



## **APPENDIX A**

### **GeolInsight Report**

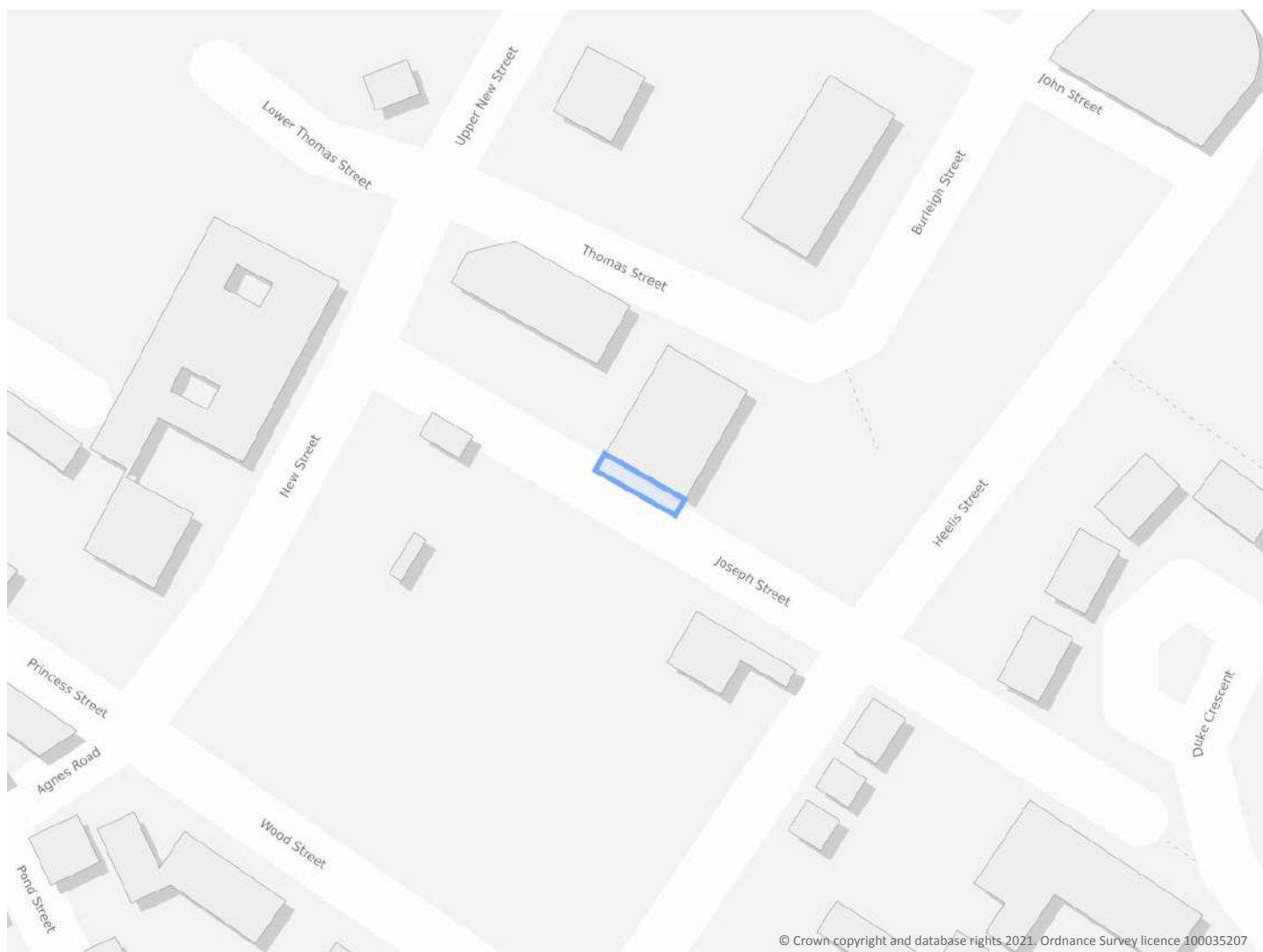
Butlers Automotive Ltd, Thomas Street, Barnsley, S70 1LH

## Order Details

**Date:** 28/04/2021  
**Your ref:** EMS\_689110\_903615  
**Our Ref:** EMS-689110\_903615  
**Client:** emapsite

## Site Details

**Location:** 434540 405890  
**Area:** 0.01 ha  
**Authority:** [Barnsley Metropolitan Borough Council](#)



**Summary of findings**

p. 2

**Aerial image**

p. 5

**OS MasterMap site plan**

p.10

[groundsure.com/insightuserguide](https://groundsure.com/insightuserguide)

Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com)

08444 159 000

## Summary of findings

| Page               | Section              | Geology 1:10,000 scale                                         | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
|--------------------|----------------------|----------------------------------------------------------------|--------------------------|-------|---------|----------|-----------|
| <a href="#">11</a> | <a href="#">1.1</a>  | <a href="#">10k Availability</a>                               | Identified (within 500m) |       |         |          |           |
| <a href="#">12</a> | <a href="#">1.2</a>  | <a href="#">Artificial and made ground (10k)</a>               | 0                        | 0     | 0       | 5        | -         |
| 14                 | 1.3                  | Superficial geology (10k)                                      | 0                        | 0     | 0       | 0        | -         |
| 14                 | 1.4                  | Landslip (10k)                                                 | 0                        | 0     | 0       | 0        | -         |
| <a href="#">15</a> | <a href="#">1.5</a>  | <a href="#">Bedrock geology (10k)</a>                          | 2                        | 2     | 9       | 20       | -         |
| <a href="#">17</a> | <a href="#">1.6</a>  | <a href="#">Bedrock faults and other linear features (10k)</a> | 0                        | 1     | 10      | 20       | -         |
| Page               | Section              | Geology 1:50,000 scale                                         | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| <a href="#">19</a> | <a href="#">2.1</a>  | <a href="#">50k Availability</a>                               | Identified (within 500m) |       |         |          |           |
| <a href="#">20</a> | <a href="#">2.2</a>  | <a href="#">Artificial and made ground (50k)</a>               | 0                        | 0     | 0       | 1        | -         |
| 21                 | 2.3                  | Artificial ground permeability (50k)                           | 0                        | 0     | -       | -        | -         |
| 22                 | 2.4                  | Superficial geology (50k)                                      | 0                        | 0     | 0       | 0        | -         |
| 22                 | 2.5                  | Superficial permeability (50k)                                 | None (within 50m)        |       |         |          |           |
| 22                 | 2.6                  | Landslip (50k)                                                 | 0                        | 0     | 0       | 0        | -         |
| 22                 | 2.7                  | Landslip permeability (50k)                                    | None (within 50m)        |       |         |          |           |
| <a href="#">23</a> | <a href="#">2.8</a>  | <a href="#">Bedrock geology (50k)</a>                          | 1                        | 0     | 6       | 9        | -         |
| <a href="#">24</a> | <a href="#">2.9</a>  | <a href="#">Bedrock permeability (50k)</a>                     | Identified (within 50m)  |       |         |          |           |
| <a href="#">25</a> | <a href="#">2.10</a> | <a href="#">Bedrock faults and other linear features (50k)</a> | 0                        | 1     | 8       | 12       | -         |
| Page               | Section              | Boreholes                                                      | On site                  | 0-50m | 50-250m | 250-500m | 500-2000m |
| <a href="#">26</a> | <a href="#">3.1</a>  | <a href="#">BGS Boreholes</a>                                  | 0                        | 3     | 17      | -        | -         |
| Page               | Section              | Natural ground subsidence                                      |                          |       |         |          |           |
| <a href="#">28</a> | <a href="#">4.1</a>  | <a href="#">Shrink swell clays</a>                             | Negligible (within 50m)  |       |         |          |           |
| <a href="#">29</a> | <a href="#">4.2</a>  | <a href="#">Running sands</a>                                  | Negligible (within 50m)  |       |         |          |           |
| <a href="#">30</a> | <a href="#">4.3</a>  | <a href="#">Compressible deposits</a>                          | Negligible (within 50m)  |       |         |          |           |
| <a href="#">31</a> | <a href="#">4.4</a>  | <a href="#">Collapsible deposits</a>                           | Very low (within 50m)    |       |         |          |           |
| <a href="#">32</a> | <a href="#">4.5</a>  | <a href="#">Landslides</a>                                     | Very low (within 50m)    |       |         |          |           |
| <a href="#">33</a> | <a href="#">4.6</a>  | <a href="#">Ground dissolution of soluble rocks</a>            | Negligible (within 50m)  |       |         |          |           |



| Page      | Section    | Mining, ground workings and natural cavities | On site                | 0-50m | 50-250m | 250-500m | 500-2000m |
|-----------|------------|----------------------------------------------|------------------------|-------|---------|----------|-----------|
| 34        | 5.1        | Natural cavities                             | 0                      | 0     | 0       | 0        | -         |
| <b>35</b> | <b>5.2</b> | <b><u>BritPits</u></b>                       | 0                      | 0     | 1       | 3        | -         |
| <b>36</b> | <b>5.3</b> | <b><u>Surface ground workings</u></b>        | 0                      | 0     | 7       | -        | -         |
| <b>36</b> | <b>5.4</b> | <b><u>Underground workings</u></b>           | 0                      | 0     | 1       | 0        | 7         |
| 37        | 5.5        | Historical Mineral Planning Areas            | 0                      | 0     | 0       | 0        | -         |
| <b>37</b> | <b>5.6</b> | <b><u>Non-coal mining</u></b>                | 1                      | 1     | 0       | 2        | 6         |
| 38        | 5.7        | Mining cavities                              | 0                      | 0     | 0       | 0        | 0         |
| 38        | 5.8        | JPB mining areas                             | None (within 0m)       |       |         |          |           |
| <b>39</b> | <b>5.9</b> | <b><u>Coal mining</u></b>                    | Identified (within 0m) |       |         |          |           |
| 39        | 5.10       | Brine areas                                  | None (within 0m)       |       |         |          |           |
| 39        | 5.11       | Gypsum areas                                 | None (within 0m)       |       |         |          |           |
| 39        | 5.12       | Tin mining                                   | None (within 0m)       |       |         |          |           |
| 39        | 5.13       | Clay mining                                  | None (within 0m)       |       |         |          |           |

| Page | Section | Radon |  |  |  |  |  |
|------|---------|-------|--|--|--|--|--|
|------|---------|-------|--|--|--|--|--|

|           |            |                     |                               |  |  |  |  |
|-----------|------------|---------------------|-------------------------------|--|--|--|--|
| <b>40</b> | <b>6.1</b> | <b><u>Radon</u></b> | Between 1% and 3% (within 0m) |  |  |  |  |
|-----------|------------|---------------------|-------------------------------|--|--|--|--|

| Page      | Section    | Soil chemistry                                        | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
|-----------|------------|-------------------------------------------------------|---------|-------|---------|----------|-----------|
| <b>41</b> | <b>7.1</b> | <b><u>BGS Estimated Background Soil Chemistry</u></b> | 1       | 2     | -       | -        | -         |
| 41        | 7.2        | BGS Estimated Urban Soil Chemistry                    | 0       | 0     | -       | -        | -         |
| 41        | 7.3        | BGS Measured Urban Soil Chemistry                     | 0       | 0     | -       | -        | -         |

| Page | Section | Railway infrastructure and projects    | On site | 0-50m | 50-250m | 250-500m | 500-2000m |
|------|---------|----------------------------------------|---------|-------|---------|----------|-----------|
| 42   | 8.1     | Underground railways (London)          | 0       | 0     | 0       | -        | -         |
| 42   | 8.2     | Underground railways (Non-London)      | 0       | 0     | 0       | -        | -         |
| 42   | 8.3     | Railway tunnels                        | 0       | 0     | 0       | -        | -         |
| 42   | 8.4     | Historical railway and tunnel features | 0       | 0     | 0       | -        | -         |
| 42   | 8.5     | Royal Mail tunnels                     | 0       | 0     | 0       | -        | -         |
| 43   | 8.6     | Historical railways                    | 0       | 0     | 0       | -        | -         |
| 43   | 8.7     | Railways                               | 0       | 0     | 0       | -        | -         |
| 43   | 8.8     | Crossrail 1                            | 0       | 0     | 0       | 0        | -         |



|    |      |             |   |   |   |   |   |
|----|------|-------------|---|---|---|---|---|
| 43 | 8.9  | Crossrail 2 | 0 | 0 | 0 | 0 | - |
| 43 | 8.10 | HS2         | 0 | 0 | 0 | 0 | - |

## Recent aerial photograph



Capture Date: 01/07/2018

Site Area: 0.01ha



## Recent site history - 2013 aerial photograph

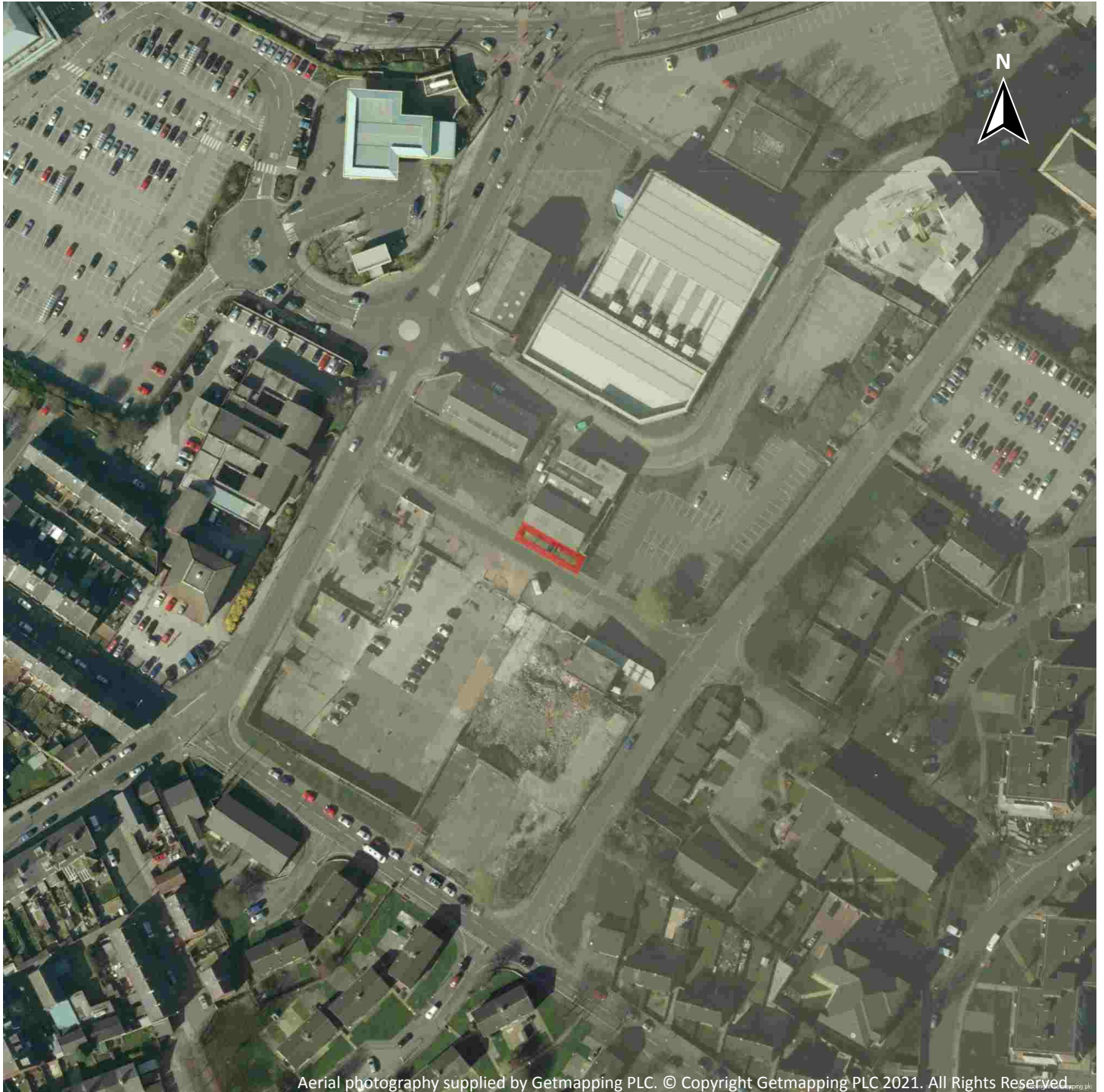


Capture Date: 07/06/2013

Site Area: 0.01ha



## Recent site history - 2012 aerial photograph



Capture Date: 26/03/2012

Site Area: 0.01ha



## Recent site history - 2009 aerial photograph



Capture Date: 11/09/2009

Site Area: 0.01ha



## Recent site history - 1999 aerial photograph



Capture Date: 10/07/1999

Site Area: 0.01ha



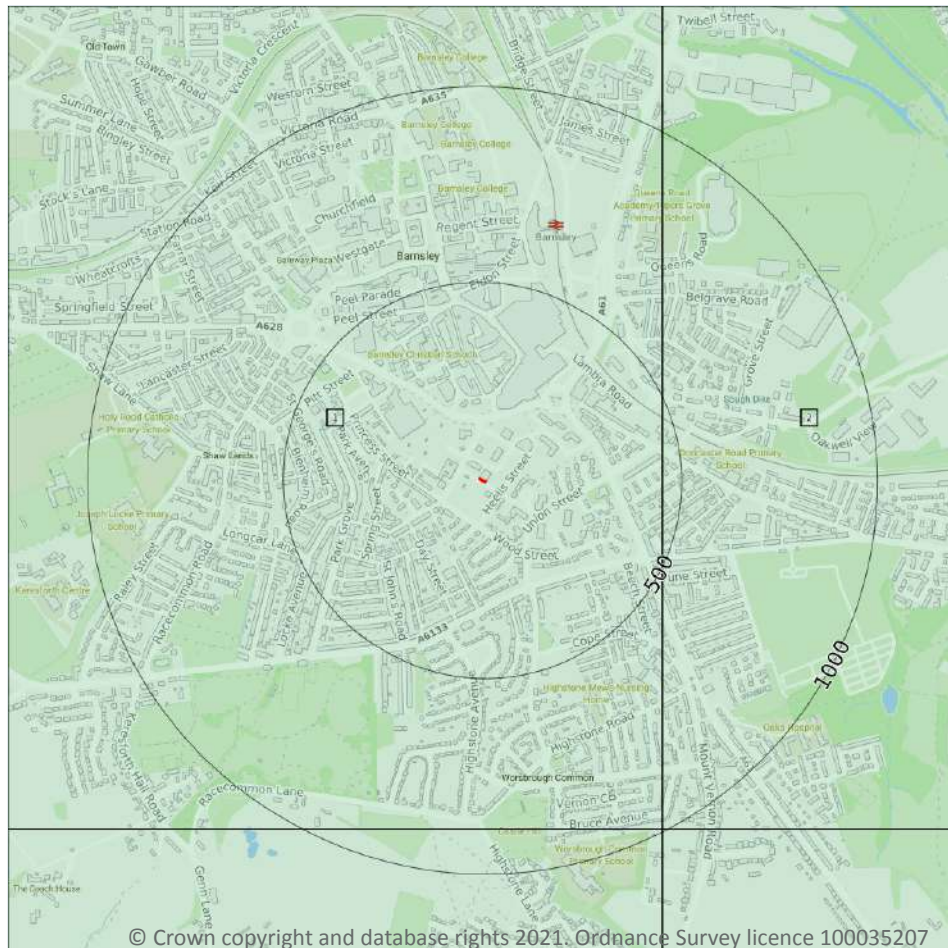
## OS MasterMap site plan



Site Area: 0.01ha



## 1 Geology 1:10,000 scale - Availability



— Site Outline  
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

### 1.1 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.

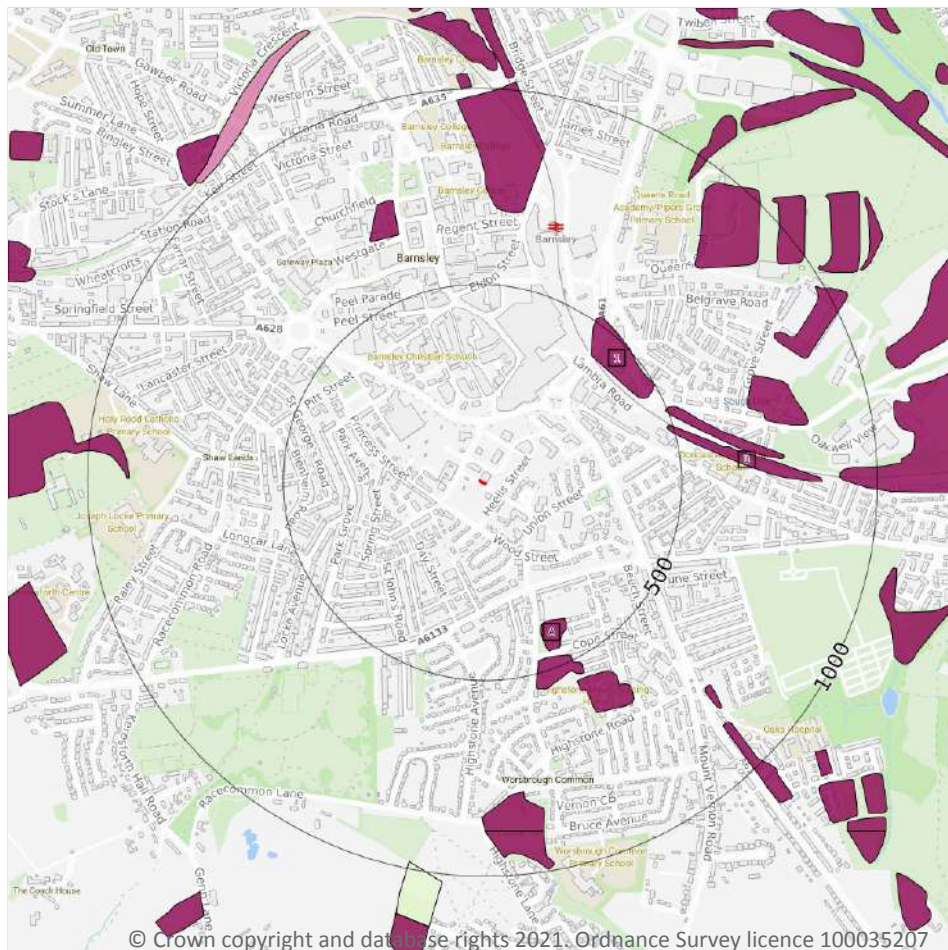
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 11**

| ID | Location | Artificial | Superficial | Bedrock | Mass movement | Sheet No. |
|----|----------|------------|-------------|---------|---------------|-----------|
| 1  | On site  | Full       | Full        | Full    | Full          | SE30NW    |
| 2  | 450m E   | Full       | Full        | Full    | No coverage   | SE30NE    |

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



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



- Site Outline**
- Search buffers in metres (m)
- Reclaimed ground
  - Made ground
  - Worked ground
  - Infilled ground
  - Disturbed ground
  - Landscaped ground

### 1.2 Artificial and made ground (10k)

#### Records within 500m

5

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.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 12**

| ID | Location | LEX Code  | Description             | Rock description   |
|----|----------|-----------|-------------------------|--------------------|
| A  | 381m SE  | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| 1  | 424m NE  | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| A  | 468m S   | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |
| B  | 484m E   | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |



| ID | Location | LEX Code  | Description             | Rock description   |
|----|----------|-----------|-------------------------|--------------------|
| B  | 495m E   | MGR-ARTDP | Made Ground (Undivided) | Artificial Deposit |

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



## Geology 1:10,000 scale - Superficial

### 1.3 Superficial geology (10k)

Records within 500m

0

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

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

### 1.4 Landslip (10k)

Records within 500m

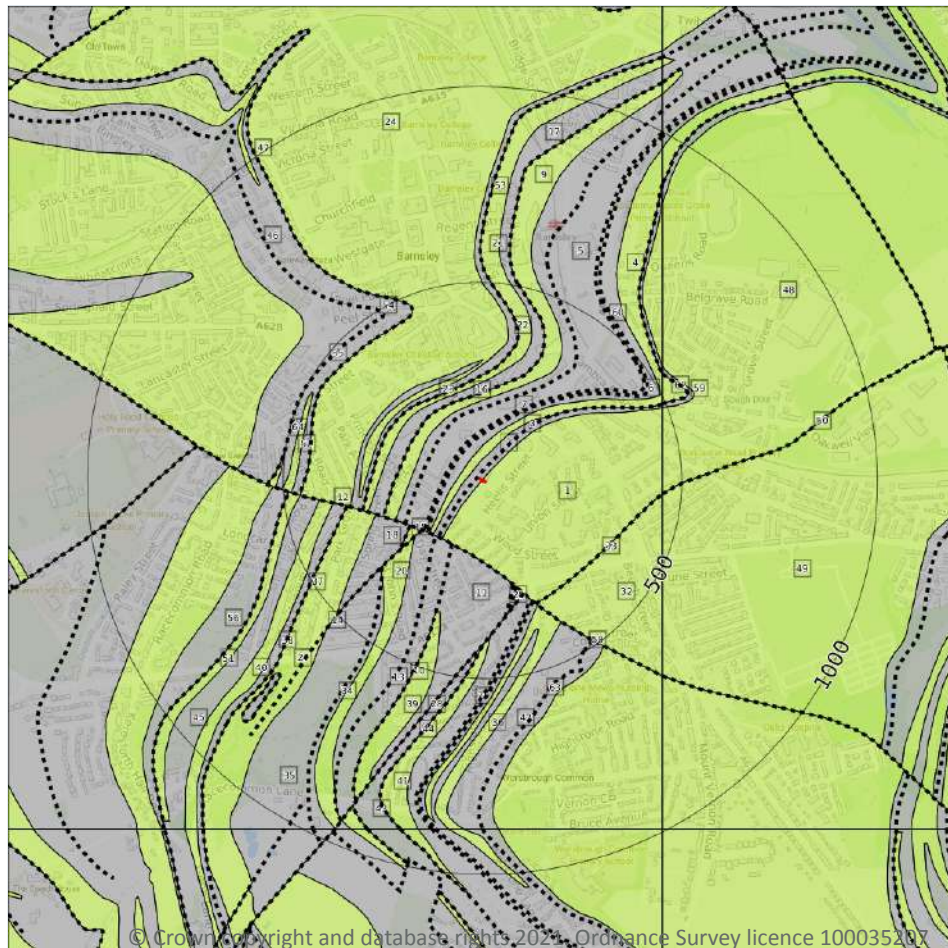
0

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.

### 1.5 Bedrock geology (10k)

Records within 500m

33

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 15**

| ID | Location | LEX Code  | Description                                                                | Rock age                               |
|----|----------|-----------|----------------------------------------------------------------------------|----------------------------------------|
| 1  | On site  | WE-SDST   | Woolley Edge Rock - Sandstone                                              | Duckmantian Sub-age                    |
| 2  | On site  | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovia Sub-age - Duckmantian Sub-age |
| 4  | 25m NW   | PMCM-SDST | Pennine Middle Coal Measures Formation - Sandstone                         | Bolsovia Sub-age - Duckmantian Sub-age |



| ID | Location | LEX Code  | Description                                                                | Rock age                                |
|----|----------|-----------|----------------------------------------------------------------------------|-----------------------------------------|
| 5  | 46m NW   | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovian Sub-age - Duckmantian Sub-age |
| 9  | 162m W   | PMCM-SDST | Pennine Middle Coal Measures Formation - Sandstone                         | Bolsovian Sub-age - Duckmantian Sub-age |
| 11 | 177m SW  | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovian Sub-age - Duckmantian Sub-age |
| 15 | 194m SW  | PMCM-SDST | Pennine Middle Coal Measures Formation - Sandstone                         | Bolsovian Sub-age - Duckmantian Sub-age |
| 17 | 196m NW  | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovian Sub-age - Duckmantian Sub-age |
| 18 | 212m SW  | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovian Sub-age - Duckmantian Sub-age |
| 20 | 220m SW  | PMCM-SDST | Pennine Middle Coal Measures Formation - Sandstone                         | Bolsovian Sub-age - Duckmantian Sub-age |
| 21 | 223m N   | PMCM-SDST | Pennine Middle Coal Measures Formation - Sandstone                         | Bolsovian Sub-age - Duckmantian Sub-age |
| 22 | 235m NW  | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovian Sub-age - Duckmantian Sub-age |
| 24 | 249m N   | KNR-SDST  | Kent's Rock - Sandstone                                                    | Duckmantian Sub-age                     |
| 27 | 278m W   | KNR-SDST  | Kent's Rock - Sandstone                                                    | Duckmantian Sub-age                     |
| 29 | 297m S   | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovian Sub-age - Duckmantian Sub-age |
| 32 | 328m SE  | WE-SDST   | Woolley Edge Rock - Sandstone                                              | Duckmantian Sub-age                     |
| 35 | 335m SW  | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovian Sub-age - Duckmantian Sub-age |
| 36 | 339m SE  | PMCM-SDST | Pennine Middle Coal Measures Formation - Sandstone                         | Bolsovian Sub-age - Duckmantian Sub-age |
| 38 | 343m W   | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovian Sub-age - Duckmantian Sub-age |
| 39 | 350m S   | ABR-SDST  | Abdy Rock - Sandstone                                                      | Duckmantian Sub-age                     |
| 40 | 377m W   | PMCM-SDST | Pennine Middle Coal Measures Formation - Sandstone                         | Bolsovian Sub-age - Duckmantian Sub-age |
| 41 | 388m S   | ABR-SDST  | Abdy Rock - Sandstone                                                      | Duckmantian Sub-age                     |
| 42 | 405m SE  | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovian Sub-age - Duckmantian Sub-age |



| ID | Location | LEX Code  | Description                                                                | Rock age                               |
|----|----------|-----------|----------------------------------------------------------------------------|----------------------------------------|
| 43 | 407m S   | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovia Sub-age - Duckmantian Sub-age |
| 45 | 410m W   | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovia Sub-age - Duckmantian Sub-age |
| 46 | 436m W   | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovia Sub-age - Duckmantian Sub-age |
| 48 | 450m E   | WE-SDST   | Woolley Edge Rock - Sandstone                                              | Duckmantian Sub-age                    |
| 49 | 452m E   | WE-SDST   | Woolley Edge Rock - Sandstone                                              | Duckmantian Sub-age                    |
| 51 | 458m W   | PMCM-SDST | Pennine Middle Coal Measures Formation - Sandstone                         | Bolsovia Sub-age - Duckmantian Sub-age |
| 52 | 461m W   | PMCM-SDST | Pennine Middle Coal Measures Formation - Sandstone                         | Bolsovia Sub-age - Duckmantian Sub-age |
| 56 | 487m W   | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovia Sub-age - Duckmantian Sub-age |
| 59 | 488m NE  | PMCM-MDSS | Pennine Middle Coal Measures Formation - Mudstone, Siltstone And Sandstone | Bolsovia Sub-age - Duckmantian Sub-age |
| 62 | 492m NE  | PMCM-SDST | Pennine Middle Coal Measures Formation - Sandstone                         | Bolsovia Sub-age - Duckmantian Sub-age |

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

## 1.6 Bedrock faults and other linear features (10k)

**Records within 500m**

**31**

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 15**

| ID | Location | Category       | Description                 |
|----|----------|----------------|-----------------------------|
| 3  | 6m NW    | ROCK           | Coal seam, inferred         |
| 6  | 74m NW   | FOSSIL_HORIZON | Fossil horizon, marine band |
| 7  | 80m NW   | ROCK           | Coal seam, inferred         |
| 8  | 138m NW  | ROCK           | Coal seam, inferred         |
| 10 | 177m SW  | ROCK           | Coal seam, inferred         |

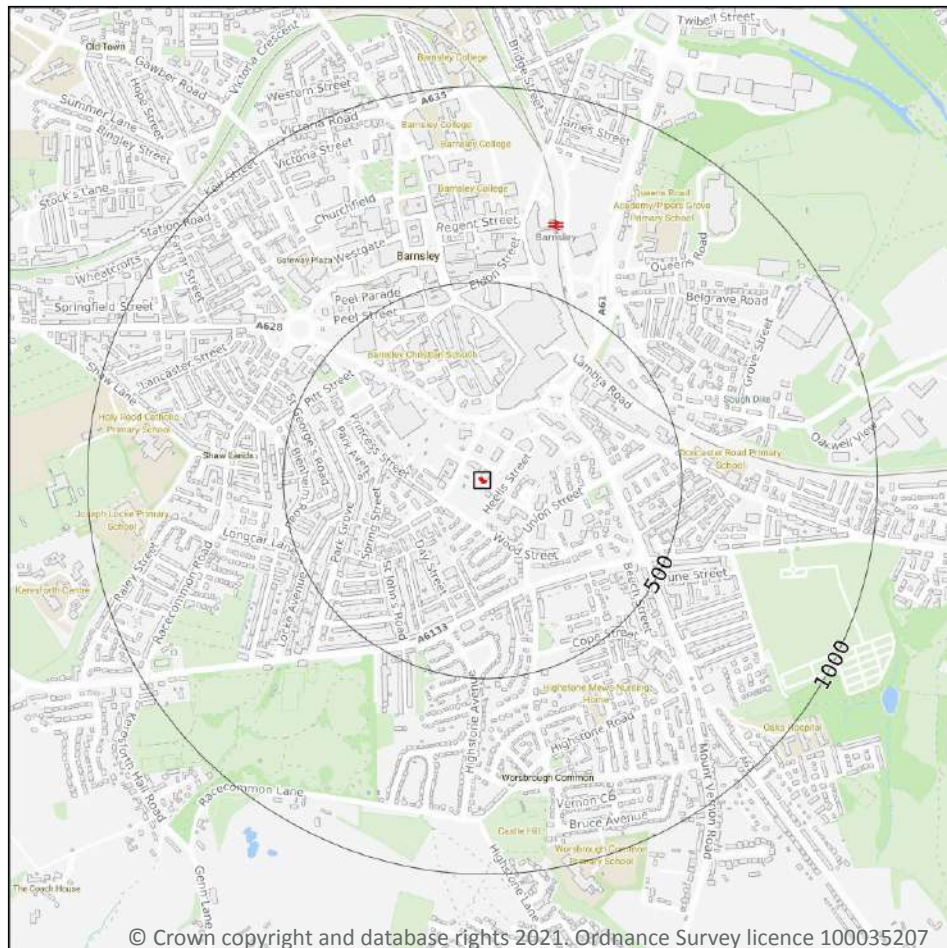


| ID | Location | Category       | Description                 |
|----|----------|----------------|-----------------------------|
| 12 | 177m SW  | FAULT          | Normal fault, inferred      |
| 13 | 182m SW  | ROCK           | Coal seam, inferred         |
| 14 | 194m SW  | FAULT          | Normal fault, inferred      |
| 16 | 196m NW  | ROCK           | Coal seam, inferred         |
| 19 | 212m SW  | ROCK           | Coal seam, inferred         |
| 23 | 235m NW  | ROCK           | Coal seam, inferred         |
| 25 | 268m S   | ROCK           | Coal seam, inferred         |
| 26 | 275m S   | FOSSIL_HORIZON | Fossil horizon, marine band |
| 28 | 297m S   | FAULT          | Normal fault, inferred      |
| 30 | 316m S   | ROCK           | Coal seam, inferred         |
| 31 | 326m S   | FOSSIL_HORIZON | Fossil horizon, marine band |
| 33 | 328m SE  | FAULT          | Normal fault, inferred      |
| 34 | 335m SW  | ROCK           | Coal seam, inferred         |
| 37 | 343m W   | ROCK           | Coal seam, inferred         |
| 44 | 407m S   | ROCK           | Coal seam, inferred         |
| 47 | 436m W   | ROCK           | Coal seam, inferred         |
| 50 | 452m E   | FAULT          | Normal fault, inferred      |
| 53 | 468m N   | ROCK           | Coal seam, observed         |
| 54 | 480m NW  | ROCK           | Coal seam, inferred         |
| 55 | 483m NW  | ROCK           | Coal seam, observed         |
| 57 | 487m W   | ROCK           | Coal seam, inferred         |
| 58 | 488m SE  | ROCK           | Coal seam, inferred         |
| 60 | 491m NE  | ROCK           | Coal seam, observed         |
| 61 | 492m NE  | ROCK           | Coal seam, inferred         |
| 63 | 497m SE  | ROCK           | Coal seam, observed         |
| 64 | 499m W   | ROCK           | Coal seam, inferred         |

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



## 2 Geology 1:50,000 scale - Availability



— Site Outline  
Search buffers in metres (m)

☐ Geological map tile

### 2.1 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.

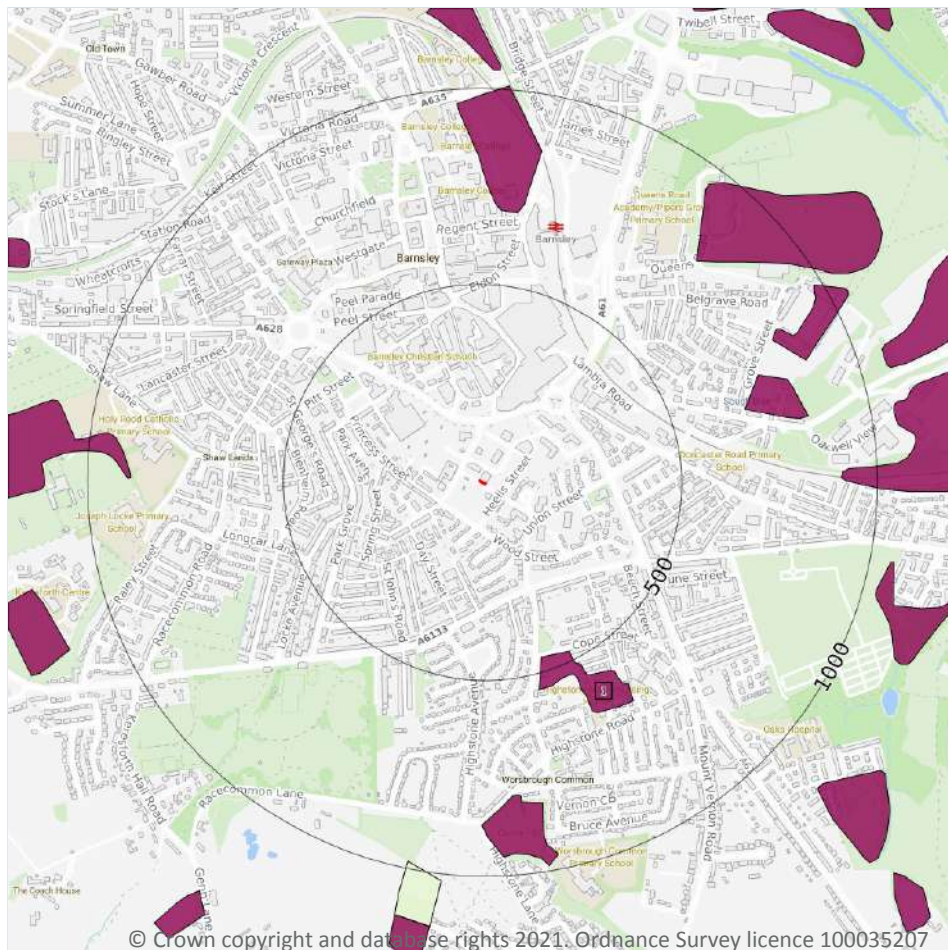
Features are displayed on the Geology 1:50,000 scale - Availability map on **page 19**

| ID | Location | Artificial  | Superficial | Bedrock | Mass movement | Sheet No.         |
|----|----------|-------------|-------------|---------|---------------|-------------------|
| 1  | On site  | No coverage | Full        | Full    | Full          | EW087_barnsley_v4 |

This data is sourced from the British Geological Survey.



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



- Site Outline
- Search buffers in metres (m)
- Made ground
  - Worked ground
  - Infilled ground
  - Disturbed ground
  - Landscaped ground

### 2.2 Artificial and made ground (50k)

#### Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 20**

| ID | Location | LEX Code  | Description             | Rock description   |
|----|----------|-----------|-------------------------|--------------------|
| 1  | 462m S   | MGR-ARTDP | MADE GROUND (UNDIVIDED) | ARTIFICIAL DEPOSIT |

This data is sourced from the British Geological Survey.

## 2.3 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

### 2.4 Superficial geology (50k)

Records within 500m

0

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.

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

### 2.5 Superficial 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 superficial deposits (the zone between the land surface and the water table).

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

### 2.6 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.*

### 2.7 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.

### 2.8 Bedrock geology (50k)

Records within 500m

16

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 23**

| ID | Location | LEX Code  | Description                                                                | Rock age    |
|----|----------|-----------|----------------------------------------------------------------------------|-------------|
| 1  | On site  | WE-SDST   | WOOLLEY EDGE ROCK - SANDSTONE                                              | WESTPHALIAN |
| 4  | 73m NW   | PMCM-MDSS | PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 6  | 133m NW  | PMCM-SDST | PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE                         | WESTPHALIAN |



| ID | Location | LEX Code  | Description                                                                | Rock age    |
|----|----------|-----------|----------------------------------------------------------------------------|-------------|
| 9  | 177m SW  | PMCM-MDSS | PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 12 | 203m SW  | PMCM-SDST | PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE                         | WESTPHALIAN |
| 13 | 226m NW  | KNR-SDST  | KENT'S ROCK - SANDSTONE                                                    | WESTPHALIAN |
| 16 | 243m SW  | PMCM-MDSS | PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 18 | 278m W   | KNR-SDST  | KENT'S ROCK - SANDSTONE                                                    | WESTPHALIAN |
| 19 | 297m S   | PMCM-MDSS | PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 22 | 326m S   | PMCM-SDST | PENNINE MIDDLE COAL MEASURES FORMATION - SANDSTONE                         | WESTPHALIAN |
| 23 | 328m SE  | WE-SDST   | WOOLLEY EDGE ROCK - SANDSTONE                                              | WESTPHALIAN |
| 25 | 351m S   | ABR-SDST  | ABDY ROCK - SANDSTONE                                                      | WESTPHALIAN |
| 28 | 385m S   | ABR-SDST  | ABDY ROCK - SANDSTONE                                                      | WESTPHALIAN |
| 29 | 405m W   | PMCM-MDSS | PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 30 | 437m W   | PMCM-MDSS | PENNINE MIDDLE COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE | WESTPHALIAN |
| 37 | 488m SE  | WE-SDST   | WOOLLEY EDGE ROCK - SANDSTONE                                              | WESTPHALIAN |

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

## 2.9 Bedrock permeability (50k)

### Records within 50m

1

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

| Location | Flow type | Maximum permeability | Minimum permeability |
|----------|-----------|----------------------|----------------------|
| On site  | Fracture  | High                 | Moderate             |

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



## 2.10 Bedrock faults and other linear features (50k)

### Records within 500m

**21**

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.

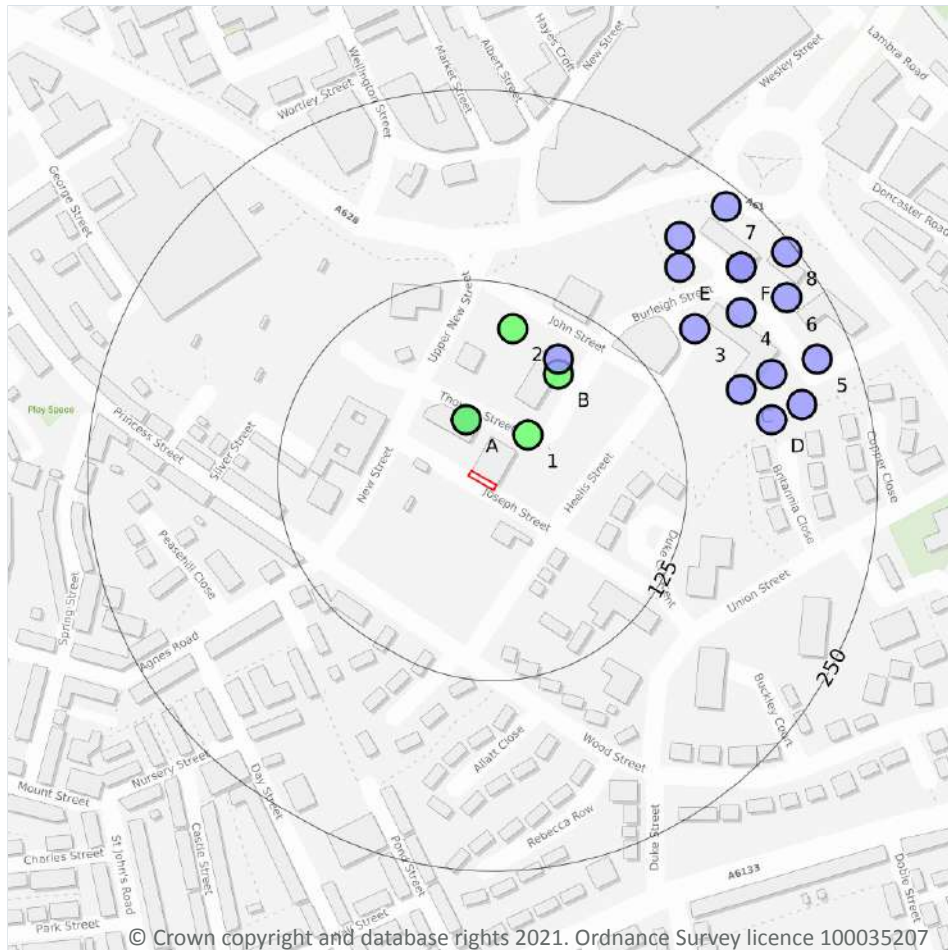
Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 23**

| ID | Location | Category | Description         |
|----|----------|----------|---------------------|
| 2  | 20m NW   | ROCK     | Coal seam, inferred |
| 3  | 73m NW   | ROCK     | Coal seam, inferred |
| 5  | 133m NW  | ROCK     | Coal seam, inferred |
| 7  | 177m NW  | ROCK     | Coal seam, inferred |
| 8  | 177m SW  | ROCK     | Coal seam, inferred |
| 10 | 177m SW  | FAULT    | Fault, inferred     |
| 11 | 182m SW  | ROCK     | Coal seam, inferred |
| 14 | 237m NE  | ROCK     | Coal seam, inferred |
| 15 | 243m SW  | ROCK     | Coal seam, inferred |
| 17 | 254m N   | ROCK     | Coal seam, inferred |
| 20 | 297m S   | FAULT    | Fault, inferred     |
| 21 | 326m S   | ROCK     | Coal seam, inferred |
| 24 | 328m SE  | FAULT    | Fault, inferred     |
| 26 | 351m S   | ROCK     | Coal seam, inferred |
| 27 | 361m W   | ROCK     | Coal seam, inferred |
| 31 | 437m W   | ROCK     | Coal seam, inferred |
| 32 | 449m S   | ROCK     | Coal seam, inferred |
| 33 | 456m NE  | ROCK     | Coal seam, inferred |
| 34 | 483m NW  | ROCK     | Coal seam, inferred |
| 35 | 487m W   | ROCK     | Coal seam, inferred |
| 36 | 488m SE  | ROCK     | Coal seam, inferred |

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



## 3 Boreholes



— Site Outline  
Search buffers in metres (m)

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

### 3.1 BGS Boreholes

Records within 250m

20

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 26**

| ID | Location | Grid reference | Name                     | Length | Confidential | Web link                 |
|----|----------|----------------|--------------------------|--------|--------------|--------------------------|
| A  | 34m N    | 434530 405930  | NEW STREET BARNSELY TP 3 | 4.0    | N            | <a href="#">15394954</a> |
| A  | 34m N    | 434530 405930  | NEW STREET BARNSELY 3    | 21.0   | N            | <a href="#">15394944</a> |
| 1  | 39m NE   | 434570 405920  | NEW STREET BARNSELY 2    | 15.5   | N            | <a href="#">15394943</a> |

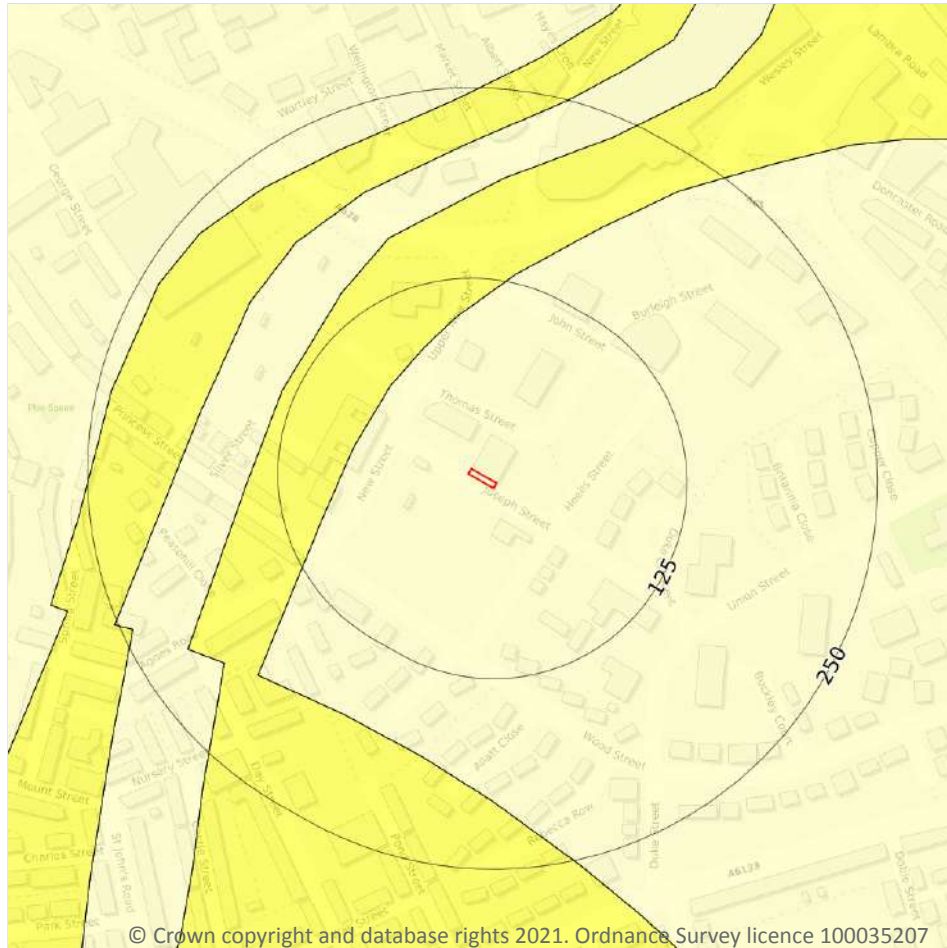


| ID | Location | Grid reference | Name                        | Length | Confidential | Web link                 |
|----|----------|----------------|-----------------------------|--------|--------------|--------------------------|
| B  | 83m NE   | 434590 405960  | NEW STREET BARNSELEY 1      | 22.0   | N            | <a href="#">15394939</a> |
| B  | 92m NE   | 434590 405970  | NEW STREET BARNSELEY TP 1   | 4.1    | N            | <a href="#">15394949</a> |
| 2  | 97m N    | 434560 405990  | NEW STREET BARNSELEY 4      | 17.0   | N            | <a href="#">15394945</a> |
| 3  | 166m NE  | 434680 405990  | SHEFFIELD ROAD BARNSELEY 9  | 7.1    | N            | <a href="#">16104925</a> |
| C  | 172m E   | 434710 405950  | SHEFFIELD ROAD BARNSELEY 7  | 3.6    | N            | <a href="#">16104923</a> |
| D  | 186m E   | 434730 405930  | SHEFFIELD ROAD BARNSELEY 1  | 2.0    | N            | <a href="#">16104905</a> |
| E  | 187m NE  | 434670 406030  | SHEFFIELD ROAD BARNSELEY 15 | 4.5    | N            | <a href="#">16104934</a> |
| C  | 195m E   | 434730 405960  | SHEFFIELD ROAD BARNSELEY 6  | 2.7    | N            | <a href="#">16104922</a> |
| 4  | 196m NE  | 434710 406000  | SHEFFIELD ROAD BARNSELEY 8  | 3.2    | N            | <a href="#">16104924</a> |
| E  | 203m NE  | 434670 406050  | SHEFFIELD ROAD BARNSELEY 10 | 5.0    | N            | <a href="#">16104926</a> |
| D  | 207m E   | 434750 405940  | SHEFFIELD ROAD BARNSELEY 2  | 4.0    | N            | <a href="#">16104911</a> |
| F  | 215m NE  | 434710 406030  | SHEFFIELD ROAD BARNSELEY 12 | 3.9    | N            | <a href="#">16104929</a> |
| F  | 215m NE  | 434710 406030  | SHEFFIELD ROAD BARNSELEY 11 | 3.0    | N            | <a href="#">16104927</a> |
| 5  | 226m E   | 434760 405970  | SHEFFIELD ROAD BARNSELEY 5  | 3.8    | N            | <a href="#">16104919</a> |
| 6  | 227m NE  | 434740 406010  | SHEFFIELD ROAD BARNSELEY 13 | 2.5    | N            | <a href="#">16104931</a> |
| 7  | 237m NE  | 434700 406070  | BARNSELEY INNER RELIEF RD 7 | 3.0    | N            | <a href="#">84114</a>    |
| 8  | 244m NE  | 434740 406040  | SHEFFIELD ROAD BARNSELEY 14 | 4.1    | N            | <a href="#">16104933</a> |

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



## 4 Natural ground subsidence - Shrink swell clays



- Site Outline
- Search buffers in metres (m)
- ☐ No data
  - ☐ Negligible
  - ☒ Very low
  - ☐ Low
  - ☐ Moderate
  - ☐ High

### 4.1 Shrink swell clays

#### Records within 50m

1

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

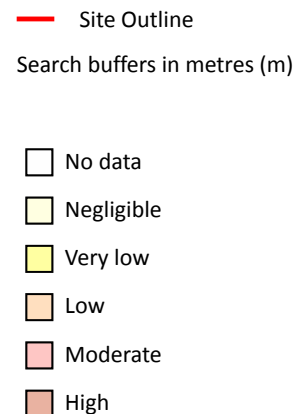
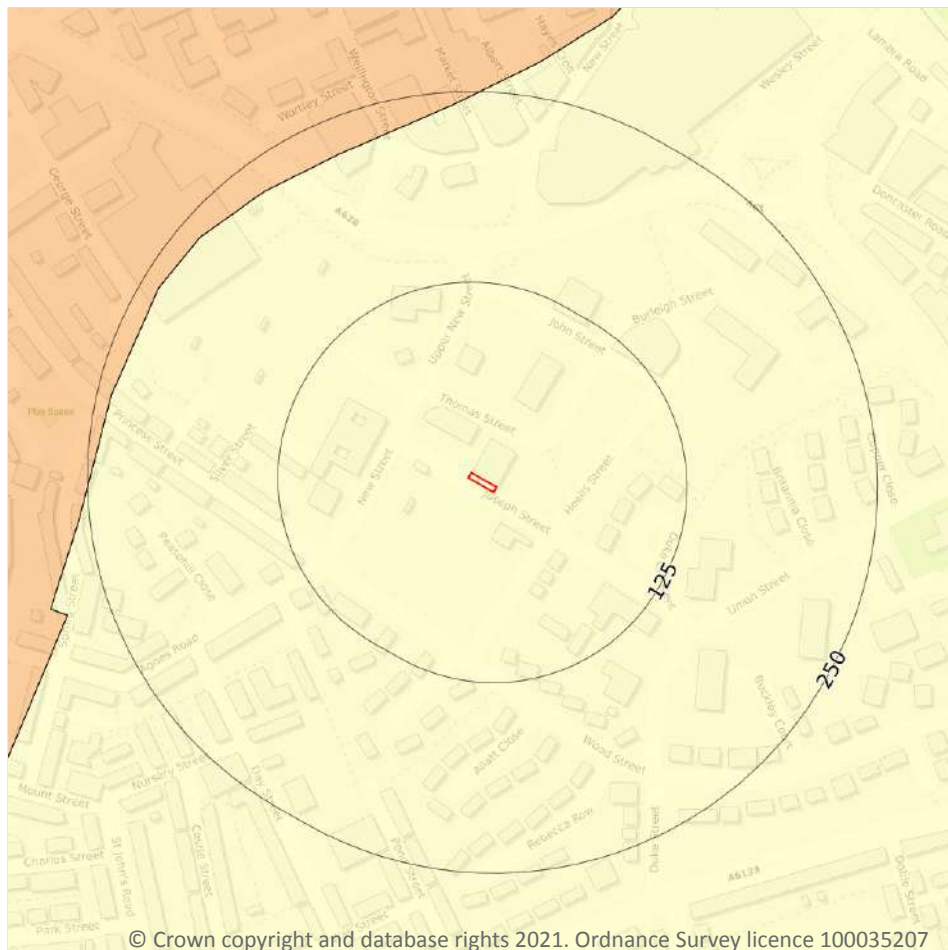
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 28**

| Location | Hazard rating | Details                                      |
|----------|---------------|----------------------------------------------|
| On site  | Negligible    | Ground conditions predominantly non-plastic. |

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



## Natural ground subsidence - Running sands



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### 4.2 Running sands

#### Records within 50m

1

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

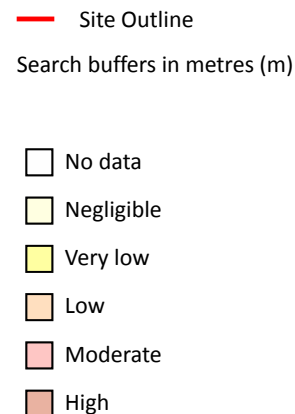
Features are displayed on the Natural ground subsidence - Running sands map on **page 29**

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

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



## Natural ground subsidence - Compressible deposits



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### 4.3 Compressible deposits

#### Records within 50m

1

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

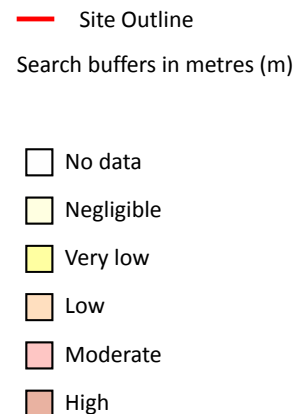
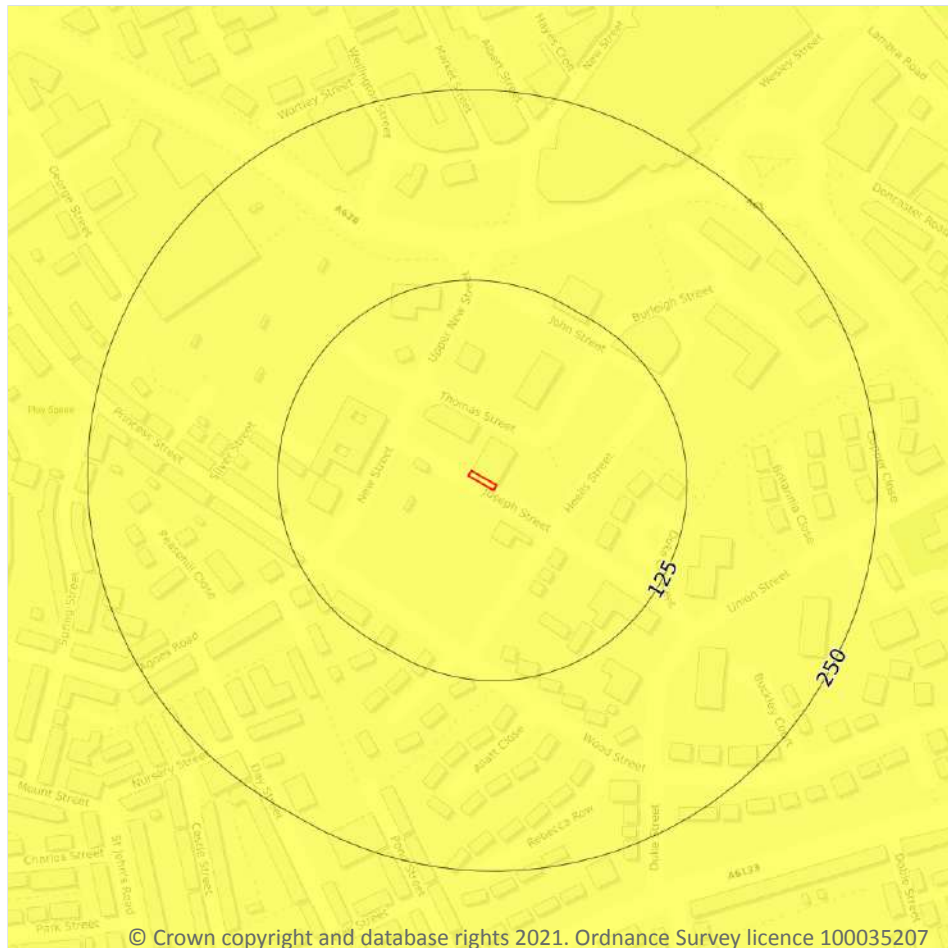
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 30**

| Location | Hazard rating | Details                                       |
|----------|---------------|-----------------------------------------------|
| On site  | Negligible    | Compressible strata are not thought to occur. |

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



## Natural ground subsidence - Collapsible deposits



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### 4.4 Collapsible deposits

#### Records within 50m

1

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

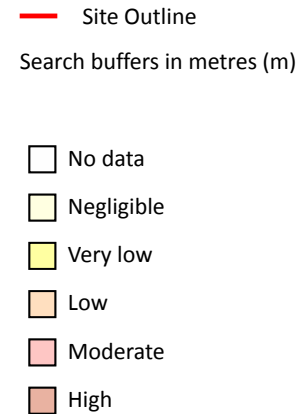
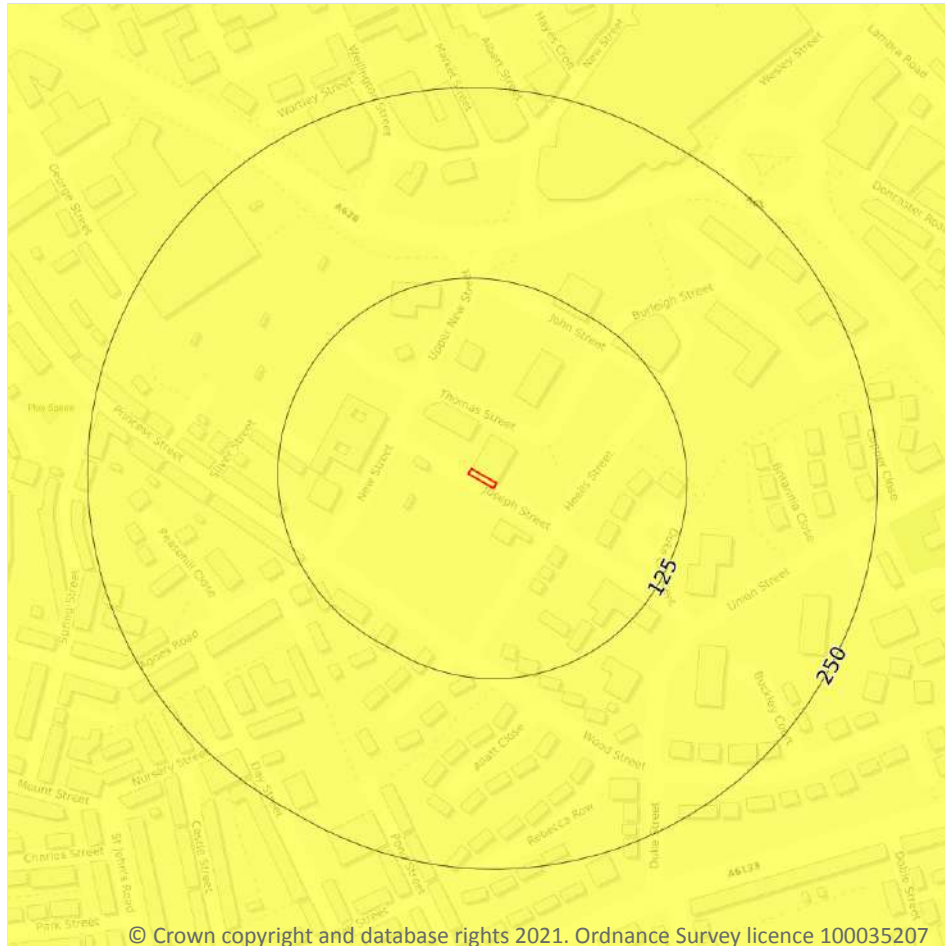
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 31**

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

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



## Natural ground subsidence - Landslides



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### 4.5 Landslides

#### Records within 50m

1

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

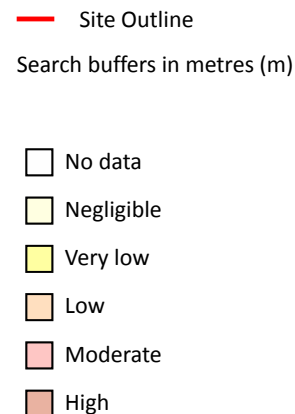
Features are displayed on the Natural ground subsidence - Landslides map on **page 32**

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

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



## Natural ground subsidence - Ground dissolution of soluble rocks



### 4.6 Ground dissolution of soluble rocks

#### Records within 50m

1

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

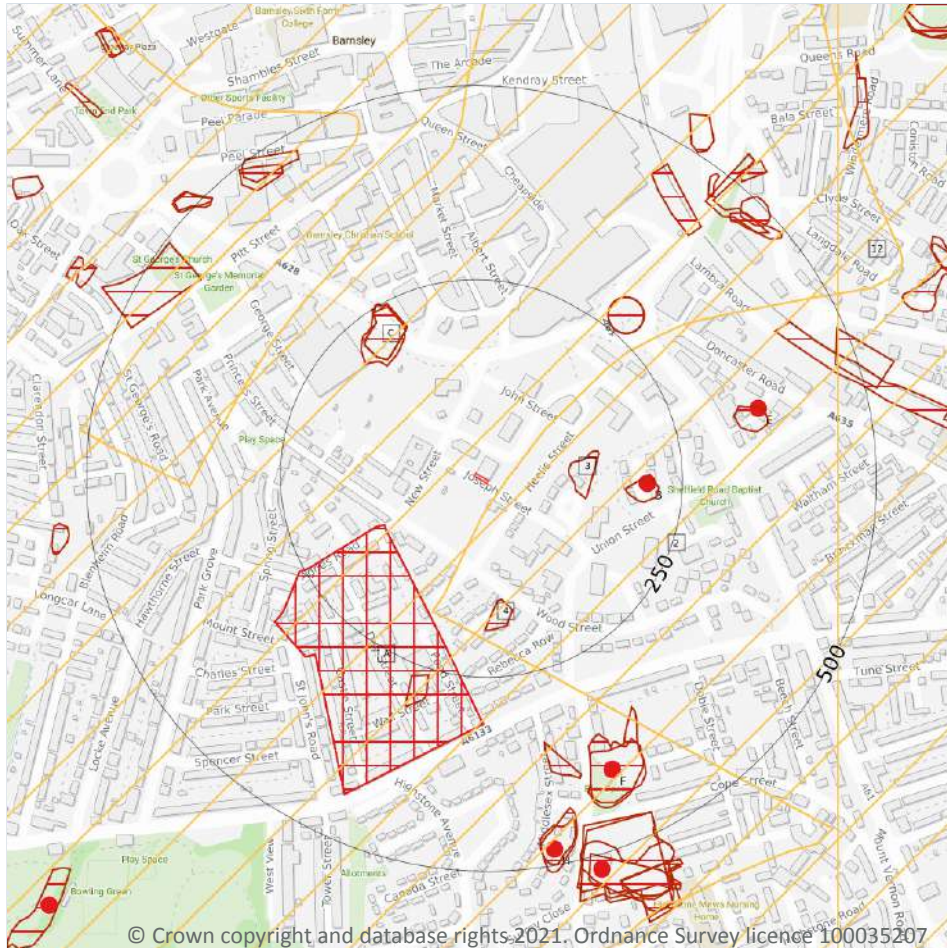
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 33**

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

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



## 5 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

### 5.1 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.*

## 5.2 BritPits

### Records within 500m

4

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 34**

| ID | Location | Details                                                                                                       | Description                                                                                                                                                                                                                                                                                                                              |
|----|----------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| B  | 204m E   | Name: Union Street<br>Address: BARNSELEY, South Yorkshire<br>Commodity: Sandstone<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 |
| E  | 359m E   | Name: Taylor Row<br>Address: BARNSELEY, South Yorkshire<br>Commodity: Sandstone<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 |
| F  | 402m SE  | Name: Warren Brick Works<br>Address: WORSBROUGH, South Yorkshire<br>Commodity: Clay & Shale<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 |
| H  | 479m S   | Name: Warren Brick Works<br>Address: WORSBROUGH, South Yorkshire<br>Commodity: Clay & Shale<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.*



### 5.3 Surface ground workings

#### Records within 250m

**7**

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 34**

| ID | Location | Land Use           | Year of mapping | Mapping scale |
|----|----------|--------------------|-----------------|---------------|
| 3  | 104m E   | Unspecified Pit    | 1850            | 1:10560       |
| A  | 132m SW  | Colliery           | 1890            | 1:10560       |
| 4  | 151m S   | Sandstone Quarry   | 1850            | 1:10560       |
| B  | 176m E   | Unspecified Quarry | 1850            | 1:10560       |
| C  | 180m NW  | Pond               | 1850            | 1:10560       |
| C  | 186m NW  | Pond               | 1904            | 1:10560       |
| C  | 186m NW  | Pond               | 1890            | 1:10560       |

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

### 5.4 Underground workings

#### Records within 1000m

**8**

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 34**

| ID | Location | Land Use          | Year of mapping | Mapping scale |
|----|----------|-------------------|-----------------|---------------|
| A  | 132m SW  | Colliery          | 1890            | 1:10560       |
| -  | 791m NE  | Colliery          | 1948            | 1:10560       |
| -  | 795m NE  | Colliery          | 1951            | 1:10560       |
| -  | 831m NE  | Unspecified Drift | 1951            | 1:10560       |
| -  | 836m NE  | Disused Air Shaft | 1966            | 1:10560       |
| -  | 844m NE  | Unspecified Drift | 1948            | 1:10560       |
| -  | 891m S   | Air Shaft         | 1938            | 1:10560       |
| -  | 957m SE  | Colliery          | 1890            | 1:10560       |



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

## 5.5 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.*

## 5.6 Non-coal mining

**Records within 1000m**

**10**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 34**

| ID | Location | Name           | Commodity             | Class | Likelihood                                                                                                                                                                           |
|----|----------|----------------|-----------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | On site  | Not available  | Iron Ore (Bedded)     | B     | Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered |
| 2  | 18m SE   | Sheffield Area | Vein Mineral/Iron ore | B     | Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered |
| 6  | 311m NW  | Sheffield Area | Vein Mineral/Iron ore | B     | Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered |
| 10 | 450m E   | Sheffield Area | Vein Mineral/Iron ore | B     | Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered |
| 12 | 511m NE  | Not available  | Iron Ore (Bedded)     | B     | Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered |



| ID | Location | Name           | Commodity             | Class | Likelihood                                                                                                                                                                           |
|----|----------|----------------|-----------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 19 | 678m NE  | Sheffield Area | Vein Mineral/Iron ore | B     | Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered |
| -  | 847m NE  | Not available  | Iron Ore (Bedded)     | B     | Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered |
| -  | 884m S   | Sheffield Area | Vein Mineral/Iron ore | B     | Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered |
| -  | 886m S   | Not available  | Iron Ore (Bedded)     | B     | Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered |
| -  | 993m SE  | Sheffield Area | Vein Mineral/Iron ore | B     | Localised small scale underground mining may have occurred. Potential for difficult ground conditions are unlikely or localised and are at a level where they need not be considered |

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

## 5.7 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.*

## 5.8 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.*



## 5.9 Coal mining

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

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

| Location | Details                                                                                                                                                                                                                                                              |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| On site  | The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider. |

*This data is sourced from the Coal Authority.*

## 5.10 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.*

## 5.11 Gypsum areas

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

Generalised areas that may be affected by gypsum extraction.

*This data is sourced from British Gypsum.*

## 5.12 Tin mining

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

Generalised areas that may be affected by historical tin mining.

*This data is sourced from Mining Searches UK.*

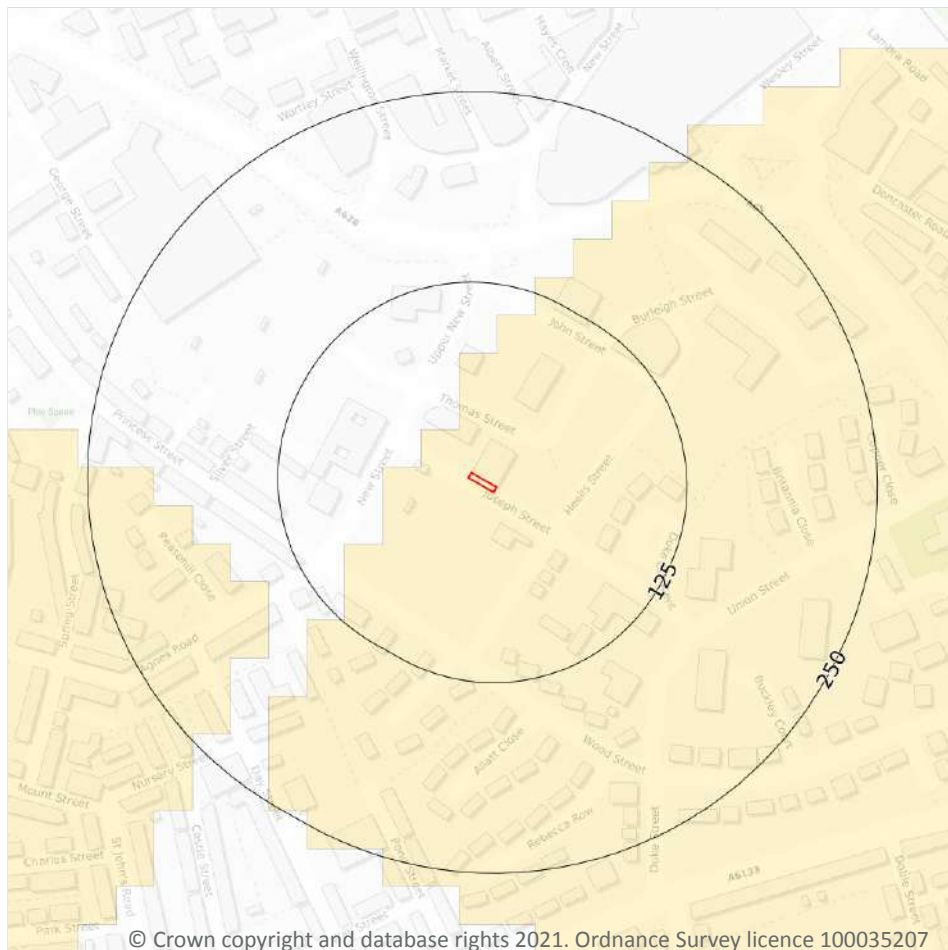
## 5.13 Clay mining

|                 |   |
|-----------------|---|
| 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).*

## 6 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%

### 6.1 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 40**

| Location | Estimated properties affected | Radon Protection Measures required |
|----------|-------------------------------|------------------------------------|
| On site  | Between 1% and 3%             | None                               |

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



## 7 Soil chemistry

### 7.1 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 km<sup>2</sup>. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km<sup>2</sup>; 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               |
|----------------|----------------------|-----------------------|------------------------|-----------------------|------------------|-----------------------|----------------------|
| <b>On site</b> | <b>25 - 35 mg/kg</b> | <b>No data</b>        | <b>100 - 200 mg/kg</b> | <b>60 - 120 mg/kg</b> | <b>1.8 mg/kg</b> | <b>90 - 120 mg/kg</b> | <b>30 - 45 mg/kg</b> |
| 18m SE         | 15 - 25 mg/kg        | No data               | 100 - 200 mg/kg        | 60 - 120 mg/kg        | 1.8 mg/kg        | 60 - 90 mg/kg         | 15 - 30 mg/kg        |
| 31m W          | 25 - 35 mg/kg        | No data               | 100 - 200 mg/kg        | 60 - 120 mg/kg        | 1.8 mg/kg        | 90 - 120 mg/kg        | 30 - 45 mg/kg        |

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

### 7.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

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

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

### 7.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

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

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



## 8 Railway infrastructure and projects

### 8.1 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.*

### 8.2 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.*

### 8.3 Railway tunnels

**Records within 250m****0**

Railway tunnels taken from contemporary Ordnance Survey mapping.

*This data is sourced from the Ordnance Survey.*

### 8.4 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.*

### 8.5 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.*

## 8.6 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.*

## 8.7 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.*

## 8.8 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.*

## 8.9 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.*

## 8.10 HS2

**Records within 500m**

**0**

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

*This data is sourced from HS2 Ltd.*



## Data providers

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

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