## PHASE 1 LAND CONTAMINATION ASSESSMENT REPORT

Pope's Road Brixton London

Prepared for: Trium Environmental LLP (on behalf of AG Hondo Pope's Road BV).

30<sup>th</sup> March 2020

Project Number: RMA-C2023



environmental planning consultancy



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### General Notes

This report has been prepared by RMA Environmental Ltd (RMA) and provides available factual data for the site at the time of the study and as obtained from the sources described in the text. The data is related to the site on the basis of the site location which has been provided by the Client.

It should be appreciated that the desk study information is not necessarily exhaustive and that further information relevant to the site and its proposed use may be available. The accuracy of map extracts cannot be guaranteed and it should be recognised that different conditions on site may have existed between and subsequent to the various map editions.

Any borehole data from the British Geological Survey (BGS) sources is included on the following basis: 'The British Geological Survey accept no responsibility for omissions or misinterpretations of the data from their Data Bank as this may be old or obtained from non-BGS sources and may not represent current interpretation'.

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## 1 INTRODUCTION

#### Background

- 1.1 This Phase 1 Land Contamination Assessment (LCA) has been prepared by RMA Environmental Limited (RMA) for Trium Environmental Consulting LLP (on behalf of AG Hondo Popes Road BV), in support of a planning application for a mixed-use scheme comprising of flexible office accommodation, retail and leisure floorspace on an area of land located to the east of Pope's Road in Brixton, London.
- 1.2 The site comprises a single storey building currently in use as a retail store and the site is 0.26 hectares (ha). The Proposed Development will include demolition of the existing building and erection of a part G + 19, part G + 8 storey building comprising flexible A1/A3/B1/D1/D2 uses at basement, ground and first floor, with restaurant (A3) use on floor 8 and B1 accommodation on floors 2 to 19, with plant enclosures at roof level, and associated cycle parking, servicing and all necessary enabling works

The objective of this Phase 1 LCA is to gather baseline information on site conditions and to identify any potential risks of ground contamination resulting from historical or current land uses, on or in close proximity to the site.

#### Scope of Work

- 1.3 This Phase 1 LCA presents the information on and addresses the following:
  - The current use and condition of the site, including any visual evidence of potentially contaminative operations on site;
  - The land use history in the context of potentially contaminative activities;
  - The environmental setting in terms of geology, hydrogeology, hydrology and surrounding land uses;
  - A review of a third-party Groundsure Environmental Database report relating to the site and its surroundings (this is included within Appendix A of this report);
  - A review of the Environment Agency's (EA) website to identify any potential environmental issues relating to the site or surrounding areas;
  - The development of a preliminary conceptual site model and identification of potential risks to human health and environmental receptors; and
  - Conclusions and recommendations.

### **Technical Approach**

- 1.4 This assessment has been undertaken in accordance with the guidance provided in the following publications:
  - Adopted London Plan (March 2016);
  - Draft London Plan (December 2019);
  - The Adopted Lambeth Local Plan (September 2015);
  - The Draft Lambeth Local Plan (January 2020);
  - Environment Agency Contaminated Land Report 11 (CLR11) Model Procedures for Management of Land Contamination (EA, 2004);
  - Guiding Principles for Land Contamination (GPLC1, EA 2010);
  - National Planning Policy Framework (NPPF, 2019); and
  - National House Building Council Part 4 Foundations Chapter 4.1 Land Quality: Managing Ground Conditions (NHBC, 2011).

## 2 SITE LOCATION AND LAYOUT

#### Site Location

2.1 The application site comprises a funnel shaped parcel of land situated between two large railway viaducts. The site is bound by Pope's Road to the West, at its widest point, and Valentia Place to the East, at its narrowest point. The site comprises a single storey building currently in use as a retail store and is centred on National Grid Reference (NGR) TQ 31237 75468; refer to Figure 2.1.

#### Site Environmental Setting

#### <u>Geology</u>

- 2.2 According to the British Geological Survey (BGS) online geological map viewer and the 1:50,000 map series England and Wales Sheet 270 for South London, the site is underlain by the superficial geology of Taplow Gravel Member comprising sand and gravel. This in turn is underlain by the bedrock geology of the London Clay Formation comprising clay and silt, then the Lambeth Group, Thanet Formation and Chalk Group.
- 2.3 From a review of BGS mapping, there are no historical borehole records on site; however, there is one located adjacent to the western boundary of the site (TQ37NW477), this was dug to a depth of 6.7 m and had the following geological strata:
  - Made ground comprising of brick and rubble (1.7 m thickness);
  - Compact brown clayey sandy gravel (3.8 m thickness); and
  - Stiff blue grey fissures silty clay (1.2 m thickness).
- 2.4 The presence of a significant thickness of made ground beneath the site gives rise to the potential for landfill/ground gas to be present.
- 2.5 The site is not located in a Radon Affected Area (i.e. less than 1% of properties are above the action level) according to the Groundsure Geo Insight report (Appendix A, and therefore no radon protection measures are considered to be necessary for the proposed development.
- 2.6 Zetica produce unexploded bomb risk maps for sites within the UK and this has confirmed that the site is located within an area at high risk of Unexploded Ordnance (UXO) (refer to Appendix B).

#### Hydrogeology

2.7 Online EA data sources provide the following hydrogeological information:

#### Table 2.1: Aquifer Properties

| Aspect  | Designation            | Description   |
|---|------------------------|---|
| Groundwater Source<br>Protection Zone (SPZ)                 | No SPZ                 | There are no SPZs on or in close proximity to the site.   |
| Superficial Aquifer<br>Designation: Taplow<br>Gravel Member | Secondary A<br>Aquifer | These rocks are permeable layers capable of supporting<br>water supplies at a local rather than strategic scale and,<br>in some cases, form an important source of base flow to<br>rivers.  |
| Bedrock Aquifer<br>Designation:<br>London Clay Formation    | Unproductive<br>Strata | These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river baseflow.   |
| Bedrock Aquifer<br>Designation:<br>Lambeth Group            | Secondary A<br>Aquifer | These rocks are permeable layers capable of supporting<br>water supplies at a local rather than strategic scale and,<br>in some cases, form an important source of base flow to<br>rivers.  |
| Bedrock Aquifer<br>Designation:<br>Thanet Sand Formation    | Secondary A<br>Aquifer | These rocks are permeable layers capable of supporting water supplies at a local rather than strategic scale and, in some cases, form an important source of base flow to rivers.   |
| Bedrock Aquifer<br>Designation:<br>Chalk Group              | Principal<br>Aquifer   | These are layers of rock or drift deposits that have high<br>intergranular and/or fracture permeability - meaning they<br>usually provide a high level of water storage. They may<br>support water supply and/or river base flow on a strategic<br>scale. In most cases, principal aquifers are aquifers<br>previously designated as major aquifer. |

- 2.8 According to the Groundsure reports, there are no recorded groundwater abstraction licences on site. There are 11 recorded groundwater abstraction licences within a 2 km radius of the site; of these, only three are active, the remainder are historic. Of the three active groundwater abstractions, the closest is located 1.1 km to the south-west of the site and is used for "*Washing/Process Washing*", with a maximum daily abstraction volume of 1,227 m<sup>3</sup>.
- 2.9 There are no recorded potable water abstraction licences on site. There are three recorded to be located within a 2 km radius of the site, of which only one is recorded to be active, the remainder are historic. This active licence is located approximately 1.3 km to the southwest of the site and is used for "*Potable Water Supply Direct*" with a maximum daily abstraction volume of 13,400 m<sup>3</sup>.

#### <u>Hydrology</u>

2.10 The closest 'main river'<sup>1</sup> is the River Thames which is located approximately 2.7 km to the north-west of the site.

<sup>&</sup>lt;sup>1</sup> Main Rivers described by the EA as the following "usually larger rivers and streams"

2.11 There are no surface water abstraction licences within the site or within a 2 km radius of the site, according to the Groundsure reports (Appendix A),

## 3 SITE RECONNAISSANCE AND DESK STUDY

#### General

3.1 A desk study has been carried out using information obtained from Groundsure Enviro Insight and Geo Insight Reports for the area, as well as through a review of published information, a site walkover and information obtained from regulatory bodies. Full copies of the Groundsure Reports are included as Appendix A.

#### Site Reconnaissance

#### Site Description and Land Use

- 3.1 Currently, the majority of the site is occupied by an existing single storey building that comprises various retail and commercial uses at ground floor level, with elevated car parking provided on the roof of the building.
- 3.2 A site walkover was undertaken on 6<sup>th</sup> November 2019 and the following site observations were made:
  - No evidence of above ground or below ground fuel or oil storage tanks was observed during the site walkover and this was confirmed by the Store Manager at Sports Direct;
  - An internal electrical switchroom was present in the Sports Direct unit, contained behind an area of shelving (Photo 1; Appendix C);
  - All internal floors within the retail units were solid and in good condition;
  - A staff car park was located on the roof of the building with access from Valentia Place to the east; minor hydrocarbon staining in some of the car parking spaces was observed but the area was generally in good condition (Photo 2; Appendix C);
  - An air conditioning plant was present on the roof of the building, within the car park area; this was fenced off from car parking spaces and was observed to be in good condition (Photo 3; Appendix C);
  - The indicative planning application boundary also contained one of the arches to the north of the site fronting Brixton Station Road; this area was bricked up and no access was possible (Photo 4; Appendix C); and
  - It was noted that the building is bound to the north and south by elevated railway lines which are above the roof level, with a number of arches (beneath the railway lines) being used for storage and retail purposes.

#### Surrounding Land Uses

- 3.3 The site is bordered by the following land uses:
  - To the immediate north and south, the site is bound by elevated railway tracks and viaducts (which are currently boarded up) upon which the tracks were built, with only a single pedestrian street separating the site from the railway tracks and viaducts;
  - To the east, the site is bound by an area which is currently used as a servicing yard by the existing occupiers of the site, and Valentia Place further beyond;
  - To the west, the site is bound by Pope's Road, which separates the site from Brixton railway station; and
  - The surrounding area is heavily urbanised and surrounded by commercial and residential land uses.

#### **Site History**

- 3.4 Historical maps have been obtained as part of the Groundsure Enviro Insight report (refer to Appendix A).
- 3.5 The historical information of relevance is summarised in Table 3.1.

| Year of Change<br>(Scale)                         | On Site  | Surrounding Area   |
|---|--|--|
| 1870-1877<br>(1:10,560)<br>(1:1,056)              | Undeveloped land adjacent to<br>Brixton Railway Station.                     | <ul> <li>Railway tracks form the northern and southern boundaries, referred to as '<i>Brighton and South Coast railway</i>'.</li> <li>Brixton Railway Station is located to the west of the site.</li> <li>Unspecified tanks are noted 50 m to the south of the site boundary.</li> <li>Residential properties form much of the surrounding area within the 100 m and 500 m boundaries.</li> </ul> |
| 1894-1899<br>(1:10,560)<br>(1:1,056)<br>(1:2,500) | The site is shown to be<br>comprised of the 'Midland<br>Railway coal depot'. | <ul> <li>An unspecified engine house is within 90 m to the south-west of the site.</li> <li>Coldharbour Lane tramway is located to the north-east.</li> <li>A second tramway is located along Gresham Road to the north of the site.</li> <li>A large hospital lies within 600 m of the site's western boundary 'south western hospital'.</li> </ul>   |
| 1916 - 1920<br>(1:10,560)                         | No significant change from<br>previous edition.                              | A large laundry is located to the south of the site, within the 100 m boundary.  |

#### Table 3.1: Summary of Historic Mapping

| Year of Change                                       | On Site  | Surrounding Area   |
|--|--|--|
| (Scale)<br>1938 – 1948<br>(1:2,500)<br>(1:10,560)    | No significant change from previous edition.   | No significant change from previous edition.   |
| 1938-1948<br>(1:10,560)                              | No significant change from previous edition.   | No significant change from previous edition.   |
| 1950 – 1962<br>(1:2,500)<br>(1:10,560)               | No significant change from previous edition.   | Engineering works are located within 30 m of<br>the site boundary, to the south-east, over the<br>railway tracks.<br>A fire station is located 100 m to the east of the<br>site.<br>An electrical substation is located 120 m to the<br>north-west.<br>A telephone exchange is shown 150 m to the<br>north-east. |
| 1965 – 1980<br>(1:1,250)<br>(1:10,000)<br>(1:10,560) | By 1973, the site had been<br>cleared and modified towards<br>its current layout with a rooftop<br>car park and single storey<br>building. | Increased density of residential housing within<br>the 750 m boundary.<br>Unspecified works and depots are located to<br>the south/south east directions.<br>The large hospital is identified along the south-<br>western boundary.  |
| 1984 – 1993<br>(1:1,250)<br>(1:10,000)               | No significant change from previous edition.   | Buildings are located to the south-east of the site and include unspecified warehouses and a garage within the 100 m boundary.   |
| 1995 – 2003<br>(1:10,000)<br>(1:1,250)               | No significant change from previous edition.   | N/A  |
| 2010-2019<br>(1:10,000)<br>(1:1,250)                 | No significant change from previous edition.   | No significant change from previous edition.   |

### Consultation

- 3.6 A contaminated land enquiry was issued to Lambeth Council on the 26<sup>th</sup> of November 2019 and their response is included within Appendix D of this report. This consultation confirms that the site is not classified as contaminated land under Part IIA of the Environmental Protection Act 1990 nor has it currently been identified for further review under the City's Contaminated Land Strategy (or other Part IIA undertaking).
- 3.7 Lambeth Council also confirm that there are no enforcement concerns regarding contaminative historical use and activity within the surrounding area under Part IIA of the Environmental Protection Act 1990 and no intention to complete further investigations regarding this have been confirmed.
- 3.8 Three sites within the surrounding area have been identified by the council as potentially contaminative and these are as follows:

- LCC Depot (NGR TQ312755), dated 1965, North of Brixton Station Road, west of Pope's Road and south of Canterbury Crescent (SW9 0HZ);
- Laundry, Engineering works (NGR TQ305761) dated 1952, North off Coldharbour Lane, east of Atlantic Road and west of Canterbury Crescent (SW9 9HQ); and
- Scaffolding depot, NGR (NGR TQ313756) dated 1998, 86/88 Gresham Road (SW9).

#### **Environmental Data Searches**

3.9 Environmental data has been obtained for the site from the Groundsure reports (Appendix A) and from data the EA and local authority websites. The information presented below is taken from these sources.

#### Table 3.2: Historical Industrial Sites

| Entry                                      | On Site | 0-250 m |
|--|---------|---------|
| Potentially Contaminative Uses             | 20      | 55      |
| Historical Tank Database                   | 0       | 7       |
| Historical Energy Features                 | 0       | 35      |
| Historical Petrol and Fuel Sites           | 0       | 0       |
| Historical Garage and Motor Vehicle Repair | 0       | 6       |
| Potentially Infilled Land                  | 0       | 0       |

- 3.10 There are 20 recorded potentially contaminative historical land uses on site and these all relate to railway infrastructure. There are a further 55 records of potentially contaminative land uses within a 250 m radius of the site. These land uses relate mostly to *'railway infrastructure'*, *'police stations'* and *'fire stations'*.
- 3.11 There are no records of historical tanks within the site.
- 3.12 However, there are seven tanks recorded to lie within a 250 m radius of the site, the closest of which is located 47 m to the south of the site and is described as '*tank or trough*' recorded in 1875.
- 3.13 There are no historical energy features recorded on site; however, thirty-five historical energy features are located within a 250 m radius of the site and are described as 'electricity substations', with the closest located 12 m to the south of the site.
- 3.14 There are no records of any historical petrol or any fuel sites within the site or located within a 250 m radius of the site.
- 3.15 There are no records of any historical garage and motor repair businesses within the site; however, there are six recorded within a 250 m radius of the site. All of these are described as 'garages' and the closest of which is recorded to be located 50 m to the south-east of the site.
- 3.16 There is no recorded potentially infilled land on site or within a 250 m radius of the site.

| Entry   | On Site | 0-250 m |
|---|---------|---------|
| Historic IPC Authorisations   | 0       | 0       |
| Licensed Discharge Consents   | 0       | 0       |
| Red List Discharge Consents   | 0       | 0       |
| Dangerous Substances List 1   | 0       | 0       |
| Dangerous Substance List 2  | 0       | 0       |
| Recorded Pollution Incidents List 1   | 0       | 0       |
| Recorded Pollution Incidents List 2   | 0       | 0       |
| Part A(1) and IPPC Authorised Activities                                      | 0       | 0       |
| Part A(2) and Part B Activities and Enforcements                              | 0       | 1       |
| Category 3 or 4 Radioactive Substances Authorisations                         | 0       | 0       |
| Water Industry Referrals (potentially harmful discharges to the public sewer) | 0       | 0       |
| Planning Hazardous Substance Consents and Enforcements                        | 0       | 0       |

#### Table 3.3: Environmental Permits, Incidents and Registers

- 3.17 According to the Groundsure reports, there are no records of any environmental permits, incidents or registers within the site boundary.
- 3.18 There are no licensed discharge consents recorded on site or within a 250 m radius of the site.
- 3.19 The one Part A(2) and Part B Activities and Enforcements located within a 250 m radius of the site is in relation to a Texaco Service station located 159 m to the east of the site; this was a Part B permit type and no enforcement was notified.
- 3.20 There are no records of Category 3 or 4 Radioactive Substances Authorisations within a 250 m radius of the site.

#### Table 3.4: Landfill and Other Waste Sites

| Entry                                      | On Site | 0-250 m |
|--|---------|---------|
| Historic Landfill Sites                    | 0       | 0       |
| Waste treatment transfer or disposal sites | 0       | 1       |
| Licensed Waste Sites                       | 0       | 1       |

- 3.21 As shown within Table 3.4, there are no records of any landfill or other waste sites within the site boundary.
- 3.22 One planning application reference was recorded for waste treatment transfer or disposal sites; this was located 29 m to the south-west of the site and refers to a recycling centre.
- 3.23 There is one recorded licensed waste site within 250 m of the site; this refers to a metal recycling centre that lies 63 m to the east which is no longer operational.

#### Table 3.5: Current Land Uses

| Entry                                      | On Site | 0-250 m |
|--|---------|---------|
| Potentially Contaminative Industrial Sites | 0       | 34      |
| Petrol or Fuel Sites                       |         | 1       |

| Entry  | On Site | 0-250 m |
|--|---------|---------|
| National Grid high voltage underground electricity transmission cables | 0       | 0       |
| National Grid high pressure gas transmission pipelines                 | 0       | 0       |

- 3.24 In accordance with Table 3.5, there are no potentially contaminative industrial sites currently on site. However, there are 34 recorded within a 250 m radius of the site, the closest of which is recorded to be 20 m to the north-west of the site and known to be *'Denmay Interioirs'*, a curtains and blinds company. The remaining contaminative industrial sites are associated with electronic equipment, published goods, clothing, unspecified works, business parks, industrial estates and fire stations.
- 3.25 There is one recorded petrol station or fuel site which refers to the Texaco site located 151 m to the east of the site. There are no national grid, high voltage underground electricity transmission cables or national grid high pressure gas transmission pipelines within the site or within a 250 m radius.

| Entry   | On Site | 0-250 m |
|---|---------|---------|
| Groundwater Abstraction Licences                              | 0       | 0       |
| Surface Water Abstraction Licences                            | 0       | 0       |
| Potable Water Abstraction Licences                            | 0       | 0       |
| Source Protection Zones                                       | 0       | 0       |
| Groundwater Vulnerability and Soil Leaching Potential entries | 1       | 0       |
| Surface Water Features  | 0       | 0       |
| River Quality Entries   | 0       | 0       |

#### Table 3.6: Hydrogeology and Hydrology

- 3.26 There are no groundwater abstraction licences recorded on site or within a 250 m radius.
- 3.27 There are no potable abstraction licences recorded to be within a 250 m radius of the site.
- 3.28 The site is recorded to be located in an area of groundwater vulnerability and soil leaching potential.
- 3.29 This classification is recorded to be 'Minor Aquifer/High Leaching Potential' and is described in the Groundsure reports as 'Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.'

#### Table 3.7: Flooding

| Entry  | On Site and Surrounding<br>Area |
|--|---------------------------------|
| Environment Agency Flood Zone 2 within 250 m | None Identified                 |
| Environment Agency Flood Zone 3 within 250 m | None Identified                 |
| Risk of flooding from Rivers and Sea on site | Very Low                        |
| Flood Defences within 250 m                  | None Identified                 |
| Areas Benefiting from Flood Defences         | None Identified                 |
| Flood Storage within 250 m                   | None Identified                 |

| Entry   | On Site and Surrounding<br>Area |
|---|---------------------------------|
| BGS Groundwater Flooding susceptibility within 50 m           | Potential Below Surface         |
| BGS confidence rating for Groundwater Flooding susceptibility | Moderate                        |

- 3.30 The site is not located within Flood Zone 2 or Flood Zone 3, nor is it located within 250 m of flood defences or within a flood storage area.
- 3.31 The risk of flooding from rivers or sea on site is identified to be very low, i.e. less than 1 in 1000 chance of flooding in any given year.
- 3.32 According to the Groundsure Reports and BGS, the site is located within an area of groundwater flooding susceptibility below the surface and has a moderate confidence rating.
- 3.33 BGS state that "Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding".

#### Table 3.8: Designated Environmentally Sensitive Sites

| Entry         | On Site | 0-250 m |
|---------------|---------|---------|
| None Recorded |         |         |

3.34 There are no environmentally sensitive areas or Nitrate Vulnerable Zones within 200 m of the site.

#### Table 3.9: Natural Hazards

| Entry  | On Site  |
|--|--|
| Maximum Shrink-Swell Hazard Rating   | Moderate   |
| Maximum Landslides Hazard Rating   | Very Low   |
| Maximum Soluble Rocks Hazard Rating  | Negligible   |
| Maximum Compressible Ground Hazard Rating  | Negligible   |
| Maximum Collapsible Hazard Rating  | Very Low   |
| Maximum Running Sand Hazard Rating   | Very Low   |
| Radon Affected Area and Percentage of homes above the Action Level                 | <1% of properties are above the Radon Action Level |
| Radon Protection Requirements for New Properties or<br>Extensions to Existing Ones | No Radon Protective<br>Measures are Necessary      |

- 3.35 According to Groundsure, the risk of shrink-swell within the site is Moderate. Shrink swell information provided by BGS for the site identifies that the ground conditions are predominantly of high plasticity and no special actions are required for existing structures, other than expert advice on trees or shrubs near buildings.
- 3.36 The risk of landslides on site is considered to be Very Low and BGS information for the site suggests that slope instability problems are unlikely to be present and, therefore, no special actions are required to avoid problems due to landslide.
- 3.37 The risk of ground dissolution of soluble rocks within the site is considered to be Negligible. BGS information for the site states that although soluble rocks are present on site, they are unlikely to cause problems except under exceptional conditions and therefore no special actions are required to avoid problems due to soluble rocks.
- 3.38 The Groundsure report identifies that the site is within an area at Negligible risk of compressible ground. There are no indicators for compressible deposits identified and no special actions are required.
- 3.39 The risk of collapsible ground on site is considered to be Very Low. BGS information for the site states that it is unlikely to have collapsible deposit problems. Therefore, no special actions are required.
- 3.40 According to BGS, the risk of running sand problems within the site is very low and BGS information states that there is a Very Low potential for running sand identified with increasing water tables on site and that no special actions are required.
- 3.41 The site is not in a Radon Affected Area (i.e. less than 1% of properties are above the action level) according to the Groundsure Report and therefore no radon protection measures are considered to be necessary.

| Entry                                 | On Site |
|---------------------------------------|---------|
| Coal Mining                           | No      |
| Non-Coal Mining                       | No      |
| Brine Affected Areas                  | No      |
| Johnson Poole and Bloomer Mining Area | Yes     |

#### Table 3.10: Mining

- 3.42 There are no mining areas within 50 m of the site.
- 3.43 Johnson Poole and Bloomer hold a dataset that provides information relating to mining activity. While it has been confirmed that there is a historical record of coal mining activity within a 1000 m radius (not pin-pointed), Groundsure records have stated that the site itself was a coal depot historically.

#### Table 3.11: Ground Workings

| Entry   | On Site | 0-250 m |
|---|---------|---------|
| Historical Surface Ground Working<br>Features | 0       | 0       |
| Historical Underground Working Features       | 0       | 0       |
| Current Ground Workings                       | 0       | 0       |

3.44 There are no records of any ground workings on site or within a 250 m radius of the site.

#### Table 3.12: Railways and Tunnels

| Entry                                  | On Site | 0-250 m |
|--|---------|---------|
| Historical Railway Lines               | 0       | 0       |
| Tunnels                                | 0       | 1       |
| Historical Railway and Tunnel Features | 16      | 4       |
| Underground railway lines              | 0       | 1       |
| Active Railways                        | 0       | 54      |

- 3.45 There are 16 records of historical railway and tunnels features on site; these are all in relation to railway sidings.
- 3.46 There are no historical railway lines located on site or within a 250 m radius of the site.
- 3.47 The is one railway tunnel located within a 250 m radius of the site; this is recorded to be located 26 m to the south-west of the site and there are no further details available.
- 3.48 There are no records of any underground railway lines that have been identified within the site; however, there is one recorded within a 250 m radius of the site. This is in reference to the 'London Underground, Victoria Line' located 54 m south of the site.
- 3.49 There are no active railway lines on site, but there are 54 active railways within 250 m of the site, the closest of which is recorded to be located 2 m to the north of the site and 4 m to the south of the site.
- 3.50 Additionally, it is noted within the Groundsure report that the site is not located within 5 km of the route of the High Speed 2 rail project or within 500 m from the route of the Crossrail 1 project.

#### **Mineral Safeguarding**

3.51 Due to the underlying geology, it is considered unlikely that it would be commercially viable or desirable to extract minerals or other materials from the site.

## 4 CONCEPTUAL SITE MODEL

#### General

4.1 The assessment of risk from contamination follows the source-pathway-receptor approach as described in CLR11 and is summarised as follows (refer to Figure 4.1).

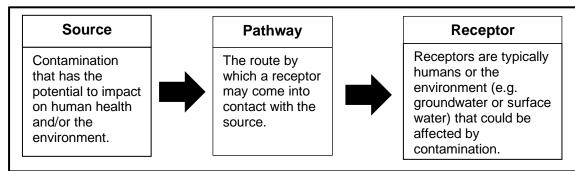


Figure 4.1: Source-Pathway-Receptor Approach

- 4.2 If there is no source-pathway-receptor (SPR) linkage in place, it is concluded that there is no risk of harm. If, however, there is a linkage between source and receptor, then a riskbased assessment called a Qualitative Risk Assessment (QRA) is used to determine the significance or potential impact of the SPR-linkage.
- 4.3 The QRA process involves the identification of sources based on historical mapping and data searches, together with identification of the exposure pathway and sensitive receptors. A Conceptual Site Model (CSM), which defines the key sources, pathways and receptors that have been identified as being relevant to this site is then developed.
- 4.4 In terms, of identifying 'significant' pollution linkages (i.e. those that could require remediation), a level of risk is assigned to each linkage. The overall risk of each pollution linkage is determined by classifying each linkage with a probability and consequence classification. Probability of a pollution linkage is classified as either having a High Likelihood, Likely, Low Likelihood or Unlikely occurrence. Similarly, the consequence of a pollution linkage is classified as either being Severe, Medium, Mild and Minor. A 'Risk Estimation' matrix table is then used to determine the overall risk of the pollution linkages. Where the level of risk is Moderate or greater, then the pollution linkage is considered 'significant' and further investigation is required.
- 4.5 Descriptions and definitions for each probability, consequence and risk classifications, including the risk matrix table is included within Appendix E of this report.
- 4.6 The Conceptual Site Model has been prepared with due regard to the advice contained in the Contaminated Land (England) Regulations 2006 and associated statutory guidance on contaminated land.

#### **Review of Potential Sources of Contamination**

4.7 Based on the information presented in the Sections 2-3 of this report, the potential sources of contamination that could impact on receptors have been identified and are summarised in Tables 4.1 and 4.2 below.

#### Table 4.1: Potential Sources of Contamination – On Site

| Source  | Location on Site | Activity                                    | Potential<br>Contaminants   |
|---|------------------|---|---|
| Historical coal depot<br>(Historical)             | Full site area   | Storage of coal for railway and other uses. | Hydrocarbons,<br>Polycyclic Aromatic<br>Hydrocarbons<br>(PAHs), Asbestos,<br>Metals |
| Railway<br>Infrastructure<br><i>(Historical)</i>  | Full site area   | Rail Infrastructure                         | Hydrocarbons,<br>PAHs, Asbestos   |
| Current building<br>(Retail unit and car<br>park) | Full site area   | Retail unit                                 | Hydrocarbons,<br>Asbestos.  |

#### Table 4.2: Potential Sources of Contamination – Off Site

| Source   | Location to the site                 | Activity                                   | Potential<br>Contaminants                            |
|--|--------------------------------------|--|--|
| Industrial/commercial buildings  | Surrounding the site                 | Number of activities including warehouses, | Hydrocarbons,<br>PAHs, Asbestos,                     |
| (historical and current)   |                                      | a hospital and garages.                    | Metals   |
| Electrical Substation (historical)                                       | 79 m to the north and north-west     | Electrical Infrastructure                  | Polychlorinated<br>biphenyls (PCBs),<br>Hydrocarbons |
| Railway<br>infrastructure<br>including stations,<br>tunnels and sidings. | Directly north and south of the site | Rail Infrastructure                        | Hydrocarbons,<br>PAHs, Pesticides,<br>Asbestos       |
| (historical and current)   |                                      |  |  |
| Unspecified Tanks<br>(historical)  | Closest is 50m to the south.         | Unknown                                    | Unknown  |

#### **Review of Potential Exposure Pathways**

4.8 A review of the identified potential pathways that could exist at the site, whether or not a source of contamination has been identified in Tables 4.1 and 4.2, is summarised in Table 4.3.

| Receptor  | Pathway  | Present | Notes  |
|---|--|---------|--|
| Human Health  |  |         |  |
|   | Dermal contact,<br>ingestion or<br>inhalation of soil<br>and soil dust                                   | NO      | The proposed scheme involves the construction of a multi storey building with one level basement and mezzanine level. The building will cover almost the full site area and there are no proposed areas of exposed soils as the site is 100% hardstanding. |
| Future site<br>users (operation<br>phase)   | Migration in<br>permeable<br>strata and<br>inhalation of gas<br>and/or organic<br>vapour                 | YES     | The superficial geology (Taplow Gravel)<br>is classified as a Secondary A Aquifer<br>and therefore considered to be relatively<br>permeable.   |
|   | Potential ground<br>gas migration in<br>permeable<br>strata,<br>accumulation<br>and risk of<br>explosion | YES     | Borehole records suggest a significant<br>thickness of made ground on site and<br>therefore it is possible that ground gas is<br>present on site.  |
| Adjacent site<br>users<br>(demolition/<br>construction<br>phase)                              | Ingestion or<br>inhalation of<br>windblown dust  | YES     | Residential dwellings and commercial<br>uses are within close proximity (<100 m<br>distance). Construction effects only.   |
| Construction<br>workers and<br>service repair<br>staff (demolition/<br>construction<br>phase) | Dermal contact,<br>ingestion, or<br>inhalation of soil<br>and soil dust                                  | YES     | Site workers could be exposed to soil or<br>ground water contamination during works<br>and/or asbestos and/or other substances<br>during construction.   |
| Development   |  | 1       |  |
| Future plant life<br>(operational<br>phase)   | Plant uptake in<br>the areas of<br>public open<br>space and<br>gardens                                   | NO      | The proposed scheme does not include<br>any areas of exposed soils such as<br>landscaping at ground level.   |
| Buried Services<br>/Infrastructure<br>(operational  | Direct Contact   | YES     | The Proposed Development will include<br>buried services (utilities) which could be<br>susceptible to corrosion from contact with  |
| phase)  |  |         | pollutants within soil.  |
| Environment   |  |         |  |
| Surface water<br>(River Thames<br>2.7km north-<br>west of the site)<br>(demolition/           | Surface runoff   | YES     | The River Thames could be exposed to<br>contamination arising from general<br>construction-related activities.<br>Operational site drainage could also<br>potentially contaminate the river.   |
| construction<br>phase and   | Groundwater  | YES     | The superficial geology (Taplow Gravel)<br>is considered to be permeable and is<br>likely to contain perched groundwater   |

#### Table 4.3: Potential Exposure Pathways and Receptors

| Receptor  | Pathway  | Present | Notes   |
|---|--|---------|---|
| operation<br>phase)   |  |         | that sits above the unproductive bedrock geology (London Clay Formation).   |
| Superficial<br>Aquifer: Taplow<br>Gravels<br>(Secondary A<br>Aquifer) | Leaching from<br>soil and vertical<br>fluid movement | YES     | The superficial geology (Taplow Gravel)<br>is considered to be relatively permeable;<br>piling and basement construction could<br>open up groundwater pathways. |
| (demolition/<br>construction<br>phase)                                |  |         |   |
| Bedrock Aquifer:<br>London Clay,<br>(Unproductive<br>Strata)          | Leaching from<br>soil and vertical<br>fluid movement | NO      | The bedrock geology (London Clay<br>Formation) is classified as unproductive<br>strata and considered to be of limited<br>permeability.                         |
| (demolition/<br>construction<br>phase)                                |  |         |   |

## Potentially Complete SPR-Linkages

4.9 Based on the sources, pathways and receptors identified in Table 4.3 below summarises all potentially complete pollutant linkages for the site and identifies the level of risk from each. Risk definitions are provided in Appendix E.

#### Table 4.4: Potential Complete SPR-Linkages

| Source  | Location  | Contaminants                                     | Pathway   | Receptor   | Probability | Consequence | Overall<br>Risk    | Justification and/or Mitigating<br>Factors   |
|---|---|--|---|--|-------------|-------------|--------------------|--|
| Existing<br>Building  | Covers<br>the<br>majority<br>of the full<br>site area | Asbestos   | Ingestion,<br>dermal<br>contact<br>and/or<br>fugitive<br>inhalation | Demolition<br>and<br>Construction<br>workers                                 | Unlikely    | Medium      | Low to<br>Moderate | Due to the age and nature of the<br>historical use of the building, a full<br>building inspection is required to identify<br>and safely removal any asbestos (and/or<br>other hazardous materials) prior to<br>commencement of<br>demolition/construction. Any waste will<br>be removed by a specialist contractor.                  |
|   |   | Hydrocarbons,<br>PAHs, Metals<br>(from car park) | Surface<br>Water<br>Runoff  | Surface<br>Water   | Likely      | Minor       | Low                | Surface water runoff from the existing<br>site drainage is potentially untreated.<br>The proposed development will include<br>an appropriate surface water drainage<br>strategy which will consider treatment<br>for surface water runoff.   |
| Potential<br>historical<br>contamination<br>in soils and<br>groundwater | On and<br>Off site                                    | Hydrocarbons,<br>Metals. PAHs,<br>Asbestos       | Ingestion,<br>dermal<br>contact<br>and<br>fugitive<br>inhalation    | Demolition<br>and<br>Construction<br>Worker and<br>service repair<br>workers | Likely      | Medium      | Moderate           | Workers will be working directly in<br>potentially contaminated soils and/or<br>groundwater. Any risk from construction<br>will be mitigated by good construction<br>practice, such as Personal Protective<br>Equipment (PPE).   |
|   |   |  |   | Future Site<br>Users   | No Linkage  | Mild        | No Risk            | The proposed scheme involves the demolition and construction of a multi storey building. The building will cover the full site area and there are no proposed areas of exposed soils as the site is 100% hardstanding, therefore there is no risk of exposed potentially contaminated soils and/or groundwater to future site users. |
|   |   |  |   | Adjacent site<br>users   | Likely      | Mild        | Very Low           | Risk from demolition and construction<br>will be mitigated by good demolition and<br>construction practice (such as dust   |

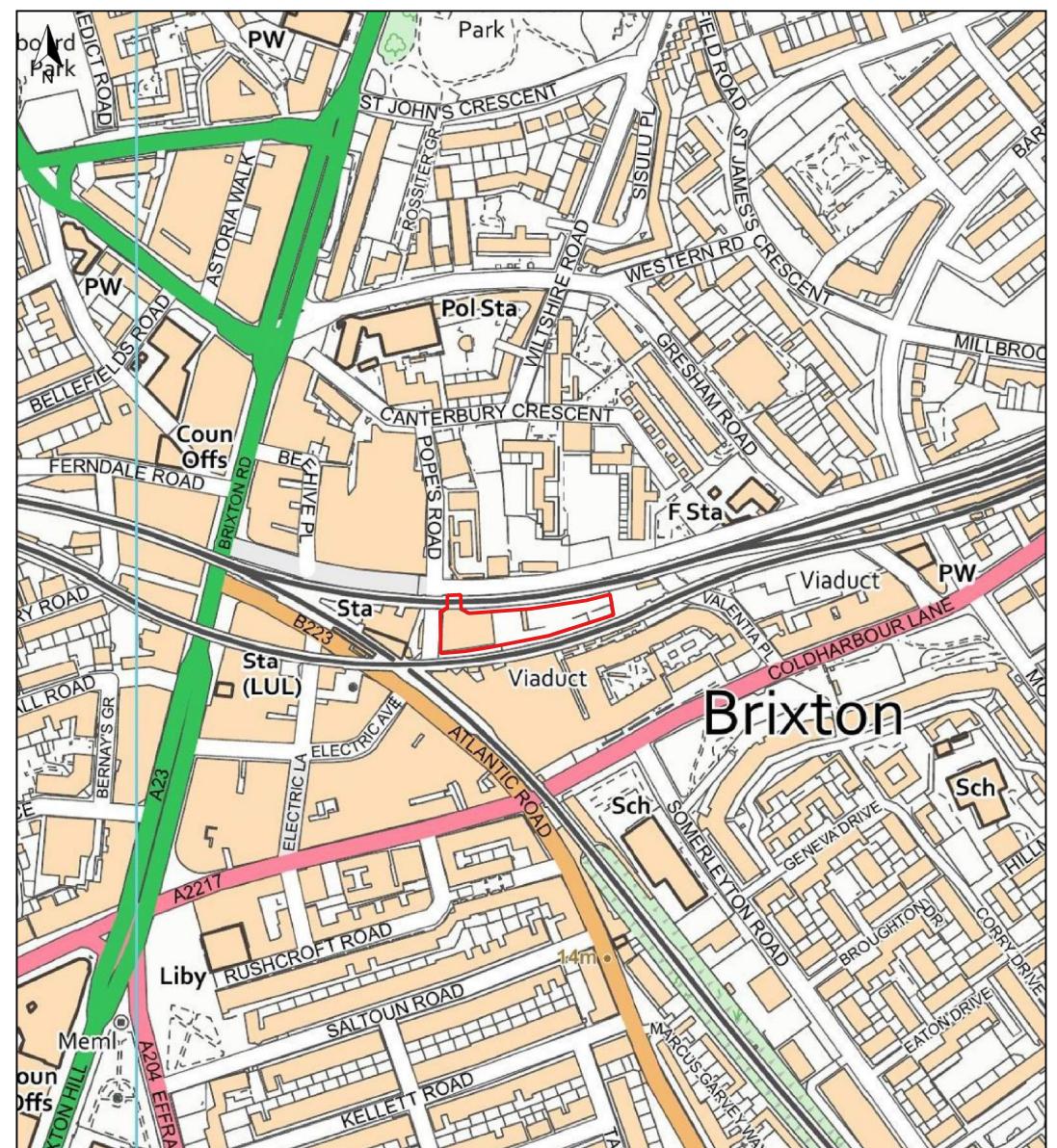
| Source                 | Location                   | Contaminants | Pathway                    | Receptor  | Probability | Consequence | Overall<br>Risk | Justification and/or Mitigating<br>Factors  |
|------------------------|----------------------------|--------------|----------------------------|---|-------------|-------------|-----------------|---|
|                        |                            |              |                            |   |             |             |                 | suppression measures) to ensure that adjacent site users are not affected.  |
|                        |                            |              | Plant<br>Uptake            | Landscape<br>Planting   | No Linkage  | Mild        | No Risk         | There are no exposed soils at ground level within the proposal.   |
|                        |                            |              | Direct<br>Contact          | Buried<br>Services  | Low         | Mild        | Low             | The proposed development will include<br>buried services (utilities); therefore, any<br>pipes and utilities in areas of potential<br>contamination will be designed<br>appropriately to reduce the risk of<br>corrosion/damage.   |
| Existing Ground<br>Gas | On Site<br>and Off<br>site | Ground Gas   | Ground<br>Gas<br>Migration | Demolition and<br>construction<br>worker and<br>service repair<br>workers | Low         | Severe      | Moderate        | Due to the presence of made ground on site,<br>there is the potential for ground gas to be<br>present on site and in worst-case this could<br>cause explosion risk. While there is no<br>reported evidence of ground gas affecting<br>the current building, it is recommended that a<br>ground gas assessment is undertaken prior<br>to demolition and construction on site and<br>appropriate mitigation measures will be put<br>in place. |
|                        |                            |              |                            | Future Site<br>Users  | No Linkage  | Severe      | No Linkage      | Any made ground will be excavated during<br>the demolition and construction of the<br>basement. Any risk of ground gas from<br>onsite materials will be removed.  |

## 5 SUMMARY & RECOMMENDATIONS

- 5.1 This Phase 1 Land Contamination Assessment has been prepared with due regard to the advice presented in the Contaminated Land (England) Regulations 2006 and associated statutory guidance on contaminated land.
- 5.2 Currently, the site comprises a funnel shaped parcel of land situated between two large railway viaducts. The site is bound by Pope's Road to the west, at its widest point, and Valentia Place to the east, at its narrowest point. The site comprises a single storey building currently in use as a retail store.
- 5.3 The Proposed Development will include the demolition of the existing building and erection of a part G + 19, part G + 8 storey building comprising flexible A1/A3/B1/D1/D2 uses at basement, ground and first floor, with restaurant (A3) use on floor 8 and B1 accommodation on floors 2 to 19, with plant enclosures at roof level, and associated cycle parking, servicing and all necessary enabling works.
- 5.4 From reviewing the Groundsure data, the site is reported to have 20 recorded potentially contaminative historical land uses on site that relate to railway infrastructure.
- 5.5 There are no current contaminative land uses depicted on the site. From reviewing baseline information and undertaking a site visit, the current land use is associated with retail and is of low risk. However, due to the age of the building there is the potential for asbestos to be located within the existing buildings on site (although not observed during the site walkover). The area surrounding the site has a number of potentially contaminative land uses, both historical and current.
- 5.6 Consultation with Lambeth Council affirmed that there were no records of contamination on the site, and no enforcements concerns relating to Part IIA of the Environmental Protection Act 1990.
- 5.7 Potentially significant pollution pathways within the site and surrounding area are associated with ingestion/inhalation of windblown dust from adjacent site users and dermal contact, ingestion or inhalation of potentially contaminated soil or dust for demolition and construction workers and service repair staff. It is also considered that there is a risk of potential contamination of surface water runoff from general demolition and construction-related activities and/or via operational site drainage.
- 5.8 Potential contamination within the soil may have a significant effect on buried services (utilities) which are susceptible to corrosion from direct contact with pollutants within soil. There is the potential for ground gas migration in permeable strata, accumulation and risk of explosion to demolition and construction workers and future site users. The superficial geology (Taplow Gravels) underlying the site is relatively permeable and therefore, there is the potential risk of contamination pathways via groundwater.
- 5.9 The overall risk from the existing buildings is considered to be **Moderate** for demolition and construction workers due to the potential presence of asbestos in buildings and **Low** for surface water due to potentially contaminated runoff entering the drainage system.

- 5.10 The overall risk of potential contamination within soils and groundwater on on-site and offsite sources is **Moderate** on construction workers as workers will be working directly in potentially contaminated soils and/or groundwater and **Very Low** for adjacent site users.
- 5.11 There is **No Risk** from potential contamination within soils and groundwater from future site users and planting because there are no proposed areas of exposed soils and/or groundwater at ground level and the proposed development is 100% hardstanding. Should any future planting occur, then this will be via above ground planters using clean soils.
- 5.12 There is a **Moderate** risk of existing ground gas migration accumulating and potential for explosion within the site on demolition and construction workers. This is because there is significant thickness of made ground on site, therefore, it is recommended that ground gas monitoring and a risk assessment is undertaken prior to demolition and construction on site. Following this, appropriate mitigation measures will be proposed (where necessary) to ensure there is no risk to construction workers.
- 5.13 A full building inspection will be required to identify and safely removal any asbestos (and/or other hazardous materials) prior to commencement of demolition and construction. Any waste will need to be removed by a specialist contractor.
- 5.14 It is recommended that a targeted site investigation is undertaken to quantify the contamination status of the underlying soils and ground water, with particular regard to the excavation of materials for the construction of the basement. This site investigation should also consider the risk of ground gas and the design of mitigation measures where required.
- 5.15 Good demolition and construction practices will be used to reduce the contamination risks to demolition/construction workers on site and adjacent site users, this will include ensuring demolition/construction workers wear appropriate personal protective equipment (PPE) and that any necessary licences would be obtained for the storage, treatment and disposal of waste.
- 5.16 An appropriate surface water drainage strategy will be designed to ensure there are no adverse effects of contamination on surface water, as a result of surface water runoff.





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|--|---|----|
| Кеу  | Figure 2.1: Site Location Plan  |    |
| Application Site   | Client: Trium Environmental LLP   |    |
|  | Project: Popes Road Brixton ENVIRONMENTA  | ۱L |
|  | Project No.: C2023 Drawn: Checked: Date: Scale: AM RM 04/03/2020 1:2,500@/          |    |

Appendix A Groundsure Reports



| RMA Environmental Limited  | Groundsure<br>Reference:   | GS-6436469                 |  |
|--|----------------------------|----------------------------|--|
| 4 SWALLOW COURT R M A ENVIRONMENTAL<br>LTD, -,<br>TIVERTON/SAMPFORD PEVERELL, EX16 7EJ |                            | C2023Sports_Direct_Brixton |  |
|  | Report Date                | 1 Nov 2019                 |  |
|  | Report Delivery<br>Method: | Email - pdf                |  |

## **Enviro Insight**

Address: RAILWAY ARCADE, ATLANTIC ROAD, LONDON, SW9 8JB

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Q.

Managing Director Groundsure Limited

Enc. Groundsure Enviroinsight

## Groundsure Enviro Insight 9

| Address:   | RAILWAY ARCADE, ATLANTIC ROAD, LONDON, SW9 8JB |
|------------|--|
| Date:      | 1 Nov 2019                                     |
| Reference: | GS-6436469                                     |
| Client:    | RMA Environmental Limited                      |

NW



W

SW

Aerial Photograph Capture date: 23-Sep-2016 Grid Reference: 531270,175468 Site Size: 0.2510ha

Report Reference: GS-6436469 Client Reference: C2023\_-\_Sports\_Direct\_Brixton SE

Е



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| <ul> <li>Map</li> <li>7 Flooding</li> <li>7.1 River and Coastal Zone 2 Flooding</li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>51   |
| Map<br>7 Flooding<br>7.1 River and Coastal Zone 2 Flooding  | 48<br>49<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>51<br>51<br>52   |
| <ul> <li>Map</li> <li>7 Flooding</li> <li>7.1 River and Coastal Zone 2 Flooding</li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>50<br>51<br>52<br>52   |
| <ul> <li>Map</li> <li>7 Flooding</li> <li>7.1 River and Coastal Zone 2 Flooding</li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>51<br>52<br>52<br>52<br>52   |
| <ul> <li>Map</li> <li>7 Flooding <ul> <li>7.1 River and Coastal Zone 2 Flooding</li></ul></li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>51<br>52<br>52<br>52<br>52   |
| <ul> <li>Map</li> <li>7 Flooding</li> <li>7.1 River and Coastal Zone 2 Flooding</li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>51<br>52<br>52<br>52<br>52<br>52<br>52<br>52   |
| <ul> <li>Map</li> <li>7 Flooding <ul> <li>7.1 River and Coastal Zone 2 Flooding</li></ul></li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>50<br>51<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52       |
| <ul> <li>Map</li> <li>7 Flooding</li> <li>7.1 River and Coastal Zone 2 Flooding</li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>50<br>51<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52       |
| <ul> <li>Map</li> <li>7 Flooding</li> <li>7.1 River and Coastal Zone 2 Flooding</li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>50<br>51<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52       |
| <ul> <li>Map</li> <li>7 Flooding</li> <li>7.1 River and Coastal Zone 2 Flooding</li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>50<br>51<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52       |
| <ul> <li>Map</li> <li>7 Flooding</li> <li>7.1 River and Coastal Zone 2 Flooding</li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>50<br>50<br>51<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52 |
| <ul> <li>Map</li> <li>7 Flooding</li> <li>7.1 River and Coastal Zone 2 Flooding</li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>50<br>51<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52       |
| <ul> <li>Map</li> <li>7 Flooding</li> <li>7.1 River and Coastal Zone 2 Flooding</li></ul>   | 48<br>49<br>49<br>49<br>49<br>49<br>49<br>50<br>50<br>50<br>50<br>51<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52<br>52       |



|   | LOCATION INTELLIGENCE |
|---|-----------------------|
| 8.14 Records of Green Belt land within 2000m of the study site: | 54                    |
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# **Overview of Findings**

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

| Section 1: Historical Industrial Sites   | On-site | 0-50  | 51-250 | 251-500 |
|--|---------|-------|--------|---------|
| 1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping                              | 20      | 18    | 37     | 25      |
| 1.2 Additional Information – Historical Tank Database  | 0       | 1     | 6      | 39      |
| 1.3 Additional Information – Historical Energy Features Database                                       | 0       | 10    | 25     | 59      |
| 1.4 Additional Information – Historical Petrol and Fuel Site<br>Database                               | 0       | 0     | 0      | 0       |
| 1.5 Additional Information – Historical Garage and Motor Vehicle<br>Repair Database                    | 0       | 3     | 3      | 0       |
| 1.6 Historical military sites  | 0       | 0     | 0      | 0       |
| 1.7 Potentially Infilled Land  | 0       | 0     | 0      | 6       |
| Section 2: Environmental Permits, Incidents and Registers  | On-site | 0-50m | 51-250 | 251-500 |
| 2.1 Industrial Sites Holding Environmental Permits and/or Authorisations                               |         |       |        |         |
| 2.1.1 Records of historic IPC Authorisations   | 0       | 0     | 0      | 0       |
| 2.1.2 Records of Part A(1) and IPPC Authorised Activities  | 0       | 0     | 0      | 0       |
| 2.1.3 Records of Red List Discharge Consents   | 0       | 0     | 0      | 0       |
| 2.1.4 Records of List 1 Dangerous Substances Inventory sites   | 0       | 0     | 0      | 0       |
| 2.1.5 Records of List 2 Dangerous Substances Inventory sites   | 0       | 0     | 0      | 0       |
| 2.1.6 Records of Part A(2) and Part B Activities and Enforcements                                      | 0       | 0     | 1      | 2       |
| 2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations                                 | 0       | 0     | 0      | 0       |
| 2.1.8 Records of Licensed Discharge Consents   | 0       | 0     | 0      | 0       |
| 2.1.9 Records of Water Industry Referrals  | 0       | 0     | 0      | 0       |
| 2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site | 0       | 0     | 0      | 0       |
| 2.2 Records of COMAH and NIHHS sites   | 0       | 0     | 0      | 0       |
| 2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents                            |         |       |        |         |
| 2.3.1 National Incidents Recording System, List 2  | 0       | 0     | 0      | 0       |
| 2.3.2 National Incidents Recording System, List 1  | 0       | 0     | 0      | 0       |
| 2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990                                       | 0       | 0     | 0      | 0       |



| Section 3: Landfill and Other Waste Sites   | On-site | 0-50m | 51-250   | 251-500   | 501-1000                    | 1000-<br>1500                       |
|---|---------|-------|--|---|-----------------------------|-------------------------------------|
| 3.1 Landfill Sites  |         |       |  |   |                             |                                     |
| 3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites  | 0       | 0     | 0  | 0   | 0                           | Not searched                        |
| 3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites  | 0       | 0     | 0  | 0   | 0                           | 0                                   |
| 3.1.3 BGS/DoE Landfill Site Survey  | 0       | 0     | 0  | 0   | 0                           | 0                                   |
| 3.1.4 Records of Landfills in Local Authority and Historical<br>Mapping Records   | 0       | 0     | 0  | 0   | 0                           | 0                                   |
| 3.2 Landfill and Other Waste Sites Findings   |         |       |  |   |                             |                                     |
| 3.2.1 Operational and Non-Operational Waste Treatment,<br>Transfer and Disposal Sites   | 0       | 1     | 0  | 0   | Not searched                | Not searched                        |
| 3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites   | 0       | 0     | 1  | 0   | 18                          | 2                                   |
| Section 4: Current Land Use   | On-site | 5     | 0-50m  | 51-25   | 0 2                         | 51-500                              |
| 4.1 Current Industrial Sites Data   | 0       |       | 6  | 28  | No                          | ot searched                         |
| 4.1 Current industrial Sites Data   | 0       |       | 0  | 1   |                             | 0                                   |
| 4.3 National Grid Underground Electricity Cables  | 0       |       | 0  | 0   |                             | 0                                   |
| 4.4 National Grid Gas Transmission Pipelines  | 0       |       | 0  | 0   |                             | 0                                   |
| Section 5: Geology<br>5.1 Records of Artificial Ground and Made Ground present beneath  |         |       | None ic  | lentified   |                             |                                     |
|   |         |       |  | lentified   |                             |                                     |
| 5.1 Records of Artificial Ground and Made Ground present beneath<br>the study site<br>5.2 Records of Superficial Ground and Drift Geology present   |         |       |  |   |                             |                                     |
| <ul> <li>5.1 Records of Artificial Ground and Made Ground present beneath the study site</li> <li>5.2 Records of Superficial Ground and Drift Geology present beneath the study site</li> <li>5.3 For records of Bedrock and Solid Geology beneath the study</li> </ul>   |         |       | Iden   |   |                             |                                     |
| <ul> <li>5.1 Records of Artificial Ground and Made Ground present beneath the study site</li> <li>5.2 Records of Superficial Ground and Drift Geology present beneath the study site</li> <li>5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.</li> </ul>   |         |       | Iden<br>0-5  | tified  |                             |                                     |
| <ul> <li>5.1 Records of Artificial Ground and Made Ground present beneath the study site</li> <li>5.2 Records of Superficial Ground and Drift Geology present beneath the study site</li> <li>5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.</li> <li>Section 6: Hydrogeology and Hydrology</li> <li>6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site</li> <li>6.2 Records of Strata Classification in the Bedrock Geology within</li> </ul>   |         |       | Iden<br>0-5<br>Iden                                  | tified<br>00m                                     |                             |                                     |
| <ul> <li>5.1 Records of Artificial Ground and Made Ground present beneath the study site</li> <li>5.2 Records of Superficial Ground and Drift Geology present beneath the study site</li> <li>5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.</li> <li>Section 6: Hydrogeology and Hydrology</li> <li>6.1 Records of Strata Classification in the Superficial Geology</li> </ul>   | On-site | 0-50m | Iden<br>0-5<br>Iden                                  | tified<br>00m<br>tified                           | 501-1000                    | 1000-2000                           |
| <ul> <li>5.1 Records of Artificial Ground and Made Ground present beneath the study site</li> <li>5.2 Records of Superficial Ground and Drift Geology present beneath the study site</li> <li>5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.</li> <li>Section 6: Hydrogeology and Hydrology</li> <li>6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site</li> <li>6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site</li> <li>6.3 Groundwater Abstraction Licences (within 2000m of the study site</li> </ul>  | On-site | 0-50m | Iden<br>0-5<br>Iden<br>Iden                          | tified<br>00m<br>tified                           | 501-1000                    |                                     |
| <ul> <li>5.1 Records of Artificial Ground and Made Ground present beneath the study site</li> <li>5.2 Records of Superficial Ground and Drift Geology present beneath the study site</li> <li>5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.</li> <li>Section 6: Hydrogeology and Hydrology</li> <li>6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site</li> <li>6.2 Records of Strata Classification in the Bedrock Geology within</li> </ul>   |         |       | Iden<br>0-5<br>Iden<br>Iden<br>51-250                | tified<br>00m<br>tified<br>251-500                |                             | 2000                                |
| <ul> <li>5.1 Records of Artificial Ground and Made Ground present beneath the study site</li> <li>5.2 Records of Superficial Ground and Drift Geology present beneath the study site</li> <li>5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.</li> <li>Section 6: Hydrogeology and Hydrology</li> <li>6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site</li> <li>6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site</li> <li>6.3 Groundwater Abstraction Licences (within 2000m of the study site)</li> <li>6.4 Surface Water Abstraction Licences (within 2000m of the study site)</li> <li>6.5 Potable Water Abstraction Licences (within 2000m of the study site)</li> </ul> | 0       | 0     | Iden<br>0-5<br>Iden<br>Iden<br>51-250<br>0           | tified<br>00m<br>tified<br>251-500<br>0           | 0                           | 2000<br>11                          |
| <ul> <li>5.1 Records of Artificial Ground and Made Ground present beneath the study site</li> <li>5.2 Records of Superficial Ground and Drift Geology present beneath the study site</li> <li>5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.</li> <li>Section 6: Hydrogeology and Hydrology</li> <li>6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site</li> <li>6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site</li> <li>6.3 Groundwater Abstraction Licences (within 2000m of the study site)</li> <li>6.4 Surface Water Abstraction Licences (within 2000m of the study site)</li> <li>6.5 Potable Water Abstraction Licences (within 2000m of the study site)</li> </ul> | 0       | 0     | Iden<br>0-5<br>Iden<br>Iden<br>51-250<br>0<br>0      | tified<br>00m<br>tified<br>251-500<br>0<br>0      | 0                           | 2000<br>11<br>0<br>3                |
| <ul> <li>5.1 Records of Artificial Ground and Made Ground present beneath the study site</li> <li>5.2 Records of Superficial Ground and Drift Geology present beneath the study site</li> <li>5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.</li> <li>Section 6: Hydrogeology and Hydrology</li> <li>6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site</li> <li>6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site</li> <li>6.3 Groundwater Abstraction Licences (within 2000m of the study site)</li> <li>6.4 Surface Water Abstraction Licences (within 2000m of the study site)</li> </ul>  | 0 0 0   | 0 0 0 | Iden<br>0-5<br>Iden<br>Iden<br>51-250<br>0<br>0<br>0 | tified<br>00m<br>tified<br>251-500<br>0<br>0<br>0 | 0<br>0<br>0<br>Not searched | 2000<br>11<br>0<br>3<br>Not searche |



| Section 6: Hydrogeology and Hydrology  | 0-500m  |       |        |              |              |               |
|--|---------|-------|--------|--------------|--------------|---------------|
|  | On-site | 0-50m | 51-250 | 251-500      | 501-1000     | 1000-<br>1500 |
| 6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site | No      | No    | No     | No           | No           | No            |
| 6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site                               | 0       | 0     | 0      | 0            | Not searched | Not searched  |
| 6.11 Surface water features within 250m of the study site  | No      | No    | No     | Not searched | Not searched | Not searched  |

#### Section 7: Flooding

| 7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site                          | None identified      |
|---|----------------------|
| 7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site | None identified      |
| 7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site                 | Very Low             |
| 7.4 Flood Defences within 250m of the study site  | None identified      |
| 7.5 Areas benefiting from Flood Defences within 250m of the study site                          | None identified      |
| 7.6 Areas used for Flood Storage within 250m of the study site                                  | None identified      |
| 7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site                | Potential at Surface |
| 7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas                     | Moderate             |

| Section 8: Designated Environmentally Sensitive Sites      | On-site | 0-50m | 51-250 | 251-500 | 501-1000 | 1000-<br>2000 |
|--|---------|-------|--------|---------|----------|---------------|
| 8.1 Records of Sites of Special Scientific Interest (SSSI) | 0       | 0     | 0      | 0       | 0        | 0             |
| 8.2 Records of National Nature Reserves (NNR)              | 0       | 0     | 0      | 0       | 0        | 0             |
| 8.3 Records of Special Areas of Conservation (SAC)         | 0       | 0     | 0      | 0       | 0        | 0             |
| 8.4 Records of Special Protection Areas (SPA)              | 0       | 0     | 0      | 0       | 0        | 0             |
| 8.5 Records of Ramsar sites                                | 0       | 0     | 0      | 0       | 0        | 0             |
| 8.6 Records of Ancient Woodlands                           | 0       | 0     | 0      | 0       | 0        | 0             |
| 8.7 Records of Local Nature Reserves (LNR)                 | 0       | 0     | 0      | 0       | 0        | 0             |
| 8.8 Records of World Heritage Sites                        | 0       | 0     | 0      | 0       | 0        | 0             |
| 8.9 Records of Environmentally Sensitive Areas             | 0       | 0     | 0      | 0       | 0        | 0             |



| Section 8: Designated Environmentally Sensitive Sites                        | On-site     | 0-50m | 51-250 | 251-500 | 501-1000 | 1000-<br>2000 |
|--|-------------|-------|--------|---------|----------|---------------|
| 8.10 Records of Areas of Outstanding Natural Beauty (AONB)                   | 0           | 0     | 0      | 0       | 0        | 0             |
| 8.11 Records of National Parks   | 0           | 0     | 0      | 0       | 0        | 0             |
| 8.12 Records of Nitrate Sensitive Areas                                      | 0           | 0     | 0      | 0       | 0        | 0             |
| 8.13 Records of Nitrate Vulnerable Zones                                     | 0           | 0     | 0      | 0       | 0        | 0             |
| 8.14 Records of Green Belt land  | 0           | 0     | 0      | 0       | 0        | 0             |
| Section 9: Natural Hazards   |             |       |        |         |          |               |
| 9.1 Maximum risk of natural ground subsidence                                |             |       | Mod    | erate   |          |               |
| 9.1.1 Maximum Shrink-Swell hazard rating identified on the study site        | dy Moderate |       |        |         |          |               |
| 9.1.2 Maximum Landslides hazard rating identified on the study site          | Very Low    |       |        |         |          |               |
| 9.1.3 Maximum Soluble Rocks hazard rating identified on the study site       | Negligible  |       |        |         |          |               |
| 9.1.4 Maximum Compressible Ground hazard rating identified on the study site | Negligible  |       |        |         |          |               |

9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site

 $9.1.6\,$  Maximum Running Sand hazard rating identified on the study site

#### 9.2 Radon

9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?

9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?

#### Section 10: Mining

10.1 Coal mining areas within 75m of the study siteNone identified10.2 Non-Coal Mining areas within 50m of the study site boundaryNone identified

 $10.3\,$  Brine affected areas within 75m of the study site

None identified

Very Low

Very Low

The site is not in a Radon Affected Area, as less than 1% of properties

are above the Action Level.

No radon protective measures are necessary.



### Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

#### 1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

#### 2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

#### 3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

#### 4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

#### 5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

#### 6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

#### 7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

#### 8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

#### 9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

#### 10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

#### 11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

#### Note: Maps

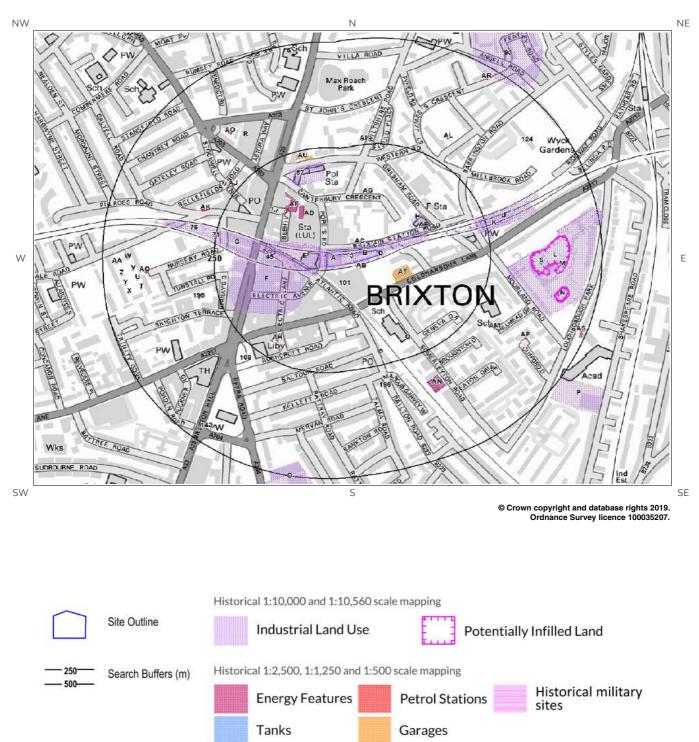
Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.



### 1. Historical Land Use





### **1. Historical Industrial Sites**

#### 1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 100

| ID  | Distance [m] | Direction | Use               | Date |
|-----|--------------|-----------|-------------------|------|
| 1A  | 0            | On Site   | Railway Building  | 1987 |
| 2A  | 0            | On Site   | Railway Building  | 1993 |
| 3   | 0            | On Site   | Railway Buildings | 1968 |
| 4B  | 0            | On Site   | Railway Buildings | 1894 |
| 5B  | 0            | On Site   | Railway Sidings   | 1894 |
| 6A  | 0            | On Site   | Railway Buildings | 1894 |
| 7B  | 0            | On Site   | Railway Building  | 1894 |
| 8B  | 0            | On Site   | Railway Building  | 1948 |
| 9B  | 0            | On Site   | Railway Sidings   | 1894 |
| 10B | 0            | On Site   | Railway Buildings | 1938 |
| 11B | 0            | On Site   | Railway Buildings | 1920 |
| 12C | 0            | On Site   | Railway Sidings   | 1920 |
| 13C | 0            | On Site   | Railway Sidings   | 1938 |
| 14C | 0            | On Site   | Railway Building  | 1894 |
| 15D | 0            | On Site   | Railway Building  | 1948 |
| 16D | 0            | On Site   | Railway Sidings   | 1899 |
| 17A | 0            | On Site   | Railway Buildings | 1894 |
| 18A | 0            | On Site   | Railway Buildings | 1938 |
| 19A | 0            | On Site   | Railway Buildings | 1920 |
| 20A | 0            | On Site   | Railway Buildings | 1948 |
| 21E | 3            | W         | Railway Station   | 1973 |
| 22E | 3            | W         | Railway Station   | 1968 |
| 23E | 3            | W         | Railway Station   | 1979 |
| 24E | 6            | W         | Railway Station   | 1870 |
| 25E | 10           | W         | Railway Station   | 1898 |
| 26E | 12           | W         | Railway Station   | 1948 |
| 27E | 13           | W         | Railway Station   | 1894 |
| 28E | 14           | W         | Railway Station   | 1920 |
| 29E | 14           | W         | Railway Station   | 1938 |
| 30E | 14           | W         | Railway Station   | 1899 |
| 31E | 14           | W         | Railway Station   | 1871 |
| 32E | 18           | W         | Railway Station   | 1894 |
| 33E | 20           | W         | Railway Station   | 1993 |
| 34E | 20           | W         | Railway Station   | 1987 |



|     |     |    | LOC               | CATION INTELLIGENCE |
|-----|-----|----|-------------------|---------------------|
| 35E | 23  | W  | Railway Station   | 1962                |
| 36E | 23  | W  | Railway Station   | 1954                |
| 37F | 47  | W  | Railway Station   | 1987                |
| 38F | 47  | W  | Railway Station   | 1993                |
| 39G | 58  | W  | Railway Land      | 1899                |
| 40G | 64  | W  | Railway Buildings | 1968                |
| 41G | 64  | W  | Railway Buildings | 1993                |
| 42G | 64  | W  | Railway Buildings | 1987                |
| 43G | 64  | W  | Railway Buildings | 1979                |
| 44G | 64  | W  | Railway Buildings | 1973                |
| 45  | 75  | W  | Railway Buildings | 1899                |
| 46H | 102 | NE | Fire Station      | 1968                |
| 47H | 102 | NE | Fire Station      | 1987                |
| 48H | 102 | NE | Fire Station      | 1993                |
| 49H | 102 | NE | Fire Station      | 1979                |
| 50H | 102 | NE | Fire Station      | 1973                |
| 51J | 162 | E  | Railway Station   | 1898                |
| 52G | 168 | W  | Railway Buildings | 1899                |
| 531 | 172 | Ν  | Police Station    | 1968                |
| 541 | 172 | Ν  | Police Station    | 1973                |
| 551 | 173 | Ν  | Police Station    | 1962                |
| 561 | 173 | Ν  | Police Station    | 1979                |
| 57  | 174 | Ν  | Police Station    | 1954                |
| 581 | 178 | Ν  | Police Station    | 1987                |
| 591 | 178 | Ν  | Police Station    | 1993                |
| 60J | 227 | E  | Railway Station   | 1948                |
| 61K | 231 | E  | Railway Station   | 1871                |
| 62K | 238 | E  | Railway Station   | 1993                |
| 63K | 238 | E  | Railway Station   | 1968                |
| 64K | 238 | E  | Railway Station   | 1987                |
| 65K | 238 | E  | Railway Station   | 1979                |
| 66K | 238 | E  | Railway Station   | 1962                |
| 67K | 238 | E  | Railway Station   | 1954                |
| 68K | 238 | E  | Railway Station   | 1973                |
| 69K | 239 | E  | Railway Station   | 1894                |
| 70K | 239 | E  | Railway Station   | 1870                |
| 71  | 239 | W  | Railway Buildings | 1899                |
| 72K | 240 | E  | Railway Station   | 1938                |
| 73K | 240 | E  | Railway Station   | 1920                |
| 74K | 241 | E  | Railway Station   | 1899                |
| 75K | 241 | E  | Railway Station   | 1894                |
| 76  | 271 | W  | Railway Buildings | 1899                |
| 77M | 286 | E  | Nursery           | 1894                |
| 78L | 288 | E  | Nursery           | 1894                |
| 79L | 289 | E  | Nursery           | 1899                |
| 80L | 293 | E  | Nursery           | 1898                |
|     |     |    |                   |                     |



|      |     |    | L                 | OCATION INTELLIGENCE |
|------|-----|----|-------------------|----------------------|
| 81L  | 295 | E  | Nursery           | 1948                 |
| 82L  | 296 | E  | Nursery           | 1870                 |
| 83L  | 304 | E  | Nursery           | 1920                 |
| 84L  | 304 | E  | Nursery           | 1938                 |
| 85L  | 339 | E  | Unspecified Heap  | 1993                 |
| 86L  | 339 | E  | Unspecified Heap  | 1987                 |
| 87L  | 340 | E  | Unspecified Heap  | 1979                 |
| 88M  | 357 | E  | Nursery           | 1871                 |
| 89N  | 404 | E  | Unspecified Heap  | 1979                 |
| 90N  | 408 | E  | Unspecified Heap  | 1993                 |
| 91N  | 408 | E  | Unspecified Heap  | 1987                 |
| 920  | 465 | S  | Unspecified Works | 1992                 |
| 93   | 480 | NE | Nurseries         | 1894                 |
| 940  | 483 | S  | Unspecified Works | 1982                 |
| 950  | 483 | S  | Unspecified Works | 1973                 |
| 96O  | 483 | S  | Unspecified Works | 1968                 |
| 97P  | 497 | SE | Unspecified Depot | 1987                 |
| 98P  | 497 | SE | Unspecified Depot | 1993                 |
| 99P  | 497 | SE | Unspecified Depot | 1973                 |
| 100P | 497 | SE | Unspecified Depot | 1979                 |

#### 1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary:

46

| ID    | Distance (m) | Direction | Use              | Date |
|-------|--------------|-----------|------------------|------|
| 101   | 47           | S         | Tank or Trough   | 1875 |
| 102AD | 98           | Ν         | Tank or Trough   | 1875 |
| 103Q  | 206          | S         | Unspecified Tank | 1974 |
| 104Q  | 207          | S         | Unspecified Tank | 1991 |
| 105Q  | 207          | S         | Unspecified Tank | 1987 |
| 106Q  | 207          | S         | Unspecified Tank | 1987 |
| 107Q  | 207          | S         | Unspecified Tank | 1995 |
| 108   | 281          | SW        | Unspecified Tank | 1987 |
| 109R  | 330          | NW        | Unspecified Tank | 1896 |
| 110R  | 330          | NW        | Unspecified Tank | 1877 |
| 111S  | 359          | E         | Tanks            | 1991 |
| 112S  | 359          | E         | Tanks            | 1984 |
| 1135  | 359          | E         | Tanks            | 1987 |
| 114S  | 360          | E         | Tanks            | 1993 |
| 115S  | 360          | E         | Tanks            | 1992 |
|       |              |           |                  |      |



|       |     |    | LO               | CATION INTELLIGENCE |
|-------|-----|----|------------------|---------------------|
| 116S  | 361 | E  | Unspecified Tank | 1974                |
| 117S  | 364 | E  | Unspecified Tank | 1974                |
| 118T  | 414 | W  | Unspecified Tank | 1958                |
| 119T  | 414 | W  | Unspecified Tank | 1950                |
| 120T  | 414 | W  | Unspecified Tank | 1961                |
| 121U  | 421 | W  | Unspecified Tank | 1958                |
| 122U  | 421 | W  | Unspecified Tank | 1950                |
| 123U  | 421 | W  | Unspecified Tank | 1961                |
| 124   | 421 | NE | Unspecified Tank | 1896                |
| 125V  | 429 | W  | Unspecified Tank | 1958                |
| 126V  | 430 | W  | Unspecified Tank | 1950                |
| 127V  | 430 | W  | Unspecified Tank | 1961                |
| 128W  | 440 | W  | Unspecified Tank | 1958                |
| 129W  | 441 | W  | Unspecified Tank | 1961                |
| 130W  | 441 | W  | Unspecified Tank | 1950                |
| 131X  | 442 | W  | Unspecified Tank | 1958                |
| 132X  | 443 | W  | Unspecified Tank | 1950                |
| 133X  | 443 | W  | Unspecified Tank | 1961                |
| 134W  | 448 | W  | Unspecified Tank | 1961                |
| 135W  | 448 | W  | Unspecified Tank | 1950                |
| 136Y  | 448 | W  | Unspecified Tank | 1958                |
| 137Y  | 448 | W  | Unspecified Tank | 1961                |
| 138Y  | 448 | W  | Unspecified Tank | 1950                |
| 139W  | 448 | W  | Unspecified Tank | 1958                |
| 140Z  | 455 | W  | Unspecified Tank | 1958                |
| 141Z  | 456 | W  | Unspecified Tank | 1961                |
| 142Z  | 456 | W  | Unspecified Tank | 1950                |
| 143   | 463 | SW | Tank or Trough   | 1875                |
| 144AA | 466 | W  | Unspecified Tank | 1961                |
| 145AA | 466 | W  | Unspecified Tank | 1950                |
| 146AA | 467 | W  | Unspecified Tank | 1958                |

#### 1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary:

94

| ID    | Distance (m) | Direction | Use                    | Date |
|-------|--------------|-----------|------------------------|------|
| 147AB | 12           | S         | Electricity Substation | 1987 |
| 148AB | 12           | S         | Electricity Substation | 1987 |
| 149AB | 12           | S         | Electricity Substation | 1991 |
| 150AB | 13           | S         | Electricity Substation | 1995 |



|       |     |    | LOC                                     | ATION INTELLIGENCE |
|-------|-----|----|---|--------------------|
| 151AB | 13  | S  | Electricity Substation                  | 1974               |
| 152AC | 20  | Ν  | Electricity Substation                  | 1993               |
| 153AC | 22  | Ν  | Electricity Substation                  | 1974               |
| 154AC | 23  | Ν  | Electricity Substation                  | 1986               |
| 155AC | 23  | Ν  | Electricity Substation                  | 1985               |
| 156AC | 23  | Ν  | Electricity Substation                  | 1991               |
| 157AD | 97  | NW | Electricity Substation                  | 1993               |
| 158AD | 98  | NW | Electricity Substation                  | 1986               |
| 159AD | 98  | NW | Electricity Substation                  | 1985               |
| 160AD | 98  | NW | Electricity Substation                  | 1991               |
| 161H  | 115 | NE | Electricity Substation                  | 1986               |
| 162H  | 115 | NE | Electricity Substation                  | 1991               |
| 163H  | 115 | NE | Electricity Substation                  | 1985               |
| 164AE | 115 | NE | Electricity Substation                  | 1993               |
| 165AE | 115 | NE | Electricity Substation                  | 1974               |
| 166AF | 118 | NW | Electricity Substation                  | 1993               |
| 167AF | 119 | NW | Electricity Substation                  | 1950               |
| 168AF | 119 | NW | Electricity Substation                  | 1950               |
| 169AF | 120 | NW | Electricity Substation                  | 1985               |
| 170AF | 120 | NW | Electricity Substation                  | 1986               |
| 171AF | 120 | NW | Electricity Substation                  | 1991               |
| 172AG | 134 | Ν  | Electricity Substation                  | 1993               |
| 173AG | 135 | N  | Electricity Substation                  | 1974               |
| 174AG | 136 | N  | Electricity Substation                  | 1985               |
| 175AG | 136 | N  | Electricity Substation                  | 1986               |
| 176AG | 136 | Ν  | Electricity Substation                  | 1991               |
| 177AH | 199 | SW | Electricity Substation                  | 1995               |
| 178AH | 209 | SW | Electricity Substation                  | 1974               |
| 179AH | 210 | SW | Electricity Substation                  | 1991               |
| 180AH | 210 | SW | Electricity Substation                  | 1987               |
| 181AH | 210 | SW | Electricity Substation                  | 1987               |
| 182AI | 259 | Ν  | Electricity Substation                  | 1993               |
| 183AI | 260 | Ν  | Electricity Substation                  | 1974               |
| 184AI | 260 | Ν  | Electricity Substation                  | 1986               |
| 185AI | 260 | Ν  | Electricity Substation                  | 1991               |
| 186AI | 260 | Ν  | Electricity Substation                  | 1985               |
| 187AJ | 262 | NW | Electricity Substation                  | 1950               |
| 188AJ | 262 | NW | Electricity Substation                  | 1950               |
| 189AJ | 269 | NW | Electricity Substation                  | 1950               |
| 190AJ | 269 | NW | Electricity Substation                  | 1950               |
| 191AK | 282 | W  | Electricity Substation                  | 1975               |
| 192AK | 286 | W  | Electricity Substation                  | 1993               |
| 193AK | 286 | W  | Electricity Substation                  | 1992               |
| 194AK | 287 | W  | Electricity Substation                  | 1991               |
| 195   | 291 | W  | Electricity Substation                  | 1950               |
| 196   | 298 | S  | Electricity Substation                  | 1974               |
|       | 200 |    | 2.000.000 00000000000000000000000000000 |                    |



| CATION INTELLIGENCE | LOCA                   |    |     |       |
|---------------------|------------------------|----|-----|-------|
| 1974                | Electricity Substation | NE | 305 | 197AL |
| 1991                | Electricity Substation | NE | 305 | 198AL |
| 1985                | Electricity Substation | NE | 305 | 199AL |
| 1986                | Electricity Substation | NE | 305 | 200AL |
| 1993                | Electricity Substation | NE | 306 | 201AL |
| 1987                | Electricity Substation | SE | 308 | 202AM |
| 1984                | Electricity Substation | SE | 308 | 203AM |
| 1991                | Electricity Substation | SE | 308 | 204AM |
| 1974                | Electricity Substation | SE | 309 | 205AM |
| 1993                | Electricity Substation | SE | 310 | 206AM |
| 1992                | Electricity Substation | SE | 310 | 207AM |
| 1974                | Electricity Substation | SE | 313 | 208AN |
| 1995                | Electricity Substation | SE | 313 | 209AN |
| 1991                | Electricity Substation | SE | 317 | 210AN |
| 1987                | Electricity Substation | SE | 317 | 211AN |
| 1987                | Electricity Substation | SE | 317 | 212AN |
| 1950                | Electricity Substation | NW | 352 | 213AO |
| 1993                | Electricity Substation | NW | 353 | 214AO |
| 1992                | Electricity Substation | NW | 353 | 215AO |
| 1975                | Electricity Substation | NW | 354 | 216AO |
| 1974                | Electricity Substation | NW | 354 | 217AO |
| 1991                | Electricity Substation | NW | 355 | 218AO |
| 1993                | Electricity Substation | NW | 355 | 219AO |
| 1950                | Electricity Substation | NW | 355 | 220AO |
| 1991                | Electricity Substation | NW | 361 | 221AO |
| 1986                | Electricity Substation | NW | 361 | 222AO |
| 1985                | Electricity Substation | NW | 361 | 223AO |
| 1950                | Electricity Substation | SE | 377 | 224AP |
| 1950                | Electricity Substation | SE | 380 | 225AP |
| 1950                | Electricity Substation | W  | 398 | 226U  |
| 1950                | Electricity Substation | W  | 398 | 227U  |
| 1993                | Electricity Substation | W  | 399 | 228U  |
| 1991                | Electricity Substation | W  | 404 | 229AQ |
| 1985                | Electricity Substation | W  | 404 | 230AQ |
| 1991                | Electricity Substation | NE | 470 | 231AR |
| 1987                | Electricity Substation | NE | 470 | 232AR |
| 1974                | Electricity Substation | NE | 471 | 233AR |
| 1993                | Electricity Substation | NE | 472 | 234AR |
| 1991                | Electricity Substation | E  | 483 | 235AS |
| 1987                | Electricity Substation | E  | 483 | 236AS |
| 1984                | Electricity Substation | E  | 483 | 237AS |
| 1974                | Electricity Substation | E  | 484 | 238AS |
| 1992                | Electricity Substation | E  | 487 | 239AS |
| 1993                | Electricity Substation | E  | 487 | 240AS |



0

#### 1.4 Additional Information - Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary:

Database searched and no data found.

#### 1.5 Additional Information - Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 6

| ID    | Distance (m) | Direction | Use     | Date |
|-------|--------------|-----------|---------|------|
| 241AT | 50           | SE        | Garage  | 1987 |
| 242AT | 50           | SE        | Garage  | 1987 |
| 243AT | 50           | SE        | Garage  | 1991 |
| 244AT | 51           | SE        | Garage  | 1974 |
| 245AU | 225          | Ν         | Garages | 1958 |
| 246AU | 226          | Ν         | Garages | 1958 |

#### 1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary:

0

Database searched and no data found.

#### 1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 6

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

| ID   | Distance(m) | Direction | Use              | Date |
|------|-------------|-----------|------------------|------|
| 247L | 339         | E         | Unspecified Heap | 1993 |
| 248L | 339         | E         | Unspecified Heap | 1987 |
| 249L | 340         | E         | Unspecified Heap | 1979 |

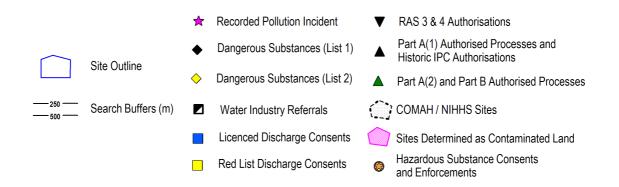
# Groundsure

| 2501       |                  |      |
|------------|------------------|------|
| 250N 404 E | Unspecified Heap | 1979 |
| 251N 408 E | Unspecified Heap | 1993 |
| 252N 408 E | Unspecified Heap | 1987 |



### 2. Environmental Permits, Incidents and Registers Map







### 2. Environmental Permits, Incidents and Registers

#### 2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

0

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:

0



2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:

3

The following Part A(2) and Part B Activities are represented as points on the Environmental Permits, Incidents and Registers Map:

| ID | Distance<br>(m) | Direction | NGR  | Details  |   |  |
|----|-----------------|-----------|--|--|---|--|
| 1  | 159             | E         | Address: Texaco Service Station, 321<br>331 Coldharbour Lane, Brixton, SWS<br>8RX<br>E 175423 Process: Unloading of Petrol into<br>Storage at Service Stations<br>Status: Historical Permit<br>Permit Type: Part B |  | Enforcement: No Enforcement Notified<br>Date of Enforcement: No Enforcement<br>Notified<br>Comment: No Enforcement Notified |  |
| 2  | 330             | SW        | 530942<br>175255   | Address: Sav & Sons Dry Cleaners, 6<br>Acre Lane, Brixton, London, SW2 5SG<br>Process: Dry Cleaning<br>Status: Current Permit<br>Permit Type: Part B | Enforcement: No Enforcement Notified<br>Date of Enforcement: No Enforcement<br>Notified<br>Comment: No Enforcement Notified |  |
| 3  | 359             | NW        | 530981<br>175755   | Address: Muna Topps Dry Cleaners, 187<br>Stockwell Road, London, SW9 9SJ<br>Process: Dry Cleaning<br>Status: Current Permit<br>Permit Type: Part B   | Enforcement: No Enforcement Notified<br>Date of Enforcement: No Enforcement<br>Notified<br>Comment: No Enforcement Notified |  |

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

Database searched and no data found.

2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site:

0

0

0



0

0

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

Database searched and no data found. 2.2 Dangerous or Hazardous Sites Records of COMAH & NIHHS sites within 500m of the study site: Database searched and no data found. 2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents 2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site: Database searched and no data found. 2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

Database searched and no data found.

#### 2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0



### 3. Landfill and Other Waste Sites Map



Site Outline EA/NRW Historic Landfill E EA/NRW Licensed Waste Site Search Buffers (m) BGS / DoE Survey Landfill Local Authority/Historical Mapping Landfill Records



# 3. Landfill and Other Waste Sites

#### 3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

0

Database searched and no data found.

3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site:

0

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:



#### 3.2 Other Waste Sites

#### 3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

| ID | Distance<br>(m) | Direction | NGR              |  | Details   |  |
|----|-----------------|-----------|------------------|--|---|--|
| 1  | 29              | SW        | 531164<br>175420 | Type of Site:<br>Loading<br>Bay/Recycling<br>Facility<br>(Conversion)<br>Site Address: Land<br>Bounded By,<br>Atlantic Road,<br>Electric Lane, The<br>Rear Of Ele,<br>London, Central<br>London, SW9 8JA | Planning Application Reference:<br>14/03000/FUL<br>Date: 06/10/2014 | Further Details: Scheme<br>comprises change of use of land<br>to provide a secure gated<br>market (use class A1) including<br>1 loading bay, on-site refuse<br>and recycling facilities,<br>male/female toilets and<br>additional storage facilities.<br>Data Source: Historic Planning<br>Application<br>Data Type: Point |

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

21

1

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

| ID | Distance<br>(m) | Direction | NGR              | Details  |  |  |
|----|-----------------|-----------|------------------|--|--|--|
| 2  | 63              | E         | 531392<br>175480 | Site Address: J E Doorey Metal Co Ltd,<br>Valentia Place, Coldharbour Lane, Brixton,<br>London, SW9<br>Type: Metal Recycling Site (mixed MRS's)<br>Size: < 25000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: DOO001<br>EPR reference: EA/EPR/TP3590EQ/S002<br>Operator: J E Doorey Metal Co Ltd<br>Waste Management licence No: 83291<br>Annual Tonnage: 30000.0 | Issue Date: 02/11/1993<br>Effective Date: -<br>Modified: -<br>Surrendered Date: Dec 1 1998 12:00AM<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Surrendered<br>Site Name: Valentia Pl, Brixton, SW9<br>Correspondence Address: -                          |  |
| ЗA | 528             | NE        | 531810<br>175697 | Site Address: Tenmead Ltd, 4-16 & 1-3,<br>Belinda Road, Brixton, London, SW9 7DT<br>Type: 75kte HCI Waste TS + treatment<br>Size: < 25000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: POW077<br>EPR reference: EA/EPR/JB3637RK/T001<br>Operator: Powerday Plc<br>Waste Management licence No: 83255<br>Annual Tonnage: 74999.0                                   | Issue Date: 21/07/1992<br>Effective Date: 27/06/2012<br>Modified: 26/06/2012<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Transferred<br>Site Name: Belinda Road (Brixton) Waste<br>Transfer Facility<br>Correspondence Address: - |  |
| 4A | 528             | NE        | 531810<br>175697 | Site Address: -<br>Type: Household, Commercial & Industrial<br>Waste T Stn<br>Size: >= 25000 tonnes < 75000 tonnes   | Issue Date: 21/07/1992<br>Effective Date: -<br>Modified: 25/05/2000<br>Surrendered Date: -   |  |



| ID           | Distance<br>(m) | Direction | NGR              | iR Details   |  |  |  |
|--------------|-----------------|-----------|------------------|--|--|--|--|
|              |                 |           |                  | Environmental Permitting Regulations<br>(Waste) Licence Number: TEN001<br>EPR reference: -<br>Operator: Tenmead Ltd<br>Waste Management licence No: 83255<br>Annual Tonnage: 46000.0   | Expiry Date: -<br>Cancelled Date: -<br>Status: Modified<br>Site Name: Tenmead Ltd, Belinda Rd, Se19<br>Correspondence Address: Tenmead Ltd, 2,<br>Royal Terrace, Southend on Sea, Essex,<br>SS1 7DT  |  |  |
| 5A           | 528             | NE        | 531810<br>175697 | Site Address: Tenmead Ltd, 4-16 & 1-3,<br>Belinda Road, Brixton, London, SW9 7DT<br>Type: 75kte HCI Waste TS + treatment<br>Size: >= 25000 tonnes < 75000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: TEN001<br>EPR reference: EA/EPR/UP3790EM/V005<br>Operator: Tenmead Ltd<br>Waste Management licence No: 83255<br>Annual Tonnage: 74999.0                | Issue Date: 21/07/1992<br>Effective Date: -<br>Modified: 26/06/2012<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Modified<br>Site Name: Belinda Road (Brixton) Waste<br>Transfer Facility<br>Correspondence Address: -             |  |  |
| 6A           | 528             | NE        | 531810<br>175697 | Site Address: Tenmead Ltd, 4-16, Belinda<br>Road, Brixton, London, SW9 7DT<br>Type: Household, Commercial & Industrial<br>Waste T Stn<br>Size: >= 25000 tonnes < 75000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: TEN001<br>EPR reference: EA/EPR/UP3790EM/V004<br>Operator: Powderday Plc<br>Waste Management licence No: 83255<br>Annual Tonnage: 46000.0 | Issue Date: 21/07/1992<br>Effective Date: -<br>Modified: 25/05/2000<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Modified<br>Site Name: Belinda Road<br>Correspondence Address: -  |  |  |
| 7A           | 528             | NE        | 531810<br>175697 | Site Address: Tenmead Ltd, 4-16 & 1-3,<br>Belinda Road, Brixton, London, SW9 7DT<br>Type: 75kte HCI Waste TS + treatment<br>Size: >= 25000 tonnes < 75000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: POW077<br>EPR reference: EA/EPR/JB3637RK/T001<br>Operator: Powerday Plc<br>Waste Management licence No: 83255<br>Annual Tonnage: 74999.0               | Issue Date: 21/07/1992<br>Effective Date: 27/06/2012<br>Modified: 26/06/2012<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Transferred<br>Site Name: Belinda Road (Brixton) Waste<br>Transfer Facility<br>Correspondence Address: - |  |  |
| 8            | 751             | NE        | 531885<br>175988 | Site Address: Plot 1, Gordon Grove,<br>Camberwell, London, SE5 9DW<br>Type: Vehicle Depollution Facility <5000<br>tps<br>Size: < 25000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: BAR195<br>EPR reference: EA/EPR/CB3508KE/A001<br>Operator: Vauxhall Mania Limited<br>Waste Management licence No: 402128<br>Annual Tonnage: 4999.0                        | Issue Date: 22/01/2015<br>Effective Date: -<br>Modified: -<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Issued<br>Site Name: Vauxhall Mania Limited<br>Correspondence Address: -   |  |  |
| Not<br>shown | 765             | SE        | 531795<br>174869 | Site Address: Shakespeare Road, London,<br>SE24 0LA<br>Type: 75kte HCI Waste TS + treatment<br>Size: < 25000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: NOR007<br>EPR reference: EA/EPR/GB3603KF/A001<br>Operator: Peter Norris (haulage) Limited<br>Waste Management licence No: 405633<br>Annual Tonnage: 74999.0   | Issue Date: 29/11/2018<br>Effective Date: -<br>Modified: -<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Issued<br>Site Name: North Shakespeare Road<br>Correspondence Address: -   |  |  |
| Not<br>shown | 766             | SE        | 531768<br>174848 | Site Address: A & J Bull (Waste Handling &<br>Recycling), Railway Sidings, Shakespeare<br>Road, Herne Hill, London, SE24<br>Type: Household, Commercial & Industrial<br>Waste T Stn<br>Size: >= 25000 tonnes < 75000 tonnes  | Issue Date: 24/12/1986<br>Effective Date: -<br>Modified: -<br>Surrendered Date: -<br>Expiry Date: 18/01/2002<br>Cancelled Date: -  |  |  |



| ID           | Distance<br>(m) | Direction | irection NGR     | Details  |   |  |  |
|--------------|-----------------|-----------|------------------|--|---|--|--|
|              |                 |           |                  | Environmental Permitting Regulations<br>(Waste) Licence Number: GRO001<br>EPR reference: EA/EPR/UP3490EJ/T002<br>Operator: Grosvenor Demolition Co Ltd<br>Waste Management licence No: 83251<br>Annual Tonnage: 74999.0  | Status: Expired<br>Site Name: Grosvenor Demo Co Ltd, Herne<br>Hill, SE24<br>Correspondence Address: -   |  |  |
| Not<br>shown | 771             | SE        | 531700<br>174800 | Site Address: Shakespeare Wharf,<br>Shakespeare Road, Brixton, London, SE24<br>OLA<br>Type: Household, Commercial & Industrial<br>Waste T Stn<br>Size: >= 75000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: AJB004<br>EPR reference: -<br>Operator: S I T A Waste Handling Ltd<br>Waste Management licence No: 83343<br>Annual Tonnage: 0.0                        | Issue Date: 10/12/2002<br>Effective Date: -<br>Modified: -<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Issued<br>Site Name: Shakespeare Wharf<br>Correspondence Address: Helen Nolan,<br>Vine Court, Chalk Pit Lane, Dorking,<br>Surrey, RG4 1AG |  |  |
| Not<br>shown | 771             | SE        | 531700<br>174800 | Site Address: Shakespeare Wharf,<br>Shakespeare Road, Herne Hill, London,<br>SE24 0LA<br>Type: Household, Commercial & Industrial<br>Waste T Stn<br>Size: >= 75000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: SSE005<br>EPR reference: EA/EPR/AB3507LC/T001<br>Operator: Sita South East Limited<br>Waste Management licence No: 83343<br>Annual Tonnage: 87750.0 | Issue Date: 10/12/2002<br>Effective Date: 29/01/2014<br>Modified: 05/08/2011<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Transferred<br>Site Name: Brixton Transfer Station<br>Correspondence Address: -   |  |  |
| Not<br>shown | 771             | SE        | 531700<br>174800 | Site Address: Shakespeare Wharf,<br>Shakespeare Road, Brixton, London, SE24<br>OLA<br>Type: Household, Commercial & Industrial<br>Waste T Stn<br>Size: >= 75000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: AJB004<br>EPR reference: -<br>Operator: S I T A Waste Handling Limited<br>Waste Management licence No: 83343<br>Annual Tonnage: 0.0                    | Issue Date: 10/12/2002<br>Effective Date: -<br>Modified: -<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Issued<br>Site Name: Shakespeare Wharf<br>Correspondence Address: Vine Court,<br>Chalk Pit Lane, Dorking, Surrey, RG4 1AG                 |  |  |
| Not<br>shown | 771             | SE        | 531700<br>174800 | Site Address: Shakespeare Wharf,<br>Shakespeare Road, Herne Hill, London,<br>SE24 0LA<br>Type: Household, Commercial & Industrial<br>Waste T Stn<br>Size: >= 75000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: SSE005<br>EPR reference: EA/EPR/AB3507LC/V002<br>Operator: Shukco 347 Ltd<br>Waste Management licence No: 83343<br>Annual Tonnage: 87750.0          | Issue Date: 10/12/2002<br>Effective Date: 29/01/2014<br>Modified: 30/06/2016<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Modified<br>Site Name: Brixton Transfer Station<br>Correspondence Address: -  |  |  |
| Not<br>shown | 771             | SE        | 531700<br>174800 | Site Address: Shakespeare Wharf,<br>Shakespeare Road, Brixton, London, SE24<br>OLA<br>Type: Household, Commercial & Industrial<br>Waste T Stn<br>Size: >= 75000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: AJB004<br>EPR reference: EA/EPR/ZP3890EF/A001<br>Operator: S I T A ( G B ) Ltd<br>Waste Management licence No: 83343<br>Annual Tonnage: 87750.0        | Issue Date: 10/12/2002<br>Effective Date: -<br>Modified: -<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Issued<br>Site Name: Shakespeare Road Transfer<br>Station<br>Correspondence Address: -  |  |  |



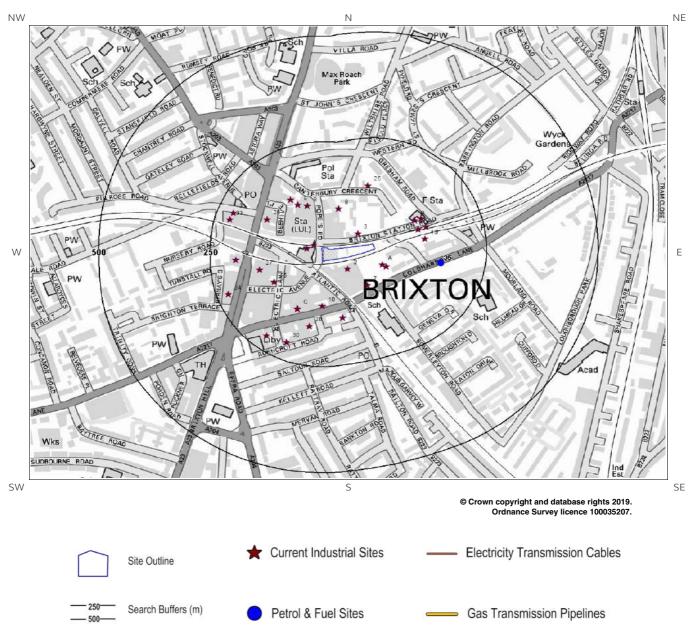
| ID           | Distance<br>(m) | Direction | NGR              | Det  | etails  |  |  |
|--------------|-----------------|-----------|------------------|--|---|--|--|
| Not<br>shown | 771             | SE        | 531700<br>174800 | Site Address: Shakespeare Wharf,<br>Shakespeare Road, Herne Hill, London,<br>SE24 OLA<br>Type: Household, Commercial & Industrial<br>Waste T Stn<br>Size: >= 75000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: SSE005<br>EPR reference: EA/EPR/AB3507LC/S003<br>Operator: Suez Recycling And Recovery<br>Waste Management licence No: 83343<br>Annual Tonnage: 0.0                 | Issue Date: 10/12/2002<br>Effective Date: 29/01/2014<br>Modified: 30/06/2016<br>Surrendered Date: Apr 17 2018 12:00AM<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Surrendered<br>Site Name: Brixton Transfer Station<br>Correspondence Address: -   |  |  |
| Not<br>shown | 816             | E         | 532105<br>175728 | Site Address: London Borough of<br>Lambeth, Public Health & Pest Control, 26,<br>Wanless Road, London, SE24 0HW<br>Type: Clinical Waste Transfer Station<br>Size: < 25000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: LAM002<br>EPR reference: -<br>Operator: London Borough of Lambeth<br>Waste Management licence No: 83254<br>Annual Tonnage: 1005.0                            | Issue Date: 19/05/1993<br>Effective Date: -<br>Modified: -<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Issued<br>Site Name: Wanless Rd Ts, Lambeth, Se24<br>Correspondence Address: Environmental<br>Health Services, Public Health & Pest<br>Control, 26, Wanless Road, London, SE24<br>0NH |  |  |
| Not<br>shown | 816             | E         | 532105<br>175728 | Site Address: London Borough of<br>Lambeth, Public Health & Pest Control, 26,<br>Wanless Road, London, SE24 0HW<br>Type: Clinical Waste Transfer Station<br>Size: < 25000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: LAM002<br>EPR reference: EA/EPR/UP3190EV/A001<br>Operator: Lambeth London Borough<br>Council<br>Waste Management licence No: 83254<br>Annual Tonnage: 1005.0 | Issue Date: 19/05/1993<br>Effective Date: -<br>Modified: -<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Issued<br>Site Name: Wanless Rd Ts, Lambeth, Se24<br>Correspondence Address: -  |  |  |
| Not<br>shown | 847             | NE        | 531910<br>176100 | Site Address: Arch 439, Gordon Grove,<br>Camberwell, London, SE5 9DW<br>Type: 75kte Vehicle Depollution Facility<br>Size: < 25000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: GOL013<br>EPR reference: EA/EPR/PP3195VN/A001<br>Operator: Golden Motor Care Ltd<br>Waste Management licence No: 102085<br>Annual Tonnage: 74999.0   | Issue Date: 23/11/2010<br>Effective Date: -<br>Modified: -<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Issued<br>Site Name: Golden Motor Care Ltd<br>Correspondence Address: -   |  |  |
| Not<br>shown | 847             | NE        | 531910<br>176100 | Site Address: Arch 439, Gordon Grove,<br>Camberwell, London, SE5 9DW<br>Type: Vehicle Depollution Facility <5000<br>tps<br>Size: < 25000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: GOL013<br>EPR reference: EA/EPR/PP3195VN/V002<br>Operator: Golden Motor Care Ltd<br>Waste Management licence No: 102085<br>Annual Tonnage: 4999.0   | Issue Date: 23/11/2010<br>Effective Date: -<br>Modified: 04/08/2015<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Modified<br>Site Name: Golden Motor Care Ltd<br>Correspondence Address: -  |  |  |
| Not<br>shown | 1165            | S         | 531630<br>174348 | Site Address: Brixton Transfer Station,<br>Shakespeare Wharf, Brixton, London, SE24<br>OLA<br>Type: Household, Commercial & Industrial<br>Waste T Stn<br>Size: >= 75000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: AJB004<br>EPR reference: EA/EPR/ZP3890EF/V003  | Issue Date: 10/12/2002<br>Effective Date: -<br>Modified: 05/08/2011<br>Surrendered Date: -<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Modified<br>Site Name: Brixton Transfer Station<br>Correspondence Address: -   |  |  |



| ID           | Distance<br>(m) | Direction | NGR              | Details   |  |  |  |
|--------------|-----------------|-----------|------------------|---|--|--|--|
|              |                 |           |                  | Operator: S I T A Waste Handling Ltd<br>Waste Management licence No: 83343<br>Annual Tonnage: 87750.0   |  |  |  |
| Not<br>shown | 1329            | E         | 532560<br>175977 | Site Address: Clinical Waste Ltd, Kings<br>College Hospital, Denmark Hill, London,<br>SE5 9NU<br>Type: Clinical Waste Transfer Station<br>Size: < 25000 tonnes<br>Environmental Permitting Regulations<br>(Waste) Licence Number: CLI001<br>EPR reference: EA/EPR/UP3290EA/S003<br>Operator: Clinical Waste Ltd<br>Waste Management licence No: 83252<br>Annual Tonnage: 5000.0 | Issue Date: 15/12/1992<br>Effective Date: -<br>Modified: 08/11/1995<br>Surrendered Date: Mar 30 2001 12:00AM<br>Expiry Date: -<br>Cancelled Date: -<br>Status: Surrendered<br>Site Name: Kings College Hosp, Denmark<br>Hill, Se5<br>Correspondence Address: - |  |  |



### 4. Current Land Use Map





### 4. Current Land Uses

#### 4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site:

34

The following records are represented as points on the Current Land Uses map.

| ID  | Distance<br>(m) | Directio<br>n | Company                    | NGR              | Address  | Activity                                     | Category   |
|-----|-----------------|---------------|----------------------------|------------------|--|--|--|
| 1   | 20              | NW            | Denmay<br>Interiors        | 531191<br>175486 | 34, Brixton Station Road,<br>London, Greater London,<br>SW9 8PE                      | Curtains and Blinds                          | Consumer Products                                |
| 2   | 27              | S             | Hustlebucks                | 531266<br>175429 | 45 Granville Arcade,<br>Coldharbour Lane,<br>London, Greater London,<br>SW9 8PR      | Clothing, Components and<br>Accessories      | Consumer Products                                |
| 3   | 31              | Ν             | Electricity<br>Sub Station | 531290<br>175513 | Greater London, SW9  | Electrical Features                          | Infrastructure and<br>Facilities                 |
| 4   | 34              | W             | Brixton Rail<br>Station    | 531176<br>175477 | Greater London, SW9  | Railway Stations,<br>Junctions and Halts     | Public Transport, Stations<br>and Infrastructure |
| 5A  | 40              | SE            | Works                      | 531345<br>175439 | Greater London, SW9  | Unspecified Works Or<br>Factories            | Industrial Features                              |
| 6A  | 48              | SE            | Electricity<br>Sub Station | 531354<br>175435 | Greater London, SW9  | Electrical Features                          | Infrastructure and<br>Facilities                 |
| 7   | 76              | S             | Electricity<br>Sub Station | 531312<br>175390 | Greater London, SW9  | Electrical Features                          | Infrastructure and<br>Facilities                 |
| 8   | 94              | Ν             | Electricity<br>Sub Station | 531247<br>175571 | Greater London, SW9  | Electrical Features                          | Infrastructure and<br>Facilities                 |
| 9   | 105             | Ν             | Lambeth<br>Print Room      | 531177<br>175578 | International House 6,<br>Canterbury Crescent,<br>London, Greater London,<br>SW9 7QE | Published Goods                              | Industrial Products                              |
| 10  | 106             | S             | Clear Prints<br>Digital    | 531210<br>175341 | 390-394, Coldharbour<br>Lane, London, Greater<br>London, SW9 8LF                     | Published Goods                              | Industrial Products                              |
| 11D | 106             | E             | J D Window<br>Tinting      | 531425<br>175523 | 549-550 Arches, Brixton<br>Station Road, London,<br>Greater London, SW9 8PF          | Industrial Coatings and<br>Finishings        | Industrial Products                              |
| 12B | 108             | NE            | Electricity<br>Sub Station | 531417<br>175544 | Greater London, SW9  | Electrical Features                          | Infrastructure and<br>Facilities                 |
| 13  | 115             | E             | Depot                      | 531441<br>175500 | Greater London, SW9  | Container and Storage                        | Transport, Storage and<br>Delivery               |
| 14E | 115             | NW            | Electricity<br>Sub Station | 531156<br>175580 | Greater London, SW9  | Electrical Features                          | Infrastructure and<br>Facilities                 |
| 15  | 118             | SW            | H B Phone<br>Centre        | 531103<br>175398 | 14, Electric Avenue,<br>London, Greater London,<br>SW9 8JX                           | Radar and<br>Telecommunications<br>Equipment | Industrial Products                              |
| 16B | 123             | NE            | Brixton Fire<br>Station    | 531431<br>175548 | Brixton Fire Station 84,<br>Gresham Road, London,<br>Greater London, SW9 7NP         | Fire Brigade Stations                        | Central and Local<br>Government                  |



| ID  | Distance<br>(m) | Directio<br>n | Company                             | NGR              | Address   | Activity                                  | Category   |
|-----|-----------------|---------------|-------------------------------------|------------------|---|---|--|
| 17C | 125             | SW            | Harry Jacobs                        | 531155<br>175335 | 410, Coldharbour Lane,<br>London, Greater London,<br>SW9 8LF                                    | Published Goods                           | Industrial Products                              |
| 18C | 125             | SW            | Xerox<br>Document<br>Printing       | 531155<br>175335 | 410, Coldharbour Lane,<br>London, Greater London,<br>SW9 8LF                                    | Clothing, Components and<br>Accessories   | Consumer Products                                |
| 19C | 125             | SW            | Xerox Design                        | 531155<br>175335 | 410, Coldharbour Lane,<br>London, Greater London,<br>SW9 8LF                                    | Published Goods                           | Industrial Products                              |
| 20C | 125             | SW            | Photographic<br>Training<br>Academy | 531155<br>175335 | 410, Coldharbour Lane,<br>London, Greater London,<br>SW9 8LF                                    | Clothing, Components and<br>Accessories   | Consumer Products                                |
| 21D | 125             | E             | Brixton<br>Brewery Ltd              | 531443<br>175528 | 547 Arches, Brixton<br>Station Road, London,<br>Greater London, SW9 8PF                         | Alcoholic Drinks                          | Foodstuffs                                       |
| 22C | 125             | SW            | Clearaprint                         | 531155<br>175335 | 410, Coldharbour Lane,<br>London, Greater London,<br>SW9 8LF                                    | Published Goods                           | Industrial Products                              |
| 23E | 135             | NW            | Electricity<br>Sub Station          | 531139<br>175593 | Greater London, SW9   | Electrical Features                       | Infrastructure and<br>Facilities                 |
| 24  | 138             | S             | Electricity<br>Sub Station          | 531256<br>175314 | Greater London, SW9   | Electrical Features                       | Infrastructure and<br>Facilities                 |
| 25  | 138             | Ν             | Electricity<br>Sub Station          | 531313<br>175626 | Greater London, SW9   | Electrical Features                       | Infrastructure and<br>Facilities                 |
| 26  | 141             | NW            | R W A<br>London LLP                 | 531087<br>175546 | 409-411, Brixton Road,<br>London, Greater London,<br>SW9 7DG                                    | Civil Engineers                           | Engineering Services                             |
| 27  | 142             | W             | Brixton                             | 531070<br>175427 | Brixton Station, Brixton<br>Road, London, Greater<br>London, SW9 8HE                            | Underground Network<br>Stations           | Public Transport, Stations<br>and Infrastructure |
| 28  | 156             | S             | London<br>Valeting<br>Centre        | 531182<br>175294 | 413, Coldharbour Lane,<br>London, Greater London,<br>SW9 8LH                                    | Vehicle Cleaning Services                 | Personal, Consumer and<br>Other Services         |
| 29  | 193             | W             | Westbury<br>Music Ltd               | 531017<br>175450 | 2, Tunstall Road, London,<br>Greater London, SW9 8BN  | Recording Studios and<br>Record Companies | IT, Advertising, Marketing<br>and Media Services |
| 30  | 207             | SW            | ΕΧΥΖΕΤ                              | 531130<br>175256 | Flat 9 Hereford House,<br>Rushcroft Road, London,<br>Greater London, SW2 1LQ                    | Tobacco Products                          | Consumer Products                                |
| 31  | 215             | NW            | London<br>Publishing<br>Partnership | 531012<br>175562 | Unit 212 The Bon Marche<br>Centre 241-251, Ferndale<br>Road, London, Greater<br>London, SW9 8BJ | Published Goods                           | Industrial Products                              |
| 32  | 216             | SW            | Electricity<br>Sub Station          | 531086<br>175271 | Greater London, SW2   | Electrical Features                       | Infrastructure and<br>Facilities                 |
| 33  | 217             | W             | Bon Marche<br>Centre                | 531004<br>175545 | The Bon Marche Centre<br>241-251, Ferndale Road,<br>London, Greater London,<br>SW9 8BJ          | Business Parks and<br>Industrial Estates  | Industrial Features                              |
| 34  | 224             | W             | Specsavers<br>Hearcare              | 531001<br>175369 | 492, Brixton Road,<br>London, Greater London,<br>SW9 8EQ  | Disability and Mobility<br>Equipment      | Consumer Products                                |



#### 4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site:

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

| ID | Distance<br>(m) | Directio<br>n | NGR              | Company | Address  | LPG            | Status   |
|----|-----------------|---------------|------------------|---------|--|----------------|----------|
| 35 | 151             | E             | 531476<br>175443 | TEXACO  | 321-331, Coldharbour<br>Lane, Brixton, London,<br>Inner London, SW9<br>8RX | Not Applicable | Obsolete |

#### 4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site:

Database searched and no data found.

0

0

1

#### 4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site:



### 5. Geology

#### 5.1 Artificial Ground and Made Ground

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

#### 5.2 Superficial Ground and Drift Geology

The database has been searched on site, including a 50m buffer.

| Lex Code | Description          | Rock Type       |
|----------|----------------------|-----------------|
| TPGR-XSV | TAPLOW GRAVEL MEMBER | SAND AND GRAVEL |

#### 5.3 Bedrock and Solid Geology

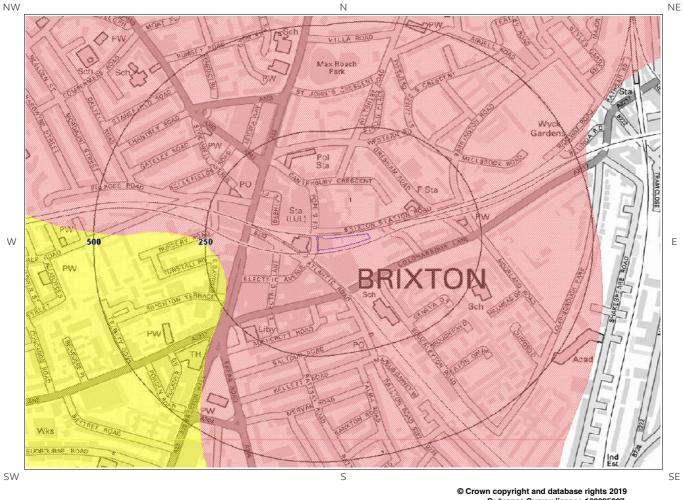
The database has been searched on site, including a 50m buffer.

| Lex Code | Description           | Rock Type     |
|----------|-----------------------|---------------|
| LC-XCZ   | LONDON CLAY FORMATION | CLAY AND SILT |

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)



### 6 Hydrogeology and Hydrology 6a. Aquifer Within Superficial Geology



Ordnance Survey licence 100035207.

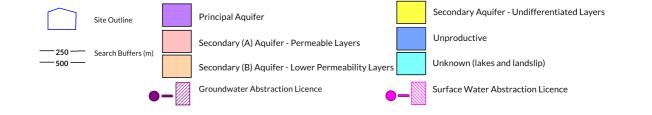
Secondary Aquifer - Undifferentiated Layers Principal Aquifer Site Outline Unproductive Secondary (A) Aquifer - Permeable Layers Search Buffers (m) Unknown (lakes and landslip) Secondary (B) Aquifer - Lower Permeability Layers 500



### 6b. Aquifer Within Bedrock Geology and Abstraction Licences

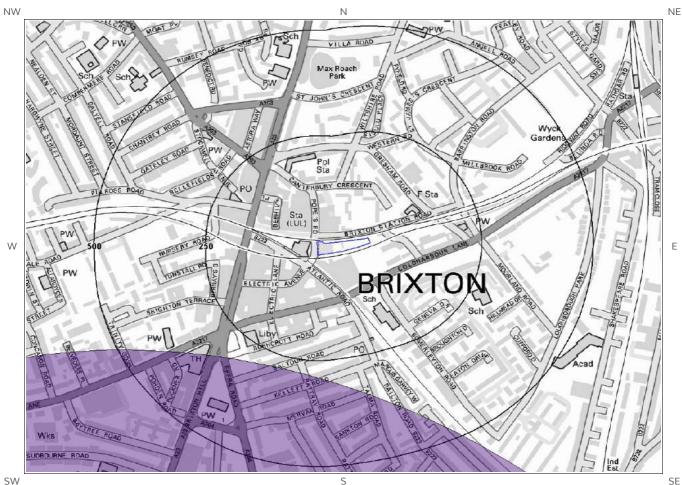


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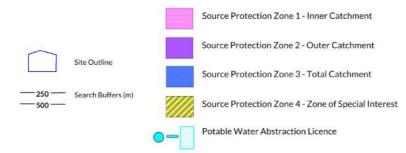


## 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



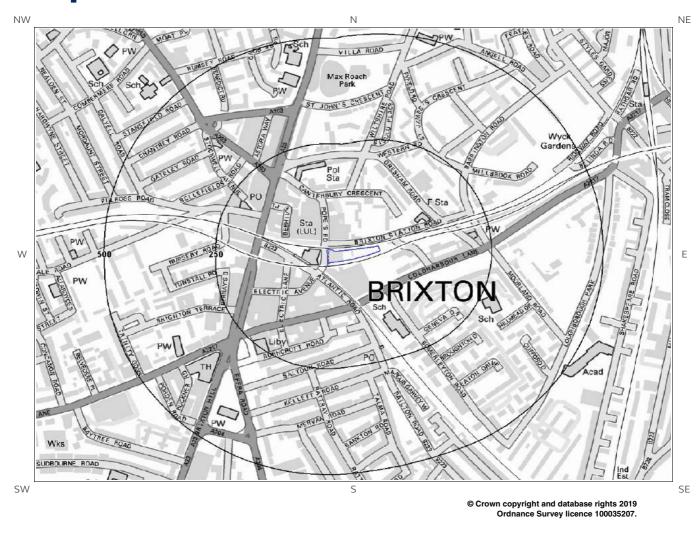
SW

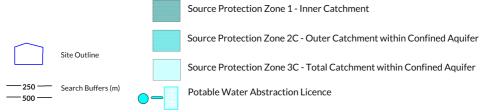
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### 6d. Hydrogeology – Source Protection Zones within confined aquifer







### 6e. Hydrology – Watercourse **Network and River Quality**



SW

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### 6.Hydrogeology and Hydrology

#### 6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

| ID | Distanc<br>e (m)    | Direction | Designation                     | Description   |
|----|---------------------|-----------|---------------------------------|---|
| 1  | 0                   | On Site   | Secondary A                     | Permeable layers capable of supporting water supplies at a local rather than<br>strategic scale, and in some cases forming an important source of base flow to rivers.<br>These are generally aquifers formerly classified as minor aquifers            |
| 3  | 215                 | W         | Secondary<br>(undifferentiated) | Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type |
| 2  | 2 447 S Secondary A |           | Secondary A                     | Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers                  |

#### 6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

| ID | Distanc<br>e (m) | Direction | Designation  | Description   |
|----|------------------|-----------|--------------|---|
| 1  | 0                | On Site   | Unproductive | These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow |
| 2  | 447              | S         | Unproductive | These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow |



#### 6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

Identified

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

| ID               | Distance<br>(m) | Direction | NGR              | Details   |  |  |  |
|------------------|-----------------|-----------|------------------|---|--|--|--|
| Not<br>show<br>n | 1105            | SW        | 530200<br>175000 | Status: Historical<br>Licence No: 28/39/42/0006<br>Details: General Washing/Process Washing<br>Direct Source: THAMES GROUNDWATER<br>Point: ACRE LANE, BRIXTON, - BOREHOLE 'A'<br>Data Type: Point<br>Name: SUNLIGHT SERVICE GROUP LTD                     | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date:<br>Expiry Date:<br>Issue No:<br>Version Start Date: 25/04/1996<br>Version End Date:          |  |  |
| Not<br>show<br>n | 1123            | SW        | 530180<br>175000 | Status: Active<br>Licence No: 28/39/42/0006<br>Details: General Washing/Process Washing<br>Direct Source: THAMES GROUNDWATER<br>Point: 125 ACRE LANE,BRIXTON,SW2 -<br>BOREHOLE<br>Data Type: Point<br>Name: Berendsen UK Limited                          | Annual Volume (m <sup>3</sup> ): 95,000<br>Max Daily Volume (m <sup>3</sup> ): 1,227<br>Original Application No: -<br>Original Start Date:<br>Expiry Date:<br>Issue No:<br>Version Start Date: 22/07/2013<br>Version End Date: |  |  |
| Not<br>show<br>n | 1193            | NE        | 532330<br>176130 | Status: Historical<br>Licence No: TH/039/0042/010<br>Details: Heat Pump<br>Direct Source: THAMES GROUNDWATER<br>Point: CUTCOMBE ROAD, LAMBETH, LONDON<br>Data Type: Point<br>Name: King's College London  | Annual Volume (m <sup>3</sup> ): 315,360<br>Max Daily Volume (m <sup>3</sup> ): 864<br>Original Application No: -<br>Original Start Date:<br>Expiry Date:<br>Issue No:<br>Version Start Date: 25/05/2012<br>Version End Date:  |  |  |
| Not<br>show<br>n | 1193            | NE        | 532330<br>176130 | Status: Active<br>Licence No: TH/039/0042/010/R01<br>Details: Heat Pump<br>Direct Source: THAMES GROUNDWATER<br>Point: CUTCOMBE ROAD, LAMBETH, LONDON<br>Data Type: Point<br>Name: King's College London  | Annual Volume (m <sup>3</sup> ): 315,360<br>Max Daily Volume (m <sup>3</sup> ): 864<br>Original Application No: -<br>Original Start Date:<br>Expiry Date:<br>Issue No:<br>Version Start Date: 01/04/2019<br>Version End Date:  |  |  |
| Not<br>show<br>n | 1267            | NW        | 530080<br>176050 | Status: Historical<br>Licence No: 28/39/42/0017<br>Details: General Washing/Process Washing<br>Direct Source: THAMES GROUNDWATER<br>Point: 17-19 UNION ROAD,CLAPHAM ROAD,<br>SW4 - BOREHOLE<br>Data Type: Point<br>Name: GLN LONDON LIMITED               | Annual Volume (m <sup>3</sup> ): 168,206<br>Max Daily Volume (m <sup>3</sup> ): 682<br>Original Application No: -<br>Original Start Date:<br>Expiry Date:<br>Issue No:<br>Version Start Date: 04/04/2007<br>Version End Date:  |  |  |
| Not<br>show<br>n | 1267            | NW        | 530080<br>176050 | Status: Historical<br>Licence No: 28/39/42/0017<br>Details: General Washing/Process Washing<br>Direct Source: THAMES GROUNDWATER<br>Point: 17-19 CLAPHAM ROAD, LONDON, -<br>BOREHOLE 'A'<br>Data Type: Point<br>Name: PERSIMMON HOMES (SOUTH EAST)<br>LTD | Annual Volume (m <sup>3</sup> ): 168,206<br>Max Daily Volume (m <sup>3</sup> ): 682<br>Original Application No: -<br>Original Start Date:<br>Expiry Date:<br>Issue No:<br>Version Start Date: 25/03/2003<br>Version End Date:  |  |  |



| ID               | Distance<br>(m) | Direction | on NGR Details   |  |  |  |
|------------------|-----------------|-----------|------------------|--|--|--|
| Not<br>show<br>n | 1272            | NW        | 530100<br>176100 | Status: Historical<br>Licence No: 28/39/42/0017<br>Details: General Washing/Process Washing<br>Direct Source: THAMES GROUNDWATER<br>Point: 17-19 CLAPHAM ROAD, LONDON, -<br>BOREHOLE 'A'<br>Data Type: Point<br>Name: SAVOY HOTEL LAUNDRY LTD      | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date:<br>Expiry Date:<br>Issue No:<br>Version Start Date: 13/06/1966<br>Version End Date:              |  |
| Not<br>show<br>n | 1272            | NW        | 530100<br>176100 | Status: Historical<br>Licence No: 28/39/42/0017<br>Details: General Washing/Process Washing<br>Direct Source: THAMES GROUNDWATER<br>Point: 17-19 CLAPHAM ROAD, LONDON, -<br>BOREHOLE 'B'<br>Data Type: Point<br>Name: SAVOY HOTEL LAUNDRY LTD      | Annual Volume (m <sup>3</sup> ): -<br>Max Daily Volume (m <sup>3</sup> ): -<br>Original Application No: -<br>Original Start Date:<br>Expiry Date:<br>Issue No:<br>Version Start Date: 13/06/1966<br>Version End Date:              |  |
| Not<br>show<br>n | 1304            | SW        | 530541<br>174328 | Status: Historical<br>Licence No: TH/039/0042/019<br>Details: Potable Water Supply - Direct<br>Direct Source: THAMES GROUNDWATER<br>Point: BOREHOLE AT BRIXTON PUMPING<br>STATION<br>Data Type: Point<br>Name: THAMES WATER UTILITIES LTD          | Annual Volume (m <sup>3</sup> ): 3,650,000<br>Max Daily Volume (m <sup>3</sup> ): 13,400<br>Original Application No: -<br>Original Start Date:<br>Expiry Date:<br>Issue No:<br>Version Start Date: 01/04/2013<br>Version End Date: |  |
| Not<br>show<br>n | 1304            | SW        | 530541<br>174328 | Status: Active<br>Licence No: TH/039/0042/019/R01<br>Details: Potable Water Supply - Direct<br>Direct Source: THAMES GROUNDWATER<br>Point: BOREHOLE AT BRIXTON PUMPING<br>STATION<br>Data Type: Point<br>Name: Thames Water Utilities Ltd          | Annual Volume (m <sup>3</sup> ): 3,650,000<br>Max Daily Volume (m <sup>3</sup> ): 13,400<br>Original Application No: -<br>Original Start Date:<br>Expiry Date:<br>Issue No:<br>Version Start Date: 01/04/2019<br>Version End Date: |  |
| Not<br>show<br>n | 1319            | SW        | 530510<br>174330 | Status: Historical<br>Licence No: 28/39/42/0063<br>Details: Potable Water Supply - Direct<br>Direct Source: THAMES GROUNDWATER<br>Point: BRIXTON PUMPING STATION, LONDON<br>SW2 - BOREHOLE<br>Data Type: Point<br>Name: THAMES WATER UTILITIES LTD | Annual Volume (m <sup>3</sup> ): 3,650,000<br>Max Daily Volume (m <sup>3</sup> ): 13,400<br>Original Application No: -<br>Original Start Date:<br>Expiry Date:<br>Issue No:<br>Version Start Date: 10/04/2002<br>Version End Date: |  |

#### 6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

None identified



#### 6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

Identified

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

| ID           | Distanc<br>e (m) | Direction | NGR              | Details  |   |  |
|--------------|------------------|-----------|------------------|--|---|--|
| Not<br>shown | 1304             | SW        | 530541<br>174328 | Status: Historical<br>Licence No: TH/039/0042/019<br>Details: Potable Water Supply - Direct<br>Direct Source: THAMES GROUNDWATER<br>Point: BOREHOLE AT BRIXTON PUMPING<br>STATION<br>Data Type: Point<br>Name: THAMES WATER UTILITIES LTD          | Annual Volume (m <sup>3</sup> ): 3,650,000<br>Max Daily Volume (m <sup>3</sup> ): 13,400<br>Original Application No: -<br>Original Start Date: 01/04/2013<br>Expiry Date: 31/03/2019<br>Issue No: 1<br>Version Start Date:<br>Version End Date: |  |
| Not<br>shown | 1304             | SW        | 530541<br>174328 | Status: Active<br>Licence No: TH/039/0042/019/R01<br>Details: Potable Water Supply - Direct<br>Direct Source: THAMES GROUNDWATER<br>Point: BOREHOLE AT BRIXTON PUMPING<br>STATION<br>Data Type: Point<br>Name: Thames Water Utilities Ltd          | Annual Volume (m <sup>3</sup> ): 3,650,000<br>Max Daily Volume (m <sup>3</sup> ): 13,400<br>Original Application No: -<br>Original Start Date: 01/04/2019<br>Expiry Date: 31/03/2028<br>Issue No: 1<br>Version Start Date:<br>Version End Date: |  |
| Not<br>shown | 1319             | SW        | 530510<br>174330 | Status: Historical<br>Licence No: 28/39/42/0063<br>Details: Potable Water Supply - Direct<br>Direct Source: THAMES GROUNDWATER<br>Point: BRIXTON PUMPING STATION, LONDON<br>SW2 - BOREHOLE<br>Data Type: Point<br>Name: THAMES WATER UTILITIES LTD | Annual Volume (m <sup>3</sup> ): 3,650,000<br>Max Daily Volume (m <sup>3</sup> ): 13,400<br>Original Application No: -<br>Original Start Date: 10/04/2002<br>Expiry Date: 31/03/2013<br>Issue No: 1<br>Version Start Date:<br>Version End Date: |  |

#### **6.6 Source Protection Zones**

Source Protection Zones within 500m of the study site

Identified

The following Source Protection Zones records are represented on the SPZ and Potable Water Abstraction Map (6c):

| ID | Distanc<br>e (m) | Direction | Zone | Description     |
|----|------------------|-----------|------|-----------------|
| 1  | 279              | S         | 2    | Outer catchment |



#### 6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

#### 6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

| Distance<br>(m) | Direction | Classification                           | Soil Vulnerability Category | Description   |
|-----------------|-----------|--|-----------------------------|---|
| 0               | On Site   | Minor Aquifer/High Leaching<br>Potential | HU                          | Soil information for urban areas and<br>restored mineral workings. These<br>soils are therefore assumed to be<br>highly permeable in the absence of<br>site-specific information. |

#### 6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site None identified

6.9.1 Biological Quality:

Database searched and no data found.

6.9.2 Chemical Quality:



#### 6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

Database searched and no data found.

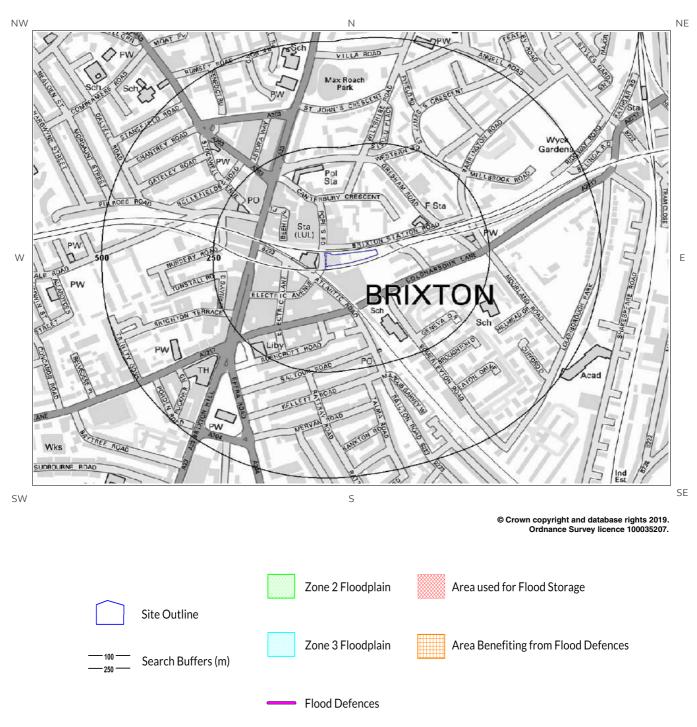
#### 6.11 Surface Water Features

Surface water features within 250m of the study site

None identified



### 7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)





### 7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



Medium

High

Search Buffers (m)



### 7 Flooding

#### 7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m None identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

#### 7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m None identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

Database searched and no data found.

#### 7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

#### 7.4 Flood Defences

Flood Defences within 250m of the study site Database searched and no data found. None identified

Very Low

#### 7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site

None identified



None identified

#### 7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site

#### 7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site Identified

Clearwater Flooding or Superficial Deposits Flooding

Superficial Deposits Flooding

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Potential at Surface Where potential for groundwater flooding to occur at surface is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

#### 7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result

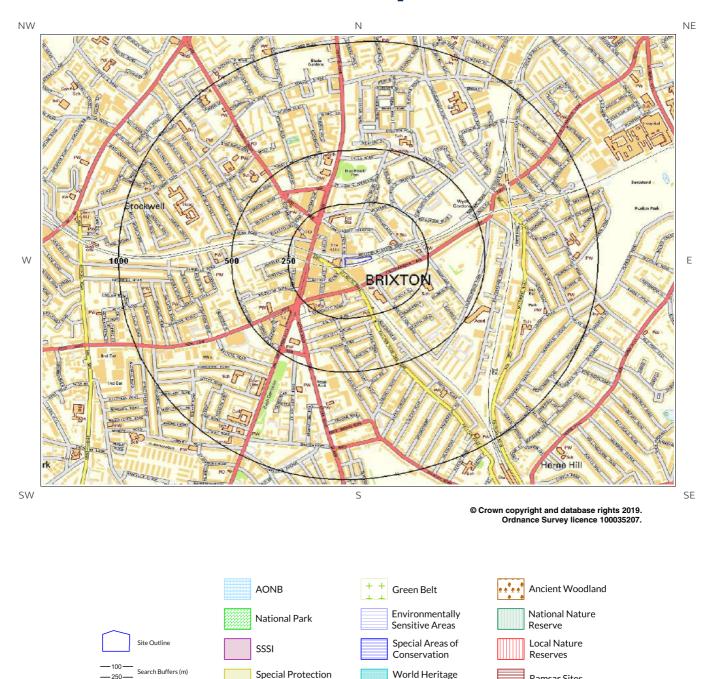
Moderate

Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.



### 8. Designated Environmentally **Sensitive Sites Map**



Sites

Areas

Nitrate Sensitive

Report Reference: GS-6436469 Client Reference: C2023\_-\_Sports\_Direct\_Brixton

Areas

Zones

Nitrate Vulnerable

**Ramsar Sites** 



### 8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site

None identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

0

0

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0



#### 8.6 Records of Ancient Woodland within 2000m of the study site:

| Database searched and no data found.  |
|---|
| .7 Records of Local Nature Reserves (LNR) within 2000m of the study site:                 |
| Database searched and no data found.  |
| 8.8 Records of World Heritage Sites within 2000m of the study site:                       |
| Database searched and no data found.  |
| 3.9 Records of Environmentally Sensitive Areas within 2000m of the study site:            |
| Database searched and no data found.  |
| 8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the tudy site: |
| Database searched and no data found.  |
| 3.11 Records of National Parks (NP) within 2000m of the study site:                       |
| Database searched and no data found.  |
| 8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:                   |

0



8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

Database searched and no data found.

8.14 Records of Green Belt land within 2000m of the study site:

Database searched and no data found.

0

### 9. Natural Hazards Findings

#### 9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

#### 9.1.1 Shrink Swell

Maximum Shrink-Swell\*\* hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

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 potential 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.

#### 9.1.2 Landslides

Maximum Landslide\* hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

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.

Hazard

#### 9.1.3 Soluble Rocks

Maximum Soluble Rocks\* hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

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.

Hazard

This indicates an automatically generated 50m buffer and site.



Very Low

Moderate

Negligible

#### 9.1.4 Compressible Ground

Maximum Compressible Ground\* hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

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.

Hazard

#### 9.1.5 Collapsible Rocks

Maximum Collapsible Rocks\* hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

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.

#### 9.1.6 Running Sand

Maximum Running Sand\*\* hazard rating identified on the study site

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. 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.

Very Low

Negligible

Very Low



Hazard

#### 9.2 Radon



#### 9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

#### 9.2.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing

ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.



### 10. Mining

#### 10.1 Coal Mining

Coal mining areas within 75m of the study site

Database searched and no data found.

#### 10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary

Database searched and no data found.

#### **10.3 Brine Affected Areas**

Brine affected areas within 75m of the study site Guidance: No Guidance Required.

None identified

None identified

None identified



### **Contact Details**

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



British Geological Survey Enquiries

Kingsley Dunham Centre Keyworth, Nottingham NG12 5GG Tel: 0115 936 3143. Fax: 0115 936 3276. Email:

Web:**www.bgs.ac.uk** BGS Geological Hazards Reports and general geological enquiries: **enquiries@bgs.ac.uk** 

> Environment Agency National Customer Contact Centre, PO Box 544 Rotherham, S60 1BY Tel: 03708 506 506 Web: <u>www.environment-agency.gov.uk</u> Email: enquiries@environment-agency.gov.uk

Public Health England Public information access office Public Health England, Wellington House 133-155 Waterloo Road, London, SE1 8UG www.gov.uk/phe Email:enquiries@phe.gov.uk Main switchboard: 020 7654 8000

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

Ordnance Survey Adanac Drive, Southampton SO16 0AS Tel: 08456 050505 LOCATION INTELLIGENCE



British Geological Survey





The Coal Authority



Local Authority Authority: London Borough of Lambeth Phone: 020 7926 1000 Web: http://www.lambeth.gov.uk/ Address: Brixton Customer Centre, Civic Centre, 6 Brixton Hill,

> Gemapping PLC Virginia Villas, High Street, Hartley Witney, Hampshire RG27 8NW Tel: 01252 845444





Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England/Natural Resources Wales who retain the Copyright and Intellectual Property Rights for the data.

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| RMA Environmental Limited<br>4 SWALLOW COURT R M A ENVIRONMENTAL | Groundsure<br>Reference: | GS-6436470                 |
|--|--------------------------|----------------------------|
| LTD, -,<br>TIVERTON/SAMPFORD PEVERELL, EX16 7EJ                  | Your Reference:          | C2023Sports_Direct_Brixton |
|  | Report Date              | 1 Nov 2019                 |
|  | Report Delivery          | Email - pdf                |

Method:

#### **Geo Insight**

Address: RAILWAY ARCADE, ATLANTIC ROAD, LONDON, SW9 8JB

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Geo Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Q.

Managing Director Groundsure Limited

Enc. Groundsure Geo Insight



| Address:   | RAILWAY ARCADE, ATLANTIC ROAD, LONDON, SW9 8JB |
|------------|--|
| Date:      | 1 Nov 2019                                     |
| Reference: | GS-6436470                                     |
| Client:    | RMA Environmental Limited                      |

NW

W

NE



S

SW

Aerial Photograph Capture date:23-Sep-2016Grid Reference:531270,175468Site Size:0.2510ha

SE



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### **Overview of Findings**

The Groundsure Geo Insight provides high quality geo-environmental information that allows geoenvironmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

For further details on each dataset, please refer to each individual section in the report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

#### Section 1: Geology 1:10,000 Scale

| 1.1 Artificial Ground                       | 1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?  | No        |
|---|--|-----------|
| 1.2 Superficial<br>Geology and<br>Landslips | 1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*   | Yes       |
|   | 1.2.2 Are there any records of landslip within 500m of the study site boundary at 1:10,000 scale?  | No        |
| 1.3 Bedrock, Solid<br>Geology and linear    | 1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.  |           |
| features                                    | 1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?   | No        |
| Section 2: Geolo                            | gy 1:50,000 Scale  |           |
| 2.1 Artificial Ground                       |  |           |
|   | 2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?  | No        |
|   | 2.1. Its there any Artificial Ground Plade Ground present beneath  | No        |
| Geology and                                 | 2.1.2 Are there any records relating to permeability of artificial   |           |
| Geology and                                 | <ul> <li>2.1.1 is there any Artificial Ground/ Plade Ground present beneath the study site?</li> <li>2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?</li> <li>2.2.1 Is there any Superficial Ground/Drift Geology present beneath</li> </ul>   | No        |
| 2.2 Superficial<br>Geology and<br>Landslips | <ul> <li>2.1.1 is there any Artificial Ground/ Plade Ground present beneath the study site?</li> <li>2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?</li> <li>2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*</li> <li>2.2.2 Are there any records of permeability of superficial ground</li> </ul> | No<br>Yes |



| Section 2: Geolo                                     | gy 1:50,000 Scale   |               |          |          |  |                 |
|--|---|---------------|----------|----------|--|-----------------|
| 2.3 Bedrock, Solid<br>Geology and linear<br>features | 2.3.1 For records of Bedrock and Solid Geolo site* see the detailed findings section.                                   | ogy beneath t | he study |          |  |                 |
|  | 2.3.2 Are there any records relating to permo<br>ground within the study site boundary?                                 | Yes           |          |          |  |                 |
|  | 2.3.3 Are there any records of linear features study site boundary?   |               |          |          |  |                 |
| Section 3: Rado                                      | ı   |               |          |          |  |                 |
| 3. Radon   | 3.1Is the property in a Radon Affected Area a<br>Protection Agency (HPA) and if so what perc<br>above the Action Level? |               |          |          | is not in a Ra<br>than 1% of p<br>e the Action L | roperties are   |
|  | 3.2Radon Protection   |               |          | No radon | protective me<br>necessary.                      | asures are      |
| Section 4: Grour                                     | nd Workings   | On-site       | 0-50m    | 51-250   | 251-500  | 501-1000        |
| 4.1 Historical Surface<br>Scale Mapping              | ce Ground Working Features from Small   | 0             | 0        | 0        | Not<br>Searched                                  | Not<br>Searched |
| 4.2 Historical Under                                 | ground Workings from Small Scale Mapping  | 0             | 0        | 0        | 0  | 0               |
| 4.3 Current Ground                                   | Workings  | 0             | 0        | 0        | 0  | 0               |
| Section 5: Minin                                     | g, Extraction & Natural Cavities  | On-site       | 0-50m    | 51-250   | 251-500  | 501-1000        |
| 5.1 Historical Mining                                | 9   | 0             | 0        | 0        | 0  | 0               |
| 5.2 Coal Mining                                      |   | 0             | 0        | 0        | 0  | 0               |
| 5.3 Johnson Poole a                                  | nd Bloomer Mining Area  | 1             | 0        | 1        | 2  | 5               |
| 5.4 Non-Coal Mining                                  | ]*  | 0             | 0        | 0        | 0  | 1               |
| 5.5 Non-Coal Minin                                   | g Cavities  | 0             | 0        | 0        | 0  | 0               |
| 5.5 Natural Cavities                                 |   | 0             | 0        | 0        | 0  | 0               |

Report Reference: GS-6436470 Client Reference: C2023\_-\_Sports\_Direct\_Brixton



|  |          |       |        | LOCATION IN  | ITELLIGENCE |
|--|----------|-------|--------|--------------|-------------|
| Section 5: Mining, Extraction & Natural Cavities | On-site  | 0-50m | 51-250 | 251-500      | 501-100     |
| 5.6 Brine Extraction                             | 0        | 0     | 0      | 0            | 0           |
| 5.7 Gypsum Extraction                            | 0        | 0     | 0      | 0            | 0           |
| 5.8 Cornwall and Devon Metalliferous Mining      | 0        | 0     | 0      | 0            | 0           |
| 5.9 Clay Mining                                  | 0        | 0     | 0      | 0            | 0           |
| Section 6: Natural Ground Subsidence             | On-sit   | ce    |        |              |             |
| 6.1 Shrink-Swell Clay                            | Modera   | te    |        |              |             |
| 6.2 Landslides                                   | Very Lo  | W     |        |              |             |
| 6.3 Ground Dissolution of Soluble Rocks          | Negligik | ole   |        |              |             |
| 6.4 Compressible Deposits                        | Negligik | ole   |        |              |             |
| 6.5 Collapsible Deposits                         | Very Lo  | W     |        |              |             |
| 6.5 Running Sand                                 | Very Lo  | W     |        |              |             |
| Section 7: Borehole Records                      | On-si    | te    | 0-50m  | 5            | 1-250       |
| 7 BGS Recorded Boreholes                         | 0        |       | 3      |              | 38          |
| Section 8: Estimated Background Soil Chemistry   | On-si    | te    | 0-50m  | 5            | 1-250       |
| 8 Records of Background Soil Chemistry           | 1        |       | 1      |              | 0           |
| Section 9: Railways and Tunnels                  | On-site  | 0-50m | 51-250 | 250-500      |             |
| 9.1 Tunnels                                      | 0        | 1     | 1      | Not Searched |             |
| 9.2 Historical Railway and Tunnel Features       | 16       | 3     | 1      | Not Searched |             |
| 9.3 Historical Railways                          | 0        | 0     | 0      | Not Searched |             |
| 9.4 Active Railways                              | 0        | 24    | 30     | Not Searched |             |
| 9.5 Railway Projects                             | 0        | 0     | 0      | 0            |             |



### 1:10,000 Scale Availability





### Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

| ID | Distance | Artificial<br>Coverage            | Superficial Coverage | Bedrock Coverage | Mass Movement Coverage |
|----|----------|-----------------------------------|----------------------|------------------|------------------------|
| 1  | 0.0      | Some<br>deposits                  | Full                 | Full             | No coverage            |
|    |          | are<br>mapped                     |                      |                  |                        |
| 2  | 447.0    | Some<br>deposits<br>are<br>mapped | Full                 | Full             | No coverage            |
| 3  | 1210.0   | Some<br>deposits<br>are<br>mapped | Full                 | Full             | No coverage            |
| 4  | 1291.0   | Some<br>deposits<br>are<br>mapped | Full                 | Full             | No coverage            |

Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

| Geology       | Full Coverage                         | Partial Coverage                             | No Coverage            |
|---------------|---------------------------------------|--|------------------------|
| Bedrock       | The whole tile has been<br>mapped     | Some but not all the tile has been mapped    | No coverage            |
| Superficial   | The whole tile has been<br>mapped     | Some but not all of the tile has been mapped | No coverage            |
| Artificial    | Some deposits are mapped on this tile | -  | No deposits are mapped |
| Mass Movement | Some deposits are mapped on this tile | -  | No coverage            |



## 1 Geology (1:10,000 scale). 1.1 Artificial Ground map (1:10,000 scale)





### 1. Geology 1:10,000 scale

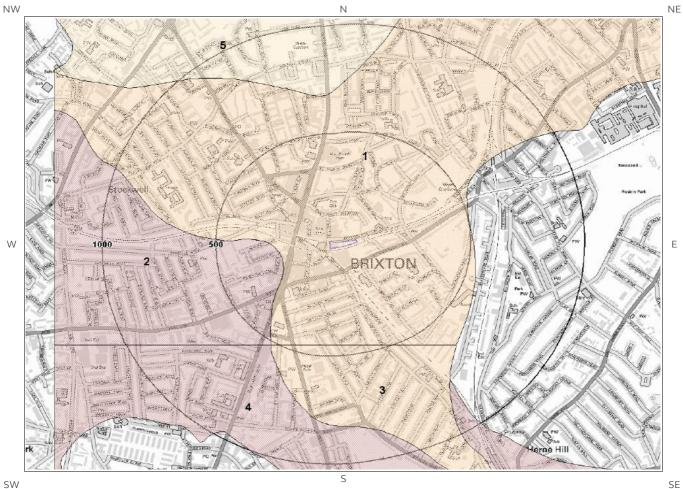
#### 1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? No



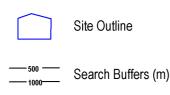
### **1.2 Superficial Deposits and** Landslips map (1:10,000 scale)



SW

Artificial Ground Legend

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# 1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

#### 1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? Yes

| I | ID | Distance<br>(m) | Direction | LEX Code  | Description                               | Rock Description |
|---|----|-----------------|-----------|-----------|---|------------------|
|   | 1  | 0.0             | On Site   | TPGR-XSV  | Taplow Gravel Formation - Sand And Gravel | Sand And Gravel  |
|   | 2  | 215.0           | W         | HEAD-DMTN | Head - Diamicton                          | Diamicton        |
|   | 3  | 447.0           | S         | TPGR-V    | Taplow Gravel Formation - Gravel          | Gravel           |

#### 1.2.2 Landslip

Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale?

No

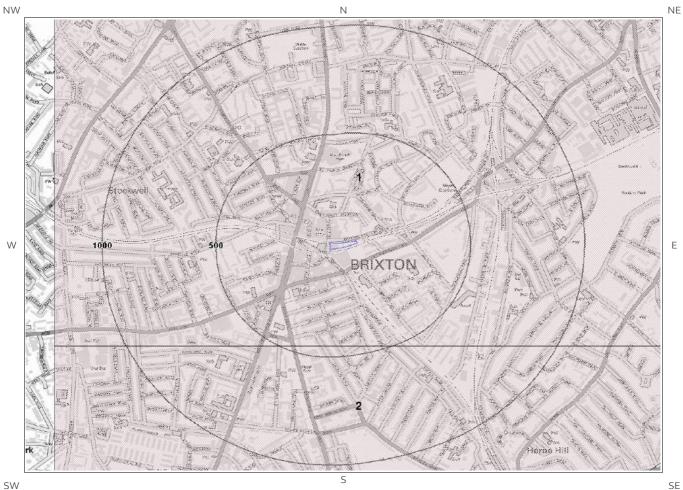
#### Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.



### 1.3 Bedrock and linear features map (1:10,000 scale)



SW

Bedrock and linear features Legend

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### **1.3 Bedrock and linear features**

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

#### 1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

| ID | Distance<br>(m) | Direction | LEX Code | Description                  | Rock Age     |
|----|-----------------|-----------|----------|------------------------------|--------------|
| 1  | 0.0             | On Site   | LC-CLAY  | London Clay Formation - Clay | Eocene Epoch |
| 2  | 447.0           | S         | LC-CLAY  | London Clay Formation - Clay | Eocene Epoch |

#### 1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? No

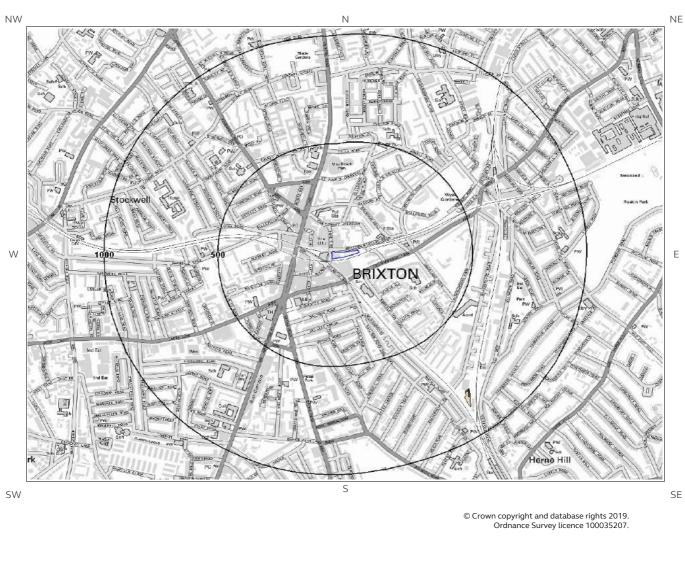
Database searched and no data found at this scale.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.



### 2 Geology 1:50,000 Scale 2.1 Artificial Ground map







### 2. Geology 1:50,000 scale

#### 2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 270

#### 2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary?

No

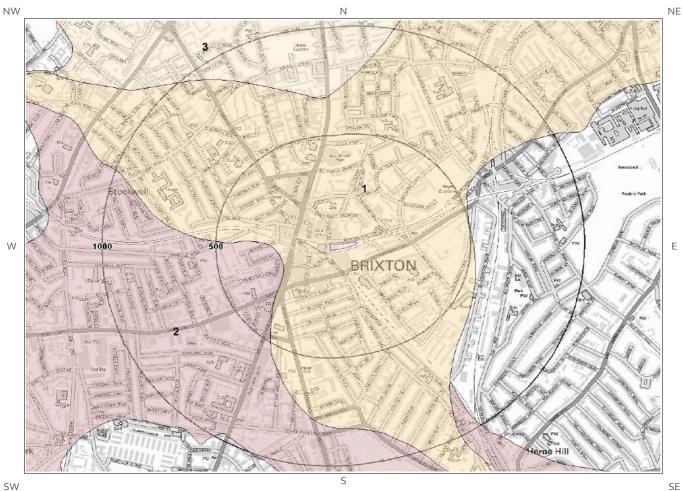
Database searched and no data found.

#### 2.1.2 Permeability of Artificial Ground

Are there any records relating to permeability of artificial ground within the study site boundary? No

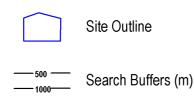


# 2.2 Superficial Deposits and Landslips map (1:50,000 scale)



SW

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# 2.2 Superficial Deposits and Landslips

### 2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

| <br>ID | Distance | Direction | LEX Code    | Description            | Rock Description               |
|--------|----------|-----------|-------------|------------------------|--------------------------------|
| <br>1  | 0.0      | On Site   | TPGR-XSV TA | APLOW GRAVEL<br>MEMBER | SAND AND GRAVEL                |
| <br>2  | 215.0    | W         | HEAD-XCZSV  | HEAD                   | CLAY, SILT, SAND<br>AND GRAVEL |

### 2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

| Distance (m) | Direction | Flow Type     | Maximum Permeability | Minimum Permeability |
|--------------|-----------|---------------|----------------------|----------------------|
| 0.0          | On Site   | Intergranular | Very High            | High                 |

### 2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary?

No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

### 2.2.4 Landslip Permeability

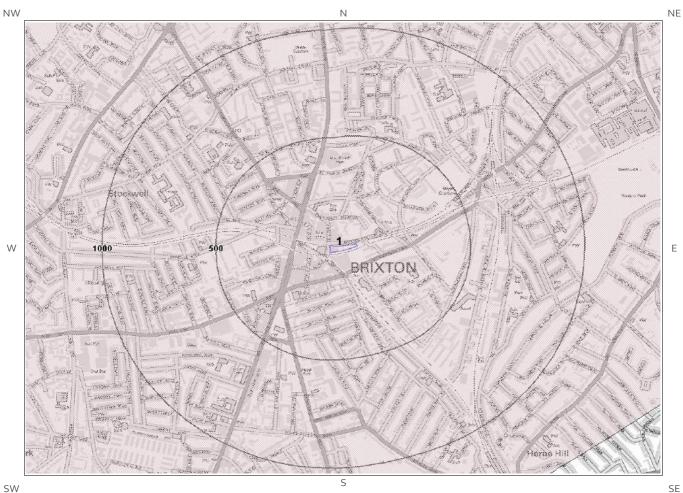
Are there any records relating to permeability of landslips within the study site boundary?

No

Database searched and no data found.

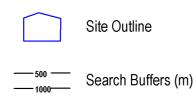


### 2.3 Bedrock and linear features map (1:50,000 scale)



SW

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# 2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 270

### 2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

| ID | Distance | Direction | LEX Code | Rock Description                         | Rock Age |
|----|----------|-----------|----------|--|----------|
| 1  | 0.0      | On Site   | LC-XCZ   | LONDON CLAY FORMATION - CLAY<br>AND SILT | YPRESIAN |

### 2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

| Distanc<br>e | Direction | Flow Type | Maximum Permeability | Minimum Permeability |
|--------------|-----------|-----------|----------------------|----------------------|
| 0.0          | On Site   | Mixed     | Low                  | Very Low             |

### 2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary?

No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.



# 3 Radon Data

### 3.1 Radon Affected Areas

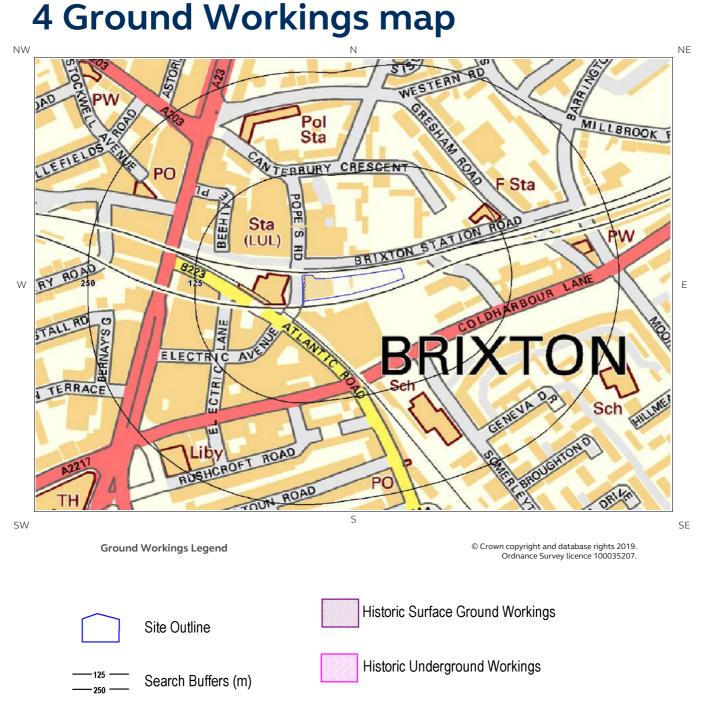
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

### 3.2 Radon Protection

Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.





Current Ground Workings



### **4 Ground Workings**

### 4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? No

Database searched and no data found.

#### 4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

#### 4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

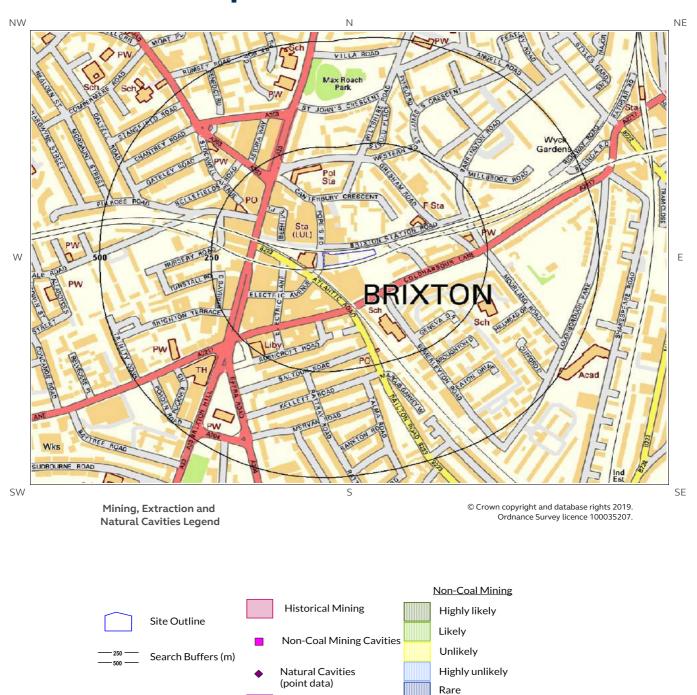
Are there any BGS Current Ground Workings within 1000m of the study site boundary?

No

Database searched and no data found.



### 5 Mining, Extraction & Natural Cavities map



Natural Cavities (polygon data)



# 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?

No

Database searched and no data found.

### 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?

No

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?

Yes

The following information provided by JPB is not represented on mapping: Whilst outside of an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) have information such as mining plans and maps held within their archive of mining activities that have occurred within 1km of this property. Further details and a quote for services can be obtained by emailing this report to enquiries.gs@jpb.co.uk.

### 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?

Yes

| ID           | Distance<br>(m) | Direction | Name          | Commodity | Assessment of likelihood   |
|--------------|-----------------|-----------|---------------|-----------|--|
| Not<br>shown | 918.0           | SE        | Not available | Chalk     | Small scale underground mining may have occurred; mine adits,<br>shafts and tunnels may be present. Potential for localised<br>difficult ground conditions are at a level where they should be |

The following non-coal mining information is provided by the BGS:



#### 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?

No

Database searched and no data found.

#### **5.6 Natural Cavities**

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

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

No

No

No

Database searched and no data found.

#### 5.7 Brine Extraction

This data provides information from 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 Cornwall and Devon Metalliferous Mining

This dataset provides information on metalliferous mining areas in Cornwall/Devon and is derived from records held by Mining Searches UK.

Are there any Cornwall and Devon Metalliferous 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

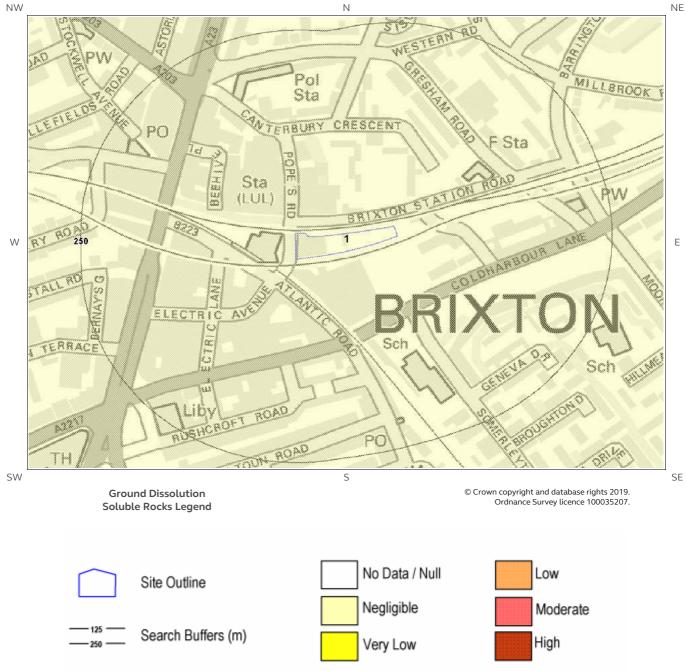






# 6.3 Ground Dissolution of Soluble **Rocks map**

NW





### 6.4 Compressible Deposits map



**Compressible Deposits Legend** 

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### 6.5 Collapsible Deposits map



**Collapsible Deposits Legend** 

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### 6.6 Running Sand map







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

### 6.2 Landslides

The following Landslides information provided by the British Geological Survey:

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

<sup>\*</sup> This includes an automatically generated 50m buffer zone around the site



### 6.3 Ground Dissolution of Soluble Rocks

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

### 6.5 Collapsible Deposits

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

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

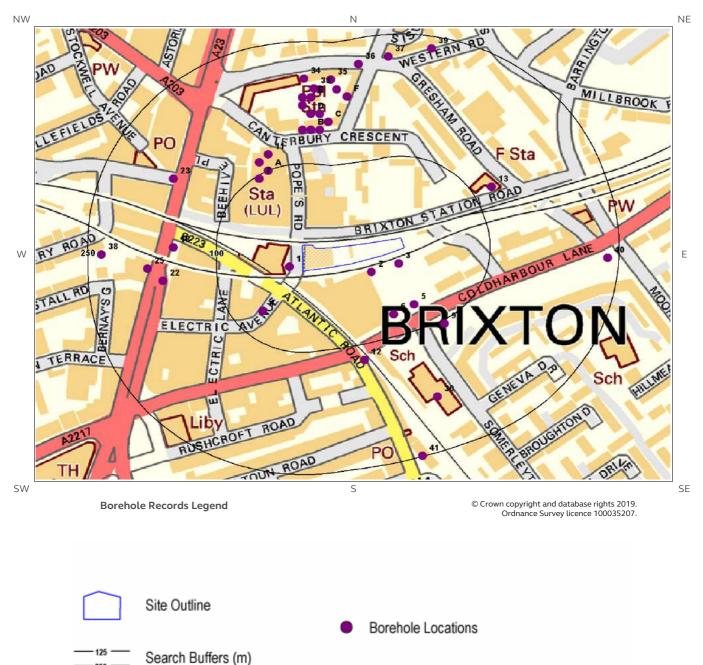
### 6.6 Running Sands

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

| ID | Distance<br>(m) | Direction | Hazard Rating | Details  |
|----|-----------------|-----------|---------------|--|
| 1  | 0.0             | On Site   | Very Low      | Very low potential for running sand problems if water table rises or if sandy strata<br>are exposed to water. No special actions required, to avoid problems due to<br>running sand. No special ground investigation required, and increased<br>construction costs or increased financial risks are unlikely due to potential<br>problems with running sand. |



### 7 Borehole Records map



Report Reference: GS-6436470 Client Reference: C2023\_-\_Sports\_Direct\_Brixton

250



### 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:

41

| ID  | Distance<br>(m) | Direction | NGR              | BGS Reference | Drilled Length | Borehole Name                          |
|-----|-----------------|-----------|------------------|---------------|----------------|--|
| 1   | 16.0            | W         | 531195<br>175452 | TQ37NW477     | 6.71           | VICTORIA-BRIXTON<br>TUBE EXTN 41A      |
| 2   | 16.0            | S         | 531290<br>175446 | TQ37NW2100    | 10.4           | BRIXTON RPT G/0295<br>BH2              |
| 3   | 16.0            | S         | 531322<br>175456 | TQ37NW2099    | 20.4           | BRIXTON RPT G/0295<br>BH1              |
| 4   | 68.0            | SW        | 531164<br>175398 | TQ37NW478     | 27.43          | VICTORIA-BRIXTON<br>TUBE EXTN 41       |
| 5   | 69.0            | S         | 531340<br>175406 | TQ37NW2101    | 10.7           | BRIXTON RPT G/0295<br>BH3              |
| 6   | 73.0            | S         | 531316<br>175394 | TQ37NW2102    | 10             | BRIXTON RPT G/0295<br>BH4              |
| 7   | 96.0            | NW        | 531160<br>175560 | TQ37NW2310    | 28             | STATION RD BRIXTON                     |
| 8A  | 100.0           | NW        | 531170<br>175570 | TQ37NW2311    | 8              | STATION RD BRIXTON                     |
| 9   | 105.0           | SE        | 531375<br>175382 | TQ37NW3181    | No details     | London Power Tunnels<br>Phase 2 BHWN08 |
| 10A | 113.0           | NW        | 531160<br>175580 | TQ37NW2308    | 8              | STATION RD BRIXTON                     |
| 11  | 118.0           | Ν         | 531170<br>175590 | TQ37NW2309    | 28             | STATION RD BRIXTON                     |
| 12  | 119.0           | S         | 531282<br>175338 | TQ37NW479     | 27.43          | VICTORIA-BRIXTON<br>TUBE EXTN 42       |
| 13  | 122.0           | NE        | 531430<br>175550 | TQ37NW305     | 1              | FIRE BRIGADE STATIO<br>GRESHAM RD      |
| 14B | 141.0           | Ν         | 531220<br>175620 | TQ37NW2735    | 20             | WILTSHIRE ROAD<br>BRIXTON 3A           |
| 15B | 141.0           | Ν         | 531220<br>175620 | TQ37NW2742    | 2.6            | WILTSHIRE ROAD<br>BRIXTON TP6          |
| 16B | 141.0           | Ν         | 531210<br>175620 | TQ37NW2734    | 4.55           | WILTSHIRE ROAD<br>BRIXTON 3            |
| 17B | 142.0           | Ν         | 531230<br>175620 | TQ37NW2741    | 2.5            | WILTSHIRE ROAD<br>BRIXTON TP5          |
| 18  | 150.0           | W         | 531060<br>175476 | TQ37NW475     | 25.91          | VICTORIA-BRIXTON<br>TUBE EXTN 39       |
| 19C | 152.0           | Ν         | 531240<br>175630 | TQ37NW2736    | 10             | WILTSHIRE ROAD<br>BRIXTON 4            |
| 20D | 161.0           | Ν         | 531220<br>175640 | TQ37NW2743    | 3.3            | WILTSHIRE ROAD<br>BRIXTON TP7          |
| 21C | 161.0           | Ν         | 531230<br>175640 | TQ37NW2740    | 3.1            | WILTSHIRE ROAD<br>BRIXTON TP4          |
| 22  | 163.0           | W         | 531048<br>175435 | TQ37NW476     | 25.91          | VICTORIA-BRIXTON<br>TUBE EXTN 40       |



| ID  | Distance<br>(m) | Direction | NGR              | BGS Reference | Drilled Length | Borehole Name                            |
|-----|-----------------|-----------|------------------|---------------|----------------|--|
| 23  | 171.0           | NW        | 531060<br>175560 | TQ37NW738     | 6.09           | GPO STOCKWELL ROAD J                     |
| 24D | 171.0           | Ν         | 531210<br>175650 | TQ37NW2739    | 3.2            | WILTSHIRE ROAD<br>BRIXTON TP3            |
| 25  | 181.0           | W         | 531030<br>175450 | TQ37NW739     | 6.09           | GPO TUNSTALL ROAD 2                      |
| 26E | 181.0           | Ν         | 531220<br>175660 | TQ37NW2737    | 3.1            | WILTSHIRE ROAD<br>BRIXTON TP1            |
| 27E | 181.0           | Ν         | 531210<br>175660 | TQ37NW2731    | 5.25           | WILTSHIRE ROAD<br>BRIXTON 1              |
| 28E | 181.0           | Ν         | 531210<br>175660 | TQ37NW2732    | 5              | WILTSHIRE ROAD<br>BRIXTON 1A             |
| 29F | 181.0           | Ν         | 531262<br>175661 | TQ37NW2193    | No details     | GRESHAM ROAD 2                           |
| 30  | 185.0           | S         | 531367<br>175293 | TQ37NW480     | 27.43          | VICTORIA-BRIXTON<br>TUBE EXTN 43         |
| 31E | 191.0           | Ν         | 531230<br>175670 | TQ37NW2738    | 4.2            | WILTSHIRE ROAD<br>BRIXTON TP2            |
| 32F | 192.0           | Ν         | 531250<br>175670 | TQ37NW2733    | 20             | WILTSHIRE ROAD<br>BRIXTON 2              |
| 33  | 192.0           | Ν         | 531223<br>175671 | TQ37NW2194    | No details     | GRESHAM ROAD 3                           |
| 34  | 204.0           | Ν         | 531212<br>175683 | TQ37NW2196    | No details     | GRESHAM ROAD 5                           |
| 35  | 204.0           | Ν         | 531243<br>175682 | TQ37NW2192    | No details     | GRESHAM ROAD 1                           |
| 36  | 219.0           | Ν         | 531275<br>175701 | TQ37NW2195    | No details     | GRESHAM ROAD 4                           |
| 37  | 222.0           | Ν         | 531310<br>175710 | TQ37NW2286    | No details     | WILTSHIRE RD LAMBETH<br>8                |
| 38  | 234.0           | W         | 530976<br>175467 | TQ37NW474     | 35.05          | VICTORIA-BRIXTON<br>TUBE EXTN 38         |
| 39  | 235.0           | Ν         | 531360<br>175720 | TQ37NW2285    | No details     | WILTSHIRE RD LAMBETH<br>7                |
| 40  | 237.0           | E         | 531565<br>175463 | TQ37NW3182    | No details     | London Power Tunnels -<br>Phase 2 BHWN09 |
| 41  | 250.0           | S         | 531350<br>175220 | TQ37NW2380    | No details     | MAYALL/RAILTON RD 1                      |
|     |                 |           |                  |               |                |  |



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.

#1: scans.bgs.ac.uk/sobi\_scans/boreholes/597541 #2: scans.bgs.ac.uk/sobi\_scans/boreholes/599207 #3: scans.bgs.ac.uk/sobi\_scans/boreholes/599206 #4: scans.bgs.ac.uk/sobi scans/boreholes/597542 #5: scans.bgs.ac.uk/sobi scans/boreholes/599208 #6: scans.bgs.ac.uk/sobi\_scans/boreholes/599209 #7: scans.bgs.ac.uk/sobi\_scans/boreholes/599417 #8A: scans.bgs.ac.uk/sobi\_scans/boreholes/599418 #10A: scans.bgs.ac.uk/sobi\_scans/boreholes/599415 #11: scans.bgs.ac.uk/sobi\_scans/boreholes/599416 #12: scans.bgs.ac.uk/sobi\_scans/boreholes/597543 #13: scans.bgs.ac.uk/sobi\_scans/boreholes/597337 #14B: scans.bgs.ac.uk/sobi\_scans/boreholes/15954707 #15B: scans.bgs.ac.uk/sobi scans/boreholes/15954719 #16B: scans.bgs.ac.uk/sobi scans/boreholes/15954705 #17B: scans.bgs.ac.uk/sobi\_scans/boreholes/15954718 #18: scans.bgs.ac.uk/sobi\_scans/boreholes/597539 #19C: scans.bgs.ac.uk/sobi\_scans/boreholes/15954709 #20D: scans.bgs.ac.uk/sobi\_scans/boreholes/15954720 #21C: scans.bgs.ac.uk/sobi\_scans/boreholes/15954716 #22: scans.bgs.ac.uk/sobi\_scans/boreholes/597540 #23: scans.bgs.ac.uk/sobi\_scans/boreholes/597805 #24D: scans.bgs.ac.uk/sobi\_scans/boreholes/15954714 #25: scans.bgs.ac.uk/sobi scans/boreholes/597806 #26E: scans.bgs.ac.uk/sobi\_scans/boreholes/15954712 #27E: scans.bgs.ac.uk/sobi\_scans/boreholes/15954694 #28E: scans.bgs.ac.uk/sobi\_scans/boreholes/15954701 #30: scans.bgs.ac.uk/sobi\_scans/boreholes/597544 #31E: scans.bgs.ac.uk/sobi\_scans/boreholes/15954713 #32F: scans.bgs.ac.uk/sobi\_scans/boreholes/15954703 #38: scans.bgs.ac.uk/sobi\_scans/boreholes/597538



# 8 Estimated Background Soil Chemistry

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

2

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   |
| 12.0       | Ν            | 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                             |  |
|--------------|-----------|------------------------------------|--|
| 54           | S         | London Underground - Victoria 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 Line: Victoria Line |  |
| Depth: NaNmbgl                         |  |
| Track Type: 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         |  |
|--------------|-----------|----------------|--|
| 26           | SW        | 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? Yes

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

| ID  | Distance<br>(m) | Direction | NGR              | Details         | Date |
|-----|-----------------|-----------|------------------|-----------------|------|
| 1A  | 0               | On Site   | 531314<br>175484 | Railway Sidings | 1938 |
| 2A  | 0               | On Site   | 531314<br>175484 | Railway Sidings |      |
| 3   | 0               | On Site   | 531343<br>175495 | Railway Sidings | 1894 |
| 4A  | 0               | On Site   | 531343<br>175494 | Railway Sidings | 1899 |
| 5   | 0               | On Site   | 531314<br>175490 | Railway Sidings | 1894 |
| 6   | 0               | On Site   | 531303<br>175482 | Railway Sidings | 1950 |
| 7A  | 0               | On Site   | 531322<br>175493 | Railway Sidings | 1916 |
| 8A  | 0               | On Site   | 531325<br>175493 | Railway Sidings | 1896 |
| 9B  | 0               | On Site   | 531361<br>175497 | Railway Sidings | 1958 |
| 10B | 0               | On Site   | 531361<br>175497 | Railway Sidings |      |
| 11  | 0               | On Site   | n/a              | Railway         | 1897 |
| 12  | 0               | On Site   | n/a              | Railway         | 1875 |
| 13  | 0               | On Site   | n/a              | Railway         | 1876 |
| 14  | 0               | On Site   | n/a              | Railway         | 1930 |
| 15  | 0               | On Site   | n/a              | Railway         | 1910 |
| 16  | 0               | On Site   | n/a              | Railway         | 187  |
| 17  | 11              | SW        | n/a              | Railways        | 187  |
| 18C | 39              | Е         | 531394<br>175508 | Railway Sidings | 1958 |
| 19C | 39              | E         | 531394<br>175508 | Railway Sidings | 1950 |
| 20  | 155             | Е         | n/a              | Railways        | 1930 |

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?   | No |
| Database searched and no data found.  |    |
| Multiple sections of the same track may be listed in the detail above<br>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 |
|---|----|
|---|----|

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

| Distance (m) | Direction | Name              | Туре        |
|--------------|-----------|-------------------|-------------|
| 2            | Ν         | Not given         | rail        |
| 2            | Ν         | Not given         | rail        |
| 4            | S         | South London Line | rail        |
| 4            | Ν         | Not given         | Multi Track |
| 4            | Ν         | Not given         | Multi Track |
| 4            | S         | South London Line | rail        |
| 5            | S         | South London Line | rail        |
| 5            | S         | South London Line | rail        |
| 6            | Ν         | Not given         | rail        |
| 6            | Ν         | Not given         | rail        |
| 7            | S         | Not given         | Multi Track |
| 7            | S         | Not given         | Multi Track |
| 9            | SE        | South London Line | rail        |
| 9            | SE        | South London Line | rail        |
| 10           | S         | South London Line | rail        |
| 10           | S         | South London Line | rail        |
| 20           | SW        | Chatham Main Line | rail        |
| 20           | SW        | Chatham Main Line | rail        |
| 23           | SW        | Chatham Main Line | rail        |
| 23           | SW        | Chatham Main Line | rail        |
| 24           | SW        | Not given         | Multi Track |
| 24           | SW        | Not given         | Multi Track |
| 35           | W         | Not given         | Multi Track |
| 35           | W         | Not given         | Multi Track |
| 69           | NE        | Not given         | rail        |
| 69           | NE        | Not given         | rail        |
| 69           | NE        | Not given         | rail        |
| 69           | NE        | Not given         | rail        |
| 74           | E         | Not given         | rail        |
| 74           | E         | Not given         | rail        |
| 74           | E         | Not given         | rail        |



|              |           |                   | LOCATION INTELLIGENCE |
|--------------|-----------|-------------------|-----------------------|
| Distance (m) | Direction | Name              | Туре                  |
| 74           | E         | Not given         | rail                  |
| 92           | W         | South London Line | rail                  |
| 92           | W         | South London Line | rail                  |
| 93           | W         | South London Line | rail                  |
| 93           | W         | South London Line | rail                  |
| 116          | S         | Chatham Main Line | rail                  |
| 116          | S         | Chatham Main Line | rail                  |
| 117          | S         | Chatham Main Line | rail                  |
| 117          | S         | Chatham Main Line | rail                  |
| 146          | W         | Chatham Main Line | rail                  |
| 146          | W         | Chatham Main Line | rail                  |
| 148          | W         | Chatham Main Line | rail                  |
| 148          | W         | Chatham Main Line | rail                  |
| 172          | W         | Not given         | Multi Track           |
| 172          | W         | Not given         | Multi Track           |
| 241          | E         | Not given         | Multi Track           |
| 241          | E         | Not given         | Multi Track           |
| 241          | E         | Not given         | Multi Track           |
| 241          | E         | Not given         | Multi Track           |
| 247          | E         | Not given         | Multi Track           |
| 247          | E         | Not given         | Multi Track           |
| 247          | E         | Not given         | Multi Track           |
| 247          | E         | Not given         | Multi Track           |

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? | No |
|---|----|
| 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**

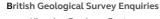
Groundsure Helpline Telephone: 08444 159 000 info@groundsure.com



LOCATION INTELLIGENCE



British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL



Kingsley Dunham Centre Keyworth, Nottingham NG12 5GG Tel: 0115 936 3143. Fax: 0115 936 3276. Email:**enquiries@bgs.ac.uk** Web:**www.bgs.ac.uk** 

BGS Geological Hazards Reports and general geological enquiries

British Gypsum Ltd East Leake Loughborough Leicestershire LE12 6HX

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

**P**ublic 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

Johnson Poole & Bloomer Limited

Harris and Pearson Building, Brettel Lane Brierley Hill, West Midlands DY5 3LH

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

Ordnance Survey Adanac Drive, Southampton SO16 0AS

Tel: 08456 050505 Website: http://www.ordnancesurvey.co.uk/

Getmapping PLC

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











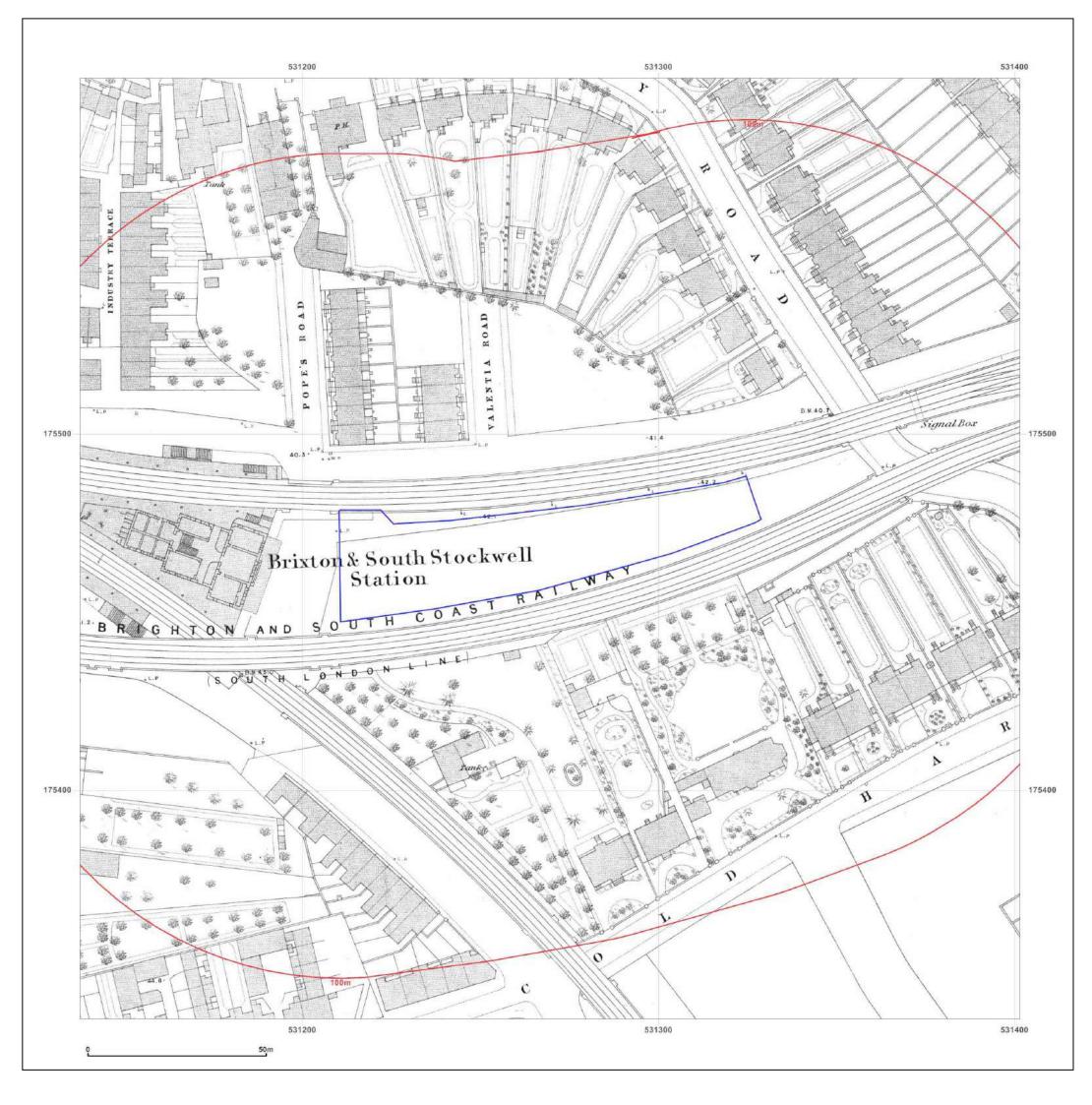
Peter Brett Associates Caversham Bridge House Waterman Place Reading Berkshire RG18DN Tel: +44 (0)118 950 0761 E-mail:**reading@pba.co.uk** Website:**http://www.peterbrett.com/home** 



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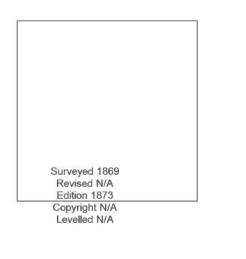
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| Map date:                               | 1873  |       |
| Scale:                                  | 1:1,056   | ₩ ¶ ⊧ |
| Printed at:                             | 1:1,056   | S     |





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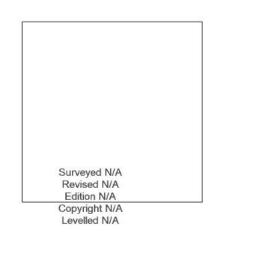
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|-------------|---|------|
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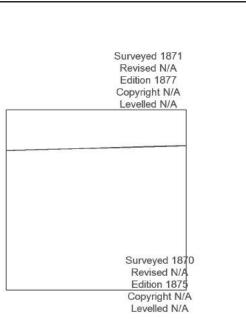
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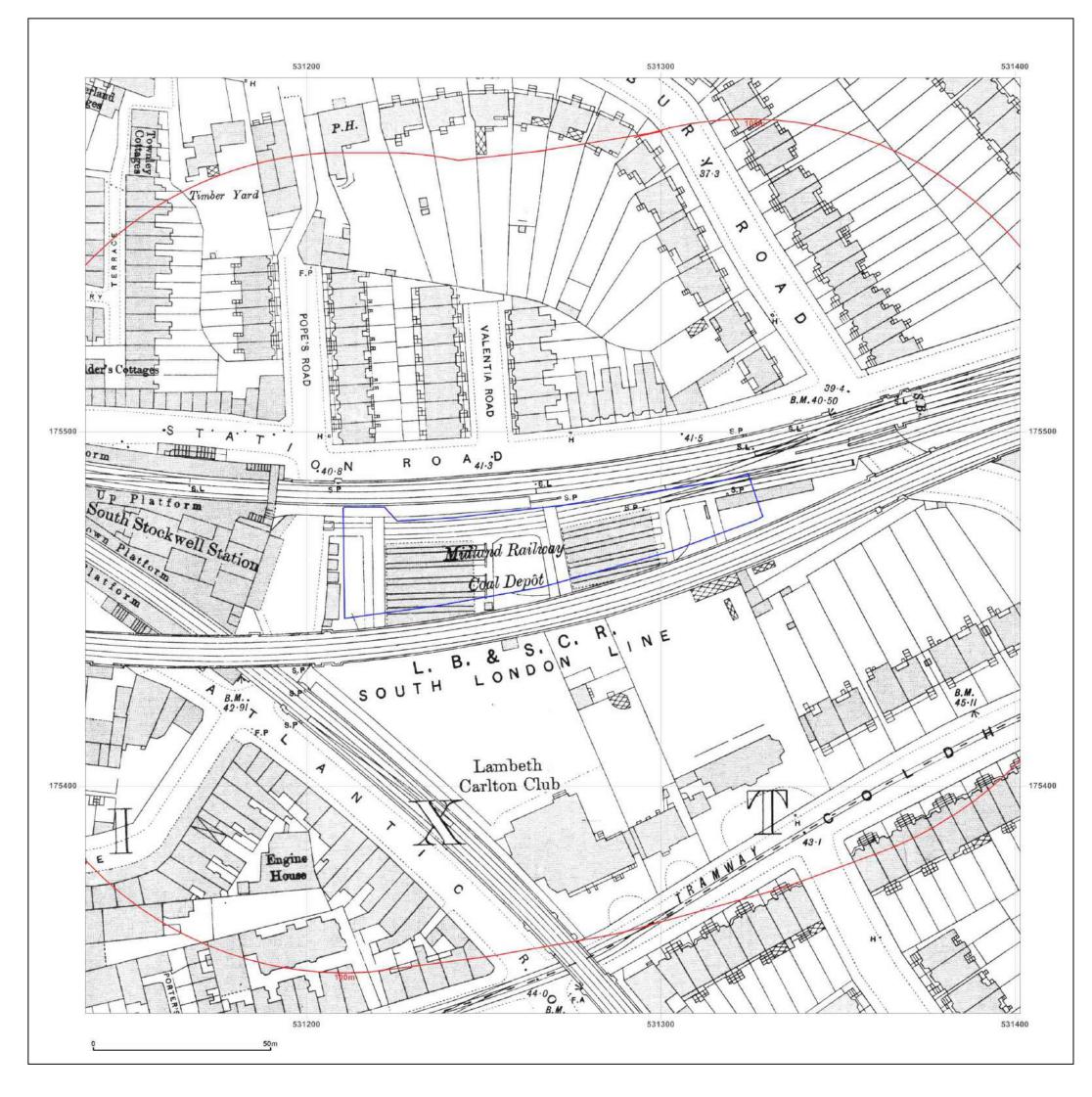
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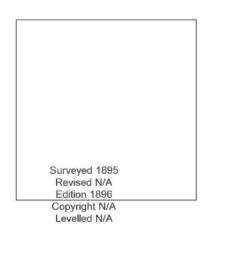
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|-------------|---|-----|
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| Map date:   | 1896  |     |
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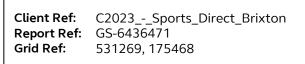
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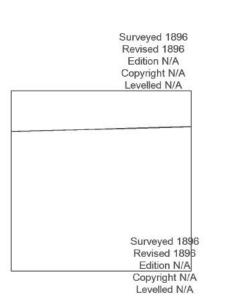


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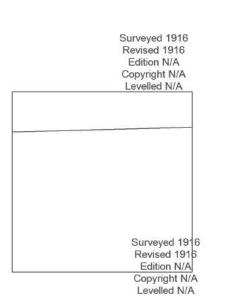




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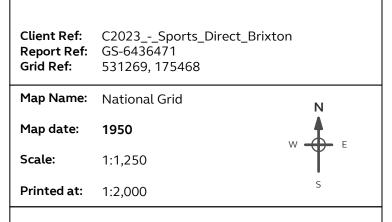
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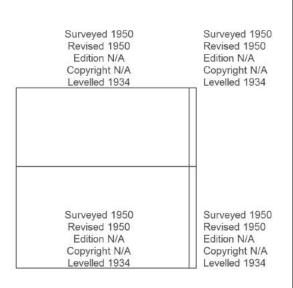
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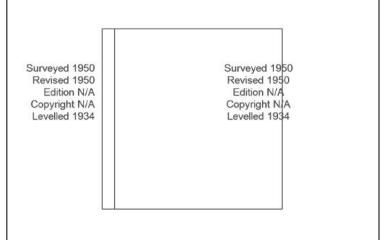
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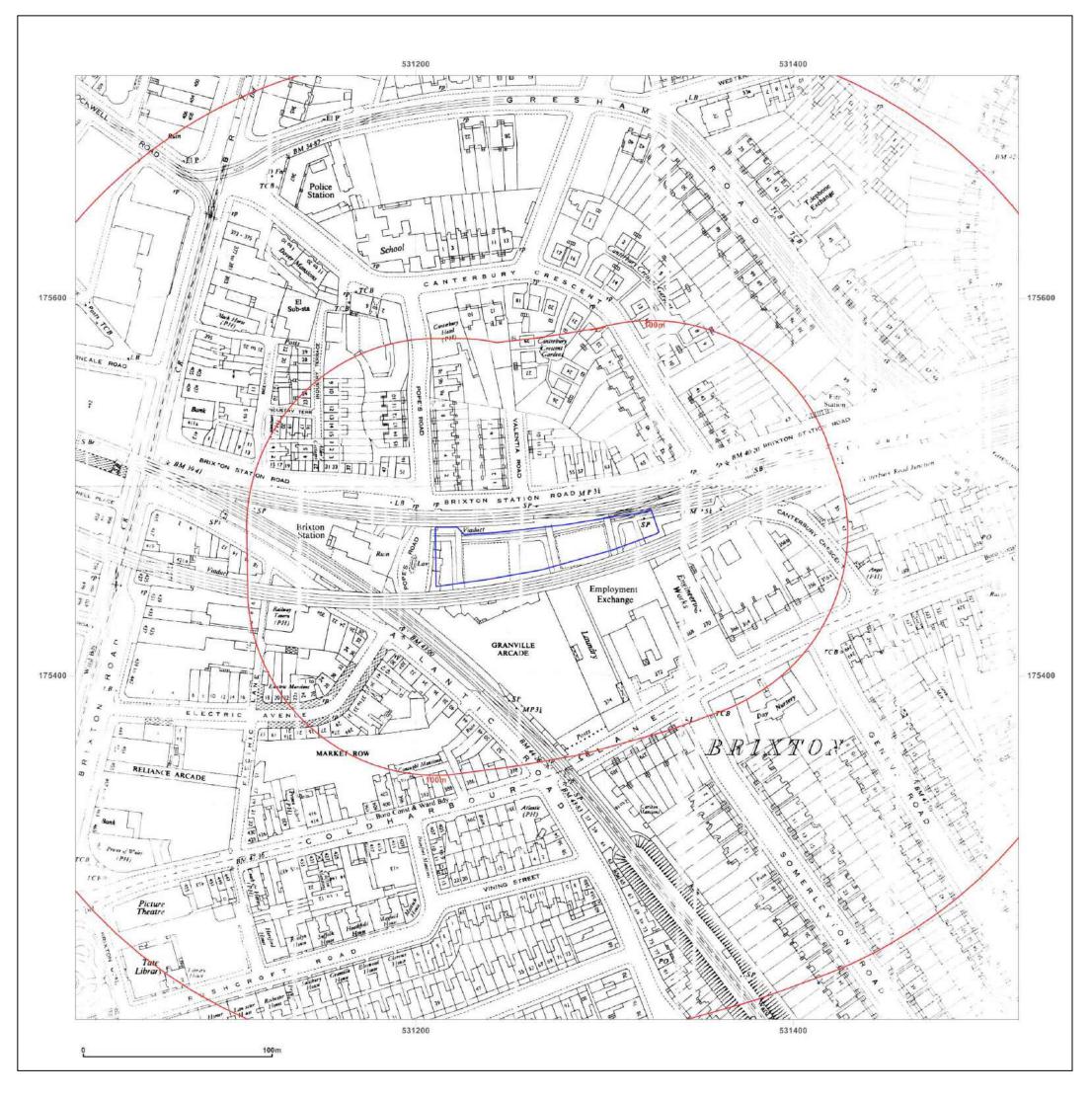




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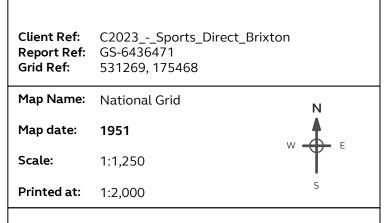
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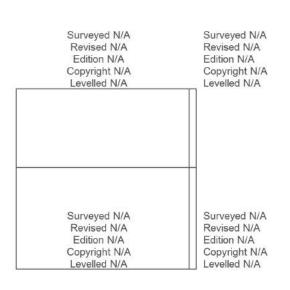
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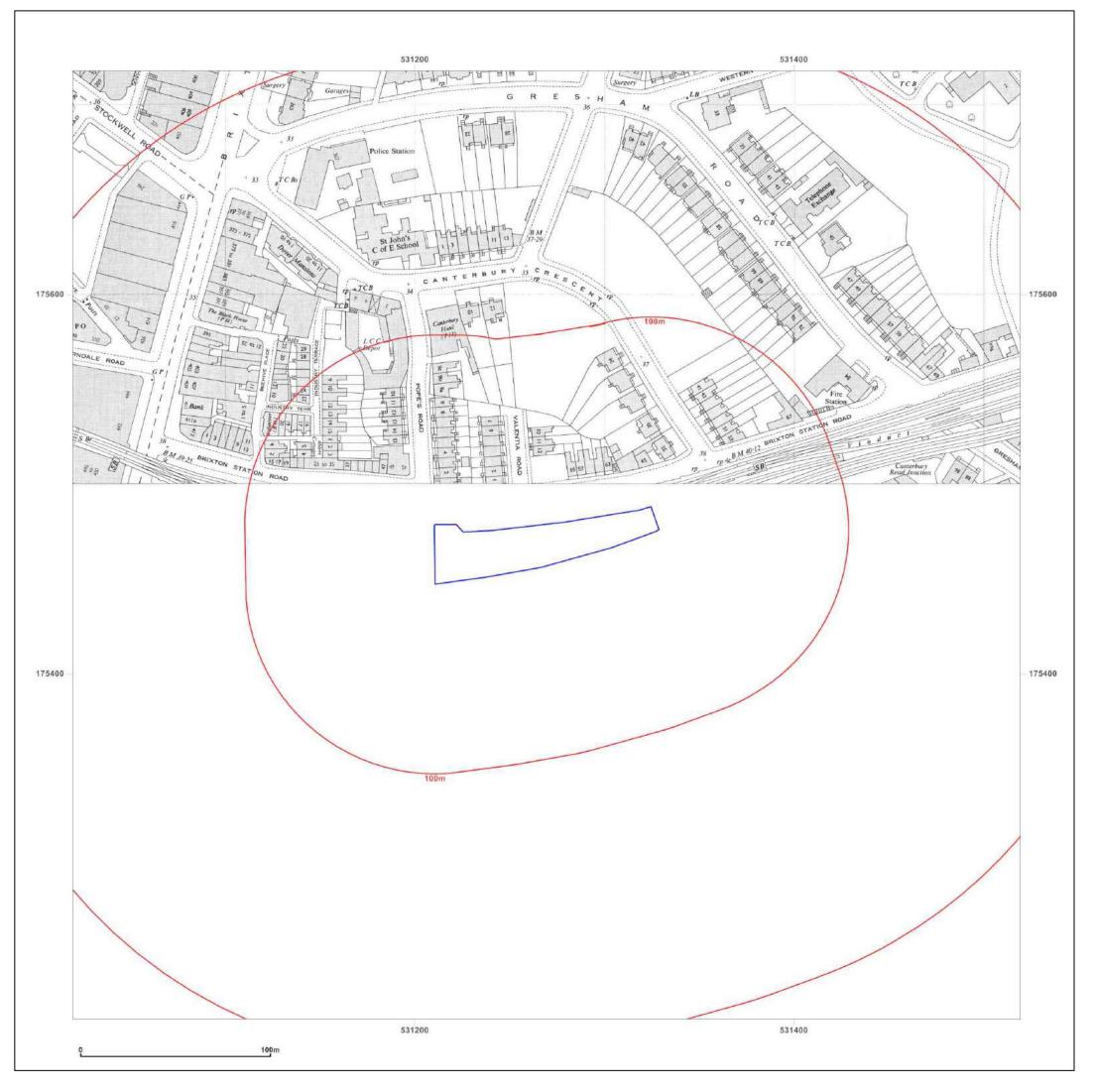




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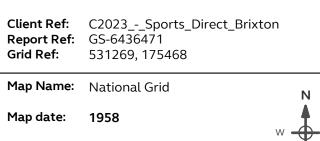
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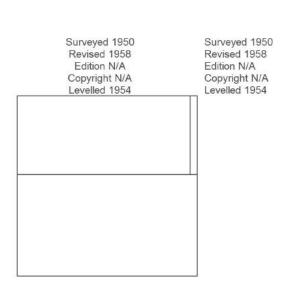


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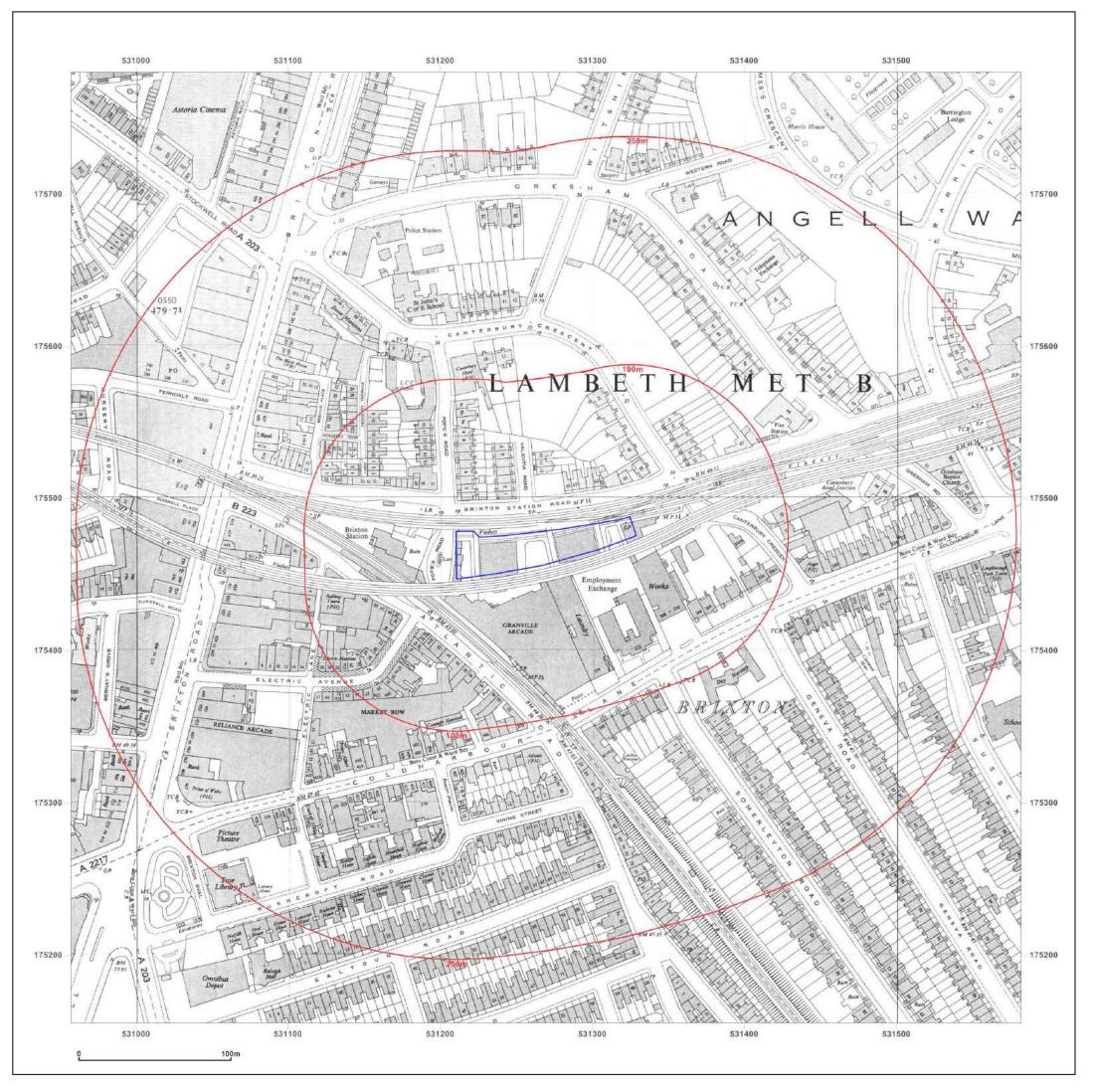




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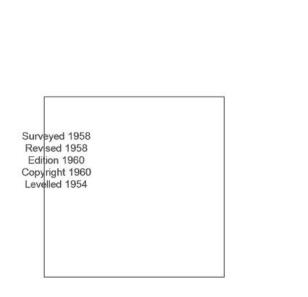


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- Map date: 1958

Scale: 1:2,500

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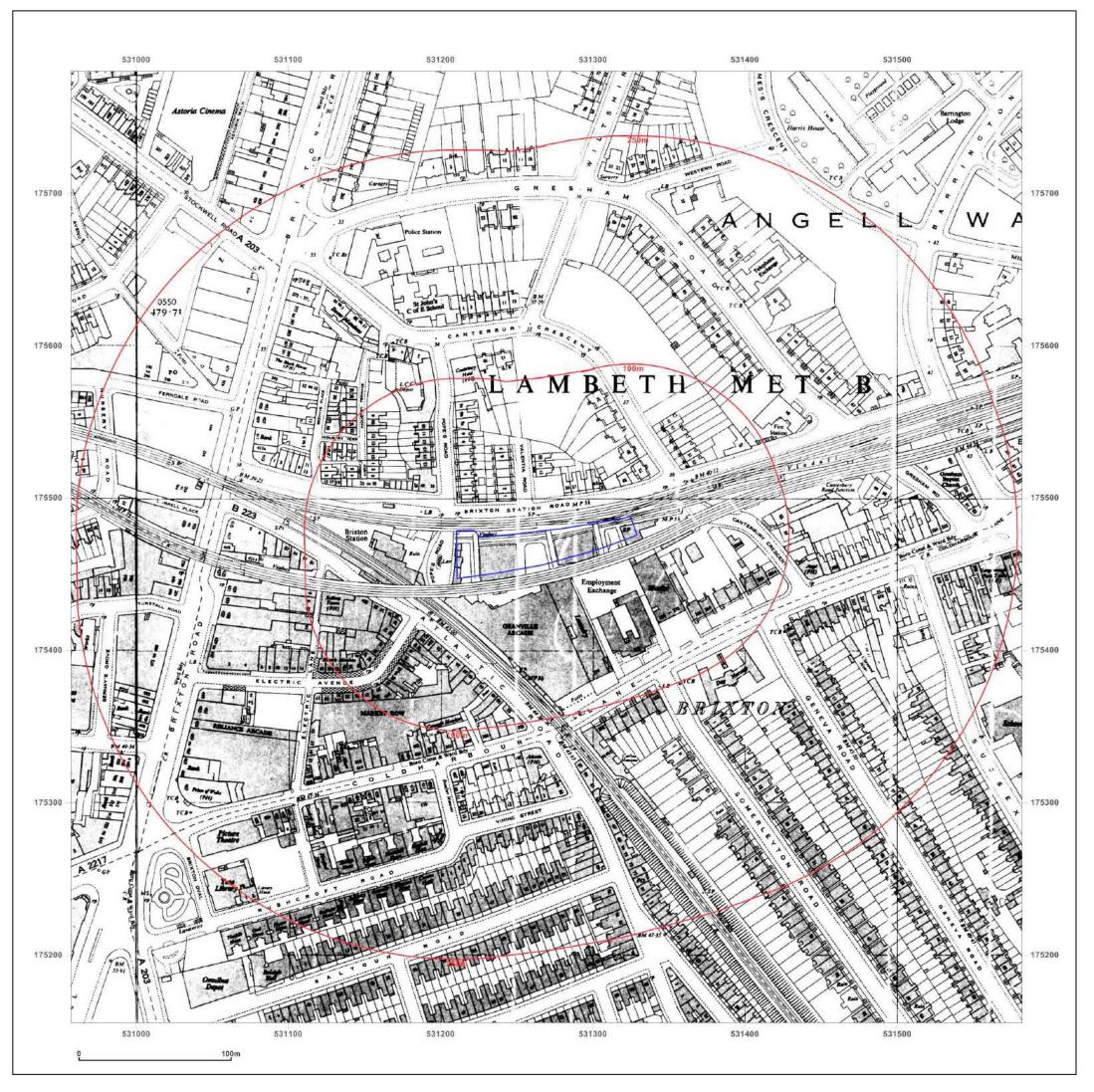
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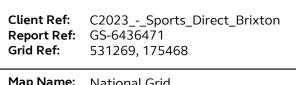
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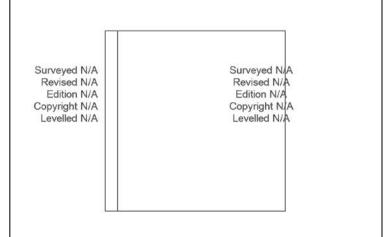




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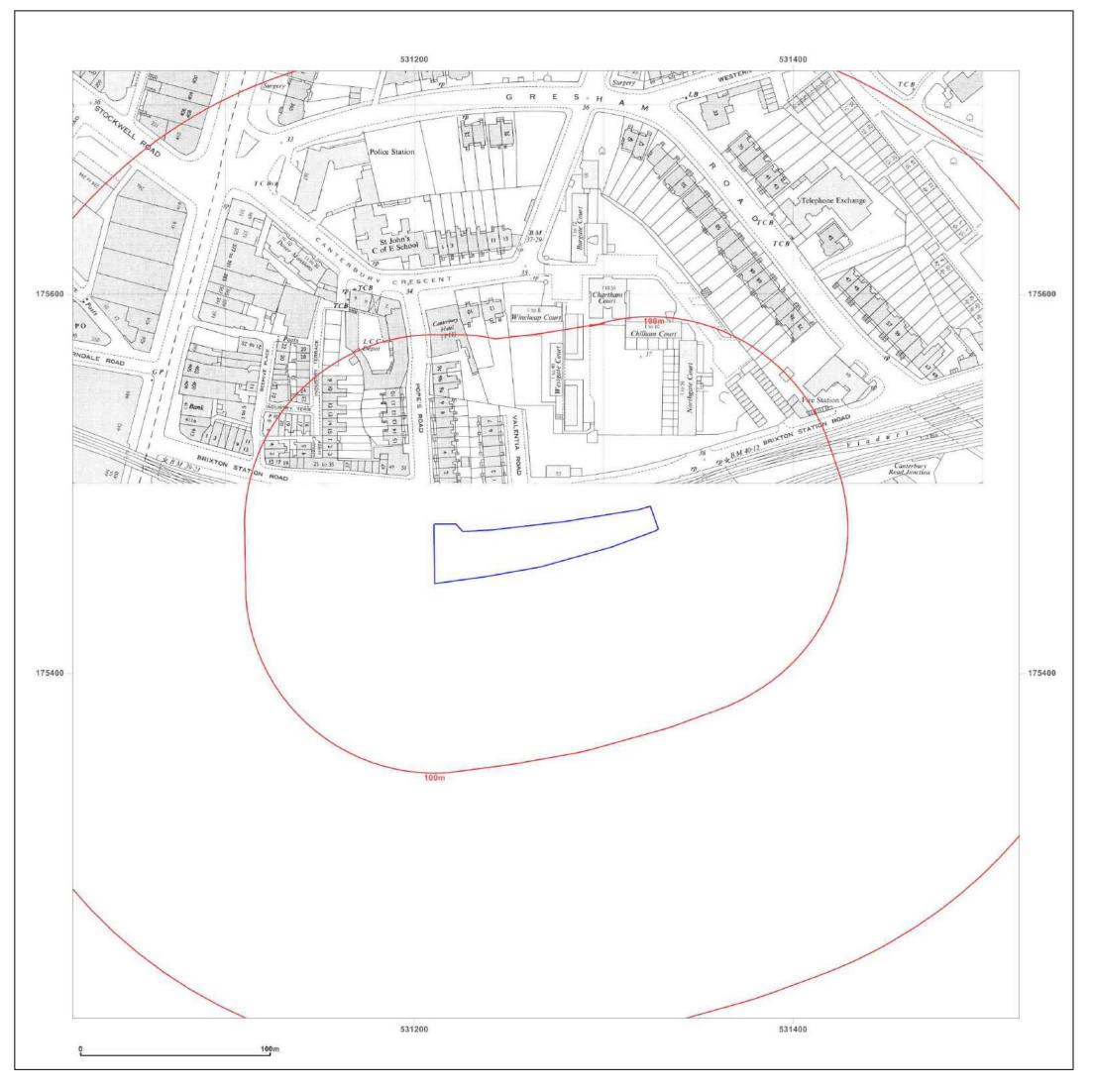




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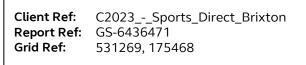
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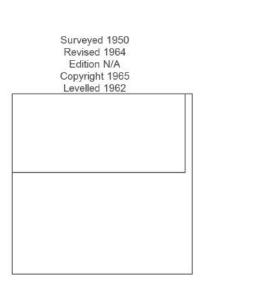


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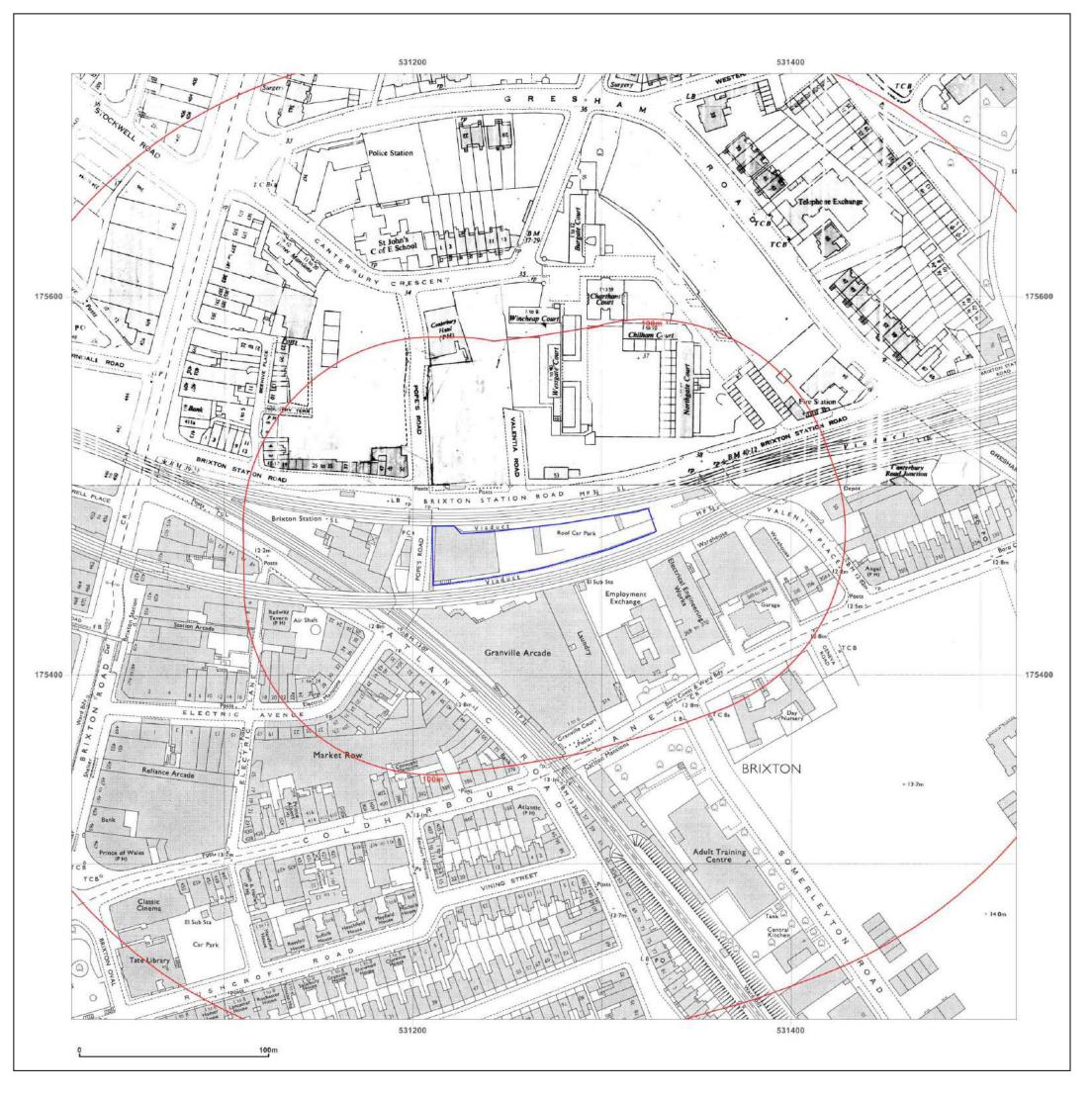
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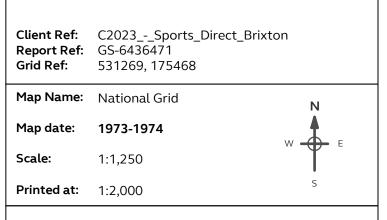
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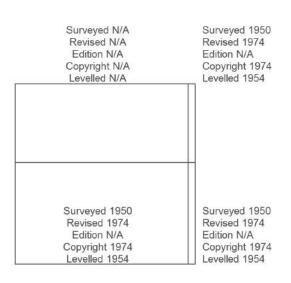
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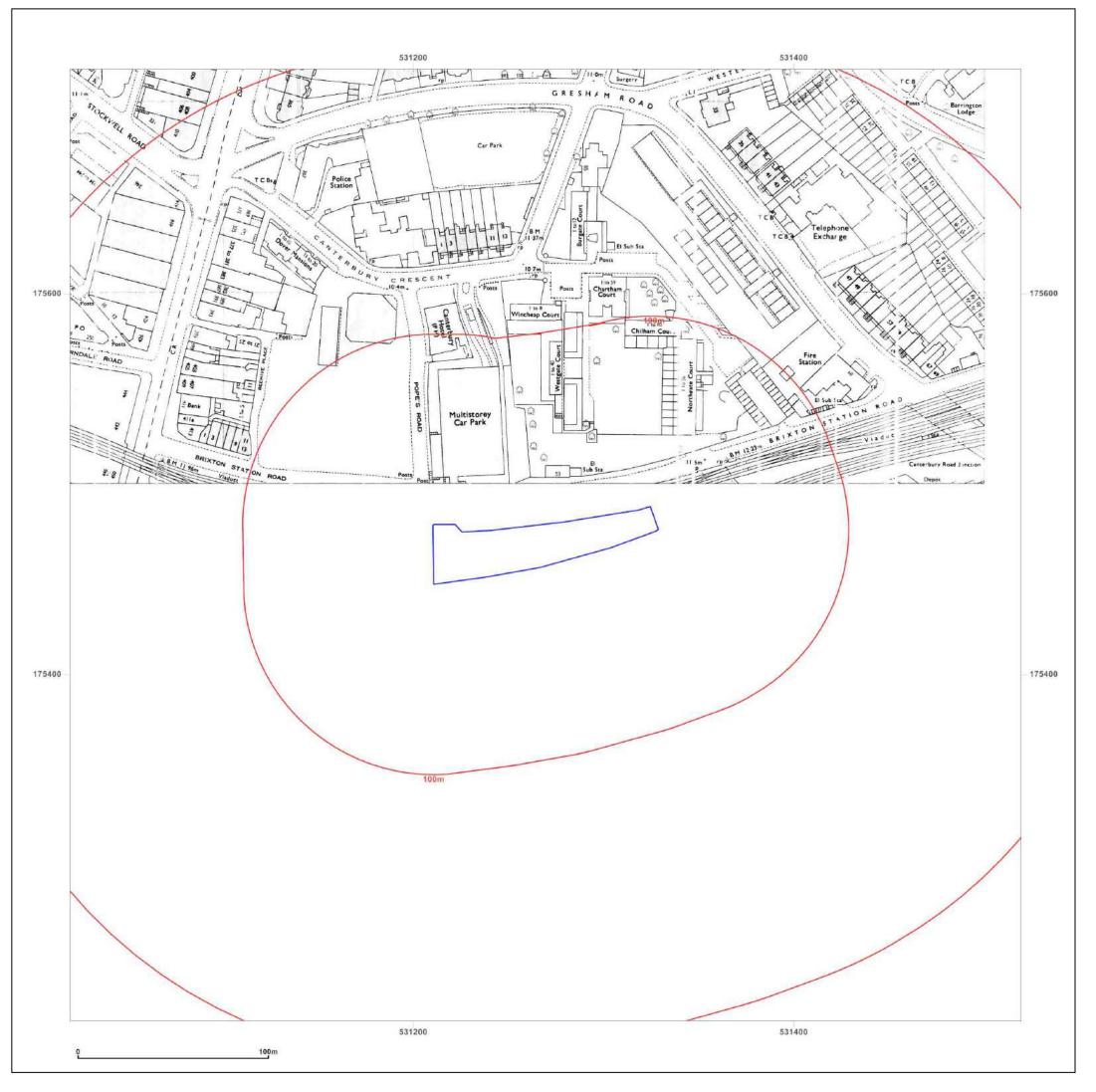




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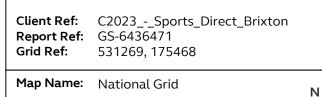
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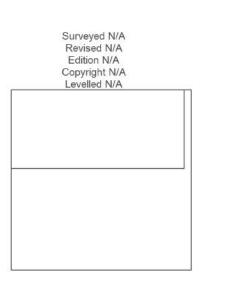
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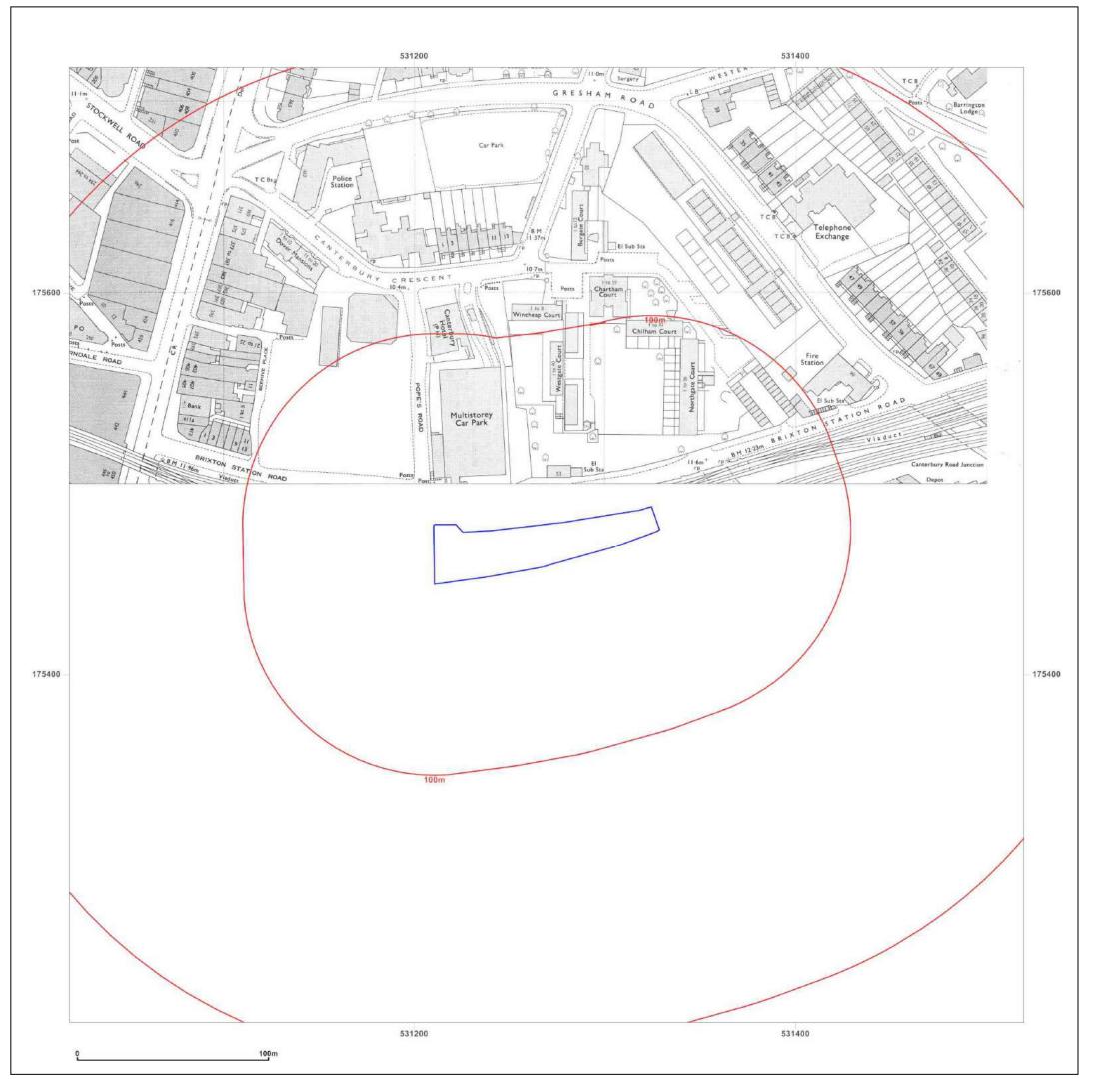
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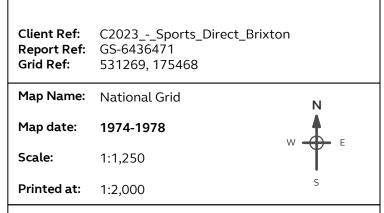
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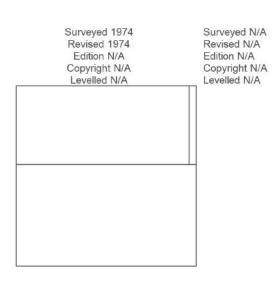
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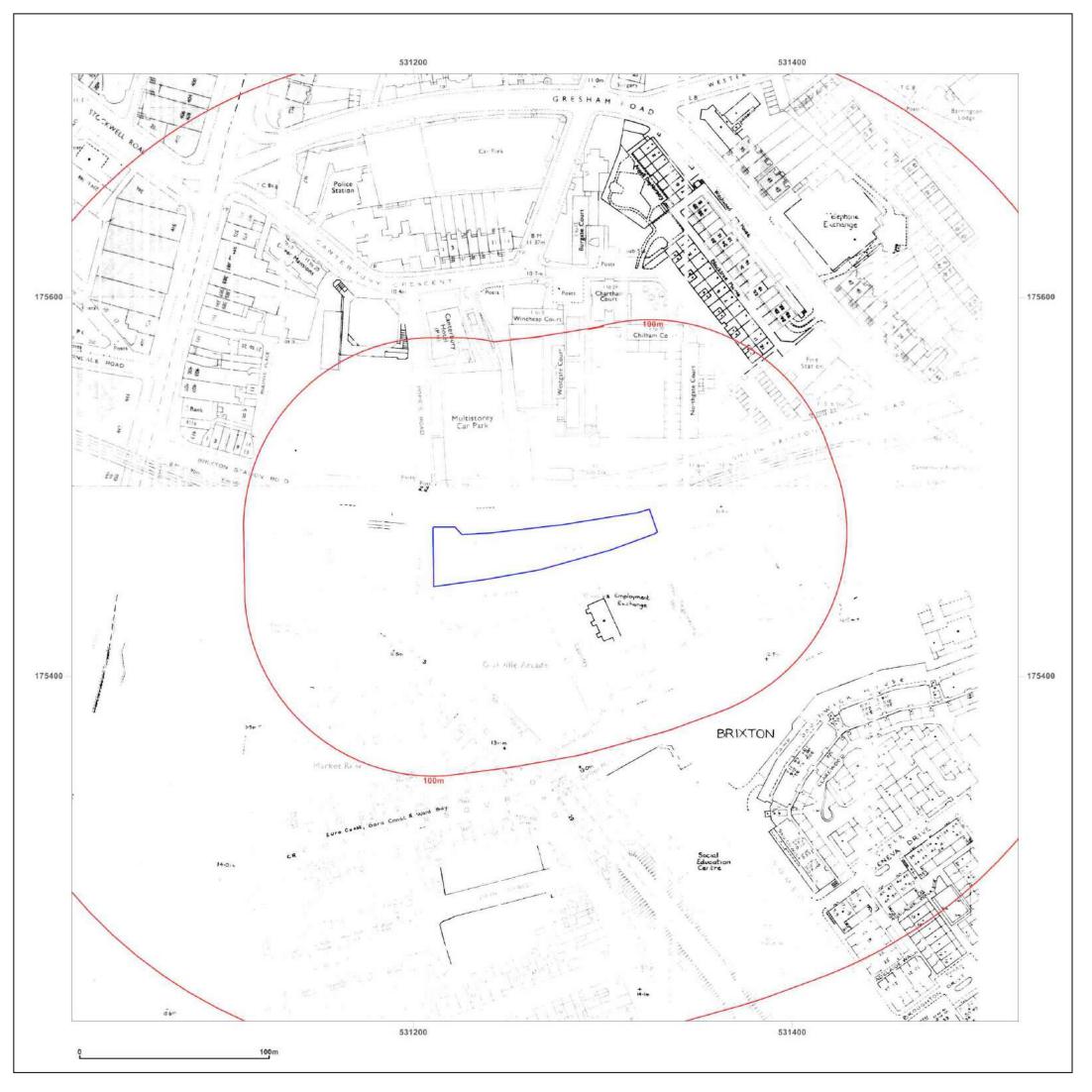




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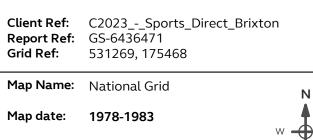
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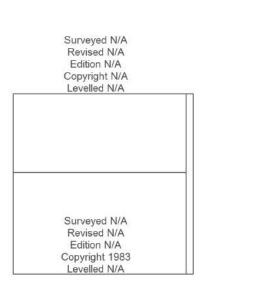


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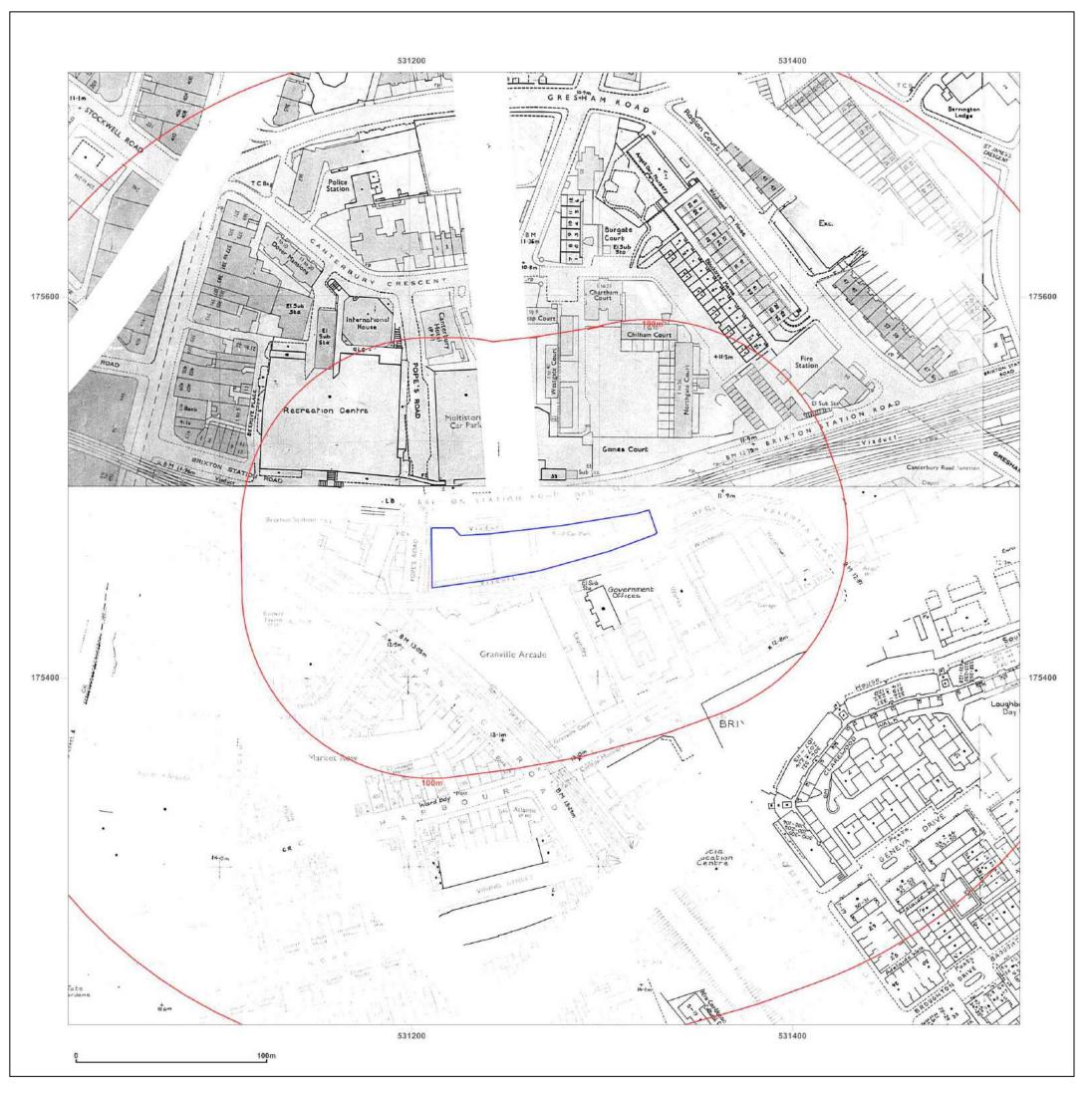




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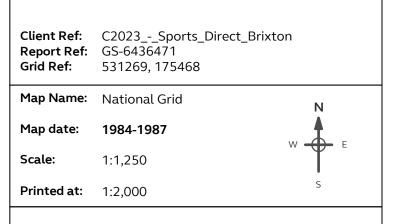
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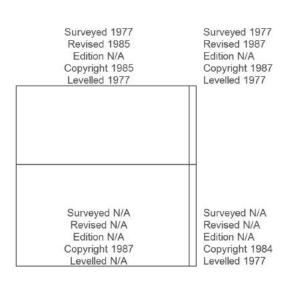
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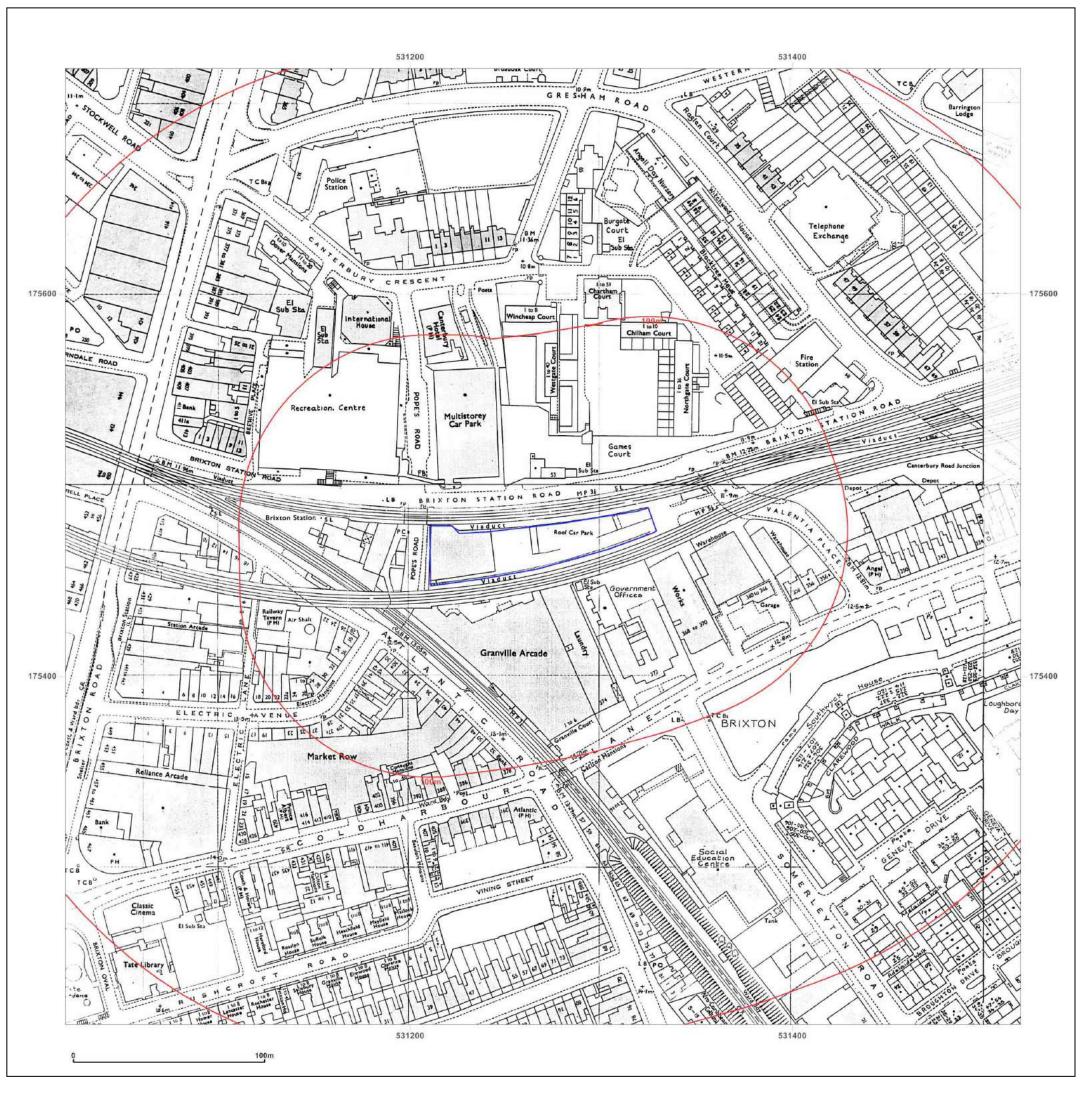




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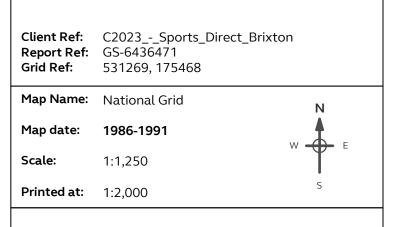
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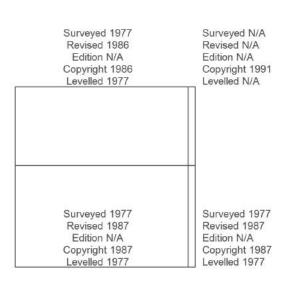
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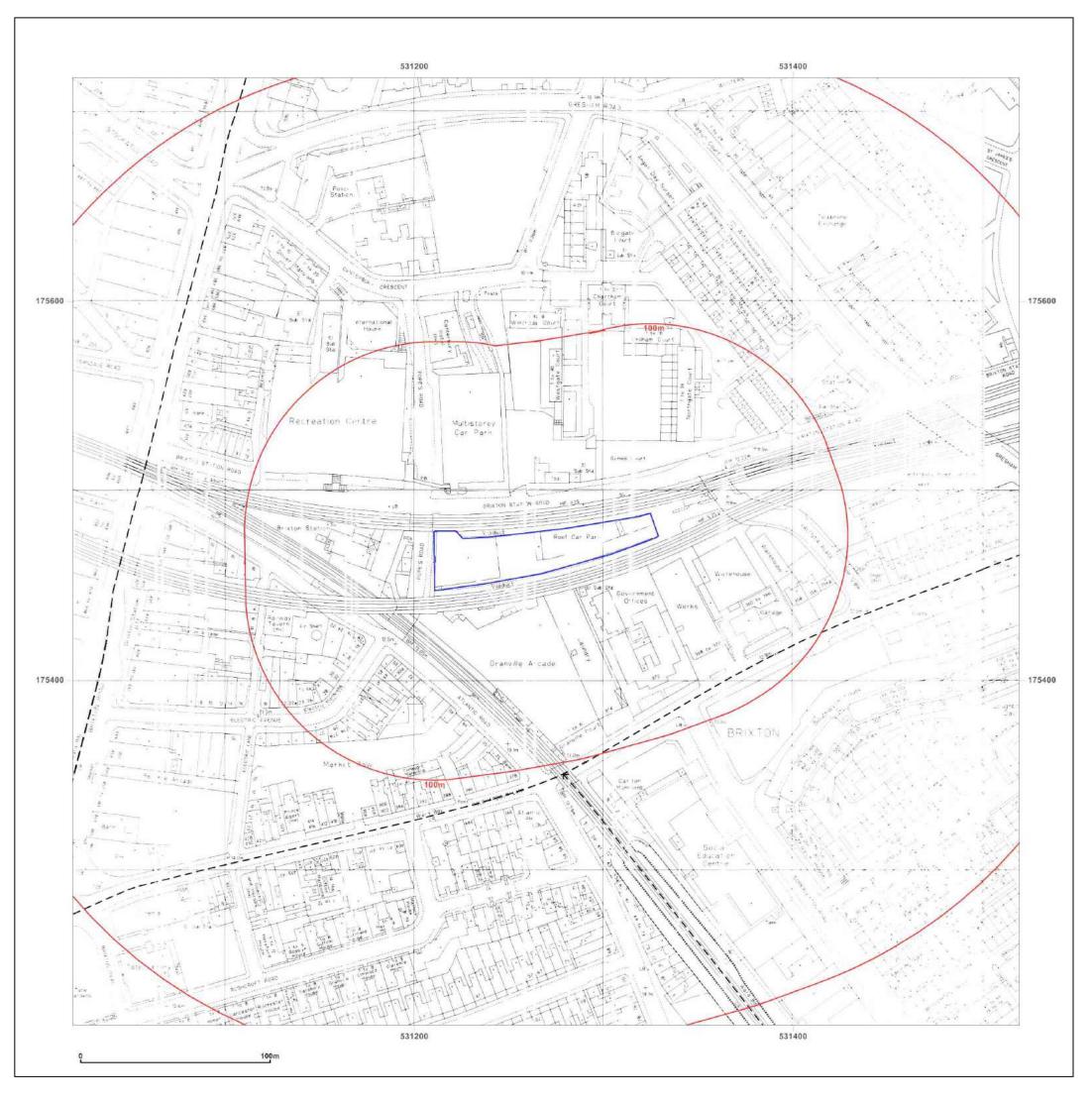




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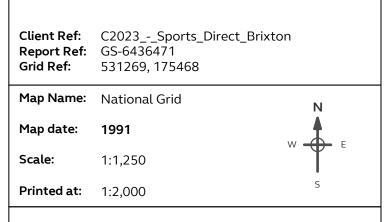
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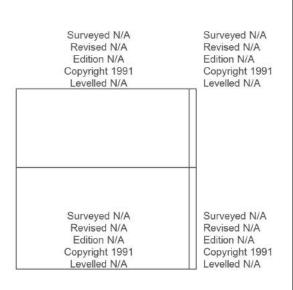
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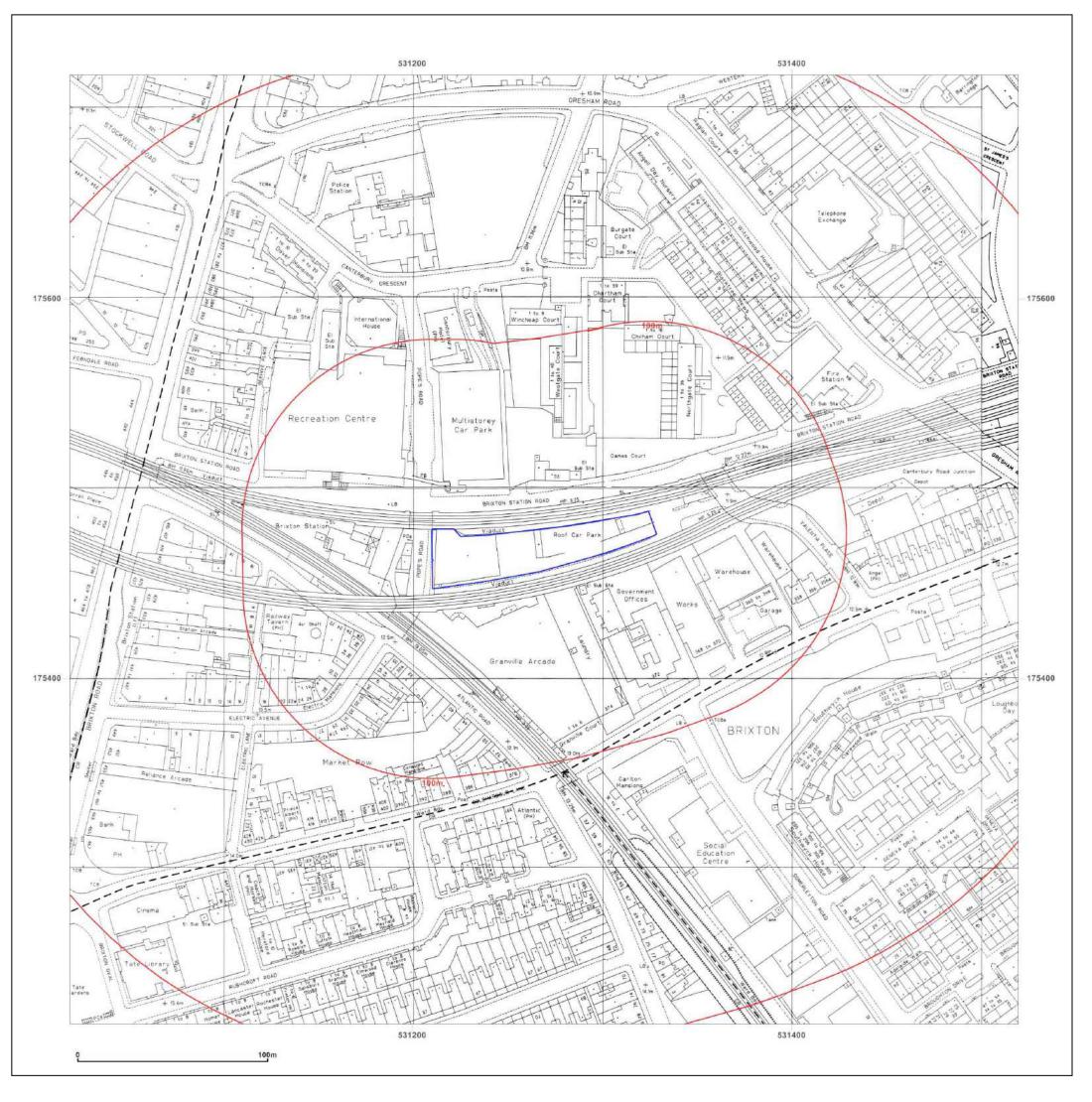




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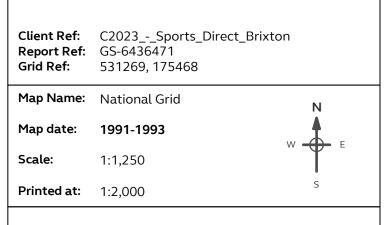
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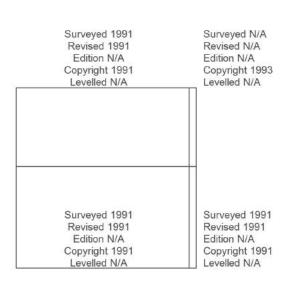
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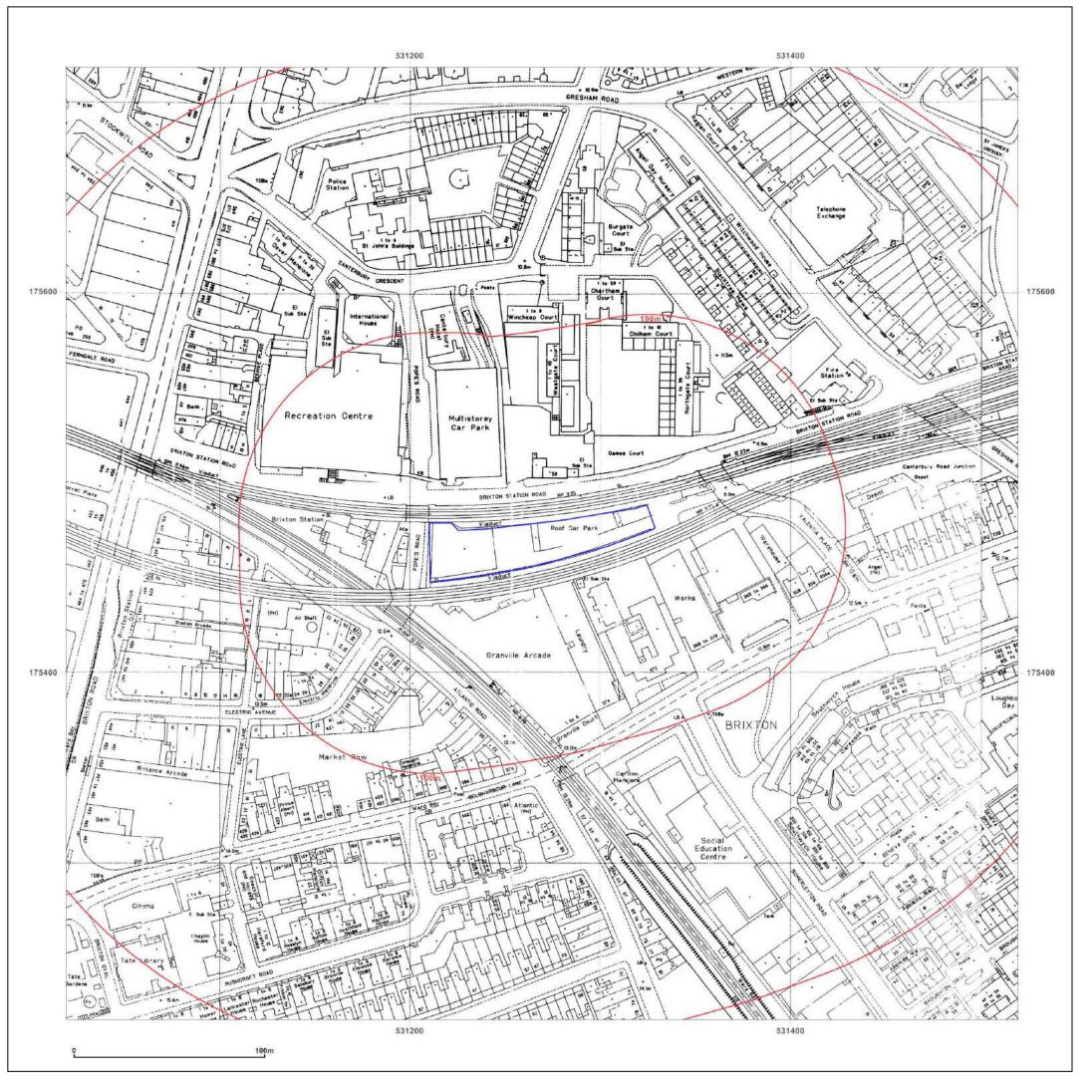




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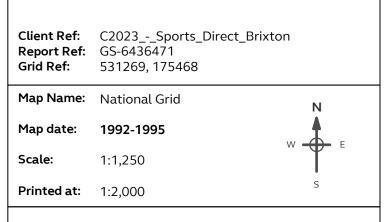
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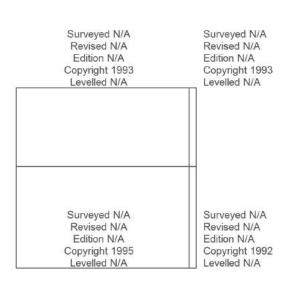
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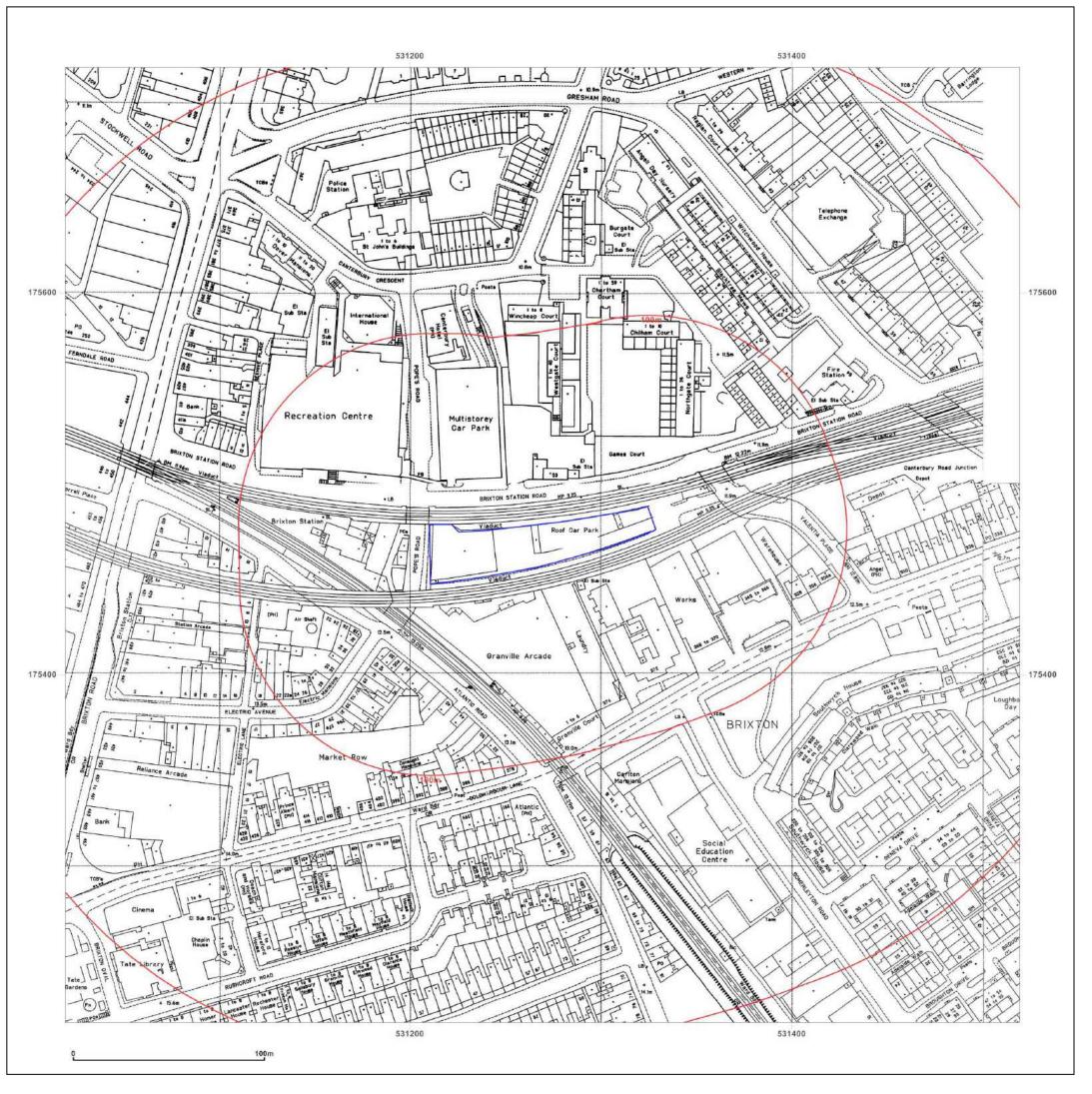




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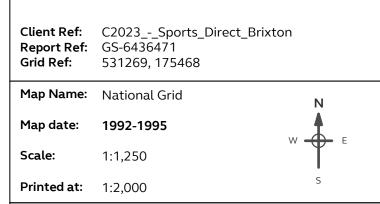
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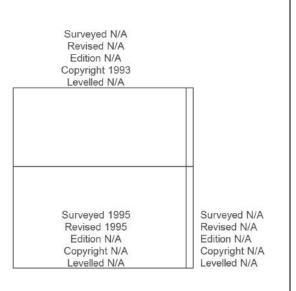
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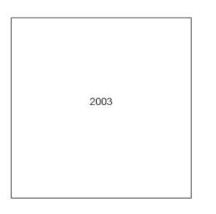
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**Scale:** 1:1,250

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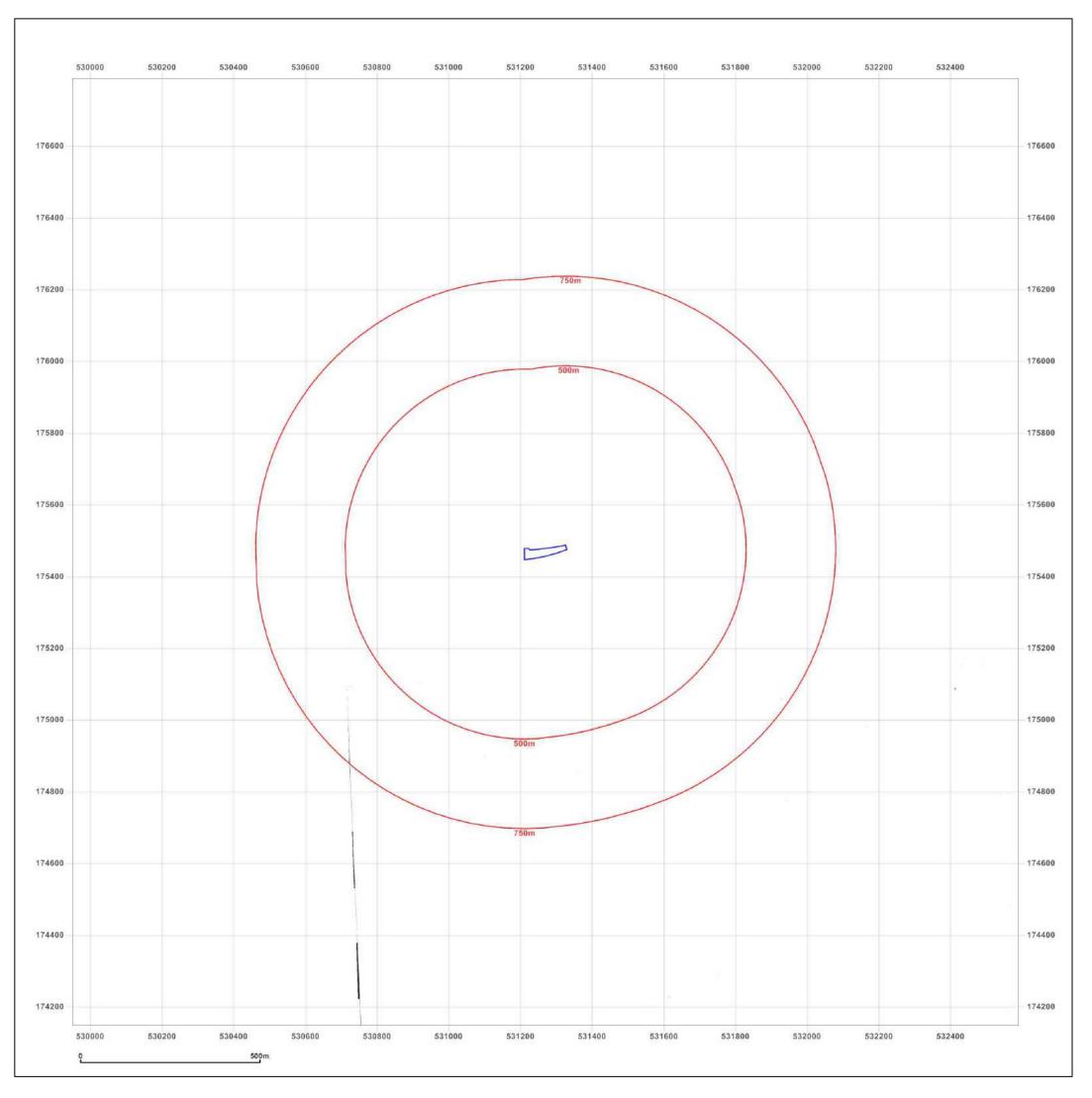


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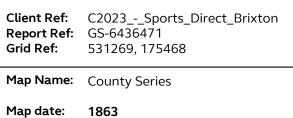


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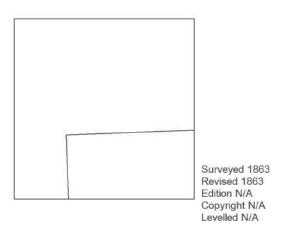
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**Scale:** 1:10,560

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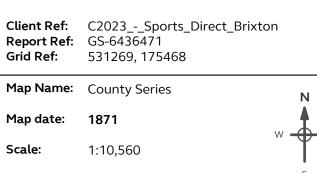
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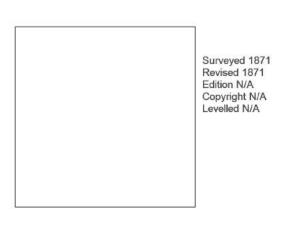




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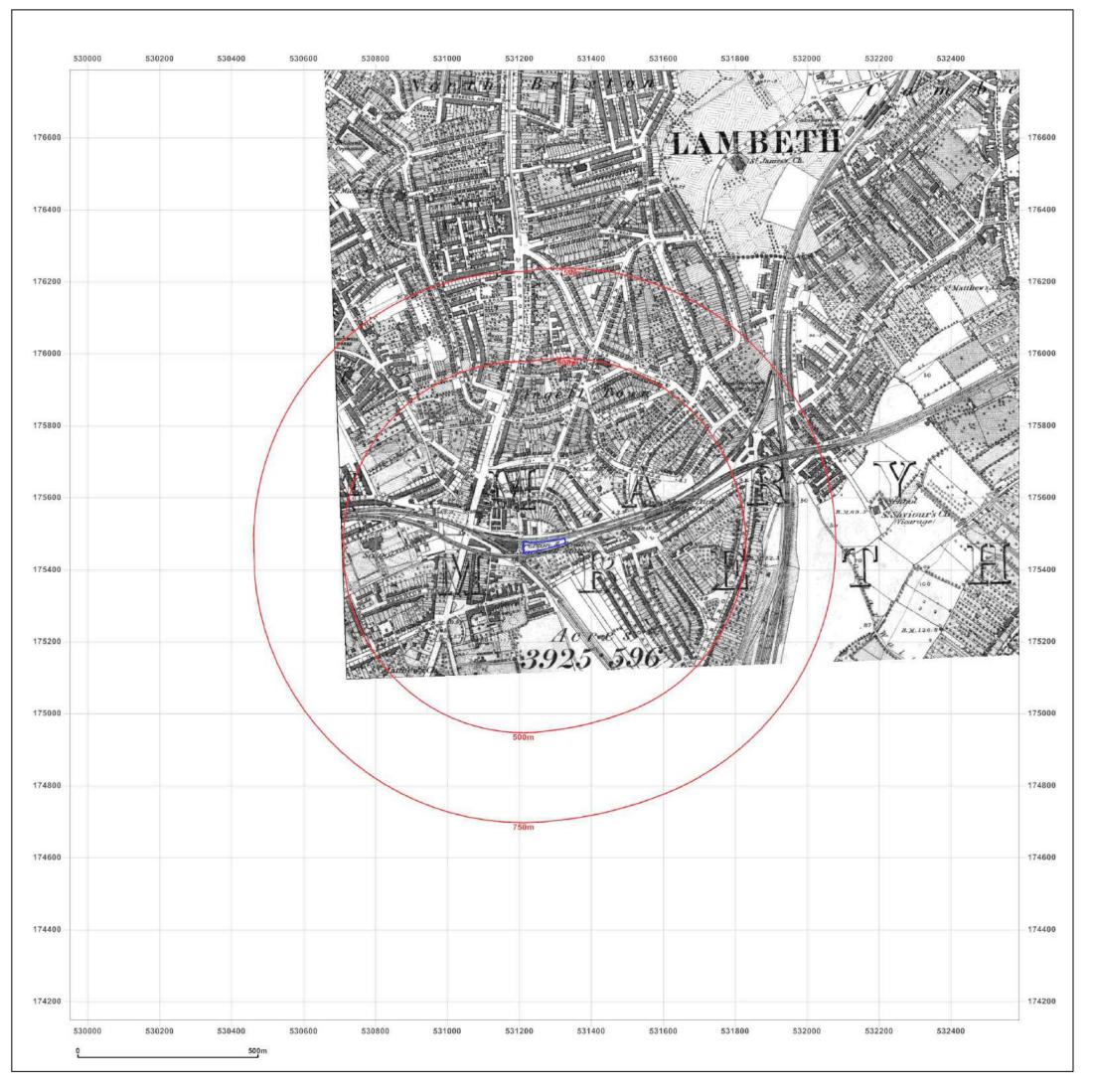




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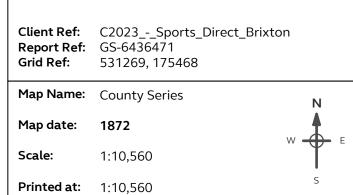
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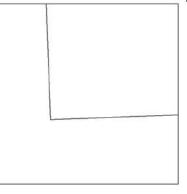




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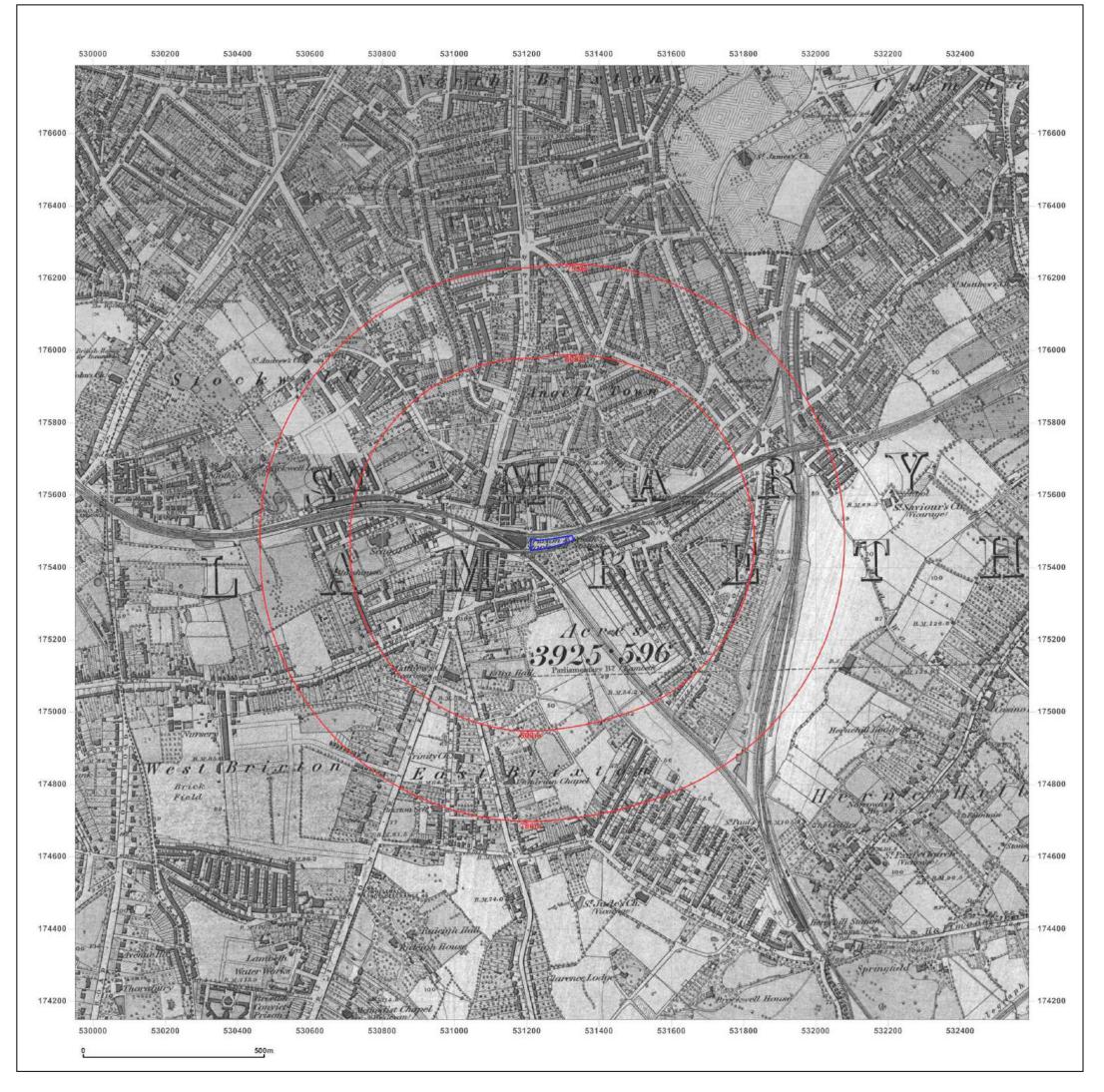




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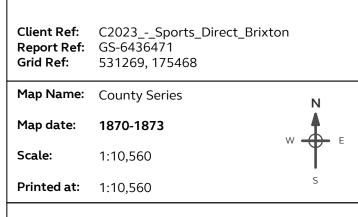
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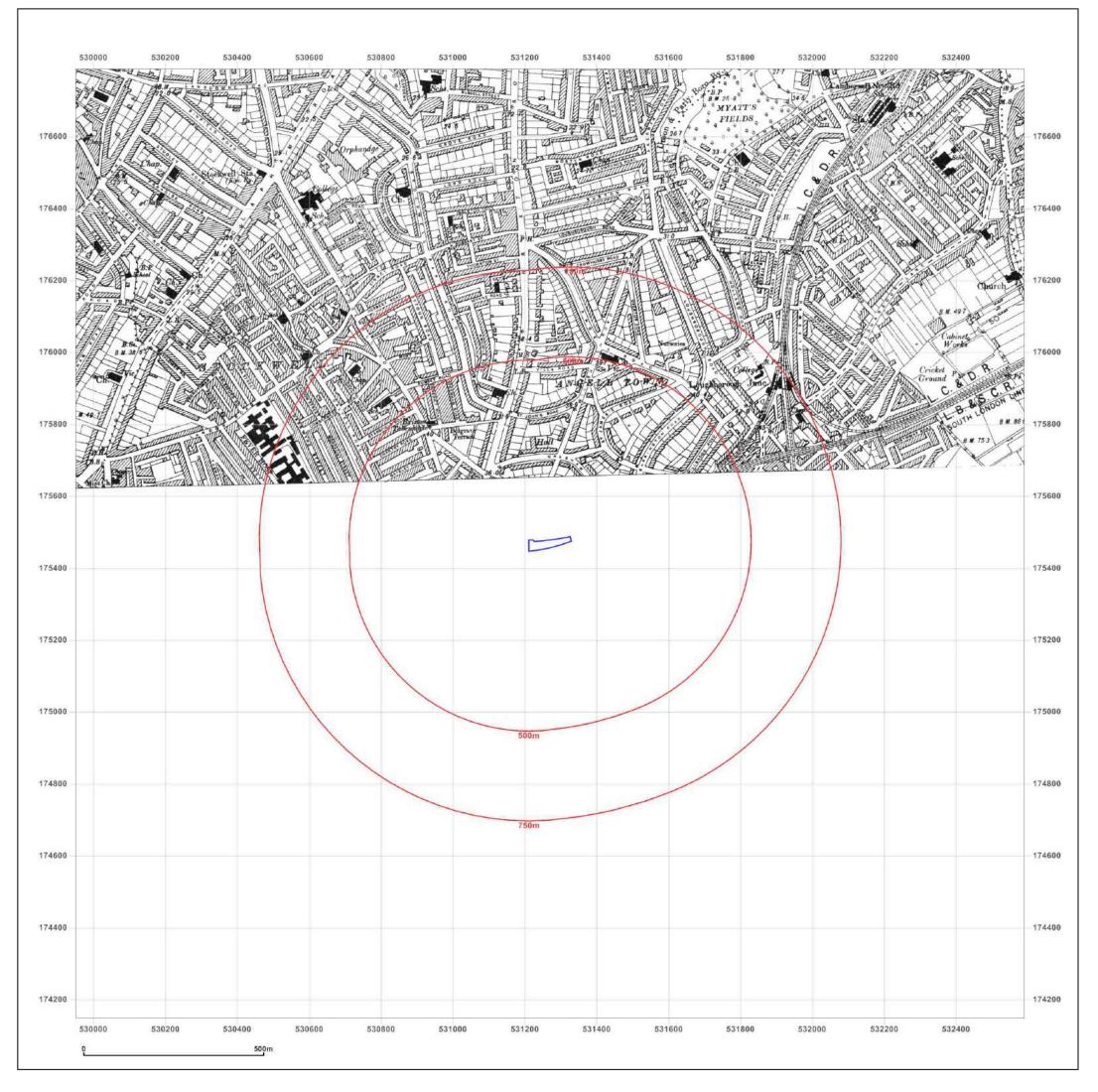
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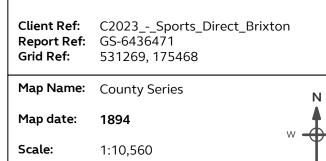
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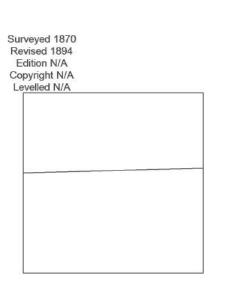




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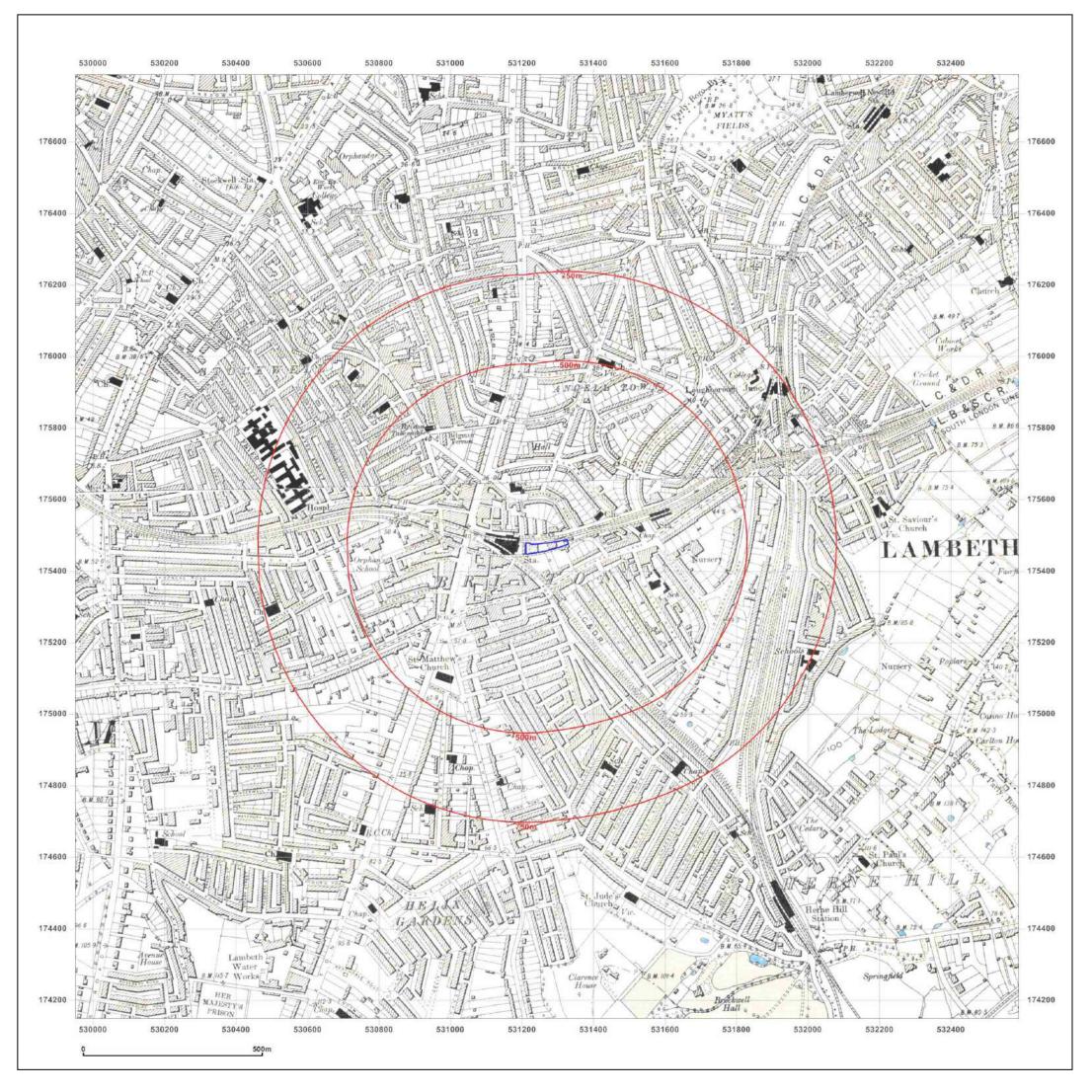




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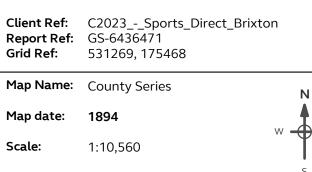
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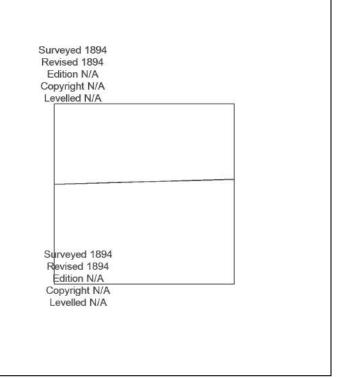




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