

14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

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 116](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	TQ38SW

This data is sourced from the British Geological Survey.



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

14.2 Artificial and made ground (10k)

Records within 500m

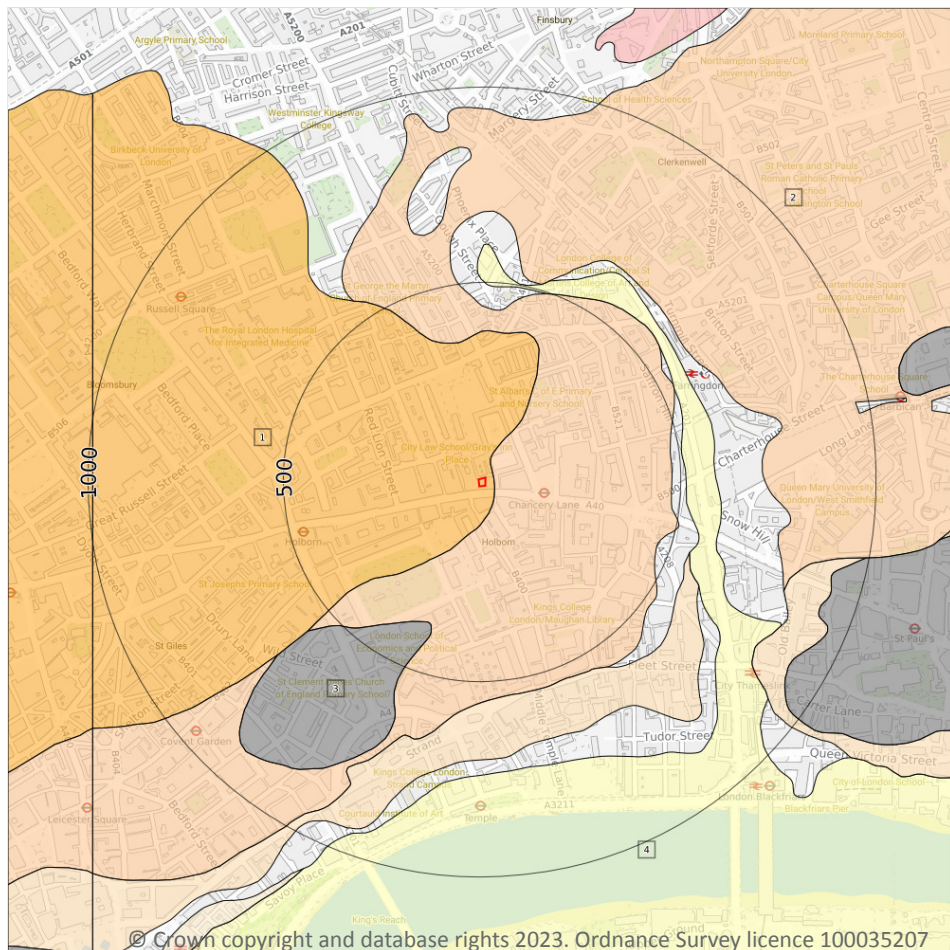
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

4

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 118](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	LHGR-XSV	Lynch Hill Gravel Member - Sand And Gravel	Sand And Gravel
2	20m NE	HAGR-XSV	Hackney Gravel Member - Sand And Gravel	Sand And Gravel
3	372m S	LASI-Z	Langley Silt Member - Silt (unlithified Deposits Coding Scheme)	Silt



ID	Location	LEX Code	Description	Rock description
4	489m N	ALV-XCZ	Alluvium - Clay And Silt	Clay And Silt

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

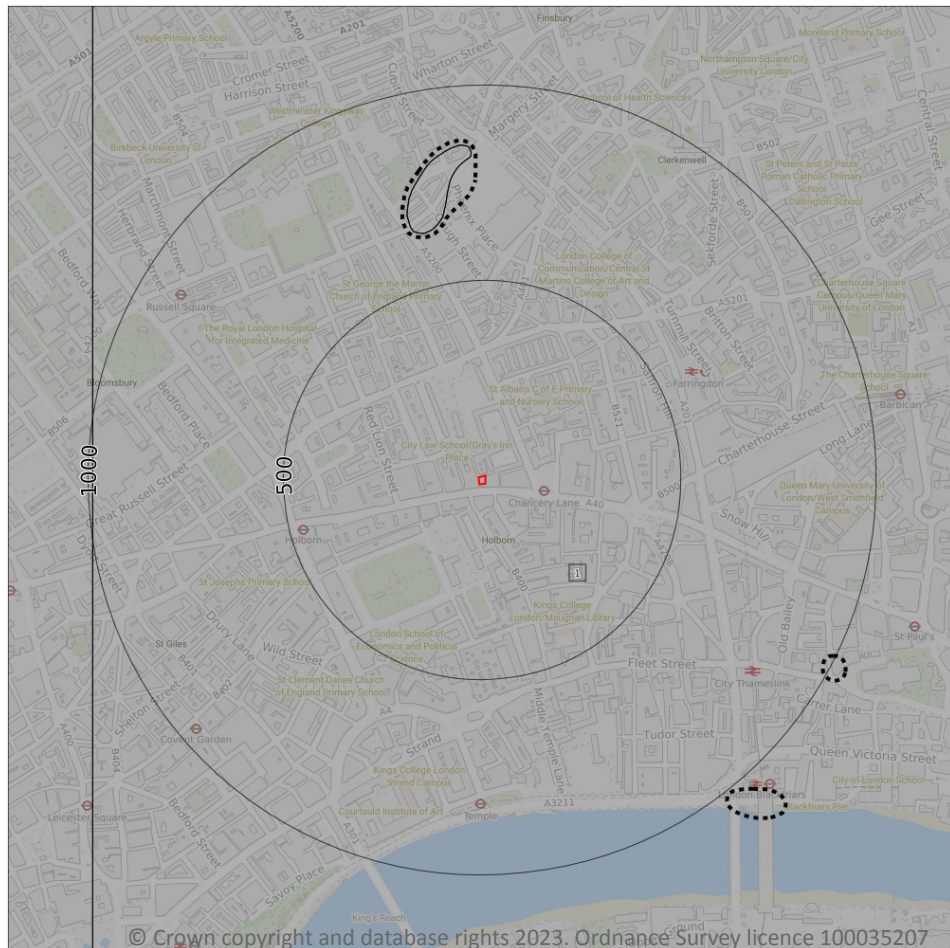
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

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

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

14.5 Bedrock geology (10k)

Records within 500m

1

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 120](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	LC-CLAY	London Clay Formation - Clay	Eocene Epoch

This data is sourced from the British Geological Survey.



14.6 Bedrock faults and other linear features (10k)

Records within 500m

0

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.

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



— Site Outline

Search buffers in metres (m)

□ Geological map tile

15.1 50k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 122](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	EW256_north_london_v4

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

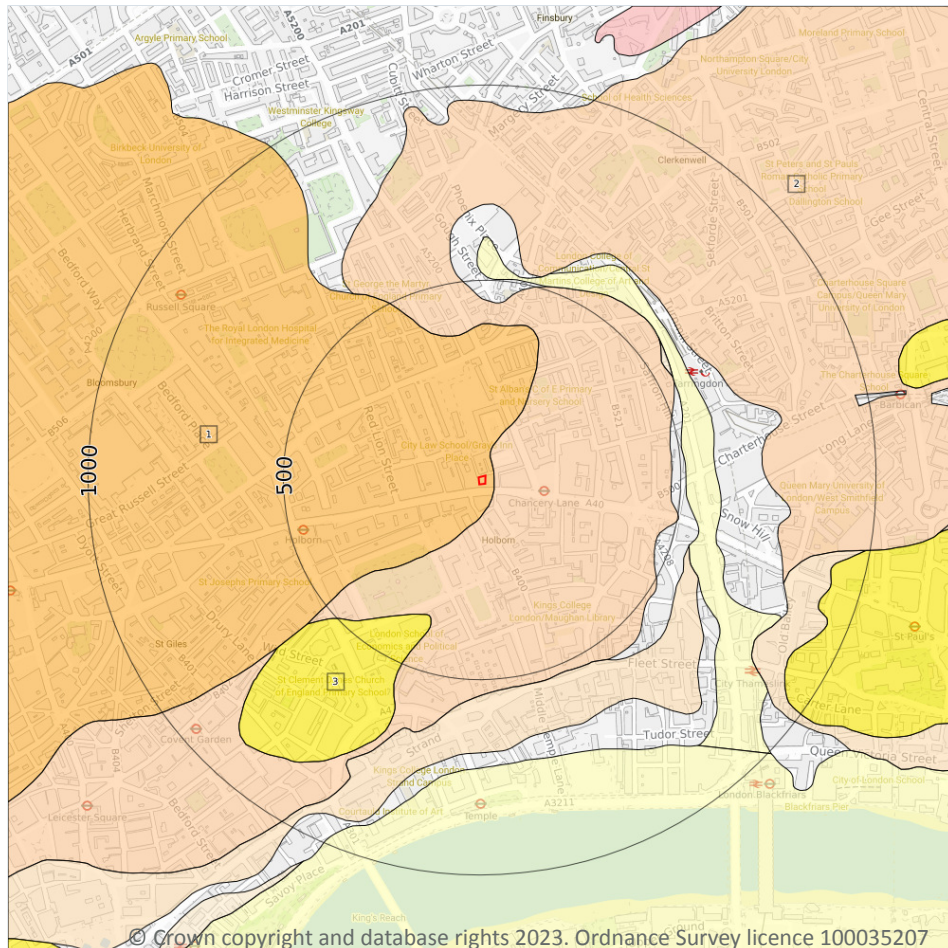
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

3

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 124](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	LHGR-XSV	LYNCH HILL GRAVEL MEMBER	SAND AND GRAVEL
2	22m NE	HAGR-XSV	HACKNEY GRAVEL MEMBER	SAND AND GRAVEL
3	359m S	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m**2**

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	Intergranular	Very High	High
22m NE	Intergranular	Very High	High

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m**0**

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

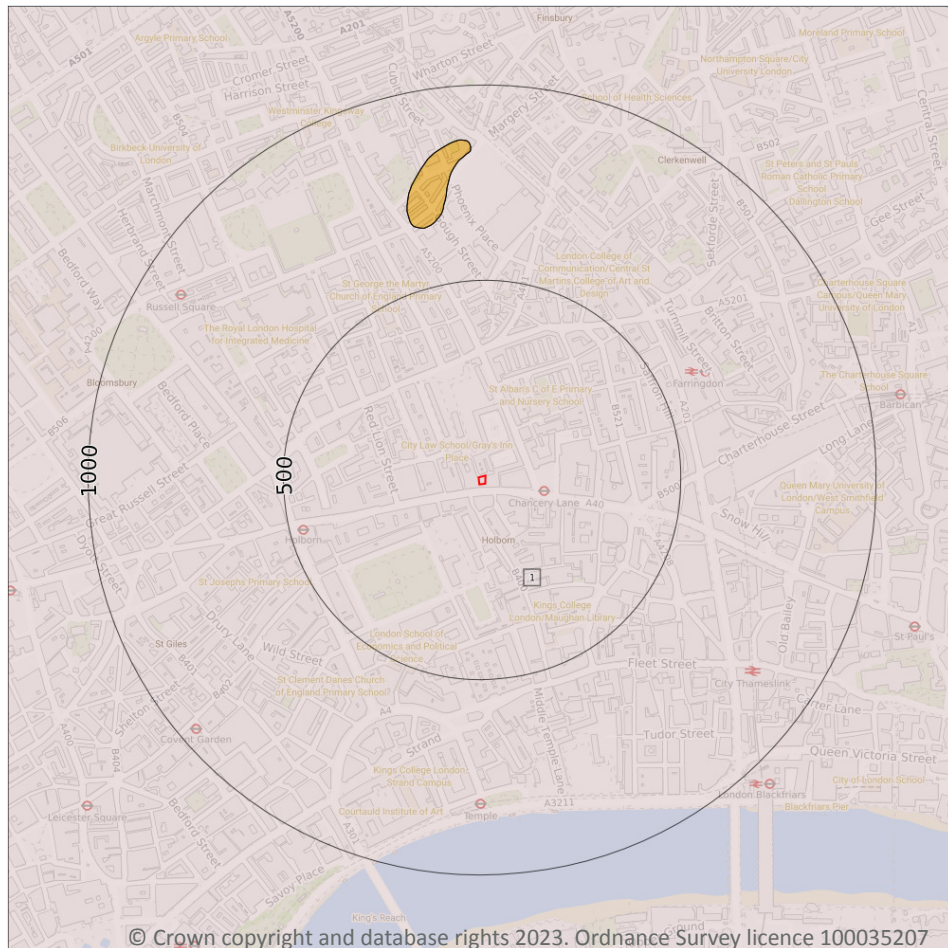
Records within 50m**0**

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m

1

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 126 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	LC-XCZS	LONDON CLAY FORMATION - CLAY, SILT AND SAND	YPRESIAN

This data is sourced from the British Geological Survey.



15.9 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	Mixed	Moderate	Very Low

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

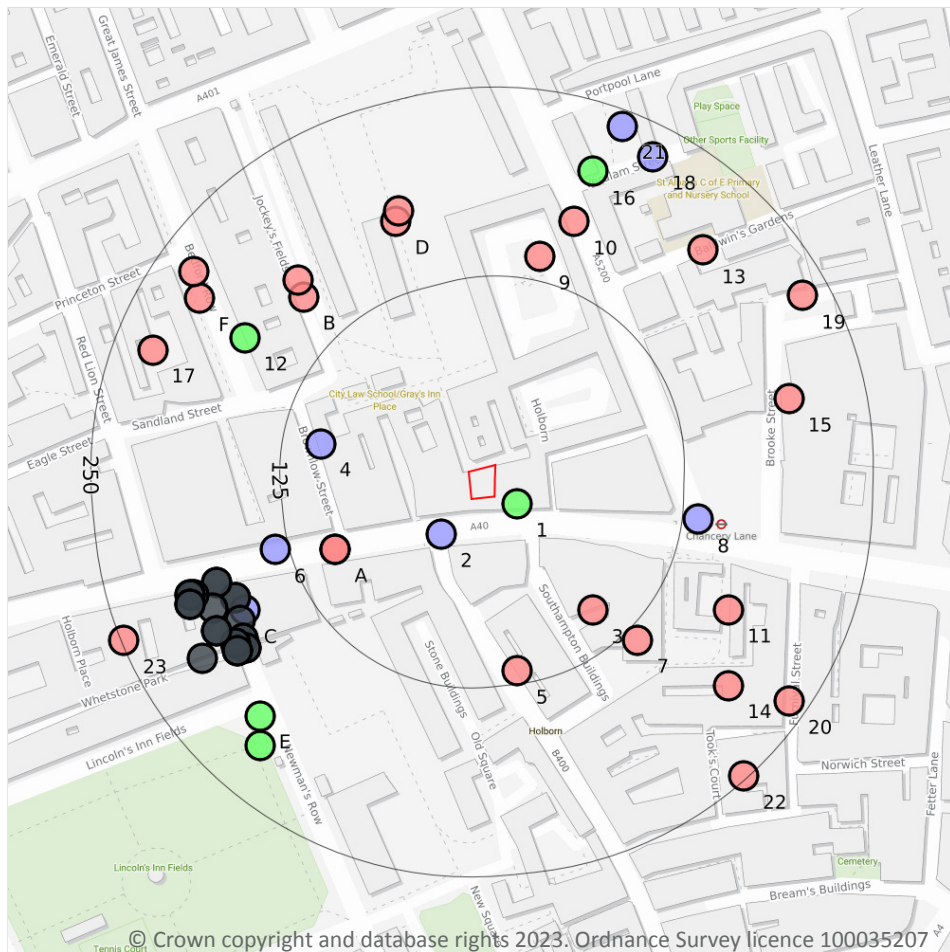
Records within 500m**0**

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.

This data is sourced from the British Geological Survey.



16 Boreholes



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

16.1 BGS Boreholes

Records within 250m

57

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 128](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	16m SE	531020 181630	29A HIGH HOLBORN	12.19	N	1063250 ↗
2	31m SW	530970 181610	CHANCERY LANE/HIGH HOLBORN	5.49	N	1063460 ↗



ID	Location	Grid reference	Name	Length	Confidential	Web link
A	96m SW	530900 181600	BROWNLOW STREET	152.4	N	1067001 ↗
A	96m SW	530900 181600	BROWNLOW STREET	152.4	N	1067002 ↗
3	99m SE	531070 181560	SOUTHAMPTON BUILDINGS, CHANCERY LANE	76.2	N	1067324 ↗
4	100m W	530890 181670	MIDDLE LEVEL SEWER NO.1 2ND SERIES BH13	8.41	N	1065896 ↗
5	116m S	531020 181520	GPO 31 HOLBORN	41.3	N	1064288 ↗
6	134m W	530860 181600	MIDDLE LEVEL SEWER NO.1 2ND SERIES BH14	7.92	N	1065897 ↗
7	134m SE	531100 181540	BIRKBECK BANK CHANCERY LANE HOLBORN	54.25	N	1063842 ↗
8	136m E	531140 181620	GRAYS INN ROAD/HIGH HOLBORN	9.3	N	1063461 ↗
9	141m N	531035 181794	Crossrail RT130R	50.0	N	20655177 ↗
B	159m NW	530879 181767	Crossrail RT134R	52.95	N	20655161 ↗
C	167m SW	530840 181560	283-284 HIGH HOLBORN	6.09	N	1067073 ↗
C	169m SW	530834 181568	Chichester House, High Holborn, London CC6H	-	Y	N/A
C	169m SW	530834 181568	Chichester House, High Holborn, London CC6V	-	Y	N/A
10	169m N	531058 181817	CROSSRAIL PACKAGE C RT41	35.0	N	1067787 ↗
B	170m NW	530875 181778	CROSSRAIL PACKAGE C RT39	35.0	N	1067789 ↗
11	172m SE	531160 181560	G.P.O. NO.12 STAPLE INN HOLBORN	39.62	N	1063415 ↗
D	173m N	530940 181817	CROSSRAIL PACKAGE C RT40	35.0	N	1067788 ↗
12	173m NW	530840 181740	MIDDLE LEVEL SEWER NO.1 2ND SERIES BH12	11.46	N	1065895 ↗
C	173m SW	530837 181553	Chichester House, High Holborn, London CC10	-	Y	N/A
C	177m SW	530839 181541	Chichester House, High Holborn, London CC7V	-	Y	N/A



ID	Location	Grid reference	Name	Length	Confidential	Web link
C	177m SW	530839 181541	Chichester House, High Holborn, London CC7H	-	Y	N/A
C	178m W	530821 181578	Chichester House, High Holborn, London CC5V	-	Y	N/A
C	178m W	530821 181578	Chichester House, High Holborn, London CC5H	-	Y	N/A
C	179m SW	530841 181535	Chichester House, High Holborn, London CC8H	-	Y	N/A
C	179m SW	530841 181535	Chichester House, High Holborn, London CC8V	-	Y	N/A
D	179m N	530942 181824	Crossrail RT135R	49.7	N	20655162 ↗
C	183m SW	530834 181538	Chichester House, High Holborn, London BH3CC	-	Y	N/A
C	183m SW	530834 181538	Chichester House, High Holborn, London BH3	-	Y	N/A
C	185m SW	530835 181533	Chichester House, High Holborn, London CC1V	-	Y	N/A
C	185m SW	530835 181533	Chichester House, High Holborn, London CC1H	-	Y	N/A
C	186m SW	530819 181561	Chichester House, High Holborn, London CC9	-	Y	N/A
C	190m SW	530821 181546	Chichester House, High Holborn, London BH2CC	-	Y	N/A
C	190m SW	530821 181546	Chichester House, High Holborn, London BH2	-	Y	N/A
C	195m W	530806 181570	Chichester House, High Holborn, London BH1CC	-	Y	N/A
C	195m W	530806 181570	Chichester House, High Holborn, London BH1	-	Y	N/A
C	196m W	530804 181570	Chichester House, High Holborn, London CC4V	-	Y	N/A
C	196m W	530804 181570	Chichester House, High Holborn, London CC4H	-	Y	N/A
13	198m NE	531143 181798	CROSSRAIL PACKAGE C RT42	32.1	N	1067786 ↗
C	198m SW	530804 181564	Chichester House, High Holborn, London CC3H	-	Y	N/A
C	198m SW	530804 181564	Chichester House, High Holborn, London CC3V	-	Y	N/A
14	199m SE	531160 181510	TOOKS COURT	152.4	N	1067061 ↗
15	199m E	531200 181700	BROOKE STREET HOLBORN	39.62	N	1063457 ↗
E	200m SW	530850 181490	LINCOLNS INN FIELDS	15.02	N	1063467 ↗
16	205m N	531070 181850	GRAYS INN ROAD LONDON 1	27.5	N	18450516 ↗
C	207m SW	530812 181528	Chichester House, High Holborn, London CC2V	-	Y	N/A

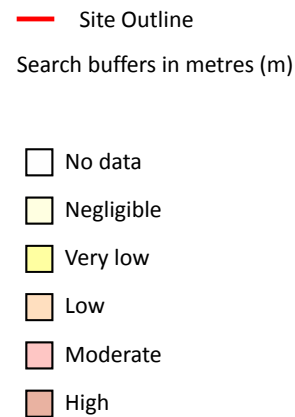
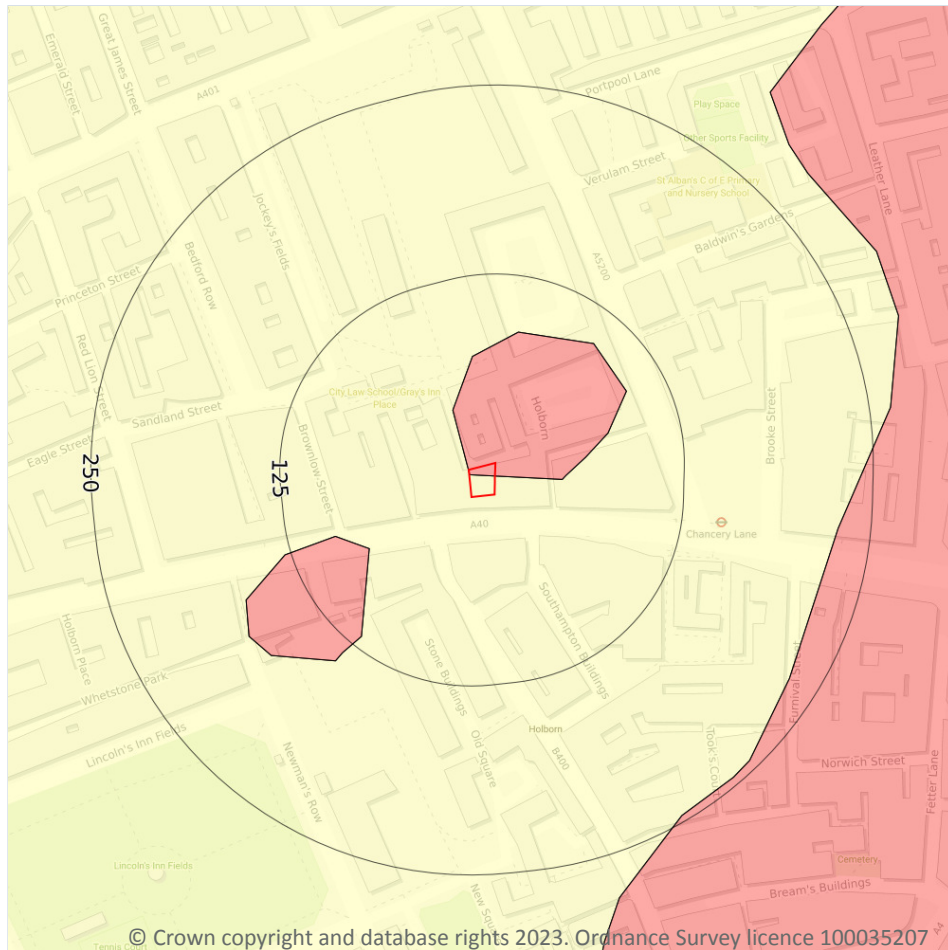


ID	Location	Grid reference	Name	Length	Confidential	Web link
F	212m NW	530810 181766	Crossrail RT133R	53.1	N	20655180 ↗
E	215m SW	530850 181470	MIDDLE LEVEL SEWER NO.1 1ST SERIES BH1	15.03	N	1065889 ↗
17	224m W	530779 181732	Crossrail RT129	50.7	N	20655176 ↗
F	225m NW	530806 181784	CROSSRAIL PACKAGE C RT38	35.0	N	1067790 ↗
18	229m NE	531110 181860	BOURNE ESTATE EXTENSION HOLBORN TP C	2.0	N	1063262 ↗
19	232m NE	531209 181768	CROSSRAIL PACKAGE C RT43	45.03	N	1067778 ↗
20	237m SE	531200 181500	SNOW HILL, HOLBORN VIADUCT	48.76	N	1067328 ↗
21	239m N	531090 181880	BOURNE ESTATE EXTENSION HOLBORN TP B	3.0	N	1063261 ↗
22	248m SE	531170 181450	G.P.O. NO.13 TOOKS COURT HOLBORN	39.62	N	1063416 ↗
23	248m SW	530760 181540	GPO 32 HOLBORN	44.74	N	1064289 ↗

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

2

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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 132 >](#)

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Moderate	Ground conditions predominantly high plasticity.

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



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

17.2 Running sands

Records within 50m

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 133](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Compressible deposits



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

17.3 Compressible deposits

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 134](#) >

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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

17.4 Collapsible deposits

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 135 >](#)

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



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

17.5 Landslides

Records within 50m

1

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

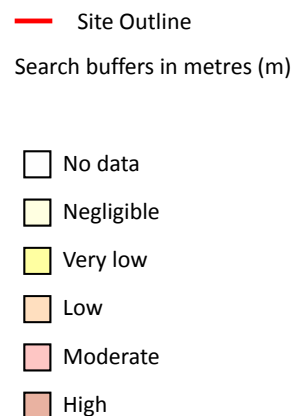
Features are displayed on the Natural ground subsidence - Landslides map on [page 136 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Ground dissolution of soluble rocks



17.6 Ground dissolution of soluble rocks

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on [page 137](#) >

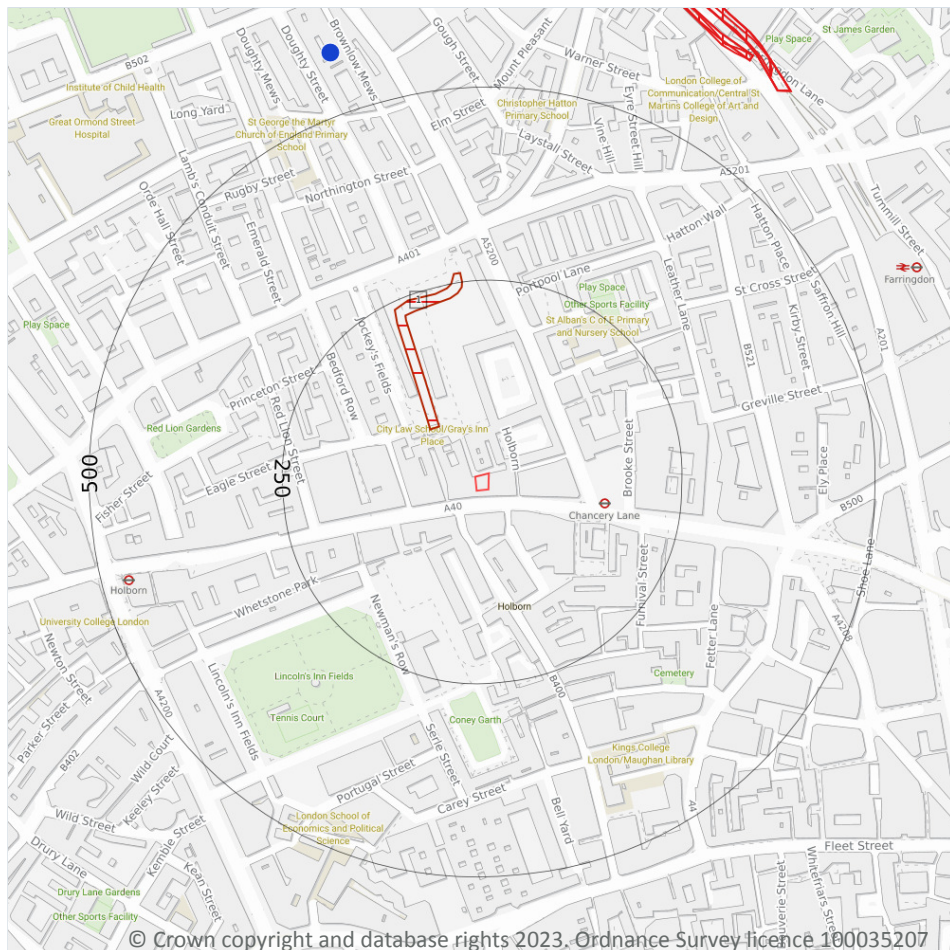
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.



18.2 BritPits

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

1

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 139 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
1	80m NW	Unspecified Ground Workings	1898	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

21

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 139 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
3	600m E	Tunnel	1895	1:10560
A	621m NE	Tunnel	1994	1:10000
A	621m NE	Tunnel	1966	1:10560
A	621m NE	Tunnel	1976	1:10000
A	621m NE	Tunnel	1971	1:10000
-	629m E	Tunnels	1895	1:10560
C	631m NE	Tunnel	1894	1:10560
-	631m E	Tunnel	1895	1:10560



ID	Location	Land Use	Year of mapping	Mapping scale
C	632m NE	Tunnel	1873	1:10560
C	632m NE	Tunnel	1873	1:10560
A	632m NE	Tunnel	1894	1:10560
-	649m E	Tunnel	1895	1:10560
-	654m E	Tunnel	1895	1:10560
-	656m E	Tunnel	1895	1:10560
-	675m E	Tunnel	1895	1:10560
-	676m E	Tunnel	1895	1:10560
-	751m E	Tunnel	1895	1:10560
-	752m E	Tunnel	1895	1:10560
-	812m S	Tunnel	1895	1:10560
-	839m S	Tunnel	1895	1:10560
-	856m S	Tunnel	1895	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

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

This data is sourced from the British Geological Survey.



18.7 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site

0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site

0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site

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
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Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.13 Clay mining

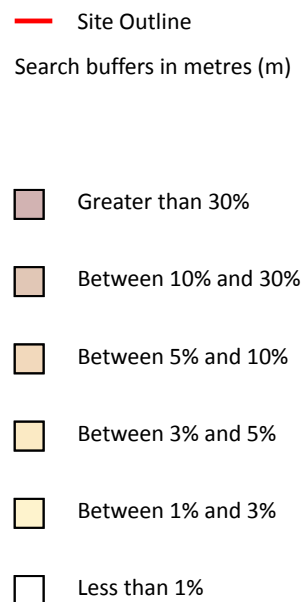
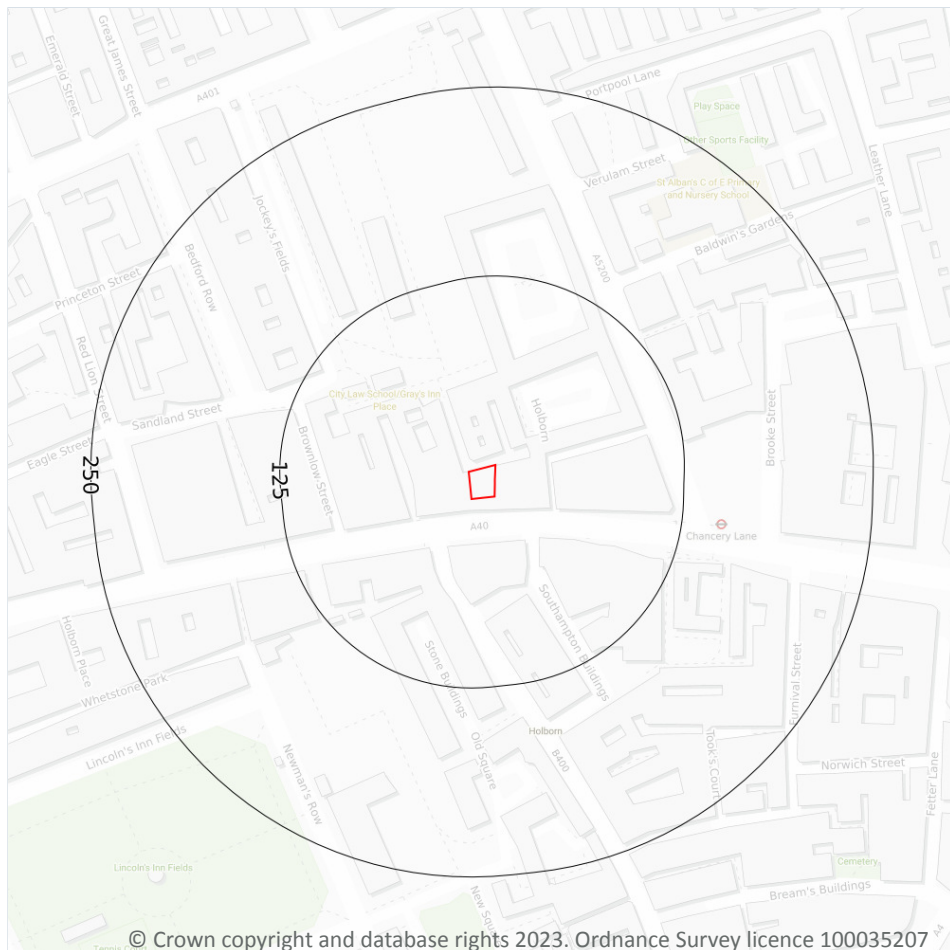
Records on site	0
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Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).



19 Radon



19.1 Radon

Records on site

1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on [page 144 >](#)

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



This data is sourced from the British Geological Survey and UK Health Security Agency.



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

3

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	No data	No data	No data	No data	No data	No data	No data
On site	No data	No data	No data	No data	No data	No data	No data
22m NE	No data	No data	No data	No data	No data	No data	No data

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

6

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	20	3.5	562	386	1.6	85	136	35	48
On site	20	3.5	601	413	2.5	95	165	39	57
33m S	22	3.8	588	404	1.2	78	138	35	52
34m S	23	4	726	499	1.7	84	182	38	70
44m N	17	3	490	337	4.2	115	158	41	48
44m N	19	3.3	516	354	2.3	94	136	36	45



This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

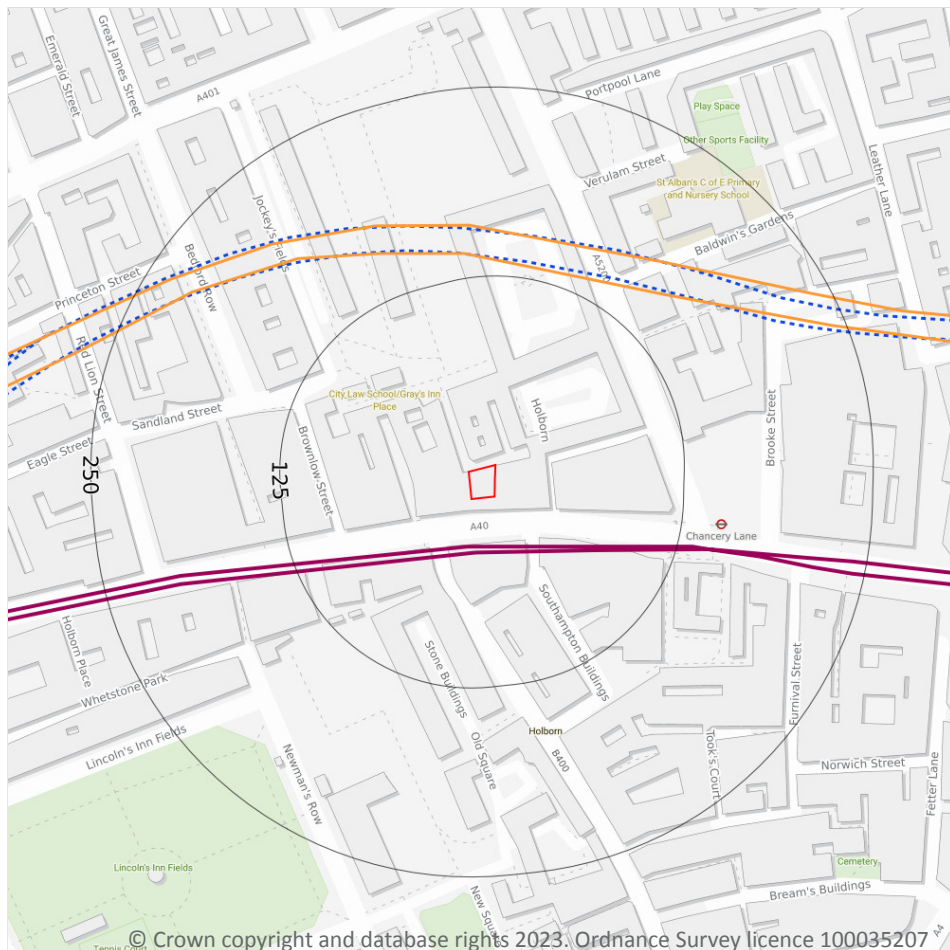
0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



21 Railway infrastructure and projects



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

21.1 Underground railways (London)

Records within 250m

1

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

Features are displayed on the Railway infrastructure and projects map on [page 148](#) >

Location	Line Name	Line Section	Track Type	Depth (m bgl)	Operational hours
34m S	Central Line	Central Line	Tunnel	24.6	Mon-Sat: Early 0355 Late 0133, Sun: Early 0535 Late 0026, 24h service overnight on Sat nights/Sun mornings

This data is sourced from publicly available information by Groundsure.



21.2 Underground railways (Non-London)

Records within 250m**0**

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m**0**

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m**0**

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m**0**

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m**0**

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.



21.7 Railways

Records within 250m

2

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways. Features are displayed on the Railway infrastructure and projects map on [page 148 >](#)

Location	Name	Type
136m N	Elizabeth Line	rail
153m N	Elizabeth Line	rail

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m

3

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.

Features are displayed on the Railway infrastructure and projects map on [page 148 >](#)

Location	Route Type
133m N	Tunnel Alignment
153m N	Tunnel Alignment
324m W	Tunnel Alignment

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m

0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.



21.10 HS2

Records within 500m

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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