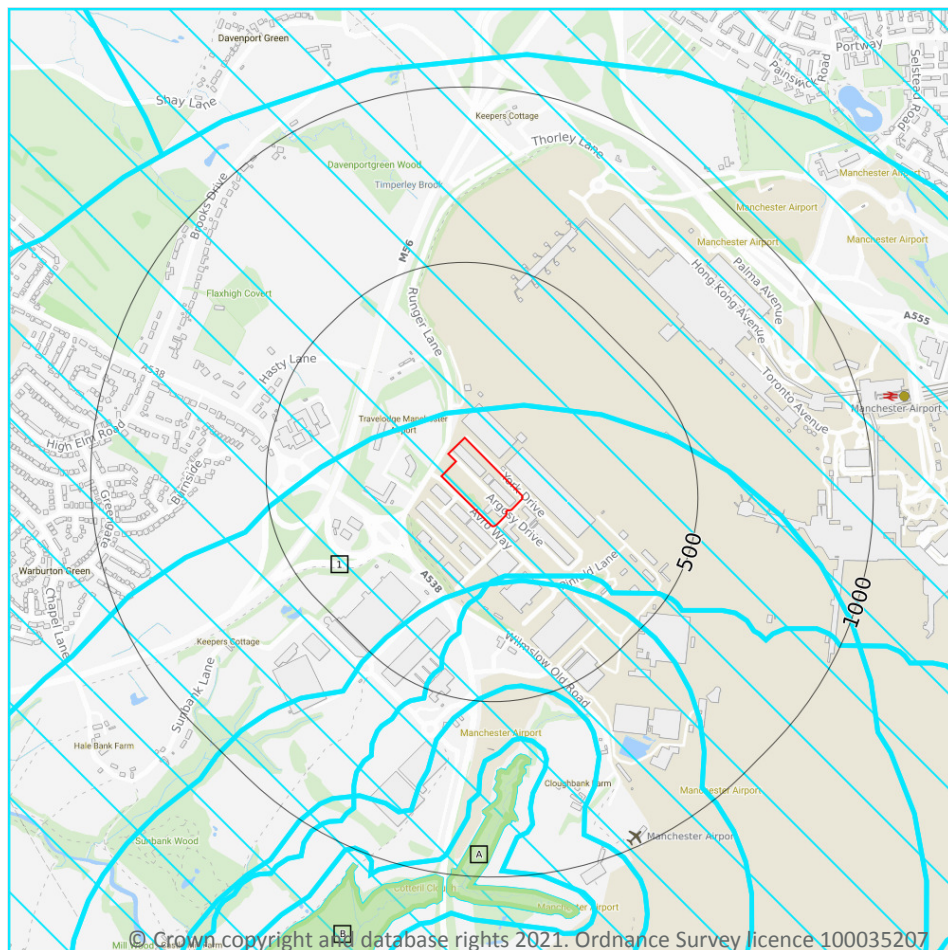


SSSI Impact Zones and Units



- 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 64**

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Residential - Residential development of 100 units or more. Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 500 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	2
-----------------------------	----------

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.

Features are displayed on the SSSI Impact Zones and Units map on **page 64**

ID:	A
Location:	662m S
SSSI name:	Cotteril Clough
Unit name:	Eastern Woodland
Broad habitat:	Broadleaved, Mixed And Yew Woodland - Lowland
Condition:	Favourable
Reportable features:	

Feature name	Feature condition	Date of assessment
Lowland mixed deciduous woodland	Favourable	13/06/2013
Wet woodland	Favourable	13/06/2013



ID: B
Location: 1013m S
SSSI name: Cotteril Clough
Unit name: Western Woodland
Broad habitat: Broadleaved, Mixed And Yew Woodland - Lowland
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Lowland mixed deciduous woodland	Favourable	30/05/2014
Wet woodland	Favourable	30/05/2014

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



11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

0

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



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

11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

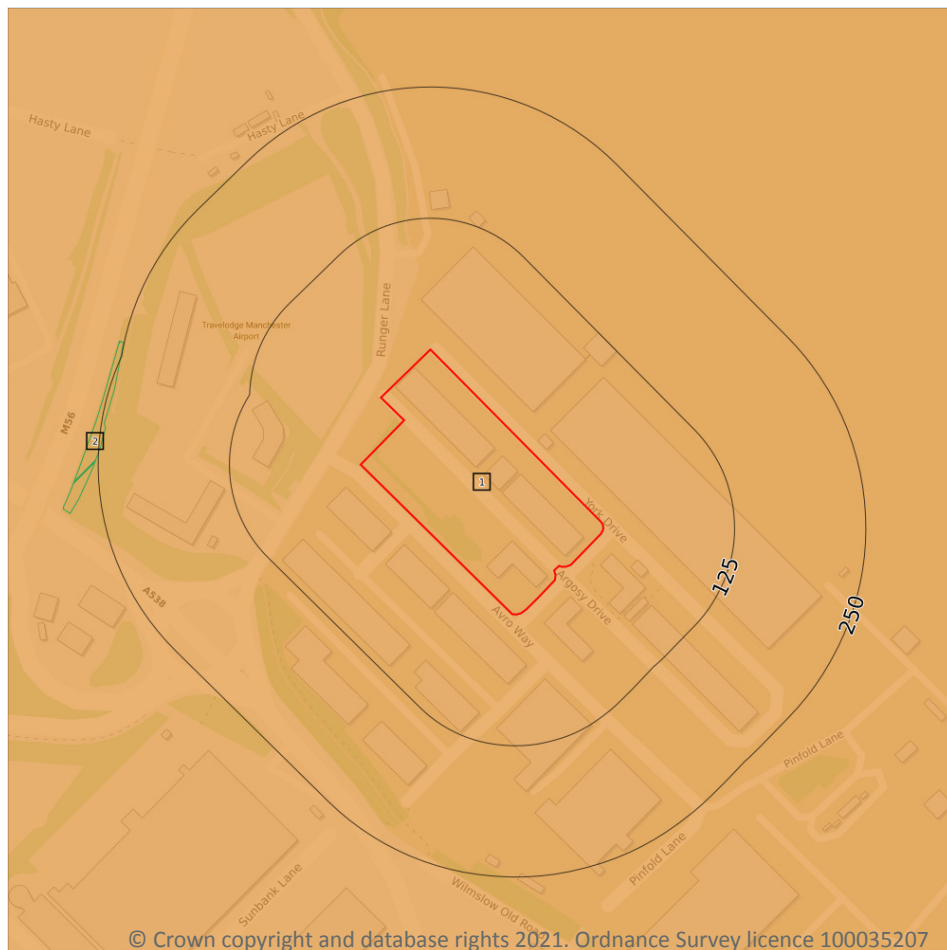
0

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

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



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

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 69**

ID	Location	Classification	Description
1	On site	Grade 3	Good to moderate quality agricultural land. Land with moderate limitations which affect the choice of crops, timing and type of cultivation, harvesting or the level of yield. Where more demanding crops are grown yields are generally lower or more variable than on land in Grades 1 and 2.

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m**0**

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

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

12.3 Tree Felling Licences

Records within 250m**1**

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

Features are displayed on the Agricultural designations map on **page 69**

ID	Location	Description	Reference	Application date
2	245m W	Selective Fell/Thin (Unconditional)	018/366/15-16	-

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m**0**

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m**0**

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

This data is sourced from Natural England.



13 Habitat designations



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

7

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

Features are displayed on the Habitat designations map on **page 71**

ID	Location	Main Habitat	Other habitats
A	143m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	149m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
1	155m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	195m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
C	217m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
C	226m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	234m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

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

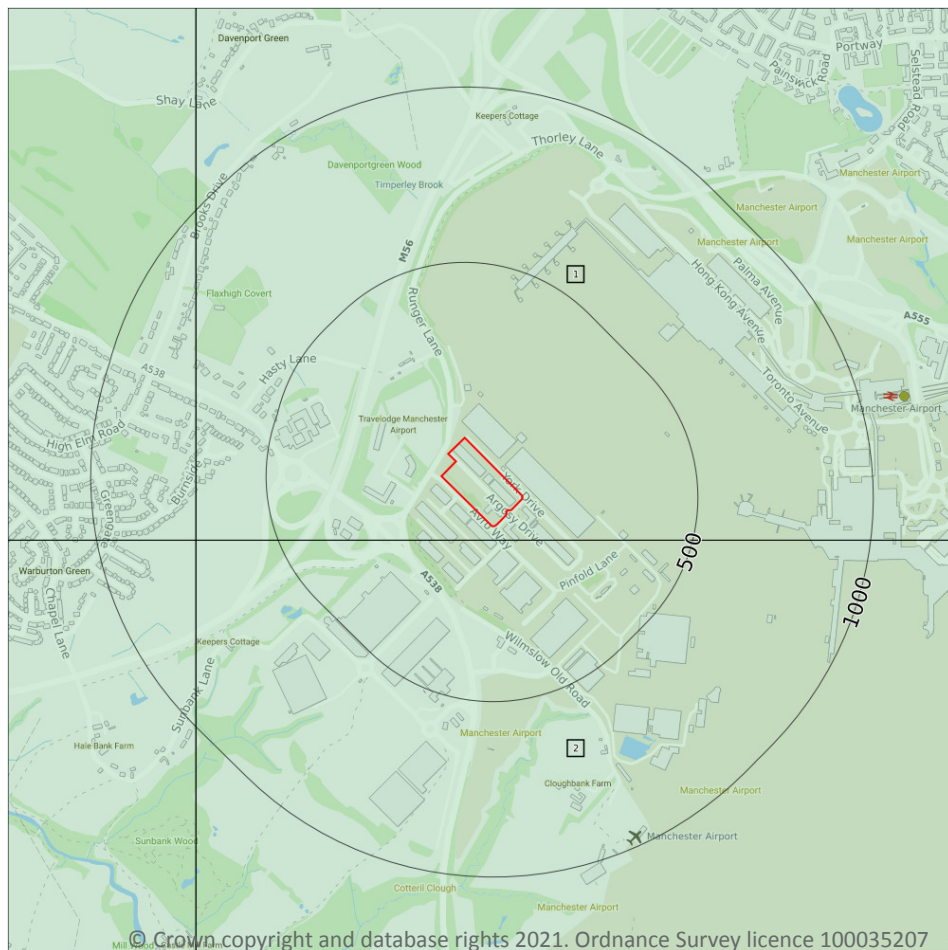
Records within 250m

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

2

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

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 73**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SJ88NW
2	40m S	No coverage	Full	Full	No coverage	SJ88SW

This data is sourced from the British Geological Survey.



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

14.2 Artificial and made ground (10k)

Records within 500m

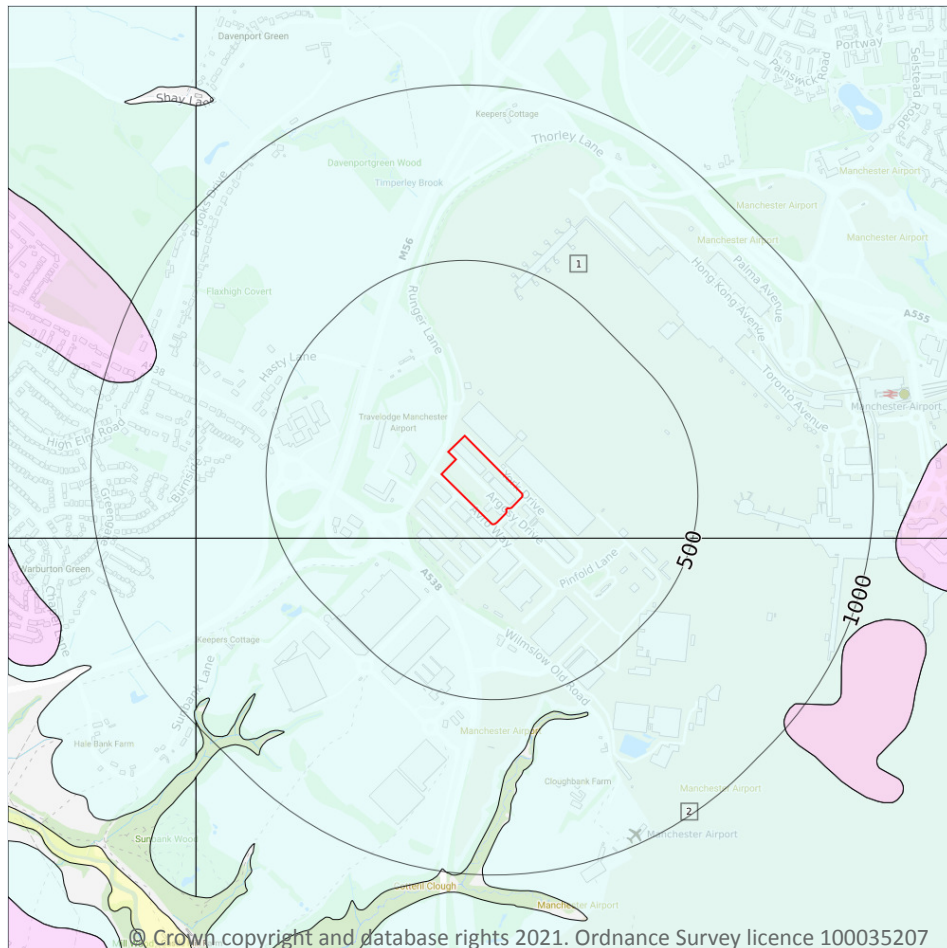
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

2

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 75**

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	40m S	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

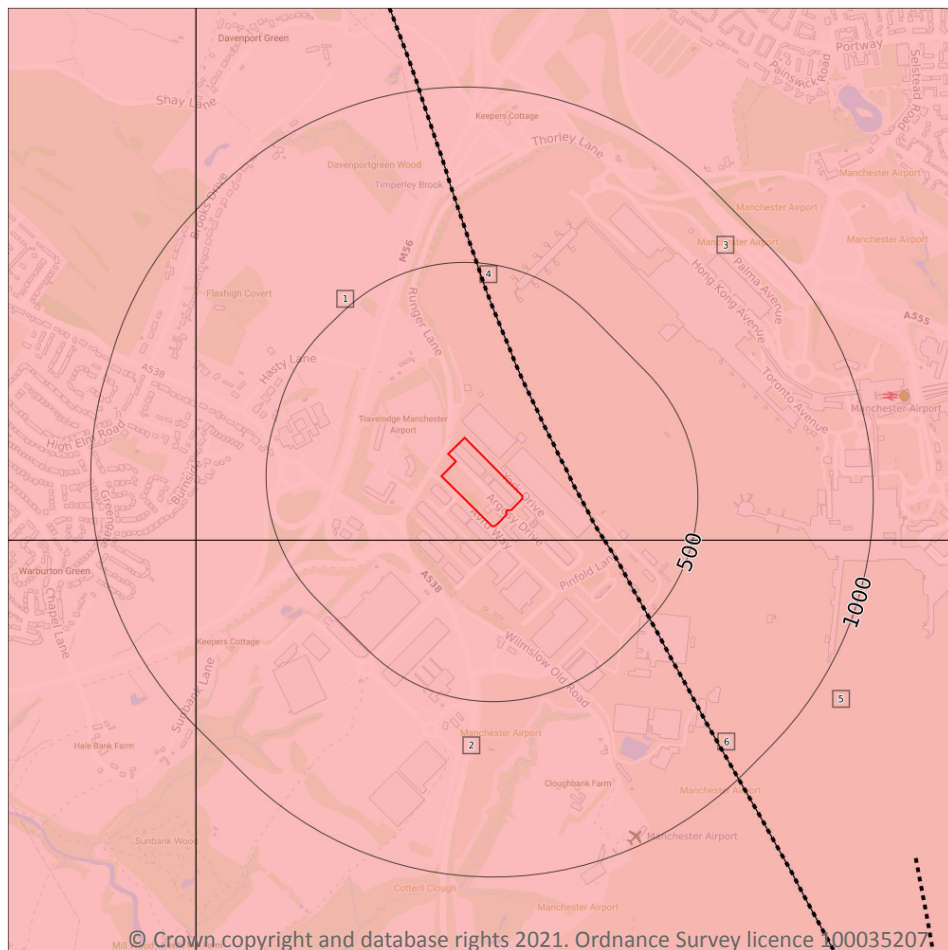
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m

4

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 77**

ID	Location	LEX Code	Description	Rock age
1	On site	BOM-MDST	Bollin Mudstone Member - Mudstone	Anisian Age
2	40m S	BOM-MDST	Bollin Mudstone Member - Mudstone	Anisian Age
3	146m NE	BOM-MDST	Bollin Mudstone Member - Mudstone	Anisian Age
5	263m SE	BOM-MDST	Bollin Mudstone Member - Mudstone	Anisian Age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

2

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

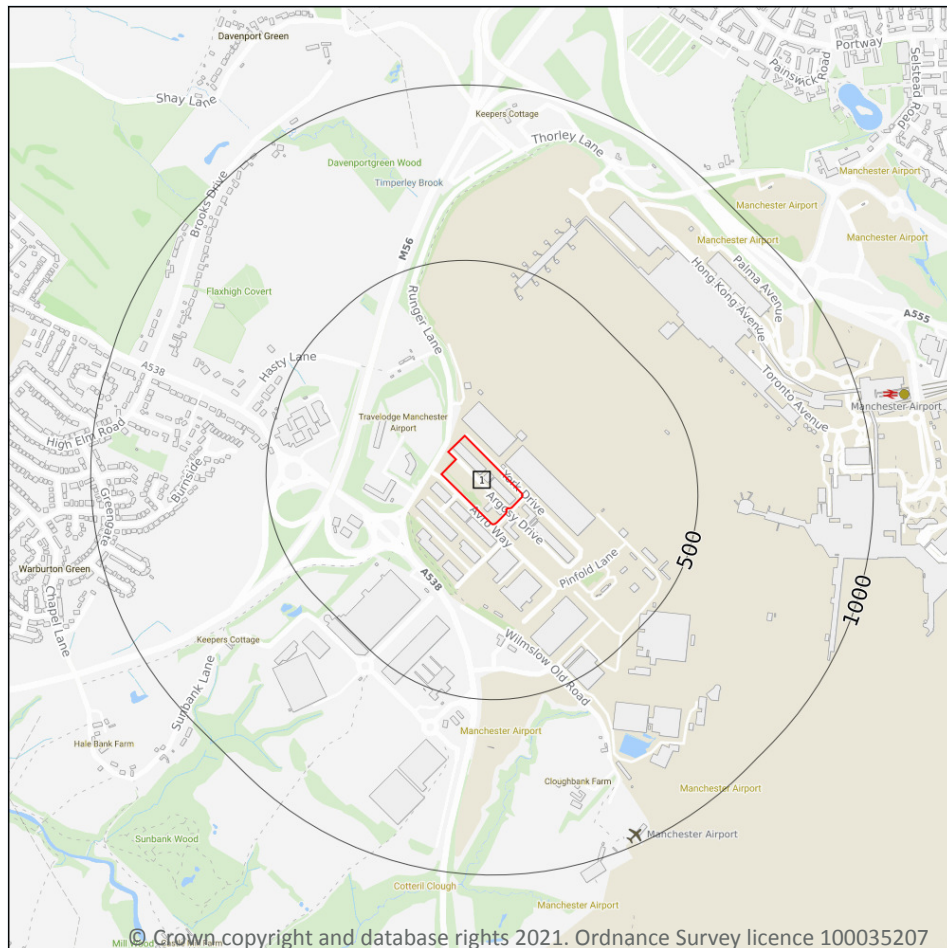
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 77**

ID	Location	Category	Description
4	146m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
6	263m SE	FAULT	Normal fault, inferred; crossmarks on downthrow side

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 79**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	Full	EW098_stockport_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

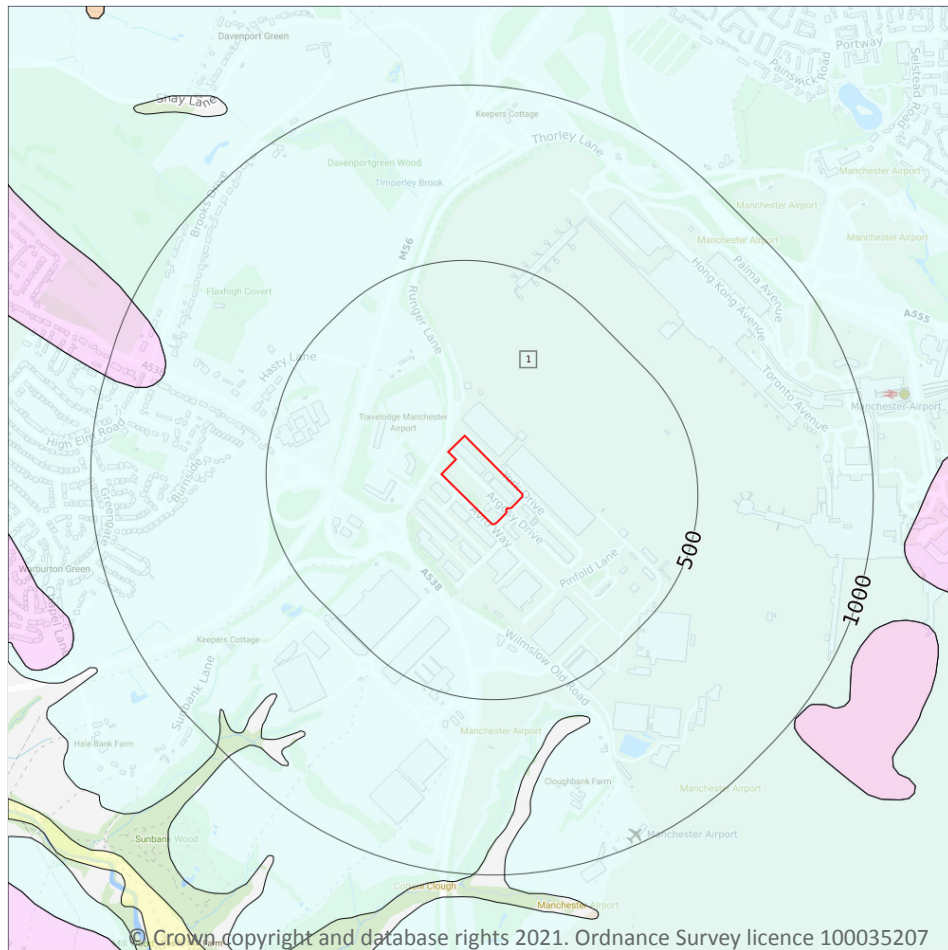
0

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



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 81**

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

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m**2**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	High	Low
40m SE	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)

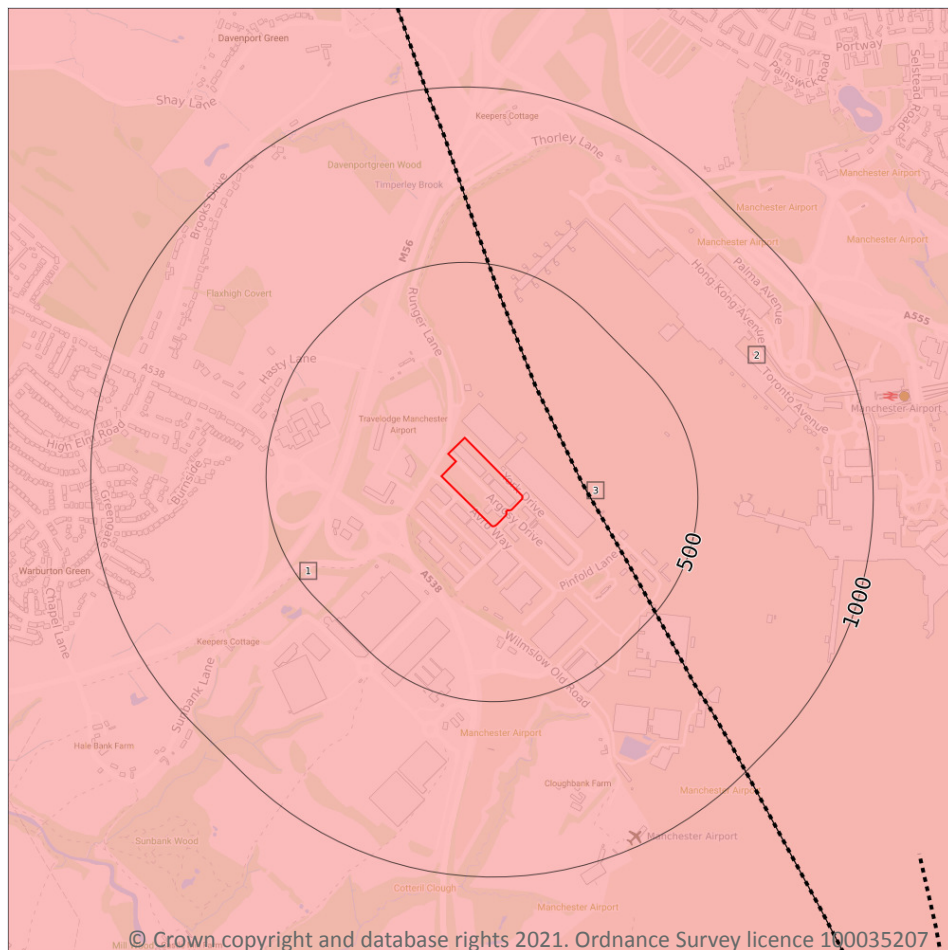
Records within 50m**0**

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

2

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 83**

ID	Location	LEX Code	Description	Rock age
1	On site	BOM-MDST	BOLLIN MUDSTONE MEMBER - MUDSTONE	ANISIAN
2	170m NE	BOM-MDST	BOLLIN MUDSTONE MEMBER - MUDSTONE	ANISIAN

This data is sourced from the British Geological Survey.



15.9 Bedrock permeability (50k)

Records within 50m

2

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Fracture	Low	Low
40m SE	Fracture	Low	Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

1

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

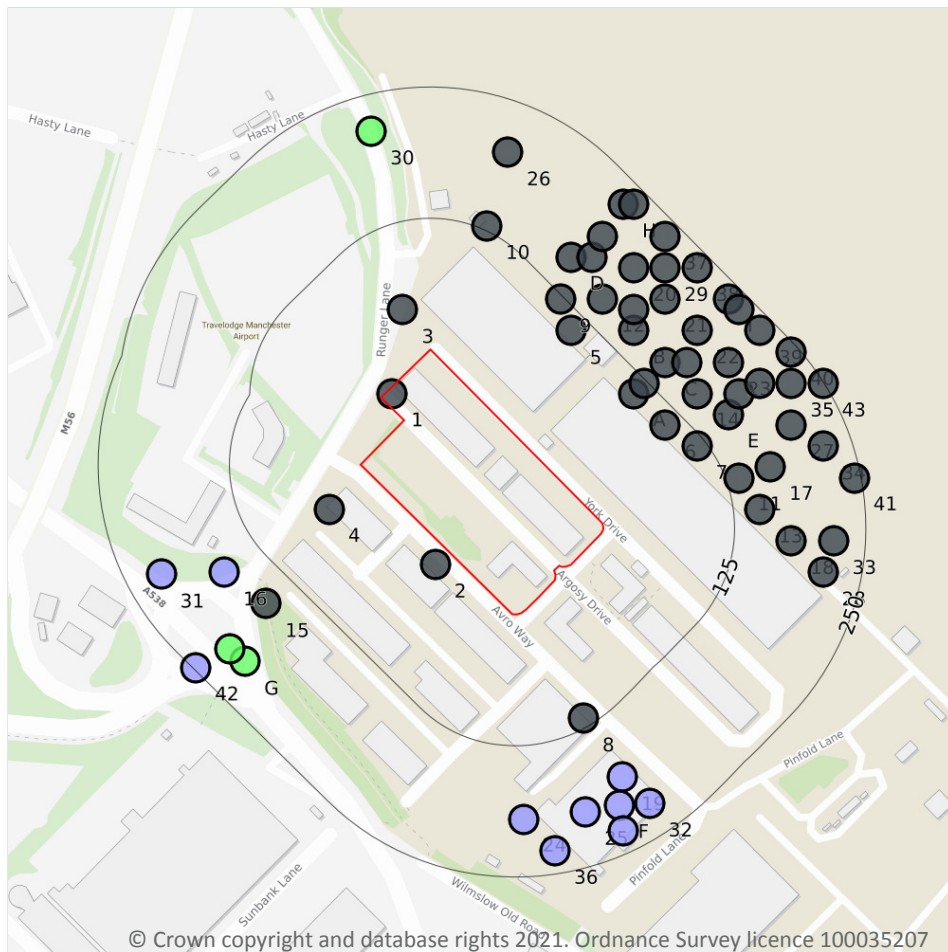
Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 83**

ID	Location	Category	Description
3	170m NE	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

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

16.1 BGS Boreholes

Records within 250m

63

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 85**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	380730 385250	INTERNATIONAL APRON EXTENSION PHASE II 16	-	Y	N/A
2	18m SW	380771 385087	CARGO PHASE 4 DEVELOPMENT 2	-	Y	N/A
3	46m NW	380740 385330	INTERNATIONAL APRON EXTENSION PHASE II 7	-	Y	N/A



ID	Location	Grid reference	Name	Length	Confidential	Web link
4	51m SW	380670 385140	INTERNATIONAL APRON EXTENSION PHASE II 17	-	Y	N/A
5	108m NE	380900 385310	INTERNATIONAL APRON EXTENSION PHASE II TP41	-	Y	N/A
A	108m NE	380960 385250	INTERNATIONAL APRON EXTENSION PHASE II TP32	-	Y	N/A
6	108m NE	380990 385220	INTERNATIONAL APRON EXTENSION PHASE II TP27	-	Y	N/A
7	116m NE	381020 385200	INTERNATIONAL APRON EXTENSION PHASE II TP22	-	Y	N/A
8	116m SE	380912 384941	CARGO PHASE 4 DEVELOPMENT 1	-	Y	N/A
9	122m NE	380890 385340	INTERNATIONAL APRON EXTENSION PHASE II 11	-	Y	N/A
A	122m NE	380970 385260	INTERNATIONAL APRON EXTENSION PHASE II 10	-	Y	N/A
10	130m NE	380820 385410	INTERNATIONAL APRON EXTENSION PHASE II 6	-	Y	N/A
11	137m E	381060 385170	INTERNATIONAL APRON EXTENSION PHASE II 9	-	Y	N/A
12	150m NE	380930 385340	INTERNATIONAL APRON EXTENSION PHASE II TP40	-	Y	N/A
13	150m E	381080 385140	INTERNATIONAL APRON EXTENSION PHASE II TP1	-	Y	N/A
B	150m NE	380960 385310	INTERNATIONAL APRON EXTENSION PHASE II TP36	-	Y	N/A
C	151m NE	380990 385280	INTERNATIONAL APRON EXTENSION PHASE II TP31	-	Y	N/A
14	151m NE	381020 385250	INTERNATIONAL APRON EXTENSION PHASE II TP26	-	Y	N/A
D	157m NE	380900 385380	MANCHESTER AIRPORT : ADDITIONAL STANDS 10	-	Y	N/A
15	158m SW	380610 385050	INTERNATIONAL APRON EXTENSION PHASE II 18	-	Y	N/A
E	158m NE	381050 385230	INTERNATIONAL APRON EXTENSION PHASE II TP21	-	Y	N/A
B	164m NE	380960 385330	MANCHESTER AIRPORT : ADDITIONAL STANDS 11R	-	Y	N/A
C	165m NE	381010 385280	MANCHESTER AIRPORT : ADDITIONAL STANDS 12R	-	Y	N/A
16	166m SW	380570 385080	M56 WIDENING JUNCTIONS 4 - 6 BH15	6.15	N	915567
17	169m E	381090 385180	CARGO TERMINAL WEST MANCHESTER AIRPORT 1	-	Y	N/A



ID	Location	Grid reference	Name	Length	Confidential	Web link
D	171m NE	380920 385380	INTERNATIONAL APRON EXTENSION PHASE II 15	-	Y	N/A
E	179m NE	381060 385250	INTERNATIONAL APRON EXTENSION PHASE II 1	-	Y	N/A
18	179m E	381110 385110	INTERNATIONAL APRON EXTENSION PHASE II TP2	-	Y	N/A
19	183m SE	380949 384885	MARRIOTT IN-FLITE SERVICES LTD, MANCHESTER AIRPORT 2	4.0	N	17877421
D	192m NE	380930 385400	INTERNATIONAL APRON EXTENSION PHASE II TP44	-	Y	N/A
20	193m NE	380960 385370	INTERNATIONAL APRON EXTENSION PHASE II TP39	-	Y	N/A
21	193m NE	380990 385340	INTERNATIONAL APRON EXTENSION PHASE II TP35	-	Y	N/A
22	193m NE	381020 385310	INTERNATIONAL APRON EXTENSION PHASE II TP30	-	Y	N/A
23	193m NE	381050 385280	INTERNATIONAL APRON EXTENSION PHASE II TP25	-	Y	N/A
24	195m S	380855 384845	CATERAIR INTERNATIONAL, MANCHESTER AIRPORT BH6.	4.0	N	18525493
25	199m S	380914 384852	MARRIOTT IN-FLITE SERVICES LTD, MANCHESTER AIRPORT 1	4.0	N	17877420
E	201m NE	381080 385260	INTERNATIONAL APRON EXTENSION PHASE II TP20	-	Y	N/A
26	202m N	380840 385480	SECOND TERMINAL, MANCHESTER AIRPORT 28	-	Y	N/A
27	203m NE	381110 385220	INTERNATIONAL APRON EXTENSION PHASE II TP17	-	Y	N/A
F	205m SE	380946 384858	MARRIOTT IN-FLITE SERVICES LTD, MANCHESTER AIRPORT 5	4.5	N	17877424
G	211m SW	380590 384995	Smart Motorway Programme NA_27482_BH9	10.25	N	20783227
G	213m SW	380575 385007	Smart Motorway Programme NA_27482_BH8	10.05	N	20783208
28	213m E	381140 385080	INTERNATIONAL APRON EXTENSION PHASE II TP3	-	Y	N/A
29	214m NE	380990 385370	INTERNATIONAL APRON EXTENSION PHASE II 14	-	Y	N/A
30	215m N	380710 385500	M56 WIDENING JUNCTIONS 4 - 6 BH11	12.51	N	915564
31	217m SW	380510 385078	M56 JUNCTION 6 TP10/06	2.0	N	19892226
32	218m SE	380975 384860	MARRIOTT IN-FLITE SERVICES LTD, MANCHESTER AIRPORT 4	4.0	N	17877423

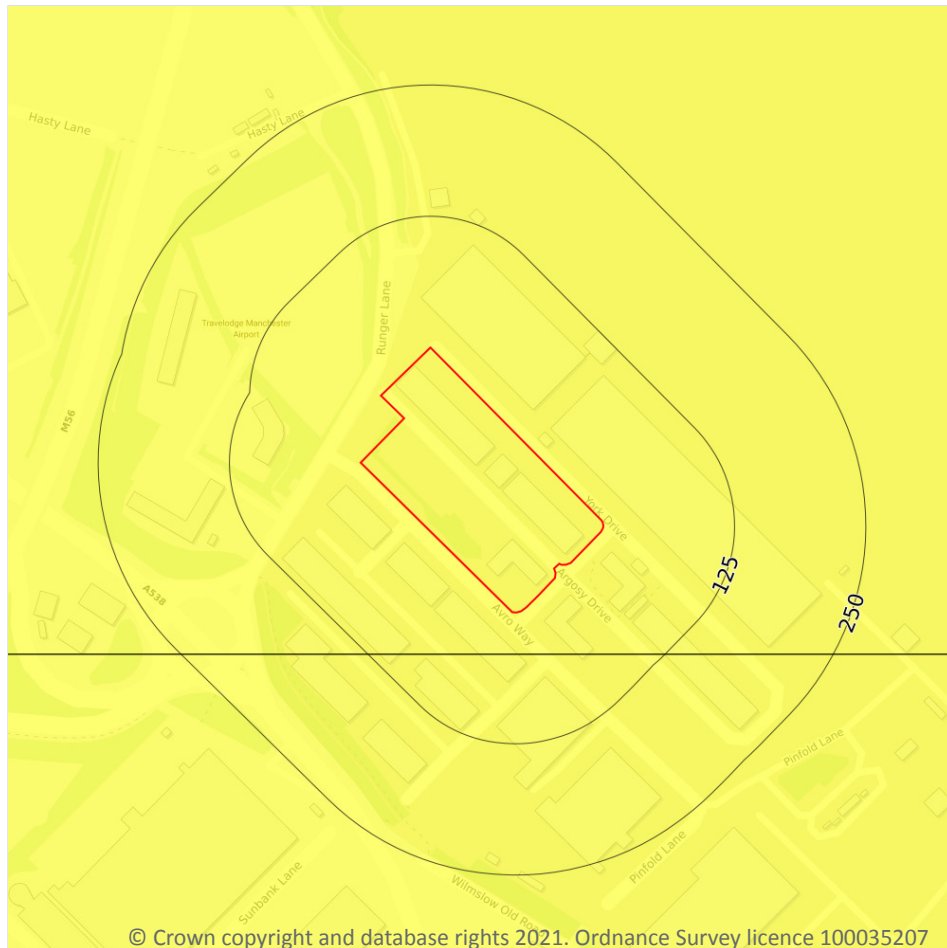


ID	Location	Grid reference	Name	Length	Confidential	Web link
33	219m E	381150 385110	CARGO TERMINAL WEST MANCHESTER AIRPORT 2	-	Y	N/A
34	222m E	381140 385200	INTERNATIONAL APRON EXTENSION PHASE II TP4	-	Y	N/A
35	224m NE	381110 385260	INTERNATIONAL APRON EXTENSION PHASE II 13	-	Y	N/A
H	228m NE	380950 385430	MANCHESTER AIRPORT : ADDITIONAL STANDS 6	-	Y	N/A
36	228m S	380885 384815	CATERAIR INTERNATIONAL, MANCHESTER AIRPORT BH7.	4.0	N	18525494
F	229m SE	380950 384834	MARRIOTT IN-FLITE SERVICES LTD, MANCHESTER AIRPORT 3	4.0	N	17877422
H	235m NE	380960 385430	INTERNATIONAL APRON EXTENSION PHASE II TP43	-	Y	N/A
37	235m NE	380990 385400	INTERNATIONAL APRON EXTENSION PHASE II TP38	-	Y	N/A
38	235m NE	381020 385370	INTERNATIONAL APRON EXTENSION PHASE II TP34	-	Y	N/A
I	235m NE	381050 385340	INTERNATIONAL APRON EXTENSION PHASE II TP29	-	Y	N/A
I	235m NE	381060 385330	MANCHESTER AIRPORT : ADDITIONAL STANDS 9	-	Y	N/A
39	236m NE	381080 385310	INTERNATIONAL APRON EXTENSION PHASE II TP24	-	Y	N/A
40	243m NE	381110 385290	INTERNATIONAL APRON EXTENSION PHASE II TP19	-	Y	N/A
41	244m E	381170 385170	INTERNATIONAL APRON EXTENSION PHASE II TP7	-	Y	N/A
42	248m SW	380543 384989	M56 JUNCTION 6 TP9/06	2.0	N	19892231
43	249m NE	381140 385260	INTERNATIONAL APRON EXTENSION PHASE II TP16	-	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).

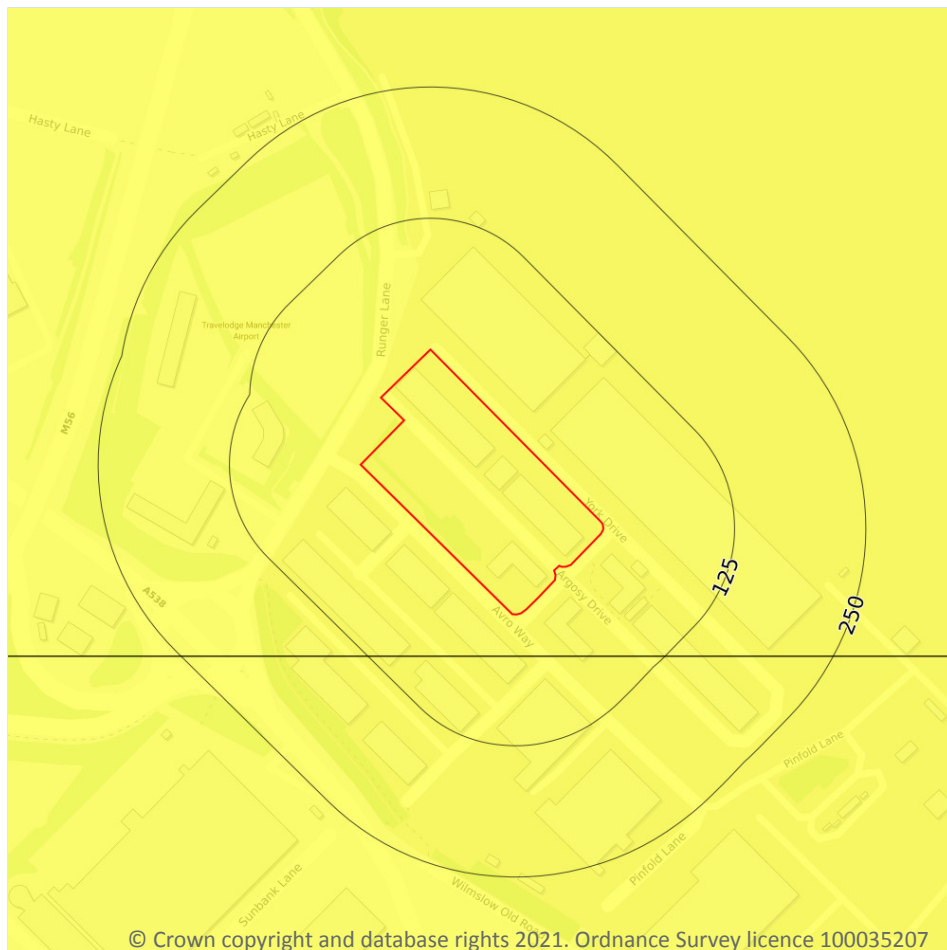
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 89**

Location	Hazard rating	Details
On site	Very low	Ground conditions predominantly low plasticity.
40m S	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 90**

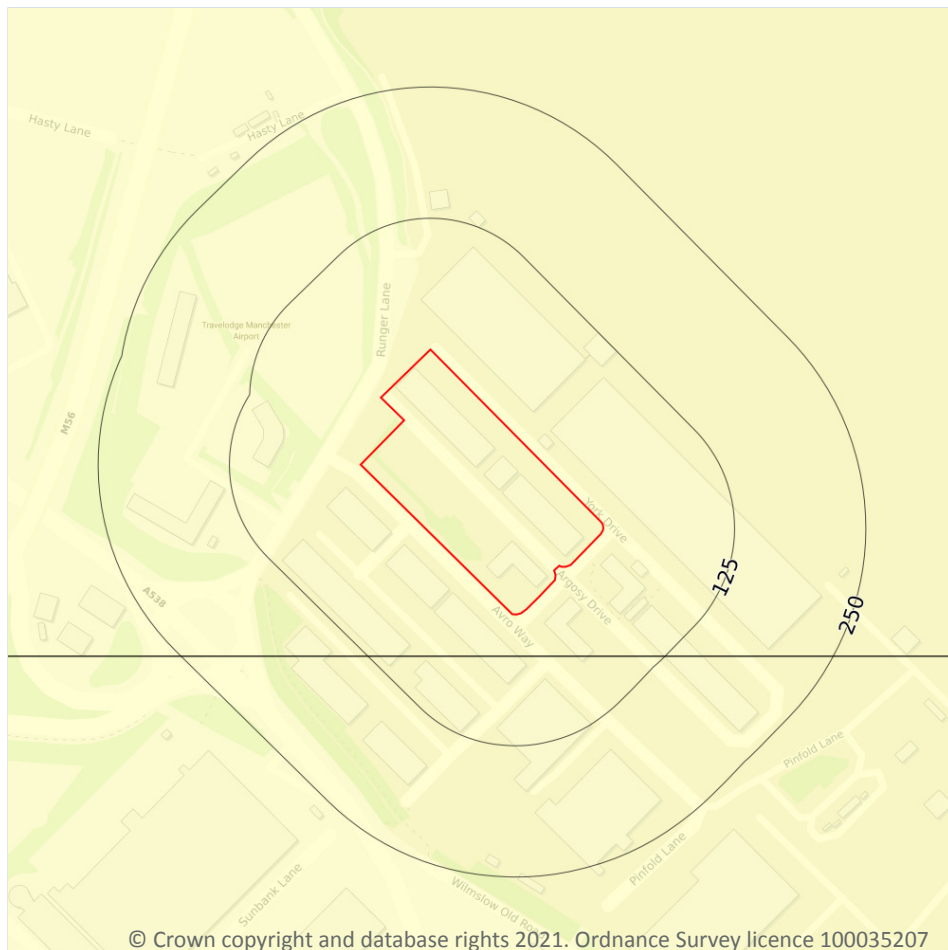
Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

Location	Hazard rating	Details
40m S	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

2

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.

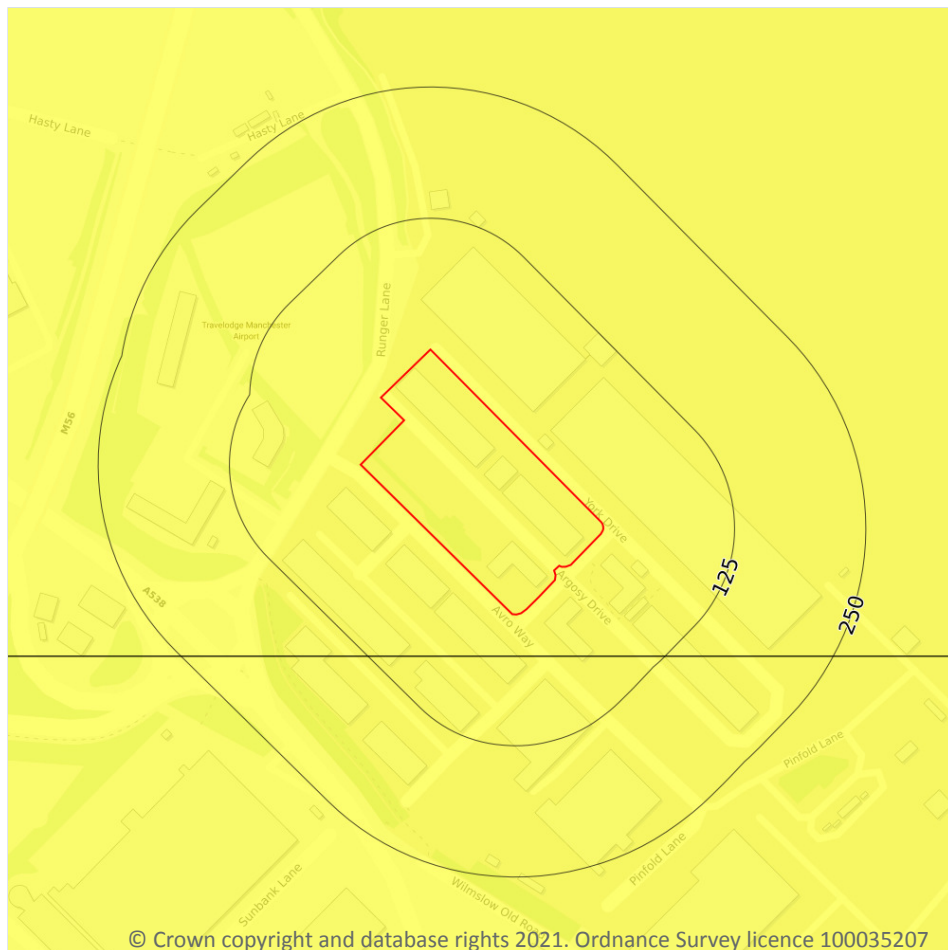
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 92**

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
40m S	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

2

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.

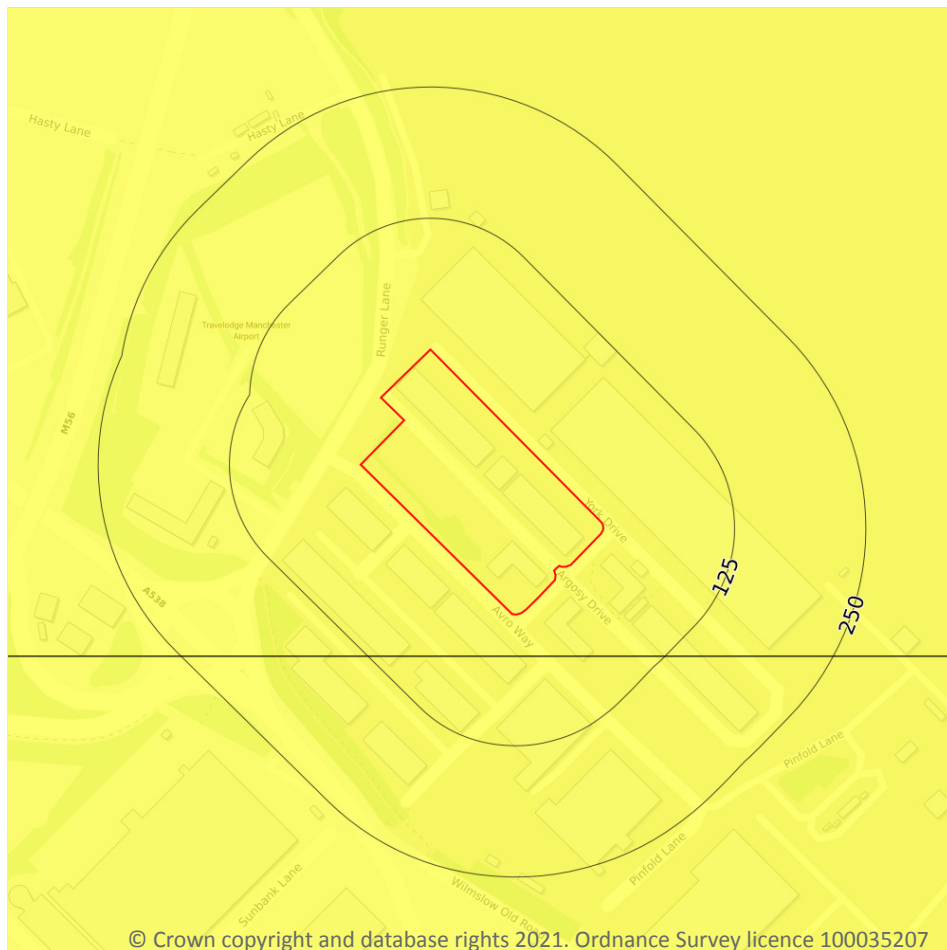
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 93**

Location	Hazard rating	Details
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.
40m S	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

2

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

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

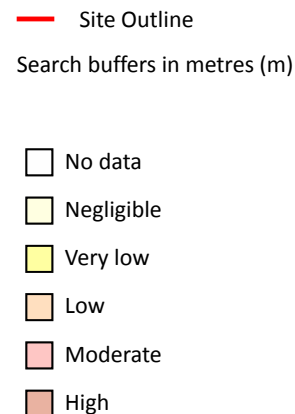
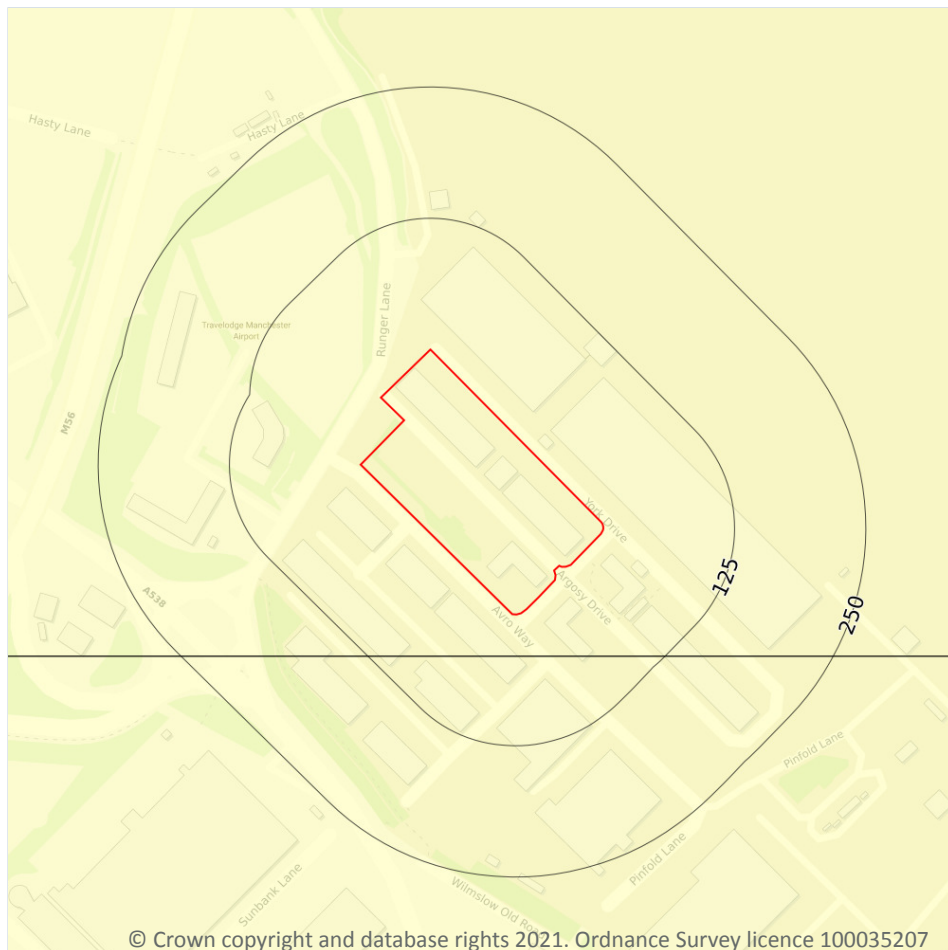
Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

Location	Hazard rating	Details
40m S	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

2

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 96**

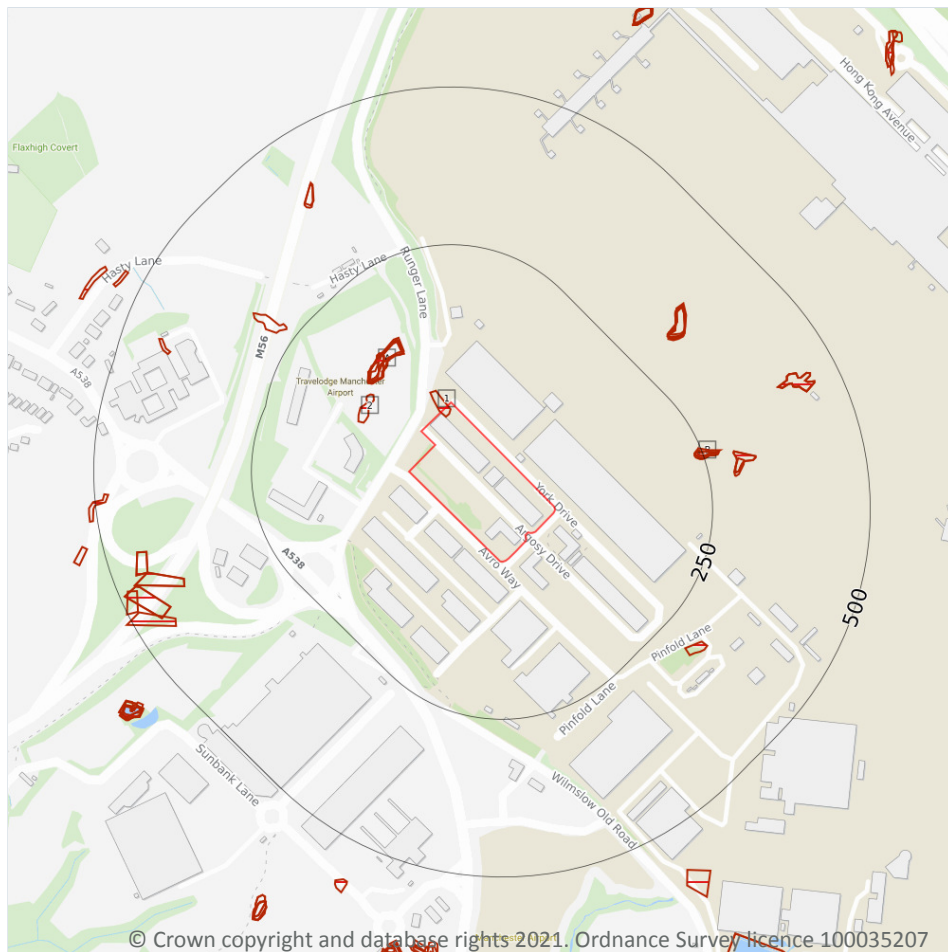
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

Location	Hazard rating	Details
40m S	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 Stantec UK Ltd.

18.2 BritPits

Records within 500m

0

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.

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

12

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 98**

ID	Location	Land Use	Year of mapping	Mapping scale
1	On site	Ponds	1910	1:10560
2	87m W	Pond	1995	1:10000
A	104m NW	Ponds	1910	1:10560
A	104m NW	Ponds	1954	1:10560
A	104m NW	Ponds	1938	1:10560
A	104m NW	Ponds	1899	1:10560
A	109m NW	Pond	1989	1:10000
A	112m NW	Ponds	1975	1:10000
A	112m NW	Ponds	1967	1:10560
B	237m E	Pond	1954	1:10560
B	239m E	Pond	1910	1:10560
B	241m E	Pond	1938	1:10560

This is data is sourced from Ordnance Survey/Groundsure.



18.4 Underground workings

Records within 1000m**0**

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

This 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**0**

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m**0**

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site**0**

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

This data is sourced from Johnson Poole and Bloomer.



18.9 Coal mining

Records on site	0
-----------------	---

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

This data is sourced from the Coal Authority.

18.10 Brine areas

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

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.

Location	Details
On site	The site is located within the Cheshire Brine Compensation District. The extraction of brine over many years has caused some properties within the Cheshire area to be at risk of subsidence. This subsidence can occur a considerable distance from the location of the extraction and further assessment is recommended. A Cheshire Salt search can be obtained direct from Groundsure or your preferred search provider.

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 Groundsure.

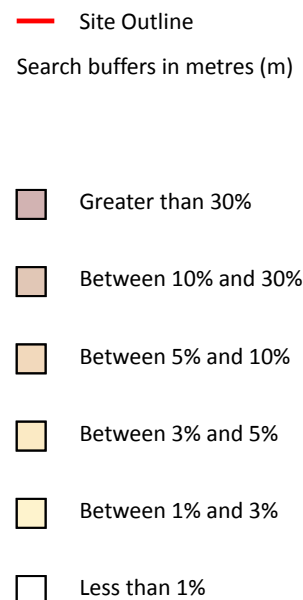
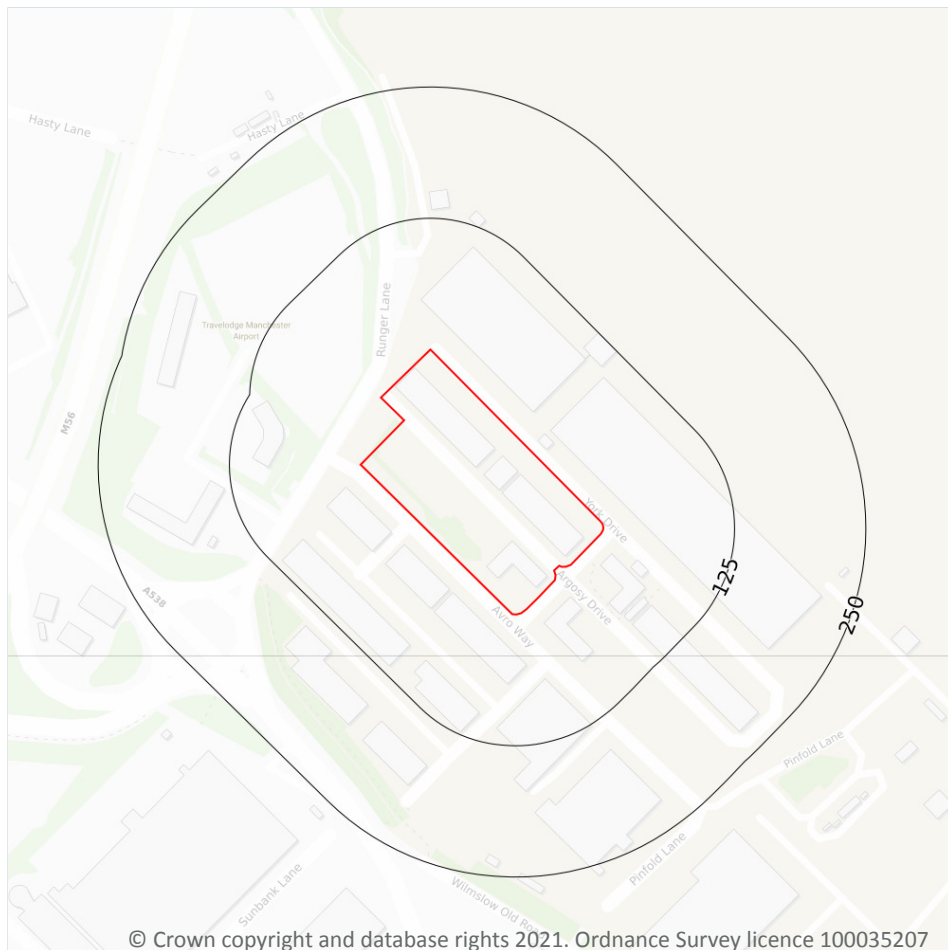
18.13 Clay mining

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



19.1 Radon

Records on site

1

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

Features are displayed on the Radon map on **page 102**

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

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



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

3

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
40m S	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 mg/kg
40m S	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 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 km²).

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 km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

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

2

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.

Features are displayed on the Railway infrastructure and projects map on **page 104**

Location	Track Type	Speed (mph)	Speed (km/h)	Status
476m NW	Surface Running Track	143mph	230kph	Current preferred consultation route
477m NW	Surface Running Track	143mph	230kph	Current preferred consultation route

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 C Historical Exploratory Hole Logs

DUNELM DRILLING CO.

BOREHOLE RECORD

Contract No. C7100

Client WHITE YOUNG CONSULTING ENGINEER

Ground Level

Location CATERAIRE MANCHESTER AIRPORT

Date 4/1/94

BOREHOLE No. BH6 + BH7

Depth	Thickness	Legend	Description of Strata	Type of Sample	C kN/m ²	M %	Ø	Density Kg/m ³	N
<u>BH6</u>									
0.60	0.60		SOFT MOIST MEDIUM BROWN CLAY WITH STONES AND BROKEN TARMAC - <u>MADE GROUND</u>	U100 0.75	45.4	27.4	-	1820	
1.50	0.90		FIRM MOTTLED BROWN AND GREY <u>CLAY</u>	U100 1.60	31.9	23.5	-	1885	
2.50			INITIALLY VERY SOFT REDDISH BROWN CLAY	U100 2.75	89.2	21.5	-	2030	
4.00			SLIGHTLY MARLY WITH OCCASIONAL GREY VEINS BECOMING STIFF WITH DEPTH	U100 4.00	111.1	20.4	-	2040	
<u>DEY</u>									
<u>BH7</u>									
0.60	0.60		LOOSE CONCRETE, BRICKS, STONES, CLAY AND TARMAC	SPT 0.90					12
0.90	0.30		REINFORCED CONCRETE OBSTRUCTION						
1.20	0.30		MED. DENSE HARDLORE <u>FILL</u> (POSSIBLE OLD RUNWAY)	U100 1.50	86.2	19.6	-	2110	
2.30	1.10		FIRM TO STIFF MEDIUM BROWN AND GREY MOTTLED <u>CLAY</u>	U100 2.50	180.0	21.8	-	2060	
4.00	1.70		FIRM TO STIFF TO STIFF DARK REDDISH BROWN SLIGHTLY MARLY <u>CLAY</u>	U100 4.00	108.0	15.9	-	2030	
SLIGHT WATER IN UPPER MADE GROUND - REMAINDER DEY									

Water Struck at AS SHOWN

Standing Water Level

DUNELM DRILLING CO.

BOREHOLE RECORD

Contract No. C7100

Client WHITE YOUNG CONSULTING ENGINEER

Ground Level

Location CATERAIRE MANCHESTER AIRPORT

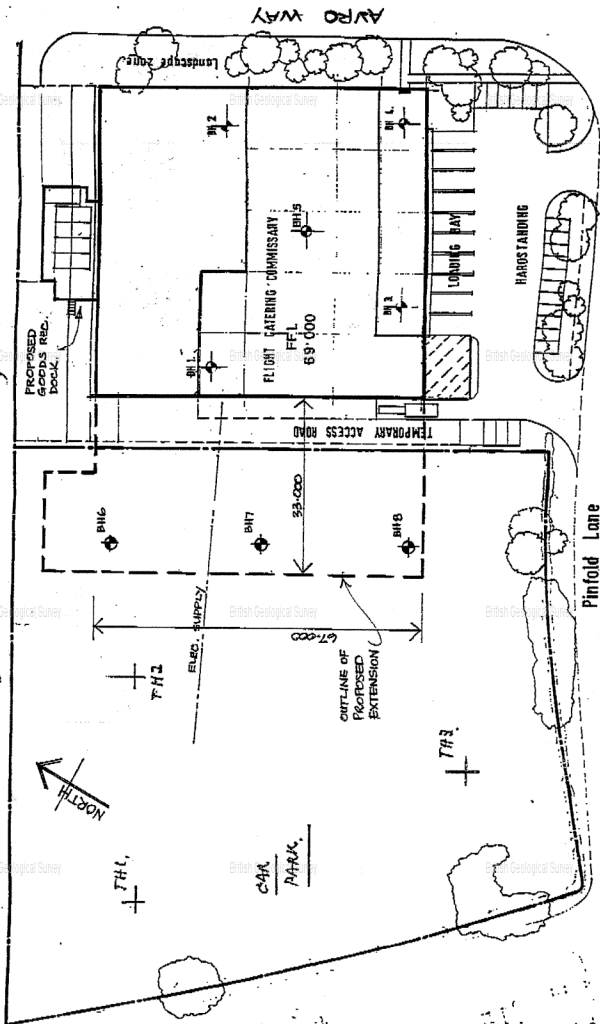
Date 4/1/94

BOREHOLE No. BH6 + BH7

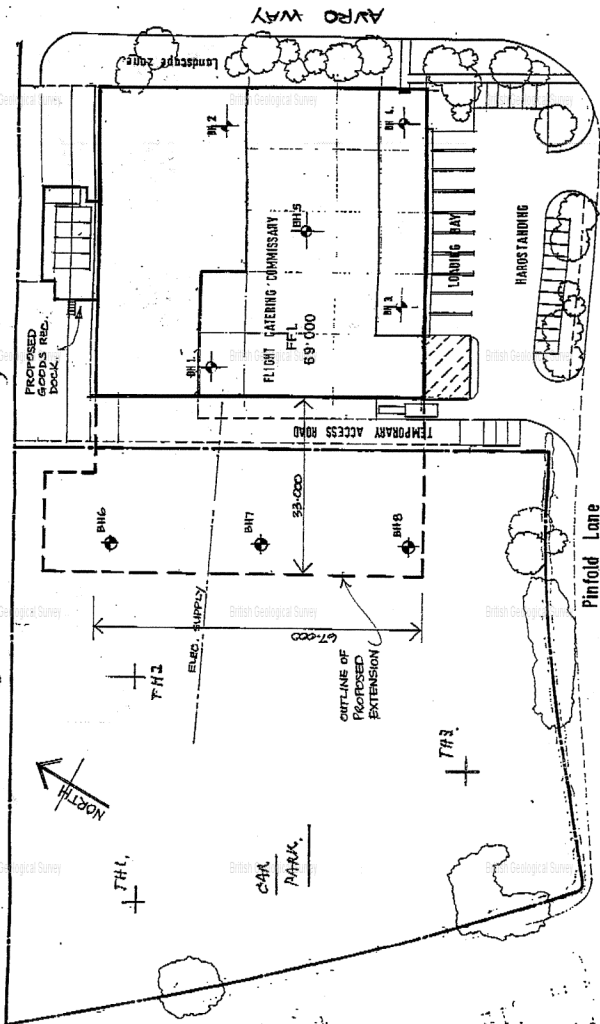
Depth	Thickness	Legend	Description of Strata	Type of Sample	C kN/m ²	M %	Ø	Density Kg/m ³	N
<u>BH6</u>									
0.60	0.60		SOFT MOIST MEDIUM BROWN CLAY WITH STONES AND BROKEN TARMAC - <u>MADE GROUND</u>	U100 0.75	45.4	27.4	-	1820	
1.50	0.90		FIRM MOTTLED BROWN AND GREY <u>CLAY</u>	U100 1.60	31.9	23.5	-	1885	
2.50			INITIALLY VERY SOFT REDDISH BROWN CLAY	U100 2.75	89.2	21.5	-	2030	
4.00			SLIGHTLY MARLY WITH OCCASIONAL GREY VEINS BECOMING STIFF WITH DEPTH	U100 4.00	111.1	20.4	-	2040	
<u>DEY</u>									
<u>BH7</u>									
0.60	0.60		LOOSE CONCRETE, BRICKS, STONES, CLAY AND TARMAC	SPT 0.90					12
0.90	0.30		REINFORCED CONCRETE OBSTRUCTION						
1.20	0.30		MED. DENSE HARDLORE <u>FILL</u> (POSSIBLE OLD RUNWAY)	U100 1.50	86.2	19.6	-	2110	
2.30	1.10		FIRM TO STIFF MEDIUM BROWN AND GREY MOTTLED <u>CLAY</u>	U100 2.50	180.0	21.8	-	2060	
4.00	1.70		FIRM TO STIFF TO STIFF DARK REDDISH BROWN SLIGHTLY MARLY <u>CLAY</u>	U100 4.00	108.0	15.9	-	2030	
SLIGHT WATER IN UPPER MADE GROUND - REMAINDER DEY									

Water Struck at AS SHOWN

Standing Water Level —



13653/ST.



Smart Motorway Programme CP

X: 380590 Y: 384995 Level: 64.5

Start: 2005-07-20 End:

Client: Highways England

Contractor: Mouchel

Engineer:

Page 1

DEPTH METRES	Depth	Level	Log	Description
	0.50	64.00		MADE GROUND Bands of tarmac hardcore and clay
1.0	1.00	63.50		MADE GROUND Hard core Fill
2.0				Very stiff brown slightly sandy CLAY with occasional grey veins roots and occasional fine to coarse gravel
3.0				
4.0	4.20	60.30		Very stiff brown sandy CLAY with a little fine to coarse sub angular gravel

IMPORTANT: This is a basic log auto-generated from AGS data held by the National Geoscience Data Centre (NGDC) and does not necessarily include all of the information supplied in the original AGS file. If you wish to deposit AGS files to the NGDC please see www.bgs.ac.uk/services/ngdc. Generated 07-01-2022 at 11:28 by BGS Groundhog (BETA). BGS Reference 20200204120058762979

Smart Motorway Programme CP

X: 380590 Y: 384995 Level: 64.5

Start: 2005-07-20 End:

Client: Highways England

Contractor: Mouchel

Engineer:

Page 2

DEPTH METRES	Depth	Level	Log	Description
6.0	6.20	58.30		Very stiff brown sandy CLAY with a little fine to coarse sub angular gravel
7.0				
8.0				Hard brown sandy CLAY with a little fine to coarse gravel
9.0	9.20	55.30		Medium dense brown SILT and fine grained SAND

IMPORTANT: This is a basic log auto-generated from AGS data held by the National Geoscience Data Centre (NGDC) and does not necessarily include all of the information supplied in the original AGS file. If you wish to deposit AGS files to the NGDC please see www.bgs.ac.uk/services/ngdc. Generated 07-01-2022 at 11:28 by BGS Groundhog (BETA). BGS Reference 20200204120058762979

Smart Motorway Programme CP

X: 380590 Y: 384995 Level: 64.5

Start: 2005-07-20 End:

Client: Highways England

Contractor: Mouchel

Engineer:

Page 3

DEPTH METRES	Depth	Level	Log	Description
	10.25	54.25		Medium dense brown SILT and fine grained SAND
11.0				
12.0				
13.0				
14.0				

IMPORTANT: This is a basic log auto-generated from AGS data held by the National Geoscience Data Centre (NGDC) and does not necessarily include all of the information supplied in the original AGS file. If you wish to deposit AGS files to the NGDC please see www.bgs.ac.uk/services/ngdc. Generated 07-01-2022 at 11:28 by BGS Groundhog (BETA). BGS Reference 20200204120058762979

GENERAL REMARKS

CAT services scan 10 minutes. Hand excavated inspection pit, 0.5 x 0.5 x 1.2m, 1/2hours.
(Ground Level Estimated from HAGDMS)

BOREHOLE LOG

SJ88NW

886



CLIENT The Department of Transport EASTING: 5208.0 8057 BOREHOLE BH 15
 SITE M56 Widening, Junctions 4 - 6 Northing: 4931.5 8508 Sheet 1 of 1
 Date 10th June 1991 Ground Level 64.16m AOD Scale 1:50

progress/ water levels	casing (m)	SPT/ U70	depths (m)	core/ sample	description	m (%)	tests	depth (m)	level (mOD)	legend
10.6.91			0.00 - 0.10 0.10 - 0.80	1B 2B	Dense, dark brown, clayey, sandy SILT with many rootlets. (TOPSOIL) Stiff orange brown mottled grey CLAY. (DRFT)	17		0.10	64.06	
			0.80 - 1.50	3B	Below 0.80m becomes dark reddish brown with occasional dark grey carbonaceous rootlets and flecks.	17	LCb			
	0.00	162 blows (1)	1.50 - 1.95	4U		13	LT	(2.80)		
	1.31	N = 47	1.95 - 2.30 2.30 - 2.50 2.50 - 2.95 2.95 - 3.75	5B 6B 7B 8J 9J 10B	Below 2.30m becomes very stiff to hard with a little sub rounded medium gravel. Gravel includes mudstone. From 2.50m becomes sandy and friable. (DRFT)	8		2.90	61.26	
	3.70	N = 47	3.75 - 4.20 4.20 - 4.80	11J 12B	Dense orange brown SAND with occasional medium to coarse gravel. Gravel includes of mudstone and sandstone. (DRFT)			(1.90)		
	4.60	30 blows (2)	4.80 - 4.90 4.90 - 5.70	13B 16B	Stiff to very stiff red-brown very sandy CLAY with a little medium to coarse gravel. Gravel includes mudstone, sandstone and fine gravel of light green siltstone. (DRFT)			4.80	59.36	
pm Dry	5.00	N = 44	5.70 - 6.15	17J						
					End of Borehole at 6.15m	10		6.15	58.01	
Equipment/Methods					Borehole advanced using a light cable percussive rig with 200mm diameter tools from the base of an inspection pit at 0.80m to completion at 5.70m. Borehole backfilled with grout on completion.					
Remarks					(1) Slide hammer only (2) Slide hammer plus 2 sinker bars		GEL JOB NO. 2334N		FIGURE 1/15.1	

Appendix D Correspondence with Regulatory Authorities

Good afternoon Will,

Further to your enquiry regarding possible environmental issues in the vicinity of Building 304, Lockup 2, Manchester Airport.

Following a search of records held by the council's Environmental Protection Department, I can confirm the following:

1. There are no known contamination issues at or adjacent to the site.
2. There are no sites determined to be statutory contaminated land within 250m of the site.
3. There are no statutory notices in force within 100m of the site.
4. There are no Private Water Supplies Regulations registered abstractions within 500m of the site.

Regards,

Ian Westbrook

Environmental Protection
Neighbourhoods Directorate
Manchester City Council
1 Hammerstone Road
Gorton
Manchester
M18 8EQ

External: 0161 234 5004

Internal: 31381

Email: i.westbrook@manchester.gov.uk

Web: <http://www.manchester.gov.uk>

This email and any files transmitted with it are confidential and intended solely for the use of the individual or entity to whom they are addressed.

If you have received this email in error, please notify the system manager.

The full text of the Council's email disclaimer is available at www.manchester.gov.uk/emaildisclaimer.

Your personal data is very important to us. Please refer to our privacy notice at www.manchester.gov.uk/privacy for further information.

This footnote also confirms that this email message has been swept for the presence of computer viruses.

From: GMMC Info Requests <InfoRequests.GMMC@environment-agency.gov.uk>
Sent: 07 January 2022 16:43
To: Davies, Matthew <Matthew.E.Davies@aeacom.com>
Subject: [EXTERNAL] GMMC245090AB Response attached from the Environment Agency

Dear Matthew,

Re: MAG Argosy Way - Records of Contamination- FOI Request

Thank you for your enquiry which was received on 17/12/21.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004.

I enclose your questions and our responses below:

1. Records of land contamination at the above site;
We do not have any contamination records for this site, please contact the local authority.
2. Records of land contamination in the environs of the site;
As above.
3. Status under waste management regulations;
We have no information to provide.
4. Any enforcements or prosecutions under the control of Water Resources Act;
We have no information to provide.
5. Information regarding any other relevant legislation such as IPPC, IRR etc.;
We have no information to provide.
6. Details of surface/groundwater abstractions and/or details of Private Water Supplies;
There is no record of any licensed abstraction point within 1km radius of this site. We do not have a comprehensive record of Private Water Supplies, of the records we do have none are showing within 250m of this site, please contact the local authority for further details.
7. Status including any enforcement notices under Part II EPA;
The site is not within 250m of this site of a Part 2a site.
8. Any known records of landfilling or remediation on or in the vicinity of the site;
There are no recorded landfills with 250m of this site.
9. Any correspondence or Enforcement Notices connected to the site with regard to nuisance issues (odour, dust, smoke, vermin etc.).
We have no information to provide.

Please refer to the [Open Government Licence](#) which explains the permitted use of this information.

Information not held by us

Where the information you have requested is not held by the Environment Agency, we are therefore refusing your request on the grounds that there is no information we can provide.

Where a request is for environmental information, the Regulations allow us to refuse to disclose it if the exception at EIR Regulation 12(4)(a) applies. The regulation states that a public authority may refuse to disclose environmental information to the extent that it does not hold that information when an applicant's request is received.

It is not possible for us to conduct a public interest balancing test because the reason for non-disclosure is that the information is not held.

Rights of appeal

If you are not satisfied with our response to your request for information, you can contact us within 2 calendar months to ask for our decision to be reviewed. If you are still not satisfied following this, you can make an appeal to the Information Commissioner, who is the statutory regulator for Freedom of Information. The address is: Office of the Information Commissioner, Wycliffe House, Water Lane, Wilmslow, Cheshire SK9 5AF.

Tel: 01625 545700.

Fax: 01625 524 510.

E-mail: mail@ico.gsi.gov.uk.

Website: <http://www.informationcommissioner.gov.uk>

Kind regards,

Anne Ball

Customer and Engagement Officer

Greater Manchester, Merseyside and Cheshire

Email: inforequests.gmmc@environment-agency.gov.uk

From: Davies, Matthew [<mailto:Matthew.E.Davies@aeacom.com>]

Sent: 17 December 2021 16:29

To: Enquiries, Unit <enquiries@environment-agency.gov.uk>

Cc: Hartas, William <William.Hartas@aeacom.com>

Subject: MAG Argosy Way - Records of Contamination- FOI Request

Good afternoon,

We are undertaking work to assess risks for contamination on behalf of our Client Manchester Airport Group and would be very grateful if you could inform us with regard to any of the following under an FOI request. This is in relation to the site located at Argosy Drive, M90 5TE (Site boundary attached).

10. Records of land contamination at the above site;
11. Records of land contamination in the environs of the site;
12. Status under waste management regulations;
13. Any enforcements or prosecutions under the control of Water Resources Act;
14. Information regarding any other relevant legislation such as IPPC, IRR etc.;
15. Details of surface/groundwater abstractions and/or details of Private Water Supplies;

16. Status including any enforcement notices under Part II EPA;
17. Any known records of landfilling or remediation on or in the vicinity of the site; and
18. Any correspondence or Enforcement Notices connected to the site with regard to nuisance issues (odour, dust, smoke, vermin etc.).

Thanks,

Matt Davies

Graduate Ground Engineer, EUR - UK & Ireland
matthew.e.davies@aeacom.com

AECOM
aeacom.com

Delivering a better world
[LinkedIn](#) | [Twitter](#) | [Facebook](#) | [Instagram](#)



Information in this message may be confidential and may be legally privileged. If you have received this message by mistake, please notify the sender immediately, delete it and do not copy it to anyone else. We have checked this email and its attachments for viruses. But you should still check any attachment before opening it. We may have to make this message and any reply to it public if asked to under the Freedom of Information Act, Data Protection Act or for litigation. Email messages and attachments sent to or from any Environment Agency address may also be accessed by someone other than the sender or recipient, for business purposes.

Appendix E Preliminary UXO Pre-Desk Study Assessment



Pre-Desk Study Assessment

Site:	MAG Argosy Way Development, Manchester, Greater Manchester
Client:	AECOM
Contact:	Matt Davies
Date:	23 rd December 2021
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Transport infrastructure and public utilities.
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified on the Site. In 1939 Ringway Airfield, approximately 0.3km southeast of the Site, was requisitioned by the Royal Air Force (RAF). It operated as the base for No. 1 Parachute Training School RAF. Fairey Aviation undertook bomber aircraft assembly in hangars on the northwest of the airfield, approximately 0.6km southeast of the Site. No readily available records have been found to indicate that RAF Ringway or any associated activities extended onto the Site.
WWII Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ RAF Ringway. ■ Transport infrastructure and public utilities. ■ Industries important to the war effort, including aircraft assembly works. ■ Military camps and training areas. ■ Anti-Aircraft (AA) and anti-invasion defences.
WWII Bombing Decoys (within 5km of Site)	None.
WWII Bombing	During WWII the Site was located in the Rural District (RD) of Bucklow, which officially recorded 258No. High Explosive (HE) bombs with a bombing density of 5.6 bombs per 405 hectares (ha). No readily available records have been found to indicate that the Site was bombed.
Post-WWII Military Activity on or Affecting the Site	None identified on the Site. Post-WWII RAF Ringway remained operational until 1957, when it reverted to civilian use as Manchester Airport. By 2000, facilities associated with Manchester Airport had been established on the Site.
Recommendation	A detailed desk study, whilst always prudent, is not considered essential in this instance.
Further information	For information about Zetica's detailed UXO desk studies and other UXO services, please visit our website: www.zeticauxo.com . Details and downloadable resources covering the most common sources of UXO hazard affecting sites in the UK can be found here . If you have any further queries, please don't hesitate to get in contact with us at uxo@zetica.com or 01993 886 682.

This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.

It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.

Appendix F Site Walkover Photographic Log

Client Name: MAG

Site Location: Building B303, 304, 305, 311

Project No. 60663052

Photo No.
1

Date:
22/12/2021

Description

View of site setting
looking SE from junction
of Avro Way / Vicsount
Drive.



Photo No.
2

Date:
22/12/2021

Description

View of site setting looking
NE from junction of Avro
Way / Viscount Drive
(Building 305 at left of
picture)



Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.
3

Date:
22/12/2021

Description

Site setting looking NW at junction of Avro Way / Viscount Drive (Building 305 at right of picture)



Photo No.

Date:
22/12/2021

Description

Site setting looking NE at junction of Avro Way / Argosy Drive (Building 303 at left of picture)



Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021

Description

External plant room on northern side of B305.



Photo No.

Date:
22/12/2021

Description

Carpark associated with the site looking from NW side of B305.



Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021

Description

B305 from southern side.



Photo No.

Date:
22/12/2021

Description

Small woodland adjacent to Avro Way.



Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021

Description

Note minor earthworks, embankments at north west of site beyond carpark adjacent to Runger Lane.



Photo No.

Date:
22/12/2021

Description

Further view of carpark (B311 in right of image)



Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021

Description

General view of site setting and west side of B305



Photo No.

Date:
22/12/2021

Description

Site setting at intersection of Viscount Drive and Yourk Drive.



Client Name: MAG		Site Location: Building 304, 305, 311	Project No. 60663052
Photo No.	Date: 22/12/2021		
Description Site setting at intersection of Viscount Drive and York Drive looking NW. Building 303 at left of image.			

Photo No.	Date: 22/12/2021	
Description General view NE side of Building 303.		

Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021

Description

General view along York Drive. Note two firewater tanks in distance in right of image.



Photo No.

Date:
22/12/2021

Description

Centre extent of Building B303



Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021

Description

Firewater tanks and toilet block associated with logistics park.



Photo No.

Date:
22/12/2021

Description

Northern extent of B303



Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021

Description

Storage of laundry at B304.



Photo No.

Date:
22/12/2021

Description

Building 304. Note also contains sewage pumping station.



Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021

Description

Sewage pumping infrastructure adjacent to B304 and manholes (green box in centre)



Photo No.

Date:
22/12/2021

Description



Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021

Description



Photo No.

Date:
22/12/2021

Description



Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021

Description



Photo No.

Date:
22/12/2021

Description



Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021



Description

Photo No.

Date:
22/12/2021



Description

Client Name: MAG

Site Location: Building 304, 305, 311

Project No. 60663052

Photo No.

Date:
22/12/2021

Description



Photo No.

Date:
22/12/2021

Description



Appendix G Geotechnical Risk Register

A Geotechnical Risk Register has been compiled to show the degree of risk attached to various ground related aspects of the proposed scheme. The purpose of the register is to produce an assessment of the risk to the project posed by site specific ground related problems and identify suitable mitigation measures to control the risk to an acceptable level. The risk register should be developed and refined as the geotechnical design and assessment progresses such that the register will allow management of the geotechnical risks.

The degree of risk (R) is determined by combining an assessment of the likelihood (L) of the hazard with an assessment of the severity (S) of the hazard. The scale against which the likelihood and severity are measured, and the resulting degree of risk determined is presented below.

Table 15-1: Geotechnical Classification of Probability and Impact

Likelihood (L)		Severity (S)	
Very Likely	5	Very High	5
Likely	4	High	4
Probable	3	Medium	3
Unlikely	2	Low	2
Negligible	1	Very Low	1

Table 15-2: Geotechnical Risk Matrix

Likelihood	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
		Severity				

Table 15-3: Geotechnical Classification of Risk Rating

Risk rating	Response
Intolerable	Unacceptable
Substantial	Early Attention
Tolerable	Regular Attention
Trivial	Monitor

Identified Geotechnical Hazard	Location	Cause	Risk before Control			Consequence	Possible Mitigation Measures
			L	S	RR (LxS)		
Aggressive Ground Chemistry	Scheme Wide	Made Ground, Glacial Till and Bollin Mudstone are potentially sulphide/sulphate bearing stratum.	4	3	12	Deleterious effects on buried concrete/piles;	Analyse BRE test results and design concrete mix during detailed design in accordance with BRE guidance.
Frost susceptible soils	Scheme Wide	Construction of pavement; Silt-rich soils present at site.	2	3	6	Surface Damage or alternative design; Frost heave.	Ground Investigation to identify underlying ground conditions and assess risk; Increase pavement thickness to incorporate risk.
Volume change in Clay Soils	Scheme Wide	Artificial and/ or superficial deposits.	2	3	6	Damage to structures due to seasonal subsidence and heave of clay soils. Also, could be due to felling of trees.	Assess Atterberg limits of cohesive soils and specify foundations according to relevant guidance. E.g. NHBC
Challenges for reusing site-won material for earthworks.	Scheme Wide	Cobbles and boulders in Glacial Till.	2	2	4	Potentially difficulty compacting Glacial Till as an engineered fill. Increased costs of disposal and importing suitable fill material.	Import suitable engineering fill or remove coarse material from existing site won material. Carry out testing to classify material.
Variable thickness and composition of superficial deposits and Made Ground/Variabl e hard ground	Scheme Wide	The inherent variability of glacial tills and Made Ground or variable rock head level and variable properties of rock	3	3	9	Unsuitable method of construction. Potential presence of boulders/buried concrete structures may obstruct piling/drilling. Obstruction or difficult to excavate or drill through. Additional cost	Ground investigation for the proposed site extents and any likely structure locations to reduce risk of potential obstructions or difficult ground.
The presence of weak and compressible soils.	Scheme Wide	Potential presence of soft, weak, compressible and thick Glacial Deposits, which are highly variable in composition and possibly indeed thickness. Made Ground is expected across the site with variable thickness and composition.	3	4	12	Differential settlement as a result of differing foundation material. Failure of structures or earthworks.	Carry out suitable ground investigation and specify appropriate foundations.
Weak pavement formation.	Scheme Wide	Site soils including Made Ground may be variable or possess low Cu/CBR/Stiffness values. This may result in weak	3	2	6	Increased cost such as resurfacing access roads and car park may be required.	Investigation including Compaction and California Bearing Ratio testing to inform pavement design and potentially the reuse of site materials . Undertake remediation for instance. Implementation of mechanical compaction, thicker capping material, ground improvement (lime improvement/soil

Identified Geotechnical Hazard	Location	Cause	Risk before Control			Consequence	Possible Mitigation Measures
			L	S	RR (LxS)		
		pavement formation and differential settlement.					stabilisation) or excavation and replace.
Historic development of site.	Scheme wide.	Known and unknown/unrecorded buried structures.	2	3	6	Costs due to damage to plant and delays removing obstructions. Potential settlement issue in areas between proposed and existing foundations of previous structures.	Ground investigation for the proposed site extents and any likely structure locations to reduce risk of potential obstructions. Proposed work to be located away from existing foundations.
Underground utilities/services.	Scheme wide.	Striking of underground services and utilities from intrusive investigation or construction work.	3	5	15	Causalities and fatalities to site workers. Damage of equipment as well as disruption to services and utilities.	PAS128 surveying. Cable avoidance tools. GPR scanning. Hand dug pits to 1.2m bgl using insulated hand tools.
UXO	Scheme wide.	Potential UXO related to historical military activity as a result of being close to the Airport during WWII.	2	5	10	H&S Impact during excavations, ground investigation, piling and construction.	Commission of a specialist UXO desk study to further clarify the risk at the site and specify appropriate mitigation for ground investigation and construction.
Re-grading of site.	Scheme wide.	Slope stability and long-term settlement of raised earthworks.	2	3	6	Failure of earthworks slopes and serviceability issues with excessive total and differential settlement, if this is a concern to the area of the scheme	Carry out a ground investigation and design earthworks appropriately.

