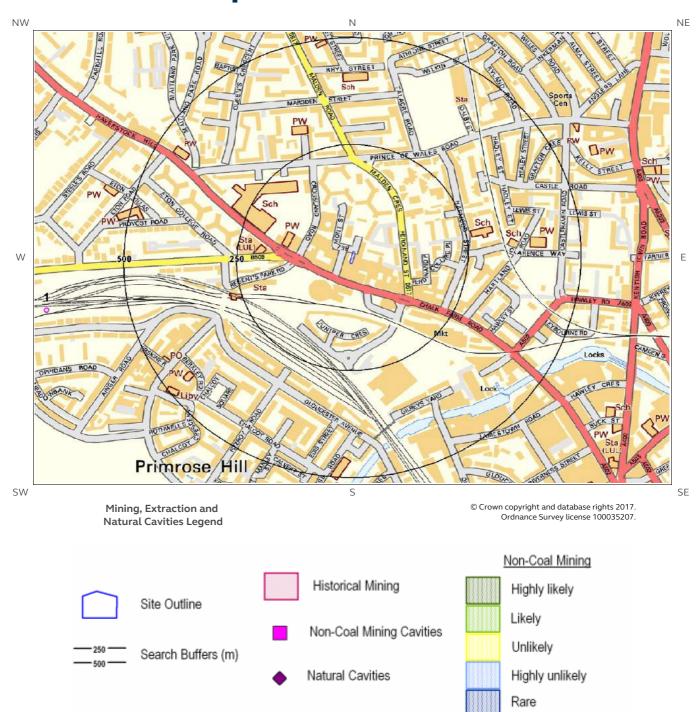


5 Mining, Extraction & Natural Cavities Map





5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary?

The following Historical Mining information is provided by Groundsure:

ID	Distance (m)	Direction	NGR	Details	Date
1	675.0	W	527650 184271	Air Shafts	1989
Not shown	734.0	W	527589 184287	Air Shafts	1989

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary?

Database searched and no data found.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary?

No

No

Yes

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary?

Database searched and no data found.

No



5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled "Review of mining instability in Great Britain, 1990" PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary?

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on Peter Brett Associates natural cavities database.

Are there any Natural Cavities within 1000m of the study site boundary?

No

No

No

No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary?

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary?

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level.

Are there any Tin Mining areas within 1000m of the study site boundary?

No

Database searched and no data found.



5.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary?

No

Database searched and no data found.



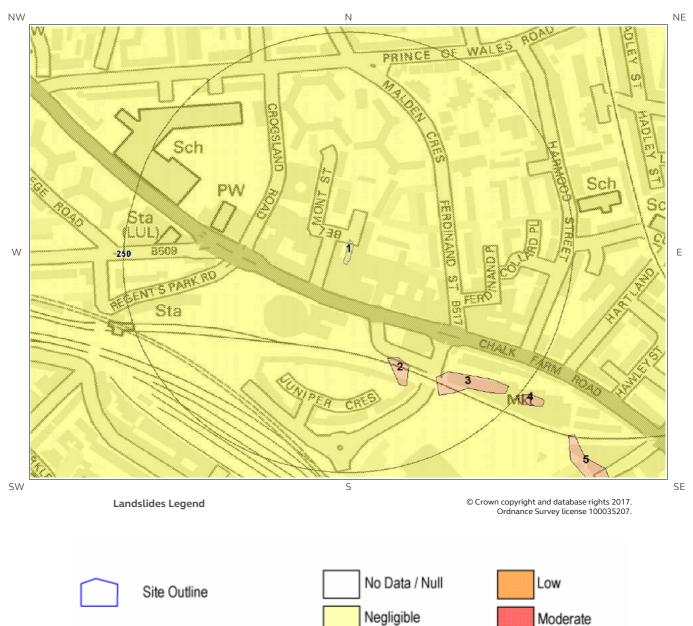
6 Natural Ground Subsidence 6.1 Shrink-Swell Clay Map





6.2 Landslides Map

Search Buffers (m)

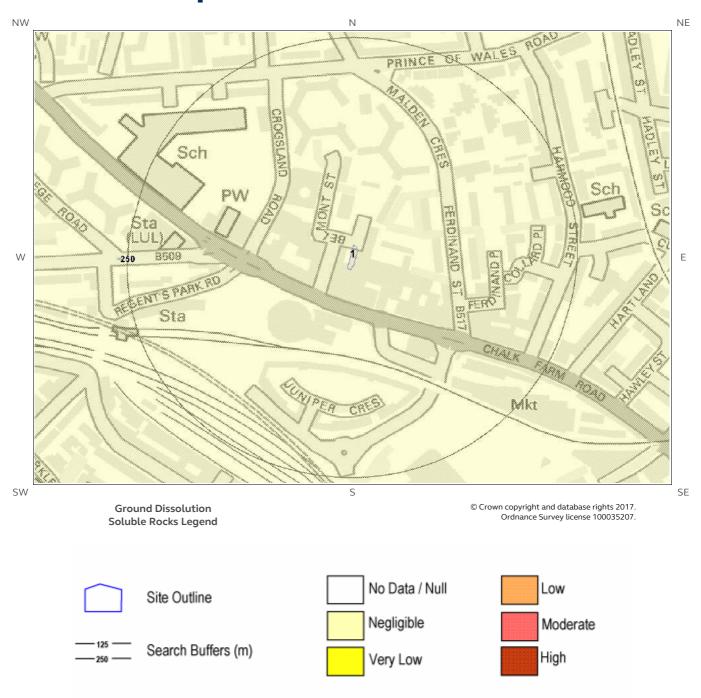


Very Low

High

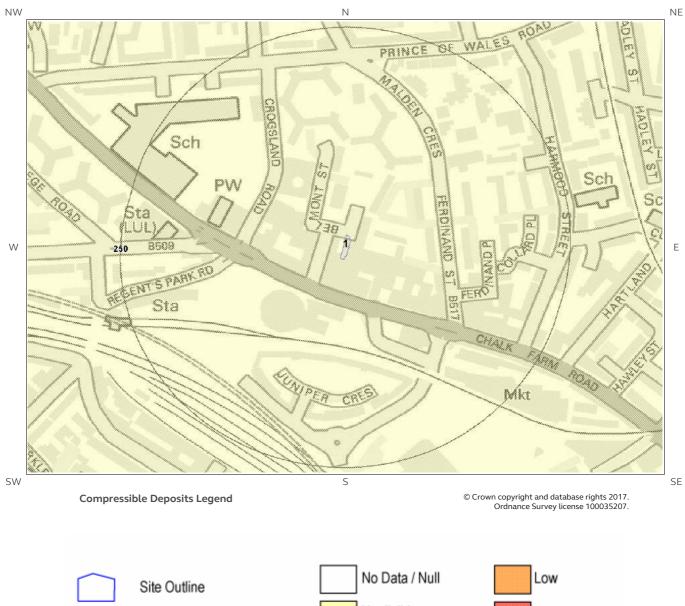


6.3 Ground Dissolution of Soluble Rocks Map





6.4 Compressible Deposits Map



______Se_____Se

Search Buffers (m)

No Data / Nul
Negligible
Very Low

Low Moderate



6.5 Collapsible Deposits Map



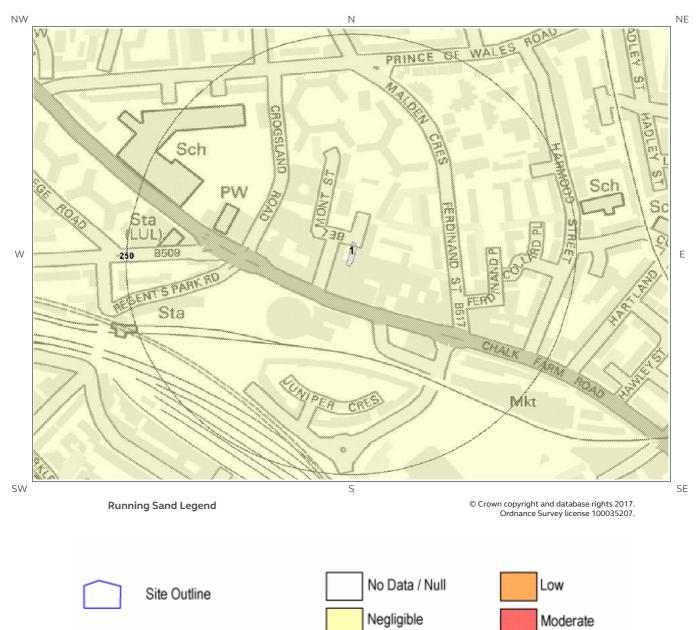


Moderate

High



6.6 Running Sand Map



Very Low

250

Search Buffers (m)

High



6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site** boundary? Moderate

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Moderate	Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potenti shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

^{*} This includes an automatically generated 50m buffer zone around the site



6.3 Ground Dissolution of Soluble Rocks

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

The following Ground Dissolution information provided by the British Geological Survey:

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

ID	Distanc (m)	^e Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

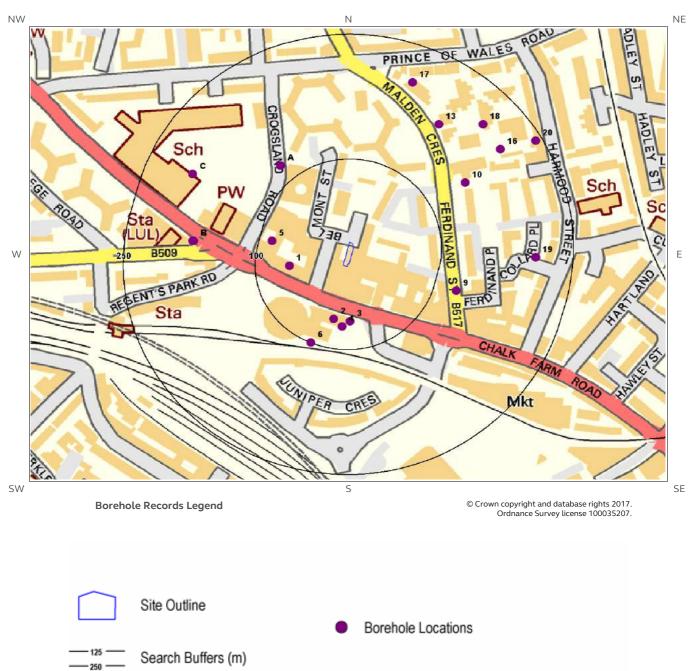
6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.



7 Borehole Records Map





7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary:

20

D	Distance (m)	Direction NGR		BGS Reference	Drilled Length	Borehole Name
1	61.0	W	528260 184380	TQ28SE2186	-1.0	CHALK FARM LONDON
2	65.0	S	528310 184316	TQ28SE2032	18.28	THE ROUNDHOUSE DEVELOPMENT, CHALI FARM ROAD, LONDON
3	67.0	S	528329 184313	TQ28SE2035	18.28	THE ROUNDHOUSE DEVELOPMENT, CHAL FARM ROAD, LONDON
4	73.0	S	528320 184307	TQ28SE2034	21.33	THE ROUNDHOUSE DEVELOPMENT, CHAL FARM ROAD, LONDON
5	86.0	W	528240 184410	TQ28SE2185	-1.0	CHALK FARM LONDON
6	528284		TQ28SE2033	12.49	THE ROUNDHOUSE DEVELOPMENT, CHAL FARM ROAD, LONDON	
7A	121.0	NW	528250 184500	TQ28SE245/A	4.0	HAVERSTOCK SECONDARY SCH.EXT
8A	121.0	NW	528250 184500	TQ28SE245/A-C	4.57	HAVERSTOCK SEC SCHOOL CHALK FARM
9	126.0	E	528450 184350	TQ28SE411	31.44	METROPOLITAN WATE BOARD 29
10	148.0	NE	528460 184480	TQ28SE854	15.0	CAMDEN,HARMOOD S 10
11B	173.0	W	528151 184410	TQ28SE23	9.14	UNDERGROUND ELECTRIC NO.15 ST PANCRAS
12B	174.0	W	528150 184410	TQ28SE299	10.36	CHALK FARM STATIOI HAMPSTEAD
13	174.0	NE	528430 184550	TQ28SE850	20.0	HARMOOD ST. CAMDE 6
14C 196.0 NW 528150 184490		TQ28SE217/A-B	5.03	HAVERSTOCK SECONDARY SCHOOL CHALK FARM 1		
15C	5C 196.0 NW 528150 TQ28SE217 184490		5.03	HAVERSTOCK SECONDARY SCHOOL CHALK FARM 2		
16	203.0	NE	528500 184520	TQ285E852 20.0		HARMOOD ST. CAMDE 8
17	204.0	Ν	528400 184600	TQ28SE845	15.25	HARMOOD ST. CAMDE 1
18	206.0	NE	528480 184550	TQ28SE851	15.0	HARMOOD ST. CAMDE 7
19	207.0	E	528540 184390	TQ28SE814	-1.0	OFF HAMMOND ST NE/ CHALK FARM RD



ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
20	242.0	NE	528540 184530	TQ28SE855	15.0	CAMDEN,HARMOOD ST. 11

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#2: scans.bgs.ac.uk/sobi_scans/boreholes/15634886 #3: scans.bgs.ac.uk/sobi_scans/boreholes/15634891 #4: scans.bgs.ac.uk/sobi_scans/boreholes/15634889 #6: scans.bgs.ac.uk/sobi scans/boreholes/15634888 #7A: scans.bgs.ac.uk/sobi scans/boreholes/591747 #8A: scans.bgs.ac.uk/sobi_scans/boreholes/591748 #9: scans.bgs.ac.uk/sobi_scans/boreholes/591949 #10: scans.bgs.ac.uk/sobi_scans/boreholes/592435 #11B: scans.bgs.ac.uk/sobi_scans/boreholes/591507 #12B: scans.bgs.ac.uk/sobi_scans/boreholes/591818 #13: scans.bgs.ac.uk/sobi_scans/boreholes/592431 #14C: scans.bgs.ac.uk/sobi_scans/boreholes/591703 #15C: scans.bgs.ac.uk/sobi_scans/boreholes/591704 #16: scans.bgs.ac.uk/sobi scans/boreholes/592433 #17: scans.bgs.ac.uk/sobi scans/boreholes/592426 #18: scans.bgs.ac.uk/sobi_scans/boreholes/592432 #19: scans.bgs.ac.uk/sobi_scans/boreholes/592395 #20: scans.bgs.ac.uk/sobi_scans/boreholes/592436



1

8 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

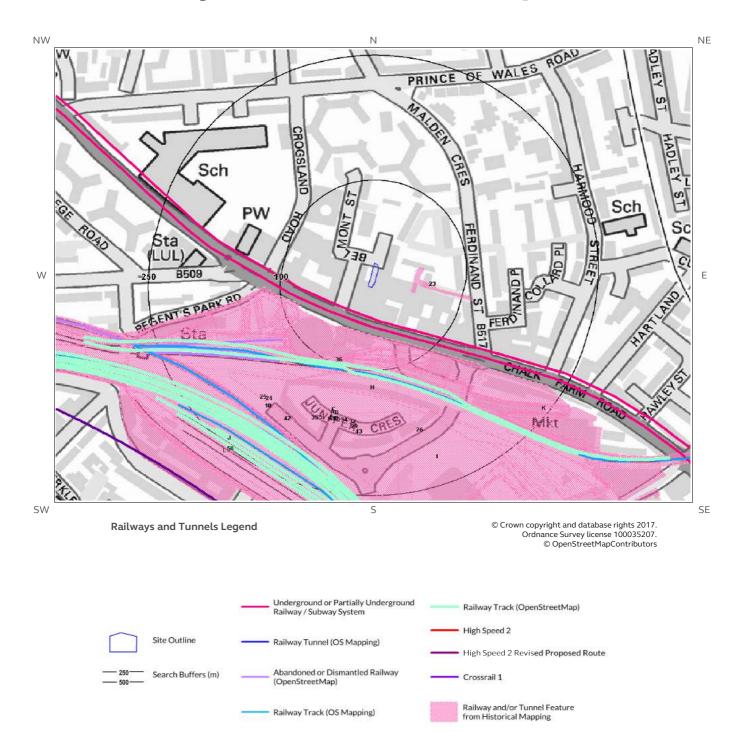
For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	London	No data	No data	No data	No data	No data

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.



9 Railways and Tunnels Map





9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary?	No
Have any underground railway lines been identified within 250m of the study site boundary?	Yes

Distance (m)	Direction	Detail
34	S	London Underground - Northern Line

The approximate depth value for the nearest London Underground line given in this dataset has been extrapolated from published depths of tube lines at station platforms, and assume a constant gradient between stations. Using this method, topographical variation has resulted in some parts of the line having associated depth values either shallower or deeper than the real-world situation. Depth values are for indication only and should not be relied upon for any calculation or technical purpose and are in no way a substitute for a professional survey.

Line	
London Underground Li	ne: Northern Line
Depth: 15n	nbgl
Track Type: 1	Tunnel

Any records that have been identified are represented on the Railways and Tunnels Map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary?	No	
Have any other railway tunnels been identified within 250m of the site boundary?	Yes	

Distance (m)	Direction	Detail
225	S	Railway Tunnel

Any records that have been identified are represented on the Railways and Tunnels Map.



9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? No

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
23	42	E	528375 184384	Railway Sidings	1896
1A	55	S	528395 184032	Railway Sidings	1973
2A	55	S	528395 184032	Railway Sidings	1968
24	55	S	n/a	Railway	1930
25	55	S	n/a	Railway	1916
3C	57	S	528366 184156	Railway Sidings	1894
4B	57	S	528135 184166	Railway Sidings	1882
26	57	S	n/a	Railway	1879
27F	62	S	528298 184181	Railway Sidings	1952
28F	62	S	528298 184181	Railway Sidings	1952
5	63	S	528377 184105	Railway Sidings	1957
29	65	S	528348 184140	Railway Sidings	1875
30	70	S	n/a	Railway	1930
31G	71	S	528381 184023	Railway Sidings	1916
32	72	S	n/a	Railway	1890
33F	73	S	528298 184181	Railway Sidings	1968
34	73	S	528321 184174	Railway Sidings	1970
35	74	S	528250 184173	Railway Sidings	196
36	74	S	528237 184294	Railway Sidings	195
37G	74	S	528383 184019	Railway Sidings	189
6B	75	S	528162 184160	Railway Sidings	194
7C	75	S	528412 184158	Railway Sidings	191
38H	86	S	n/a	Railways	187
39H	86	S	n/a	Railways	189
40H	86	S	n/a	Railways	193
8D	87	S	528320 184188	Railway Sidings	192
9D	87	S	528320 184188	Railway Sidings	193



				LOCATION INTELLIG	ENCE
ID	Distance (m)	Direction	NGR	Details	Date
10	91	S	528199 184182	Railway Sidings	1989
41B	99	S	528250 184174	Railway Sidings	197:
42	106	S	528250 184155	Railway Sidings	1982
43	121	S	528368 184155	Railway Sidings	1952
441	154	S	n/a	Railways	187
451	154	S	n/a	Railways	187
461	154	S	n/a	Railways	193
58	194	SW	528256 184173	Tunnel	198
12E	195	SW	528263 184167	Tunnel	197
13E	196	SW	528261 184167	Tunnel	199
14E	196	SW	528261 184167	Tunnel	199
15E	196	SW	528261 184167	Tunnel	199
16E	196	SW	528261 184167	Tunnel	197
17E	197	SW	528261 184167	Tunnel	196
18E	197	SW	528261 184167	Tunnel	196
19E	198	SW	528259 184167	Tunnel	198
20E	198	SW	528259 184167	Tunnel	198
21E	198	SW	528259 184167	Tunnel	199
22E	198	SW	528259 184167	Tunnel	199
47J	204	SW	528205 184149	Railway Sidings	199
48J	204	SW	528205 184149	Railway Sidings	198
49J	204	SW	528205 184149	Railway Sidings	199
50	221	SW	528196 184140	Railway Sidings	195
51K	223	SE	528521 184233	Railway Sidings	197
52K	223	SE	528521 184233	Railway Sidings	197
53K	223	SE	528521 184233	Railway Sidings	195
54K	223	SE	528521 184233	Railway Sidings	196
55L	230	SW	528218 184126	Railway Sidings	199
56L	230	SW	528218 184126	Railway Sidings	199
57L	230	SW	528218 184126	Railway Sidings	199



ID	Distance (m)	Direction	NGR	Details	Date
11L	233	SW	528201 184135	Railway Sidings	1911

Any records that have been identified are represented on the Railways and Tunnels Map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Status
116	SW	Dismantled
134	SW	Disused
200	SW	Disused

Multiple sections of the same track may be listed in the detail above Any records that have been identified are represented on the Railways and Tunnels Map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No	0
--	---

Have any active railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Name	Туре
96	S	North London line	Rail
96	S	North London line	Rail
101	S	North London line	Rail
101	S	North London line	Rail
103	S	Not given	Multi Track
103	S	Not given	Multi Track
105	SW	North London line	Rail
105	SW	North London line	Rail
119	S	North London line	Rail
119	S	North London line	Rail
156	SE	North London line	Rail
156	SE	North London line	Rail
161	SE	North London line	Rail
161	SE	North London line	Rail
179	SE	North London line	Rail
179	SE	North London line	Rail
181	SE	North London line	Rail
181	SE	North London line	Rail



			LOCATION INTELLIGENCE
Distance (m)	Direction	Name	Туре
200	SW	Not given	Multi Track
200	SW	Not given	Multi Track
206	SW	Up Fast	Rail
206	SW	Up Fast	Rail
208	SW	Not given	Rail
208	SW	Not given	Rail
211	SW	Not given	Multi Track
211	SW	Not given	Multi Track
212	SW	Not given	Rail
212	SW	Not given	Rail
215	SW	Not given	Rail
215	SW	Not given	Rail
216	SW	West Coast Main Line	Rail
216	SW	West Coast Main Line	Rail
220	SW	Not given	Rail
220	SW	Not given	Rail
221	SW	Not given	Multi Track
221	SW	Not given	Multi Track
222	SW	Not given	Rail
222	SW	Not given	Rail
223	S	Not given	Multi Track
223	S	Not given	Multi Track
224	SW	Down Fast	Rail
224	SW	Down Fast	Rail
225	S	Not given	Rail
225	S	Not given	Rail
232	SW	Not given	Multi Track
232	SW	Not given	Multi Track
237	SW	Not given	Rail
237	SW	Not given	Rail
242	SW	Not given	Rail
242	SW	Not given	Rail
244	S	West Coast Main Line	Rail
244	S	West Coast Main Line	Rail
247	SW	Not given	Rail
247	SW	Not given	Rail

Multiple sections of the same track may be listed in the detail above Any records that have been identified are represented on the Railways and Tunnels Map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project?	Yes
is the study site within skin of the route of the right speed 2 rult project.	105

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.



The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.



Contact Details

Groundsure Helpline Telephone: 08444 159 000 info@groundsure.com



LOCATION INTELLIGENCE



British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL



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BGS Geological Hazards Reports and general geological enquiries

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The Coal Authority 200 Lichfield Lane Mansfield Notts NG18 4RG Tel: 0345 7626 848 DX 716176 Mansfield 5 www.coal.gov.uk



The Coal Authority

Public Health England

Public information access office Public Health England, Wellington House 133-155 Waterloo Road, London, SE1 8UG

https://www.gov.uk/government/organisations/public-healthengland

Email: **enquiries@phe.gov.uk** Main switchboard: 020 7654 8000

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Tel: +44 (0) 1384 262 000 Email:**enquiries.gs@jpb.co.uk** Website: **www.jpb.co.uk**

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Getmapping PLC

Virginia Villas, High Street, Hartley Witney, Hampshire RG27 8NW Tel: 01252 845444 Website:**http://www1.getmapping.com/**











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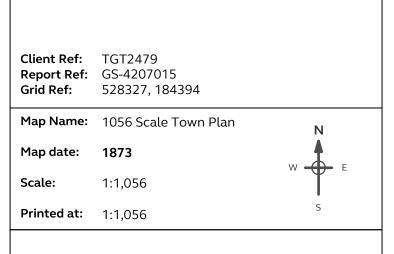
Standard Terms and Conditions

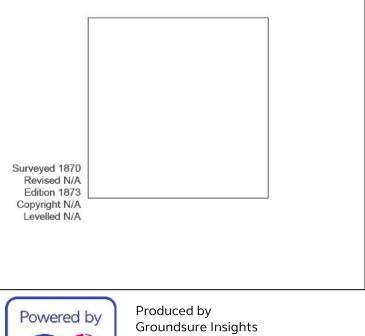
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(Rear of 8) 10a BELMONT STREET, LONDON, NW1 8HH

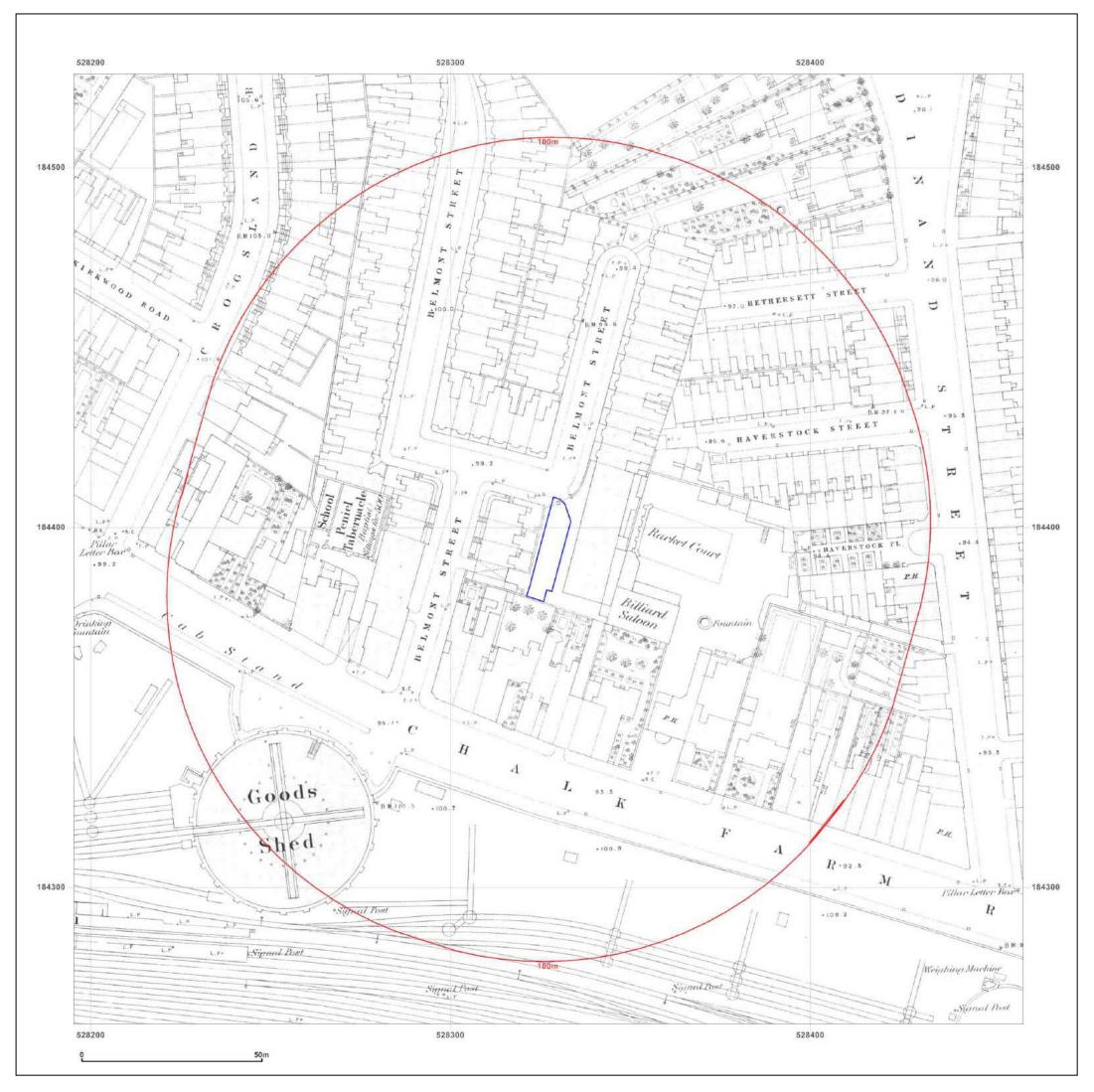




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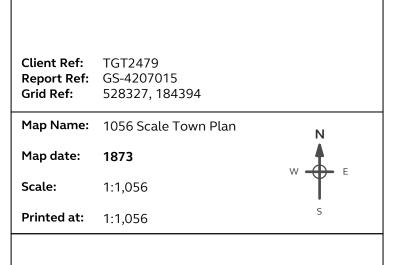
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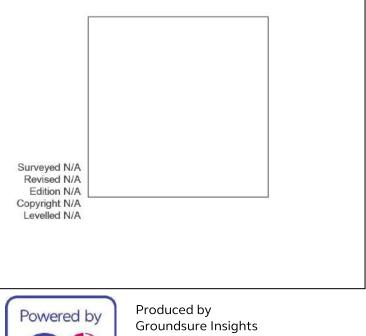
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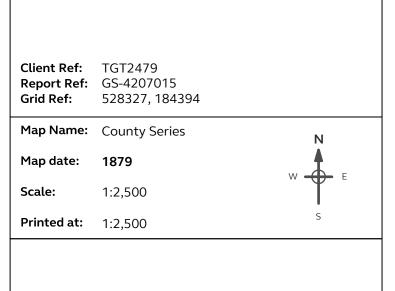
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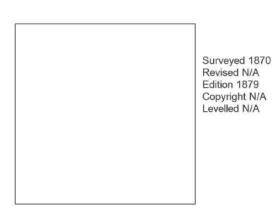
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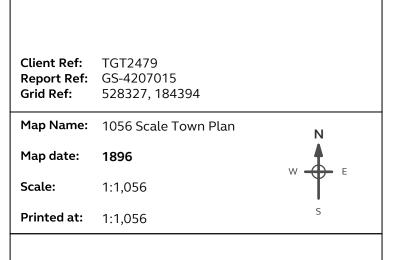
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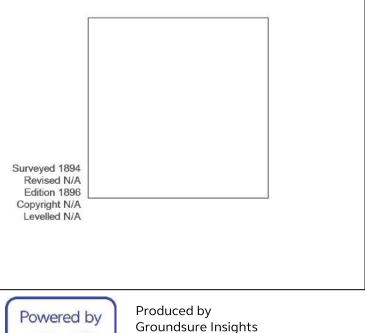
Production date: 23 August 2017





(Rear of 8) 10a BELMONT STREET, LONDON, NW1 8HH

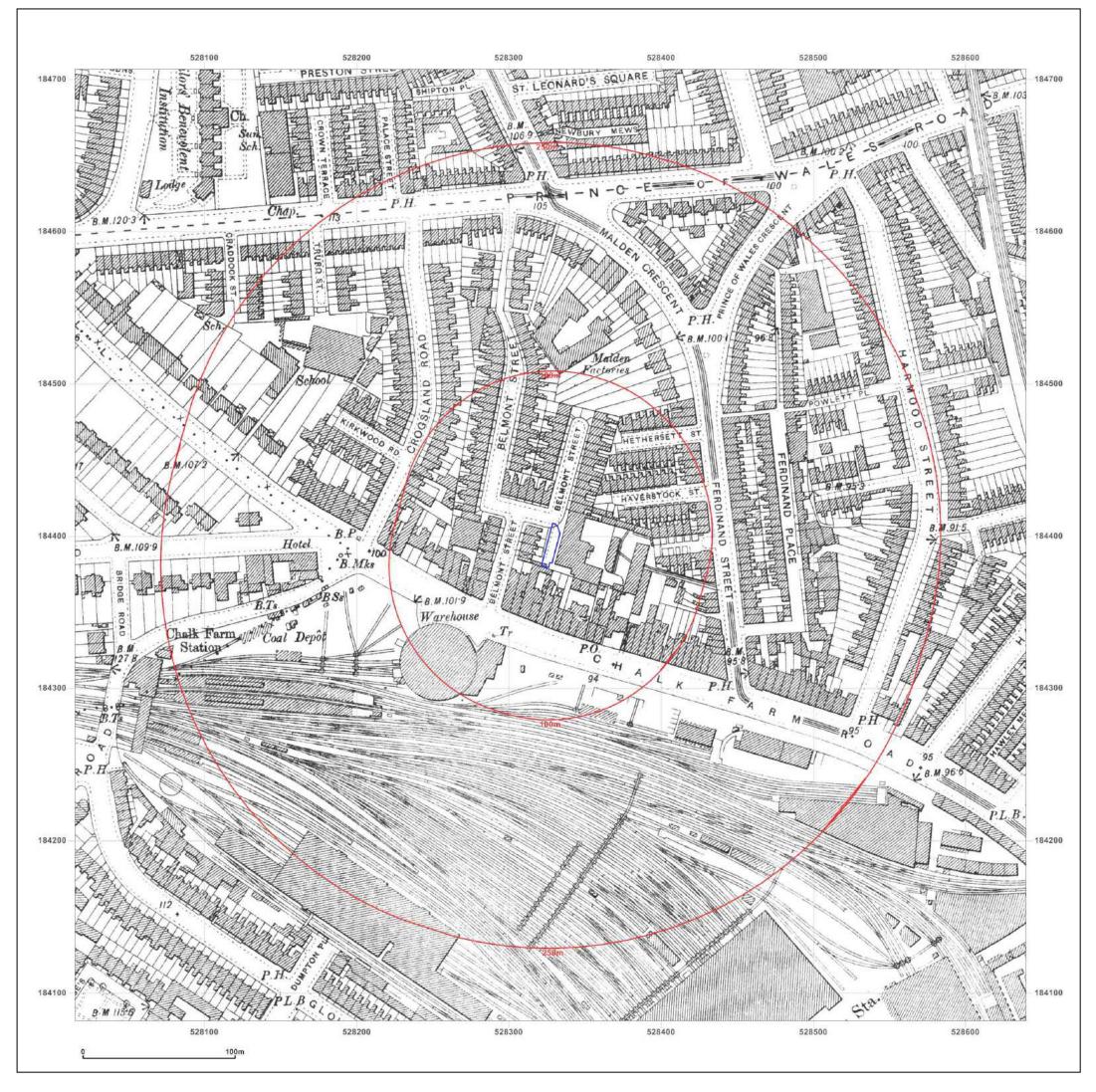




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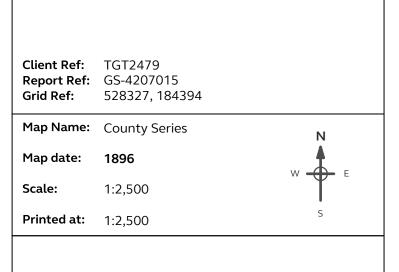


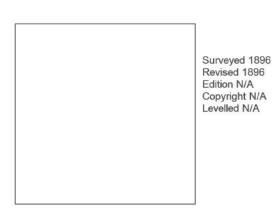
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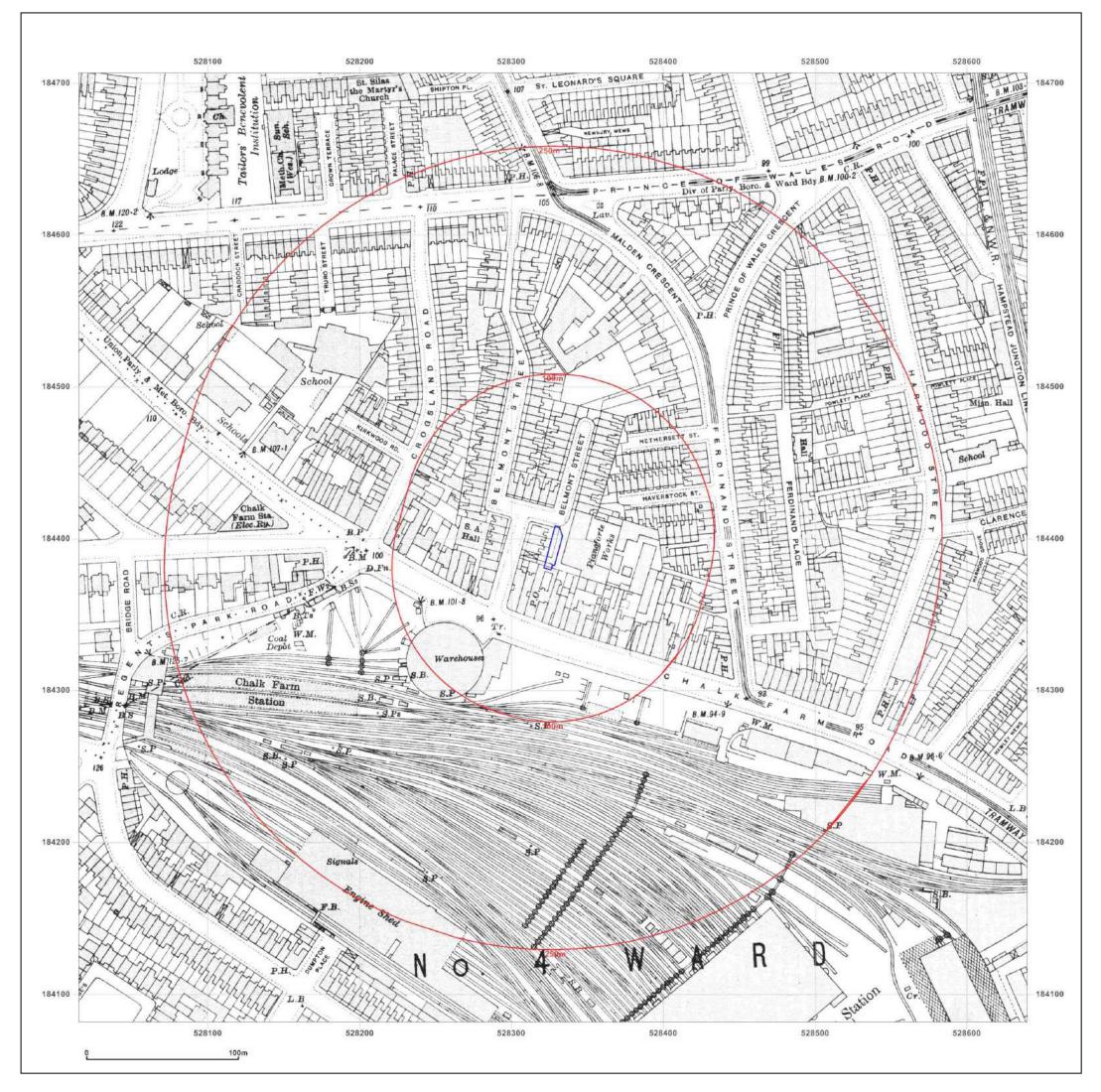




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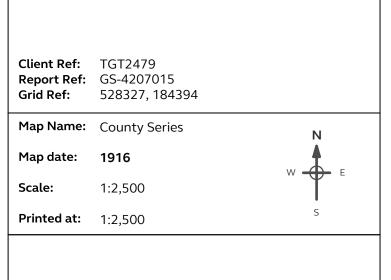
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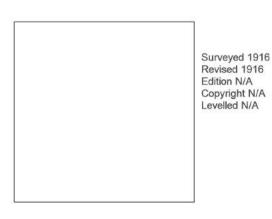
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