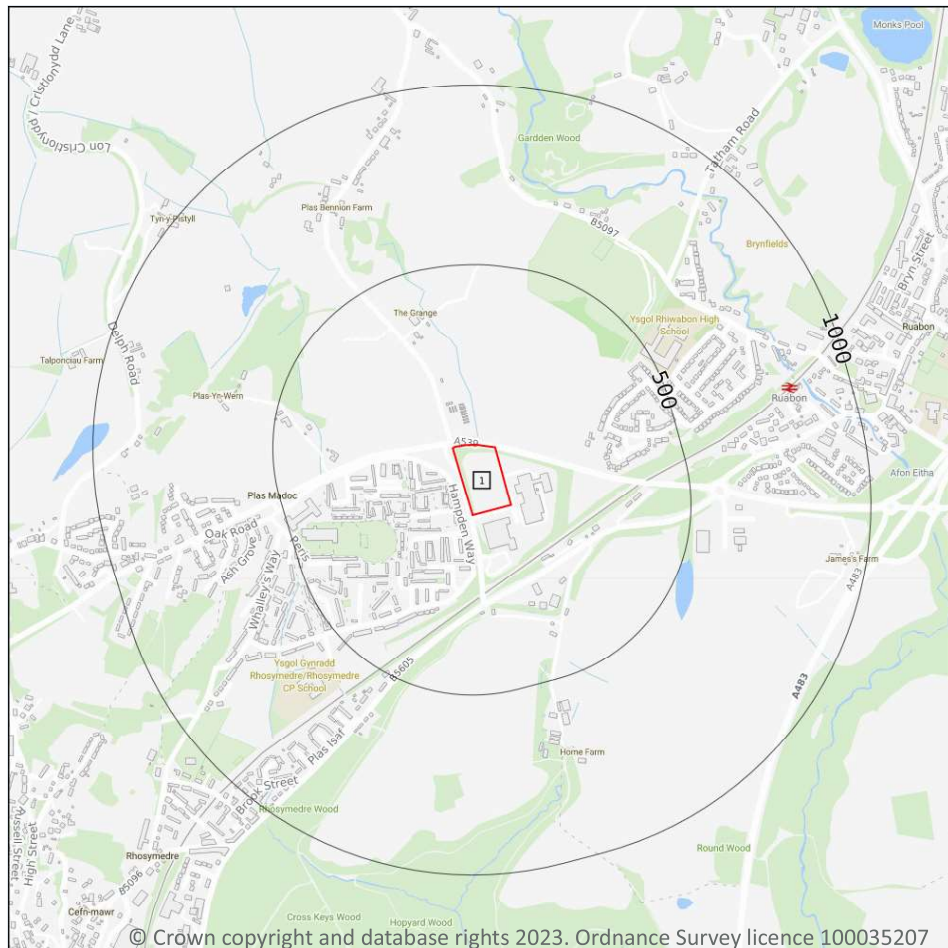


15 Geology 1:50,000 scale - Availability



— 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 87](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW121_wrexham_v4

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

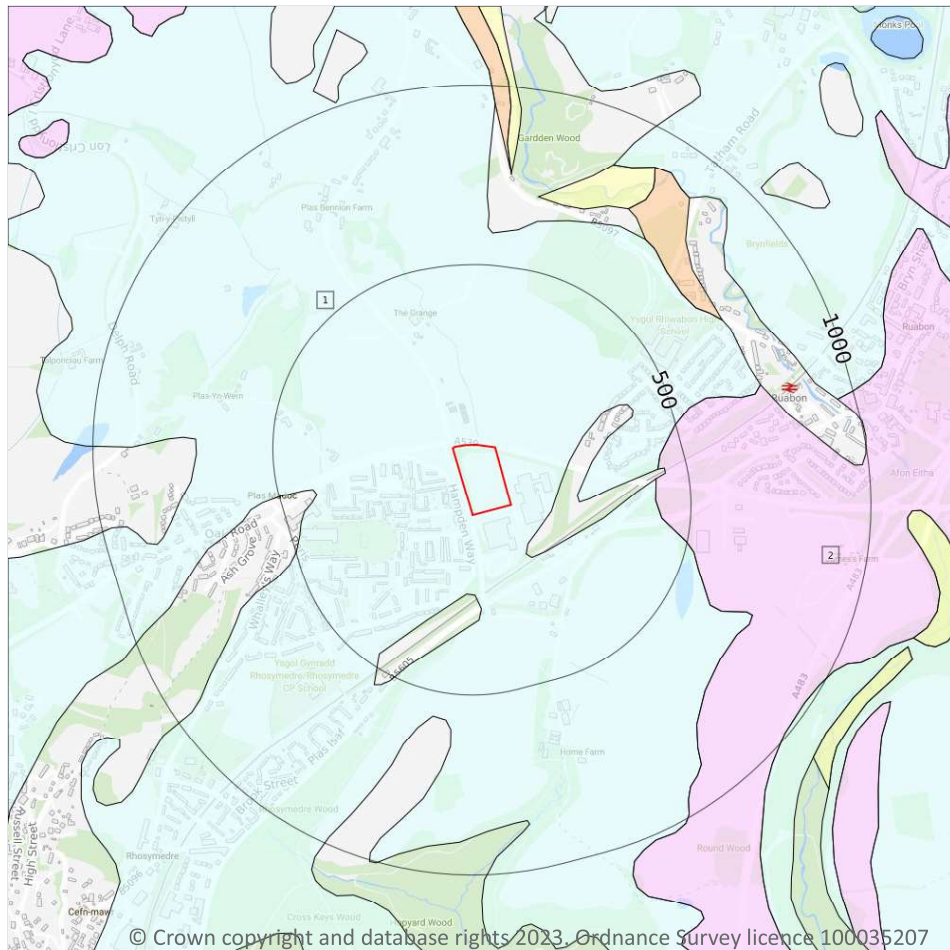
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

2

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 89](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	402m E	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m**1**

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

Location	Flow type	Maximum permeability	Minimum permeability
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)

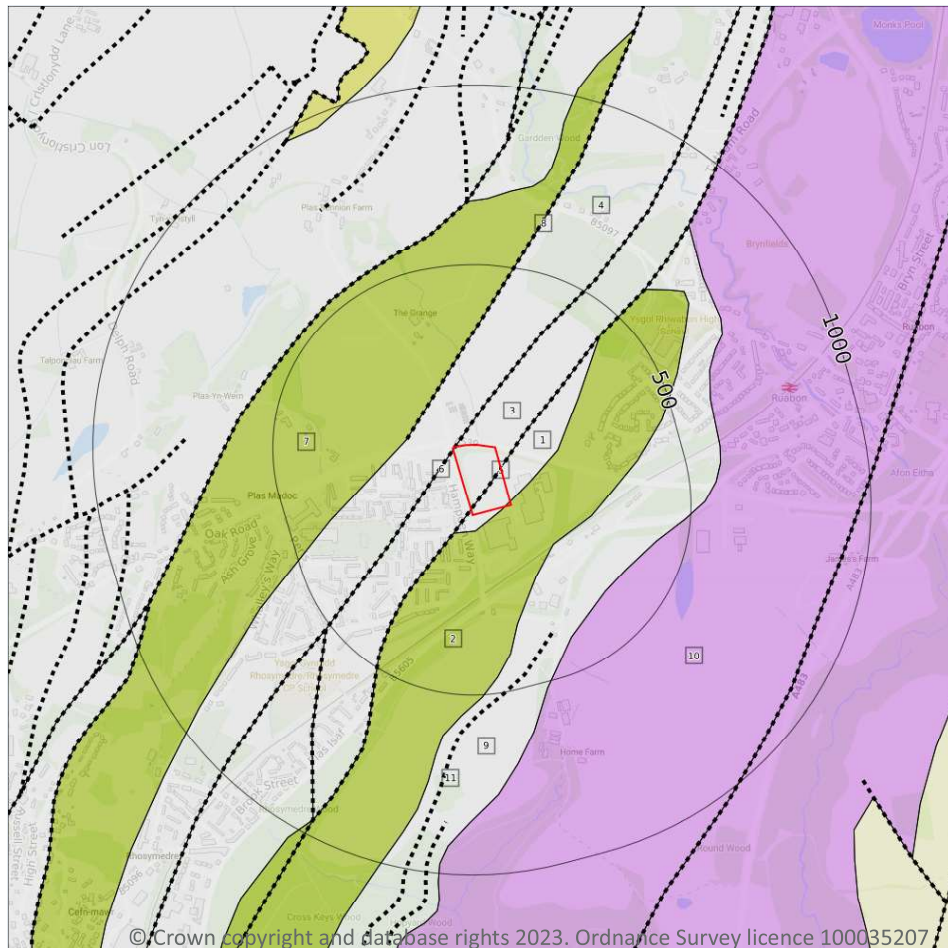
Records within 50m**0**

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

7

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 91](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	PLMC-MDSS	PENNINE LOWER COAL MEASURES FORMATION AND PENNINE MIDDLE COAL MEASURES FORMATION (UNDIFFERENTIATED) - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
2	On site	CF-SDST	CEFN ROCK - SANDSTONE	WESTPHALIAN



ID	Location	LEX Code	Description	Rock age
3	On site	PLMC-MDSS	PENNINE LOWER COAL MEASURES FORMATION AND PENNINE MIDDLE COAL MEASURES FORMATION (UNDIFFERENTIATED) - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
4	On site	PLMC-MDSS	PENNINE LOWER COAL MEASURES FORMATION AND PENNINE MIDDLE COAL MEASURES FORMATION (UNDIFFERENTIATED) - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
7	122m NW	CF-SDST	CEFN ROCK - SANDSTONE	WESTPHALIAN
9	160m SE	PLMC-MDSS	PENNINE LOWER COAL MEASURES FORMATION AND PENNINE MIDDLE COAL MEASURES FORMATION (UNDIFFERENTIATED) - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
10	356m SE	ETM-MDST	ETRURIA FORMATION - MUDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	2
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A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	4
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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 91](#) >

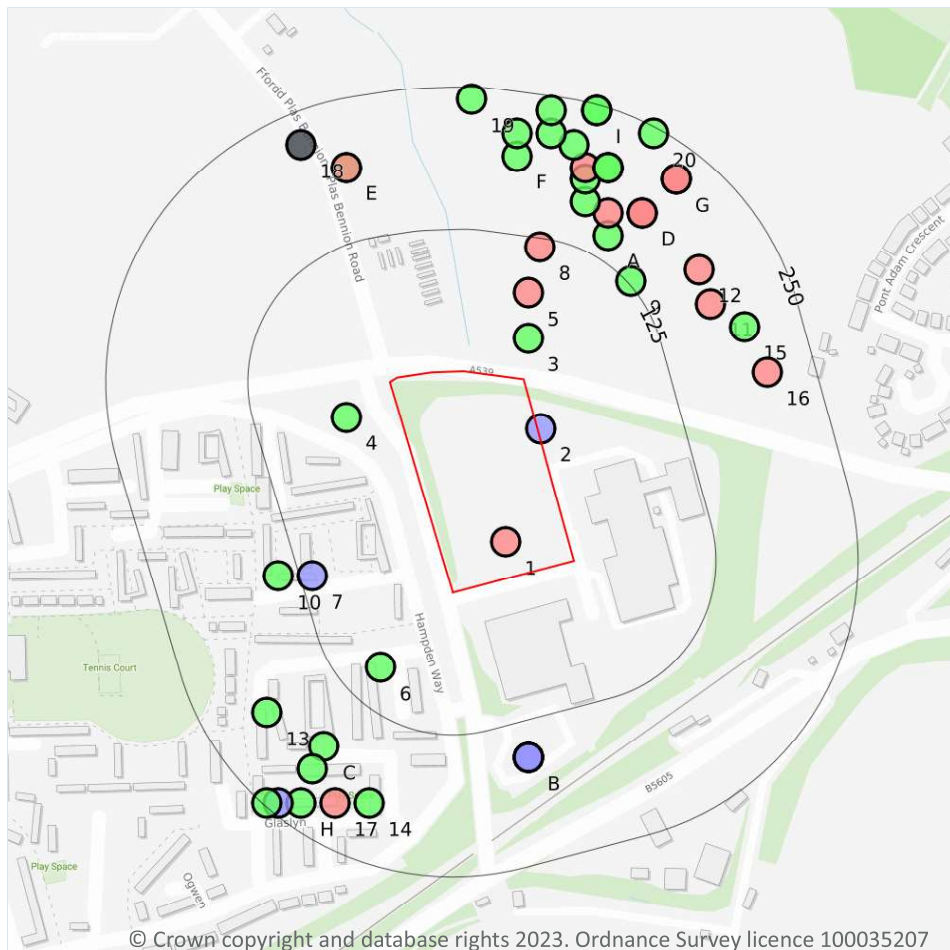


ID	Location	Category	Description
5	On site	FAULT	Fault, inferred, displacement unknown
6	On site	FAULT	Fault, inferred, displacement unknown
8	122m NW	FAULT	Fault, inferred, displacement unknown
11	372m SE	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.



16 Boreholes



- Site Outline**
- Search buffers in metres (m)**
- Confidential
 - 0 - 10m
 - 10 - 30m
 - 30m+
 - Unknown

16.1 BGS Boreholes

Records within 250m

52

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 94](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	329220 343520	WYNNSTAY COLLIERY 2 DENBIGH	379.17	N	143670 ↗
2	3m NE	329251 343620	TELECOM TOWER WYNNSTAY IND EST CLY0049 1	2.7	N	20308590 ↗



ID	Location	Grid reference	Name	Length	Confidential	Web link
3	37m N	329240 343700	TIR-Y-FRON, O/C SITE. 418	14.94	N	143869 ↗
4	46m NW	329080 343630	PLAS MADOC, O/C SITE. 1	19.51	N	143754 ↗
5	77m N	329240 343740	TIR-Y-FRON, O/C SITE. 417	36.58	N	143870 ↗
6	91m SW	329110 343410	PLAS MADOC, O/C SITE. 60	23.16	N	143775 ↗
7	114m SW	329050 343490	PLAS MADOC, O/C SITE. 3	3.66	N	143756 ↗
8	118m N	329250 343780	TIR-Y-FRON, O/C SITE. 416	30.18	N	143871 ↗
9	128m NE	329330 343750	TIR-Y-FRON, O/C SITE. 2	21.34	N	143875 ↗
10	143m SW	329020 343490	PLAS MADOC, O/C SITE. 2	23.77	N	143755 ↗
A	147m NE	329310 343790	TIR-Y-FRON, O/C SITE. 1	12.5	N	143876 ↗
B	158m S	329240 343330	WYNNNSTAY BANKS DEPOT. 3	5.0	N	144068 ↗
B	158m S	329240 343330	WYNNNSTAY BANKS DEPOT. 2	5.0	N	144067 ↗
B	158m S	329240 343330	WYNNNSTAY BANKS DEPOT. 6	5.0	N	144071 ↗
B	158m S	329240 343330	WYNNNSTAY BANKS DEPOT. 4	5.0	N	144069 ↗
B	158m S	329240 343330	WYNNNSTAY BANKS DEPOT. 5	5.0	N	144070 ↗
B	158m S	329240 343330	WYNNNSTAY BANKS DEPOT. 1	5.5	N	144066 ↗
A	164m NE	329310 343810	TIR-Y-FRON, O/C SITE. 302	31.39	N	143877 ↗
A	166m N	329290 343820	TIR-Y-FRON, O/C SITE. 24	29.26	N	143878 ↗
C	177m SW	329060 343340	PLAS MADOC, O/C SITE. 58	22.56	N	143773 ↗
11	177m NE	329400 343730	TIR-Y-FRON, O/C SITE. 101	45.72	N	143873 ↗
D	180m NE	329340 343810	TIR-Y-FRON, O/C SITE. 406	36.27	N	143912 ↗
D	180m NE	329340 343810	TIR-Y-FRON, O/C SITE. 405	37.49	N	143911 ↗
12	182m NE	329390 343760	TIR-Y-FRON, O/C SITE. 104	54.86	N	143874 ↗
A	185m N	329290 343840	TIR-Y-FRON, O/C SITE. 22	23.77	N	143879 ↗
E	190m NW	329080 343850	PLAS MADOC PRS. 2	27.0	N	144053 ↗
E	190m NW	329080 343850	PLAS MADOC PRS. 1	33.0	N	144052 ↗
F	194m N	329230 343860	TIR-Y-FRON, O/C SITE. 30	22.4	N	143882 ↗
A	194m N	329290 343850	TIR-Y-FRON, O/C SITE. 25, 401,402	45.11	N	143880 ↗
13	195m SW	329010 343370	PLAS MADOC, O/C SITE. 5	17.68	N	143757 ↗

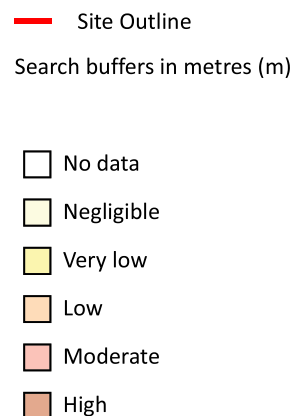
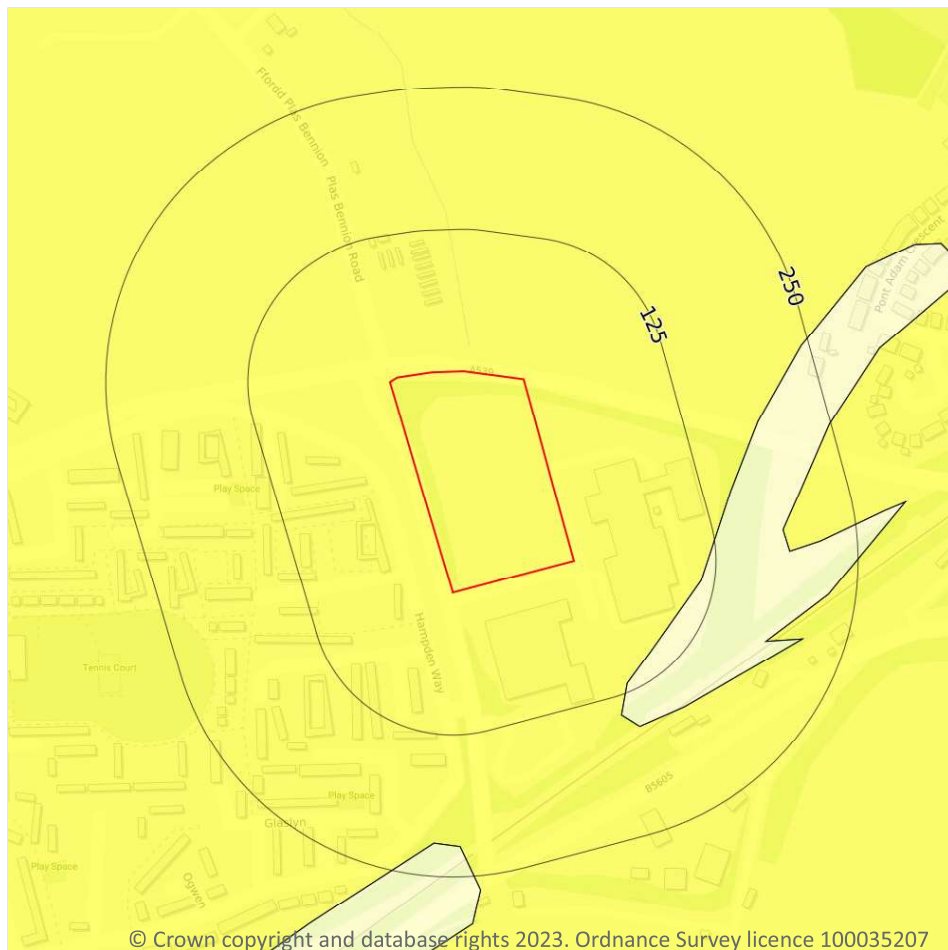


ID	Location	Grid reference	Name	Length	Confidential	Web link
C	199m SW	329050 343320	PLAS MADOC, O/C SITE. 56	14.94	N	143771 ↗
14	199m S	329100 343290	PLAS MADOC, O/C SITE. 41	26.82	N	143762 ↗
15	200m NE	329430 343710	TIR-Y-FRON, O/C SITE. 17	16.76	N	143872 ↗
A	201m N	329310 343850	TIR-Y-FRON, O/C SITE. 403	30.18	N	143918 ↗
A	201m N	329310 343850	TIR-Y-FRON, O/C SITE. 404	28.04	N	143919 ↗
A	201m N	329310 343850	TIR-Y-FRON, O/C SITE. 404A	29.11	N	143920 ↗
16	208m E	329450 343670	TIR-Y-FRON, O/C SITE. 108	36.58	N	143924 ↗
A	211m N	329280 343870	TIR-Y-FRON, O/C SITE. 23	16.03	N	143881 ↗
17	212m SW	329070 343290	PLAS MADOC, O/C SITE. 40	30.48	N	143761 ↗
F	214m N	329230 343880	TIR-Y-FRON, O/C SITE. 26	18.44	N	143883 ↗
A	218m N	329260 343880	TIR-Y-FRON, O/C SITE. 27	19.51	N	143885 ↗
G	222m NE	329370 343840	TIR-Y-FRON, O/C SITE. 407	42.06	N	143909 ↗
G	222m NE	329370 343840	TIR-Y-FRON, O/C SITE. 408	40.23	N	143910 ↗
18	222m NW	329040 343870	PLAS BENNION SITE, 104	-	Y	N/A
H	229m SW	329040 343290	PLAS MADOC, O/C SITE. 54	18.9	N	143769 ↗
A	238m N	329260 343900	TIR-Y-FRON, O/C SITE. 31	20.73	N	143884 ↗
19	240m N	329190 343910	TIR-Y-FRON, O/C SITE. 29	23.77	N	143923 ↗
H	241m SW	329020 343290	WYNNSTAY, O/C SITE. 228	7.92	N	143851 ↗
20	245m NE	329350 343880	TIR-Y-FRON, O/C SITE. 105	27.43	N	143908 ↗
I	245m N	329300 343900	TIR-Y-FRON, O/C SITE. 410	19.35	N	143903 ↗
I	245m N	329300 343900	TIR-Y-FRON, O/C SITE. 409	20.12	N	143902 ↗
H	247m SW	329010 343290	PLAS MADOC, O/C SITE. 50	21.34	N	143765 ↗

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

1

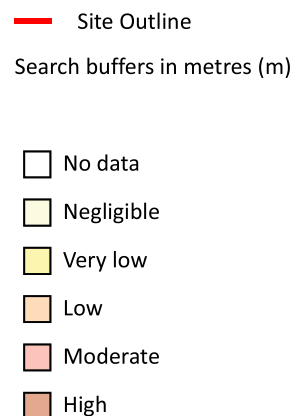
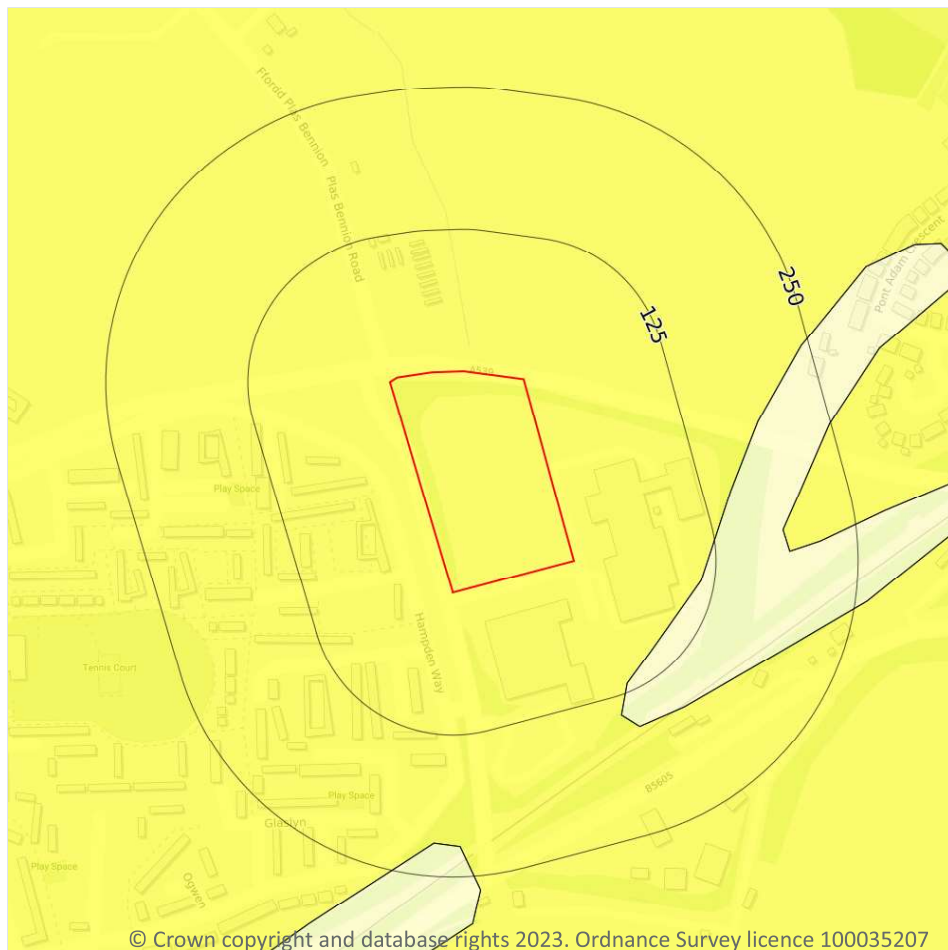
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 97 >](#)

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



17.2 Running sands

Records within 50m

1

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

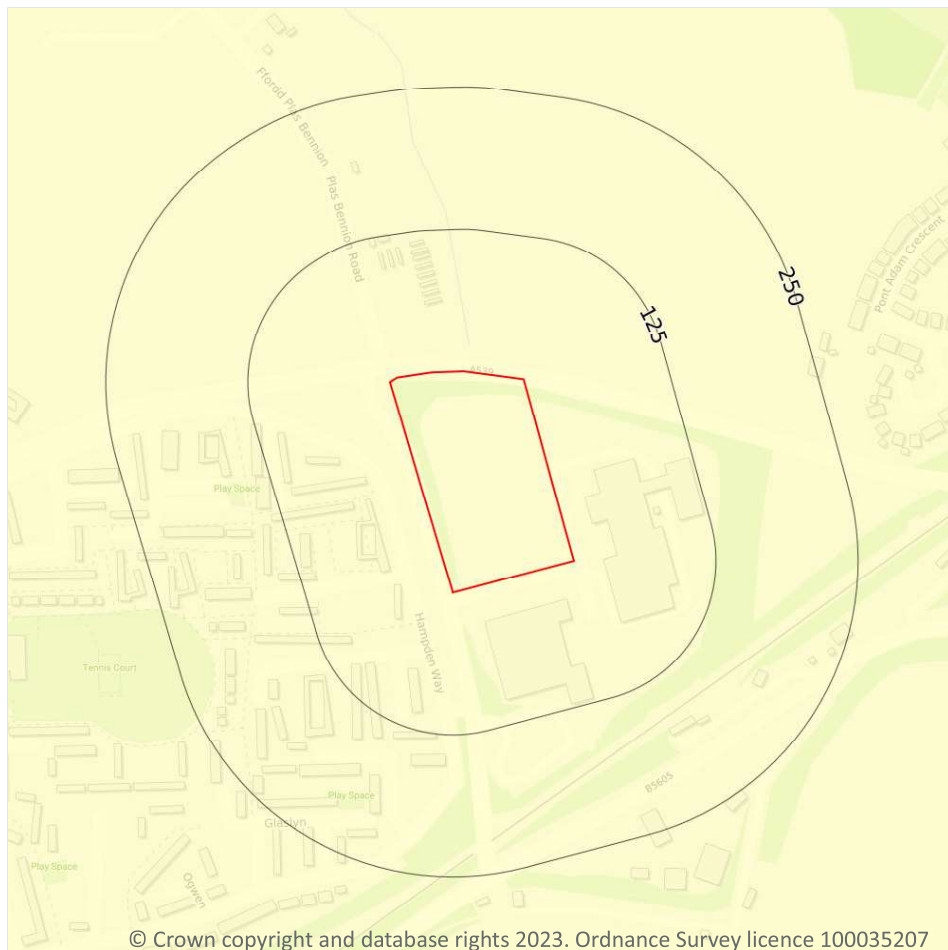
Features are displayed on the Natural ground subsidence - Running sands map on [page 98](#) >

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.

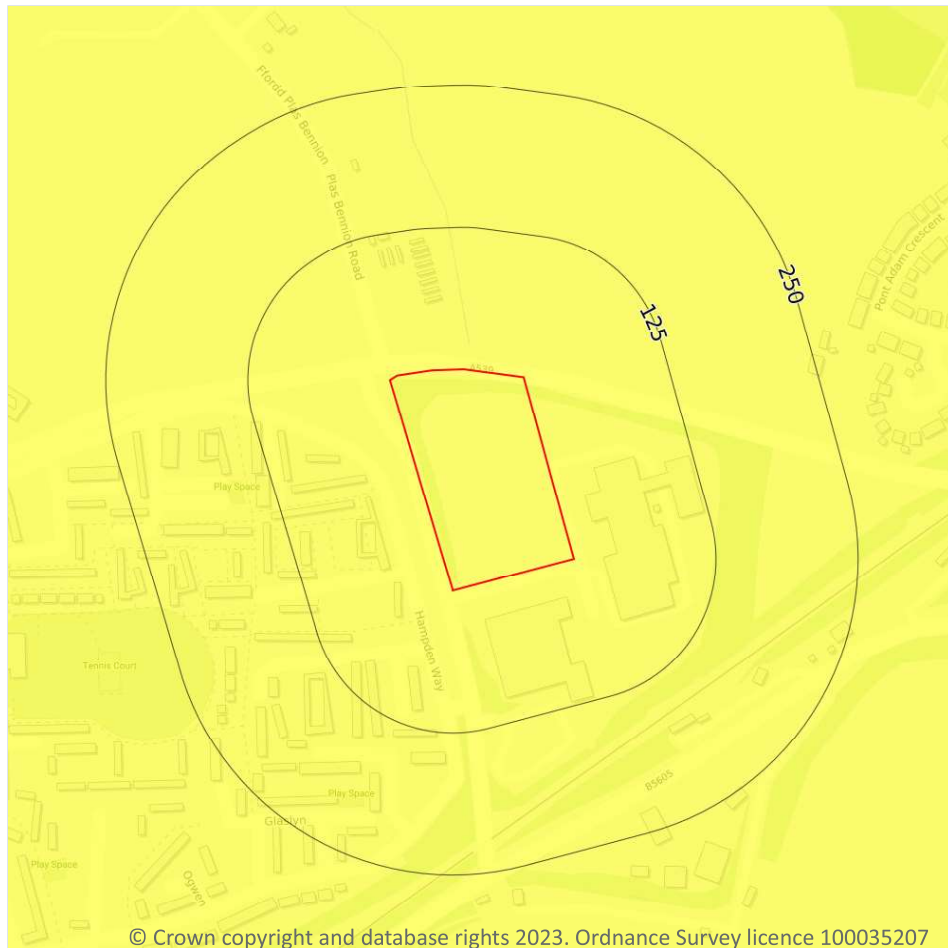
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 99](#) >

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.

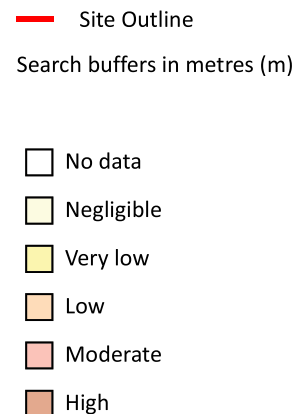
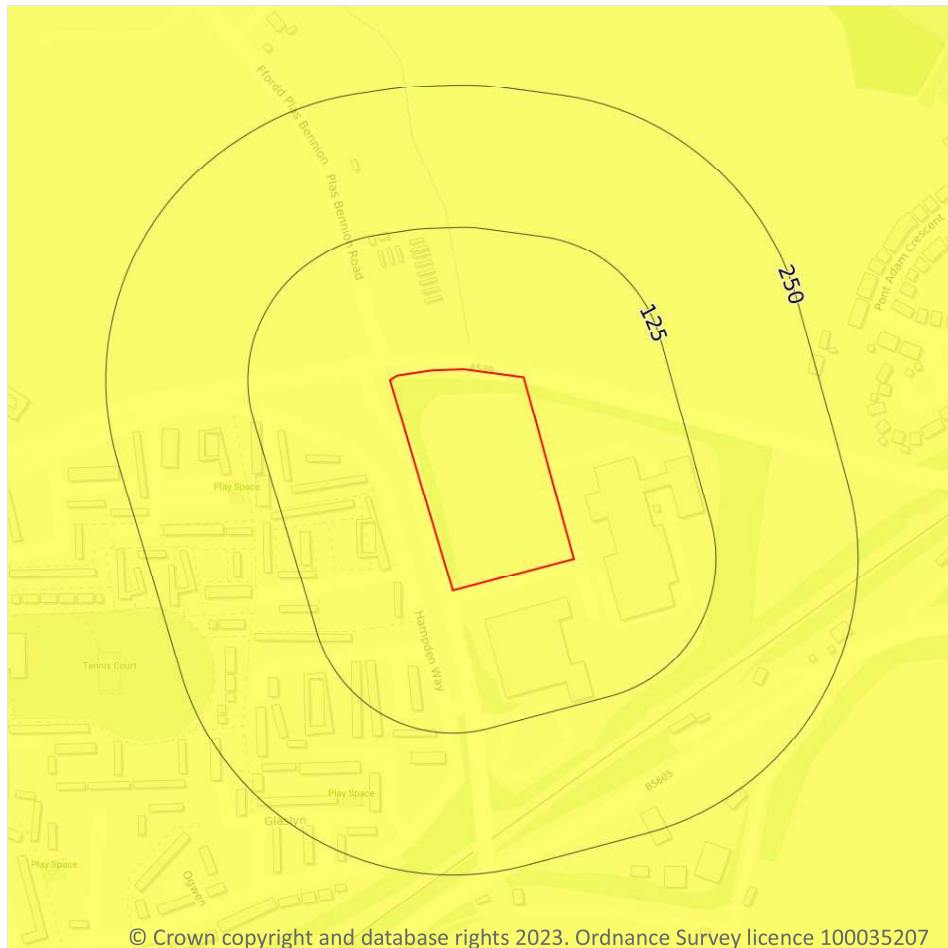
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 100 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m

1

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

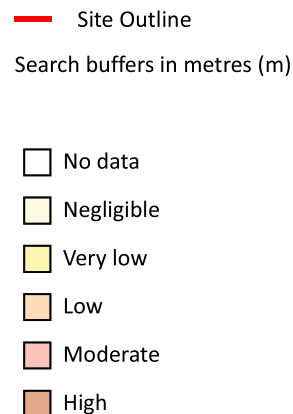
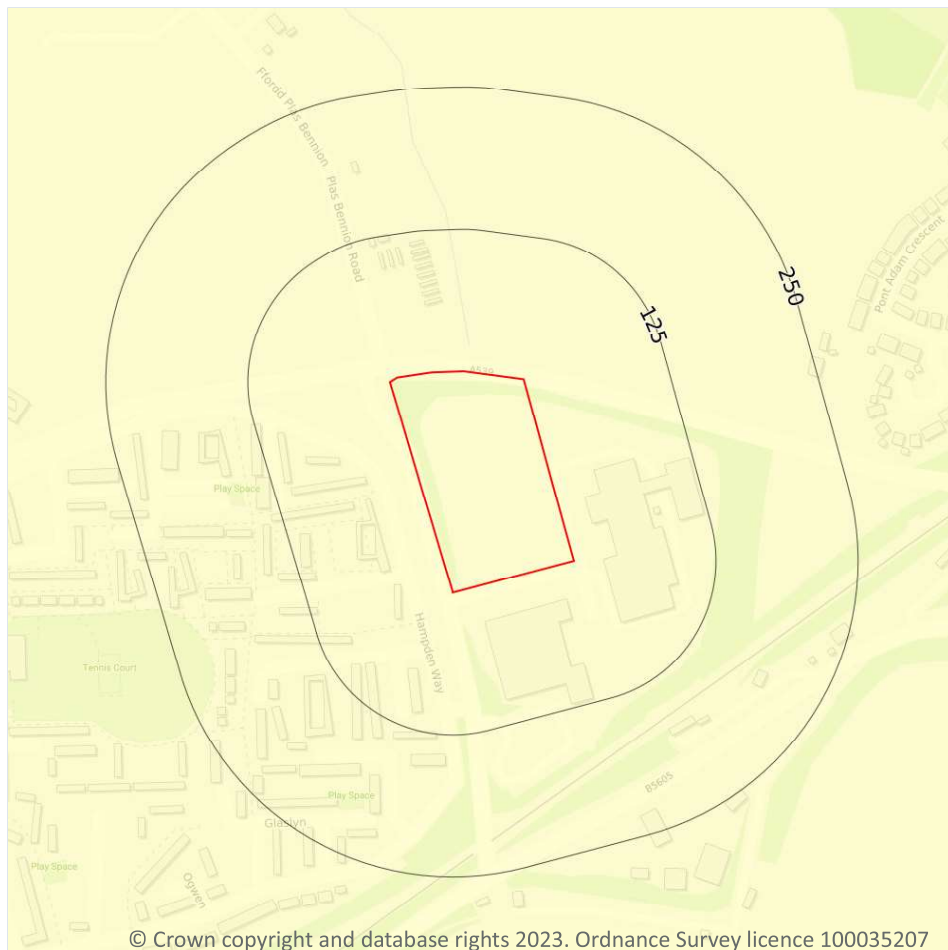
Features are displayed on the Natural ground subsidence - Landslides map on [page 101](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 102](#) >

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.

