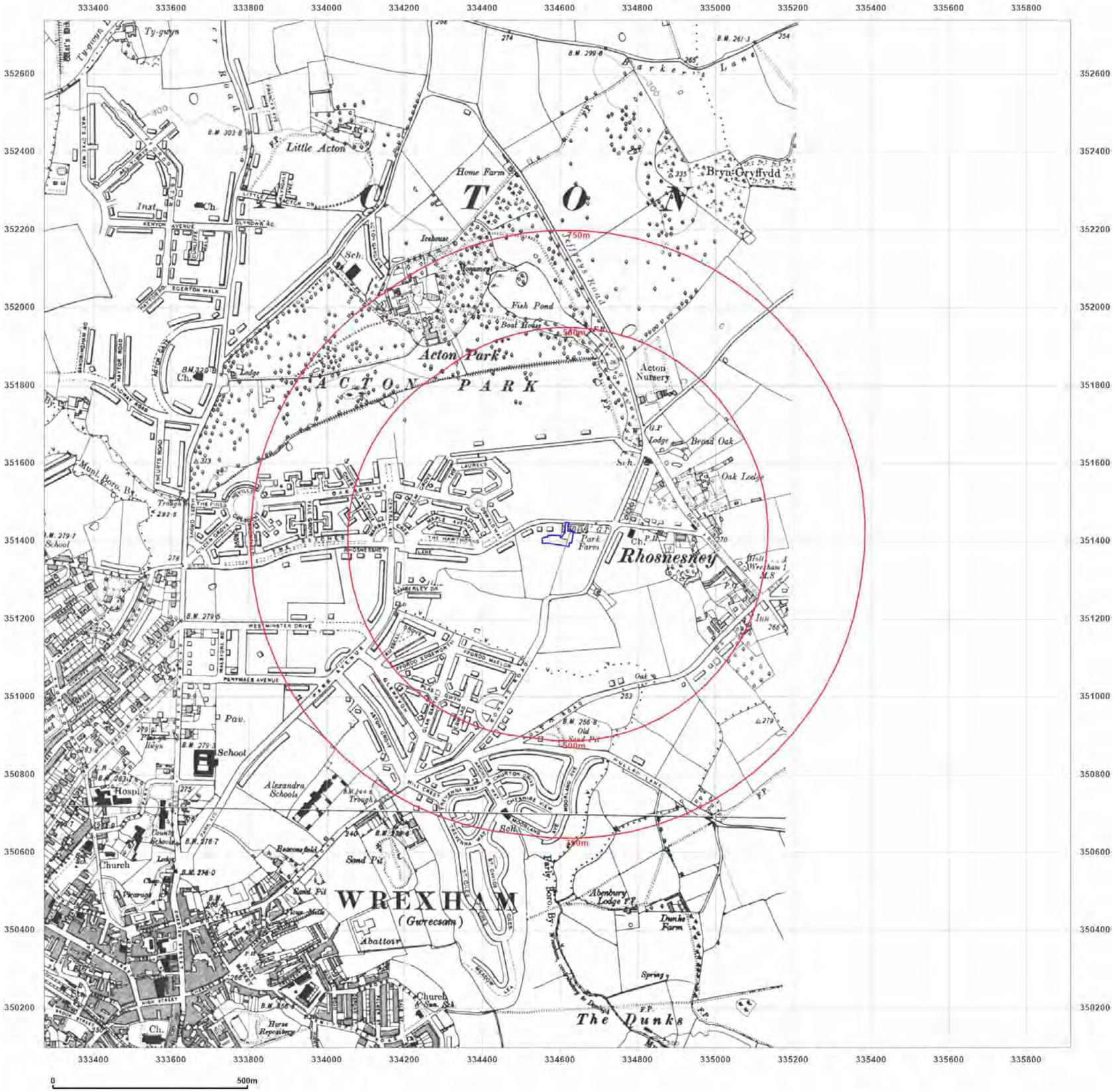
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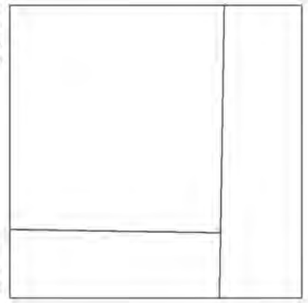
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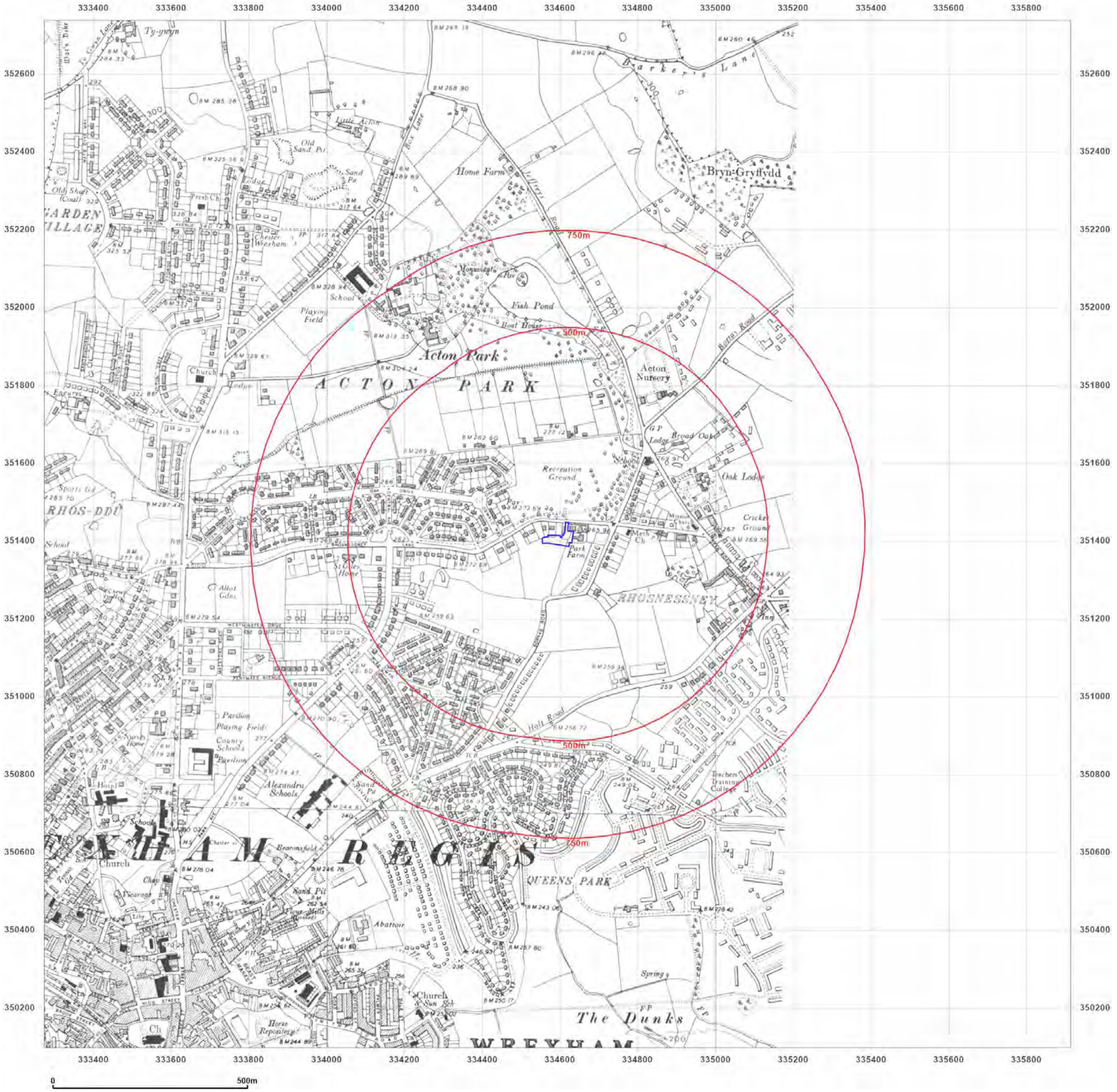
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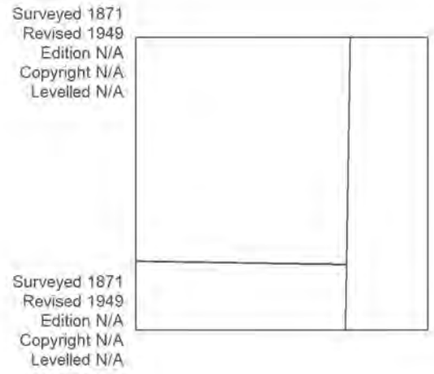
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Printed at: 1:10,560

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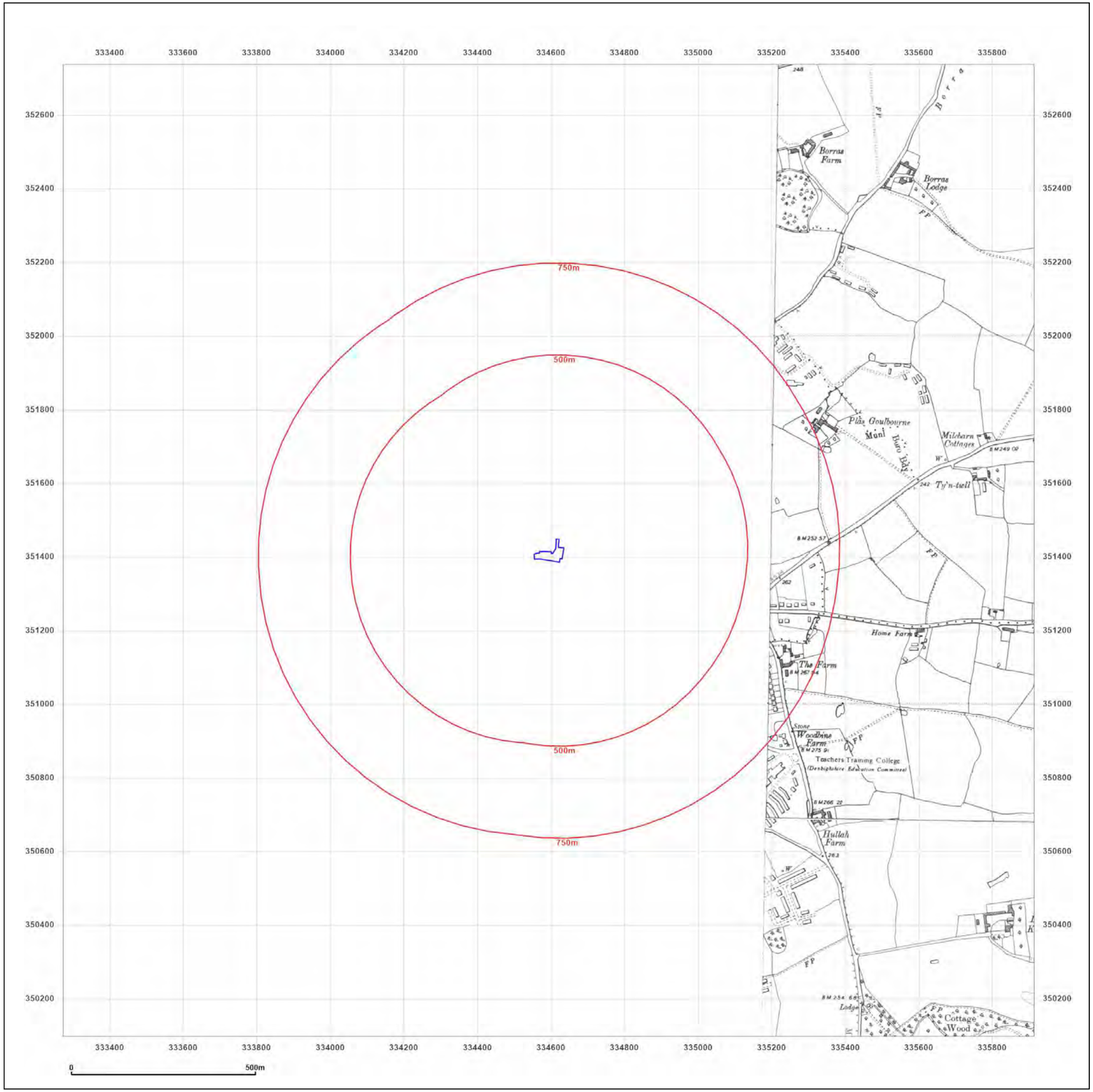
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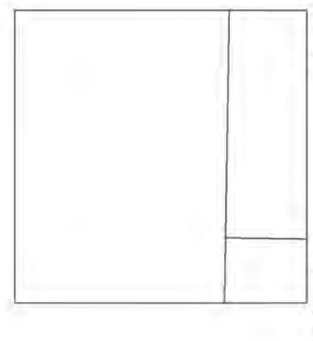
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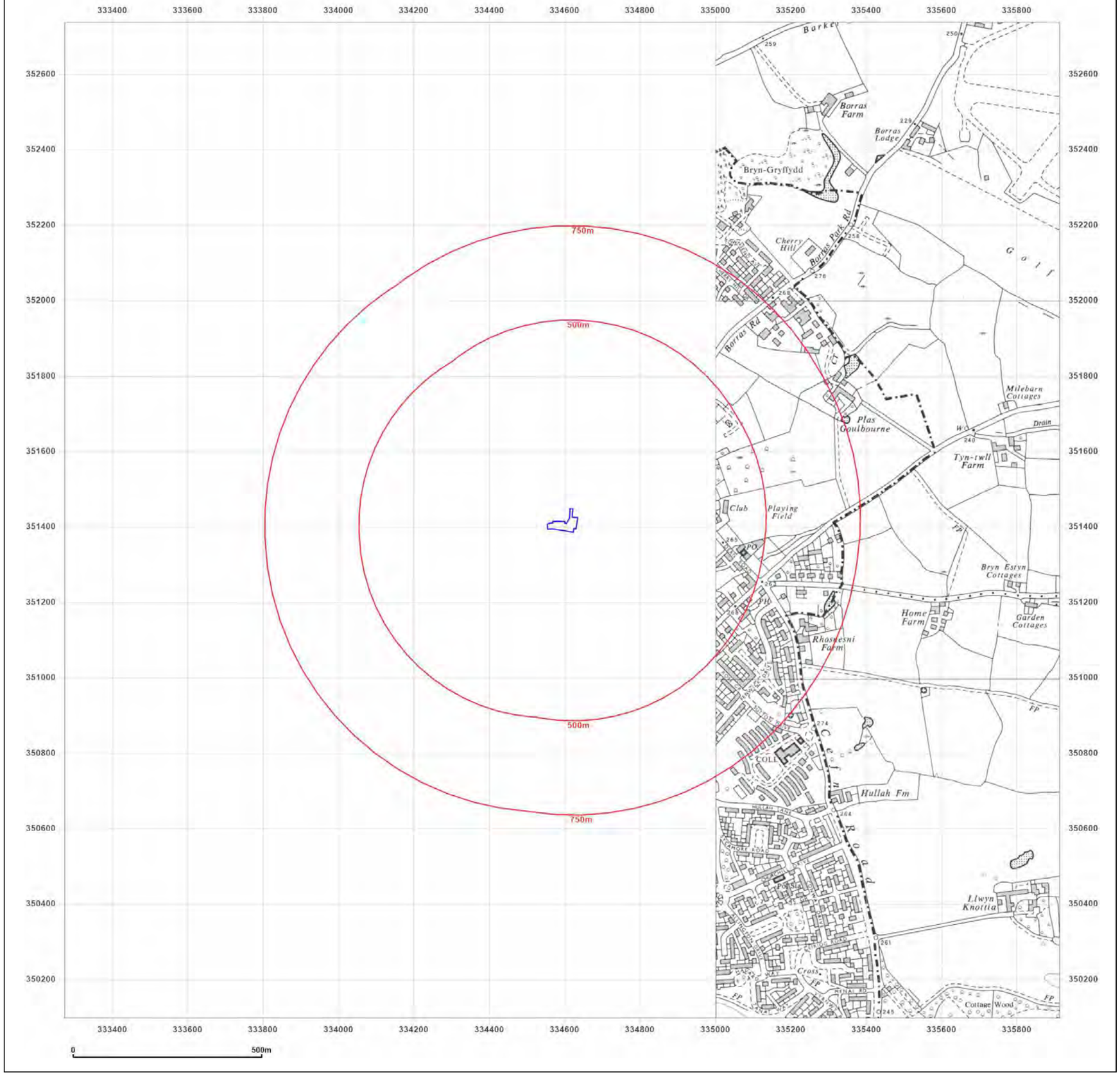
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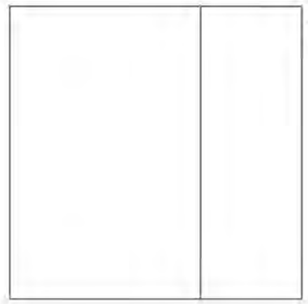
Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: Provisional
Map date: **1960**
Scale: 1:10,560
Printed at: 1:10,560

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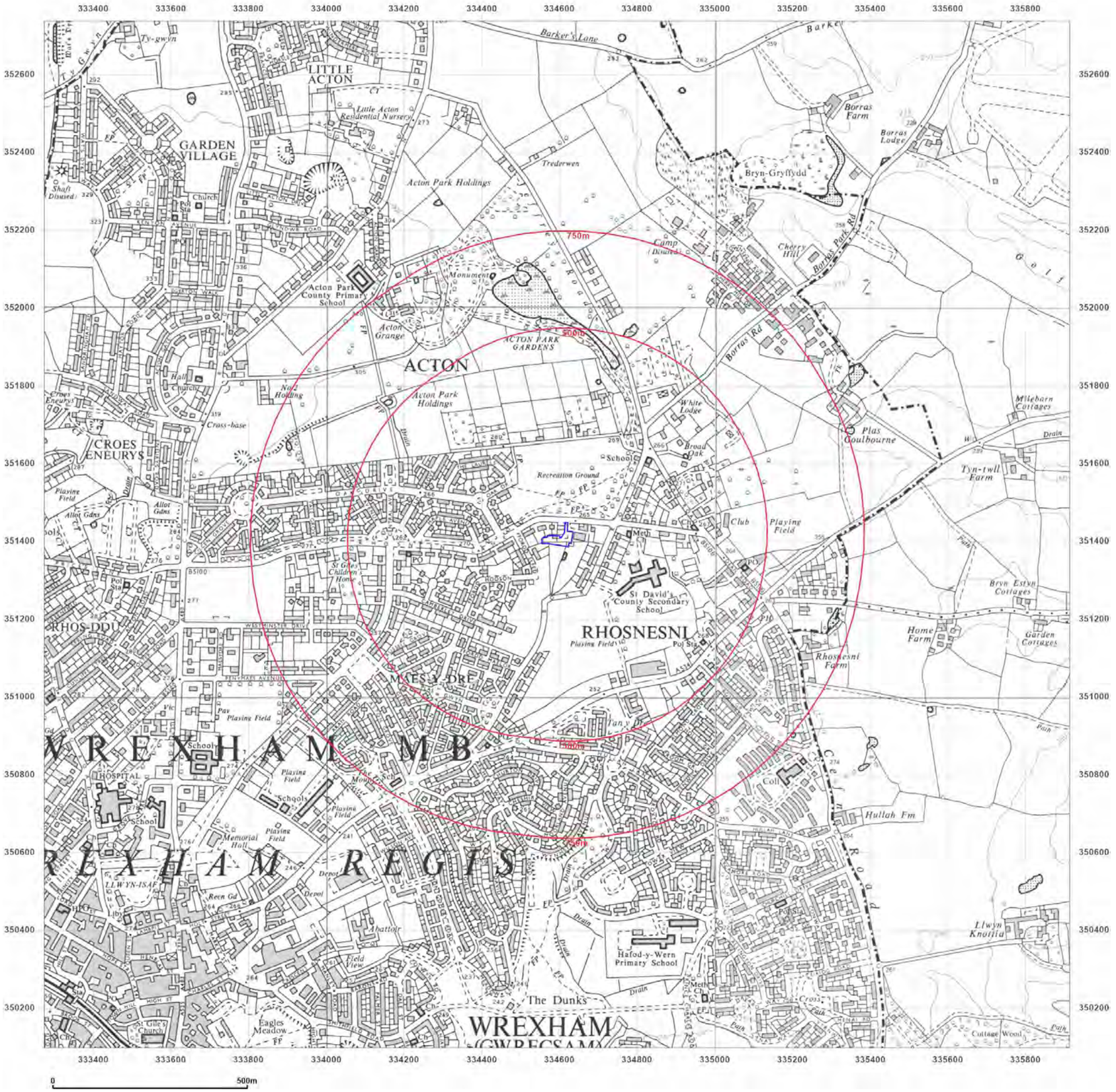
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Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

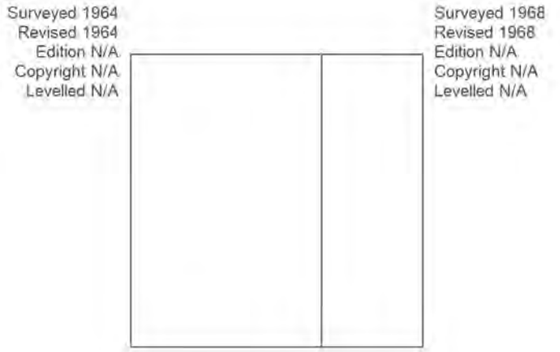
Map Name: Provisional

Map date: **1964-1968**

Scale: 1:10,560

Printed at: 1:10,560

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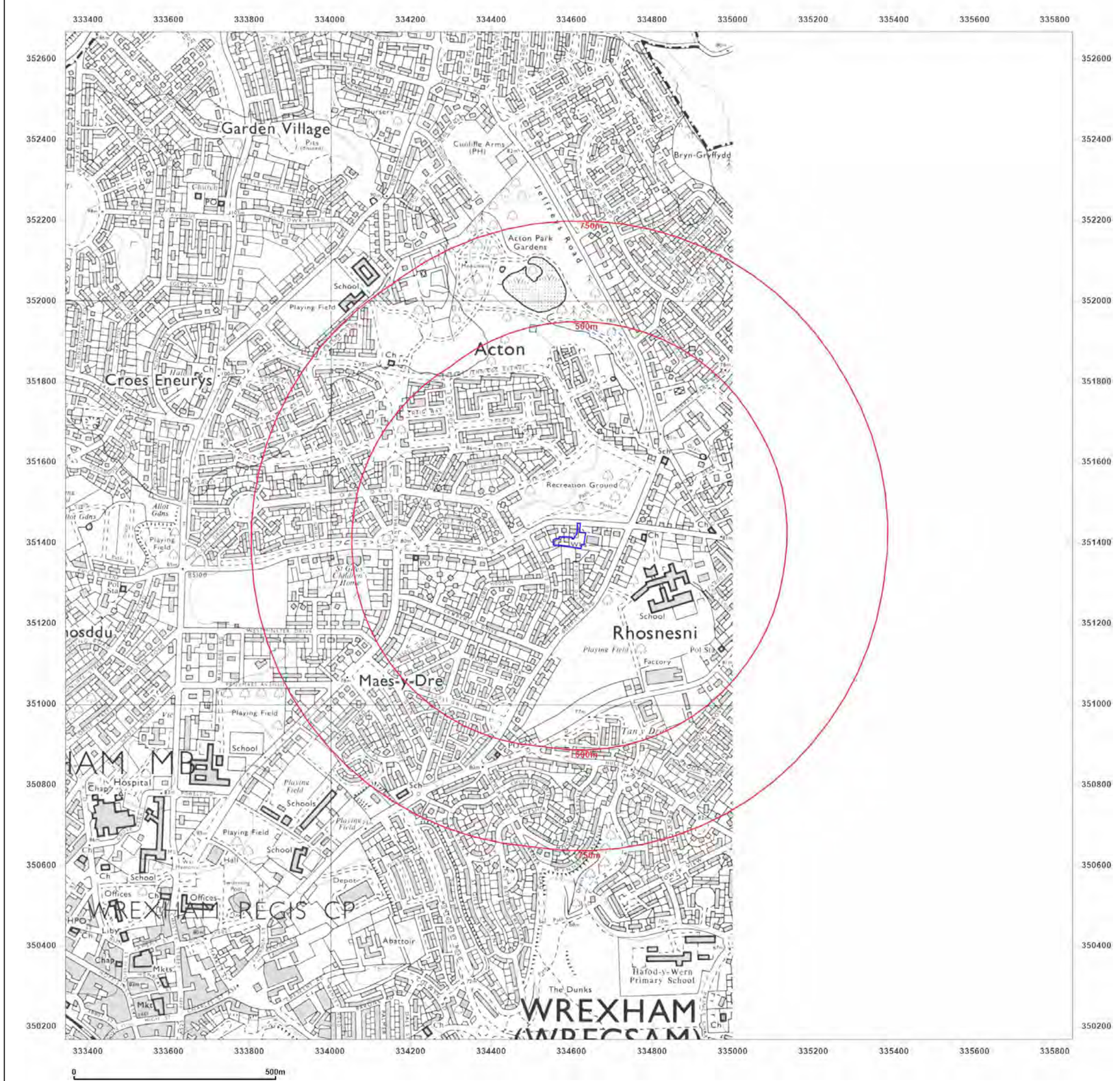
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Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

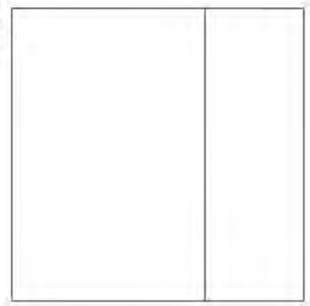
Map date: **1974**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1972
Revised 1974
Edition N/A
Copyright 1974
Levelled 1969



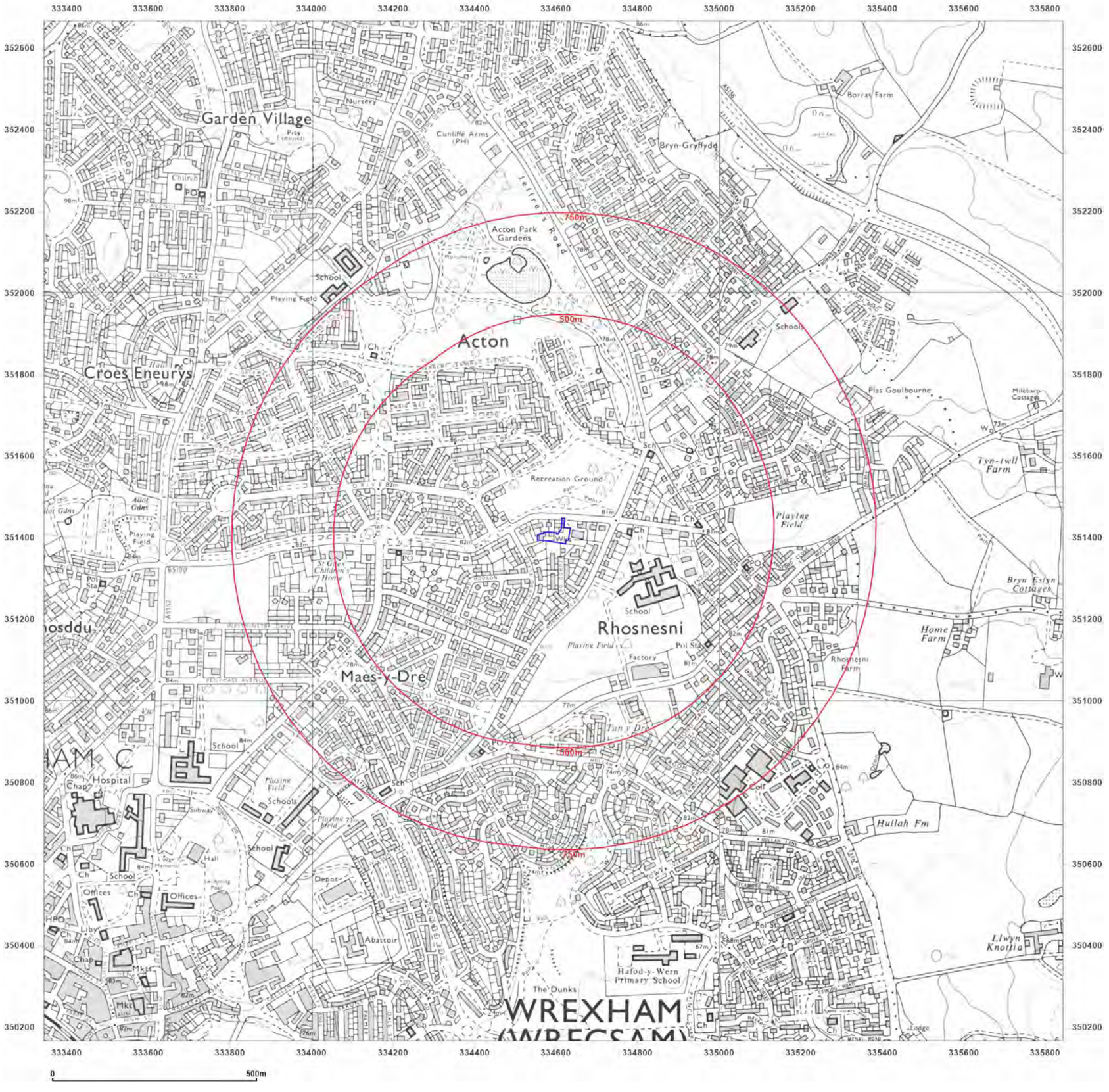
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Production date: 14 August 2024

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Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

Map date: **1980-1982**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1980
Revised 1980
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1970
Revised 1982
Edition N/A
Copyright N/A
Levelled N/A

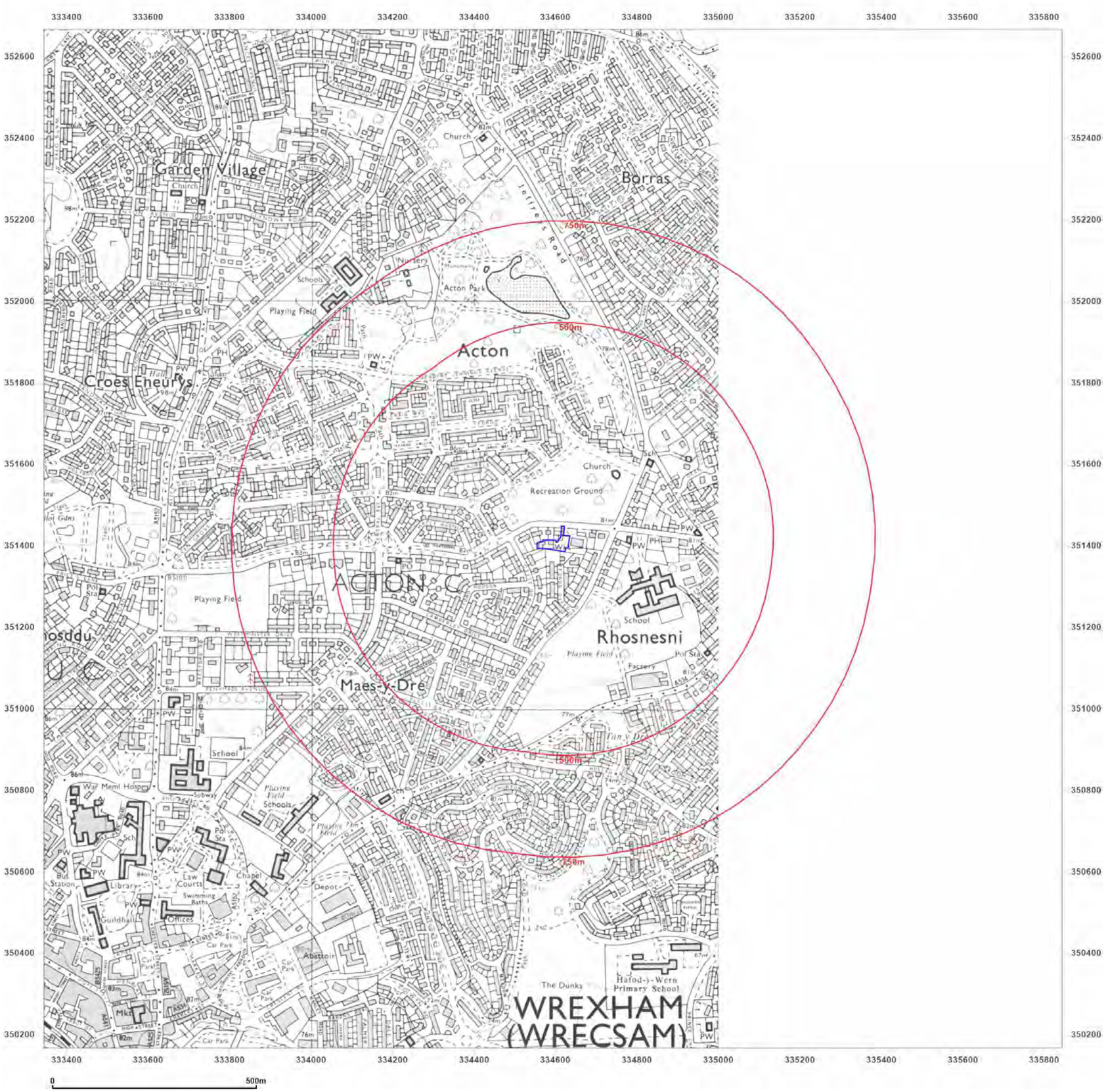
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Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

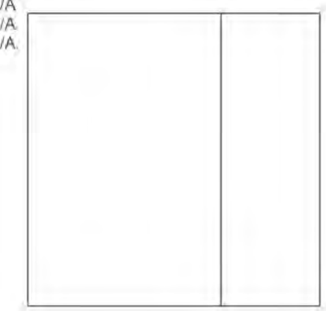
Map date: **1985**

Scale: 1:10,000

Printed at: 1:10,000

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



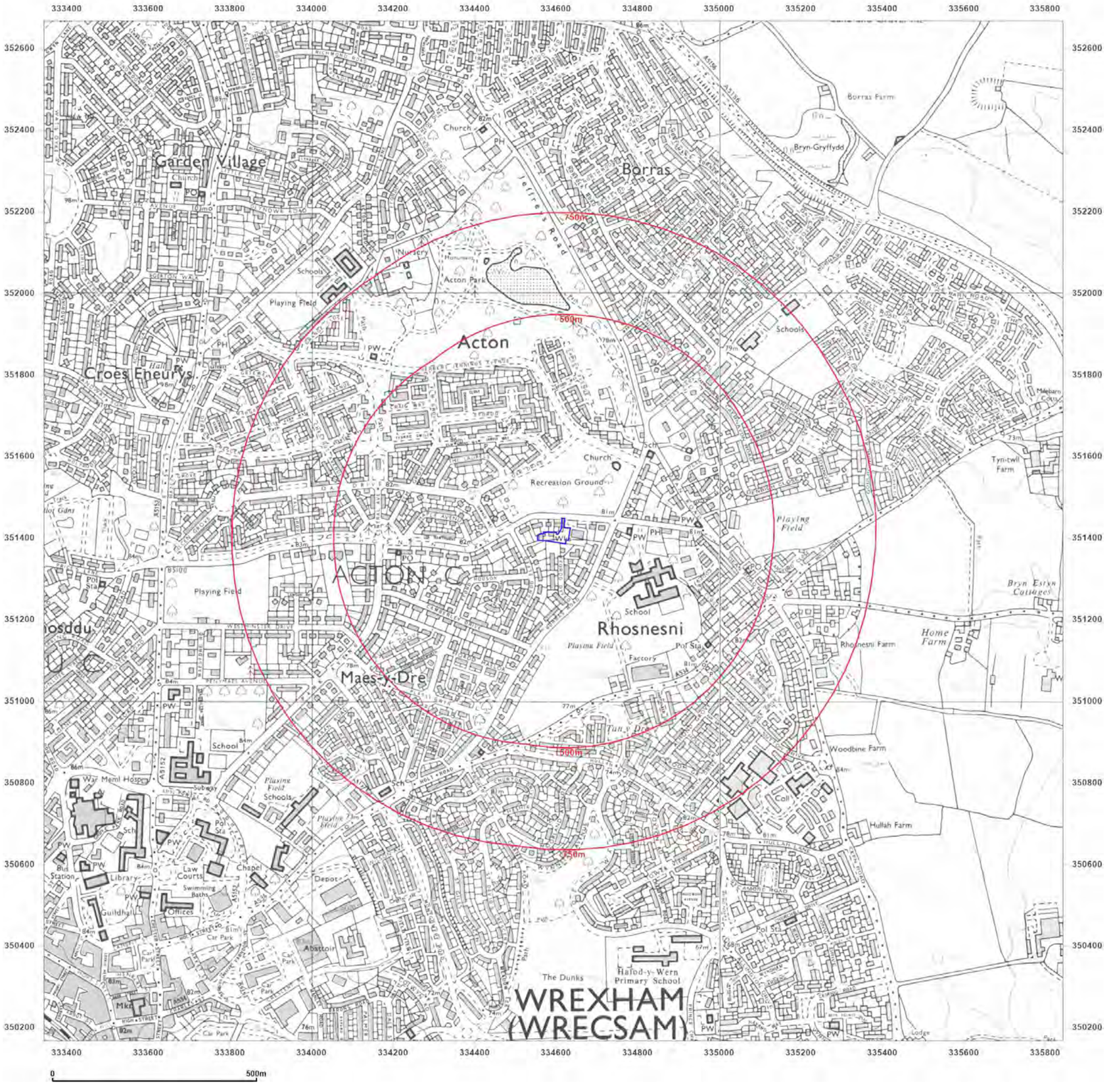
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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

Map date: **1989-1992**

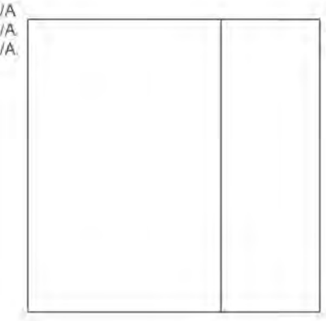
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Printed at: 1:10,000

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Surveyed 1985
Revised 1989
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1990
Revised 1992
Edition N/A
Copyright N/A
Levelled N/A



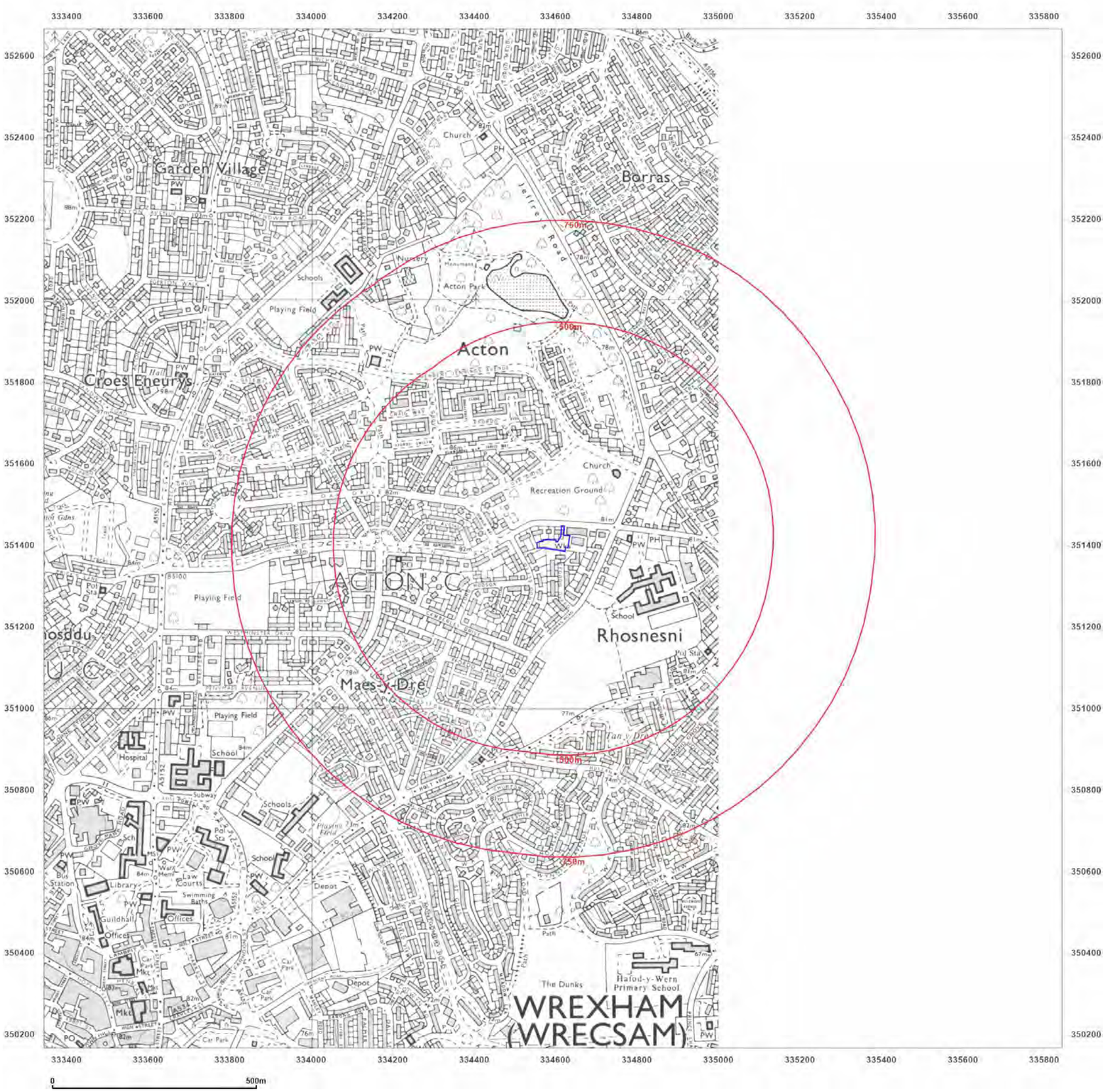
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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

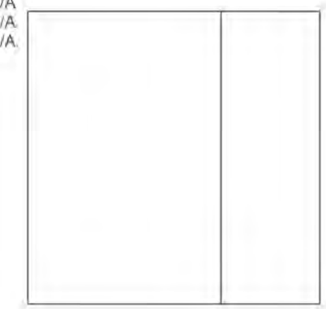
Map date: **1992**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1990
Revised 1992
Edition N/A
Copyright N/A
Levelled N/A



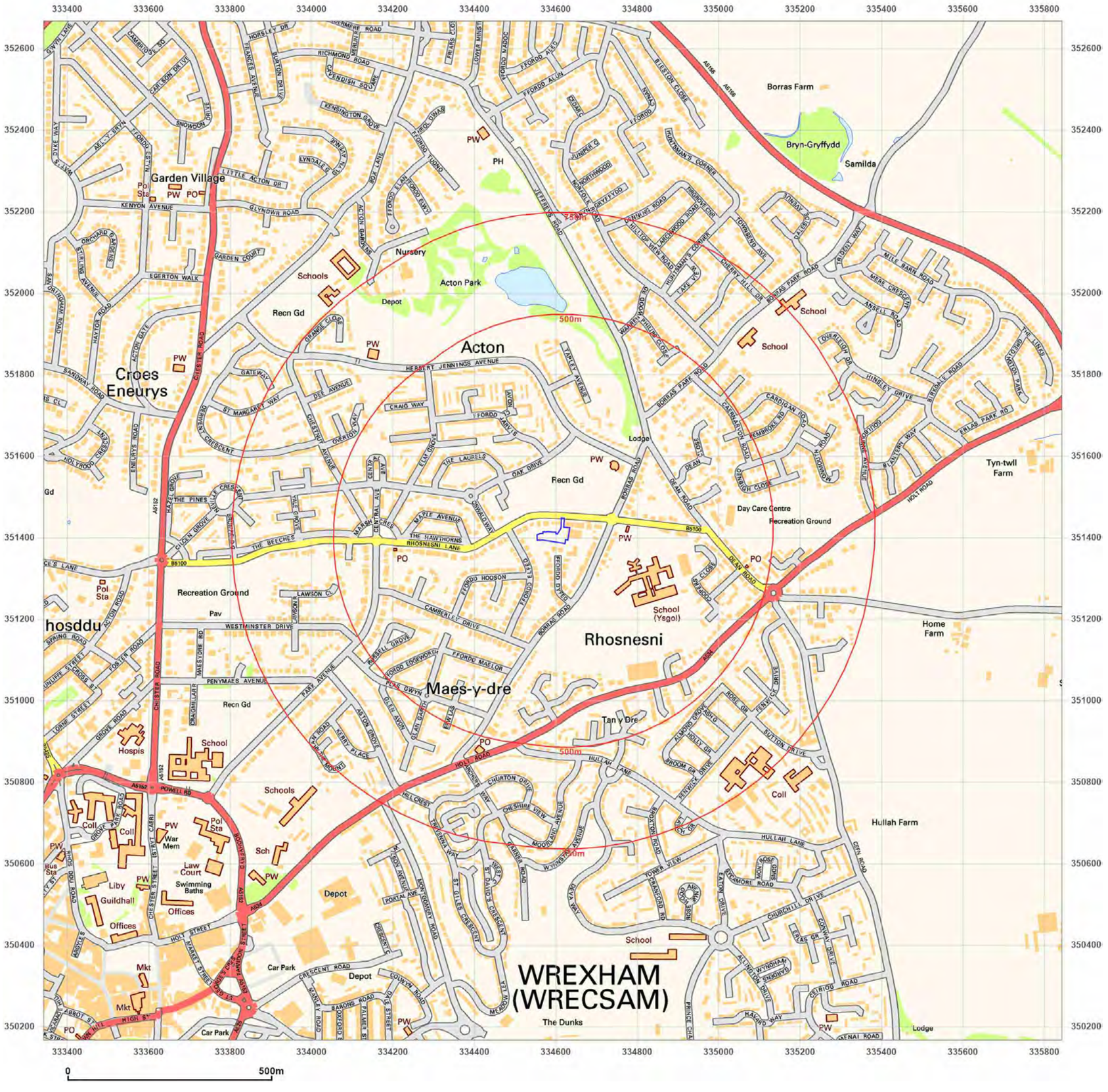
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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

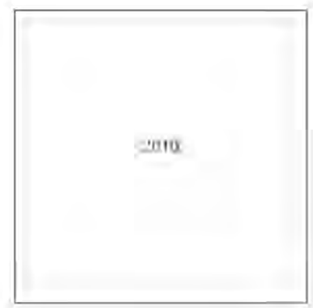
Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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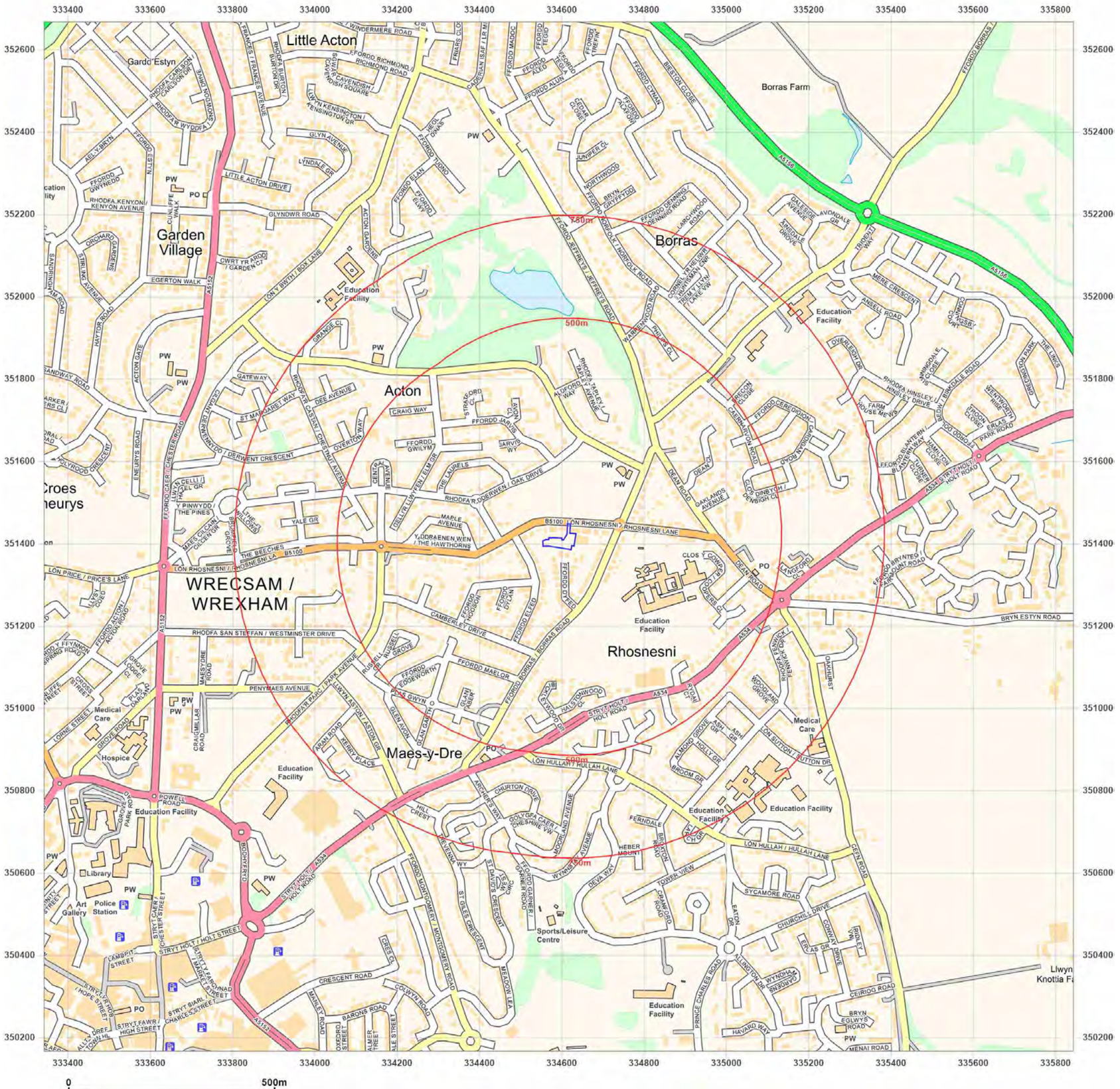
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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

Map date: **2024**

Scale: 1:10,000

Printed at: 1:10,000

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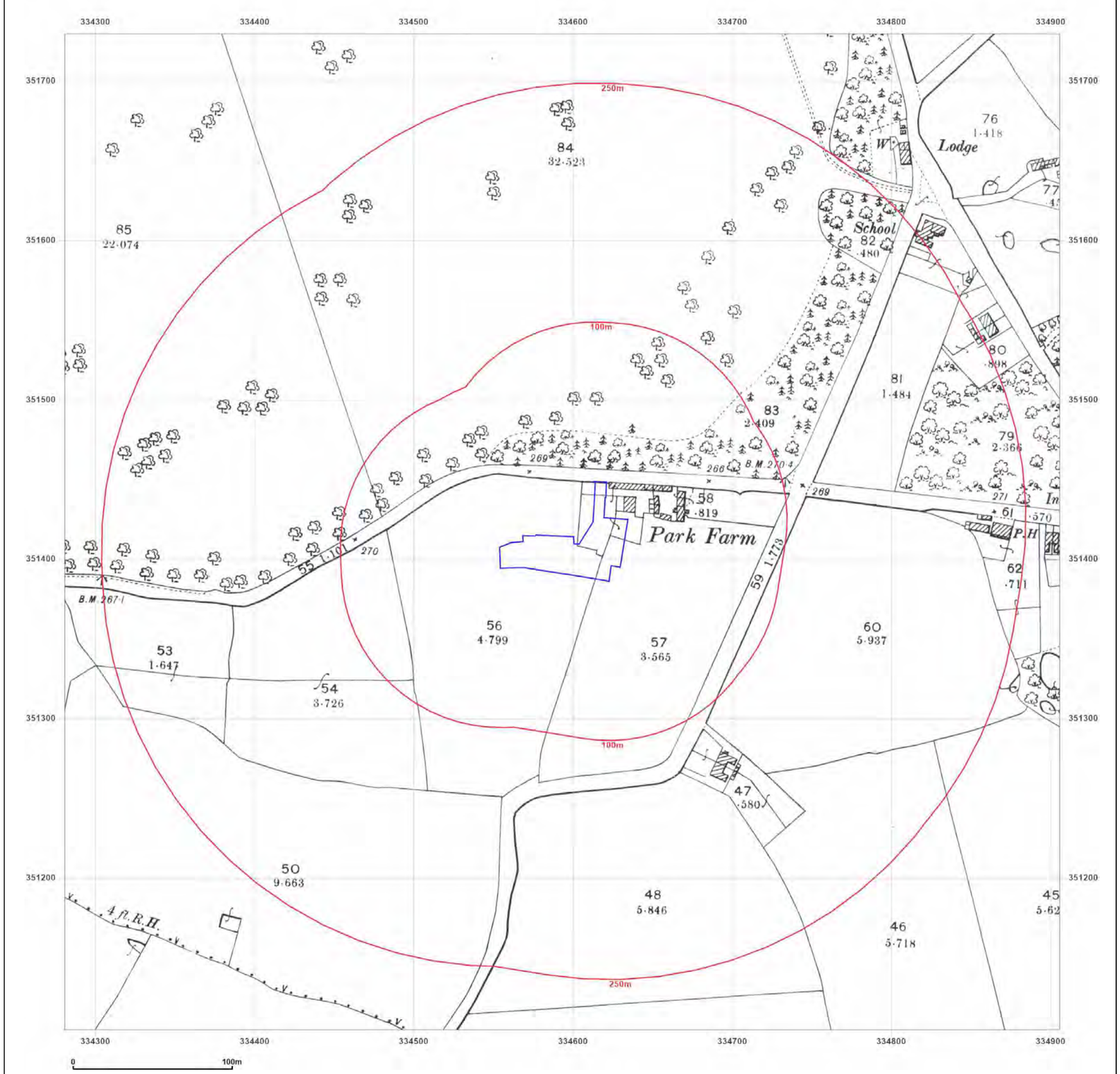
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Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: County Series

Map date: **1899**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1899
Revised 1899
Edition N/A
Copyright N/A
Levelled N/A

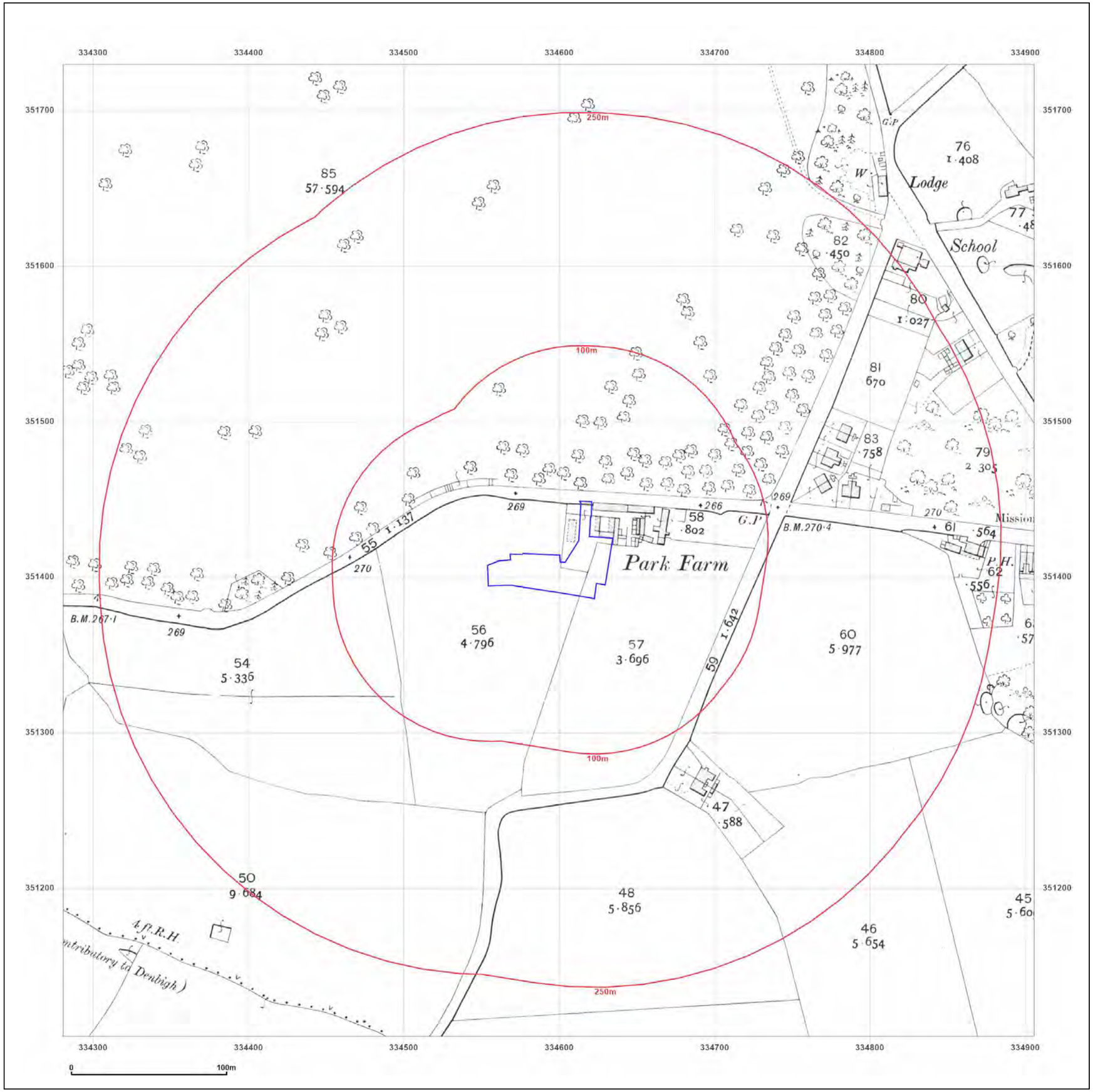
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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: County Series

Map date: **1912**

Scale: 1:2,500

Printed at: 1:2,500

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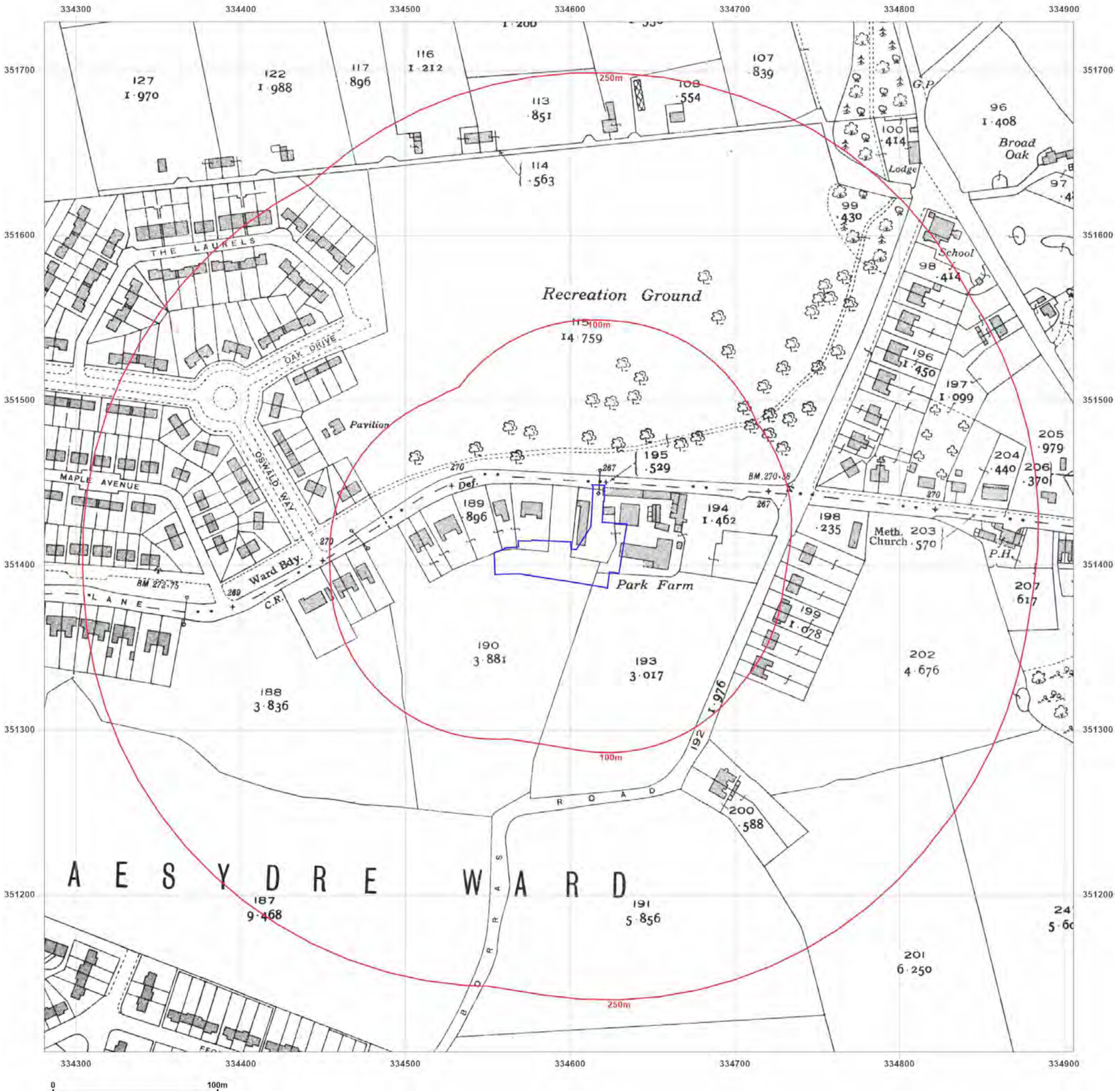
Surveyed 1912
Revised 1912
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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: County Series

Map date: **1937**

Scale: 1:2,500

Printed at: 1:2,500

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

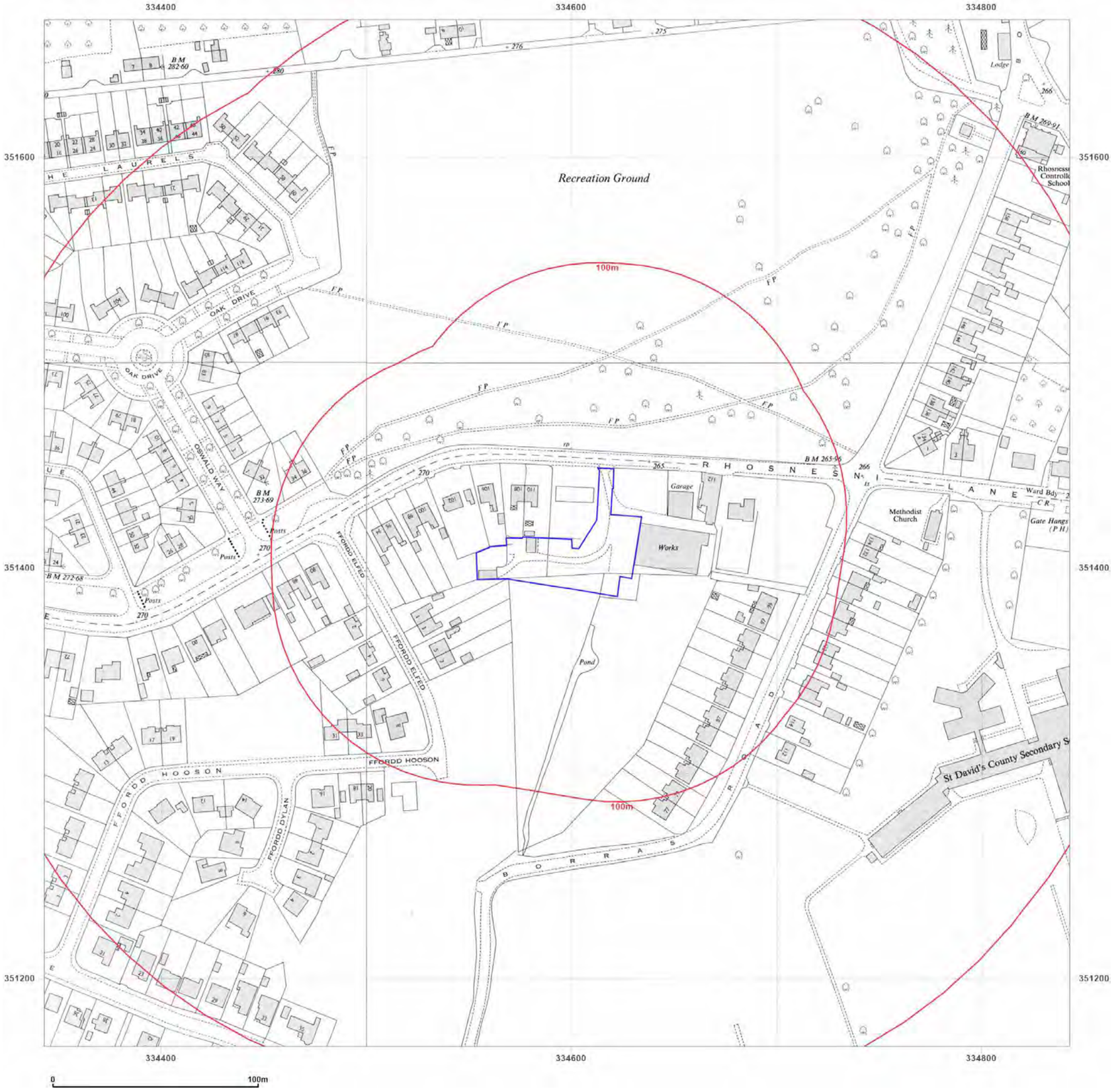
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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

Map date: **1959**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1950 Revised 1950 Edition N/A Copyright 1959 Levelled 1950	Surveyed 1958 Revised 1958 Edition N/A Copyright 1959 Levelled 1950
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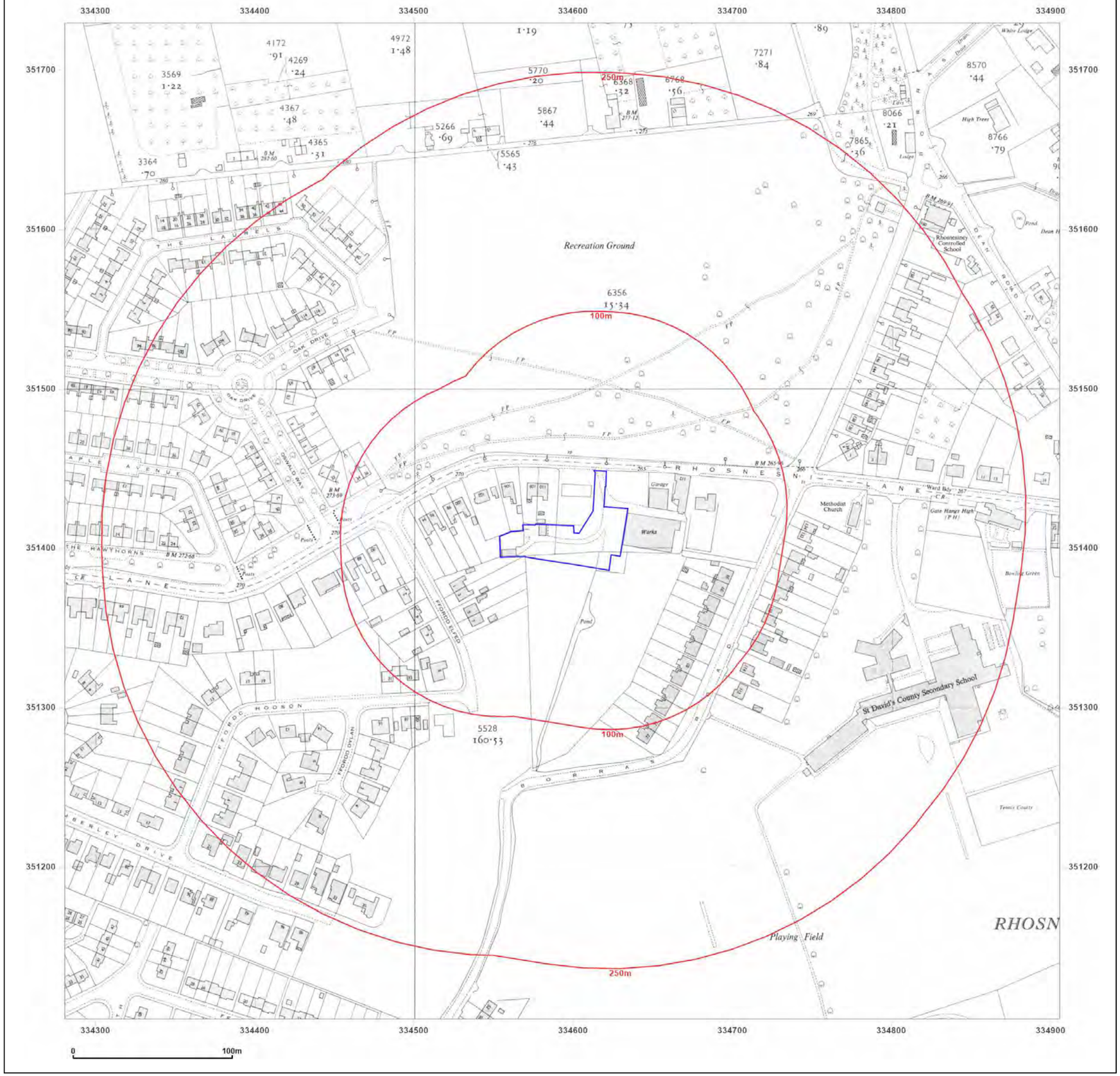
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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

Map date: **1960**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1958
Revised 1958
Edition 1960
Copyright 1960
Levelled 1950

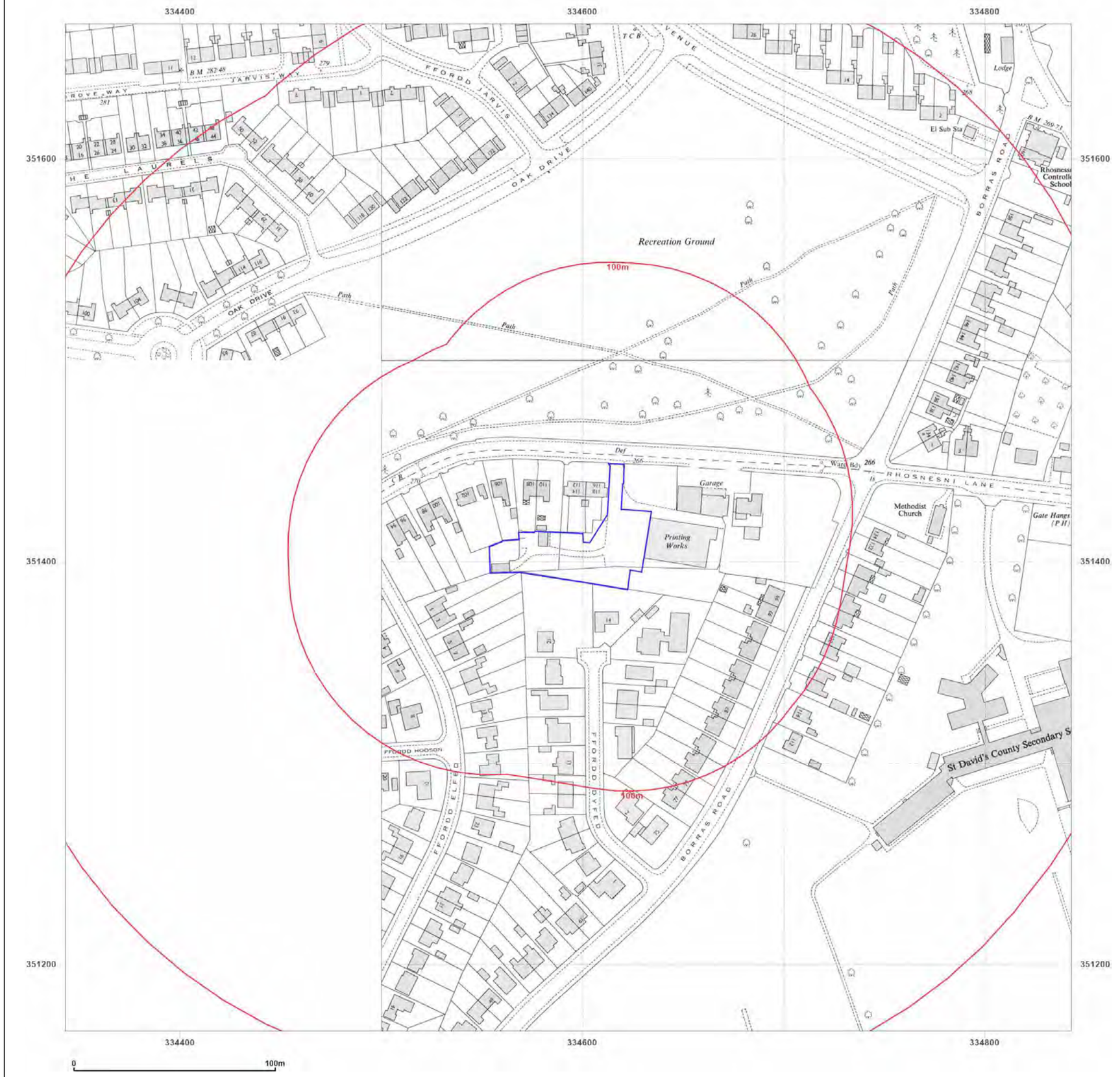
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Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

Map date: **1967-1968**

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1967
Edition N/A
Copyright 1967
Levelled 1959

Surveyed 1958
Revised 1967
Edition N/A
Copyright 1967
Levelled 1959

Surveyed 1958
Revised 1967
Edition N/A
Copyright 1968
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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

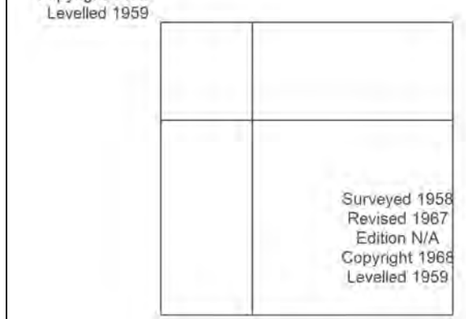
Map Name: National Grid

Map date: **1968-1973**

Scale: 1:1,250

Printed at: 1:2,000

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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

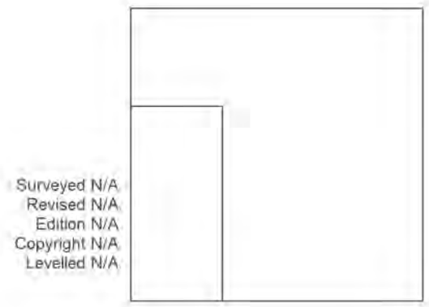
Map Name: National Grid

Map date: **1976**

Scale: 1:1,250

Printed at: 1:2,000

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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

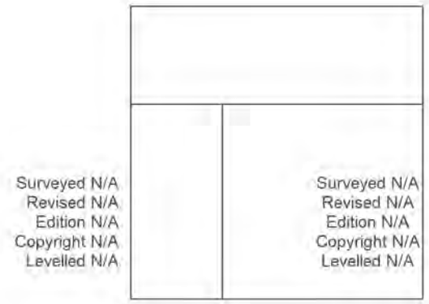
Map Name: National Grid

Map date: **1977-1979**

Scale: 1:1,250

Printed at: 1:2,000

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Groundsure INSIGHTS

Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

Map date: **1986-1990**

Scale: 1:1,250

Printed at: 1:2,000

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Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

Map date: **1990-1992**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
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Edition N/A
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Revised N/A
Edition N/A
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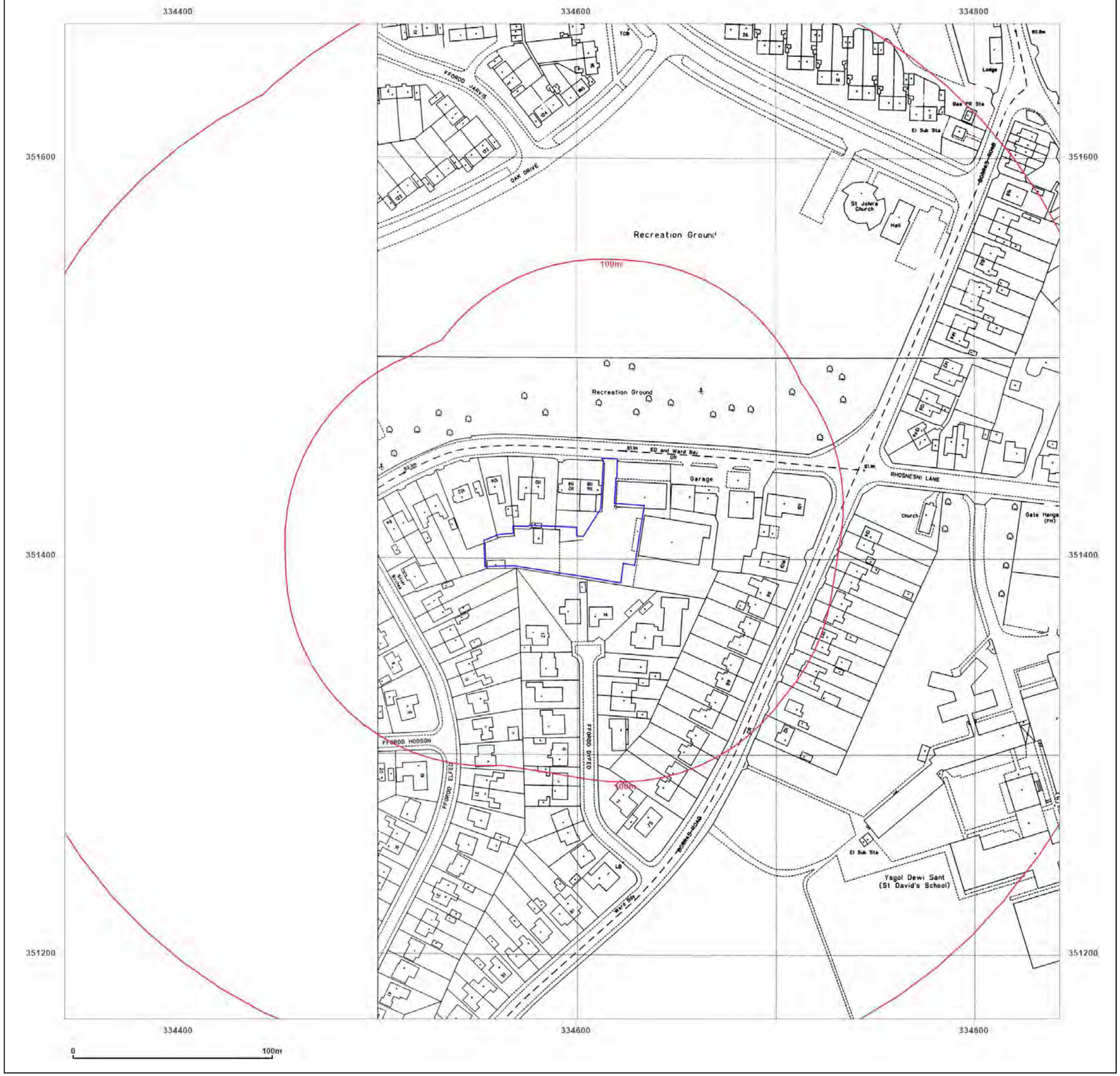
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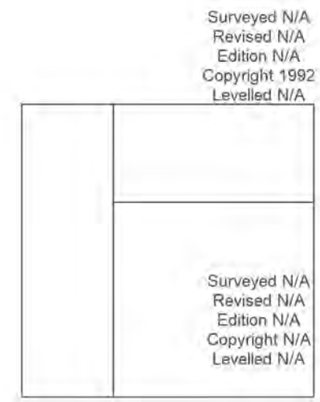
Map Name: National Grid

Map date: **1992-1993**

Scale: 1:1,250

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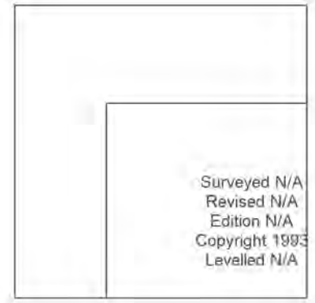
Map Name: National Grid

Map date: **1993**

Scale: 1:1,250

Printed at: 1:2,000

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R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

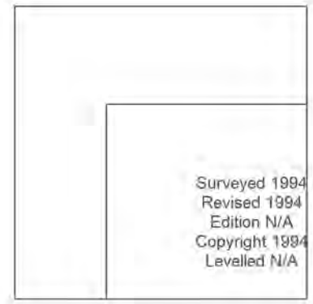
Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

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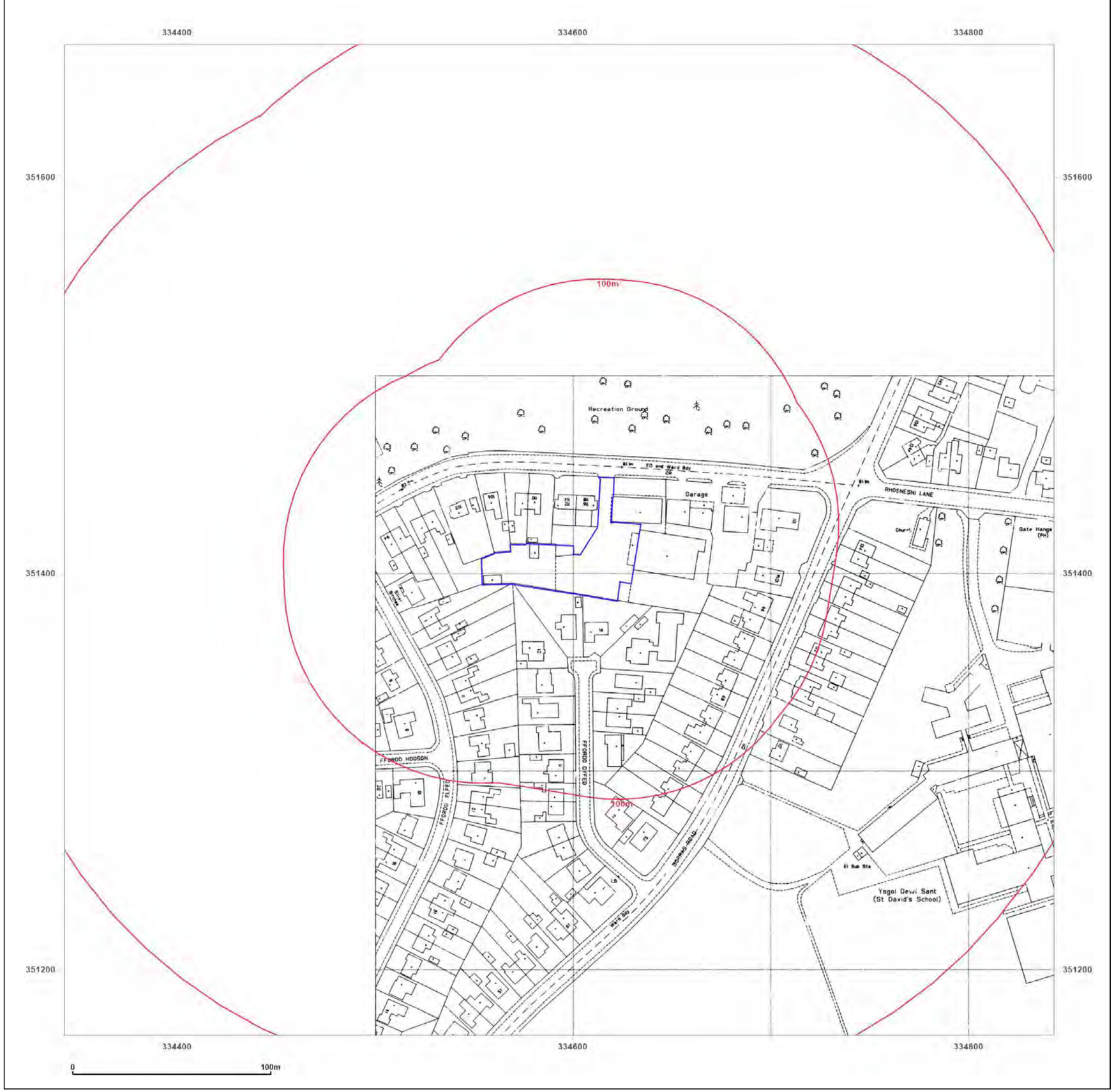
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Site Details:

R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

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Groundsure INSIGHTS

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R3341-120 Rhosnesni Lane

Client Ref: R3341-Rear of 120 Rhosnesni Lane
Report Ref: GS-IGY-X5Z-9KE-TQG
Grid Ref: 334593, 351417

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

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APPENDIX D

UXO Preliminary Desk Based Risk Assessment

From: PDSA
To: Megan Jones
Subject: RE: PA019936 PDSA Request Form Submission
Date: 30 August 2024 16:24:57
Attachments: image001.png
image003.png
image006.png

Good afternoon Meg

Please find the PDSA below as requested. If you have any further queries, don't hesitate to contact us.

Pre-Desk Study Assessment

Site:	120 Rhosnesni Lane, Wrexham, Wales
Client:	Smith Grant LLP
Contact:	Meg Jones
Date:	30th August 2024
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified on the Site. The Denbighshire Hussars were billeted at Acton Park, in the vicinity of the Site.
WWI Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: • Transport infrastructure and public utilities. • Royal Flying Corps (RFC) Wrexham. • Military barracks, camps, depots, and training areas.
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified on the Site. During WWII, Acton Park was re-requisitioned to accommodate British and United States (US) troops.
WWII Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: • Transport infrastructure and public utilities. • Industries important to the war effort, including munitions factories. • Royal Air Force (RAF) Wrexham. • Military barracks, camps, depots, and training areas. • Anti-Aircraft (AA) and anti-invasion defences.
WWII Bombing Decoys (within 5km of Site)	None.
WWII Bombing	During WWII the Site was located in the Municipal Borough (MB) of Wrexham, which officially recorded 1No. High Explosive (HE) bomb with a bombing density of 0.3

	bombs per 405 hectares (ha). No readily available records have been found to indicate that the Site was bombed.
Post-WWII Military Activity on or Affecting the Site	None identified.
Recommendation	A detailed desk study, whilst always prudent, is not considered essential in this instance.
Further information	For information about Zetica's detailed UXO desk studies and other UXO services, please visit our website: www.zeticauxo.com. Details and downloadable resources covering the most common sources of UXO hazard affecting sites in the UK can be found **here**. If you have any further queries, please don't hesitate to get in contact with us at uxo@zetica.com or 01993 886 682.
This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary. It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.	

Many thanks

Harry

Harry Clayton
Risk Assessor
Zetica Limited

T. 01993 886 682 | **E.** harry.clayton@zetica.com | **W.** www.zeticauxo.com | **T.** @ZeticaUXO



From: Zetica UXO <webform@zeticauxo.com>
Sent: Wednesday, August 14, 2024 4:06 PM
To: PDSA <pdsa@zetica.com>
Subject: PA019936 PDSA Request Form Submission

Name
Meg Jones
Company

	Smith Grant LLP
Email	
	megan.jones@smithgrant.co.uk
Phone	
	07943792644
Site Name	
	120 Rhosnesni Lane
Location Method	
	Easting/Northing
Site Boundary *	
	• Planning-Site-and-Location-Plan-Rev-G.pdf
Location Code	
	334603, 351404

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APPENDIX E

Historical Mapping Table

Contaminated Land Risk Assessment Methodology

Conceptual Site Model

Within the contaminated land risk assessment framework, a conceptual Site model (CSM) is developed which identifies the following three components:

- **Source of Contamination:** contaminant: hazardous substance that has the potential to cause adverse impacts;
- **Receptor**: target that may be affected by contamination: e.g. human health of existing or future site users whether they be residents, construction workers etc., occupants/users of site, water resources (rivers or groundwater), or structures;
- **Migratory Pathway**: a viable route whereby a hazardous substance may come into contact with the receptor.

Contaminant Linkage

A contaminant linkage is identified when there is a potential contaminant source, receptor and pathway linkage between the two. The absence of one or more of each component (contaminant, pathway, receptor) would prevent a contaminant linkage being established.

During the contaminated land assessment, the potential 'significance' of this contaminant linkage is established within a risk assessment framework.

The identification of potential contaminant linkages is based on a Conceptual Model of the site, which is subject to continual refinement as additional data becomes available. The Environment Agency's Land Contamination Risk Management (LCRM) guidance (published October 2020, updated July 2023) uses a three staged risk-based approach including: Stage 1 risk assessment, Stage 2: Options Appraisal and Stage 3: Remediation and Verification.

Risk Assessment Framework

A "risk" is defined as:

> *The probability, or frequency, or occurrence of a defined hazard; and*
>
> *The severity or magnitude (including the seriousness) of the consequences.*

The UK's approach to the assessment of environmental risk is set out in by Ciria C552 'Contaminated land risk assessment. A guide to good practice' (Rudland D.J, Lancefield R.M & Mayell P.N, 2001). This has been adapted and is presented within Tables 1 to 3, below.

Table 1: Severity/Consequence of Risk	
Severe	Acute risks to human health. Catastrophic damage to buildings/property (e.g. by explosion). Direct pollution of sensitive water receptors (or serious pollution of other controlled waters (Designated Main Rivers or Principal /Secondary A groundwater aquifers bodies). Acute effects on sensitive ecosystems or species
Moderate	Harm to human health from chronic (long-term) exposure. Pollution of sensitive watercourses (controlled watercourses other than Main Rivers) (Secondary B aquifers) or pollution of other water bodies. Chronic effects on sensitive ecosystems or species. Significant damage to buildings or infrastructure.
Mild	No significant harm to human health in either short or long term. No pollution of sensitive controlled waters, no more than slight pollution of non-sensitive waters. Damage to non-sensitive ecosystems or species. Requirement for protective equipment during site works to mitigate health effects. Minor damage to buildings or infrastructure.
Negligible	No harm to human health, ecosystems, buildings and infrastructure or pollution of water.

The probability of the risk occurring is classified according to criteria given in Table 2 below:

Table 2: Probability of Risk Occurring	
High likelihood	Contaminant linkage may be present, and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor.
Likely	Contaminant linkage may be present, and it is probable that the risk will occur over the long term.
Low Likelihood	Contaminant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Unlikely	Contaminant linkage may be present but the circumstances under which harm would occur are improbable.

An overall evaluation of the level of risk is gained from a comparison of the severity and probability, as shown in Table 3 below:

Table 3: Comparison of Severity and Probability					
		Severity			
		Severe	**Moderate**	**Mild**	**Negligible**
Probability	**High Likelihood**	Very High Risk	High Risk	Medium/Low Risk	Low Risk
	Likely	High Risk	Medium Risk	Low Risk	Negligible Risk
	Low Likelihood	High/Medium Risk	Medium/Low Risk	Low Risk	Negligible Risk
	Unlikely	Medium/Low Risk	Low Risk	Low Risk	Negligible Risk

The various risk rankings provide guidance for recommended actions, whether this is:

Table 4 – Description of the Classified Risks and Likely Action Required	
Evaluated Risk	**Recommended Actions**
Very High Risk	Severe harm to a receptor may already be occurring, or there is a high likelihood that severe harm could occur from an identified hazard. Urgent investigation and remedial works / mitigation in the short term is likely to be required.
High Risk	Harm is likely to arise to a receptor from an identified hazard. Urgent investigation is required, and remedial works may be necessary in the short term and are likely over the long term.
Medium Risk	It is possible that harm could arise to a receptor from a hazard. However, it is 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. Limited investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low Risk	It is possible that harm could arise to a receptor from a hazard, but there is a low likelihood of this hazard occurring and if realised, harm would at worst normally be mild.
Negligible Risk	There is a negligible possibility that harm could arise to a receptor. In the event of such harm being realised, it is likely to be mild or negligible.

APPENDIX F

Risk Assessment Methodology

Table 1 – Land to the rear of 120 Rhosnesni Lane Historical Development Summary			
Feature	**Map**	**Location**	**Description**
			On-site
Agricultural land	1899 to 1937	Across Site	The Site is part of wider agricultural fields from the earliest available mapping until 1937 when the surrounding area is developed.
Building	1937	North	A long building to the immediate north encroaches on Site. The building is demolished by 1959.
Building	1959 to 2021	Northwest	This building is first mapped along the northwest boundary from 1959 with the construction of the works to the east of the Site. It is visible on satellite imagery until 2021 when it is demolished.
Building	1959 to 2024	Southwest	This building is first mapped in the southwest corner from 1959 with the construction of the works to the east of the Site. It remains to present day.
Road/track	1959 to 1990-1992	Centre	A roadway/track is mapped from Rhosnesni Lane to the north in 1959, leading to the works to the east and towards the buildings located in the west of the Site, with a land boundary dividing the Site in the centre into east and west parcels. The roadway/track is removed from mapping by 1990-1992 and a strip of concrete has been mapped on the east boundary, associated with the former works
Parking	2006 to 2024	East	Satellite imagery from 2007 shows the east of the Site being used as parking with a gravel surface. Imagery from 2021 shows the Site having been resurfaced with tarmac.
Vacant land / storage	2006 to 2024	West	Satellite imagery from 2007 shows the west of the Site to be occupied by shrubs and trees until 2021 when it has been resurfaced with gravel and some items stored along the southern boundary.
			Off-site
Park Farm	1899 to 1959	<5m northeast	Park Farm is present from the earliest available mapping (1899) with a collection of buildings to the immediate northeast of the Site. The farm expands with a large building to the immediate east of the Site in 1937. However, the farm is replaced by a works, and garage by 1959.
Printing works	1959 to present day	<5m east	This works is first mapped in 1959 and is labelled as a printing works from the late 1960s. It is no longer labelled as a printing works in the 1990s but the building remains to present day.
Building	1990-1992 to present day	<5m northeast	This large building is first mapped in the early 1990s and remains to present day.
Recreation ground	1937 to present day	<10m north	Formerly open woodland, this recreation ground is first mapped in 1937 with footpaths and trees. By the 1980s, St John's Church is built in the east (170m NE of Site) and satellite imagery from 2007 to present day show two football pitches, which remain to present day.
Garage	1959 to 2009	13m east	This is first mapped in 1959 before expanded eastwards in the 1960s. Imagery from 2009 shows it is now occupied by a heating and plumbing retailer. In 2024, it is operated by Cliftons, a fireplace and media wall retailer.
Pond	1959 to 1967-1968	35m south	This pond is mapped to the south with a long drainage channel heading southwards. It is replaced with the residential close Ffordd Dyfed in 1967-1968.

Petrol station	1959 to 2009	67m east	The building is first mapped in 1959 with a forecourt on its north side being mapped in 1986-1990. The forecourt is present on satellite imagery until 2012 when it is demolished, and the petrol station is converted to a sandwich shop.
Residential development	1937 to present day	Surrounding	Major residential development occurs in the surrounding area between 1910 and 1937 with properties mapped to the west along Rhosnesni Lane and to the west along Borras Road. Further development occurs to the southwest in the 1950s and by the late 1960s, the Site is surrounded by residential closes.
St Davids School	1959 to present day	140m southeast	This school is first mapped in 1959 as 'St Davids County Secondary School'. By the 1980s, a building is constructed further south and by the 1990s, it shortens its name to 'St Davids School'.

Note: Dates refer to dates provided on OS mapping; actual dates may differ