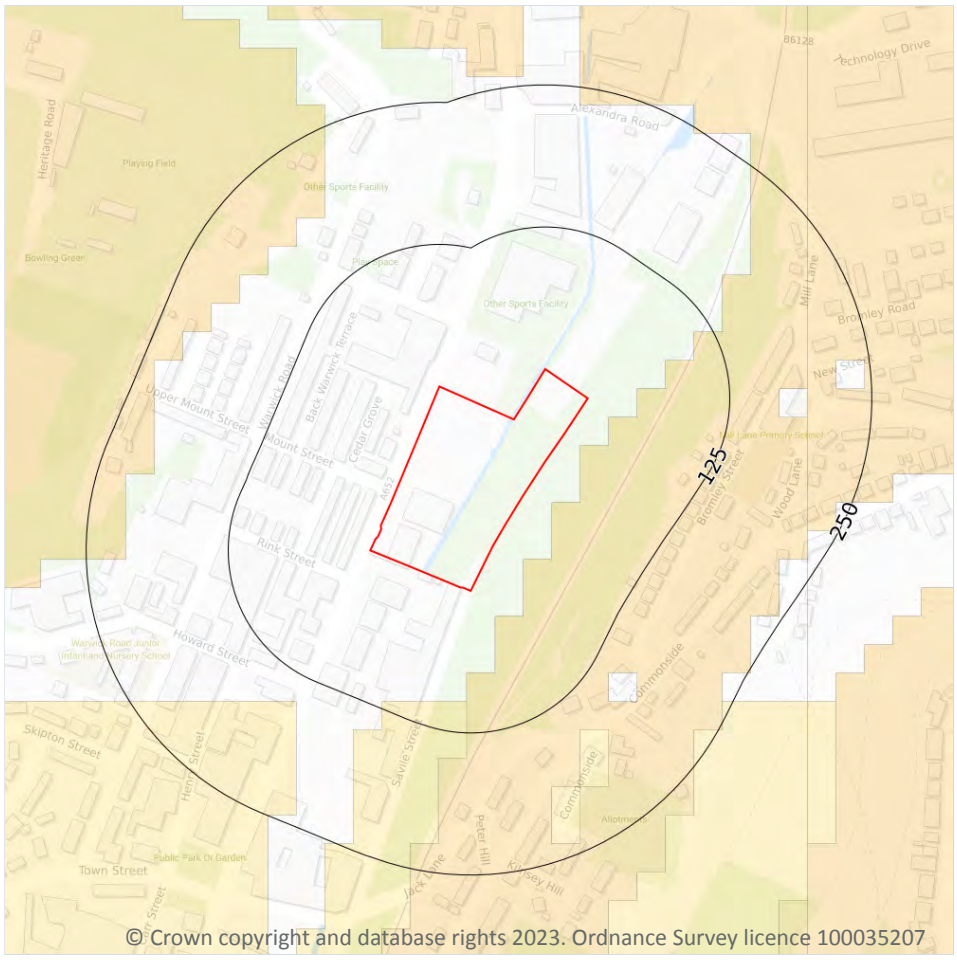
19 Radon



Site Outline

Search buffers in metres (m)

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

19.1 Radon

Records on site	1

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 147**

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 km^2. 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^2; 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	**25 - 35 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**120 - 180 mg/kg**	**30 - 45 mg/kg**
On site	**35 - 45 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**90 - 120 mg/kg**	**30 - 45 mg/kg**
17m NW	35 - 45 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	90 - 120 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

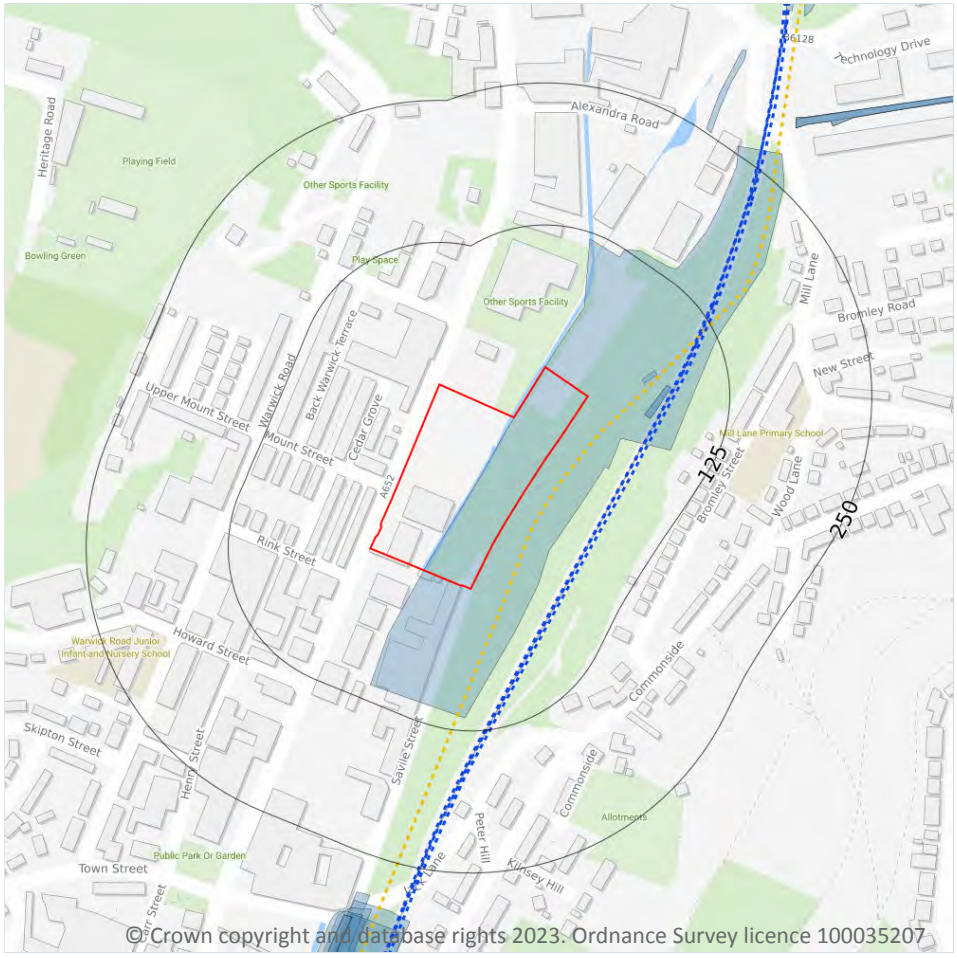
20.3 BGS Measured Urban Soil Chemistry

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 km^2.

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects



21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	4

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.

Features are displayed on the Railway infrastructure and projects map on **page 150**

Location	Land Use	Year of mapping	Mapping scale
On site	**Railway Sidings**	**1905**	**10560**
50m NE	Railway Sidings	1955	1250
53m E	Railway Sidings	1907	2500
53m E	Railway Sidings	1894	2500

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	1

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

Features are displayed on the Railway infrastructure and projects map on **page 150**

Location	Description
22m E	Dismantled

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	13

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 150**

Location	Name	Type
63m E	Not given	Multi Track
64m E	Huddersfield Line	rail
67m E	Huddersfield Line	rail
85m NE	Not given	Multi Track
106m NE	Not given	Multi Track
115m S	Not given	Multi Track
136m NE	Not given	Multi Track
149m S	Not given	Multi Track
217m S	Not given	Multi Track
222m NE	Huddersfield Line	rail
224m NE	Huddersfield Line	rail
229m NE	Not given	Multi Track
240m NE	Not given	Multi Track

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	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.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: https://www.groundsure.com/terms-and-conditions-jan-2020/.

APPENDIX H: BGS BOREHOLE SECTION SHEETS

Holst Soil Engineering Limited

Borehole No. 15

BOREHOLE LOG

Contract No. SI1330/F2687
Location Batley - Sewerage
Client John Dosser and Partners.
Method of Boring Percussion
Diameter of Borehole 0.20m

2470 2323
SE22SW 507

Sheet 1 of 1
Chainage
Ground Level 47.21m AOD.
Date 3.11.73

Description of Strata	Legend	Depth below G.L(m)	Thickness of Strata(m)	Type of Sample	c KN/sq.m	ø deg	m.c. %	γ Kg/cum	N
MADE GROUND Ash				0.80					5
		1.80	1.80	1.90					
Very soft light grey/brown silty organic CLAY (fill)					10	0	37.0	1670	
		2.90	1.10						
Stiff dark brown CLAY with grey/green siltstone fragments.				3.30					
		3.70	0.80		90	17	21.8	2320	
Medium compact silty SAND and GRAVEL with occasional cobbles				4.50					
		4.90	1.20						19
Weathered light to medium grey MUDSTONE				6.00					70
		6.50	1.60						

Type of Sample
□ Undisturbed Sample
○ Disturbed Sample
△ Water Sample
I Penetration Test
c Apparent Cohesion
ø Angle of Friction
m.c. Moisture Content
γ Bulk Density
N S.P.T. Value

Remarks (Observations of Ground Water etc)

Water struck at 1.85m
final standing level (cased) 2.10m
" " (Uncased) 1.95m

Water levels are subject to seasonal or tidal variations and should not be taken as constant

British Geological Survey

Holst Soil Engineering Limited

Borehole No. 13

BOREHOLE LOG

Contract No. S11330/F2687
Location Batley - Sewerage.
Client John Dosser and Partners.
Method of Boring Percussion
Diameter of Borehole 0.20m

2468 2320
SE22SW 805

Sheet 1 of 1
Chainage
Ground Level 45.82m AOD.
Date 4.11.73

Description of Strata	Legend	Depth below G.L(m)	Thickness of Strata(m)	Type of Sample	c KN/sq.m	ø deg	m.c. %	γ Kg/cum	N
MADE GROUND Ash				0.60					5
		1.60	1.60	1.70					
Very soft grey/brown silty organic CLAY becoming stoney bear base (?fill)					no test		38.3		
				3.20	9	0	65.7	1540	
				4.85					
		5.10	3.50		21	8	18.4	1550	
Very highly weathered dark brown to black shaley MUDSTONE with coal partings.									
		6.00	0.90	6.05					32
Light to dark grey shaley MUDSTONE highly weathered near surface.				6.60					72 for 0.23m
		7.00	1.00						

Type of Sample
□ Undisturbed Sample
○ Disturbed Sample
△ Water Sample
I Penetration Test
c Apparent Cohesion
ø Angle of Friction
m.c. Moisture Content
γ Bulk Density
N S.P.T. Value

Remarks (Observations of Ground Water etc)
Water struck at 1.60m
final standing level 2.10m

Water levels are subject to seasonal or tidal variations and should not be taken as constant

British Geological Survey

Holst Soil Engineering Limited

Borehole No. 14

BOREHOLE LOG

Contract No S11330/F2687
Location Batley - Sewerage
Client John Dosser and Partners.
Method of Boring Percussion
Diameter of Borehole 0.20m

2466 2321
SE2284 506

Sheet 1 of 1
Chainage
Ground Level 46.41m AOD.
Date 16.11.73

Description of Strata	Legend	Depth below G.L(m)	Thickness of Strata(m)	Type of Sample	c KN/sq.m	ø deg	m.c. %	γ Kg/cum	N
MADE GROUND Ash.				0.60					11
Very soft light grey/brown silty organic CLAY (?fill)		1.75	1.75	1.70	22	0	32.6	1710	
Very soft light grey/brown mottled very sandy stoney CLAY. (?fill)		3.20	1.45	2.99	13	0	36.1	1820	
Soft light grey/brown sandy stoney CLAY		4.30	1.10	4.55					
Highly weathered light to medium grey MUDSTONE.		5.70	1.40	6.00	64	0	17.1	2100	
Weathered medium grey silty MUDSTONE.		6.50	0.80	7.55					85
		8.00	1.50						

Type of Sample
□ Undisturbed Sample
○ Disturbed Sample
△ Water Sample
I Penetration Test
c Apparent Cohesion
ø Angle of Friction
m.c. Moisture Content
γ Bulk Density
N S.P.T. Value

Remarks (Observations of Ground Water etc)

Water struck at 2.60m
final standing level 2.20m

Water levels are subject to seasonal or tidal variations and should not be taken as constant

British Geological Survey

Norwest Holst Soil Engineering Ltd.

Borehole L

BOREHOLE LOG

Contract No. F4022
Location Dewsbury/Batley
Client Yorkshire Water Authority
Method of Boring Percussion/Rotary
Diameter of Borehole 0.15m/ .10m

SE 225W 520
2475 2319

Sheet 1 of 2
Chainage
Ground Level 51.88 m.A.O.D.
Date 25.8.78

Description of Strata	Legend	Depth Below G.L.(m)	O.D. Level (m)	Casing Depth at Sampling	Sampling and Coring	R.Q.D %	Daily Progress
MADEGROUND Brick ash, clay					0.50		
		1.20	50.68				
Stiff silty CLAY with mudstone fragments					1.50		
		2.60	49.28		2.50		
Completely weathered dark grey shaly MUDSTONE with coal bands		3.20	48.68				
Completely weathered light brown very silty MUDSTONE		4.00	47.88		4.00	82for 187mm	
Highly weathered very highly fractured brown weak to moderately weak SILTSTONE					0%		
					5.00		
					49%	0	
					6.50		
					100%	0	
		7.50	44.38		7.50		
Moderately to occasionally completely weathered very highly to slightly fractured grey weak to moderately weak SILTSTONE					100%	0	
					8.50		
					0%	0	
					9.50		
					100%	0	

Type of Sample

- Is S.P.T. ■ Undisturbed
- Ic. C.P.T. × Vane
- O Jar △ Water
- ● Bulk ▩ Piezometer

Remarks (Observations of Ground Water etc.)

BH dry