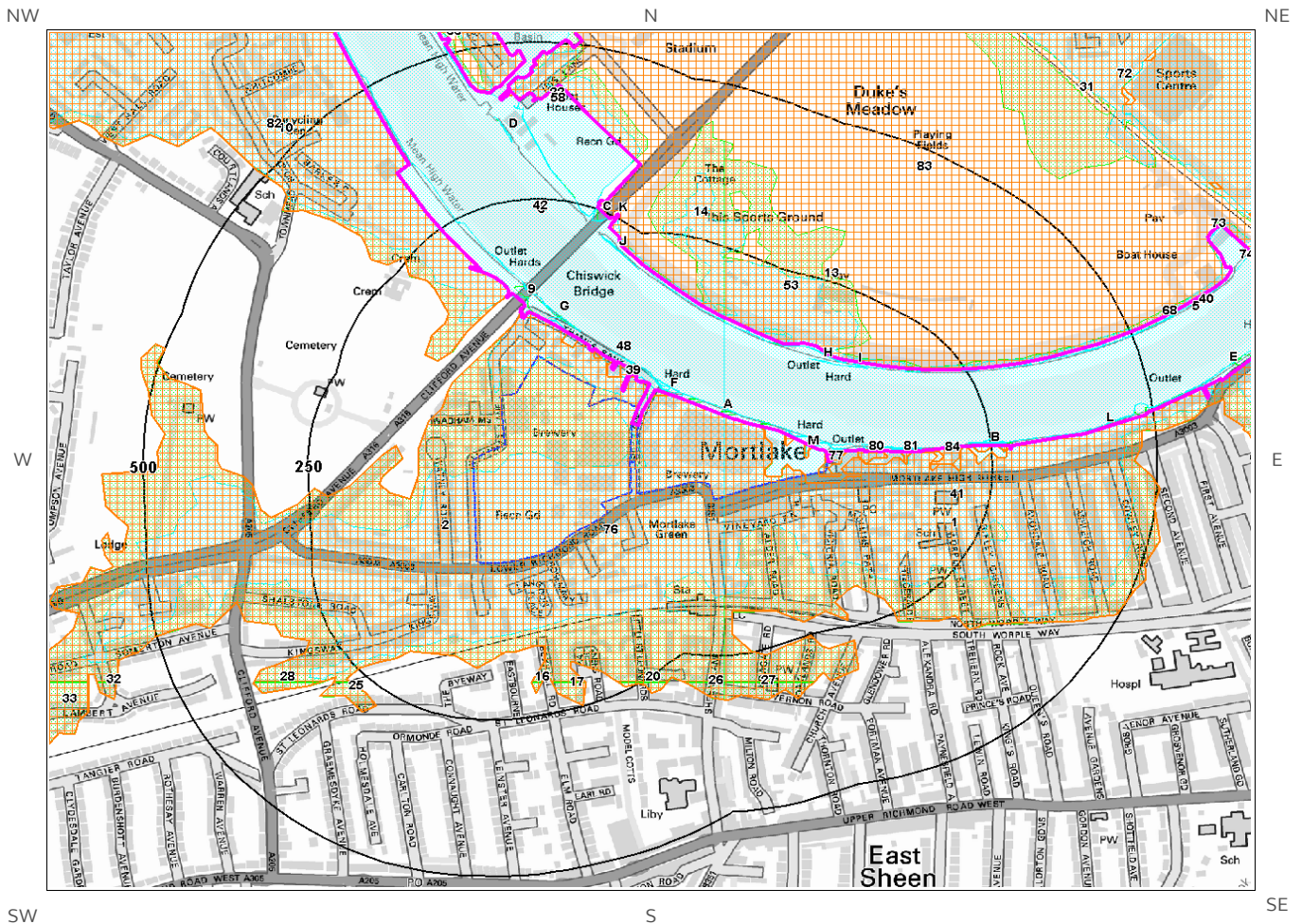
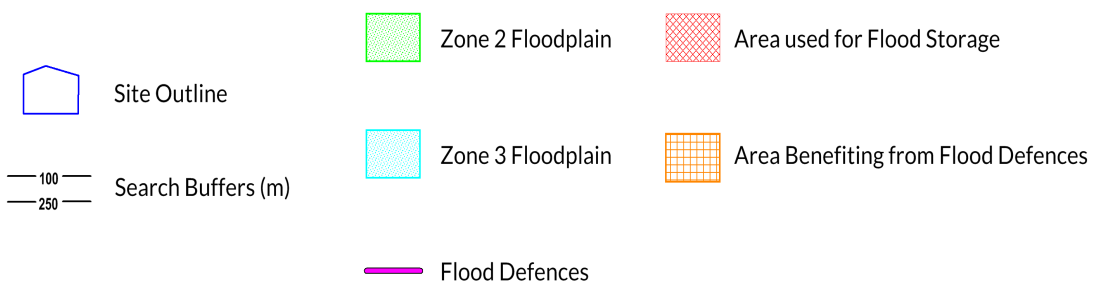


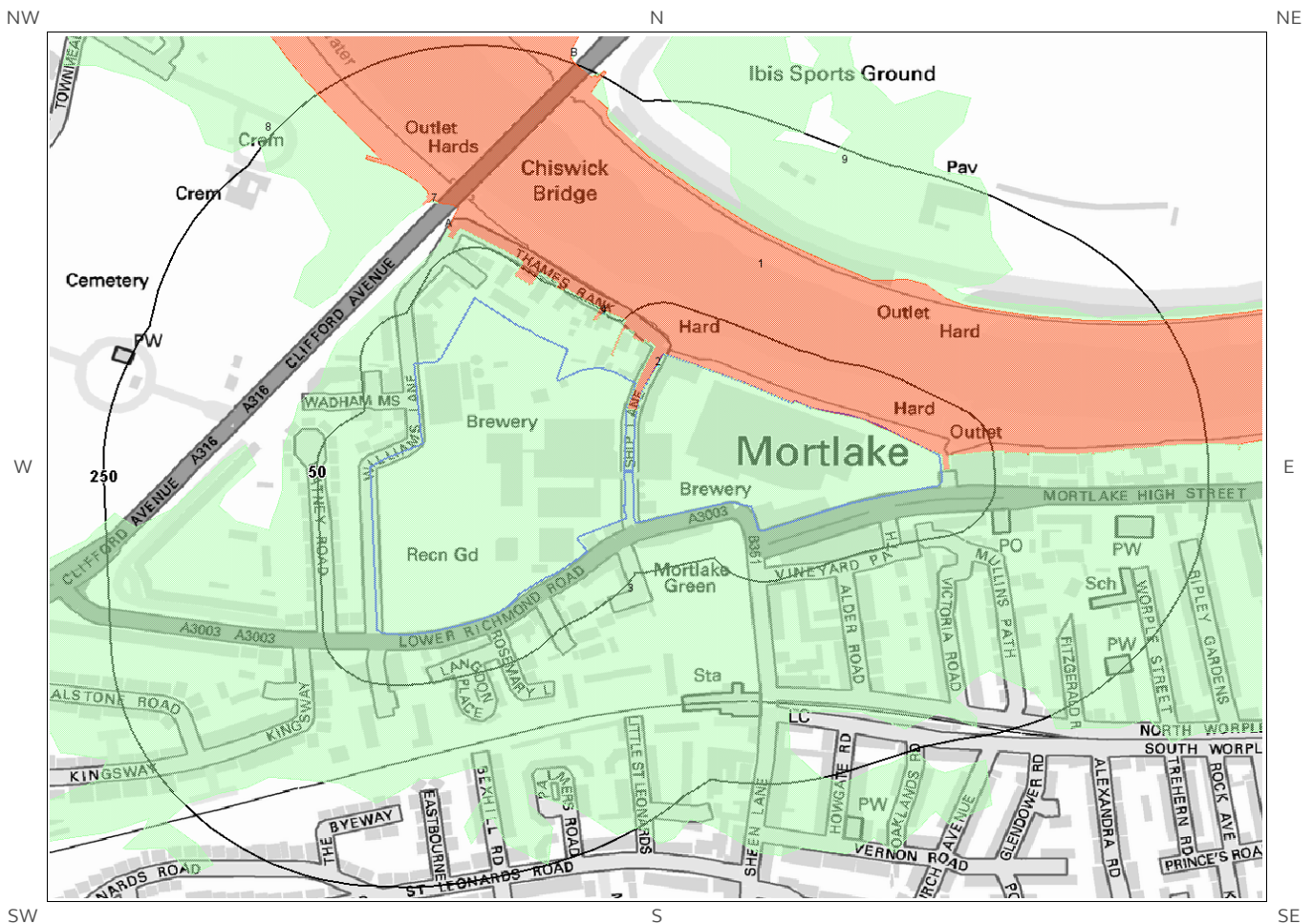
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



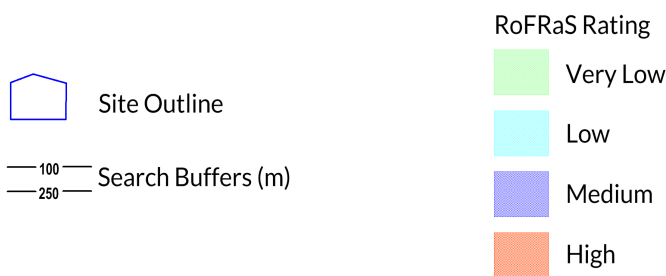
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m

Identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	0	On Site	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
2	0	On Site	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
3F	0	On Site	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
4A	0	On Site	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
5	0	On Site	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
6	0	On Site	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
7A	7	NE	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
8G	68	NE	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
9	90	N	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
10	95	N	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
11H	124	N	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
12I	131	NE	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
13	132	N	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
14	138	N	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
15J	194	N	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
16	195	S	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
17	201	S	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
18B	212	E	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
19B	212	E	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)

20	233	SE	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
21C	233	NE	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
22	234	N	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
23C	244	NE	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
24K	249	NE	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m

Identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Type
1	0	On Site	20-Jun-2019	Zone 3 - (Fluvial Models)
2	0	On Site	20-Jun-2019	Zone 3 - (Fluvial Models)
3F	0	On Site	20-Jun-2019	Zone 3 - (Fluvial Models)
4A	0	On Site	20-Jun-2019	Zone 3 - (Fluvial Models)
5	1	N	20-Jun-2019	Zone 3 - (Fluvial Models)
6	1	N	20-Jun-2019	Zone 3 - (Fluvial Models)
7A	3	N	20-Jun-2019	Zone 3 - (Fluvial Models)
8G	4	N	20-Jun-2019	Zone 3 - (Fluvial Models)
9	5	N	20-Jun-2019	Zone 3 - (Fluvial Models)
10	61	NE	20-Jun-2019	Zone 3 - (Fluvial Models)
11H	68	NE	20-Jun-2019	Zone 3 - (Fluvial Models)
12I	74	N	20-Jun-2019	Zone 3 - (Fluvial Models)
13	124	N	20-Jun-2019	Zone 3 - (Fluvial Models)
14	131	NE	20-Jun-2019	Zone 3 - (Fluvial Models)
15J	132	N	20-Jun-2019	Zone 3 - (Fluvial Models)
16	194	N	20-Jun-2019	Zone 3 - (Fluvial Models)
17	222	E	20-Jun-2019	Zone 3 - (Fluvial Models)

18B	222	E	20-Jun-2019	Zone 3 - (Fluvial Models)
19B	231	N	20-Jun-2019	Zone 3 - (Fluvial Models)
20	234	N	20-Jun-2019	Zone 3 - (Fluvial Models)
21C	244	NE	20-Jun-2019	Zone 3 - (Fluvial Models)
22	249	NE	20-Jun-2019	Zone 3 - (Fluvial Models)

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite High

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a High (1 in 30 or greater) chance of flooding in any given year.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRaS flood Risk
1	0.0	On Site	High
2	0.0	On Site	Low
3	0.0	On Site	Very Low
4	45.0	NE	Low

7.4 Flood Defences

Flood Defences within 250m of the study site Identified

The following flood defence records are represented as lines on the Flood Map:

ID	Distance (m)	Direction	Update
86	0	On Site	17-Jun-2019
87	136	N	17-Jun-2019
88	226	NE	17-Jun-2019
89	230	NE	17-Jun-2019
90	231	NE	17-Jun-2019

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site

Identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site

None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site

Identified

Clearwater Flooding or Superficial Deposits Flooding

Superficial Deposits Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Potential at Surface

Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

7.8 Groundwater Flooding Confidence Areas

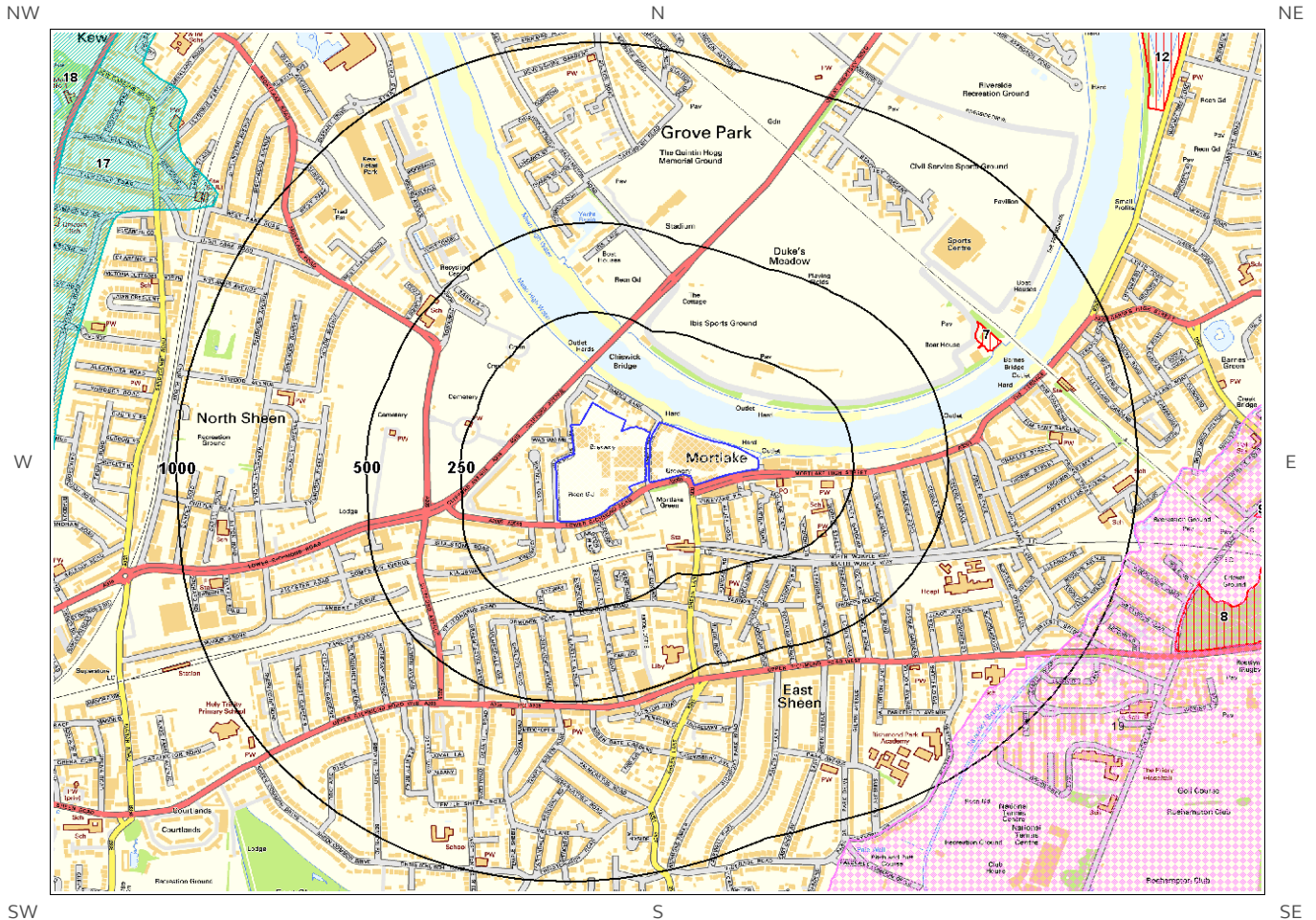
British Geological Survey confidence rating in this result

Moderate

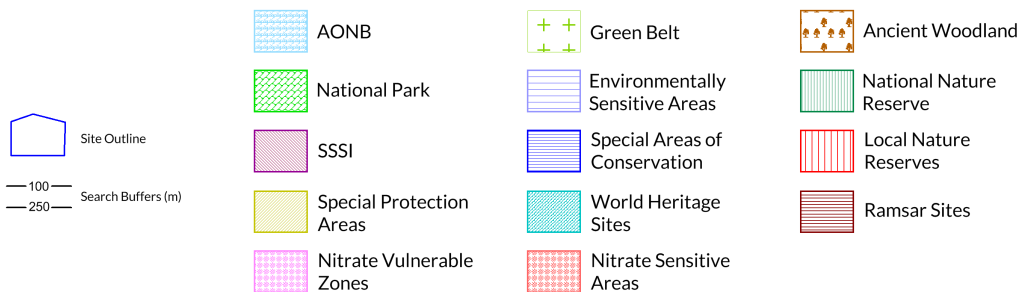
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site

Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

2

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
Not shown	1324	S	Richmond Park	Natural England
Not shown	1349	S	Richmond Park	Natural England

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

2

The following National Nature Reserve (NNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NNR Name	Data Source
Not shown	1324	S	Richmond Park	Natural England
Not shown	1349	S	Richmond Park	Natural England

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

2

The following Special Area of Conservation (SAC) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SAC Name	Data Source
Not shown	1324	S	Richmond Park	Natural England

ID	Distance (m)	Direction	SAC Name	Data Source
Not shown	1349	S	Richmond Park	Natural England

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

0

Database searched and no data found.

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

10

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
7	659	NE	Duke's Hollow	Natural England
8	1191	E	Barnes Common	Natural England
9	1313	E	Barnes Common	Natural England
Not shown	1351	E	Barnes Common	Natural England
Not shown	1368	E	Barnes Common	Natural England
12	1417	NE	Leg of Mutton Reservoir	Natural England
Not shown	1523	E	Barnes Common	Natural England
Not shown	1609	E	Barnes Common	Natural England
Not shown	1835	E	Barnes Common	Natural England
Not shown	1841	E	Barnes Common	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

2

The following World Heritage Site records provided by English Heritage and Cadw are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	World Heritage Site Name	Data Source
17	1126	NW	Royal Botanic Gardens, Kew Buffer Zone	Historic England
18	1473	W	Royal Botanic Gardens, Kew	Historic England

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

2

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
19	860	SE	Existing	DEFRA
Not shown	1945	S	Existing	DEFRA

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **Groundsure Geo Insight**, available from our [website](#). The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell** hazard rating identified on the study site Moderate

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property no significant increase in insurance risk due to natural slope instability problems.

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site Negligible

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site High

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Very significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Construction may not be possible at economic cost. For existing property probable increase in insurance risk from compressibility especially if water conditions or loading of the ground change significantly.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site Very Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site Low

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property no significant increase in insurance risk due to running sand problems is likely.

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.