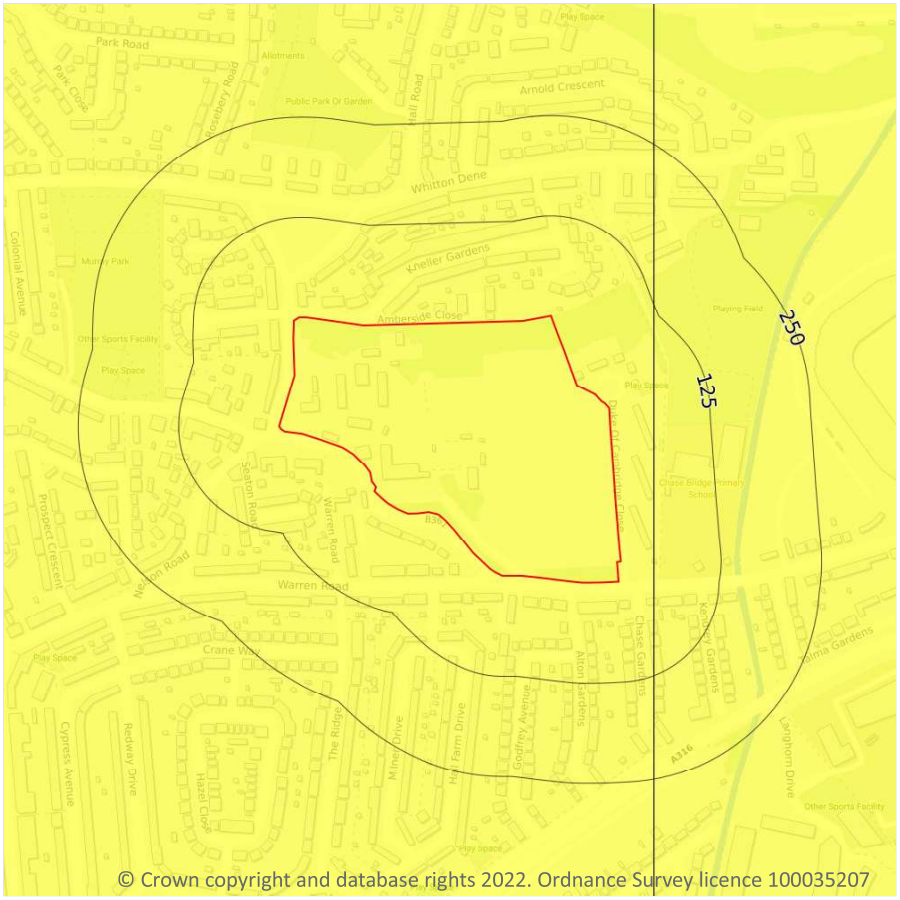
| Location | Hazard rating | Details |
|---|---|---|
| 41m E | Negligible | Compressible strata are not thought to occur. |

*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 |
|---|---|

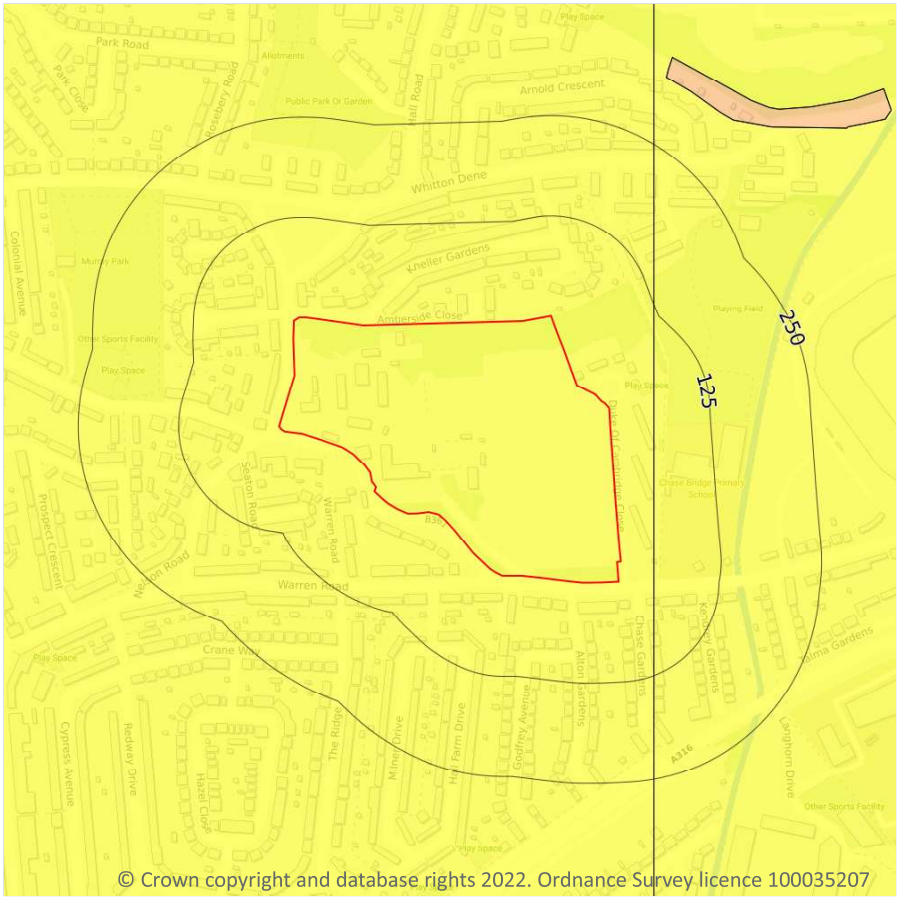
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 97**

| Location | Hazard rating | Details |
|---|---|---|
| **On site** | **Very low** | **Deposits with potential to collapse when loaded and saturated are unlikely to be present.** |
| 41m E | 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.

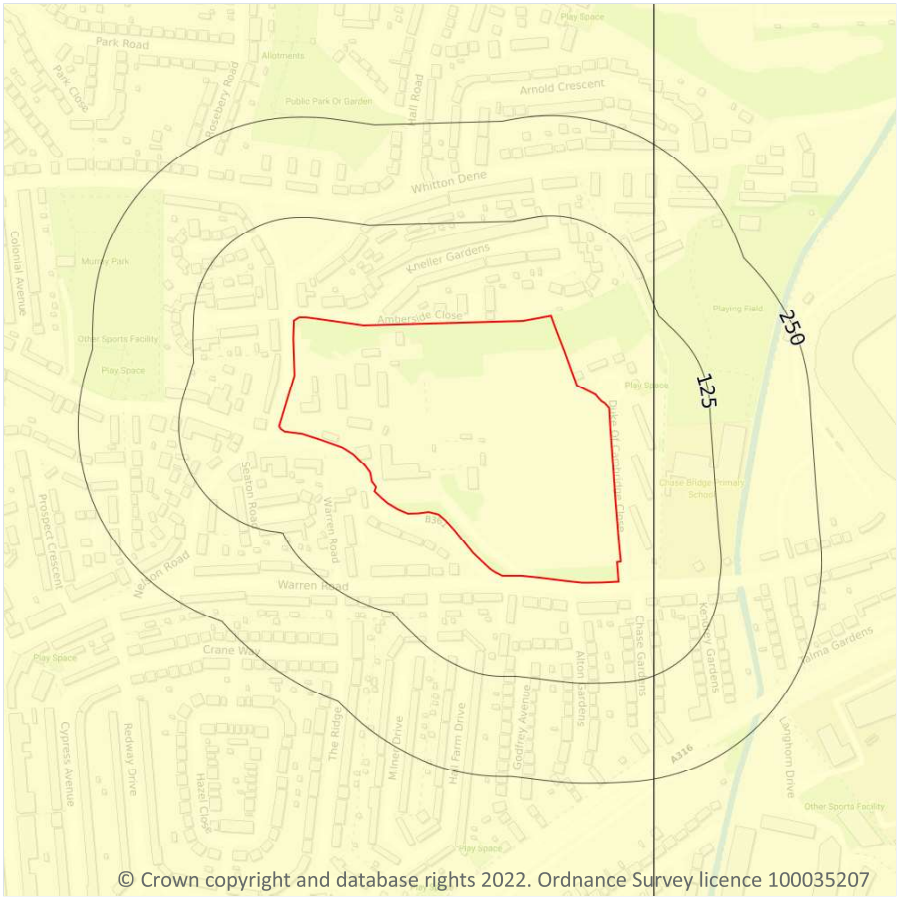
Features are displayed on the Natural ground subsidence - Landslides map on **page 98**

| 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 |
|---|---|---|
| 41m E | Very low | Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered. |

*This data is sourced from the British Geological Survey.*

# Natural ground subsidence - Ground dissolution of soluble rocks




Site Outline

Search buffers in metres (m)

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

## 17.6 Ground dissolution of soluble rocks

| Records within 50m | 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.

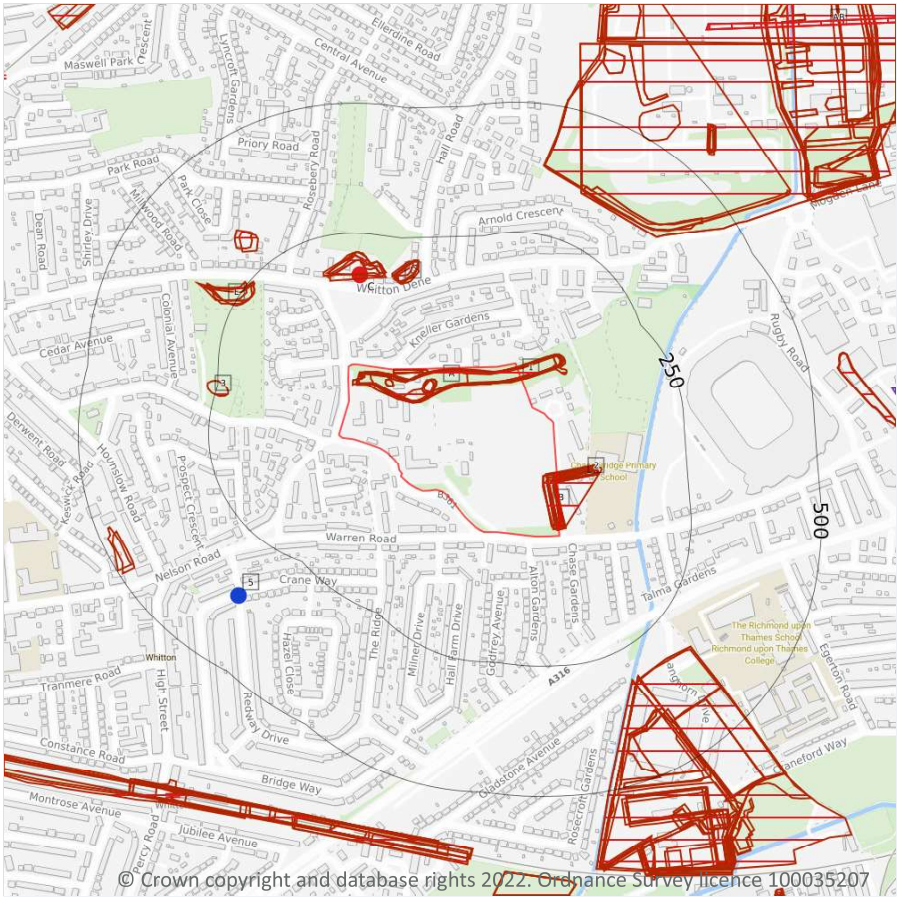
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 100**

| 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 |
|---|---|---|
| 41m E | 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 | 1 |
|---|---|

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.

Features are displayed on the Mining, ground workings and natural cavities map on **page 102**

| ID | Location | Details | Source |
|---|---|---|---|
| 5 | 363m SW | Type: Scour Hollows x 1<br>Superficial Geology: -<br>Bedrock Geology: Chalk Group, Lambeth Group, London Clay Formation, Thanet Sand Formation | Simple Bibliography: -<br>Full Bibliography: NEWMAN, T., The impact of adverse geological conditions on the design and construction of the Thames Water Ring Main in Greater London, 2009;<br>Confidentiality: Data source can be revealed, data can be used freely |

*This data is sourced from Stantec UK Ltd.*

## 18.2 BritPits

| **Records within 500m** | **1** |
|---|---|

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 102**

| ID | Location | Details | Description |
|---|---|---|---|
| C | 170m N | Name: Whitton Dean Gravel Pit<br>Address: TWICKENHAM, Surrey<br>Commodity: Sand & Gravel<br>Status: Ceased | Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site<br>Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority |

*This data is sourced from the British Geological Survey.*

## 18.3 Surface ground workings

| **Records within 250m** | **40** |
|---|---|

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 102**

| ID | Location | Land Use | Year of mapping | Mapping scale |
|---|---|---|---|---|
| **1** | **On site** | **Ponds** | **1865** | **1:10560** |
| **A** | **On site** | **Pond** | **1959** | **1:10560** |
| **A** | **On site** | **Pond** | **1938** | **1:10560** |

| ID | Location | Land Use | Year of mapping | Mapping scale |
|---|---|---|---|---|
| **A** | **On site** | **Pond** | **1912** | **1:10560** |
| **A** | **On site** | **Water Body** | **1938** | **1:10560** |
| **A** | **On site** | **Water Body** | **1912** | **1:10560** |
| **A** | **On site** | **Water Body** | **1894** | **1:10560** |
| **A** | **On site** | **Water Body** | **1933** | **1:10560** |
| **A** | **On site** | **Water Body** | **1894** | **1:10560** |
| **A** | **On site** | **Pond** | **1896** | **1:10560** |
| **A** | **On site** | **Pond** | **1898** | **1:10560** |
| **B** | **On site** | **Unspecified Pit** | **1894** | **1:10560** |
| **B** | **On site** | **Unspecified Ground Workings** | **1938** | **1:10560** |
| **B** | **On site** | **Unspecified Ground Workings** | **1912** | **1:10560** |
| **B** | **On site** | **Unspecified Pit** | **1865** | **1:10560** |
| **B** | **On site** | **Unspecified Pit** | **1938** | **1:10560** |
| **B** | **On site** | **Unspecified Pit** | **1912** | **1:10560** |
| **B** | **On site** | **Unspecified Pit** | **1894** | **1:10560** |
| **B** | **On site** | **Unspecified Pit** | **1933** | **1:10560** |
| **B** | **On site** | **Unspecified Heap** | **1935** | **1:10560** |
| **B** | **On site** | **Unspecified Pit** | **1933** | **1:10560** |
| **B** | **On site** | **Unspecified Heap** | **1935** | **1:10560** |
| **B** | **On site** | **Unspecified Pit** | **1898** | **1:10560** |
| 2 | 52m E | Unspecified Pit | 1894 | 1:10560 |
| C | 162m N | Gravel Pit | 1912 | 1:10560 |
| D | 163m N | Unspecified Pit | 1912 | 1:10560 |
| D | 164m N | Gravel Pit | 1912 | 1:10560 |
| D | 167m N | Unspecified Pit | 1933 | 1:10560 |
| D | 167m N | Unspecified Pit | 1933 | 1:10560 |
| D | 168m N | Unspecified Pit | 1938 | 1:10560 |
| C | 171m N | Gravel Pit | 1933 | 1:10560 |

| ID | Location | Land Use | Year of mapping | Mapping scale |
|---|---|---|---|---|
| C | 172m N | Gravel Pit | 1912 | 1:10560 |
| C | 173m N | Gravel Pit | 1938 | 1:10560 |
| C | 173m N | Gravel Pit | 1912 | 1:10560 |
| D | 175m N | Unspecified Pit | 1912 | 1:10560 |
| 3 | 226m W | Pond | 1912 | 1:10560 |
| E | 229m NW | Pond | 1912 | 1:10560 |
| E | 229m NW | Pond | 1894 | 1:10560 |
| E | 230m NW | Pond | 1865 | 1:10560 |
| E | 241m NW | Pond | 1912 | 1:10560 |

*This is data is sourced from Ordnance Survey/Groundsure.*

## 18.4 Underground workings

| **Records within 1000m** | **6** |
|---|---|

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 102**

| ID | Location | Land Use | Year of mapping | Mapping scale |
|---|---|---|---|---|
| AB | 738m NE | Tunnel | 1987 | 1:10000 |
| AB | 738m NE | Tunnel | 1974 | 1:10000 |
| AB | 738m NE | Tunnel | 1966 | 1:10560 |
| AE | 807m NE | Tunnel | 1987 | 1:10000 |
| AE | 807m NE | Tunnel | 1974 | 1:10000 |
| AE | 807m NE | Tunnel | 1966 | 1:10560 |

*This is data is sourced from Ordnance Survey/Groundsure.*

## 18.5 Historical Mineral Planning Areas

| Records within 500m | 0 |
|---|---|

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

*This data is sourced from the British Geological Survey.*

## 18.6 Non-coal mining

| Records within 1000m | 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 | 0 |
|---|---|

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

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

## 18.11 Gypsum areas

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

Generalised areas that may be affected by gypsum extraction.

*This data is sourced from British Gypsum.*

## 18.12 Tin mining

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

Generalised areas that may be affected by historical tin mining.

*This data is sourced from 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


Site Outline

Search buffers in metres (m)

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

## 19.1 Radon

| Records on site | 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 108**

| 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.*