PHASE I GEO-ENVIRONMENTAL DESK STUDY REPORT

Argoed High School

June 2020

hsp consulting

CIVIL | STRUCTURAL | GEOTECHNICAL & ENVIRONMENTAL | TRAFFIC AND TRANSPORT

Lawrence House | 6 Meadowbank Way | Nottingham | NG16 3SB

01773 535555 | design@hspconsulting.com | www.hspconsulting.com

Argoed High School,
Bryn Road,
Mold

Phase I Geo-Environmental Desk Study Report

This report was produced by HSP Consulting Engineers Ltd for Gleeds Management Services Limited as the Phase I Geo-Environmental Desk Study Report for the Argoed High School to provide a preliminary assessment of potential ground related development constraints and to support a feasibility study for provision of a new school.

Issue & Revision History

Revision	Status	Originated	Checked	Approved	Date
-	FINAL	H. Daley MGeol (Hons) FGS	J. P. Bridgman BSc (Hons), CGeol, FGS	H.Pratt B.Eng (Hons), C.Eng, F.Cons.E, M.I.C.E, MI Mgt.	18.06.2020
Project Number: C3250				Document Reference: C3250/PI	

This document is also available in hard copy; please contact the author to obtain a copy.

HSP Consulting Engineers Ltd, Lawrence House, 6 Meadowbank Way, Nottingham, NG16 3SB
T 01773 535555 **W** www.hspconsulting.com

Contents

Appendices

Appendix I	-	Site Location Plan
Appendix II	-	Preferred Feasibility Option
Appendix III	-	Emapsite® Groundsure GeoInsight and EnviroInsight Report
Appendix IV	-	Historical Mapping
Appendix V	-	Coal Authority Consultant's Report
Appendix VI	-	Basis for Contaminated Land Qualitative Risk Assessment
Appendix VII	-	Site Walkover Photographs

Executive Summary

HSP Consulting has been commissioned by Gleeds Management Services Limited to provide technical studies to support a feasibility study. The geo-environmental desk study (Phase I) is one of a series of studies providing information on likely constraints to the development of the site. The purpose of the report is to collate background historical and geo-environmental data to address where possible land contamination and stability matters within Planning Policy Guidance.

The site supports Argoed High School site is located off Bryn Road, Mold. The approximate National Grid Reference for the centre of the site is (NGR) 326380 364562.

The site is shown as open fields from the earliest mapping, with no significant changes until the 1980s when Argoed High School is recorded on site. The surrounding land within 250m is predominantly recorded as open fields with residential housing recorded to the west of the site from the 1970's. No significant changes are recorded on subsequent mapping.

Superficial Till deposits are recorded across the site on relevant BGS mapping, underlain by bedrock geology of the Pennine Lower Coal Measures Formation. Made Ground is not indicated within the site boundary on the published geological mapping, however, limited localised made ground should be anticipated associated with the existing school.

The superficial Till deposits are classified as a Secondary Undifferentiated aquifer and the Pennine Lower Coal Measures Formation bedrock deposits are classified as a Secondary A Aquifer.

The site does lie within a Coal Authority (CA) standing advice or reporting area. The CA consultants report provides details of three mine shafts within the site boundary. None of the three records provide any treatment details. The site in general is not within a High Risk Development Area. However a Coal Mining Risk Assessment (CMRA) may be required to support a planning application if there is interaction between the proposed layout, the known shafts and shallow coal recorded in the available BGS borehole logs.

The Preliminary Conceptual Site Model indicates a low possibility that harm could arise to a designated receptor from identified hazards.

The executive summary contains an overview of key findings and conclusions. However, no reliance should be placed on the executive summary until the whole of the report has been read. Other sections of the report may contain information which puts into context the findings noted within the executive summary.

1. Introduction

1.1 Background

Detailed designs have not been provided for the site; however a preferred feasibility option has been provided indicating a new school building upon the playing fields immediately to the east of the existing school.

1.2 Scope and Limitations

HSP Consulting has been commissioned by Gleeds Management Services Limited to provide technical studies to support a feasibility study. The geo-environmental desk study (Phase I) is one of a series of studies providing information on likely constraints to the development of the site. The purpose of the report is to collate background historical and geo-environmental data to address where possible land contamination and stability matters within Planning Policy Guidance.

The recommendations made in this report are based on the assessment of the published information and information provided by the Client.

1.3 Report Objectives

The objectives of this report are to:

- Establish the geological and hydrogeological conditions using existing available/published information;
- Summarise available information and identify site specific geotechnical and environmental hazards which may place a constraint upon the proposed site use;
- Produce a Conceptual Site Model and preliminary qualitative environmental risk assessment identifying potential pollution linkages between sources of contamination, pathways and receptors;
- Provide recommendations for Phase II Ground Investigation and any other assessments required.

1.4 Sources of Information

The following sources of information were used during the preparation of this report.

- EmapSite Historical Mapping ref. EMS-605071_808854 (Appendix IV)
- Emapsite Groundsure Enviro+Geo Insight®: EMS-605071__808855 (Appendix III)
- British Geological Survey. Onshore Geoindex. www.bgs.ac.uk
- DEFRA Magic Map: http://defra.gov.uk/magicmap.aspx
- The Coal Authority: http://mapapps2.bgs.ac.uk/coalauthority/home.html
- Department of the Environment. Industry Profiles.

A walkover was undertaken by HSP Consulting on the 14th April 2020. The purpose of the walkover was to record the current land use, topography and principal physical features and to identify, where possible, visual and olfactory indicators of contamination. Photographs can be found within Appendix VII.

2. Site Setting

2.1 The Site

2.1.1 Location

The Argoed High School site is located off Bryn Road, Mold, CH7 6RY. The approximate National Grid Reference for the centre of the site is (NGR) 326380 364562. A Site Location Plan is included in Appendix I.

2.1.2 Description

The site comprises the existing Argoed High School off Bryn Road. Bryn Road slopes downhill from west to east with a main drop off parking area east of the entrance to the school. Immediately behind the drop off a large landscaping bund is evident to the east of the gates.

The existing school is on two levels with the west of the school at a higher level and the east lower. The existing two storey school appears to be late 70's early 1980's construction, concrete and blockwork with much of the school having flat roofing.

Moving around the east of the site towards the proposed development site for the new school (existing playing fields) there are some large boundary trees not evident on the outline proposed plans. The access moves around the east of the buildings to a tarmac playground bordered by a small landscape bund with two portakabins.

The playing fields slope towards the eastern boundary where a stream runs down the southern boundary to the east and then northerly at the periphery. Boundary trees are mainly deciduous and predominantly found around the bottom eastern half of the field.

2.1.3 Surrounding Land Use

The main features of interest identified are:

North:	Residential area and highways (Bryn Road).
East:	Agricultural Fields (grass).
South:	Residential area and sports fields.
West:	Residential area and highways (Snowdon Avenue).

2.1.4 Proposed End Use

The proposed end use will be a new build High School on the existing campus playing fields immediately to the east of the existing school buildings. The preferred option indicates a new build school with associated hard and soft landscaping, and additional multi use all weather play areas. Some areas of the existing site are due to remain such as the southern MUGA. The layout changes include demolition of the existing school, extensive hard and soft landscaping as well as vehicle drop off and parking provision. The preferred option layout is presented in Appendix II.

2.2 Geology

2.2.1 Made Ground

The BGS mapping does not indicate any Made Ground on the site, however, limited localised made ground should be anticipated associated with development of the existing school.

2.2.2 Superficial Deposits

Superficial Till deposits of Devensian age are recorded across the site.

2.2.3 Bedrock Geology

Bedrock Geology of the Pennine Lower Coal Measures Formation of the Carboniferous Period is recorded across the site and described by the BGS as '*Interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part.*'

2.2.4 Structural Geology

The bedrock geology underlying the area is heavily faulted with one north-south orientated inferred fault of unknown displacement recorded on site.

2.2.5 Historical Boreholes

Borehole logs freely available from the BGS digital borehole record viewer have been consulted to summarise the likely ground conditions at the site. There is one publicly available record within 250m of the site. This record is on-site and comprises a total of 26 exploratory boreholes (A – Z) as well as a layout plan showing the location of the boreholes across the High School site. Within Table 2.1 below a summary of the most pertinent are presented.

Table 2.1 - Summary of Historical BGS Borehole Information

BGS Reference		Summary of Ground Conditions	
SJ26SE17A On-Site	Drilled by: nkc Date: Unknown Method: Rotary Air Flush Open Hole	0.00m - 0.30m 0.30m - 0.90m 0.90m – 2.10m 2.10m – 2.80m 2.80m - 5.70m 5.70m – 7.00m 7.00m – 7.60m 7.60m – 9.20m 9.20m – 11.90m 11.90m – 12.80m 12.80m – 13.20m 13.20m – 14.00m 14.00m – 15.00m	Topsoil Brown SANDSTONE BOULDER (hard drilling) Firm brown silty stony CLAY Firm brown weathered MUDSTONE Dark grey sandy MUDSTONE (hard drilling) Grey MUDSTONE (firm drilling) Soft drilling with small coal fragments Grey MUDSTONE (firm drilling) Dark grey sandy MUDSTONE (firm drilling) Black SHALE with IRONSTONE layers (hard drilling) Grey SHALE Black SHALE and COAL Grey MUDSTONE (firm drilling)
SJ26SE17B On-Site	Drilled by: nkc Date: Unknown Method: Rotary Air Flush Open Hole	0.00m - 0.30m 0.30m - 0.90m 0.90m – 2.10m 2.10m – 2.80m 2.80m – 4.60m 4.60m – 6.40m 6.40m – 7.00m 7.00m – 7.60m 7.60m – 7.90m 7.90m – 8.50m 8.50m – 9.20m 9.20m – 10.50m	Topsoil Brown GRAVEL Firm brown silty stony CLAY Firm brown weathered MUDSTONE Dark grey sandy MUDSTONE (hard drilling) Dark grey SHALE (soft drilling) Grey MUDSTONE (firm drilling) Black COAL and SHALE (soft drilling) Dark grey SHALE Grey SHALE Very soft drilling (Presume Old Workings) Grey MUDSTONE (firm drilling)
SJ26SE17C On-Site	Drilled by: nkc Date: Unknown Method: Rotary Air Flush Open Hole	0.00m - 0.30m 0.30m - 0.90m 0.90m – 1.50m 1.50m – 2.10m 2.10m – 4.60m 4.60m – 12.30m 12.30m – 13.20m 13.20m – 14.0m 14.0m – 15.0m 15.0m – 16.0m	Topsoil Brown stony CLAY Firm brown sandy CLAY Brown weathered sandy MUDSTONE (firm drilling) Grey sandy MUDSTONE (hard drilling) Dark grey MUDSTONE (hard drilling) Black COAL and SHALE (soft drilling) Grey SHALE (firm drilling) Black COAL and SHALE (firm drilling) Grey MUDSTONE (firm drilling)
SJ26SE17K On-Site	Drilled by: nkc Date: Unknown Method: Rotary Air Flush Open Hole	0.00m – 2.10m 2.10m – 3.00m 3.00m – 7.30m 7.30m – 9.10m 9.10m – 11.30m 11.30m – 11.90m 11.90m – 13.10m 13.10m – 15.20m 15.20m – 15.90m 15.90m – 16.50m 16.50m – 17.10m 17.10m – 21.00m	Brown sandy CLAY Brown weathered sandy MUDSTONE (firm drilling) Dark grey MUDSTONE (soft drilling) Grey sandy MUDSTONE (hard drilling) Grey MUDSTONE (soft drilling) Dark grey MUDSTONE and black SHALE (firm drilling) Grey MUDSTONE Black SHALE (firm drilling) Firm COAL Black SHALE (firm drilling) Firm COAL Grey MUDSTONE (firm drilling)
SJ26SE17N On-Site	Drilled by: nkc Date: Unknown Method: Rotary Air Flush Open Hole	0.00m – 1.80m 1.80m – 9.50m 9.50m – 11.50m 11.50m – 12.80m 12.80m – 14.50m 14.50m – 15.00m 15.00m – 15.60m 15.60m – 16.20m 16.20m – 18.00m	Brown sandy CLAY Grey sandy MUDSTONE (hard drilling) Black SHALE (firm drilling) Grey MUDSTONE (firm drilling) Black SHALE (firm drilling) Firm COAL Black SHALE (firm drilling) Firm COAL Grey MUDSTONE (firm drilling)
SJ26SE17S On-Site	Drilled by: nkc Date: Unknown Method: Rotary Air Flush Open Hole	0.00m – 2.40m 2.40m – 3.40m 3.40m – 3.50m 3.50m – 5.20m 5.20m – 5.60m 5.60m – 11.00m 11.00m – 11.30m 11.30m – 13.10m 13.10m – 15.10m 15.10m – 19.00m	Brown sandy CLAY Brown weathered MUDSTONE (firm drilling) Firm black SHALE Grey MUDSTONE (firm drilling) Firm black SHALE Grey MUDSTONE (firm drilling) Firm COAL Black SHALE (firm drilling) Grey SANDSTONE (hard drilling) Grey MUDSTONE (firm drilling)

2.2.6 Geological Hazard Ratings

The Groundsure Report provides ground stability data for the site and surrounding area, a summary is provided in Table 2.2 below:

Table 2.2 - Summary of BGS Hazard Ratings

Hazard	Located	Direction	Hazard Potential
Potential for Collapsible Rocks Stability Hazards	On-site	-	Very Low
Potential for Landslide Ground Stability Hazards	On-site	-	Very Low
Potential for Ground Dissolution Stability Hazards	On-site	-	Negligible
Potential for Compressible Ground Stability Hazards	On-Site	-	Negligible
Potential for Running Sand Ground Stability Hazards	On-site	-	Negligible to Very Low
Potential for Shrinking or Swelling Clay Ground Stability Hazards	On-site	-	Negligible to Very Low

2.3 Mining

2.3.1 BGS Mineral Sites

No records of BGS mining or mineral sites have been identified within a 250m radius of the site.

Non-coal mining records suggests localised small-scale underground mining may have occurred for Iron Ore (Bedded). Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered.

2.3.2 Brine Extraction

No Brine Extraction Areas have been identified within a 250m radius of the site.

2.3.3 Coal Mining

The site does lie within a Coal Authority standing advice or reporting area. A Coal Authority Consultants Report for the site is presented within Appendix V.

The report provides details of three mine shafts within the site boundary. None of the three records provide any treatment details.

The location of the shafts as well as any relevant potential zone of influence will need to be accurately overlaid onto the proposed development plans to determine if further assessment is required or precautions need to be considered during detailed design. The shaft coordinates are provided in Appendix V and until further information is available the zone of influence around each shaft should be assumed to be the Coal Authority default of 20m.

The site in general is not within a High Risk Development Area. However a Coal Mining Risk Assessment (CMRA) may be required to support a planning application if there is interaction between the proposed layout, the known shafts and shallow coal recorded in the available BGS borehole logs. It would be prudent to undertake a CMRA including obtaining further detailed shaft records and the abandonment plans for the site.

2.4 Hydrogeology

2.4.1 Aquifer Units

The superficial Till deposits are classified as a Secondary Undifferentiated Aquifer, defined by the Environment Agency as *'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.*

The Pennine Lower Coal Measures Formation bedrock deposits are classified as a Secondary A Aquifer, defined by the Environment Agency as '*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'.*

2.4.2 Groundwater Vulnerability

The site is not located within 250m of a Source Protection Zone.

Groundwater vulnerability mapping records the site as a Secondary Bedrock Aquifer – Medium Vulnerability.

2.4.3 Groundwater Abstractions

No groundwater abstraction licences have been identified within 250m of the site.

2.5 Hydrology

2.5.1 Nearest Surface Water Course

The nearest surface water feature is an inland river not influenced by normal tidal action. The river is recorded orientated east west in the centre of the site.

2.5.2 Surface Water Quality

No Environment Agency River Quality Records have been identified within 250m of the site.

2.5.3 Surface Water Abstractions

No licensed surface water abstraction points are recorded within a 250m radius of the site.

Additionally, there are no potable water abstractions identified within a 2000m radius of the site.

2.5.4 Surface Water Discharge Consents

There are three Surface Water Discharge Consents recorded within a 250m radius of the site. The closest record is on site and relates to an unspecified effluent from Mold Bryn-Y-Ball Top Farm. The consent was revoked on the 18th January 1995. The other two records are 110m north and 205m southwest and both relate to the discharge of sewage from pumping stations.

2.6 Flood Risk

The site does not lie within an Environment Agency Zone 2 or Zone 3 floodplain.

The site does not lie within an area benefitting from flood defences or within an area used for flood storage.

Although the report provides information on flood risk this does not constitute a flood risk assessment for the site. The flood risk information provided only relates to flooding from Rivers or Seas and does not account for flooding from other sources such as groundwater, blockages in drainage systems, artificial water features and overland flow. A separate Flood Risk Assessment may be required for the site.

2.7 Radon

The majority of the site is within an intermediate probability radon affected area with between 1% and 3% of properties being above the action level. Within the lower probability radon affected area, no radon protection measures are therefore considered necessary in the construction of new dwellings and extensions.

The north west corner of the site is an intermediate probability radon area where 5% - 10% of properties are above the action level. Within this area, basic radon protection measures are therefore considered necessary in the construction of new dwellings and extensions.

2.8 Sensitive Land Uses, Ecological and Statutory Designations

No records of sensitive land use (SSSI, SAC, Ancient Woodland, Nitrate Vulnerable Zones Nature Reserves, Environmentally Sensitive Areas, etc) have been identified within a 250m radius of the site.

3. Site History

The following section details the historical development of the site, with reference to historical Ordnance Survey maps. All distances are approximate and given from the site boundary. Descriptions in italics are as identified on the historical plans. For a complete list of maps consulted refer to the Emapsite® Historical Mapping presented in Appendix IV.

Table 3.1 - Summary of Historical Maps

Published Map Date & Scale	Land Use on Site	Surrounding Land Use
Date: 1869-1871 Scale: 1:2,500 1:10,560 County Series	The site is recorded as multiple fields with a pond in the north western corner. A watercourse (originating from a spring identified centrally on site on the 1960 mapping) is recorded running through the centre of the site in a north easterly direction to the eastern boundary, where it turns north and runs parallel to the boundary and then away north.	The surrounding land use is predominantly agricultural with a large pond present adjacent to the western boundary of the site. A road is recorded along the northern boundary of the site. A farm recorded as *Bryn y baal Isaf* is recorded along this road within 50m of the site. A small quarry is recorded approximately 250m north west of the site.
Date: 1960-1963 Scale: 1:2,500 1:10,560 National Grid	No significant changes identified.	*Highfield Farm* is recorded adjacent to the northern boundary of the farm.
Date: 1977 Scale: 1:2,500 National Grid	No significant changes identified.	Residential housing is recorded along the western boundary of the site.
Date: 1982 -1990 Scale: 1:1,250 1:10,000 National Grid	*Argoed High School* occupies the north western third of the site with the remaining area shown as *Playing Fields* and a *Playground* which is located in the south west extreme of the site from 1989 onwards.	Additional residential housing is recorded to the west of the site. A *Sports Ground* with *Bowling Green* and two small buildings is shown adjacent to the southern boundary

4. Environmental Data

4.1 Polluting Activity

4.1.1 Pollution Incidents to Controlled Water

No Environment Agency Recorded Pollution Incidents to Controlled Water have been recorded within a 250m radius of the site.

4.2 Licensed Industrial Activity

4.2.1 Licensed Sites

No incidents of Integrated Pollution Prevention and Control have been identified within 250m of the site boundary.

No Environment Agency or Local Authority Integrated Pollution Controls, Environmental Permits or Enforcements are recorded within a 250m radius of the site.

There are no Registered Radioactive Substance Licences recorded within 250m of the site.

No Part A (2) or Part B Activities have been identified within a 250m radius of the site.

4.2.2 Current Industrial Activities

There are two current potentially contaminative industrial activities recorded within a 250m radius of the site. These records relate to air rifle range and a sewage pumping station which are 43m north west and 116m north east of the site.

In addition, one electricity sub-station is recorded within 250m of the site, the sub-station is approximately 70m south west of the site.

4.2.3 Fuel Stations & Tanks

There are no fuel station record within a 250m radius of the site.

There are no records of high-pressure underground pipelines (oil and gas) within 250m of the site.

4.3 Waste and Material Storage Locations

4.3.1 Landfill

There are no records of Historical Landfill Sites or Licensed Waste Management Facilities recorded within a 250m radius of the site.

4.3.2 Waste Transfer Stations

There are no records of disposal depots within a 250m radius of the site.

There are no operational or non-operational Registered Waste Treatment, Transfer or Disposal sites identified within a 250m radius of the site.

4.4 Summary

Based on the information collated for the desk study, the geo-environmental setting of the site is summarised as follows:

- The site is shown as an open field from the earliest mapping, with no significant changes until the 1980s when Argoed High School is recorded on site. No significant changes are recorded on subsequent mapping. The surrounding land within 250m is predominantly recorded as open fields with residential housing expansion to the west of the site from the 1970's. No significant changes are recorded on subsequent mapping.
- Superficial Till deposits are recorded across the site on relevant BGS mapping, underlain by bedrock geology of the Pennine Lower Coal Measures Formation.
- Made Ground is not indicated within the site boundary on the published geological mapping, however, limited localised made ground should be anticipated associated with development of the school.
- The superficial Till deposits are classified as a Secondary Undifferentiated Aquifer and the Pennine Lower Coal Measures Formation bedrock deposits are classified as a Secondary A Aquifer.
- The radon probability changes across the site, Basic radon protection measures are required in the north west corner of the site (intermediate probability radon area where 5% - 10% of properties are above the action level). Radon protective measures are not required elsewhere on site at present.
- The site does lie within a Coal Authority standing advice or reporting area. There are three mine shafts within the site boundary. The site in general is not within a High Risk Development Area. However, a Coal Mining Risk Assessment (CMRA) may be required to support a planning application if there is interaction between the proposed layout and the known shafts.

Based on the above, the environmental sensitivity of the site can be considered to be Low at this stage.

5. Preliminary Conceptual Site Model (PCSM)

5.1 Introduction

The UK approach to risk assessment for both 'Contaminated Land' as defined by Part 2A of the Environmental Protection Act 1990 (EPA 1990) and for 'land affected by contamination' as defined in National Planning Policy Framework Planning Practice Guidance follows a risk-based tiered framework published by Defra and the Environment Agency in their guidance document *'CLR11 Model Procedures for the Management of Land Contamination'*.

The basis of CLR11 is the development of the conceptual site model (CSM) which is the representation of the source-pathway-receptor (pollutant) linkages upon which the assessment of risk can be based.

5.2 Risk Assessment Approach

The approach to the human health risk assessment reported here follows the principals given in CLR 11, i.e. application of the following assessment hierarchy:

- Tier 1 risk screening by establishment of potential pollutant linkages, i.e. the preliminary conceptual site model (PCSM), or
- Tier 2 generic quantitative assessment using generic assessment criteria (GACs) that represent 'acceptably low' risk, or
- Tier 3 quantitative risk assessment using site specific assessment criteria (SSACs) that represent 'unacceptable risk', or where generic assessment criteria are not available, or they are not applicable to the CSM.

At this stage there is no site-specific data available. The potential sources of contamination based on historical and current land uses were identified using the Emapsite Groundsure Enviro+Geo Insight (Appendix III) and Department of the Environment Industry Profiles. In the absence of a standard exposure scenario for a school environment, a conservative standard exposure scenario of residential without home-grown produce has been used to identify potential exposure pathways for human health receptors. Controlled water, flora and fauna and property receptors have also been included within the PCSM.

5.3 Preliminary Conceptual Site Model

The PCSM was produced by undertaking a Source-Pathway-Receptor analysis of the site:

Sources (**S**) are potential or known contaminant sources, e.g. a former land use:
Pathways (**P**) are environmental systems through which a contaminant could migrate, e.g. air, groundwater;
Receptors (**R**) are sensitive environmental receptors that could be adversely affected by a contaminant, e.g. Site Occupiers, groundwater resources.

For a pollutant linkage to exist between a contaminant source and a receptor, a pathway must be present.

5.3.1 Sources

The potential sources of contamination within 250m of the site and associated groups of potentially contaminative substances are outlined below. The list of potential contaminants was derived from the Department of the Environment Industry Profiles. The activities and substances listed below should not be considered exhaustive and provides a guide to the likely range of contaminants which may be present.

On Site

S1: Historical and Contemporary land use: Agricultural Land, Education Facility.
Contamination associated with current land use is likely to be limited but may include pesticides historically and made ground associated with development on site.

Off Site

S2: Historical and Contemporary land use: Agricultural land, residential dwellings, allotments.
Contamination associated with historical and current land use is likely to be limited.

S3: Historical Ponds along the western boundary of the site
Hazardous ground gases generation.

5.3.2 Pathways

The site is underlain by superficial and bedrock deposits classified as Secondary undifferentiated and Secondary A Aquifers respectively.

P1: Human uptake;
- Dermal contact with soils and dust
- Ingestion of soils and dust
- Inhalation of soils, dust and vapour

P2: Horizontal and vertical migration of contaminants through potentially permeable soils and rocks

P3: Migration along preferential pathways via underground services and drainage runs (pipes, culverts and granular material)

P4: Overland flow / surface runoff

P5: Vertical and lateral migration of ground gases and/or vapour

P6: Root uptake

5.3.3 Receptors

R1: End Users: Students and School Staff

R2: Construction and maintenance workers

R3: Controlled Water, Secondary aquifer.

R4: Property: Services (e.g. drinking water supply pipes) and structures/buildings (concrete used in foundations)

R5: Proposed flora and fauna.

5.3.4 Preliminary Qualitative Risk Assessment

For each potential pollutant linkage identified within the PCSM, the potential risk has been assessed on the probability of a pollution event and the severity it may have on the identified receptors. The results are presented in Table 5.1 below. The methodology for the assessment is presented in Appendix V.

Table 5.1 Preliminary Conceptual Site Model and Qualitative Risk Assessment

Source	Pathway	Receptor	Consequence	Probability	Risk	Comments
On site **S1:** Historical and Contemporary land use: Agricultural Land, Education Facility.	**P1:** Human uptake pathways	**R1:** End Users **R2:** Construction and maintenance workers	Mild	Low	Low	It is possible that end users / construction workers will come into contact with the soils across the site, however given the limited potential for contamination, the risk is considered to be LOW
	P2: Horizontal and vertical migration of contaminants through potentially permeable soils and rocks. **P3:** Migration of contaminants along preferential pathways (man- made). **P4:** Surface runoff.	**R3:** Controlled Water: Groundwater & Surface Water	Mild	Unlikely	Very Low	The bedrock geology is classified as a Secondary A Aquifer. Given the limited potential for contaminative sources and the lack of a plausible pathway, the risk to surface water and groundwater is considered to be VERY LOW.
Off Site (within 250m) **S2**: Historical and Contemporary land use: Agricultural land, residential dwellings, allotments. **S3**: Historical Ponds – Ground Gas Source	**P2:** Horizontal and vertical migration of contaminants through potentially permeable soils and rocks. **P3:** Migration of contaminants along preferential pathways (man- made). **P4:** Surface runoff.	**R1:** End Users **R2:** Construction and maintenance workers	Minor	Unlikely	Very Low	Due to the distance and nature of potential off-site sources, the risk is considered to be VERY LOW.
	P5: Vertical and lateral migration of ground gases and/or vapour.	**R1:** End Users	Mild	Likely	Moderate	Two ponds were recorded on historical mapping along the western boundary of the site. Also the Pennine Lower Coal Measures Formation bedrock may produce ground gases. Until investigation further, the risk is considered to be MODERATE.
	P2: Horizontal and vertical migration of contaminants through potentially permeable soils and rocks. **P3:** Migration of contaminants along preferential pathways (man- made). **P4:** Surface runoff.	**R4:** Property, services and substructures	Mild	Likely	Moderate/ Low	Shallow Made Ground (if present on site) and natural bedrock deposits of the Pennine Lower Coal Measures Formation may be aggressive to concrete and underground utilities. Until the potential has been investigated further, the risk is considered to be MODERATE / LOW.
	P6: Root uptake.	**R5:** Proposed Flora and fauna	Mild	Low	Low	There is likely to be a playing field and soft landscaping provision within the proposed school and therefore, until investigated further, the risk of uptake to proposed flora and fauna is LOW.

6. Preliminary Engineering Constraints and Recommendations

Detailed designs have not been provided for the site; however a preferred feasibility option has been provided indicating a new building upon the playing fields immediately to the east of the existing school. Some areas of the existing site are due to remain such as the southern MUGA. The layout changes following demolition of the existing school show extensive hard and soft landscaping changes incorporating additional vehicle drop off and parking provision. From the layout it is anticipated that a number of the external areas will be subject to significant earthworks operations. The preferred option layout is presented in Appendix II.

6.1 Geotechnical Constraints

The Emapsite® Groundsure Enviro+Geo Insight report and Historical Mapping suggest Made Ground is unlikely to be encountered but may be present associated with development on site. Any Made Ground would have an unknown composition and strength.

The groundwater regime on site is unknown and should be assessed further, if possible.

The recorded shafts and Coal Measure geology at the site present possible constraints and should be assessed further. Although the site generally is not within a high risk development area a Coal Mining Risk Assessment (CMRA) may be required to support a planning application if there is interaction within the zone of influence of the shafts. It would be prudent to undertake a CMRA including obtaining further detailed shaft records and the abandonment plans for the site to inform the scope of any intrusive investigation.

The shaft coordinates are provided in Appendix V and until further information is available the zone of influence around each shaft should be assumed to be the Coal Authority default of 20m.

The soils on site are likely to be fine in nature at shallow depth with rockhead at around 2m begl based on the BGS Geoindex borehole information. It should be noted that the likely ground conditions present constraints which should be further investigated by ground investigation to inform the feasibility study and provide useful background information for detailed design. Some of the obvious constraints at this stage may be but are not limited to:

- programme impacts around the ‘earthworks window’ (March to September annually),
- inclement weather during the earthworks window limiting soil movements, sulphates and the potential for the use of binders should be investigated,
- rock head, hard dig / rock ripping requirements and generation of material unsuitable (argillaceous rock) for use as engineered fill.
- The route for disposal or any licencing requirements for excavation of incidental coal during groundworks or earthworks.

6.2 Environmental Constraints

Any Made Ground on site may contain elevated concentrations of potentially harmful contaminants which may present a risk to the receptors identified in the PCSM including end users or construction workers.

The Preliminary Conceptual Site Model indicates a low possibility that harm could arise to a designated receptor from identified hazards.

Based on the available information, the site has historically been open fields before becoming an educational facility. The land use remains the same at present. The risk from contamination is currently considered to be low, however, it would be prudent to undertake intrusive investigation to confirm this and aid the feasibility study.

6.3 Recommendations

HSP would recommend that an intrusive geo-environmental investigation be undertaken across the site to confirm the recommendations outlined above.

The objectives of the investigation should be as follows:

- To establish the ground conditions laterally and vertically across the site, including the presence, distribution and composition of any Made Ground.
- To obtain soil samples for contamination analysis in order to refine the PCSM and undertake generic quantitative risk assessment.
- To obtain data on the ground gas and groundwater regime.
- To obtain geotechnical design parameters for the proposed buildings.
- To assess if the soils and groundwater on site are likely to be aggressive to buried/surface concrete and proposed utilities.
- Broad geotechnical classification of the natural soils and the existing earth mounds for use as engineered fill. At feasibility stage this information would not be sufficient for any detailed earthworks strategy. However, the existing levels at the site and outline development plan suggest sitewide investigation for reuse of site soils as engineered fill is necessary at the feasibility stage to inform the proposed scheme constraints appropriately.

Appendix I

NOTES: DO NOT SCALE

N

- Approximate Red Line Boundary

hsp consulting

Lawrence House, Meadowbank Way,
Eastwood, Nottingham, NG16 3SB
Tel: 01773 535 555 Fax: 0870 600 6091
www.hspconsulting.com

CLIENT:
Gleeds Management Services

PROJECT:
Argoed High School

TITLE:
Site Location Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN:	DATE:
MPK	April 2020
PROJECT No:	DRAWING No:
C3250	50

Appendix II

Argoed High School, Mold.

Test to Fit Plan

Red line boundary

Pedestrian Access

Vehicular Access

Current Access Points

Main Vehicular Route

Drainage Ditches

Existing Trees

Existing Hedgerow

Noise

Overhead Cables

Foot Bridge

Existing Right of Way

Building for Demolition

Photo View

Gradient / Embankment

+39.0m

Level

N

Completed Scheme.

Argoed Primary School			
School Specifics:			
No. of pupils	600		
FTE staff	55		
Total Building Area / m2			
Generated from BB99	3,040	Test Scheme	Difference
Childcare	0	0	0
Basic Teaching	1450	1450	0
Hall	351	351	0
Learning resources	125	125	0
Staff & Admin	182	182	0
Storage	237	237	0
Float	155	155	0
Total	**2,500**	**2,500**	0
BB99 External Spaces / m2			
Pitches	12,000	4000	-8,000
Soft play	2,300	1865	-435
Games courts	1,800	1800	0
Hard play	1,300	1309	9
Habitat	800	900	100
Float	3,000	3000	0
Total Net	**21,200**	12,874	-8,326
Parking			
No. of Spaces	55	55	0
Min Other	2120		
Max Other	4340		
Childcare			
Min Total Gross	**23,800**		
Max Total Gross	**26,500**		

Argoed Secondary School			
School Specifics:			
No. of pupils	700		
FTE staff	65		
Total Building Area / m2			
Generated from BB98	3,040	Test Scheme	Difference
Childcare	0	0	0
Basic Teaching	2,150	2,150	-
Hall	810	810	-
Learning resources	250	250	-
Staff & Admin	335	335	-
Storage	420	420	-
Float	460	460	-
Dining & Social	165	165	-
Total	**4,590**	**4,590**	-
BB98 External Spaces / m2			
Pitches	34,500	25000	-9,500
Soft play	2,550	2300	-250
Games courts	2,000	6700	4,700
Hard play	1,450	1300	-150
Habitat	900	2689	1,789
Float	4,500	4500	0
Total Net	**45,900**	42489	-3,411
Parking			
No. of Spaces	65	65	0
Min Other	1,000		
Max Other	11,400		
Childcare			
Min Total Gross	**46,900**		
Max Total Gross	**57,300**		

Points of Note.

- School areas shown are based on BB98 & BB99 Gross Floor areas.
- Adjacencies have yet to be resolved.
- Building components aligned north - south where possible, with teaching spaces on the east and west elevations.
- Building located away from Bryn Road - noise and pollution.
- Existing woodland retained and identified as Habitat Space.
- Existing games court retained. To be considered whether this sits outside of the MIM contract.
- External amenities - games courts - located towards the front of the site to facilitate access for community use and site management.

Site Access.

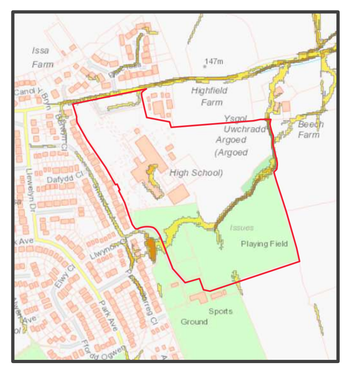
- Access off proposed new road. Position of turn-off TBC.

Phasing and Delivery.

- No existing buildings on the site.
- Development wholly dependent on the delivery of the new road.

Utilities:

- Not currently known.



0 5m 10m 20m 50m

Appendix III

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

Argoed High School, Bryn Road, Mold, CH7 6RY,

Order Details

Date: 14/04/2020

Your ref: EMS_605071_808855

Our Ref: EMS-605071_808855

Client: emapsite

Site Details

Location: 326397 364564

Area: 8.8 ha

Authority: Sir y Fflint - Flintshire County Council

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	0	0	10	24	-
15	1.2	Historical tanks	0	1	0	0	-
15	1.3	Historical energy features	0	0	3	10	-
16	1.4	Historical petrol stations	0	0	0	0	-
16	1.5	Historical garages	0	0	0	0	-
17	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
18	2.1	Historical industrial land uses	0	0	15	32	-
20	2.2	Historical tanks	0	2	0	0	-
21	2.3	Historical energy features	0	0	4	23	-
22	2.4	Historical petrol stations	0	0	0	0	-
22	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
24	3.5	Historical waste sites	0	0	0	0	-
24	3.6	Licensed waste sites	0	0	0	0	-
24	3.7	Waste exemptions	0	0	0	1	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
26	4.1	Recent industrial land uses	0	1	2	-	-
27	4.2	Current or recent petrol stations	0	0	0	0	-
27	4.3	Electricity cables	0	0	0	0	-
27	4.4	Gas pipelines	0	0	0	0	-
27	4.5	Sites determined as Contaminated Land	0	0	0	0	-

27	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
28	4.7	Regulated explosive sites	0	0	0	0	-
28	4.8	Hazardous substance storage/usage	0	0	0	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
28	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
28	4.11	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
29	4.12	Radioactive Substance Authorisations	0	0	0	0	-
29	**4.13**	**Licensed Discharges to controlled waters**	1	0	2	3	-
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	-
31	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	0	1	-
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	1
39	5.7	Surface water abstractions	0	0	0	0	0
39	5.8	Potable abstractions	0	0	0	0	0
39	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)**	1	1	1	-	-

42	6.2	Surface water features	1	0	3	-	-
42	6.3	WFD Surface water body catchments	1	-	-	-	-
43	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 Sea (RoFRaS)	None (within 50m)				
44	7.2	Historical Flood Events	0	0	0	-	-
44	7.3	Flood Defences	0	0	0	-	-
44	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	Negligible (within 50m)

Page	Section	Groundwater flooding	
48	9.1	Groundwater flooding	Moderate (within 50m)

Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
49	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	13
50	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
50	10.3	Special Areas of Conservation (SAC)	0	0	0	0	11
53	10.4	Special Protection Areas (SPA)	0	0	0	0	0
54	10.5	National Nature Reserves (NNR)	0	0	0	0	0
54	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
54	10.7	Designated Ancient Woodland	0	0	0	0	37
56	10.8	Biosphere Reserves	0	0	0	0	0
56	10.9	Forest Parks	0	0	0	0	0
56	10.10	Marine Conservation Zones	0	0	0	0	0
56	10.11	Green Belt	0	0	0	0	0
56	10.12	Proposed Ramsar sites	0	0	0	0	0

57	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
57	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
57	10.15	Nitrate Sensitive Areas	0	0	0	0	0
57	**10.16**	**Nitrate Vulnerable Zones**	0	0	0	0	1
59	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
60	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
61	11.1	World Heritage Sites	0	0	0	-	-
61	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
61	11.3	National Parks	0	0	0	-	-
61	11.4	Listed Buildings	0	0	0	-	-
62	11.5	Conservation Areas	0	0	0	-	-
62	11.6	Scheduled Ancient Monuments	0	0	0	-	-
62	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
63	**12.1**	**Agricultural Land Classification**	Grade 3b (within 250m)				
64	12.2	Open Access Land	0	0	0	-	-
64	12.3	Tree Felling Licences	0	0	0	-	-
64	12.4	Environmental Stewardship Schemes	0	0	0	-	-
64	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
65	13.1	Priority Habitat Inventory	0	0	0	-	-
65	13.2	Habitat Networks	0	0	0	-	-
65	13.3	Open Mosaic Habitat	0	0	0	-	-
65	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
66	**14.1**	**10k Availability**	Identified (within 500m)				
67	14.2	Artificial and made ground (10k)	0	0	0	0	-
68	14.3	Superficial geology (10k)	0	0	0	0	-

68	14.4	Landslip (10k)	0	0	0	0	-
69	14.5	Bedrock geology (10k)	0	0	0	0	-
69	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
70	15.1	50k Availability	Identified (within 500m)				
71	15.2	Artificial and made ground (50k)	0	0	0	1	-
72	15.3	Artificial ground permeability (50k)	0	0	-	-	-
73	15.4	Superficial geology (50k)	1	0	0	0	-
74	15.5	Superficial permeability (50k)	Identified (within 50m)				
74	15.6	Landslip (50k)	0	0	0	0	-
74	15.7	Landslip permeability (50k)	None (within 50m)				
75	15.8	Bedrock geology (50k)	4	1	3	7	-
76	15.9	Bedrock permeability (50k)	Identified (within 50m)				
77	15.10	Bedrock faults and other linear features (50k)	2	1	3	7	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
78	16.1	BGS Boreholes	4	0	17	-	-
Page	Section	Natural ground subsidence					
80	17.1	Shrink swell clays	Very low (within 50m)				
81	17.2	Running sands	Very low (within 50m)				
83	17.3	Compressible deposits	Negligible (within 50m)				
84	17.4	Collapsible deposits	Very low (within 50m)				
85	17.5	Landslides	Very low (within 50m)				
86	17.6	Ground dissolution of soluble rocks	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
87	18.1	Natural cavities	0	0	0	0	-
88	18.2	BritPits	0	0	0	3	-
88	18.3	Surface ground workings	1	1	14	-	-
89	18.4	Underground workings	0	0	0	10	39
91	18.5	Historical Mineral Planning Areas	0	0	0	0	-

91	**18.6**	**Non-coal mining**	1	0	0	4	4
93	18.7	Mining cavities	0	0	0	0	0
93	**18.8**	**JPB mining areas**	Identified (within 0m)				
93	**18.9**	**Coal mining**	Identified (within 0m)				
93	18.10	Brine areas	None (within 0m)				
94	18.11	Gypsum areas	None (within 0m)				
94	18.12	Tin mining	None (within 0m)				
94	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
95	**19.1**	**Radon**	Between 5% and 10% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
97	**20.1**	**BGS Estimated Background Soil Chemistry**	12	2	-	-	-
98	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
98	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
99	21.1	Underground railways (London)	0	0	0	-	-
99	21.2	Underground railways (Non-London)	0	0	0	-	-
99	21.3	Railway tunnels	0	0	0	-	-
99	21.4	Historical railway and tunnel features	0	0	0	-	-
99	21.5	Royal Mail tunnels	0	0	0	-	-
100	21.6	Historical railways	0	0	0	-	-
100	21.7	Railways	0	0	0	-	-
100	21.8	Crossrail 1	0	0	0	0	-
100	21.9	Crossrail 2	0	0	0	0	-
100	21.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 07/05/2017

Site Area: 8.8ha

Recent site history - 2013 aerial photograph

Capture Date: 04/06/2013

Site Area: 8.8ha

Recent site history - 2009 aerial photograph

Capture Date: 01/06/2009

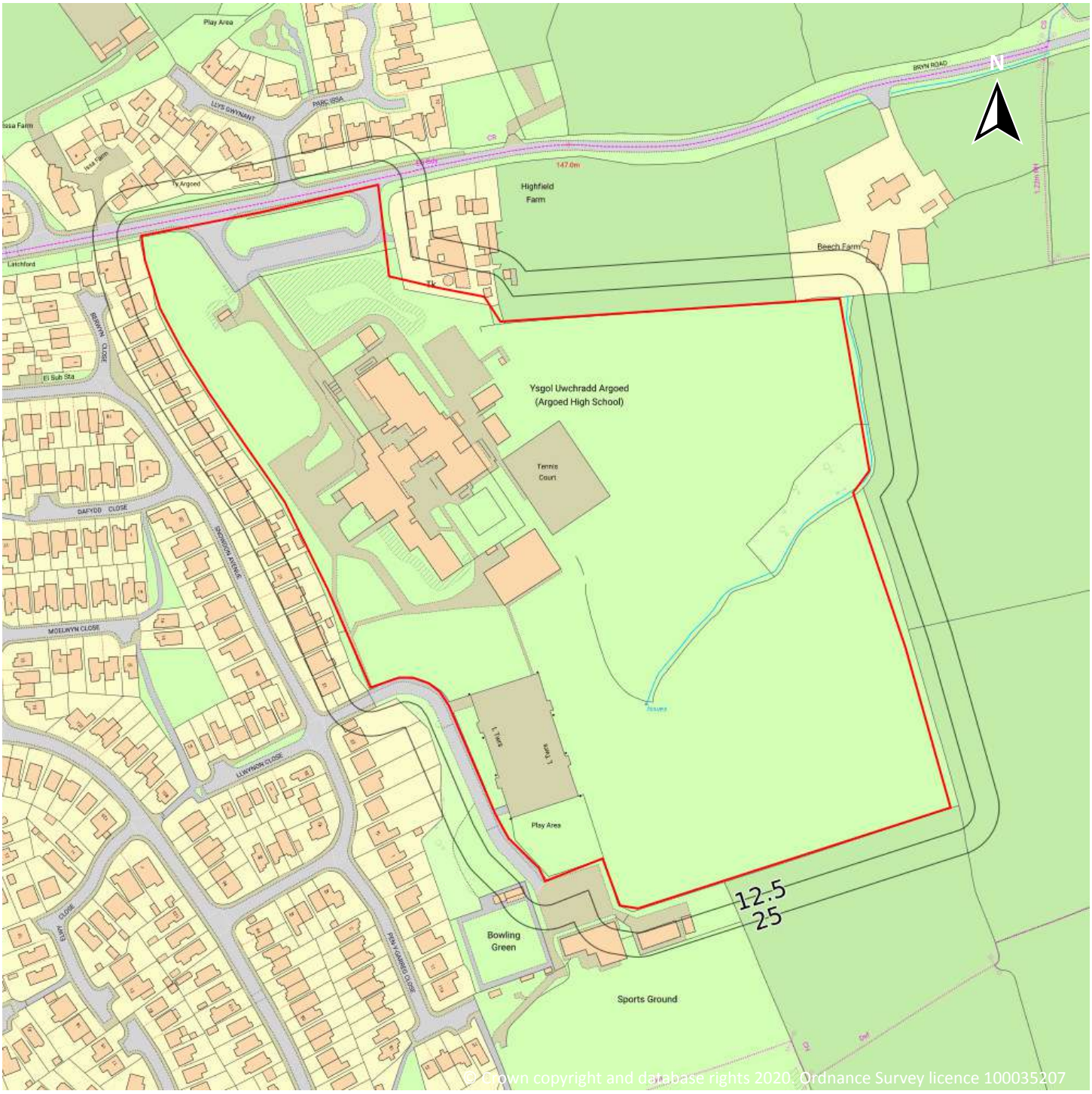
Site Area: 8.8ha

Recent site history - 2001 aerial photograph

Capture Date: 28/07/2001

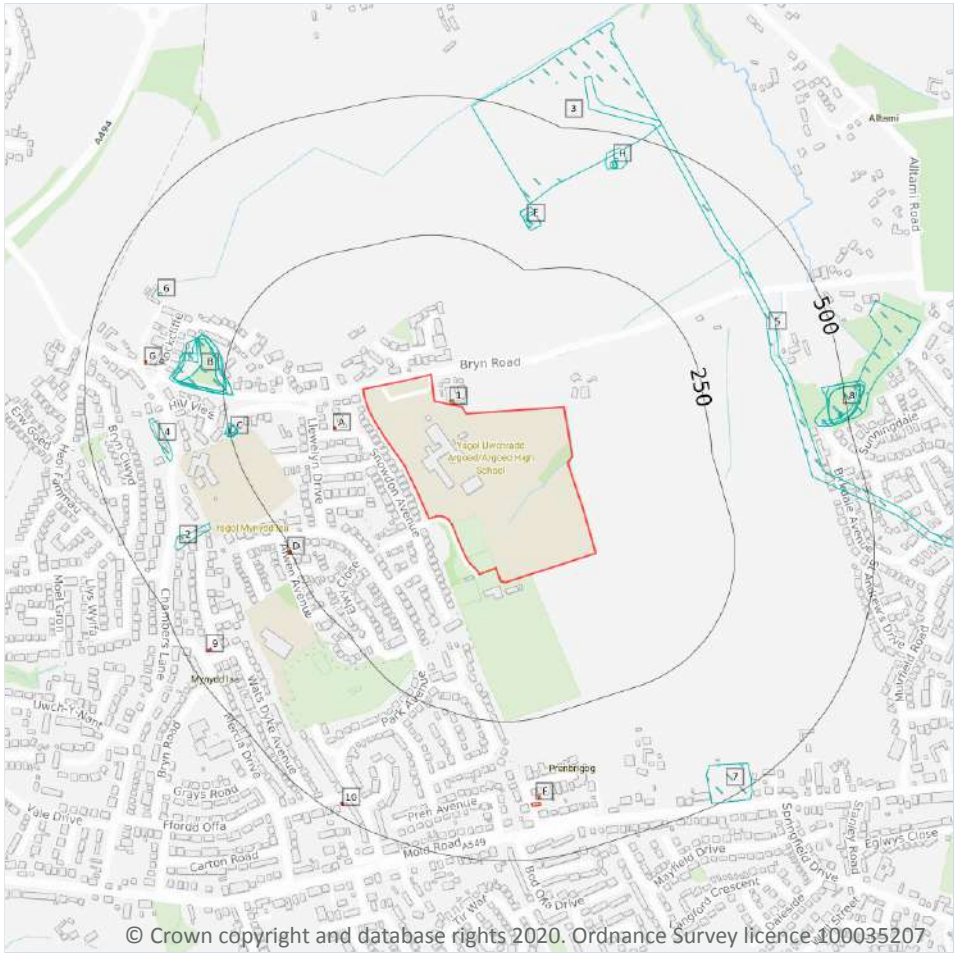
Site Area: 8.8ha

OS MasterMap site plan



Site Area: 8.8ha

1 Past land use



1.1 Historical industrial land uses

Records within 500m	34

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 13**

ID	Location	Land use	Dates present	Group ID
B	234m W	Unspecified Old Quarry	1948	900903

ID	Location	Land use	Dates present	Group ID
B	236m W	Unspecified Old Quarry	1909 - 1938	971378
C	236m W	Unspecified Quarry	1948	960273
C	236m W	Unspecified Pit	1909	961422
C	237m W	Unspecified Quarry	1869	848119
C	237m W	Unspecified Pit	1938	936450
B	245m W	Unspecified Quarry	1869 - 1898	886839
B	245m W	Quarry	1869	814260
B	248m W	Unspecified Quarry	1960 - 1974	856176
B	248m W	Unspecified Quarry	1990	976603
E	314m NE	Refuse Heap	1869	900031
E	316m NE	Unspecified Ground Workings	1909	799499
2	348m SW	Chambers	1909	810018
3	353m NE	Colliery	1938	855431
4	359m W	Unspecified Heap	1869	802873
5	383m E	Tramway Sidings	1938	990955
6	399m NW	Unspecified Tank	1898	824197
7	431m SE	Unspecified Ground Workings	1960 - 1968	908331
H	434m N	Refuse Heap	1869	904352
H	438m N	Disused Air Shaft	1987	861894
H	438m N	Disused Air Shaft	1970 - 1981	855257
H	438m N	Disused Air Shaft	1960	875048
8	439m E	Refuse Heap	1869	828348
H	448m N	Coal Shaft	1869	876178
H	450m N	Coal Shaft	1869	873240
I	452m E	Unspecified Ground Workings	1869	799498
I	465m E	Unspecified Heap	1898 - 1909	945081
I	465m E	Unspecified Heap	1948	966860
I	467m E	Unspecified Heap	1938	966532

ID	Location	Land use	Dates present	Group ID
I	484m E	Coal Shafts	1869	793879
I	484m E	Unspecified Shafts	1898	809215
I	484m E	Old Coal Shafts	1909 - 1938	880881
I	486m E	Coal Shafts	1869	793880
I	486m E	Old Coal Shafts	1948	893270

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m **1**

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 13**

ID	Location	Land use	Dates present	Group ID
1	2m N	Unspecified Tank	1989 - 1993	129821

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m **13**

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 13**

ID	Location	Land use	Dates present	Group ID
A	66m SW	Electricity Substation	1959 - 1989	82578
A	67m SW	Electricity Substation	1993	85291

ID	Location	Land use	Dates present	Group ID
A	68m SW	Electricity Substation	1984	75308
D	250m SW	Electricity Substation	1993	83093
D	251m SW	Electricity Substation	1959	73786
D	251m SW	Electricity Substation	1989	73960
D	251m SW	Electricity Substation	1984	73500
F	387m S	Electricity Substation	1999	60011
G	390m W	Electricity Substation	1985 - 1990	81315
G	392m W	Electricity Substation	1974	78690
F	398m S	Electricity Substation	1983 - 1990	64774
9	455m SW	Electricity Substation	1966 - 1990	69860
10	476m SW	Electricity Substation	1983 - 1999	81716

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

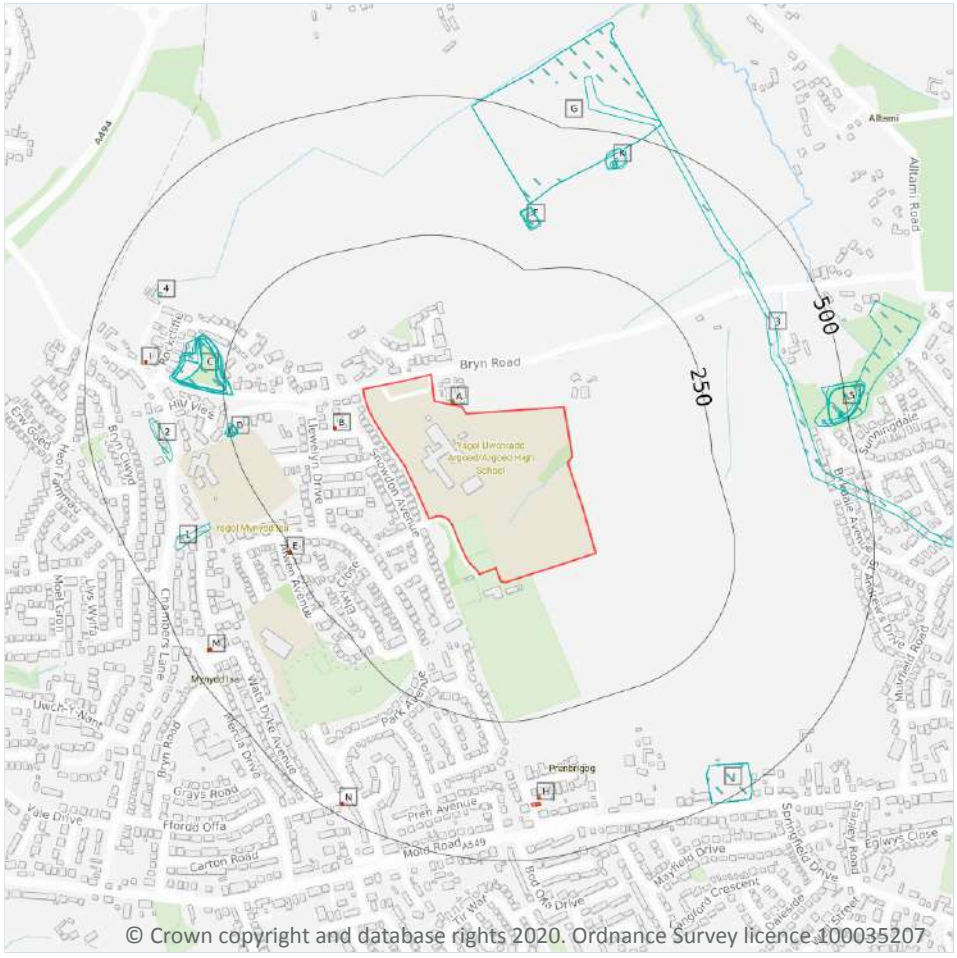
1.6 Historical military land

Records within 500m	0

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

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

2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m	47

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

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

ID	Location	Land Use	Date	Group ID
C	234m W	Unspecified Old Quarry	1948	900903
C	236m W	Unspecified Old Quarry	1938	971378
C	236m W	Unspecified Old Quarry	1909	971378

ID	Location	Land Use	Date	Group ID
D	236m W	Unspecified Quarry	1948	960273
D	236m W	Unspecified Pit	1909	961422
D	237m W	Unspecified Quarry	1869	848119
D	237m W	Unspecified Pit	1938	936450
D	237m W	Unspecified Pit	1938	936450
C	245m W	Unspecified Quarry	1898	886839
C	245m W	Quarry	1869	814260
C	247m W	Unspecified Quarry	1869	886839
C	248m W	Unspecified Quarry	1990	976603
C	248m W	Unspecified Quarry	1974	856176
C	248m W	Unspecified Quarry	1960	856176
C	248m W	Unspecified Quarry	1968	856176
F	314m NE	Refuse Heap	1869	900031
F	316m NE	Unspecified Ground Workings	1909	799499
F	317m NE	Refuse Heap	1869	900031
1	348m SW	Chambers	1909	810018
G	353m NE	Colliery	1938	855431
G	353m NE	Colliery	1938	855431
2	359m W	Unspecified Heap	1869	802873
3	383m E	Tramway Sidings	1938	990955
4	399m NW	Unspecified Tank	1898	824197
J	431m SE	Unspecified Ground Workings	1960	908331
J	431m SE	Unspecified Ground Workings	1968	908331
K	434m N	Refuse Heap	1869	904352
K	435m N	Refuse Heap	1869	904352
K	438m N	Disused Air Shaft	1987	861894
K	438m N	Disused Air Shaft	1960	875048
K	438m N	Disused Air Shaft	1970	855257

ID	Location	Land Use	Date	Group ID
5	439m E	Refuse Heap	1869	828348
K	443m N	Disused Air Shaft	1981	855257
K	448m N	Coal Shaft	1869	876178
K	450m N	Coal Shaft	1869	873240
L	452m E	Unspecified Ground Workings	1869	799498
L	465m E	Unspecified Heap	1909	945081
L	465m E	Unspecified Heap	1948	966860
L	467m E	Unspecified Heap	1938	966532
L	467m E	Unspecified Heap	1938	966532
L	467m E	Unspecified Heap	1898	945081
L	484m E	Unspecified Shafts	1898	809215
L	484m E	Coal Shafts	1869	793879
L	484m E	Old Coal Shafts	1909	880881
L	484m E	Old Coal Shafts	1938	880881
L	486m E	Coal Shafts	1869	793880
L	486m E	Old Coal Shafts	1948	893270

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**2**

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

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

ID	Location	Land Use	Date	Group ID
A	2m N	Unspecified Tank	1989	129821
A	4m N	Unspecified Tank	1993	129821

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**27**

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

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

ID	Location	Land Use	Date	Group ID
B	66m SW	Electricity Substation	1959	82578
B	66m SW	Electricity Substation	1989	82578
B	67m SW	Electricity Substation	1993	85291
B	68m SW	Electricity Substation	1984	75308
E	250m SW	Electricity Substation	1993	83093
E	251m SW	Electricity Substation	1959	73786
E	251m SW	Electricity Substation	1989	73960
E	251m SW	Electricity Substation	1984	73500
H	387m S	Electricity Substation	1999	60011
I	390m W	Electricity Substation	1985	81315
I	390m W	Electricity Substation	1990	81315
I	390m W	Electricity Substation	1989	81315
I	390m W	Electricity Substation	1989	81315
I	390m W	Electricity Substation	1989	81315
I	392m W	Electricity Substation	1974	78690
H	398m S	Electricity Substation	1990	64774
H	399m S	Electricity Substation	1983	64774
M	455m SW	Electricity Substation	1966	69860
M	455m SW	Electricity Substation	1974	69860
M	455m SW	Electricity Substation	1985	69860
M	455m SW	Electricity Substation	1990	69860
M	455m SW	Electricity Substation	1989	69860
M	455m SW	Electricity Substation	1989	69860

ID	Location	Land Use	Date	Group ID
M	455m SW	Electricity Substation	1989	69860
N	476m SW	Electricity Substation	1999	81716
N	476m SW	Electricity Substation	1983	81716
N	477m SW	Electricity Substation	1990	81716

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

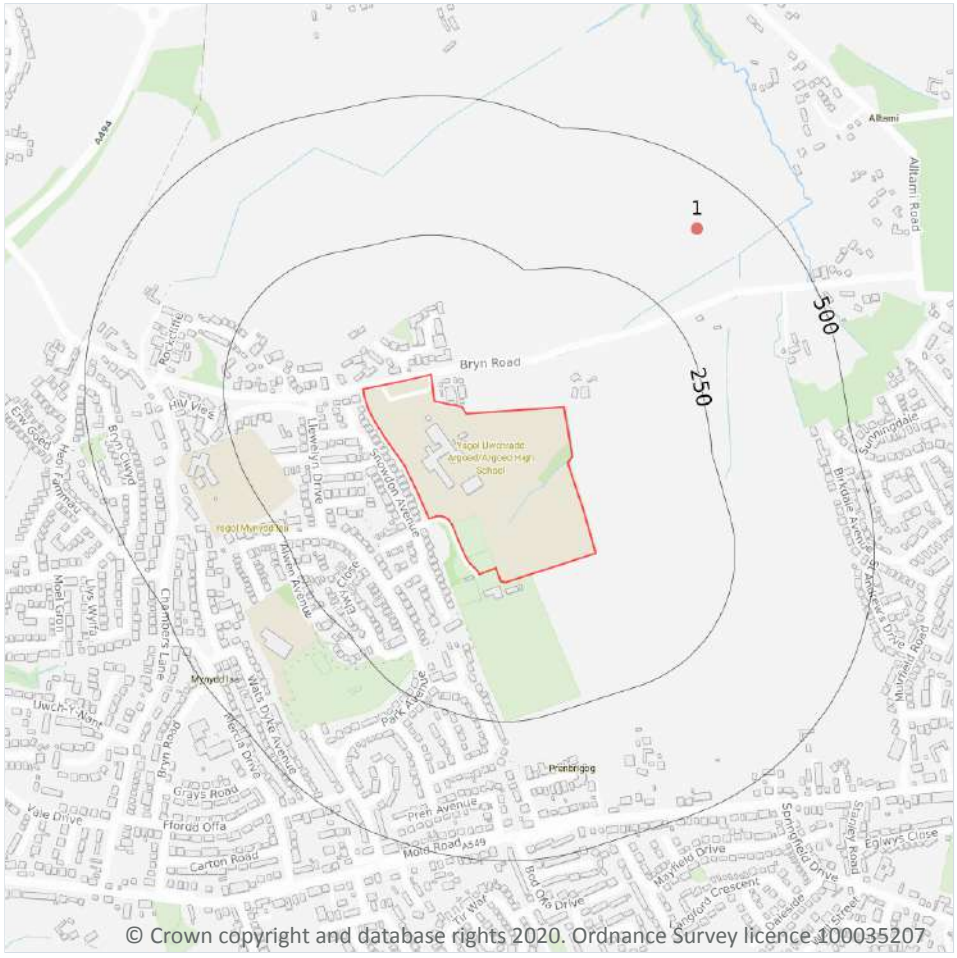
2.5 Historical garages

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	1

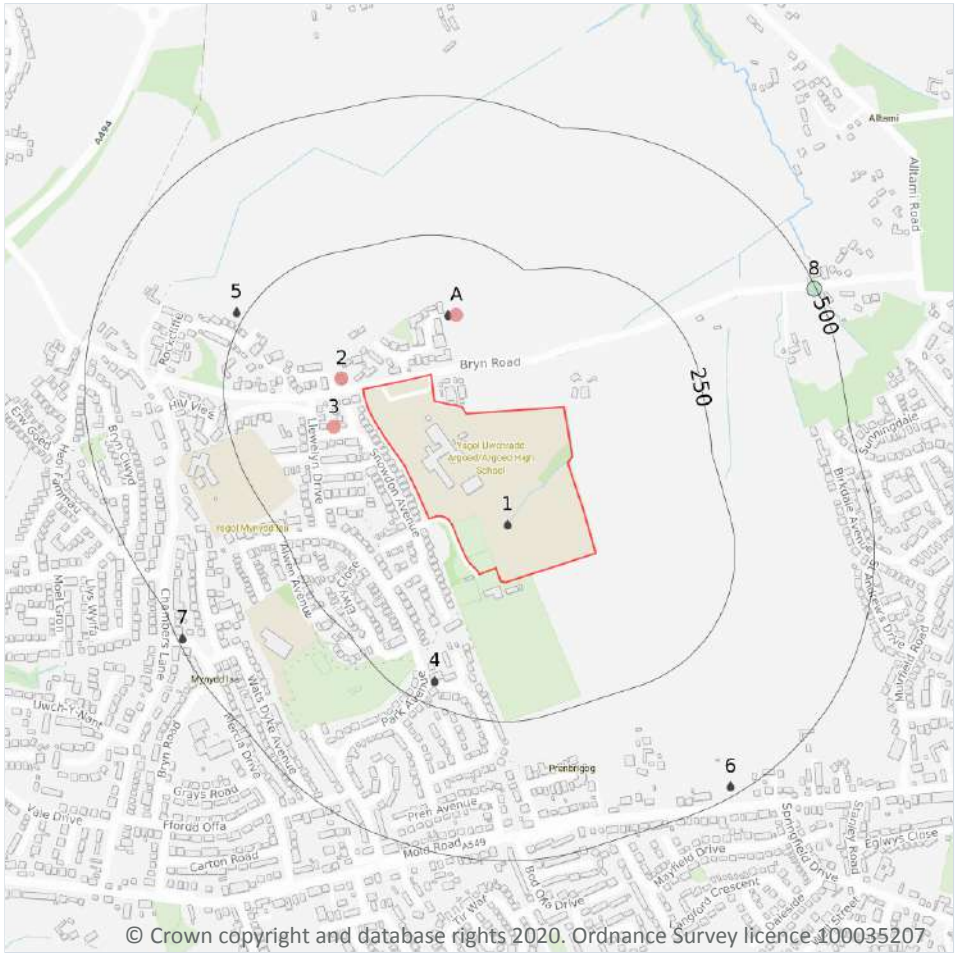
Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

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

ID	Location	Site	Reference	Category	Sub-Category	Description
1	399m NE	-	WEX104656	Storing waste exemption	On a farm	Storage of sludge

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

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	3

Current potentially contaminative industrial sites.

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

ID	Location	Company	Address	Activity	Category
2	43m NW	John's Armoury & Air Rifle Range	Issa Farm, Bryn Road, Bryn-y-Baal, Mold, Clwyd, CH7 6RY	Shooting Facilities	Sports Complex
3	70m SW	Electricity Sub Station	Clwyd, CH7	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
A	116m NE	Sewage Pumping Station	Clwyd, CH7	Waste Storage, Processing and Disposal	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

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

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

Records within 500m	0

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	6

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	
1	**On site**	**MOLD BRYN-Y-BALL TOP FARM DEVELOPME, MOLD BRYN-Y-BALL TOP FARM DEVELO, BRYN-Y-BALL TOP FARM DEVELOPMENT, TOP FARM DEVELOPMENT**	**Effluent Type: UNSPECIFIED Permit Number: CM0091001 Permit Version: 1 Receiving Water: UN-NAMED TRIB. OF ALLTAMI BROO**	**Status: CONSENT EXPIRED - TIME LIMIT Issue date: 18/03/1981 Effective Date: 18/03/1981 Revocation Date: 18/01/1995**
A	110m N	SPS AT RESIDENTIAL DEV - PARC HANES, SPS AT RESIDENTIAL DEVELOPMENT, PARC HANES OFF BRYN RD, MYNYDD ISSA	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: CG0390701 Permit Version: 1 Receiving Water: SURFACE WATER SEWER	Status: Effective Issue date: 02/03/2001 Effective Date: 02/03/2001 Revocation Date: -
4	205m SW	MYNYDD ISA WATS DYKE AVE PS, CH7 6YA	Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: CM0192401 Permit Version: 2 Receiving Water: S W SEWER	Status: Effective Issue date: 08/09/2010 Effective Date: 08/09/2010 Revocation Date: -
5	266m NW	ROCK COTTAGE DEVELOPMENT, OFF ROCKCLIFFE, BRYN Y BAAL, MOLD, FLINTSHIRE	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CG0419501 Permit Version: 1 Receiving Water: GROUNDWATER VIA A SOAKAWAY	Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV Issue date: 23/04/2004 Effective Date: 23/04/2004 Revocation Date: 12/06/2005
6	482m SE	PRENBRIGOG NO 1 CHLORINATED O/	Effluent Type: UNSPECIFIED Permit Number: CM0206001 Permit Version: 1 Receiving Water: GROUND	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 02/10/1989 Effective Date: 02/10/1989 Revocation Date: 17/03/1994

ID	Location	Address	Details	
7	491m SW	Mynydd Isa Chambers lane/Mercia Drive CSO, Mynydd Isa Chambers Lane / Mercia Drive, Mold, CH7 6UH	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: CG0360301 Permit Version: 2 Receiving Water: AFON ALUN TRIBUTARY	Status: Effective Issue date: 25/09/2019 Effective Date: 25/09/2019 Revocation Date: -

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	1

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

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

ID	Location	Details	
8	496m NE	Incident Date: 23/09/2013 Incident Identification: 1161417 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

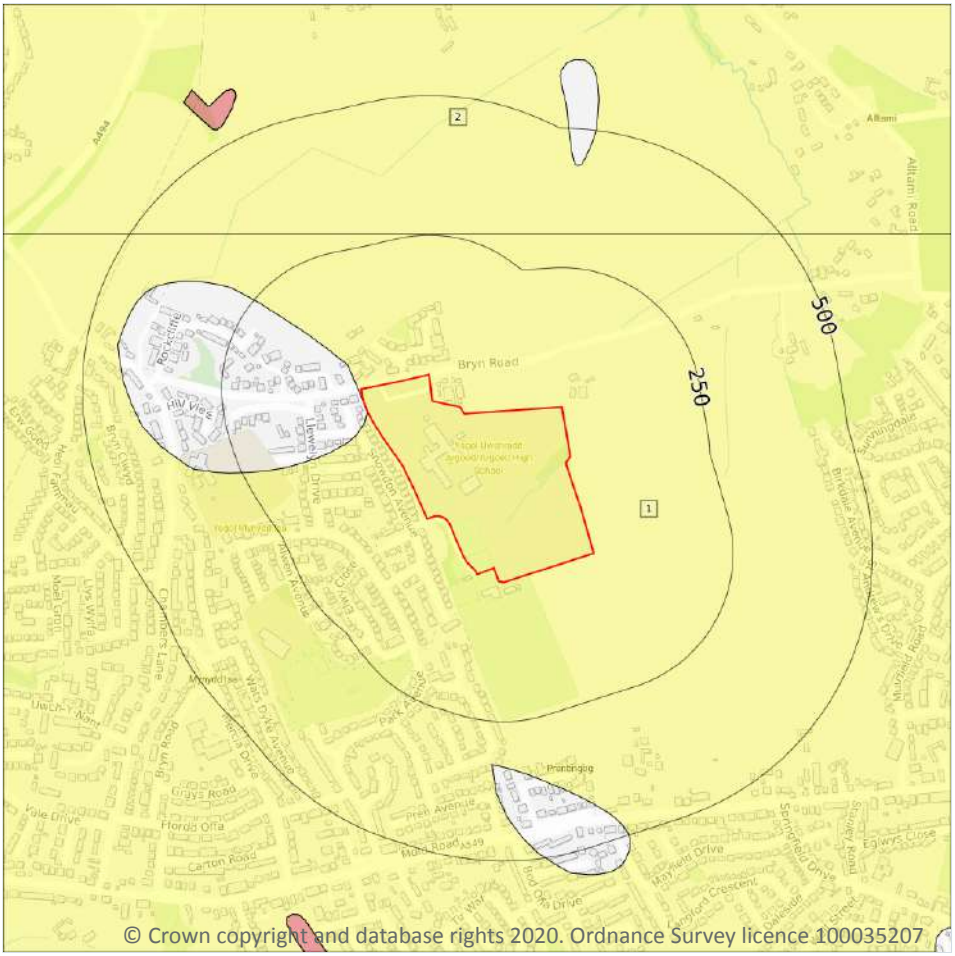
4.21 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

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

5.1 Superficial aquifer

Records within 500m	2

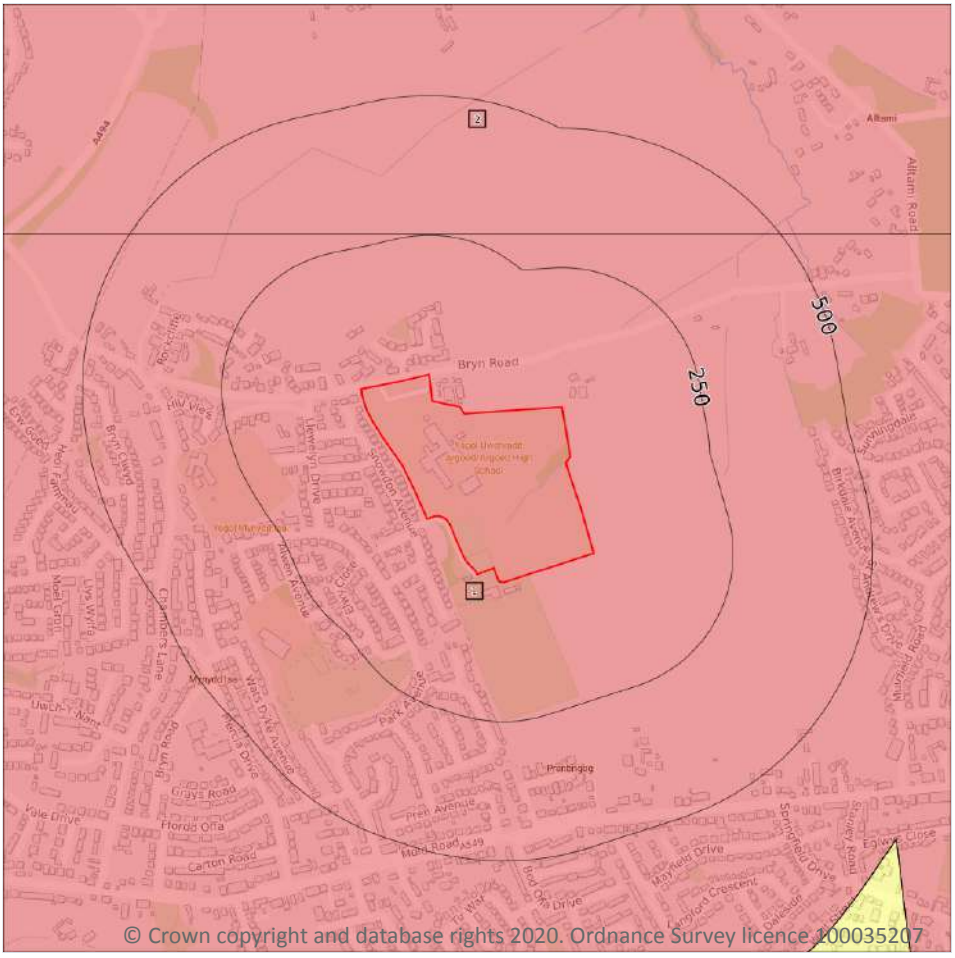
Aquifer status of groundwater held within superficial geology.

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

ID	Location	Designation	Description
1	**On site**	**Secondary Undifferentiated**	**Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type**
2	252m N	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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

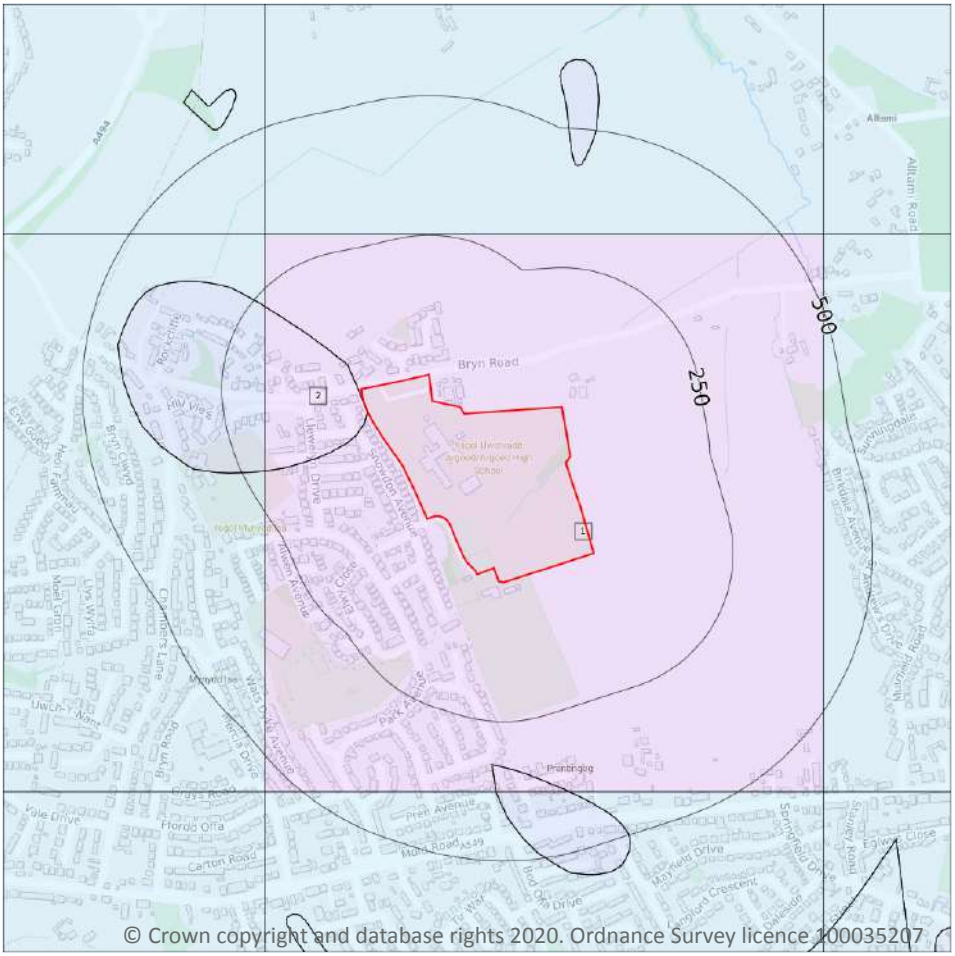
Aquifer status of groundwater held within bedrock geology.

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	252m N	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



Site Outline

Search buffers in metres (m)

Superficial vulnerability

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

Bedrock vulnerability

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

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	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 bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: Low Aquifer type: Secondary Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary bedrock aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, No Superficial Aquifer	Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year	Vulnerability: - Aquifer type: - Thickness: <3m Patchiness value: <90% Recharge potential: Low	Vulnerability: Medium 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.

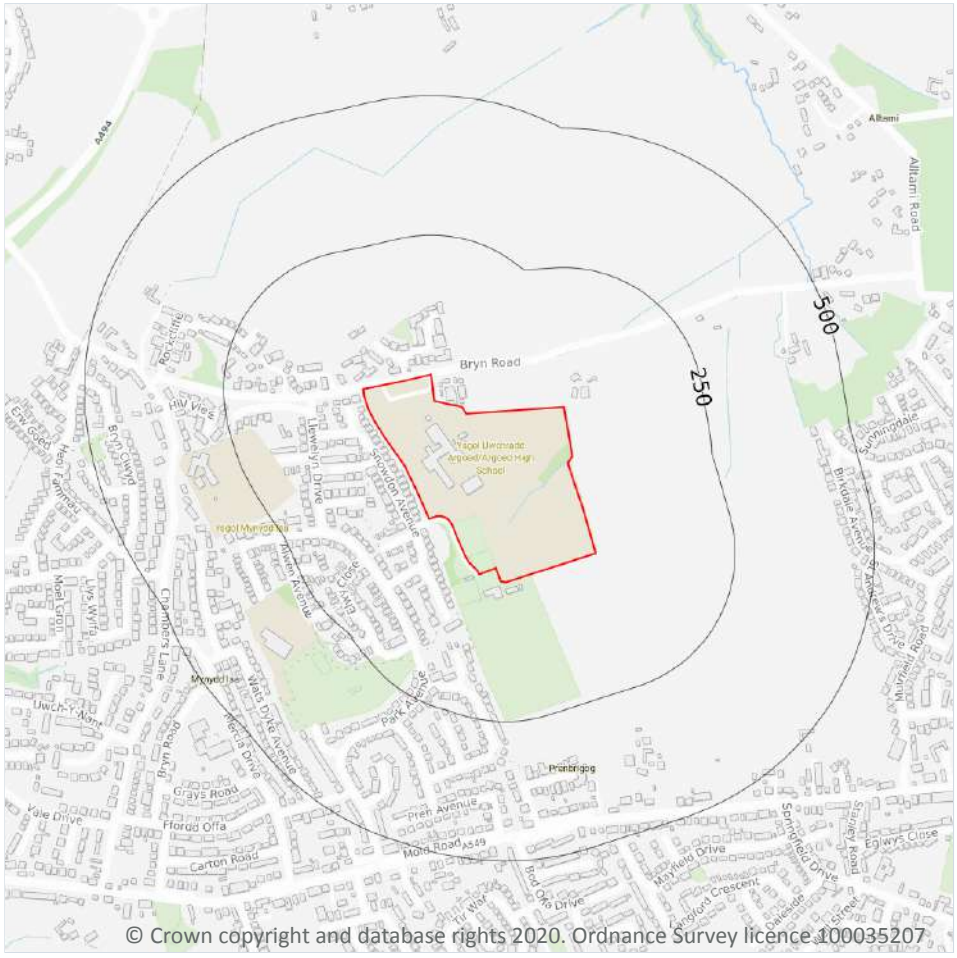
5.5 Groundwater vulnerability- local information

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



© Crown copyright and database rights 2020. Ordnance Survey licence 100035207

- 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	1

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	
-	1004m S	Status: Historical Licence No: 24/67/8/0013 Details: General Farming & Domestic Direct Source: EAW Groundwater Point: WELL Data Type: Point Name: Bistre Farm Easting: 326830 Northing: 363450	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 09/08/1966 Expiry Date: - Issue No: 101 Version Start Date: 01/01/2004 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**0**

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

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

5.8 Potable abstractions

Records within 2000m	**0**

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

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

5.9 Source Protection Zones

Records within 500m	**0**

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

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

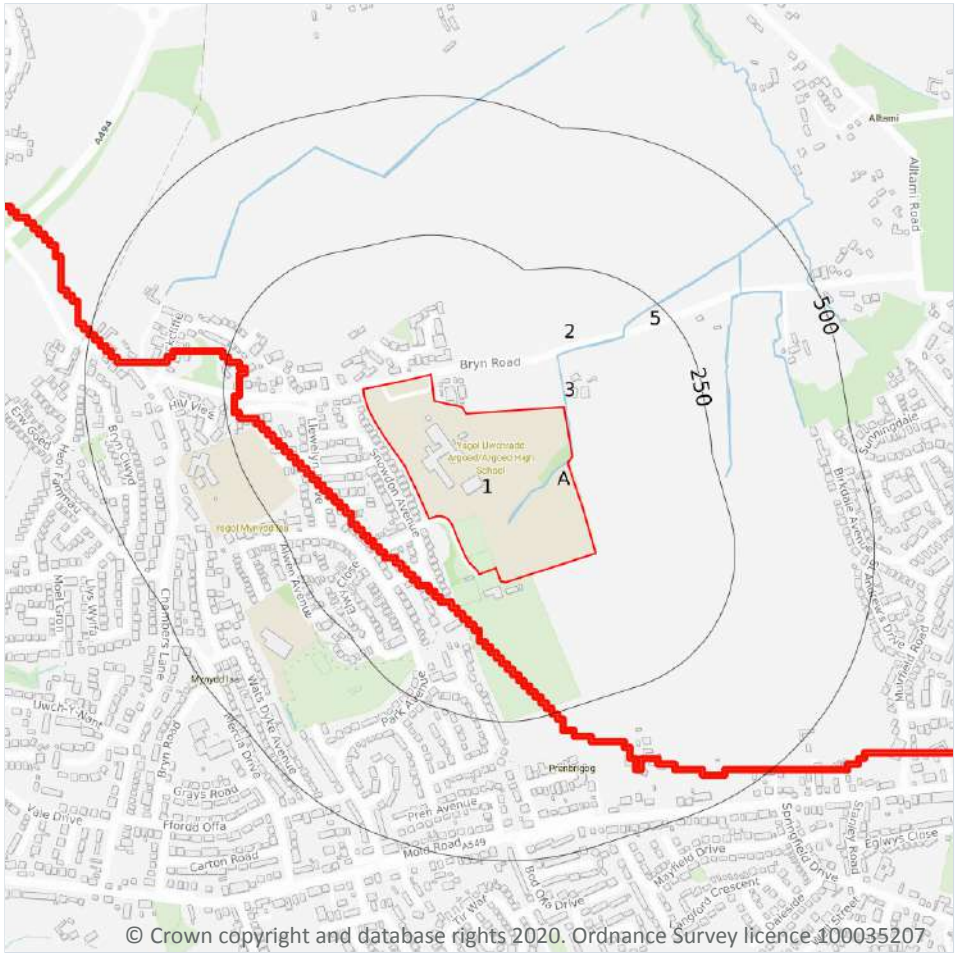
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



6.1 Water Network (OS MasterMap)

Records within 250m **3**

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

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

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

ID	Location	Type of water feature	Ground level	Permanence	Name
3	4m E	Inland river not influenced by normal tidal action.	Not provided	Watercourse contains water year round (in normal circumstances)	-
5	93m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**4**

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

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

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
2	**On site**	**River WB catchment**	**Wepre Brook**	**GB111067056880**	**Dee Estuary**	**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
-	2784m N	River	Wepre Brook	GB111067056880	Moderate	Good	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
1	**On site**	**Dee Carboniferous Coal Measures**	**GB41102G204800**	**Poor**	**Poor**	**Good**	**2016**

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

7 River and coastal flooding

7.1 Risk of Flooding from Rivers and Sea (RoFRaS)

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance).

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding

8.1 Surface water flooding

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

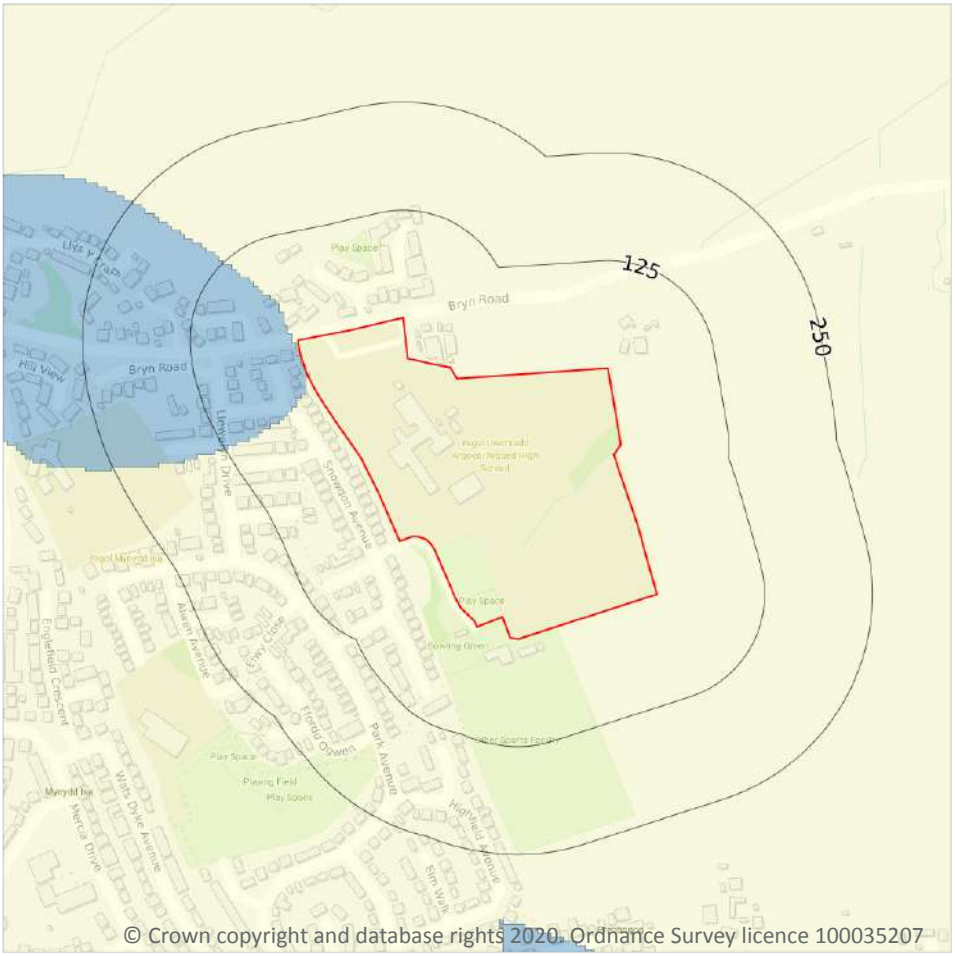
Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year 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.

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

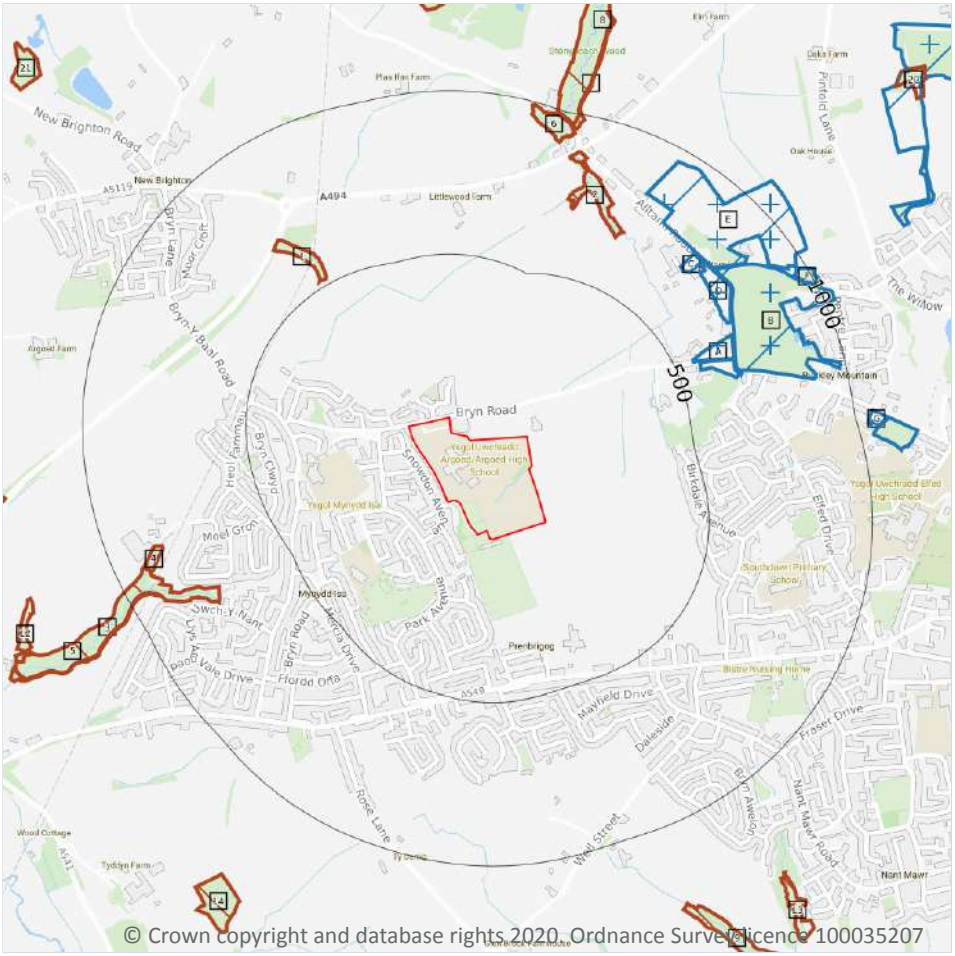
Highest risk on site	**Moderate**
Highest risk within 50m	**Moderate**

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 48**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

Sites of Special Scientific Interest (SSSI)

Special Areas of Conservation (SAC)

Designated Ancient Woodland

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	13

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.

Features are displayed on the Environmental designations map on **page 49**

ID	Location	Name	Data source
A	559m NE	Buckley Claypits And Commons	Natural Resources Wales

ID	Location	Name	Data source
A	570m E	Buckley Claypits And Commons	Natural Resources Wales
B	676m E	Buckley Claypits And Commons	Natural Resources Wales
C	696m NE	Buckley Claypits And Commons	Natural Resources Wales
D	700m NE	Buckley Claypits And Commons	Natural Resources Wales
E	765m NE	Buckley Claypits And Commons	Natural Resources Wales
F	953m NE	Buckley Claypits And Commons	Natural Resources Wales
G	1034m E	Buckley Claypits And Commons	Natural Resources Wales
G	1040m E	Buckley Claypits And Commons	Natural Resources Wales
-	1273m N	Maes Y Grug	Natural Resources Wales
I	1317m NE	Buckley Claypits And Commons	Natural Resources Wales
-	1856m NE	Buckley Claypits And Commons	Natural Resources Wales
-	1916m E	Buckley Claypits And Commons	Natural Resources Wales

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	**11**

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.

Features are displayed on the Environmental designations map on **page 49**

ID	Location	Name	Features of interest	Habitat description	Data source
A	559m NE	Deeside and Buckley Newt sites	Western acidic oak woodland; Alder woodland on floodplains; Great crested newt; Bullhead.	Coniferous woodland; Broad-leaved deciduous woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Dry grassland, Steppes; Improved grassland; Heath, Scrub, Maquis and Garrigue, Phygrana; Mixed woodland	Natural Resources Wales
A	570m E	Deeside and Buckley Newt sites	Western acidic oak woodland; Alder woodland on floodplains; Great crested newt; Bullhead.	Coniferous woodland; Broad-leaved deciduous woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Dry grassland, Steppes; Improved grassland; Heath, Scrub, Maquis and Garrigue, Phygrana; Mixed woodland	Natural Resources Wales
B	676m E	Deeside and Buckley Newt sites	Western acidic oak woodland; Alder woodland on floodplains; Great crested newt; Bullhead.	Coniferous woodland; Broad-leaved deciduous woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Dry grassland, Steppes; Improved grassland; Heath, Scrub, Maquis and Garrigue, Phygrana; Mixed woodland	Natural Resources Wales
C	696m NE	Deeside and Buckley Newt sites	Western acidic oak woodland; Alder woodland on floodplains; Great crested newt; Bullhead.	Coniferous woodland; Broad-leaved deciduous woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Dry grassland, Steppes; Improved grassland; Heath, Scrub, Maquis and Garrigue, Phygrana; Mixed woodland	Natural Resources Wales

ID	Location	Name	Features of interest	Habitat description	Data source
D	700m NE	Deeside and Buckley Newt sites	Western acidic oak woodland; Alder woodland on floodplains; Great crested newt; Bullhead.	Coniferous woodland; Broad-leaved deciduous woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Dry grassland, Steppes; Improved grassland; Heath, Scrub, Maquis and Garrigue, Phygrana; Mixed woodland	Natural Resources Wales
E	765m NE	Deeside and Buckley Newt sites	Western acidic oak woodland; Alder woodland on floodplains; Great crested newt; Bullhead.	Coniferous woodland; Broad-leaved deciduous woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Dry grassland, Steppes; Improved grassland; Heath, Scrub, Maquis and Garrigue, Phygrana; Mixed woodland	Natural Resources Wales
F	953m NE	Deeside and Buckley Newt sites	Western acidic oak woodland; Alder woodland on floodplains; Great crested newt; Bullhead.	Coniferous woodland; Broad-leaved deciduous woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Dry grassland, Steppes; Improved grassland; Heath, Scrub, Maquis and Garrigue, Phygrana; Mixed woodland	Natural Resources Wales
-	1273m N	Deeside and Buckley Newt sites	Western acidic oak woodland; Alder woodland on floodplains; Great crested newt; Bullhead.	Coniferous woodland; Broad-leaved deciduous woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Dry grassland, Steppes; Improved grassland; Heath, Scrub, Maquis and Garrigue, Phygrana; Mixed woodland	Natural Resources Wales

ID	Location	Name	Features of interest	Habitat description	Data source
I	1317m NE	Deeside and Buckley Newt sites	Western acidic oak woodland; Alder woodland on floodplains; Great crested newt; Bullhead.	Coniferous woodland; Broad-leaved deciduous woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Dry grassland, Steppes; Improved grassland; Heath, Scrub, Maquis and Garrigue, Phygrana; Mixed woodland	Natural Resources Wales
-	1856m NE	Deeside and Buckley Newt sites	Western acidic oak woodland; Alder woodland on floodplains; Great crested newt; Bullhead.	Coniferous woodland; Broad-leaved deciduous woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Dry grassland, Steppes; Improved grassland; Heath, Scrub, Maquis and Garrigue, Phygrana; Mixed woodland	Natural Resources Wales
-	1916m E	Deeside and Buckley Newt sites	Western acidic oak woodland; Alder woodland on floodplains; Great crested newt; Bullhead.	Coniferous woodland; Broad-leaved deciduous woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Dry grassland, Steppes; Improved grassland; Heath, Scrub, Maquis and Garrigue, Phygrana; Mixed woodland	Natural Resources Wales

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	37

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 49**

ID	Location	Name	Woodland Type
1	518m NW	Unknown	Ancient Semi Natural Woodland
2	667m NE	Unknown	Ancient Semi Natural Woodland
3	741m SW	Unknown	Ancient Semi Natural Woodland
4	833m SW	Unknown	Ancient Semi Natural Woodland
5	905m SW	Unknown	Ancient Semi Natural Woodland
6	907m N	Unknown	Restored Ancient Woodland Site
7	951m N	Unknown	Ancient Semi Natural Woodland
8	963m N	Unknown	Restored Ancient Woodland Site
9	1244m S	Unknown	Ancient Semi Natural Woodland
10	1247m N	Unknown	Restored Ancient Woodland Site

ID	Location	Name	Woodland Type
11	1255m W	Unknown	Ancient Semi Natural Woodland
12	1266m SW	Unknown	Ancient Semi Natural Woodland
13	1295m SE	Unknown	Ancient Semi Natural Woodland
14	1299m SW	Unknown	Ancient Semi Natural Woodland
-	1329m W	Unknown	Ancient Semi Natural Woodland
-	1383m S	Unknown	Ancient Semi Natural Woodland
-	1434m N	Unknown	Restored Ancient Woodland Site
-	1459m N	Unknown	Restored Ancient Woodland Site
-	1484m SW	Unknown	Ancient Semi Natural Woodland
-	1531m N	Unknown	Ancient Semi Natural Woodland
-	1540m N	Unknown	Ancient Semi Natural Woodland
20	1556m NE	Unknown	Restored Ancient Woodland Site
21	1557m NW	Unknown	Restored Ancient Woodland Site
-	1666m S	Unknown	Ancient Semi Natural Woodland
-	1668m N	Unknown	Restored Ancient Woodland Site
-	1673m N	Unknown	Restored Ancient Woodland Site
-	1689m W	Unknown	Restored Ancient Woodland Site
-	1750m S	Unknown	Ancient Semi Natural Woodland
-	1752m N	Unknown	Restored Ancient Woodland Site
-	1765m W	Unknown	Ancient Semi Natural Woodland
-	1782m NE	Unknown	Ancient Semi Natural Woodland
-	1785m N	Unknown	Ancient Semi Natural Woodland
-	1822m SE	Unknown	Ancient Semi Natural Woodland
-	1873m NE	Unknown	Restored Ancient Woodland Site
-	1918m E	Unknown	Ancient Semi Natural Woodland
-	1919m N	Unknown	Ancient Semi Natural Woodland
-	1996m 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

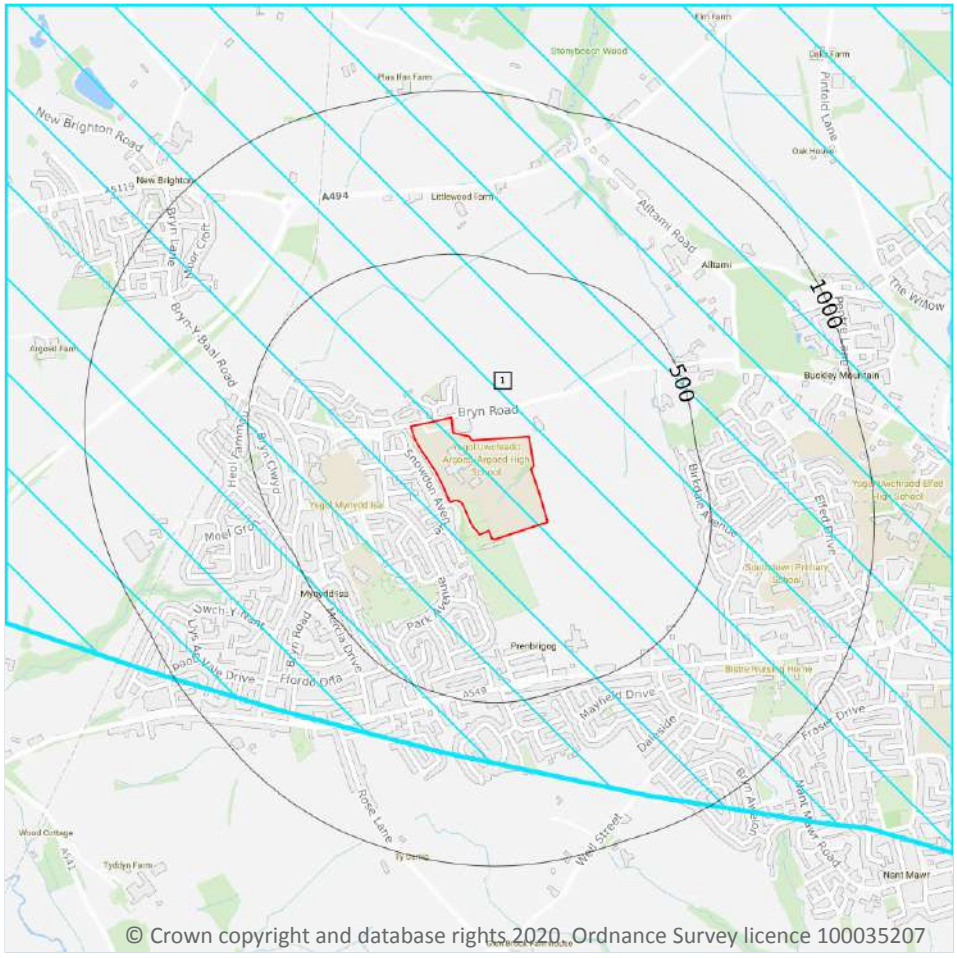
Records within 2000m	1

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

Location	Name	Type	NVZ ID	Status
571m SW		Surface Water	626	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

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

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 59**

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

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 English Heritage, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m	0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m	0

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

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

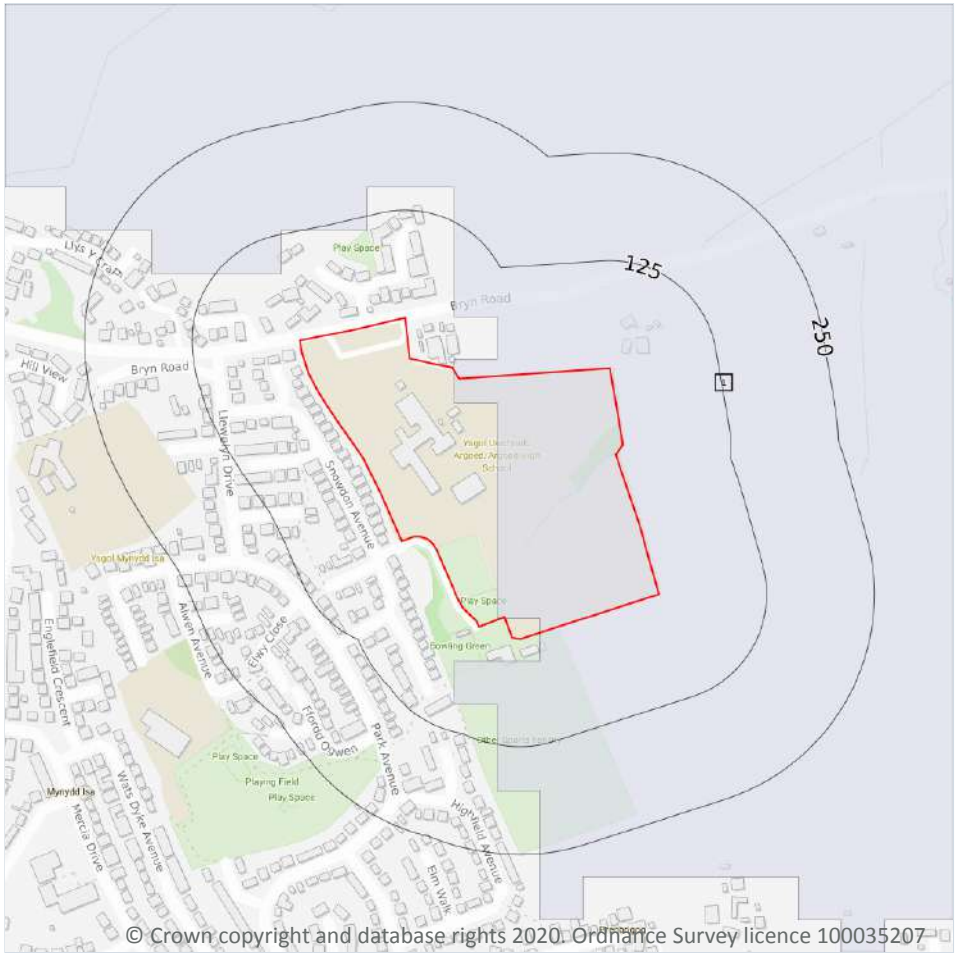
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	1

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

Features are displayed on the Agricultural designations map on **page 63**

ID	Location	Classification	Description
1	**On site**	**Grade 3b**	**Moderate quality agricultural land**

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.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

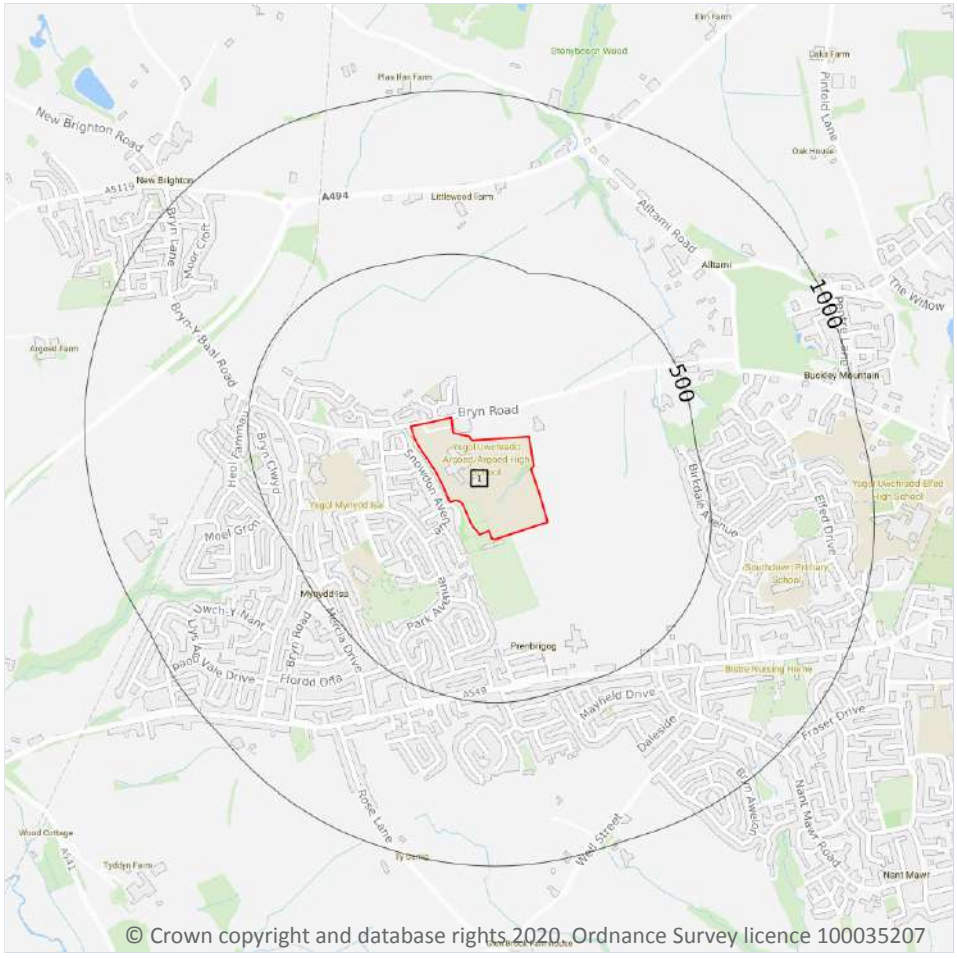
13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

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

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

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

This data is sourced from the British Geological Survey.

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

14.2 Artificial and made ground (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

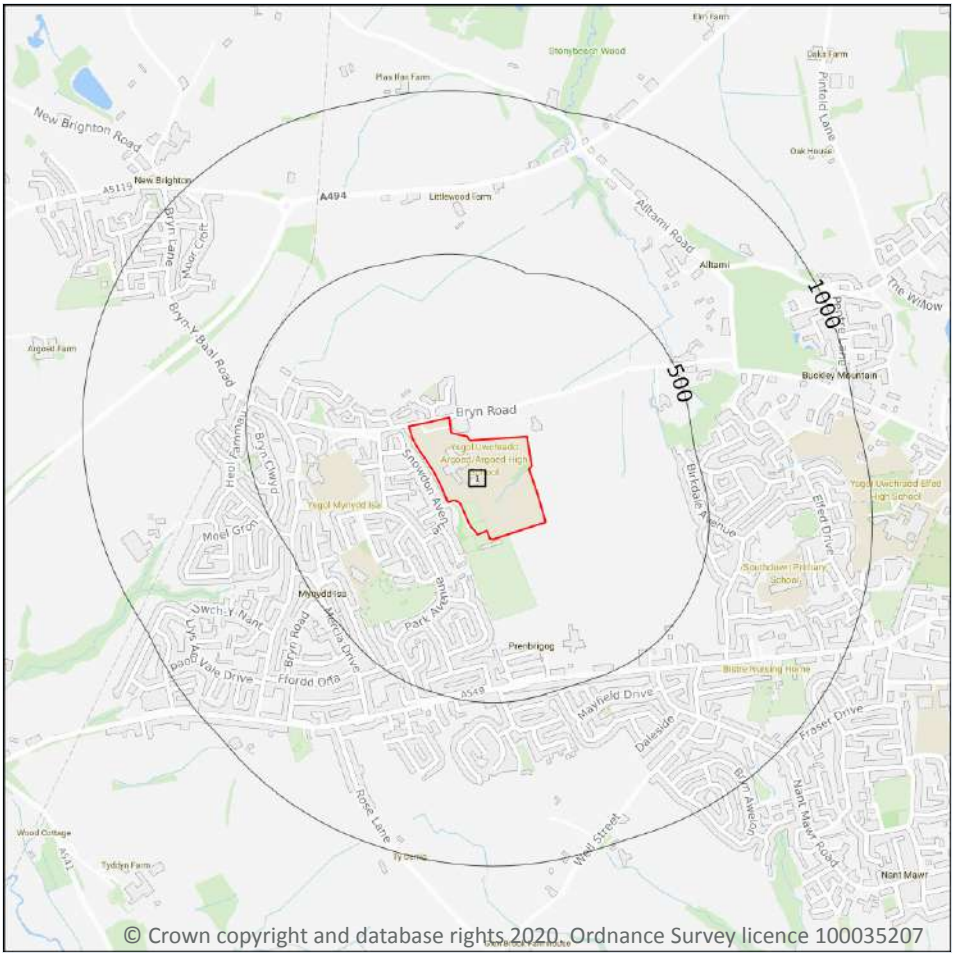
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

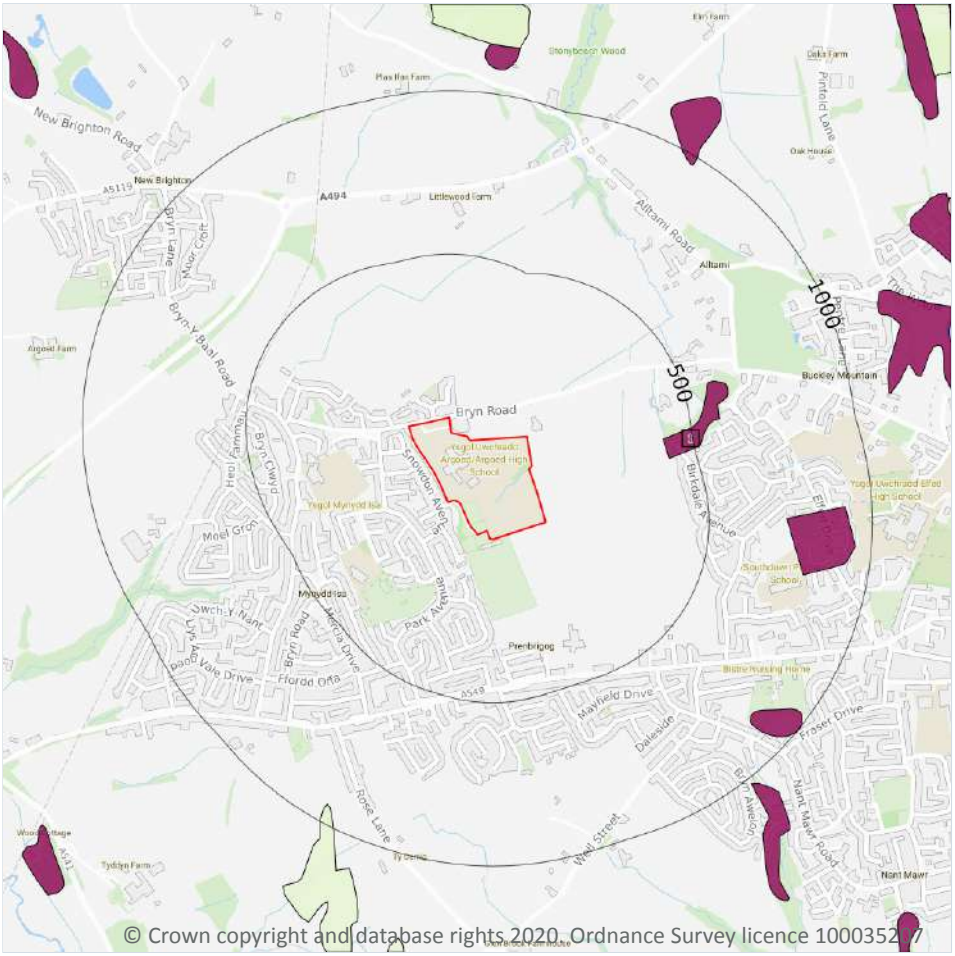
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 70**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW108_flint_v4**

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 71**

ID	Location	LEX Code	Description	Rock description
1	409m E	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

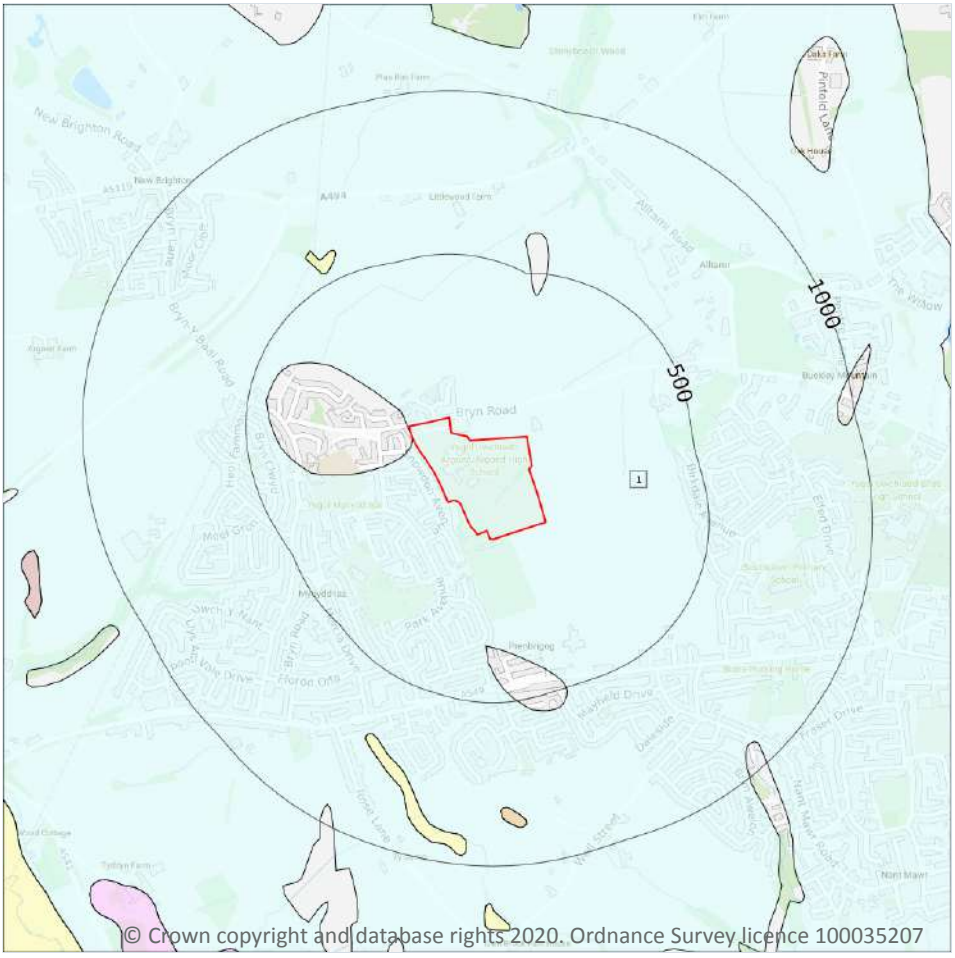
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m	1

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

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

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

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

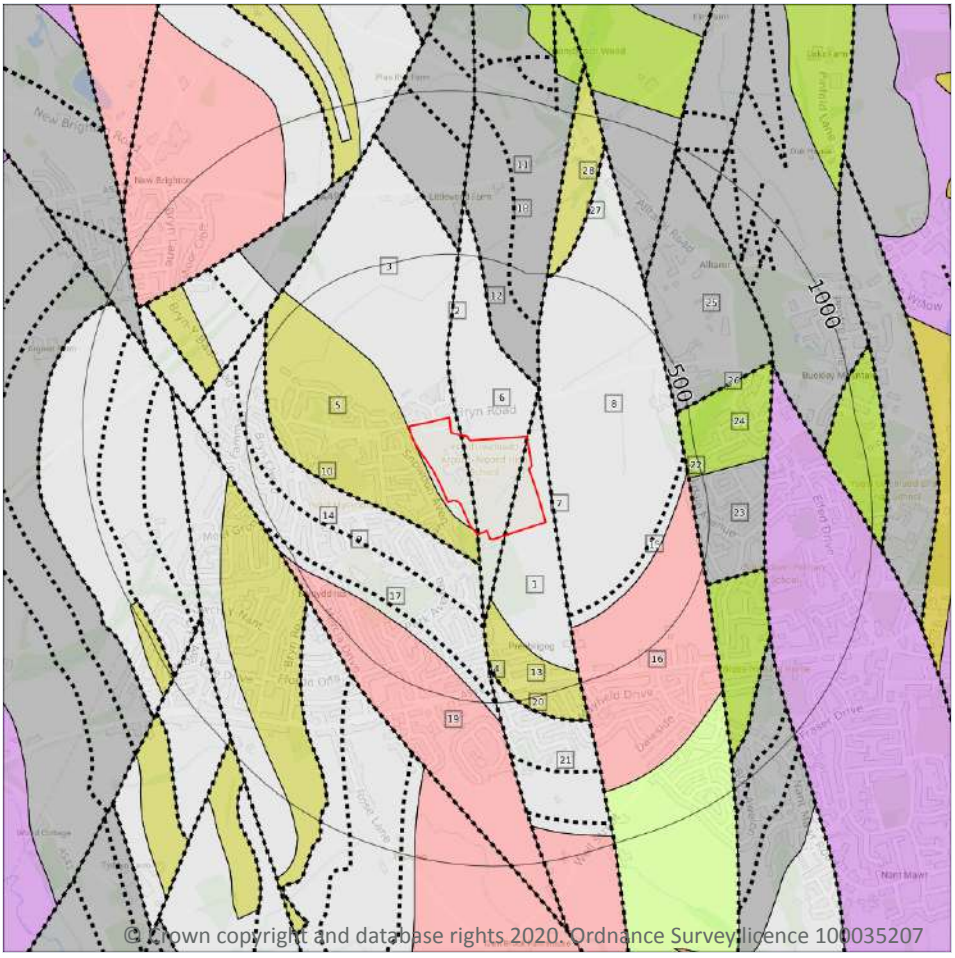
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	15

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 75**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**PLCM-MDSS**	**PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE**	**WESTPHALIAN**
3	**On site**	**PLCM-MDSS**	**PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE**	**WESTPHALIAN**

ID	Location	LEX Code	Description	Rock age
5	**On site**	**PLCM-SDST**	**PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE**	**WESTPHALIAN**
6	**On site**	**PLCM-MDSS**	**PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE**	**WESTPHALIAN**
8	29m E	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
9	75m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
11	153m N	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
13	182m S	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN
16	324m SE	GS-SDAR	GWESPYR SANDSTONE - SANDSTONE AND [SUBEQUAL/SUBORDINATE] ARGILLACEOUS ROCKS, INTERBEDDED	NAMURIAN
19	362m SW	GS-SDAR	GWESPYR SANDSTONE - SANDSTONE AND [SUBEQUAL/SUBORDINATE] ARGILLACEOUS ROCKS, INTERBEDDED	NAMURIAN
21	379m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
23	454m E	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
24	458m E	HLR-SDST	HOLLIN ROCK - SANDSTONE	WESTPHALIAN
25	462m E	PMCM-MDSS	PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
28	491m N	PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION - SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	2

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

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	**13**

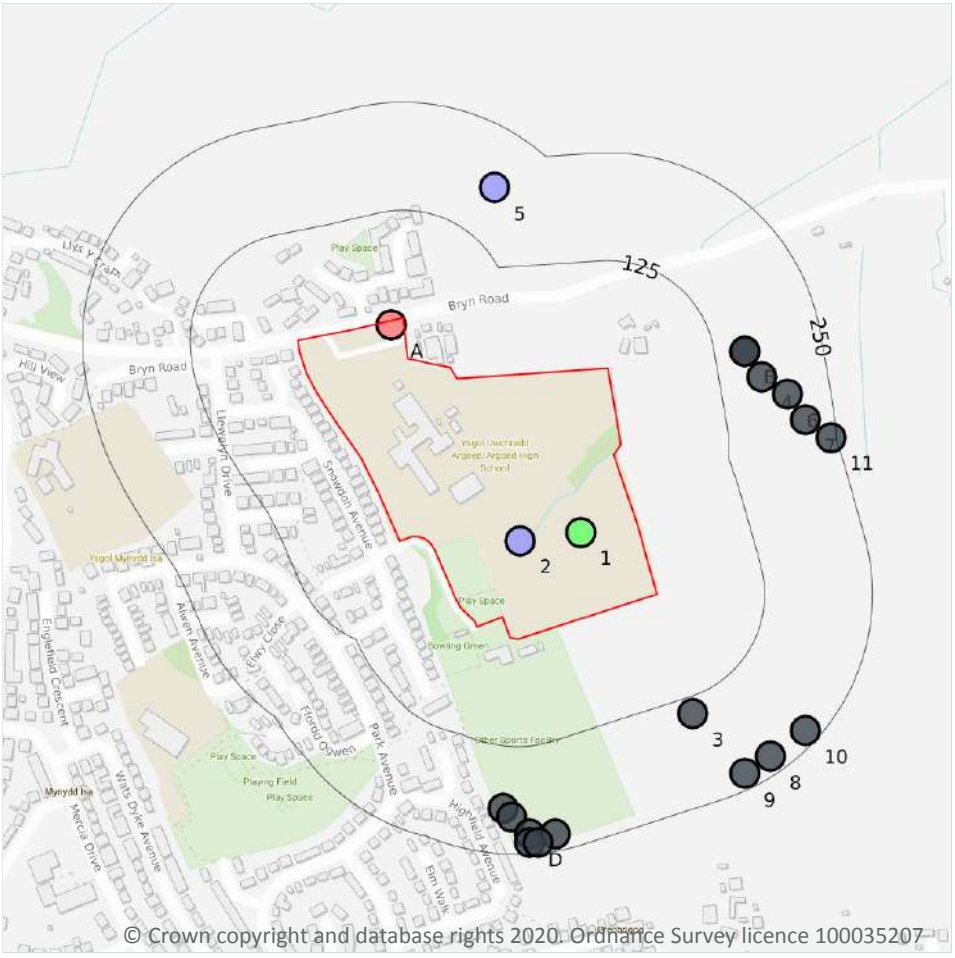
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 75**

ID	Location	Category	Description
2	**On site**	**FAULT**	**Fault, inferred, displacement unknown**
4	**On site**	**FAULT**	**Fault, inferred, displacement unknown**
7	29m E	FAULT	Fault, inferred, displacement unknown
10	75m SW	ROCK	Coal seam, inferred
12	153m N	ROCK	Coal seam, inferred
14	207m SW	ROCK	Coal seam, inferred
15	291m SE	ROCK	Coal seam, inferred
17	328m SW	ROCK	Coal seam, inferred
18	344m N	ROCK	Coal seam, inferred
20	379m S	ROCK	Coal seam, inferred
22	454m E	FAULT	Fault, inferred, displacement unknown
26	464m E	ROCK	Coal seam, inferred
27	491m N	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



16.1 BGS Boreholes

Records within 250m **21**

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

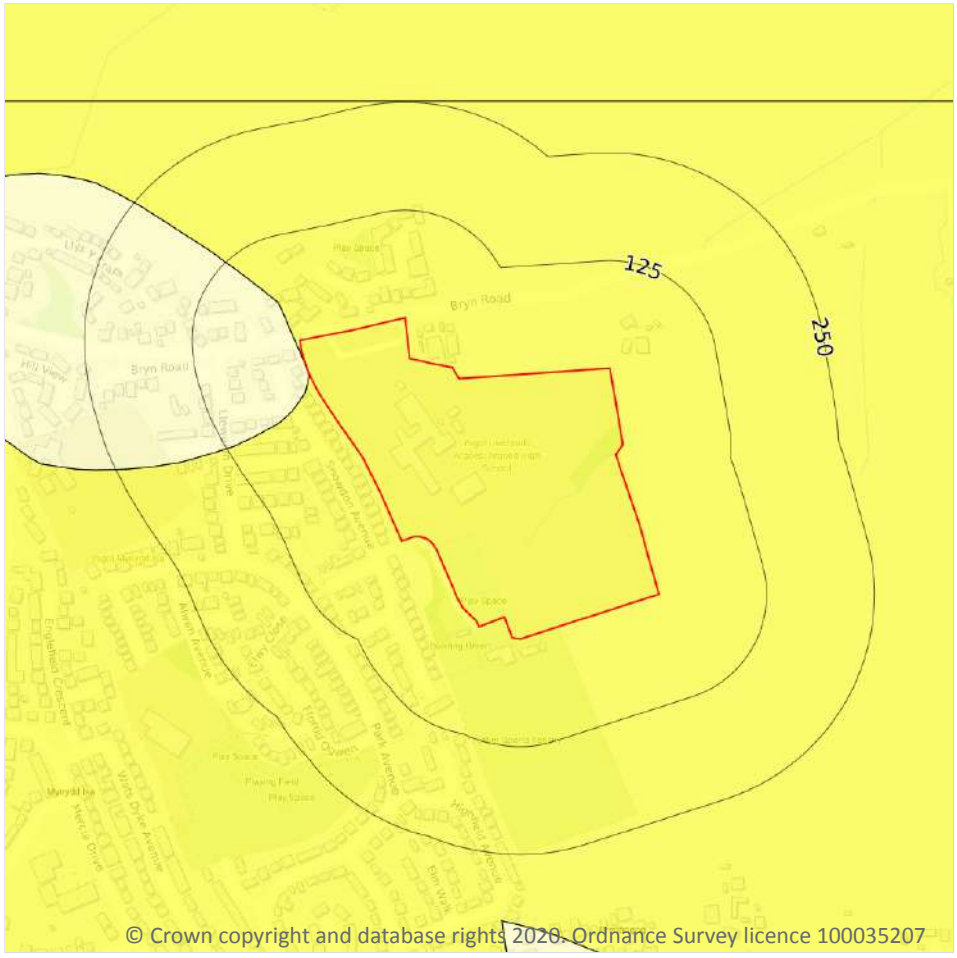
Features are displayed on the Boreholes map on **page 78**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	326500 364500	MYNYDD ISA COMPREHENSIVE SCHOOL	23.0	N	148668
2	On site	326430 364490	? OLD SHAFT UNNAMED	-2.0	N	149281
A	On site	326280 364740	N.WALES COKING COAL SURVEY BH77	44.4	N	149221

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	**On site**	**326280 364740**	**N.WALES COKING COAL SURVEY BH76**	**100.0**	**N**	**149220**
3	144m S	326630 364290	PREN SITE BH32	-	Y	N/A
B	160m E	326690 364710	PREN SITE BH6	-	Y	N/A
B	160m E	326690 364710	PREN SITE BH7	-	Y	N/A
4	175m E	326710 364680	PREN SITE BH5	-	Y	N/A
5	185m NE	326400 364900	WEST BUCKLEY OC SITE	-2.0	N	149179
C	197m S	326410 364180	PREN SITE BH401	-	Y	N/A
6	201m E	326740 364660	PREN SITE BH4	-	Y	N/A
C	206m S	326420 364170	PREN SITE BH402	-	Y	N/A
7	216m E	326760 364630	PREN SITE BH3	-	Y	N/A
D	226m S	326440 364150	PREN SITE BH403	-	Y	N/A
8	230m SE	326720 364240	PREN SITE BH34	-	Y	N/A
D	230m S	326470 364150	PREN SITE BH406	-	Y	N/A
9	231m SE	326690 364220	PREN SITE BH33	-	Y	N/A
10	233m SE	326760 364270	PREN SITE BH35	-	Y	N/A
D	236m S	326440 364140	PREN SITE BH405	-	Y	N/A
D	237m S	326450 364140	PREN SITE BH404	-	Y	N/A
11	244m E	326790 364610	PREN SITE BH2	-	Y	N/A

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	2

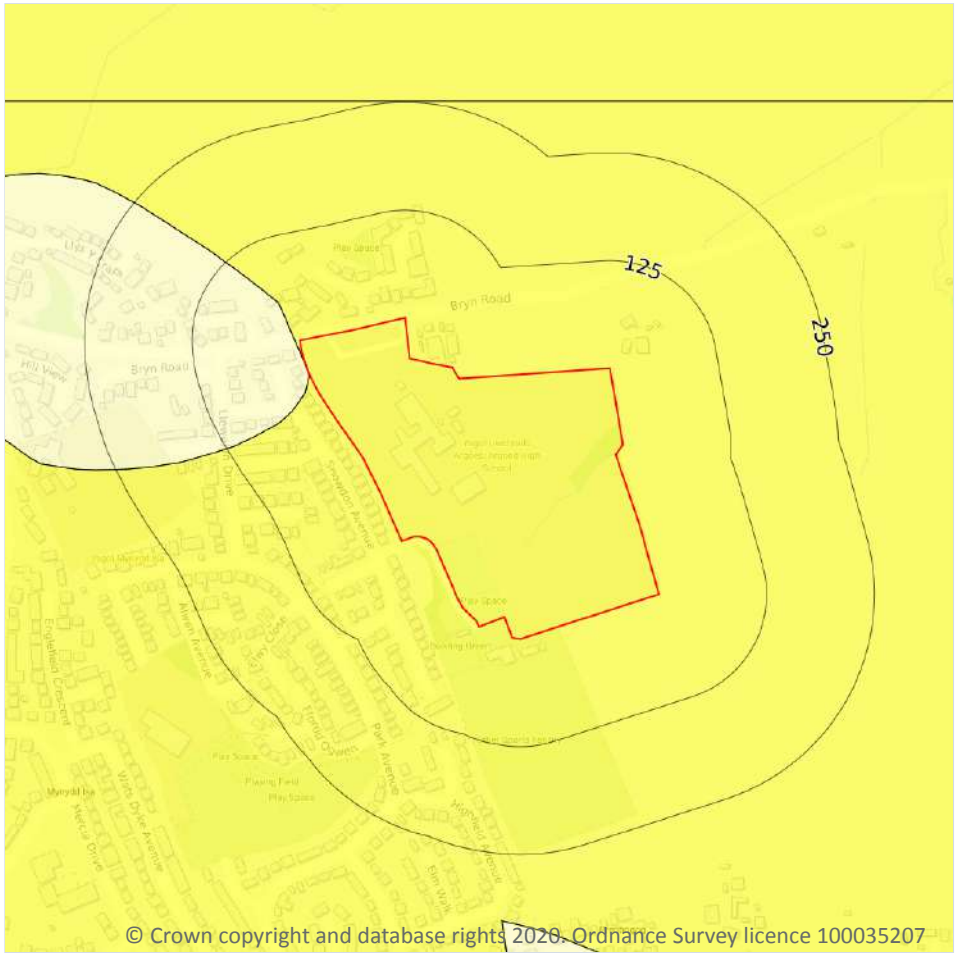
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 80**

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	2

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

Features are displayed on the Natural ground subsidence - Running sands map on **page 81**

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

Location	Hazard rating	Details
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

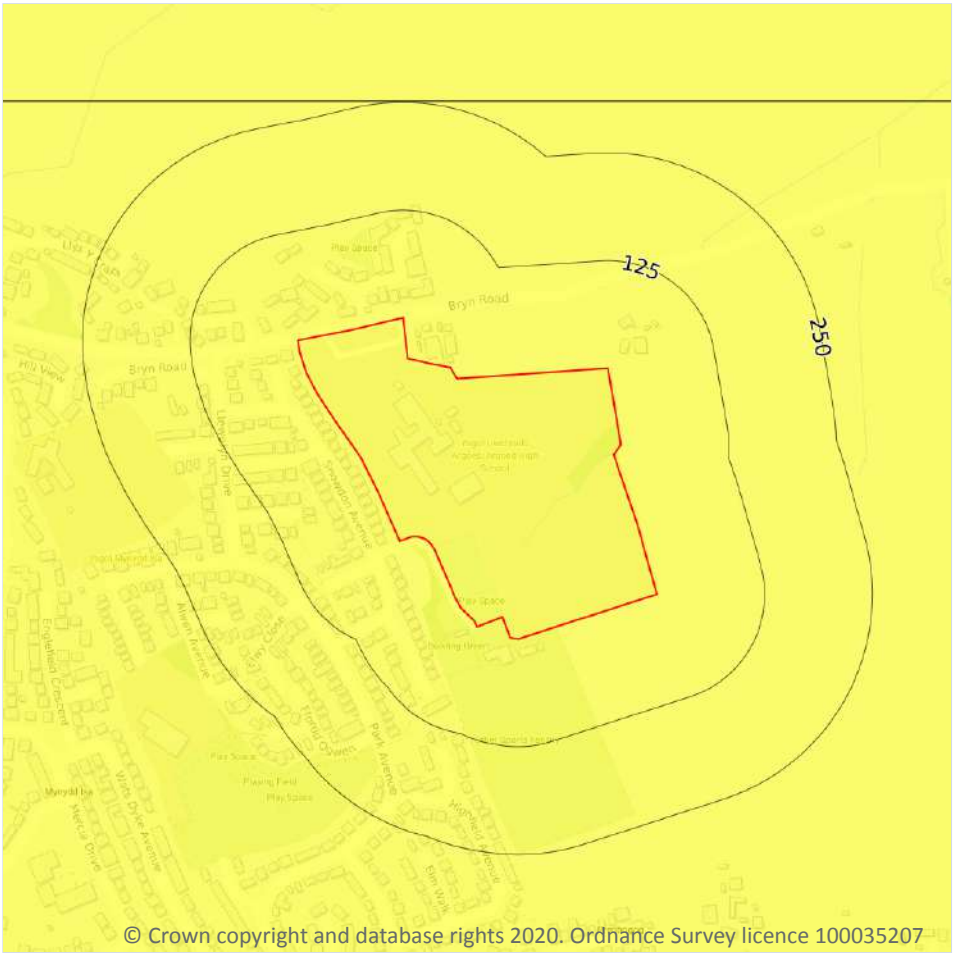
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 83**

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

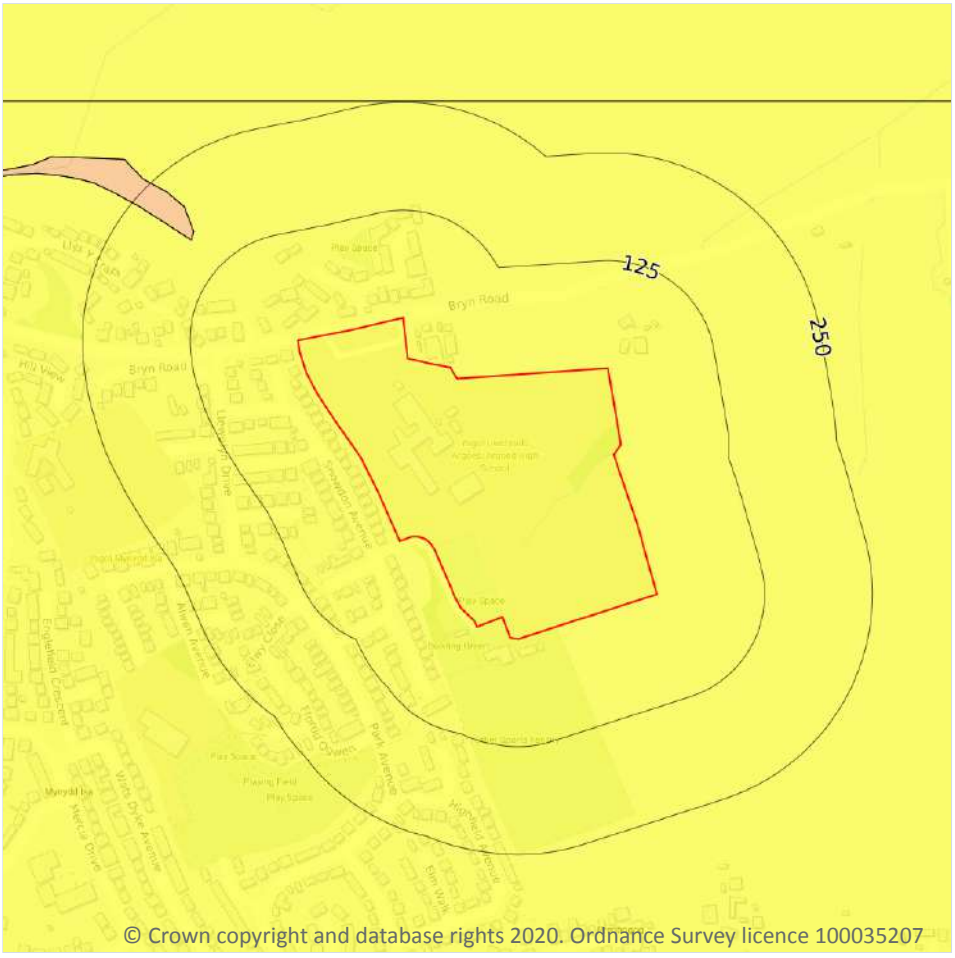
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 84**

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 85**

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

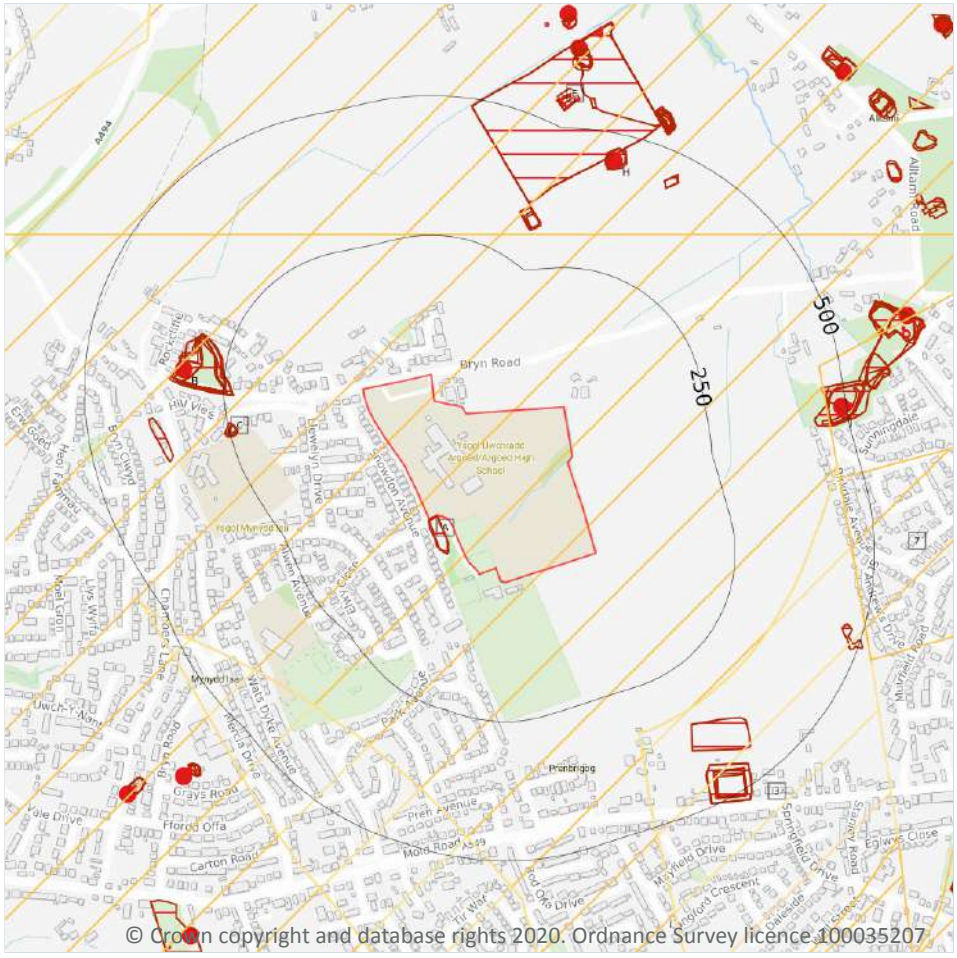
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 86**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities

Non Coal Mining

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

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Peter Brett Associates (PBA).

18.2 BritPits

Records within 500m	3

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 87**

ID	Location	Details	Description
B	324m W	Name: Bryn-y-ffynnon Address: New Brighton, MOLD, Flintshire Commodity: Sandstone Status: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Type: Ceased 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
H	451m N	Name: Aberllanerch Farm Address: BUCKLEY, Flintshire Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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
J	491m E	Name: Aber-llanerch Farm Address: Buckley, MOLD, Flintshire Commodity: Coal, Deep Status: Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Type: Ceased 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.

18.3 Surface ground workings

Records within 250m	16

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining, ground workings and natural cavities map on **page 87**

ID	Location	Land Use	Year of mapping	Mapping scale
A	**On site**	**Pond**	**1869**	**1:10560**
A	1m S	Pond	1869	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
B	234m W	Unspecified Old Quarry	1948	1:10560
B	236m W	Unspecified Old Quarry	1938	1:10560
B	236m W	Unspecified Old Quarry	1909	1:10560
C	236m W	Unspecified Quarry	1948	1:10560
C	236m W	Unspecified Pit	1909	1:10560
C	237m W	Unspecified Quarry	1869	1:10560
C	237m W	Unspecified Pit	1938	1:10560
C	237m W	Unspecified Pit	1938	1:10560
B	245m W	Unspecified Quarry	1898	1:10560
B	247m W	Unspecified Quarry	1869	1:10560
B	248m W	Unspecified Quarry	1990	1:10000
B	248m W	Unspecified Quarry	1974	1:10000
B	248m W	Unspecified Quarry	1960	1:10560
B	248m W	Unspecified Quarry	1968	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	**49**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 87**

ID	Location	Land Use	Year of mapping	Mapping scale
H	438m N	Air shaft	1991	1:10000
H	438m N	Disused Air Shaft	1987	1:10000
H	438m N	Disused Air Shaft	1960	1:10560
H	438m N	Disused Air Shaft	1970	1:10560
H	442m N	Air Shaft	1948	1:10560
H	443m N	Disused Air Shaft	1981	1:10000

ID	Location	Land Use	Year of mapping	Mapping scale
H	450m N	Coal Shaft	1869	1:10560
J	484m E	Unspecified Shafts	1898	1:10560
J	486m E	Coal Shafts	1869	1:10560
J	486m E	Old Coal Shafts	1948	1:10560
J	504m E	Old Coal Shafts	1948	1:10560
J	505m E	Unspecified Shafts	1898	1:10560
J	505m E	Coal Shafts	1869	1:10560
E	536m NE	Unspecified Level	1948	1:10560
M	619m SW	Old Coal Shaft	1948	1:10560
M	619m SW	Unspecified Old Shaft	1898	1:10560
L	621m E	Unspecified Disused Shaft	1974	1:10000
L	621m E	Unspecified Disused Shaft	1960	1:10560
L	621m E	Unspecified Disused Shaft	1968	1:10560
L	623m E	Old Coal Shaft	1948	1:10560
L	623m E	Unspecified Old Shaft	1898	1:10560
N	643m NE	Unspecified Old Shaft	1948	1:10560
N	643m NE	Unspecified Old Shafts	1898	1:10560
L	655m E	Unspecified Disused Shaft	1990	1:10000
N	658m N	Unspecified Shafts	1869	1:10560
N	667m N	Unspecified Old Shaft	1960	1:10560
N	668m N	Unspecified Shaft	1898	1:10560
N	669m N	Unspecified Disused Shaft	1987	1:10000
N	670m N	Unspecified Disused Shaft	1981	1:10000
N	670m N	Unspecified Disused Shaft	1970	1:10560
N	675m N	Unspecified Shafts	1869	1:10560
N	679m N	Unspecified Shaft	1948	1:10560
N	679m N	Unspecified Old Shafts	1898	1:10560
-	700m E	Coal Shaft	1869	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
-	705m E	Old Coal Shaft	1948	1:10560
-	705m E	Unspecified Old Shaft	1898	1:10560
O	711m SW	Coal Shaft	1869	1:10560
O	712m SW	Unspecified Shaft	1898	1:10560
-	765m E	Colliery	1869	1:10560
-	794m E	Unspecified Shaft	1869	1:10560
-	838m E	Unspecified Shaft	1898	1:10560
-	857m SW	Coal Shaft	1869	1:10560
W	868m SW	Coal Shafts	1869	1:10560
-	872m SE	Coal Shaft	1869	1:10560
-	879m SE	Old Coal Shaft	1948	1:10560
-	938m N	Unspecified Old Shaft	1898	1:10560
-	967m SE	Coal Shaft	1869	1:10560
-	999m NE	Unspecified Level	1948	1:10560
-	999m NE	Unspecified Level	1898	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	**0**

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	**9**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 87**

ID	Location	Name	Commodity	Class	Likelihood
1	**On site**	**Not available**	**Iron Ore (Bedded)**	**B**	**Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered**
2	252m N	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
3	324m SE	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
6	362m SW	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
7	454m E	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
-	671m E	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
11	736m NW	Not available	Vein Mineral	A	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
12	747m SE	Not available	Vein Mineral	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered
13	770m SE	Not available	Iron Ore (Bedded)	B	Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Peter Brett Associates (PBA).

18.8 JPB mining areas

Records on site	1

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

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	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.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Mining Searches UK.

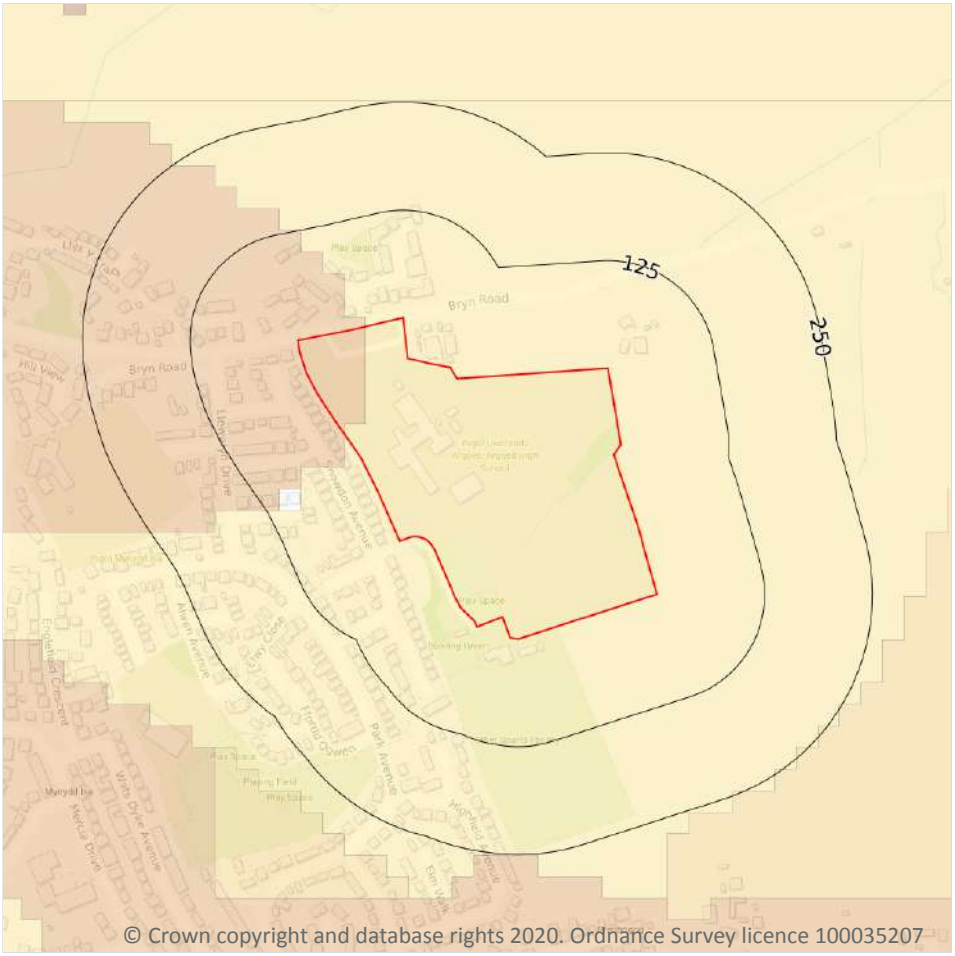
18.13 Clay mining

Records on site	0

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

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

19 Radon



Site Outline

Search buffers in metres (m)

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

19.1 Radon

Records on site	2

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

Features are displayed on the Radon map on **page 95**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 5% and 10%**	**Basic**
On site	**Between 1% and 3%**	**None**

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

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	**14**

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**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**200 - 300 mg/kg**	**120 - 240 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
29m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
38m NE	15 mg/kg	No data	200 - 300 mg/kg	120 - 240 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	**0**

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	**0**

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.

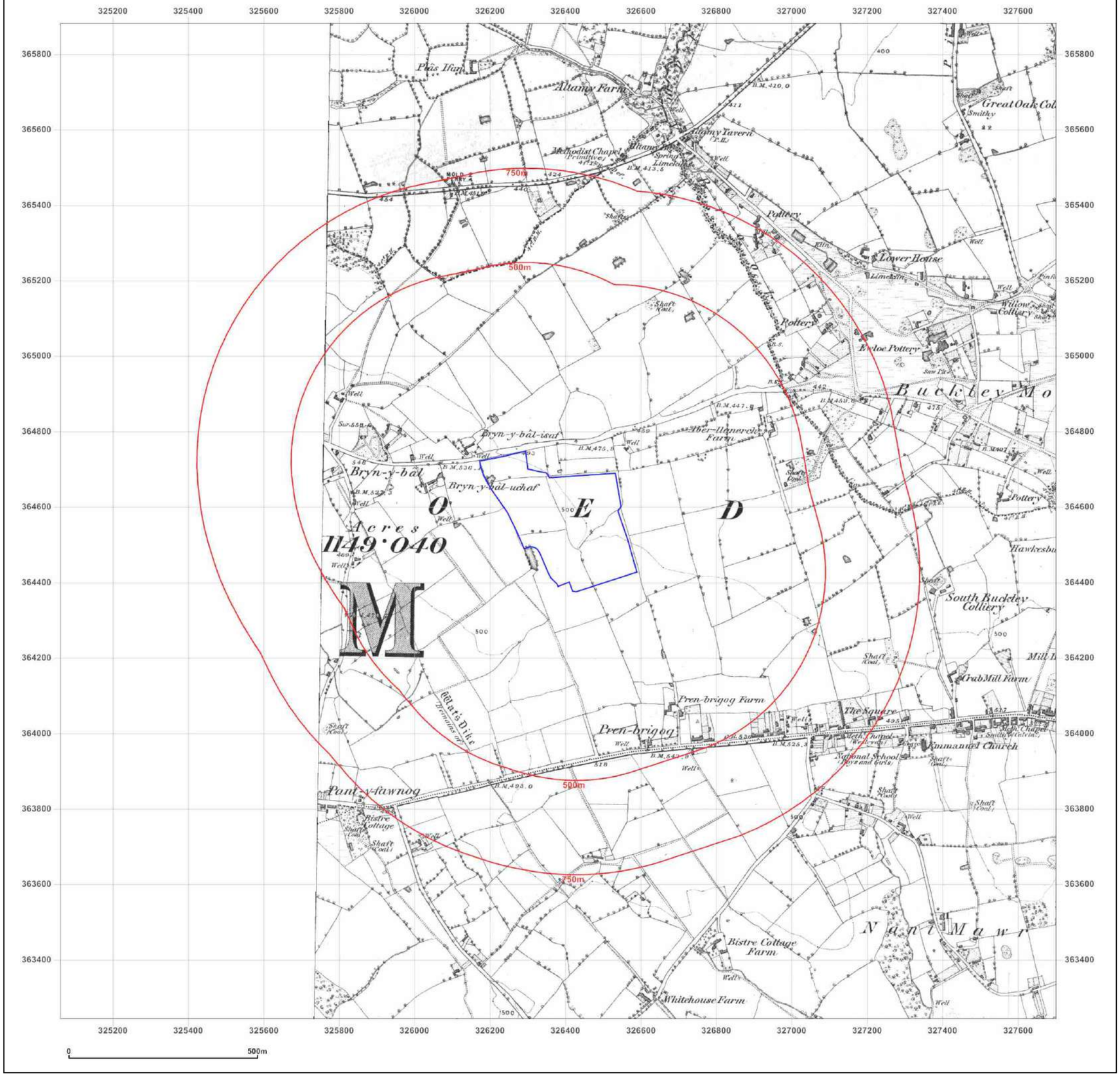
Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: https://www.groundsure.com/terms-and-conditions-jan-2020/.

Appendix IV



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

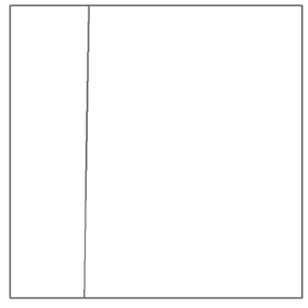
Map Name: County Series

Map date: **1869**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



Surveyed 1869
Revised 1869
Edition N/A
Copyright N/A
Levelled N/A

Groundsure INSIGHTS

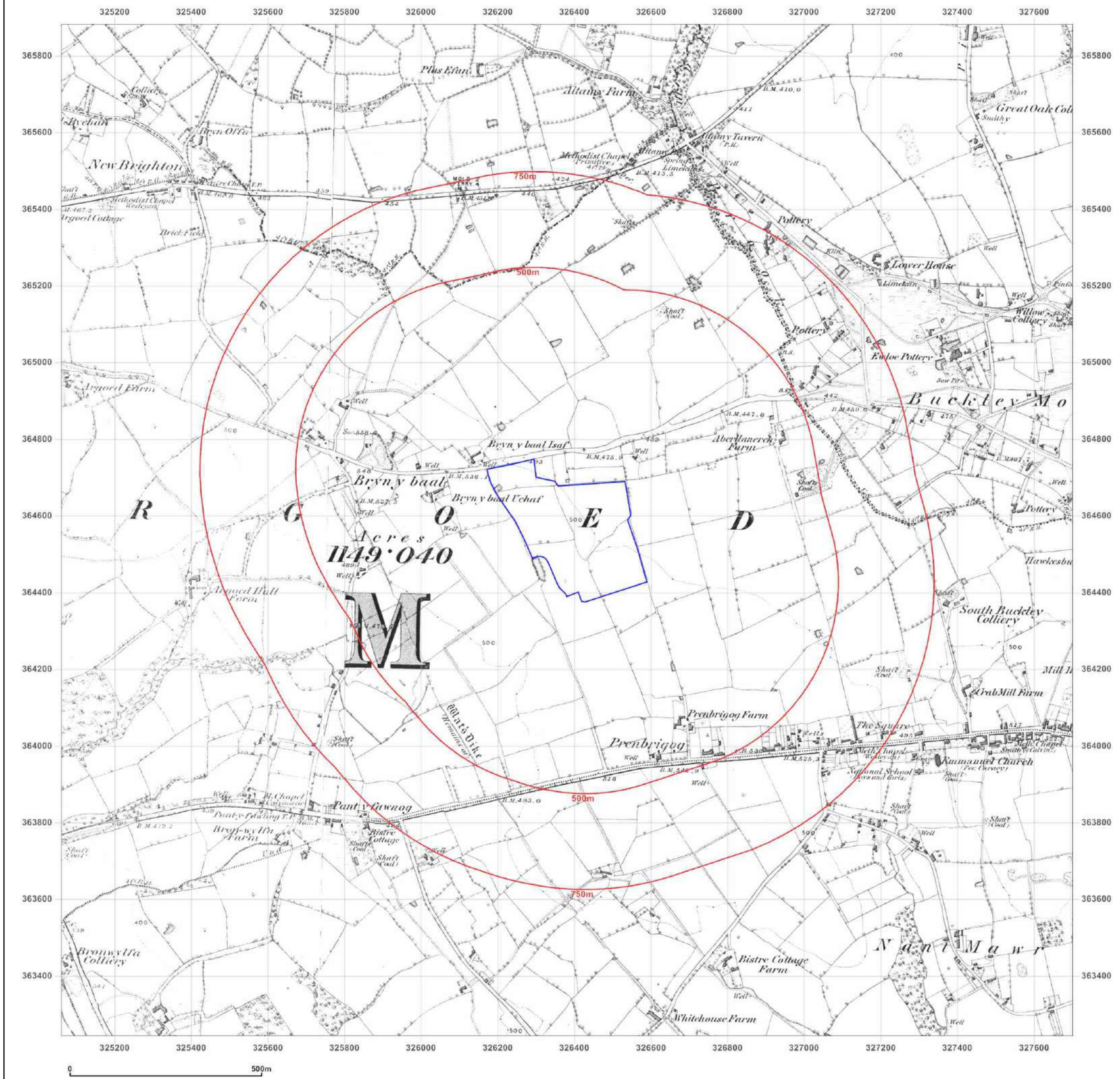
Produced by
Groundsure Insights
www.groundsure.com

Powered by OS

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

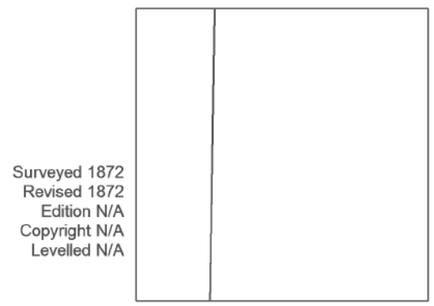
Map Name: County Series

Map date: **1869-1872**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

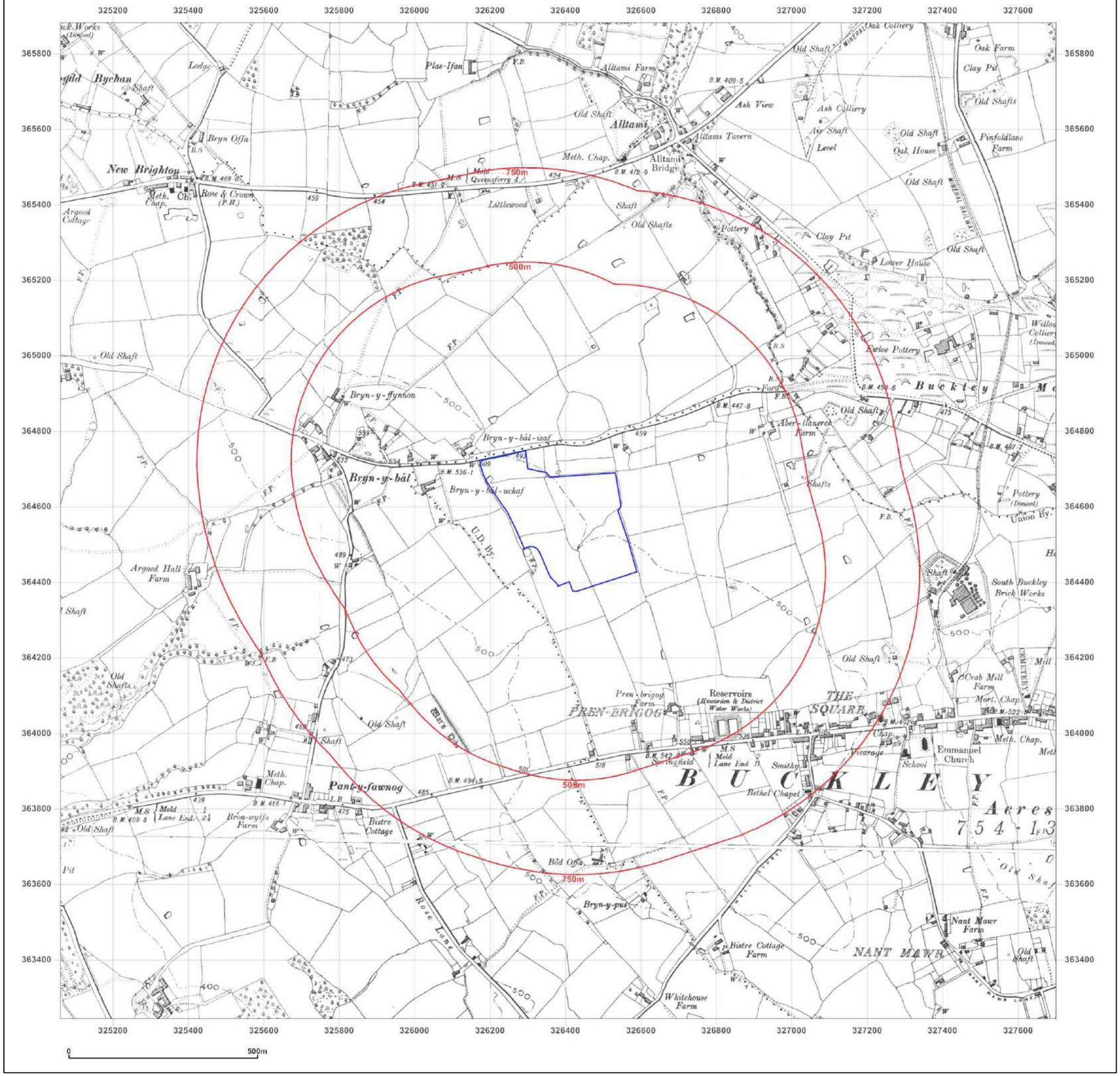


Produced by
Groundsure Insights
www.groundsure.com

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

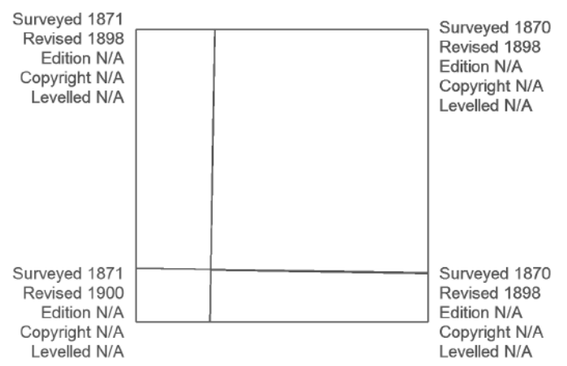
Map Name: County Series

Map date: **1898-1900**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

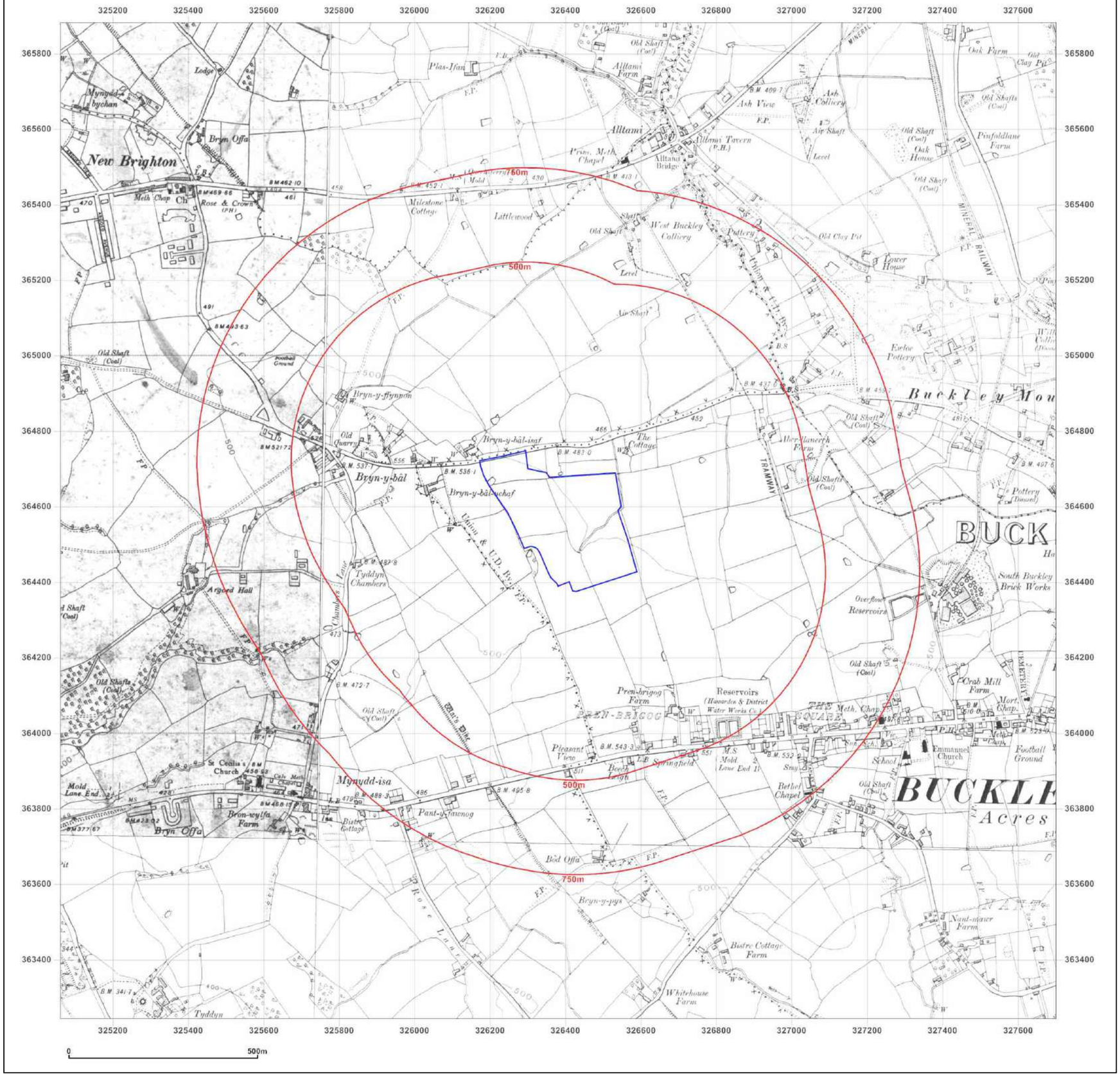


Produced by
Groundsure Insights
www.groundsure.com

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref:	EMS_605071_808854
Report Ref:	EMS-605071_808854
Grid Ref:	326380, 364562

Map Name:	County Series
Map date:	**1909-1910**
Scale:	1:10,560
Printed at:	1:10,560

N
W E
S

Groundsure INSIGHTS

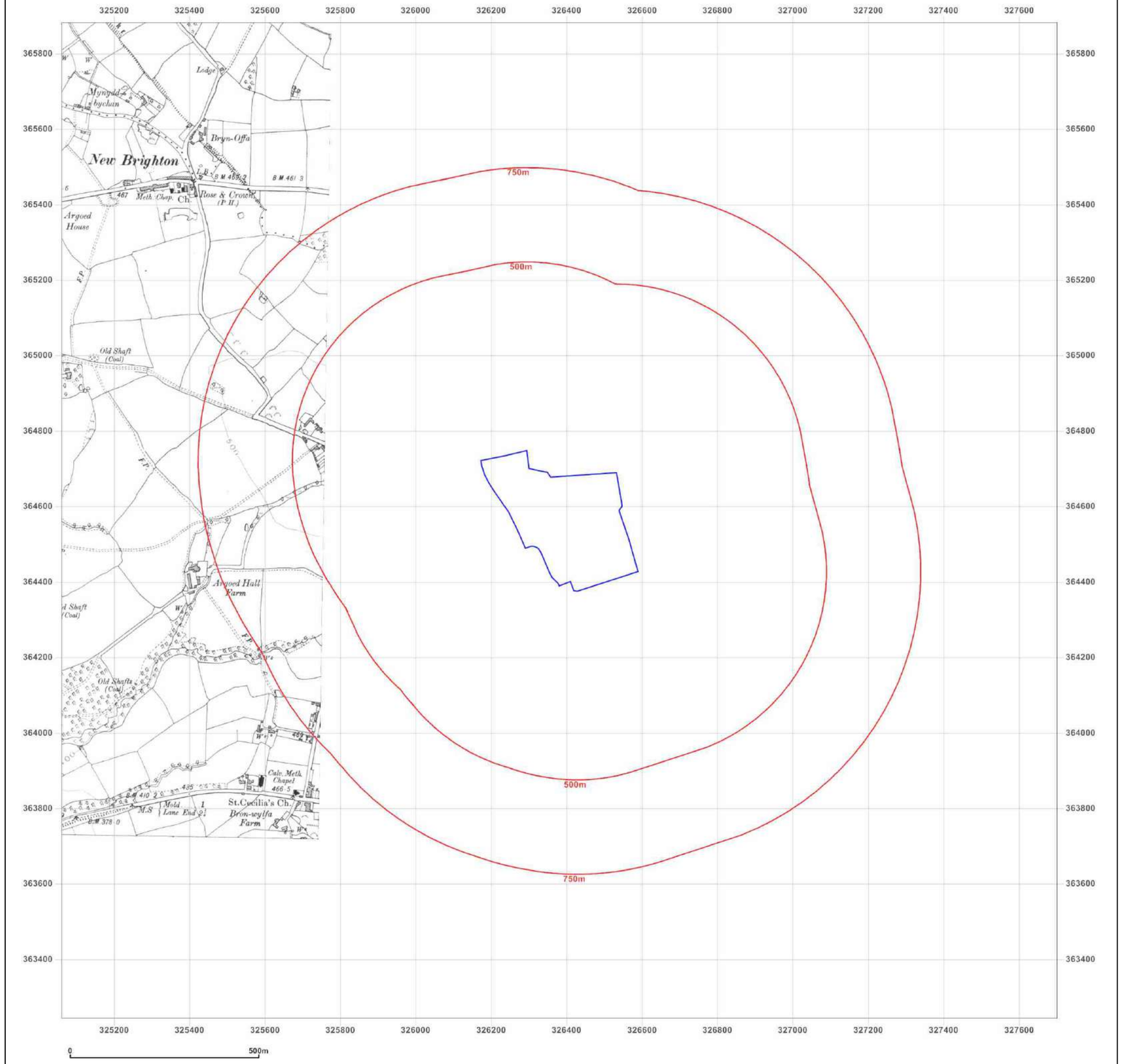
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: County Series

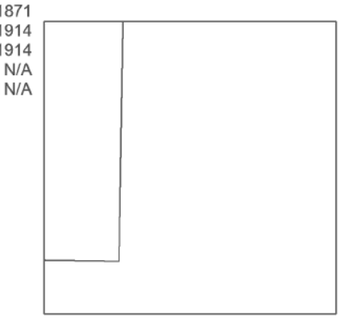
Map date: **1914**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1871
Revised 1914
Edition 1914
Copyright N/A
Levelled N/A

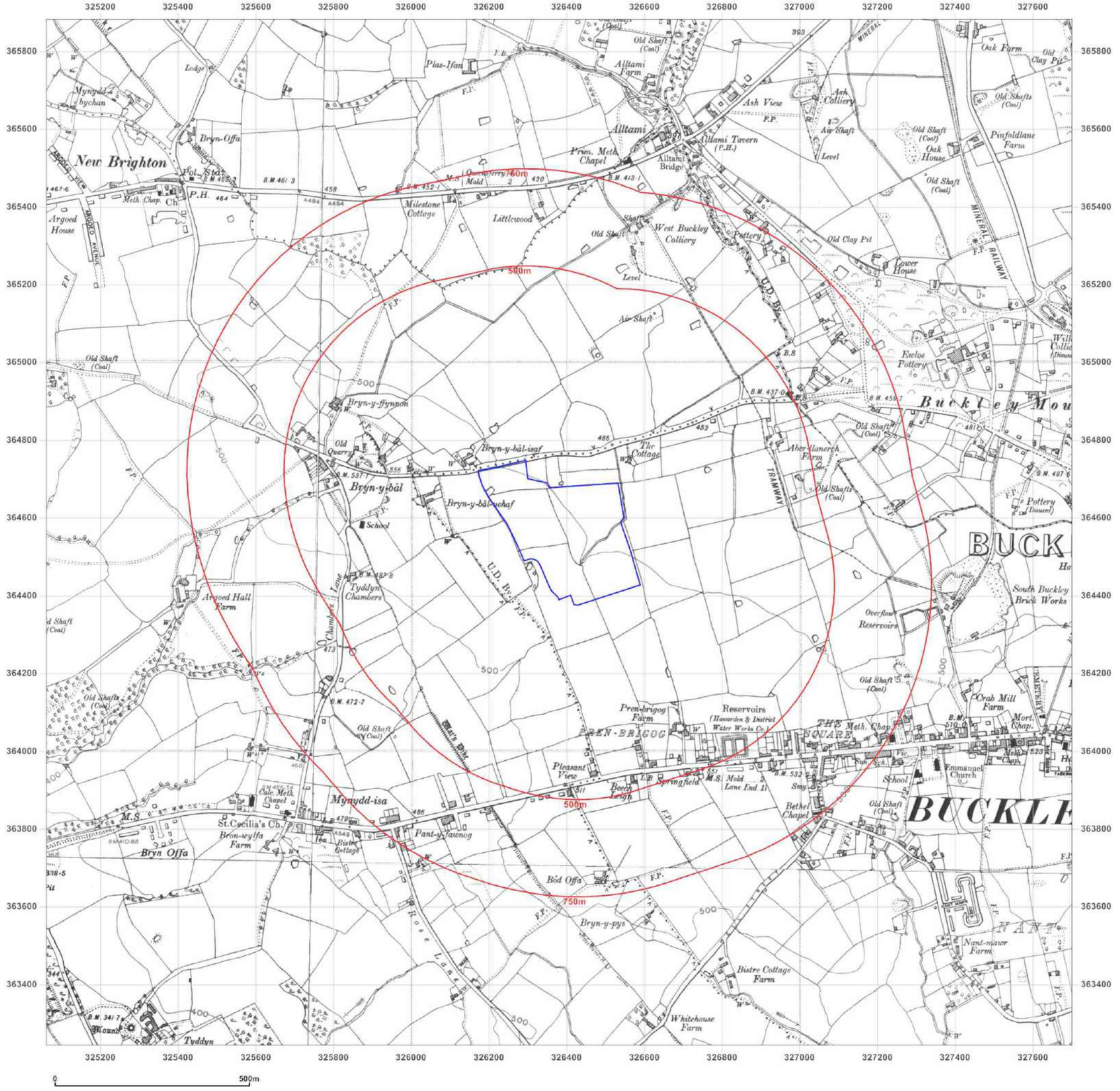


Produced by
Groundsure Insights
www.groundsure.com

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

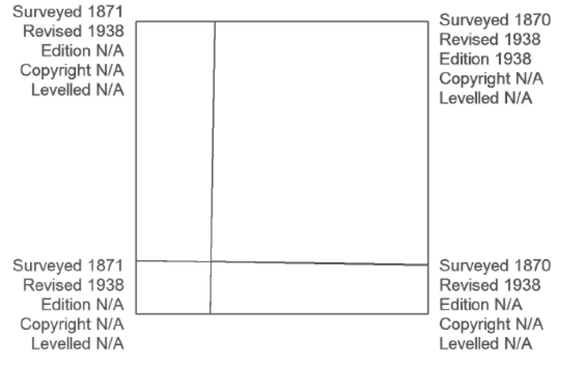
Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



Groundsure INSIGHTS

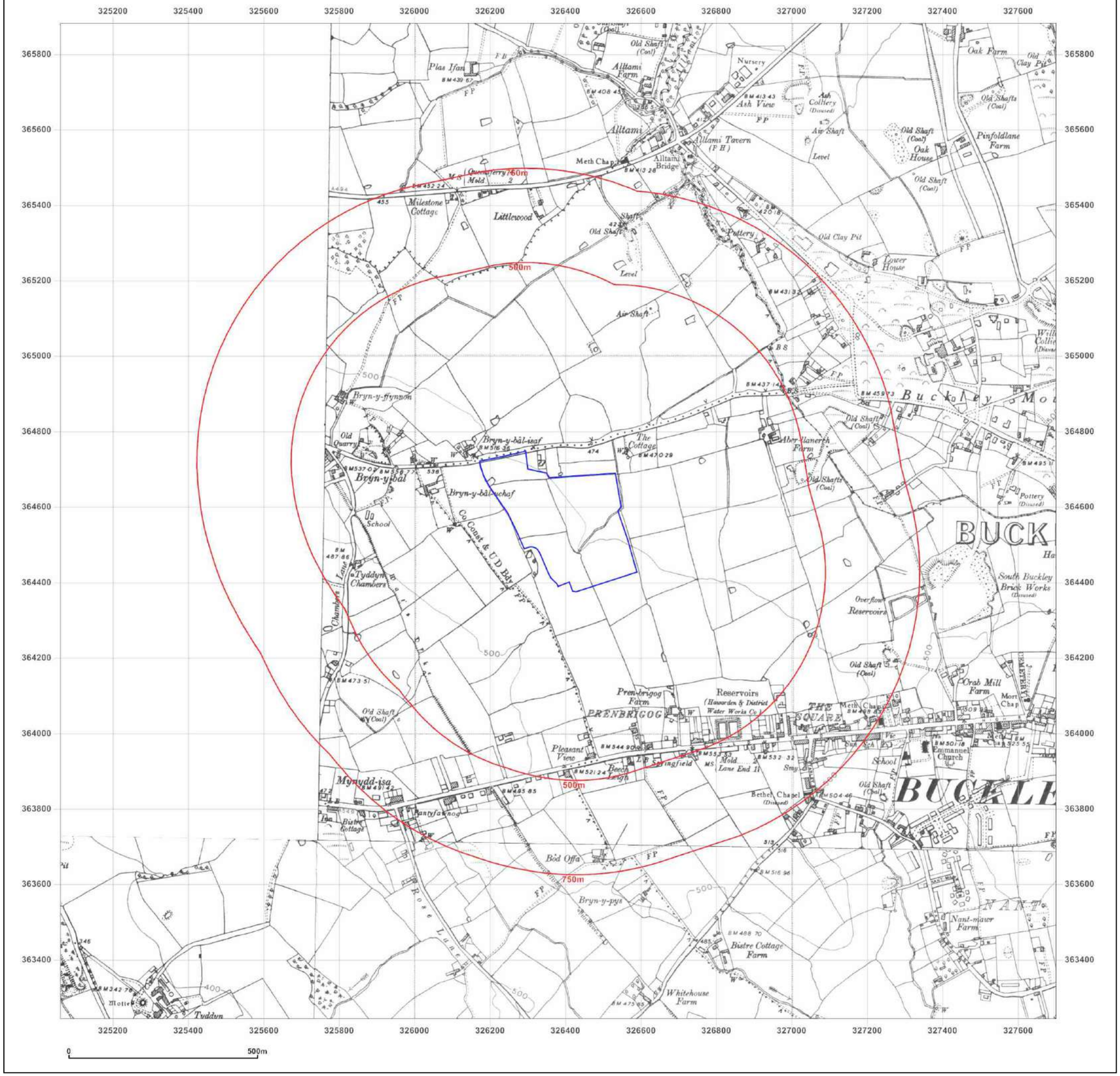
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

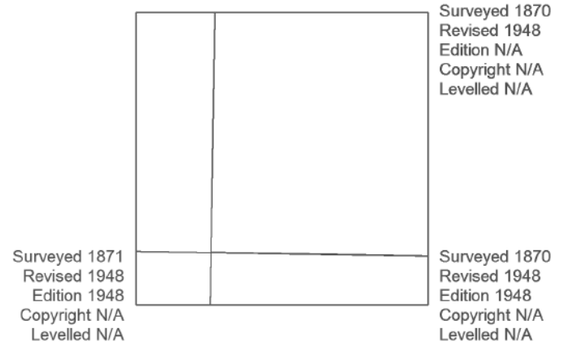
Map Name: County Series

Map date: **1948**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



Groundsure INSIGHTS

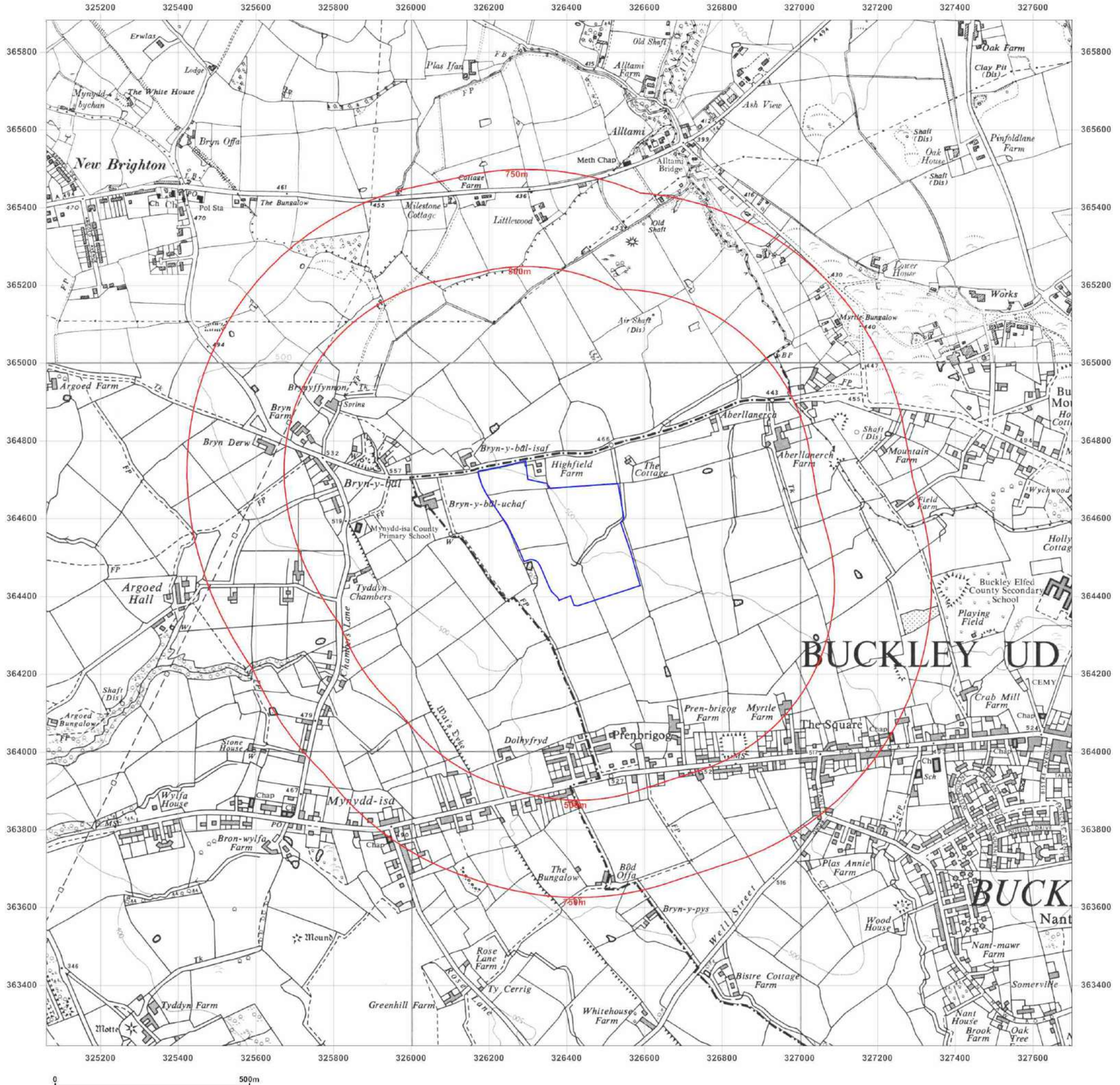
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: Provisional

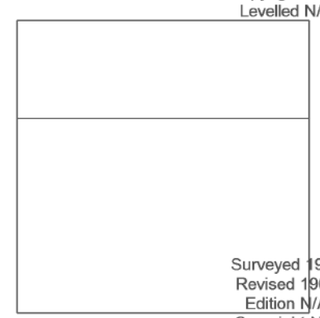
Map date: **1960-1963**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed N/A
Revised 1962
Edition N/A
Copyright 1963
Levelled N/A



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

Groundsure INSIGHTS

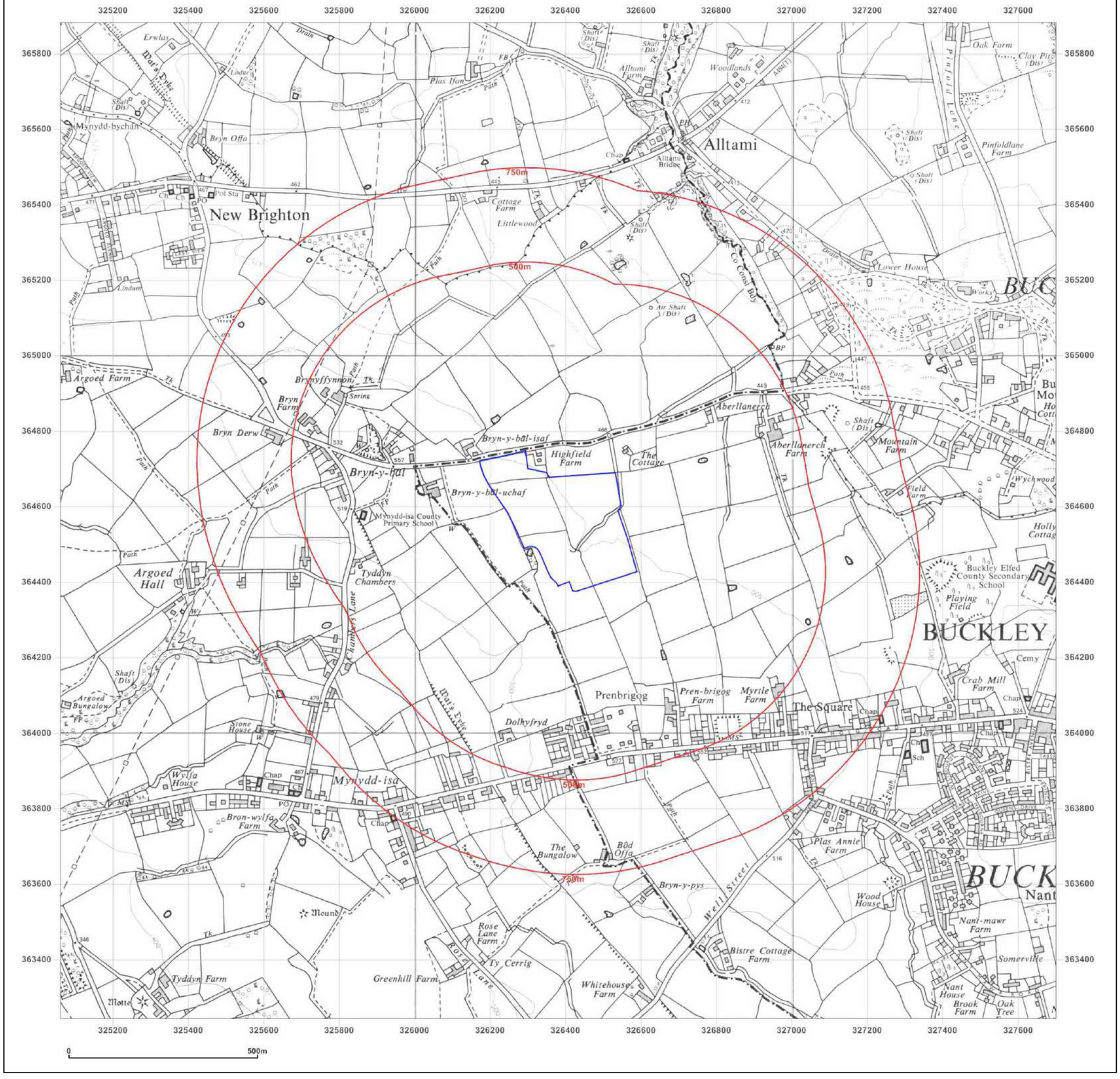
Produced by
Groundsure Insights
www.groundsure.com

Powered by OS

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: Provisional

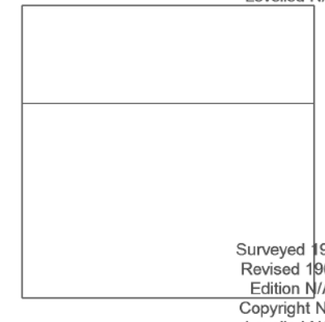
Map date: **1968-1970**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1966
Revised 1970
Edition N/A
Copyright N/A
Levelled N/A



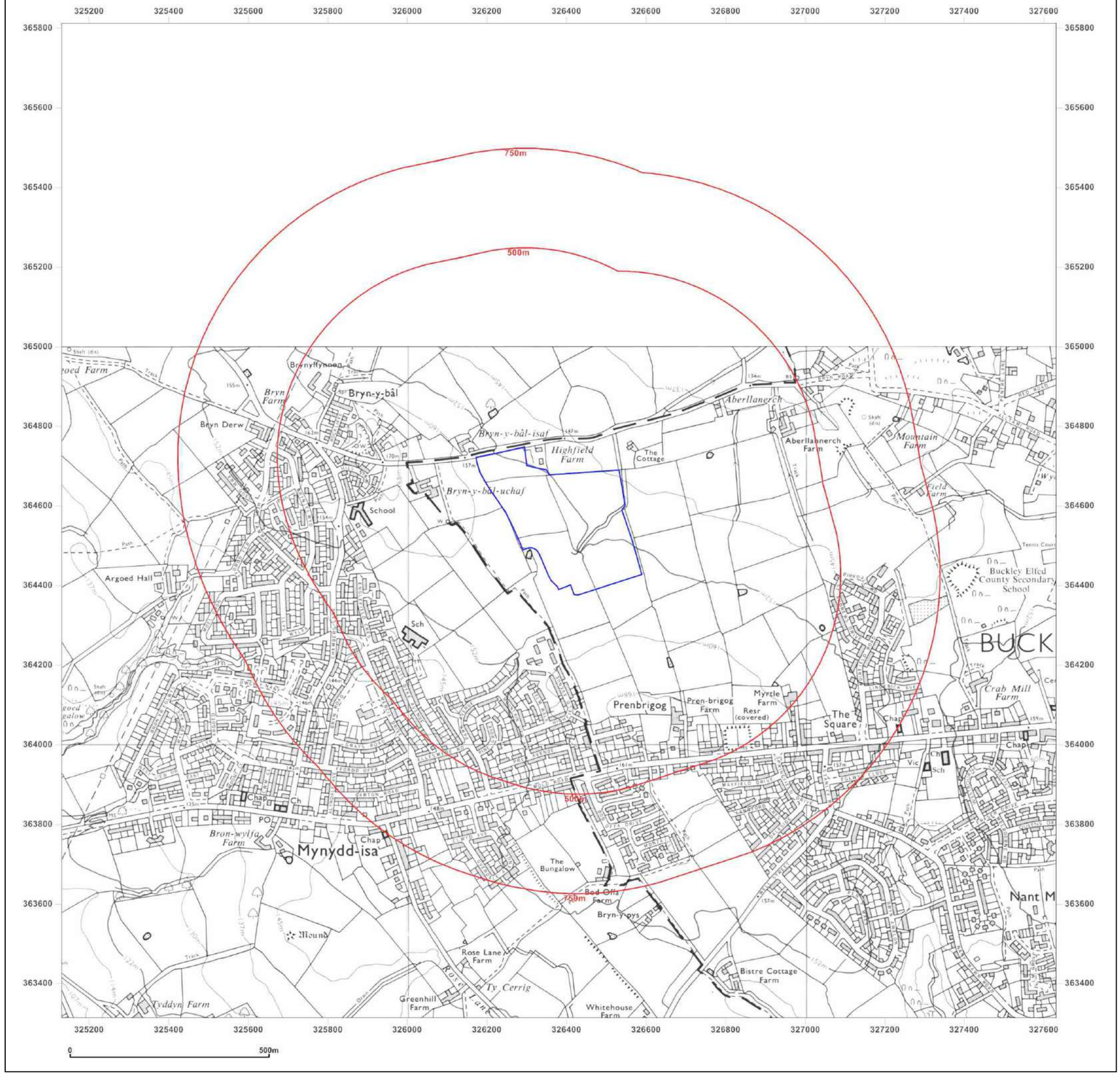
Surveyed 1968
Revised 1968
Edition N/A
Copyright N/A
Levelled N/A

Produced by
Groundsure Insights
www.groundsure.com

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1975**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1973
Revised 1975
Edition N/A
Copyright 1975
Levelled 1969

Groundsure INSIGHTS

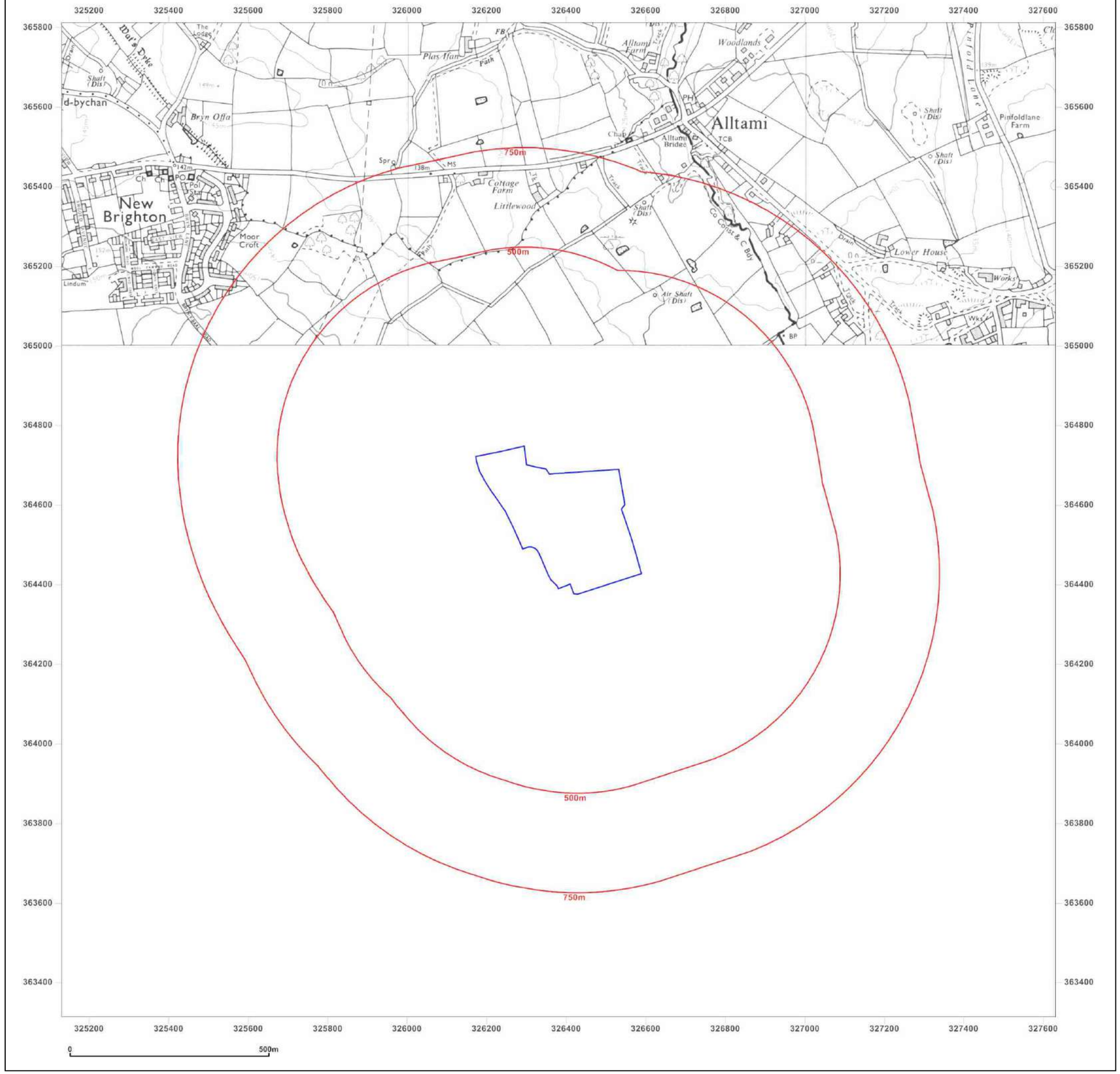
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

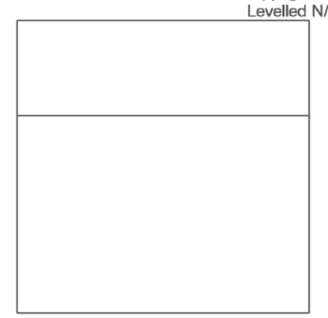
Map date: **1981**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1979
Revised 1981
Edition N/A
Copyright N/A
Levelled N/A

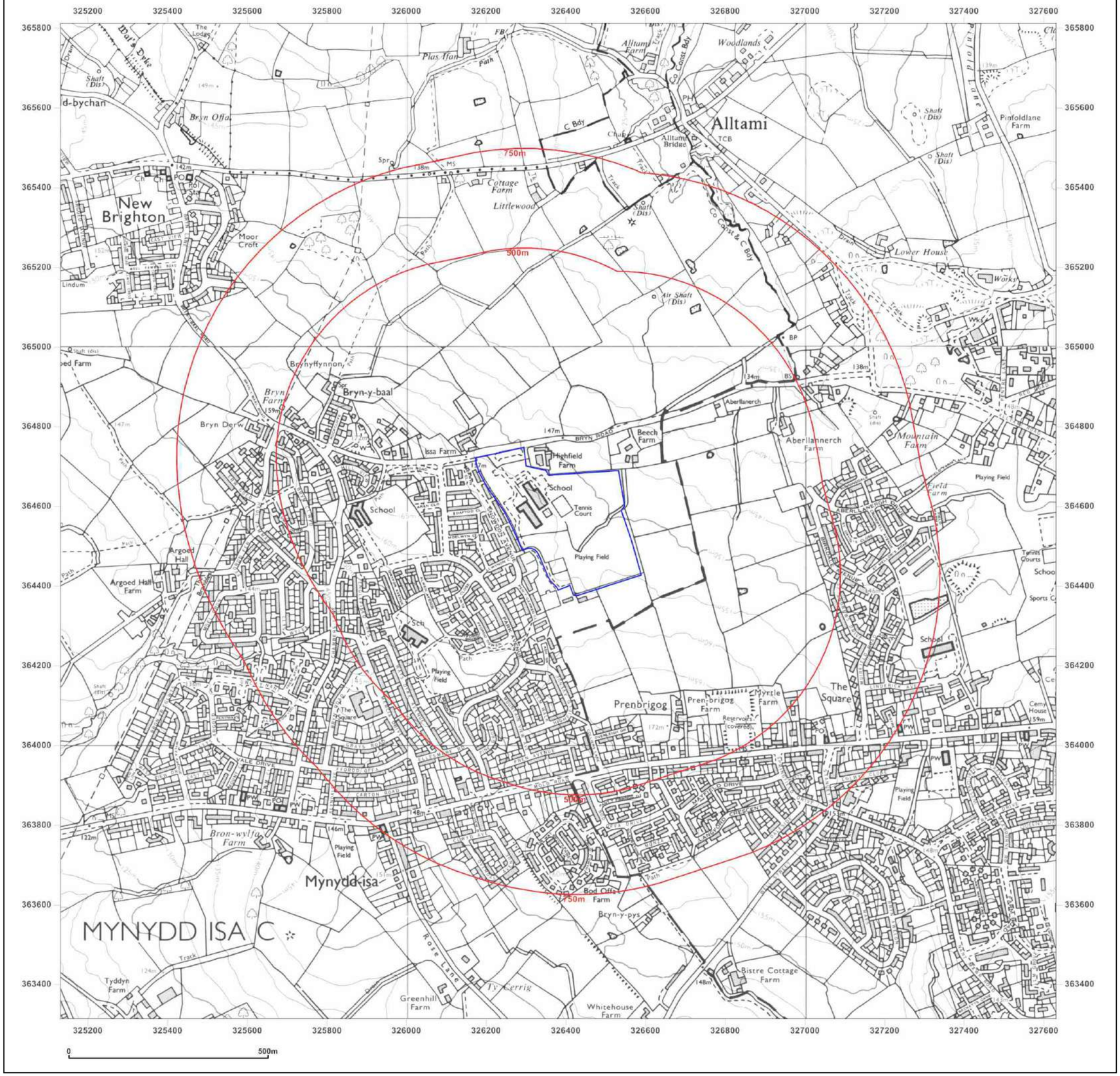


Produced by
Groundsure Insights
www.groundsure.com

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1987-1990**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1979
Revised 1987
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1984
Revised 1990
Edition N/A
Copyright N/A
Levelled N/A

Groundsure INSIGHTS

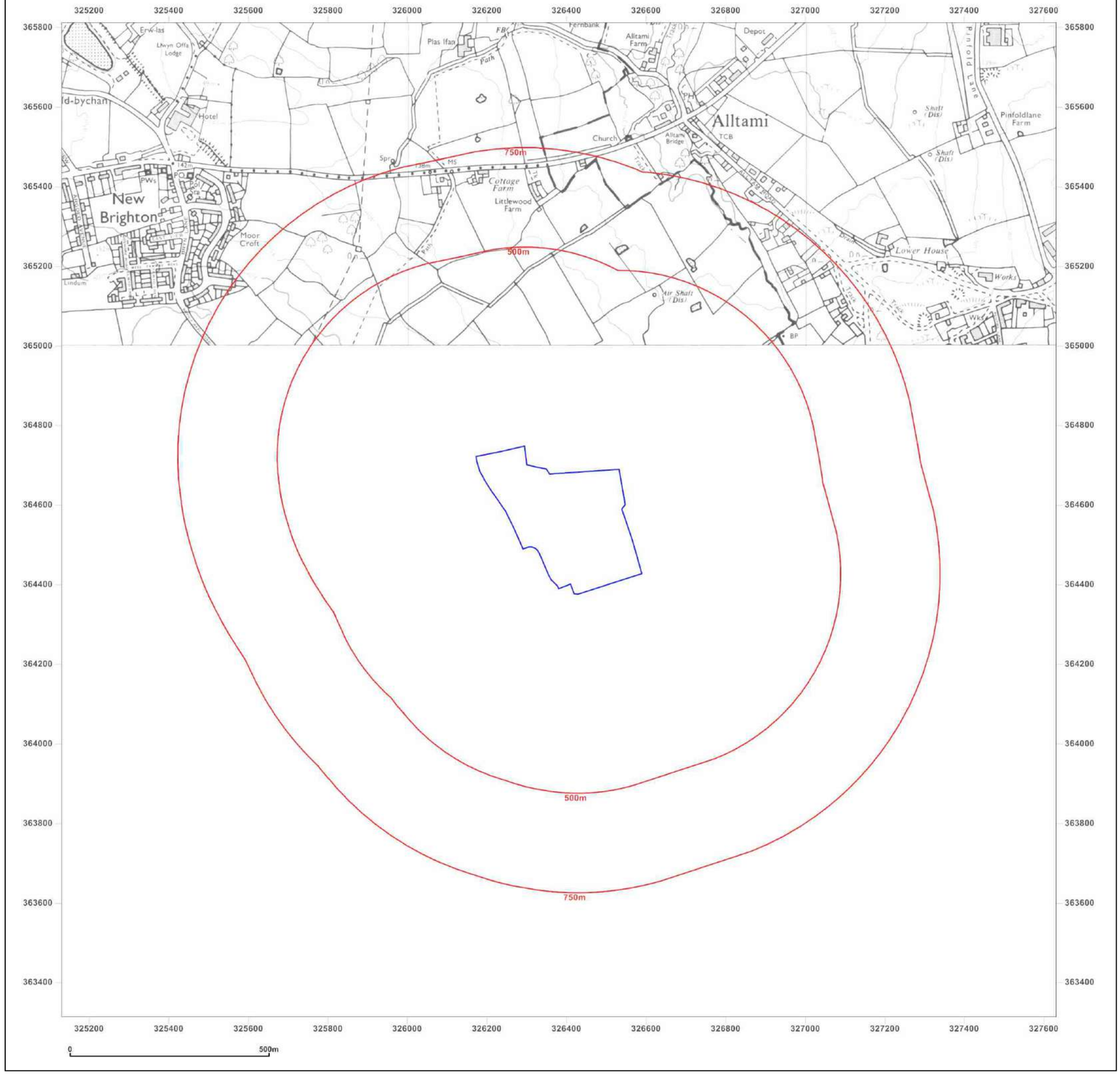
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

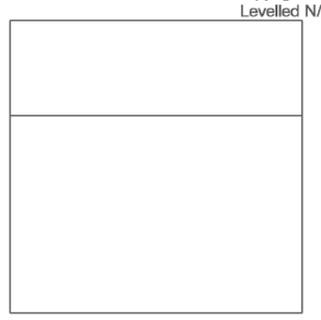
Map date: **1991**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1991
Revised 1991
Edition N/A
Copyright N/A
Levelled N/A



Groundsure INSIGHTS

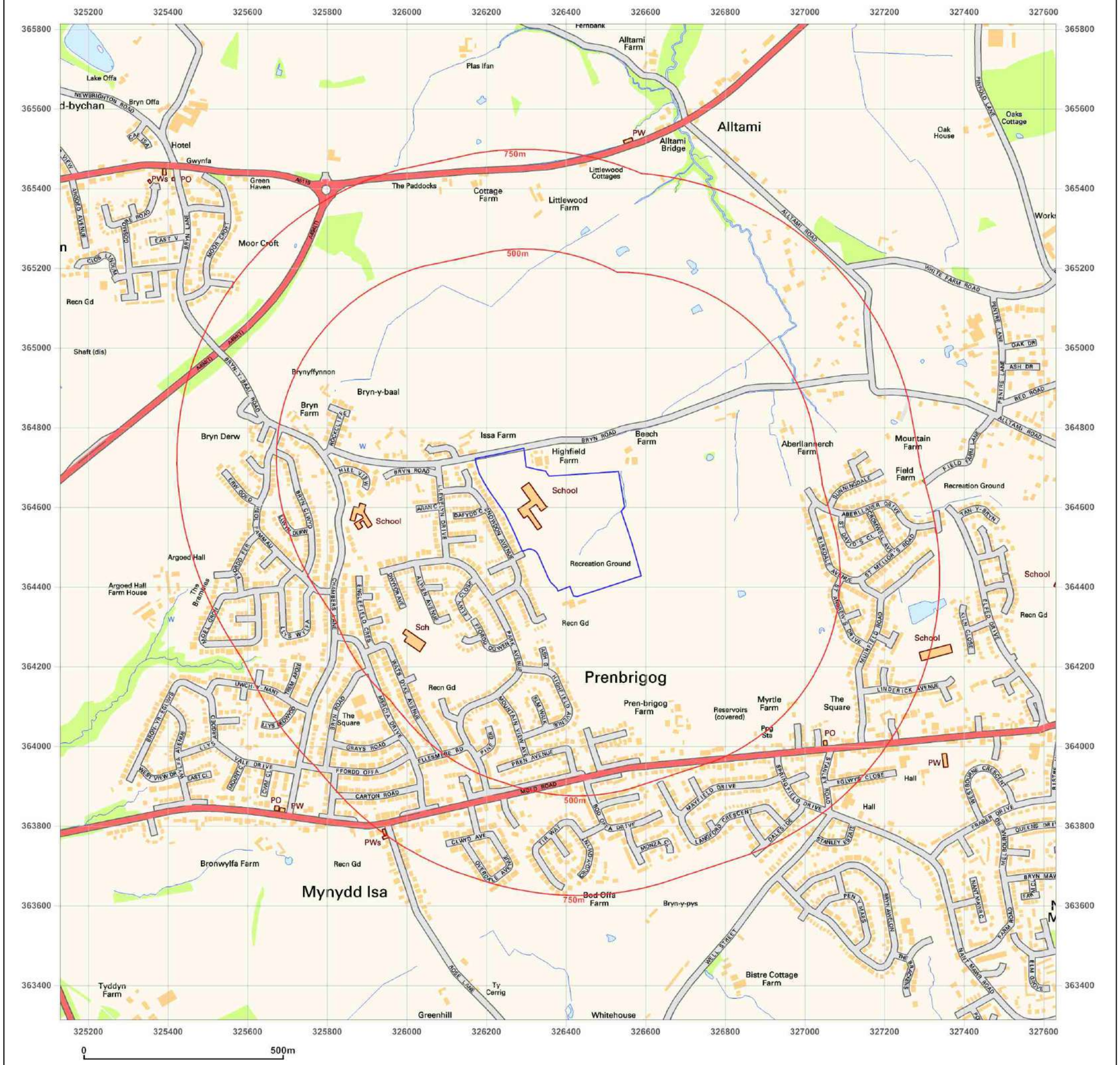
Produced by
Groundsure Insights
www.groundsure.com

Powered by OS

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2001

Produced by
Groundsure Insights
www.groundsure.com

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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

emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2010

Groundsure INSIGHTS

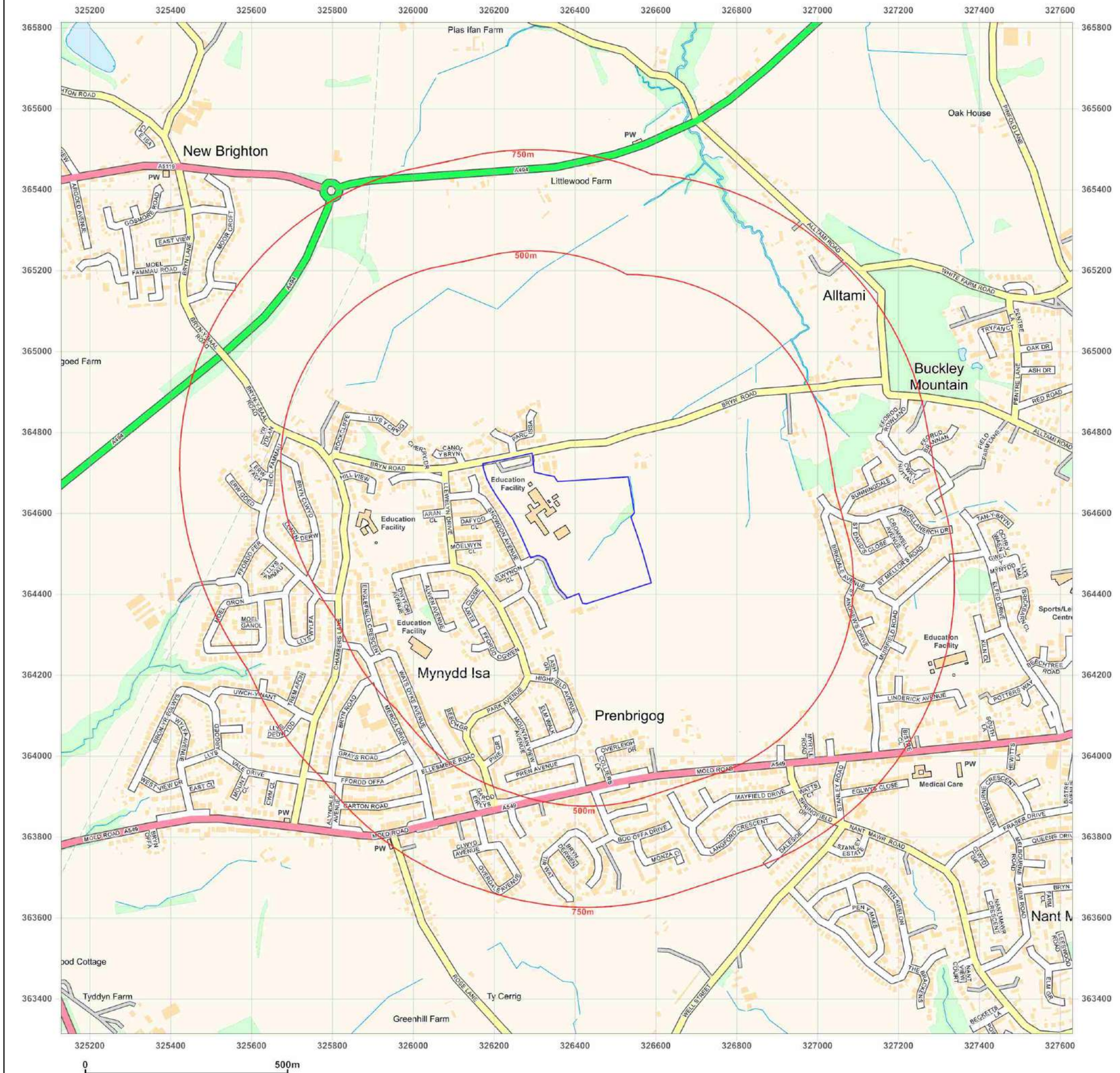
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid
Map date: **2020**
Scale: 1:10,000
Printed at: 1:10,000

N
W E
S

2020

Groundsure INSIGHTS

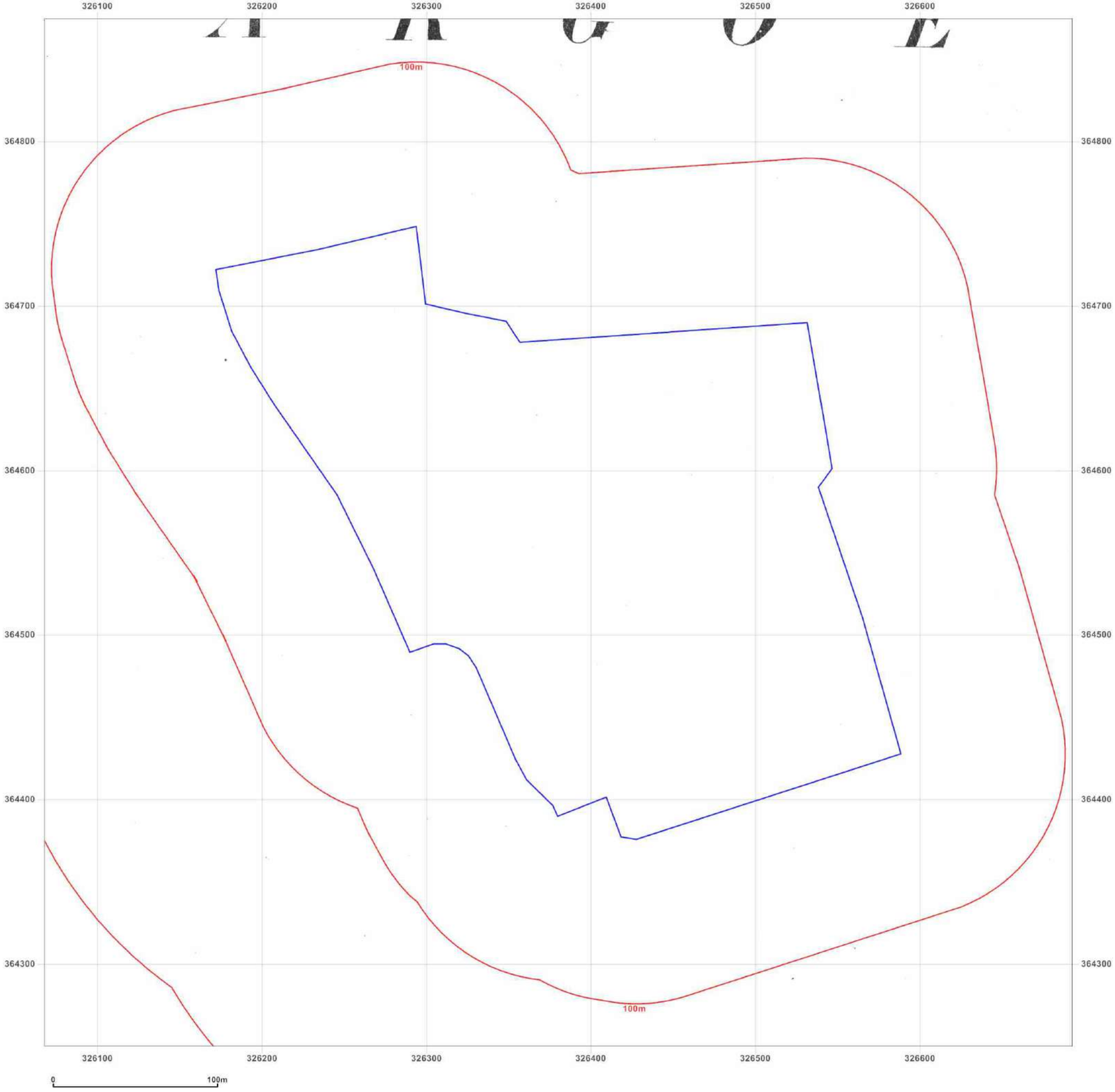
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: County Series

Map date: **1870**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1870
Revised 1870
Edition N/A
Copyright N/A
Levelled N/A

Groundsure INSIGHTS

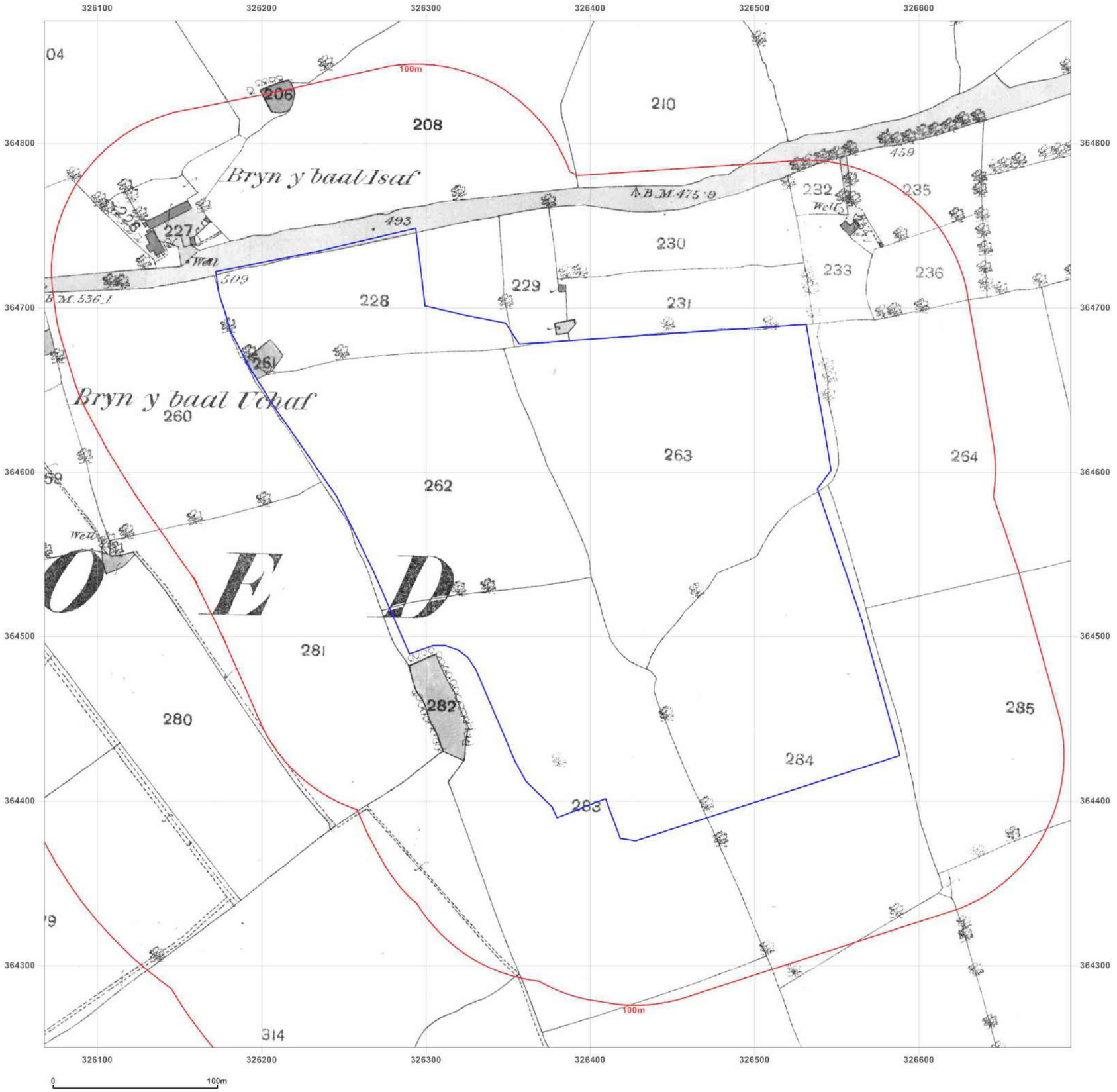
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: County Series

Map date: **1871**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1871
Revised 1871
Edition N/A
Copyright N/A
Levelled N/A

Groundsure INSIGHTS

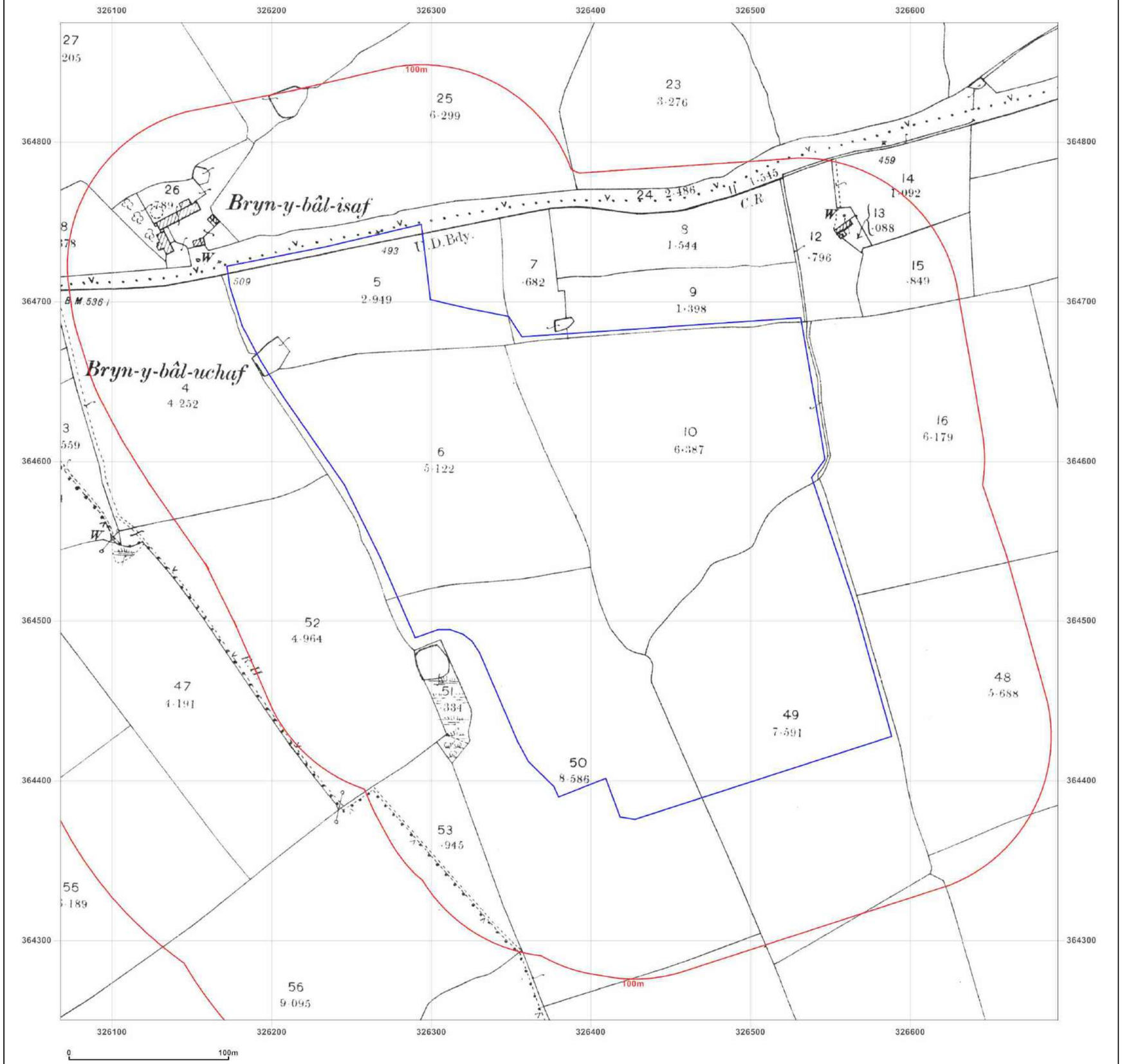
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: County Series

Map date: **1899**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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

Groundsure INSIGHTS

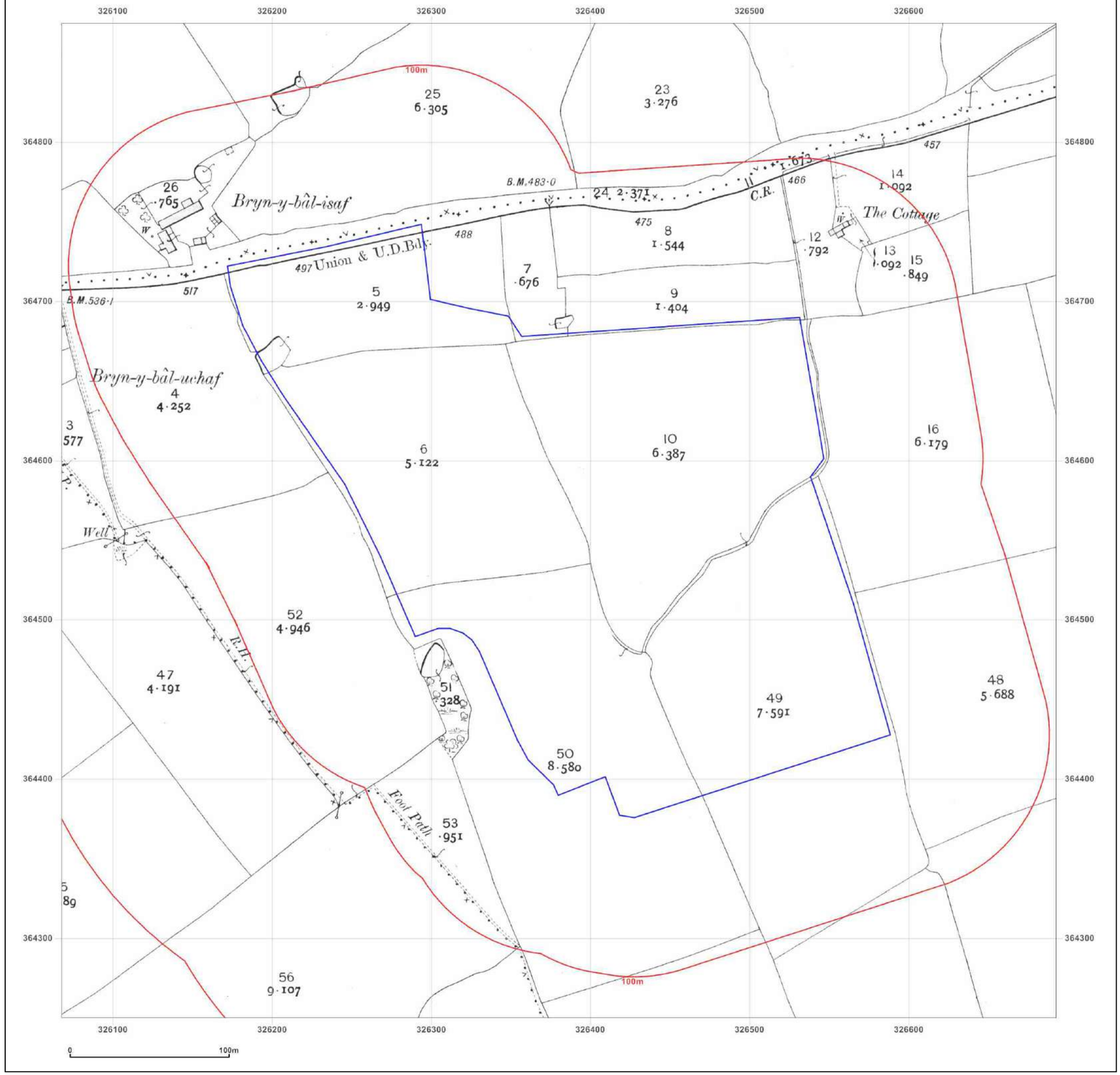
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: County Series

Map date: **1912**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1912
Revised 1912
Edition N/A
Copyright N/A
Levelled N/A

Groundsure INSIGHTS

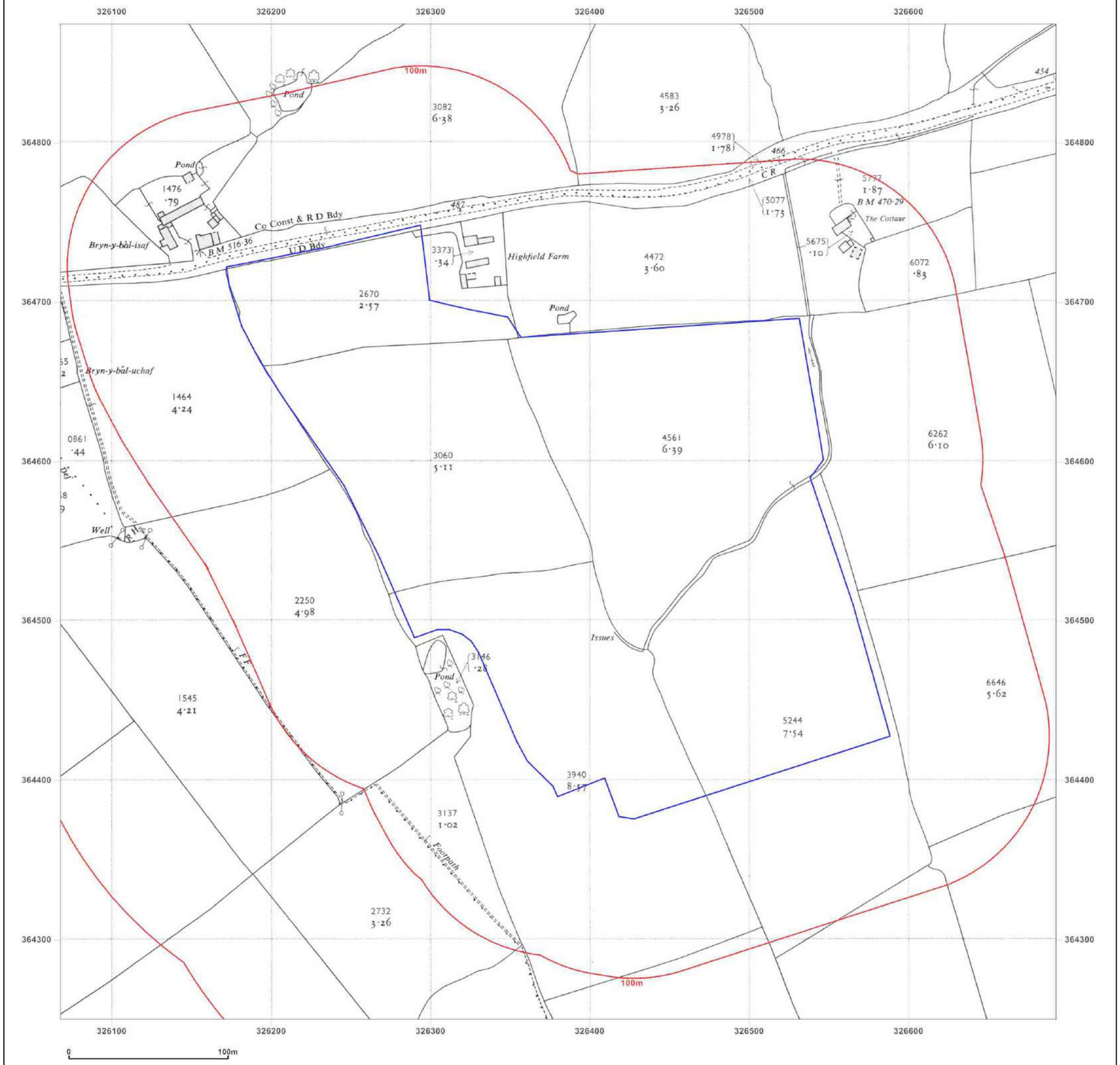
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1960**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1951

Groundsure INSIGHTS

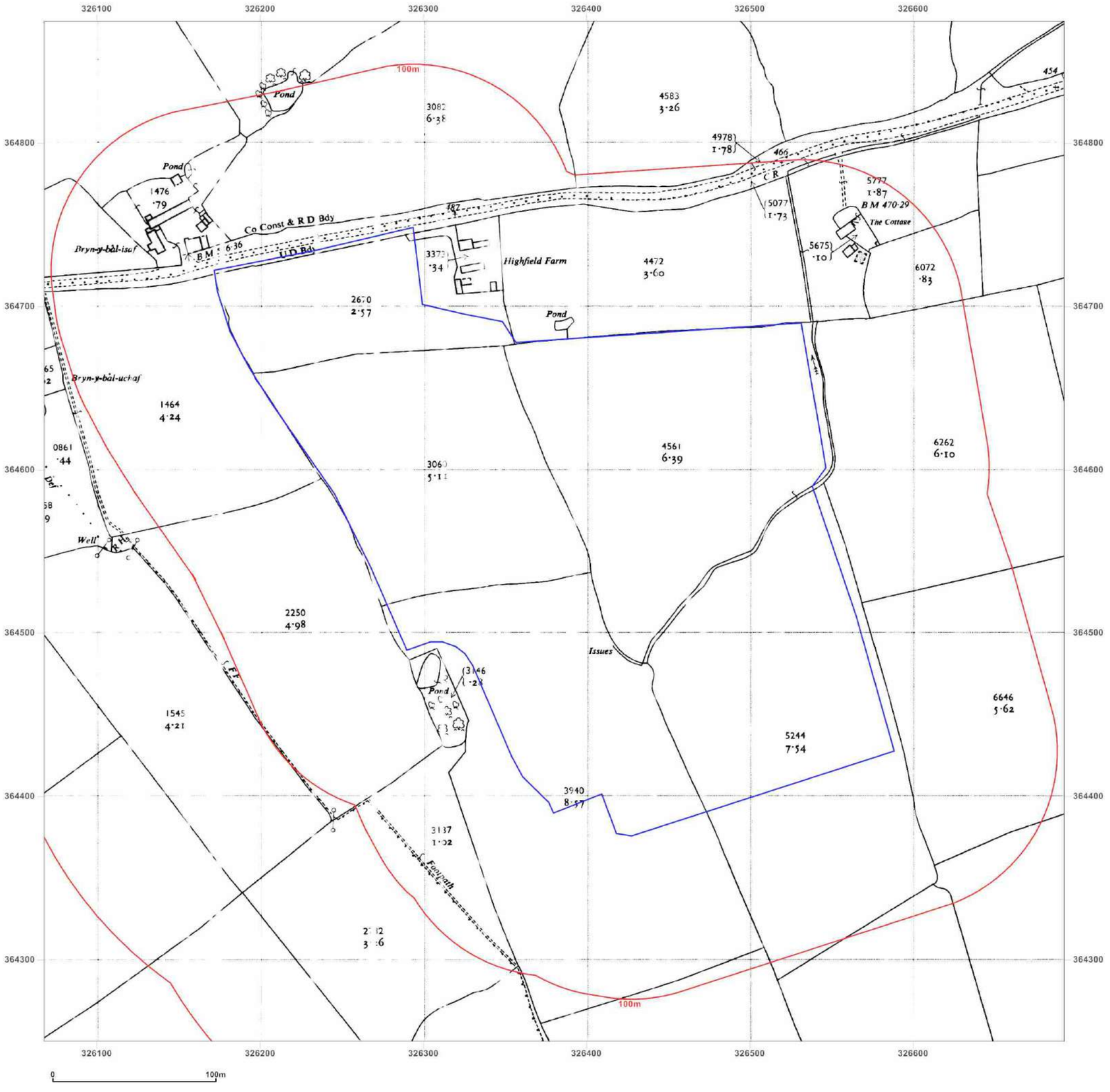
Produced by
Groundsure Insights
www.groundsure.com

Powered by OS

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1961**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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

Groundsure INSIGHTS

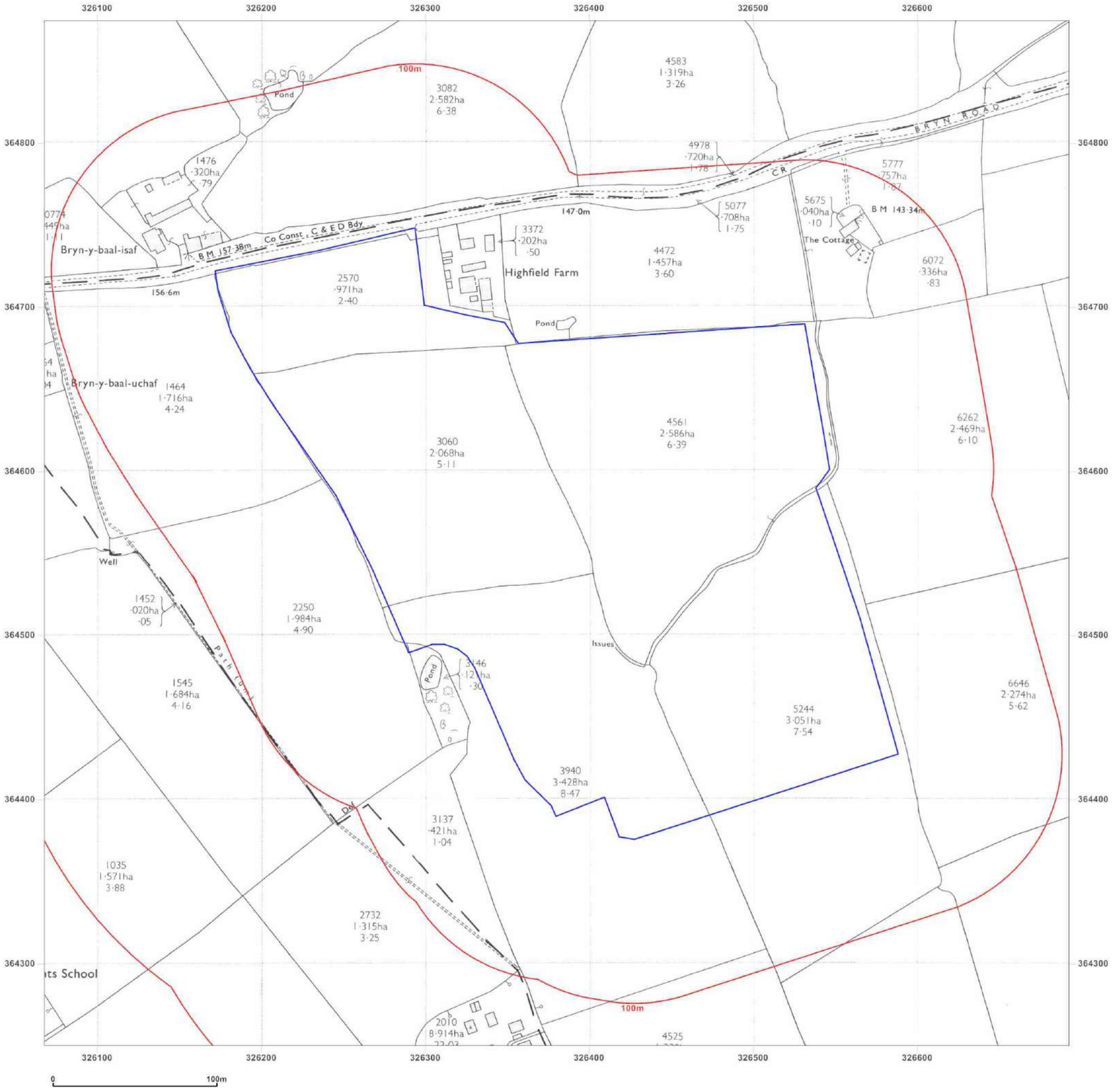
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1974**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1974
Revised 1974
Edition N/A
Copyright 1975
Levelled 1959

Groundsure INSIGHTS

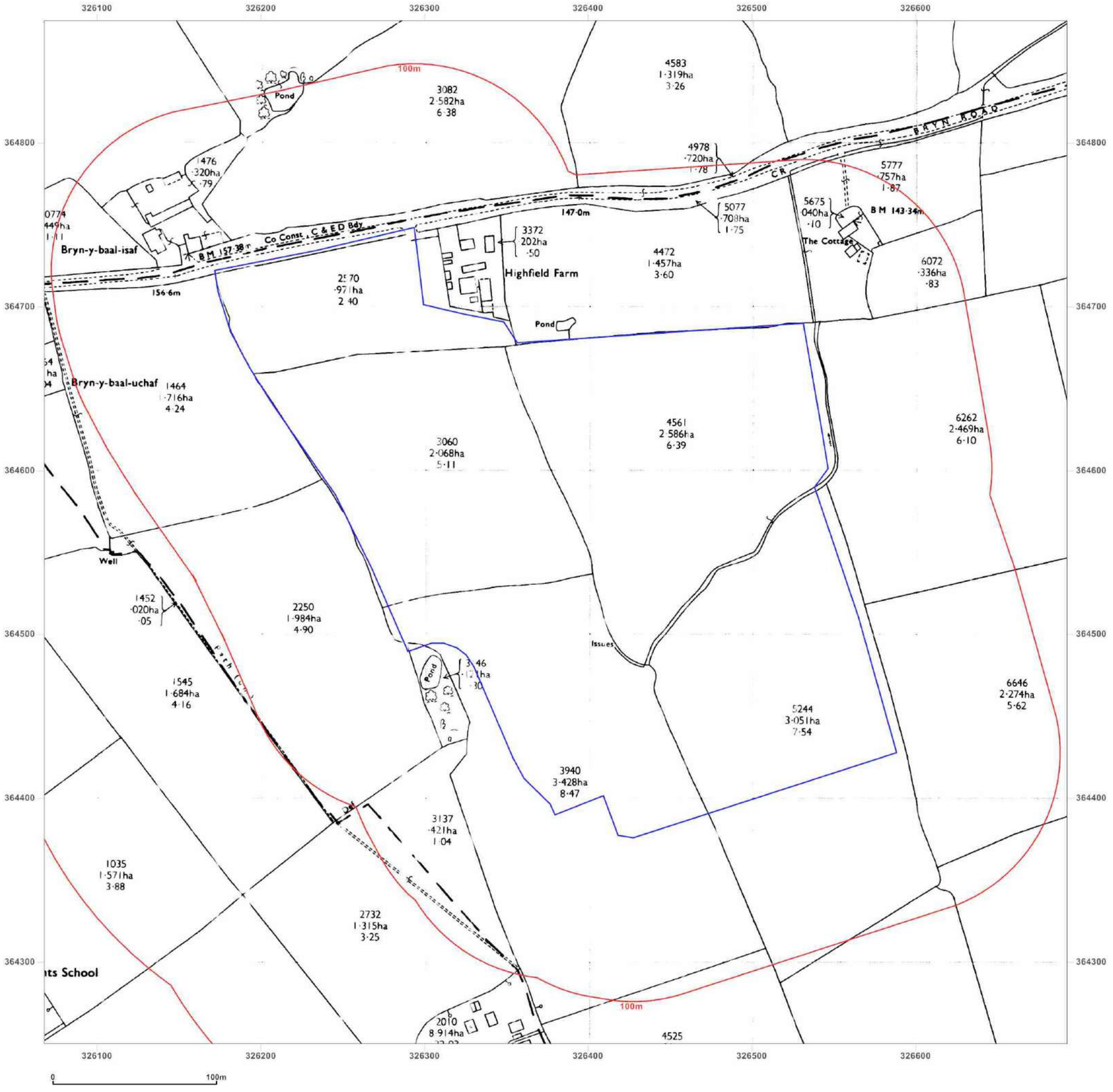
Produced by
Groundsure Insights
www.groundsure.com

Powered by OS

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1975**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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

Groundsure INSIGHTS

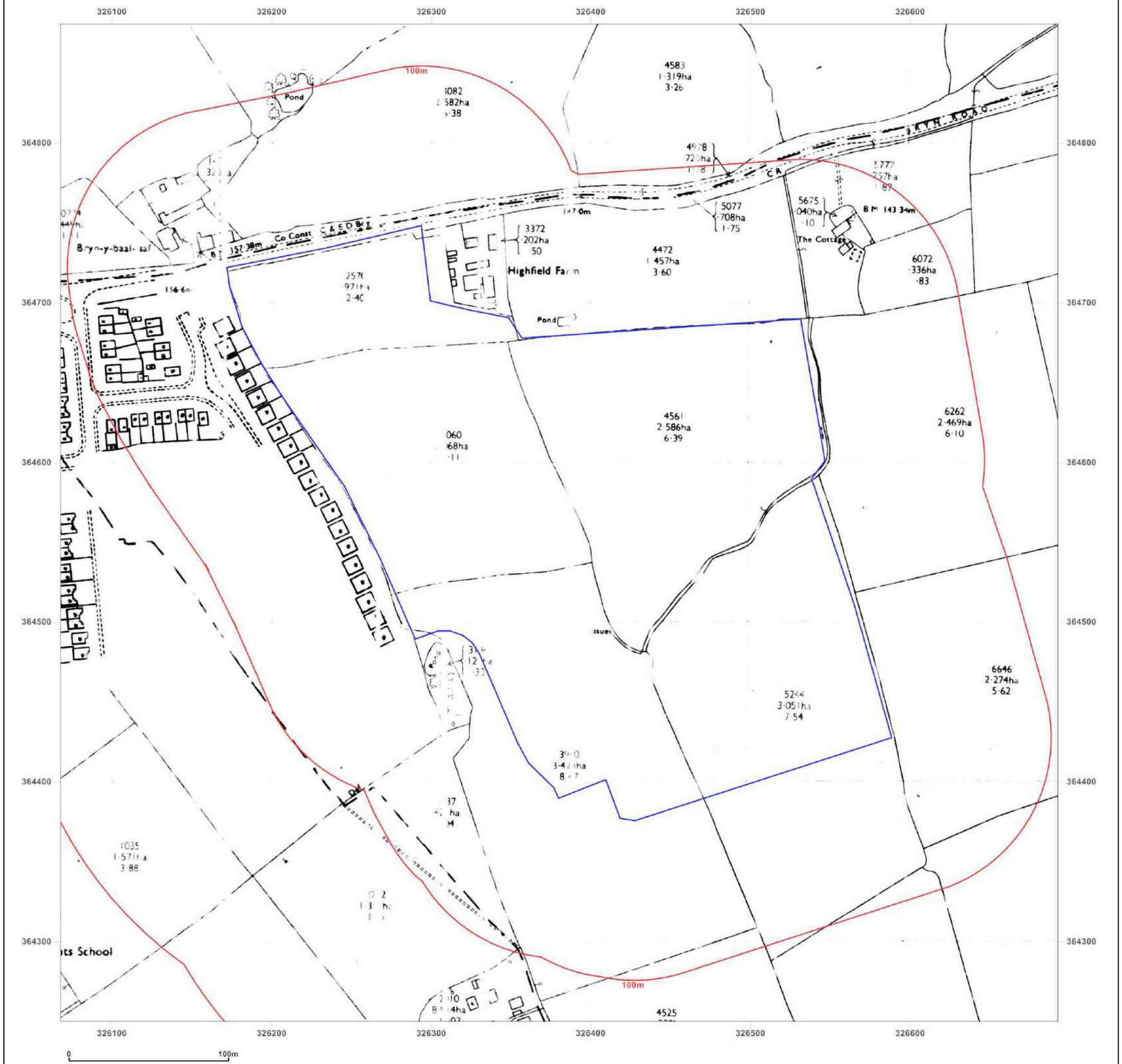
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1977**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

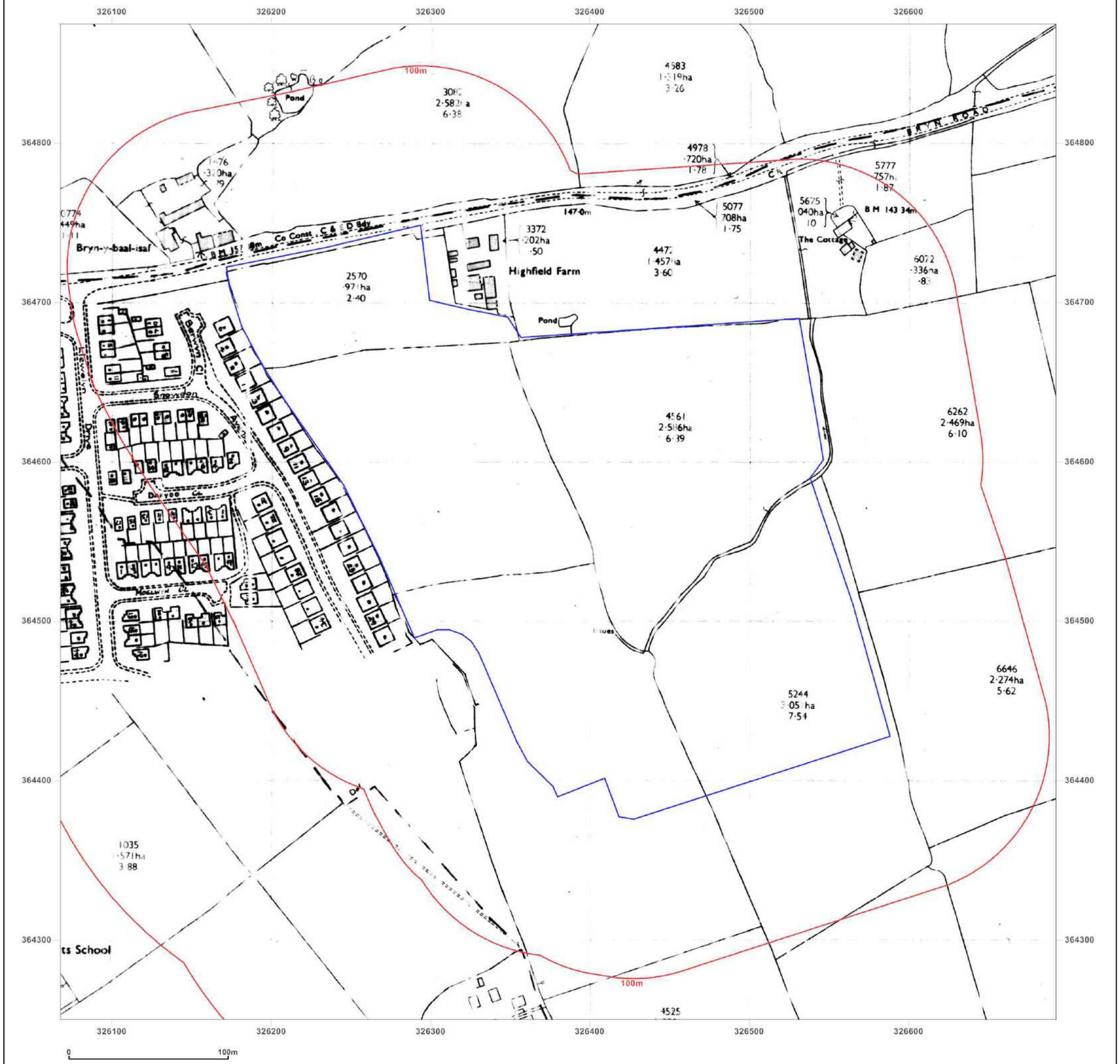
Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Produced by
Groundsure Insights
www.groundsure.com

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1979**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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

Groundsure INSIGHTS

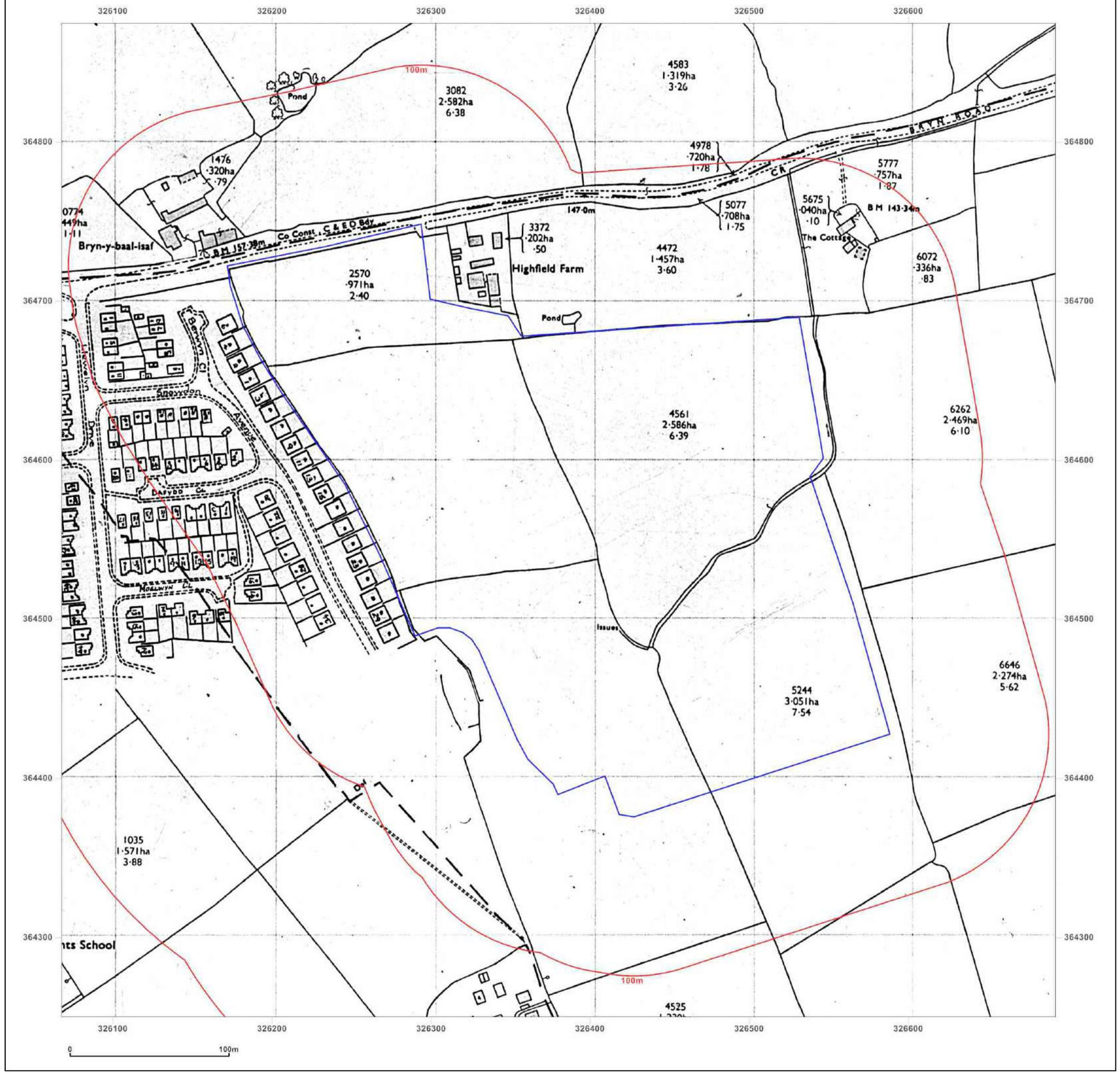
Produced by
Groundsure Insights
www.groundsure.com

Powered by OS

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1979**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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

Groundsure INSIGHTS

Produced by
Groundsure Insights
www.groundsure.com

Powered by OS

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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

emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1982**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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

Groundsure INSIGHTS

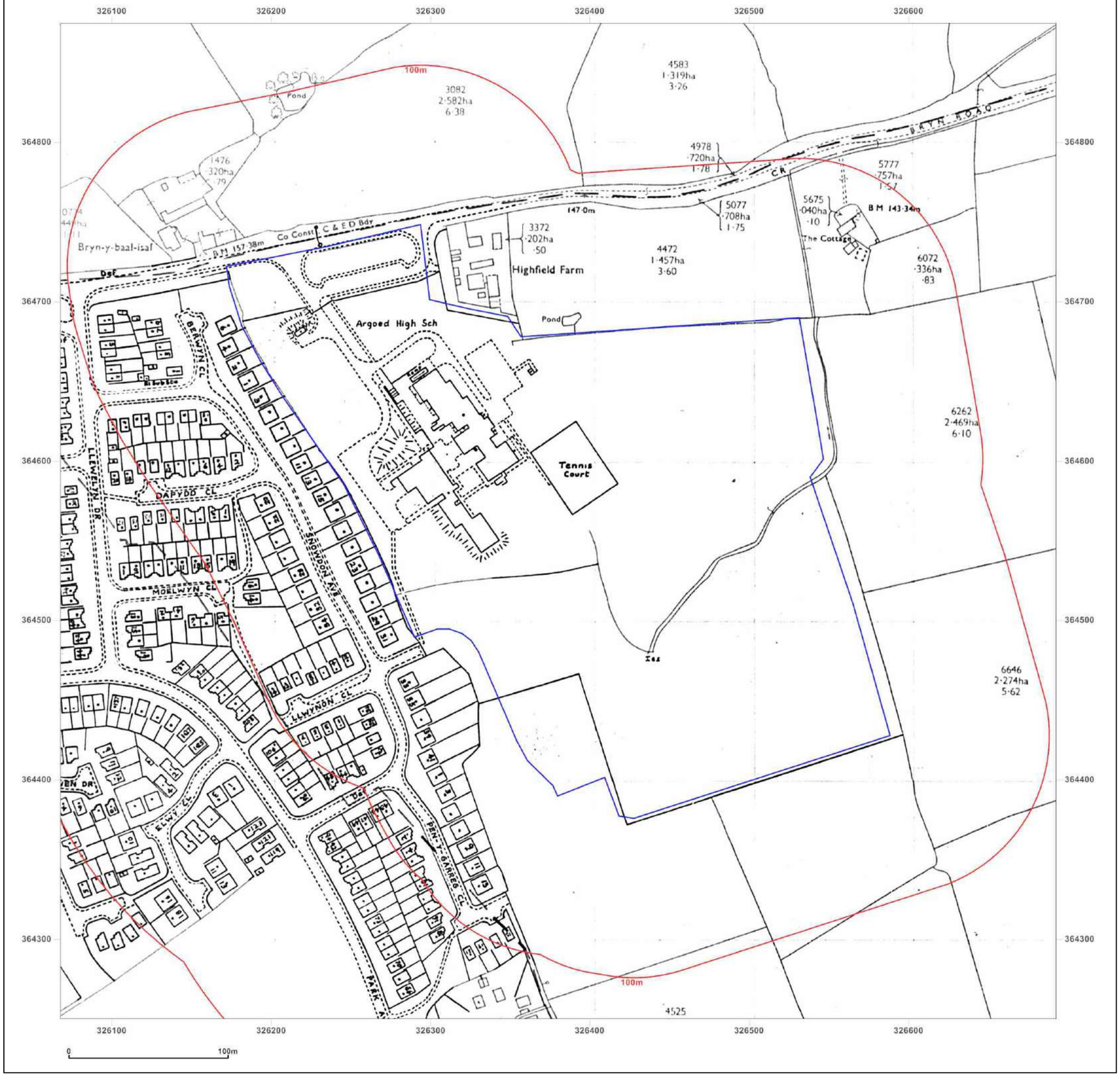
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1982**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1982
Levelled 1959

Groundsure INSIGHTS

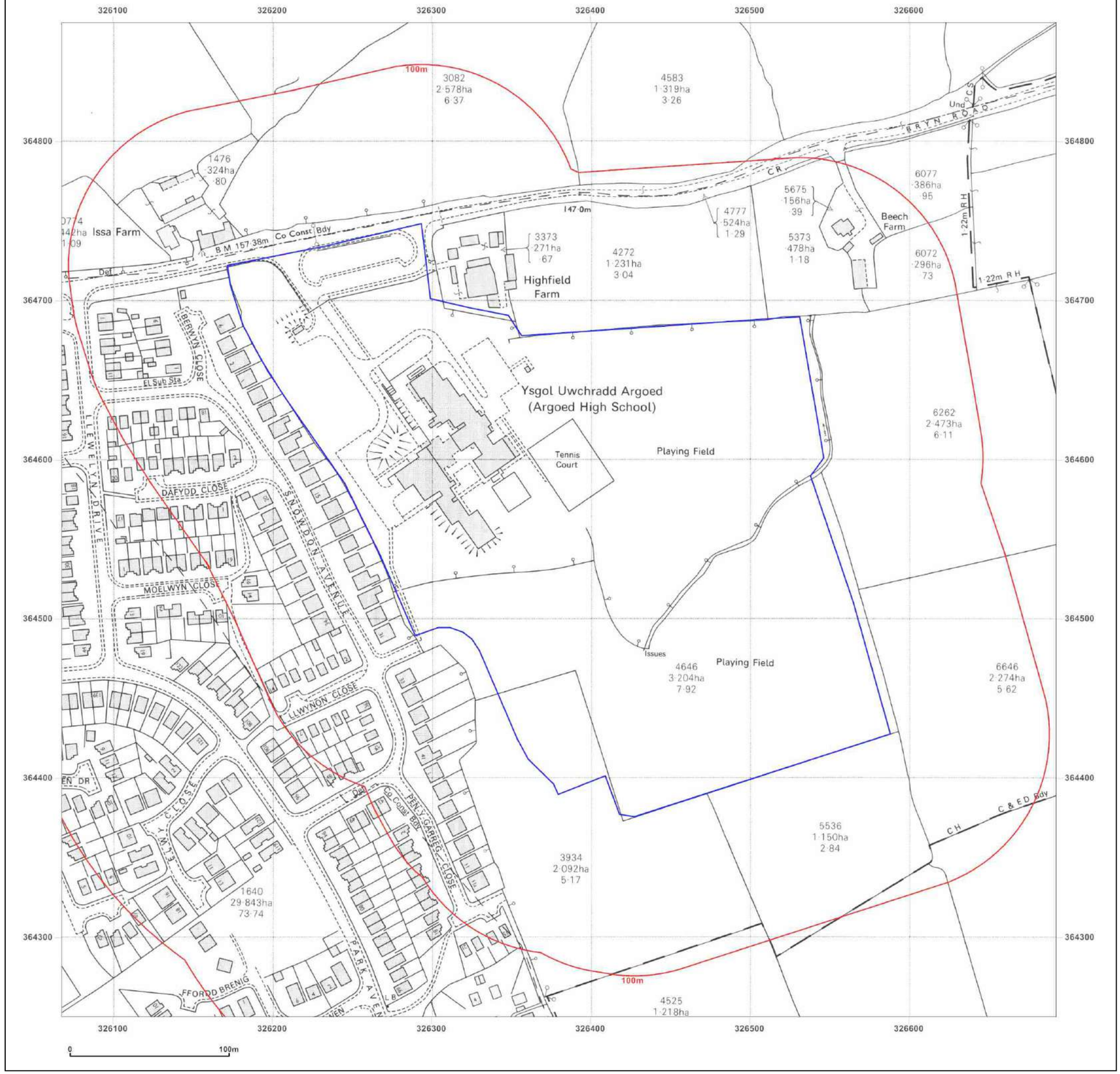
Produced by
Groundsure Insights
www.groundsure.com

Powered by OS

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1984**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1984
Revised 1984
Edition N/A
Copyright 1985
Levelled 1959

Groundsure INSIGHTS

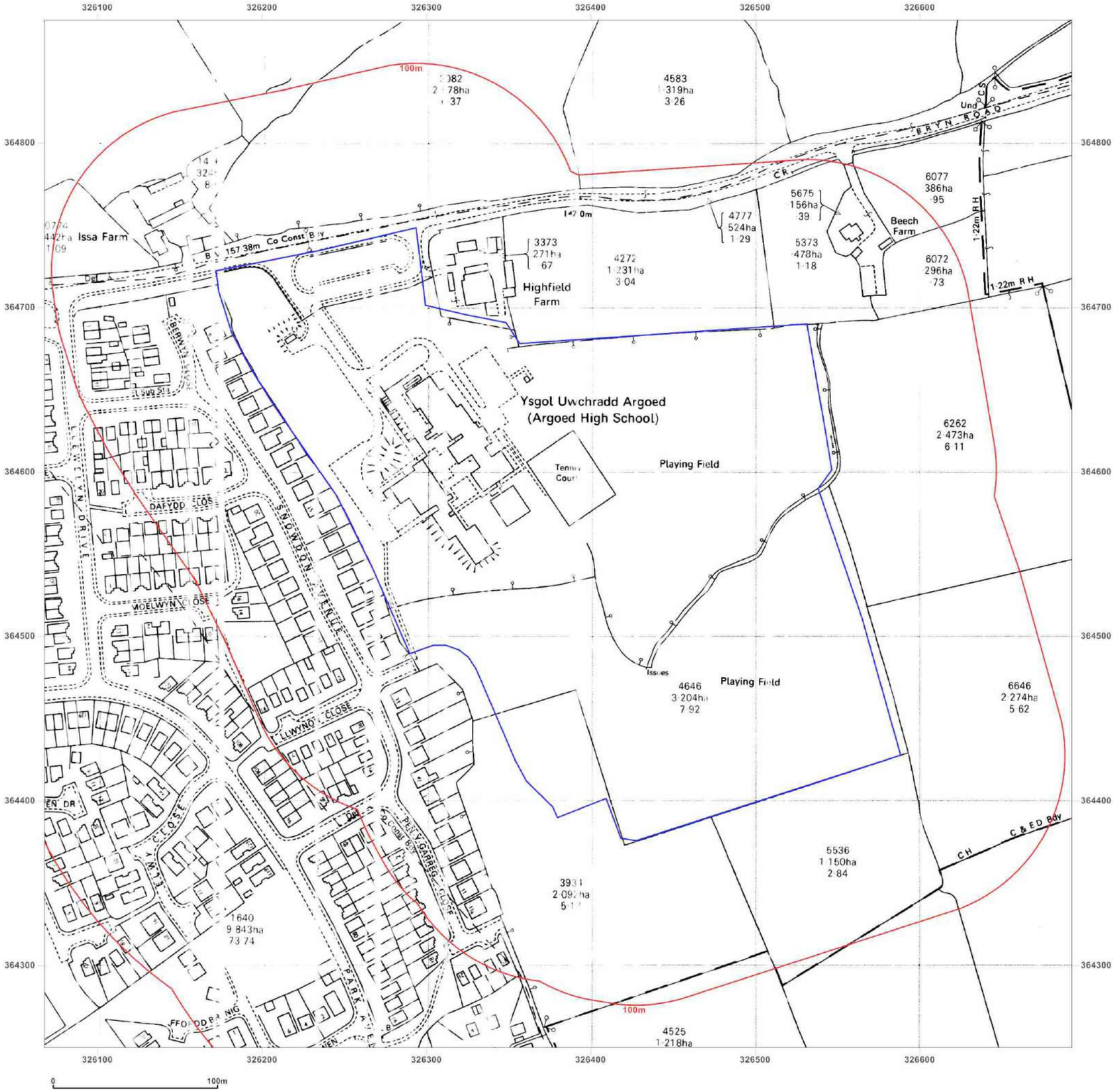
Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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



emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1985**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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

Groundsure INSIGHTS

Produced by
Groundsure Insights
www.groundsure.com

Powered by OS

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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

emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1989**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

Surveyed 1959
Revised 1984
Edition N/A
Copyright 1989
Levelled 1959

Groundsure INSIGHTS

Produced by
Groundsure Insights
www.groundsure.com

Powered by OS

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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

emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1990**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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

Groundsure INSIGHTS

Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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

emapsite™

Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

Map Name: National Grid

Map date: **1993**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
S

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

Groundsure INSIGHTS

Produced by
Groundsure Insights
www.groundsure.com

Powered by

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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

emapsite™

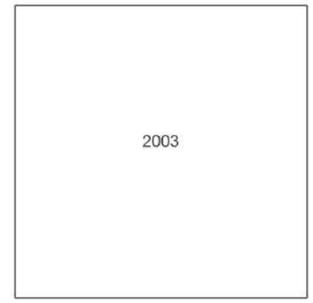
Site Details:

Argoed High School,Bryn Road,Mold,CH7 6RY

Client Ref: EMS_605071_808854
Report Ref: EMS-605071_808854
Grid Ref: 326380, 364562

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

N
W E
S



Groundsure INSIGHTS

Produced by
Groundsure Insights
www.groundsure.com

Powered by OS

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 14 April 2020

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

Appendix V

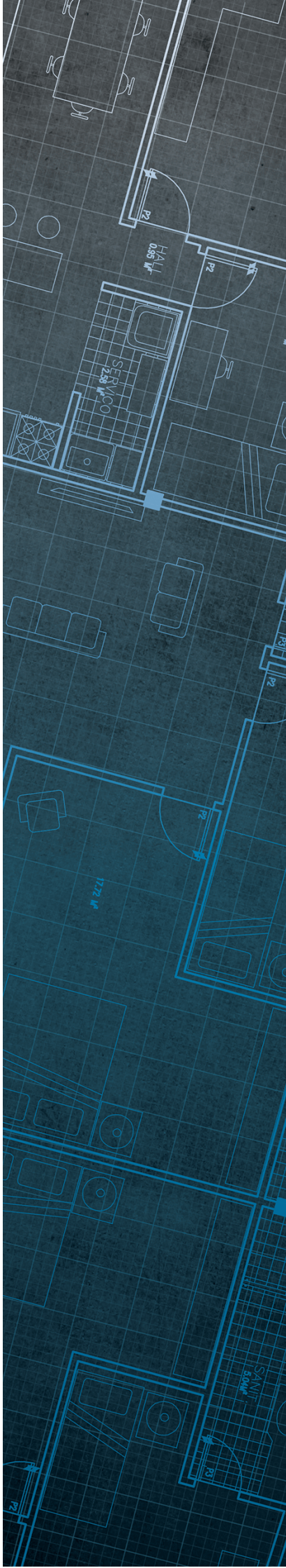
The Coal Authority

Consultants

Coal Mining Report

Argoed High School
Bryn Road
Bryn Y Baal
Flintshire
CH7 6RY

Date of enquiry:	**11 May 2020**
Date enquiry received:	**11 May 2020**
Issue date:	**11 May 2020**
Our reference:	**51002284189001**
Your reference:	**C3250**



Consultants

Coal Mining Report

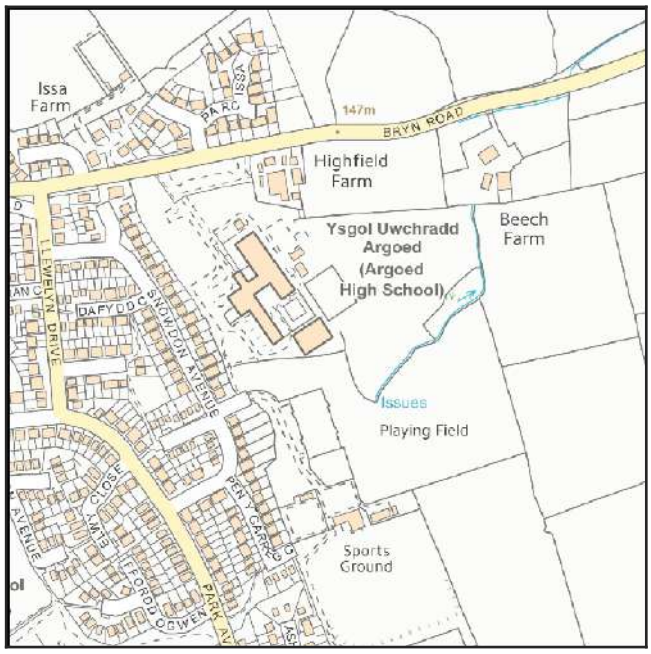
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

HSP CONSULTING

Enquiry address

Argoed High School
Bryn Road
Bryn Y Baal
Flintshire
CH7 6RY



Approximate position of property

Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2018. All rights reserved.

Ordnance Survey Licence number: 100020315

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

@coalauthority
/company/the-coal-authority
/thecoalauthority
/thecoalauthority

Section 1 – Mining activity and geology

Past underground mining
No past mining recorded.

Probable unrecorded shallow workings
None.

Spine roadways at shallow depth
No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	326364-288	326498 364560		Coal	
Shaft	326364-315	326488 364560		Coal	
Shaft	326364-317	326429 364491		Coal	

Abandoned mine plan catalogue numbers
The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

7132		

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops
No outcrops recorded.

Geological faults, fissures and breaklines
No faults, fissures or breaklines recorded.

Opencast mines
None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips
None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations
None recorded within 50 metres of the enquiry boundary.

Remediated sites
None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence
The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas
None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes
None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining
None recorded.

Coal mining licensing
None recorded within 200 metres of the enquiry boundary.

Court orders
None recorded.

Section 46 notices
No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices
The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land
The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

Based on the responses in this report, no further information has been highlighted.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk.**

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines
Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips
Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations
Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites
Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence
Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas
Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

Mine water treatment schemes
Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining
Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing
Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders
Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices
Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices
Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

This page left intentionally blank

VAT receipt

Issued by	The Coal Authority 200 Lichfield Lane Mansfield Nottinghamshire NG18 4RG
Tax point date	11 May 2020
Issued to	HSP CONSULTING 6 MEADOWBANK WAY EASTWOOD NOTTINGHAMSHIRE NG16 3SB
Property search for	ARGOED HIGH SCHOOL BRYN ROAD BRYN Y BAAL FLINTSHIRE CH7 6RY
Reference number	51002284189001
Date of issue	11 May 2020
Cost	£112.13
VAT @ 20%	£22.43
Total received	£134.56
VAT registration	598 5850 68

The Coal Authority

Summary of findings

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

Approximate position of the enquiry boundary shown

Disused mine shaft

How to contact us
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com

Appendix VI

Appendix V
Basis for Contaminated Land Qualitative Risk Assessment

The following Contaminated Land Risk Assessment methodology is based on CIRIA C552 (2001) *Contaminated Land Risk Assessment – A Guide to Good Practice*, in order to quantify potential risk via **risk estimation** and **risk evaluation**, which can be adopted at the Phase I (Desk Study) stage. This will then determine an overall risk category which can be used to identify potential investigation or remedial actions. This methodology uses qualitative descriptors and therefore is a qualitative approach based on desk information. The risk assessment should be refined following receipt of ground investigation data.

The methodology requires the classification of:

- the magnitude of the **consequence** (severity) of a risk occurring, and
- the magnitude of the **probability** (likelihood) of a risk occurring.

The potential consequences of contamination risks occurring at this Site are classified in accordance with Table VI-1 below, which is adapted from the CIRIA guidance.

Table V-1: Classification of Consequence

Classification	Definition of Consequence
Severe	Short-term (acute) risks to human health likely to result in "significant harm" as defined by the Environmental Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such an ecosystem.
Medium	Chronic damage to Human Health (significant harm as defined in DEFRA, 2012). Pollution of sensitive water resources. A significant change in a particular ecosystem, or organism forming part of such an ecosystem.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ("significant harm" as defined in the DEFRA, 2012). Damage to sensitive buildings/structures/services or the environment.
Minor	Harm, though not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc.). Easily repairable effects of damage to buildings, structures and services.

Source: CIRIA C552

The probability of contamination risks occurring at this Site will be classified in accordance with Table VI-2 below from the CIRIA guidance. Note that for each category, it is assumed that a pollution linkage exists. Where a pollution linkage does not exist, the likelihood is zero, as is the risk.

Table V-2: Classification of Probability

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

For each possible pollution linkage (source-pathway-receptor) identified, the potential risk can be evaluated based upon the following probability x consequence matrix shown in Table VI-3.

Table V-3: Overall Contamination Risk Matrix

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High likelihood	Very high risk	High risk	Moderate risk	Moderate/Low risk
	Likely	High risk	Moderate risk	Moderate/Low risk	Low risk
	Low likelihood	Moderate risk	Moderate/low risk	Low risk	Very low risk
	Unlikely	Moderate/Low risk	Low risk	Very low risk	Very low risk

Based upon this, CIRIA C552 present definitions of the risk categories, together with the investigatory and remedial actions that are likely to be necessary in each case, as in Table VI-4. These risk categories apply to each pollutant linkage, not simply to each hazard or receptor.

Table V-4: Definition of Risk Categories and Likely Actions Required

Risk Category	Definition and likely actions required
Very high	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.
Moderate	It is possible that harm could arise to a designated receptor from an identified hazard. However, if [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. 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	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised would at worst be relatively mild.
Very Low	There is a low possibility that harm could rise to a receptor. In the event of such harm being realised it is not likely to be severe.

Appendix VII

Client Name: Gleeds Management Services Limited	Site: Argoed High School	Job Number: C3250
Photo No: Photo 1 School Entrance and Car Parking		

Client Name: Gleeds Management Services Limited	Site: Argoed High School	Job Number: C3250
Photo No: Photo 2 Slope from the access road to the school buildings (east of the site)		

Client Name: Gleeds Management Services Limited	Site: Argoed High School	Job Number: C3250
Photo No: Photo 3 View from landscaped bund in the north of the site.		

Client Name: Gleeds Management Services Limited	Site: Argoed High School	Job Number: C3250
Photo No: Photo 4 School buildings in the centre of the site.