

TFL_PSF_9131 SITE INVESTIGATIONS: SMALL SITES INITIATIVE PORTOBELLO ROAD, KENSINGTON AND CHELSEA, W10 6HJ

Geotechnical and Geo-Environmental Desk Study

FEBRUARY 2020

A large, solid orange geometric shape, resembling a stylized triangle or a section of a larger triangle, is positioned in the bottom right corner of the page. It is composed of two overlapping triangles, creating a subtle internal line. A thin horizontal line extends from the left edge of the page, passing behind the orange shape.

Portobello Road, Kensington and Chelsea, W10 6HJ

Geotechnical and Geo-Environmental Desk Study

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1 Introduction

1.1 Terms of Reference

Arcadis Consulting (UK) Limited (Arcadis) has been commissioned by Transport for London (TfL) 'the Client' to undertake a number of technical surveys for a site at Portobello Road, Kensington and Chelsea, W10 6HJ ('the Site').

TfL is aiming to divest a number of small sites to enable positive regeneration. The objective of this review is to identify potential development constraints due to geotechnical and geo-environmental conditions on Site based on the findings of this desk study.

The objectives of this review are to:

- Review geo-environmental information regarding the Site and its surrounding area; and
- Provide outline information on potential geo-environmental and geotechnical constraints which may impact on the land value or redevelopment potential for the Site.

The Site location is shown in Figure 1 below.



Figure 1: Site Location Plan provided by TfL

1.2 Sources of Information

As part of this desk study report various sources of information have been used and are detailed below:

- The on-line British Geological Survey (BGS) Geology of Britain Map Viewer (Ref. 1);
- Historical borehole records available through BGS website (above) (Ref. 1);
- Historical Ordnance Survey maps obtained from Groundsure (included in Appendix A);
- Environmental Information from Groundsure Datasheet (Appendix B);
- Current publicly available aerial images and maps from Google maps (Ref. 2);
- Zetica Regional Unexploded Ordnance Map and Pre- Desk Study Assessment (Appendix C); and
- Unexploded Ordnance data obtained from Bomb Sight National Archives website (Ref. 3).

1.3 Limitations and Expectations

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This report has been compiled from a number of sources, which Arcadis believes to be trustworthy. However, Arcadis is unable to guarantee the accuracy of information provided by others. The report is based on information available at the time. Consequently, there is a potential for further information to become available, which may change this report's conclusion and for which Arcadis cannot be responsible.

2 Site Setting and History

2.1 Site Location

Table 2.1: Details relating to Site Location

Site Location / Address	Portobello Road, Kensington & Chelsea, W10 6HJ
National Grid Reference	524372,181377
Approximate Site Area	The Site covers an area of approximately 0.44 hectares (ha)
Description of Site	<p>The site was unable to be accessed during the Site walkover.</p> <p>Based on the limited observations made during the Site walkover the Site appears to be occupied by thick vegetation including trees and grass. The surface of the site is built up, approximately 2m higher than the surrounding natural ground.</p> <p>The northern boundary of the site is a brick wall and is shared with the neighbouring railway track.</p>
Topography	The regional elevation is 55m above the Above Ordnance Datum (AOD) and is anticipated to slope gently to the west and southwest of the Site towards The River Thames.
Surrounding Area	<p>The site lies within a mixed residential and commercial setting, surrounded by residential dwellings, schools and restaurants.</p> <p>Ladbroke Grove Train Station is located approximately 138mm west of the Site and the affiliated railway line is located immediately north, followed by the A40.</p> <p>No industrial land uses are located within a 500m radius of the site.</p>

2.2 Site History

A review of the available historical Ordnance Survey (OS) maps (Appendix A) has been undertaken to assess the historical development of the Site and surrounding areas.

It is not the intention of this report to provide a full history, but to identify those past uses on and within the vicinity of the Site that could have resulted in contamination of the soils and/or waters. Significant changes to the land use of the Site and surrounding areas are summarised in Table 2.2 below.

Table 2.2 History of Site and Surrounding Area

Date	Historical Development (Site and Surrounding Area)
1865-1874	<p>The Site is undeveloped land.</p> <p>Hammersmith and City Railway runs parallel to the northern boundary of the site.</p> <p>The immediate surrounding area comprised of vacant/agricultural fields (with exception to the railway line). Notting Barn Lodge is located approximately 70m north east of the Site. Lancaster Road is located to south of the site with some buildings to the south which appear to be residential. Notting Hill Station is located approximately 70m to the west of the Site.</p>
1881	<p>The Site is shown as part of the embankment to the railway line to the north.</p> <p>The surrounding area remains largely unchanged.</p>

Date	Historical Development (Site and Surrounding Area)
1894- 1896	<p>The area immediately surrounding the Site has been developed into residential and commercial buildings. A school is now labelled immediately south of the Site.</p> <p>The southern section of the Site is marked as raised.</p> <p>The lot immediately north of the railway line is marked as raised.</p>
1916	<p>The Site remains unchanged.</p> <p>A laundry facility is marked approximately 200m north of the site. A smithy is located 20m north of the site.</p>
1953	<p>The Site remains unchanged.</p> <p>The surrounding area has undergone further development including a garage 90m and 200m south east, engineering works 120m south east, coach works 100m west and a timbers yard 110m north.</p>
1991	<p>An elevated road marked as A40 (Westway) is constructed immediately north of the railway, running parallel to the northern boundary. Some of the residential buildings north of the railway were demolished to accommodate the new road.</p>
2003-2020	<p>No significant changes are noted within the Site.</p> <p>The Site remains elevated land south of the A40 and railway line.</p>

2.2.1 Summary of Site History

The Site has remained largely undeveloped and is shown as part of the embankment relating to the Hammersmith & City Railway located immediately north of the Site. Made Ground is therefore likely to be present due to the construction of the embankment.

Large scale residential development took place in the surrounding areas between 1881 and 1894.

Continued residential development and industrial services such as a laundry, engineering works and a timber yard established within a 200m radius of the site between 1916 to 1953.

The A40 (Westway) was constructed following demolition of a small portion residential dwellings located north of the site between 1968 and 1969.

Review of topographic maps indicate a likely hydraulic gradient to the south, towards The River Thames. Potentially contaminating historical offsite activities identified within Table 2.2, with exception to the smithies located 20m north and raised land located 15m north of site, present a negligible risk of impacting the site. This is due to distance, inferred hydraulic gradient and/or anticipated low mobility of contaminants of concern.

2.3 Unexploded Ordnance

With reference to the Zetica Unexploded Bomb Risk report for the site (Appendix C), the Site is designated as lying within an area denoted as “moderate” bomb risk. Further reference has been made to the Bomb Sight National Archives (Ref. 3) which indicates that several High Explosive (HE) bombs were dropped in close proximity to the Site.

A pre-desk study assessment (PDSA) was obtained from Zetica (Appendix C) which states that during WWII the Site was located in the Municipal Borough of Kensington, which officially recorded 568 High Explosive Bombs with a regional bombing density of 248 bombs per 405 hectares.

The PDSA recommends that a detailed desk study needs to be commissioned to assess, and potentially zone, the UXO hazard level on the Site.

3 Physical and Environmental Setting

3.1 Published Geology, Hydrogeology and Hydrology

With reference to the sources of information detailed in section 1.2, the following information has been obtained.

Table 3.1 Information Regarding Geology, Hydrogeology and Hydrology

Geology / Aquifer Status	Superficial Deposits: No superficial deposits are recorded underlying the Site. Solid Geology: London Clay Formation which is designated as Unproductive Strata.
BGS Boreholes (within 100m of the Site)	The nearest historic BGS borehole to the site (TQ28SW71, date: unknown) is located approximately 10m southeast of the site. The bore logs indicate made ground to 2'6 (0.76m) underlain by a stiff fissured clay to termination depth at 20' (6m). No water strikes were encountered.
Within a Source Protection Zone	The Site is not located within a groundwater Source Protection Zone (SPZ).
Licensed Groundwater Abstraction Points	There are no licensed groundwater abstraction points identified within 500m of the Site.
Surface Water Feature	There are no surface water features within 250m of the Site.
Likely Groundwater Flow Direction	Based on the published geology and topographic maps, significant groundwater flow within London Clay bedrock is not expected to be present. However, local topography indicates any shallow groundwater, if present, would likely flow in a south/ south western direction towards The River Thames, which is located approximately 3.3 km from the Site.

3.2 Environmental Public Registers

Public register information from the Groundsure Report (Appendix B) for the Site and the surrounding area (within 250m radius) has been summarised in Table 3.2 below.

It is not the purpose of this section to provide a comprehensive account of the environmental data but only to detail those factors that could impact the Site.

Table 3.2. Environmental Data

Data type	Description	Distance (m) and Direction
Radon	The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level).	N/A
Discharge Consent	None recorded within 250m.	N/A
Pollution Incidents to controlled waters	2 incidents are recorded within 250m of the site. The nearest entry relates to a pollutant described as 'construction and demolition materials and wates', on the	157m west

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Data type	Description	Distance (m) and Direction
	20 th January 2003. Classified as a Category 4 No Impact Incident.	
Local Authority Pollution Prevention and Controls	None recorded.	N/A
Potentially Infilled Land	None recorded within 250m.	N/A
Landfill sites (current and historical)	No current or historic landfill sites are recorded within 250m of the Site.	N/A
Contemporary Trade Directory Entries (Within 250m of the Site)	Railway Line	<10m north
	Railway Station (Ladbroke Grove)	68m south west
	Garage	131m west
	Garage	161m west
	Garage (fuel)	214m south west
	Vehicle Cleaning	237m north
Fuel Station Entries	No records of petrol or fuel stations within 250m of the Site.	N/A
Unspecified Tanks	1 unspecified tank within 250m from the site	152m north east

Based on the review of the environmental public register, one site activity, the railway line located immediately north of the site, is considered to present a viable potential impact on the site, given its close and up-hydraulic gradient proximity.

The remaining industrial services are discounted due to the distance, anticipated mobility of likely contaminants and/or location with respect to the anticipated hydraulic gradient.

4 Preliminary Conceptual Model

Geo-environmental assessments are required in accordance with current regulatory guidance (CIRIA C552 - Ref. 4 and CLR11 – Ref. 5) to consider the significance of potential contamination in terms of plausible contaminant source-pathway-receptor contaminants linkages. As part of this process, it is necessary to develop a conceptual model of these potential contaminant linkages by identifying the potential contamination sources, sensitive receptors and any potential exposure pathways. A risk assessment is then undertaken to determine the likelihood and significance of these potentially complete contaminant linkages.

4.1 Potential Contaminant Sources

Based on the information obtained from the historical and environmental research, the following potential sources of contamination have been identified on and off site (Table 4.1).

It should be noted that it is considered unlikely that all these substances would be present at significant concentrations within the site.

Table 4.1: Potential sources of contamination on and off site.

Source	Potential Contaminants
On Site	
Made Ground (from railway embankment)	Asbestos, metals, pesticides, hydrocarbons, ground gas, polychlorinated biphenyls (PCBs)
London Clay bedrock underlying the site	Sulphates.
Off Site	
Railway Line – Immediately north of site	Hydrocarbons, metals, PAHs, Asbestos
Historic Smithies- 20m north	Hydrocarbons, PAHs, metals, volatile and semi volatile organic compounds (VOC and sVOC)
Made Ground-40m north of site	Hydrocarbons, ground gas, PAHs, asbestos

4.2 Potential Receptors

The proposed form of the development is currently unknown. As a precautionary approach the potential receptors detailed below take into consideration the proposed future land use as residential properties with private gardens and landscaped areas. It is considered possible that any potential contamination within the soils may be disturbed during the construction phase, or during gardening or landscaping undertaken by any future site users.

4.2.1 Human Health

- Site users (residents, visitors, maintenance workers and contractors).

Contamination risks to construction workers are not appraised by chronic (long term) exposure human health risk assessments. There are no appropriate published criteria applicable to assessment of potential risks to construction workers. The potential risks should be addressed by a site-specific construction workers risk assessment and implementation of appropriate health and safety measures, to adequately mitigate any potential risks. All works should be conducted in accordance with the CDM regulations 2015 (Ref. 6) or any other relevant guidance. Construction workers are not considered further site users.

4.2.2 Controlled Waters

No sensitive controlled water receptors were identified.

4.2.3 Buildings

- Underground/ structures/services (water pipes, concrete, foundations).
- Proposed buildings

4.3 Potential Pathways

Potential pathways are the routes that link the receptor to the contamination. The potential pathways for this site are summarised in the table below.

Table 4.2: Potential Contaminative Pathways

Receptor	Pathway
Human health (future site users/ residents, visitors, maintenance workers and contractors)	<p>Accidental ingestion of contaminants within soil, water and dust.</p> <p>Inhalation of dust, vapours and ground gases.</p> <p>Dermal contact with contaminants within soil, water and dust.</p> <p>Ingestion of contaminated vegetables and soil attached to vegetables, if future Site users were to use the gardens.</p>
Buildings	<p>Direct contact of building services or foundations with contaminants in the soil and Made Ground.</p> <p>Gas and / or vapour accumulation in confined and poorly ventilated spaces.</p> <p>Sulphate attack on buried concrete.</p>

4.4 Preliminary Qualitative Risk Assessment

Primary sources of (potential) on-site contamination are associated with (probable) onsite Made Ground. Human exposure could occur in gardens or soft landscaped areas, especially if soils are disturbed by activities such as digging/gardening. Ground gas / vapours could be generated by the Made Ground which could accumulate in confined spaces and poses potential risk to future site users.

Migration of soil gases and/or impacted water from the made ground identified north of the site, is considered possible, but unlikely to be severe, due in part to the low anticipated permeability of the underlying superficial deposits and London Clay solid geology. It is also possible that made ground has been removed during construction of the A40.

A partially complete exposure pathway has been established for historical smithies located services located 20m north of the site. This is considered a low risk, given the anticipated relatively low mobility groundwater, however it remains a potential off-site source.

The risks will need to be further understood through intrusive investigation into the ground conditions and chemical analysis to assess potential contaminants. If the Site is found to be contaminated, mitigation measures will be required to break the source-pathway-receptor linkages.

5 Waste Management and Potential Development Constraints

5.1 Waste Management

Consideration should be given to the disposal of waste soils/Made Ground which are likely to be generated by the development. Chemical testing of soils/Made Ground is likely to be required to inform a waste classification assessment and determine the potential disposal options. It should be noted that the waste contractor may require testing of the actual material to be disposal prior to acceptance, and there is no obligation on a landfill operator to accept the waste.

Soils suspected of being contaminated should be segregated from soils which appear to be 'clean' and should not be used elsewhere on the site as fill or landscaping unless they can be proven to be fit for purpose.

Imported topsoil for gardens and landscaped areas should be clean, fit for purpose and validated as necessary.

5.2 Potential Development Constraints

The historical review reveals that developments surrounding the Site are generally limited to the largely residential setting of the Site alongside the construction of the A40 in the late 1960's. At the time of the Site walkover, the Site could not be accessed with a vehicle. There may be potential access through commercial buildings located along the southern boundary.

A ground investigation is recommended to determine the potential contamination present on the site. From experience, the potential for the need to undertake remediation should be limited given that the only minimal earth works have been completed onsite.

The following potential environmental conditions have been identified that will warrant further consideration and/or implementation:

- Removal of former foundations and concrete obstructions;
- The close proximity to the railway line may have restrictions on the minimum distance that excavations (including exploratory holes, trial pits and foundations) and development can be undertaken. Liaison with London Underground should be undertaken.
- Excavation and replacement of upper part of Made Ground;
- Asbestos protection measures during disturbance of Made Ground (depending on the findings of the ground investigation);
- Groundwater control measures and treatment of extracted groundwater (depending on the findings of the ground investigation);
- Provision of gas resistant membrane (depending on the findings of the ground investigation);
- Provision of contaminant resistant water supply pipes (depending on the findings of the ground investigation);
- Provision of garden amenity topsoil/subsoil/clean cover system in garden areas and public open space;
- Potentially further investigation and consultancy advice to support planning obligations.
- There are mature trees across the entirety of the Site which may require removal.

6 Geotechnical Considerations

Ground conditions anticipated at the site comprise Made Ground (likely to be present given close proximity to the railway line), underlain by the London Clay (as per BGS mapping).

Potential founding solutions will be dependent on the thickness of Made Ground and geotechnical properties of the natural deposits. Based on the site walkover, thickness of the Made Ground is anticipated to be approximately 2.0m above natural surface level. The Made Ground is generally considered unsuitable for foundations due to its variable composition and potential for high total and differential settlement. Below ground structures and services may be present and will require removal prior to redevelopment.

At this stage, conventional shallow foundations may not be appropriate for the site, but this would depend on the thickness of the Made Ground and the underlying ground conditions. Deeper trench fill may be possible although the maximum practical extent of this type of foundation is in the region of 2-2.5m. In areas of deeper Made Ground, or where deeper soft / loose bands are recorded either piling or ground treatment e.g. vibro-stone columns should provide a suitable foundation solution. The advice of a specialist ground improvement contractor should be sought to verify the suitability of the ground for treatment.

Consideration will need to be given to the presence of existing trees that are removed, retained or the planting of future trees when considering the depths of the foundations. The risks associated with the London Clay include high plasticity clay which are subject to shrinkage and swelling, sulphate attack and the potential for relict shear slip surfaces should be considered during the investigation / design.

Further to this, consideration will also need to be given to the proposed development design and the proximity of the railway line.

7 Conclusion and Recommendations

The site is a vacant parcel of land, comprising of elevated land with large trees and grassed surface. The northern boundary of the Site is bound by the Hammersmith and City and Circle railway lines. Adjacent to the north of the railway is the elevated A40 (Westway) road, constructed in the late 1960's. The southern boundary is bound by a combination of residential and commercial properties. The Site is located within a largely urbanised area of Kensington and Chelsea, South West London.

An intrusive site investigation has not been undertaken at this stage; however, Made Ground is anticipated to be present, possibly originating from the previous rail activities.

Made ground onsite is considered to present the main potential source of contamination.

An historic smithy was located approximately 20m north of the site. It is possible that the historical spills could have migrated beneath the site, however given the low mobility of groundwater within London Clays, this is considered unlikely, but cannot be entirely dismissed.

The Made Ground located 40m north of the site is considered a potential source of contamination. This is considered a low risk, given the anticipated relatively low mobility of groundwater, however it remains a potential off-site source.

Potential geo-environmental constraints have been identified that may impact on the future development. Whilst contamination may be present within the underlying soils, mitigation of risks to Site end users may be delivered by the appropriate design of the development itself (i.e. the use of hardstanding to limit the pathway for human exposure) rather than large scale removal of materials.

7.1 Design Considerations

Potential risks to human health and the built environment have been identified from potential on site Made Ground and ground gas / vapours and there are possible risks to human health from the off-site sources (Made Ground). It is recommended that an intrusive site investigation should be undertaken prior to redevelopment to quantify these risks. This should include for chemical testing of soils, groundwater monitoring (if present) and gas monitoring in accordance with the recommendations in CIRIA C665 (Ref. 7) and CLR 11 (Ref. 5) and consideration of shrinkage, swelling of London Clay and sulphate attack to below ground concrete.

7.2 Construction Considerations

During construction, a watching brief should be undertaken to identify the presence of any unforeseen contamination. If contamination is encountered, all works should cease until the advice of a suitably qualified professional can be sought.

Construction / demolition workers should use appropriate Personal Protection Equipment (PPE) and follow the site-specific contractors risk assessment which should include risks to human health from potential contamination. Due to the historic phases of development and demolition surrounding the site consideration should be given to the presence of asbestos within the Made Ground.

Good site management practices should be adopted during the construction phase such as covering stockpiles to minimise surface runoff/dust creation.

A foundation works risk assessment may be required to assess the risks to the underlying geology if foundations or piling which penetrate the base of Made Ground

There is a potential risk from UXO, and it is recommended that a site-specific detailed desk study is undertaken prior to any intrusive investigations or earthworks. A watching brief from a UXO specialist may be required.

Underground services may be present beneath the site associated with the nearby railway station. These will need to be taken into consideration during the proposed development.

8 References

1. British Geological Survey (BGS) [online]. Available at: <https://mapapps.bgs.ac.uk/geologyofbritain/home>. Accessed January 2020.
2. Google maps [online]. Available at <https://www.google.co.uk/maps>. Accessed January 2020.
3. Bomb Sight National Archives [on-line]. Available at: <http://bombsight.org>. Accessed January 2020.
CIRIA C552 (2001) Contaminated land risk assessment. A guide to good practice.
4. DEFRA and the Environment Agency, 2004. Model Procedures for the Management of Land Contamination, Guidelines for Environmental Risk Assessment and Management, Contaminated Land Report 11 (CLR11).
5. The Construction (Design and Management) Regulations 2015.
6. CIRIA C665 (2007) Assessing risks posed by hazardous ground gases to buildings (revised).

APPENDIX A

Historical Ordnance Survey Maps

Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: 1056 Scale Town Plan

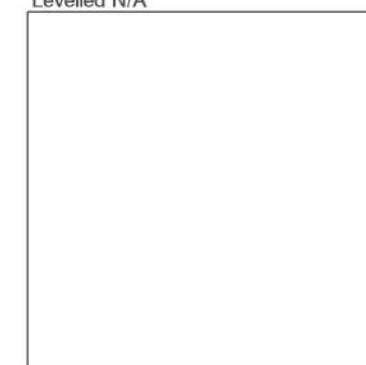
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Scale: 1:1,056

Printed at: 1:1,056



Surveyed 1865
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

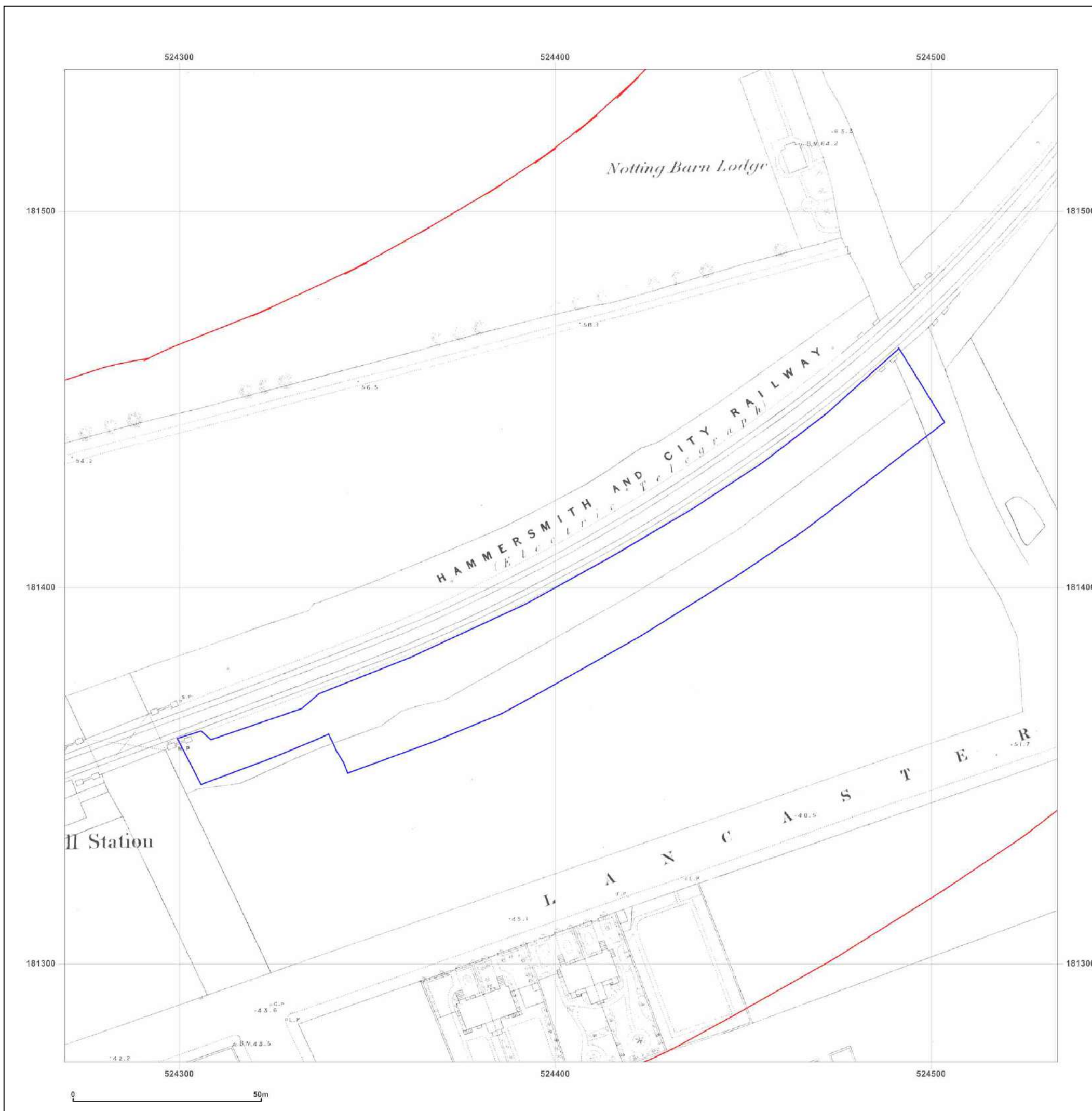


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Map legend available at:
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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: County Series

Map date: 1881

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1865
Revised N/A
Edition 1881
Copyright N/A
Levelled N/A

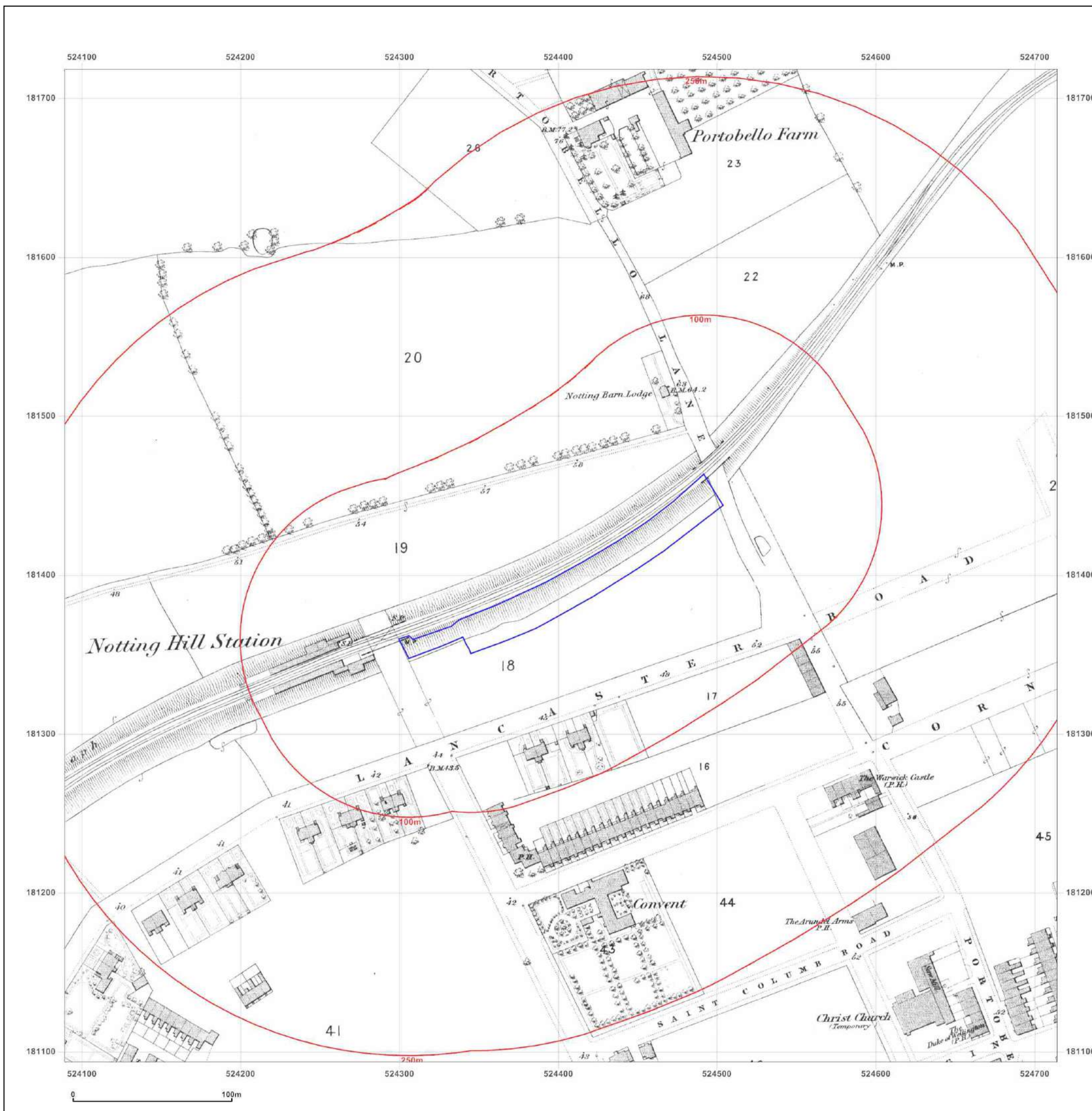


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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: 1056 Scale Town Plan

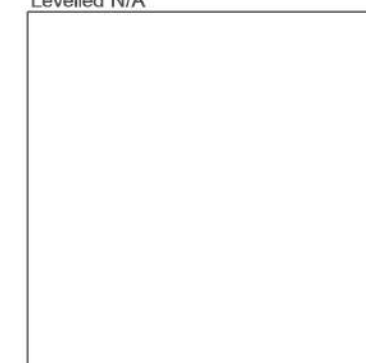
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Scale: 1:1,056

Printed at: 1:1,056



Surveyed 1893
Revised N/A
Edition 1896
Copyright N/A
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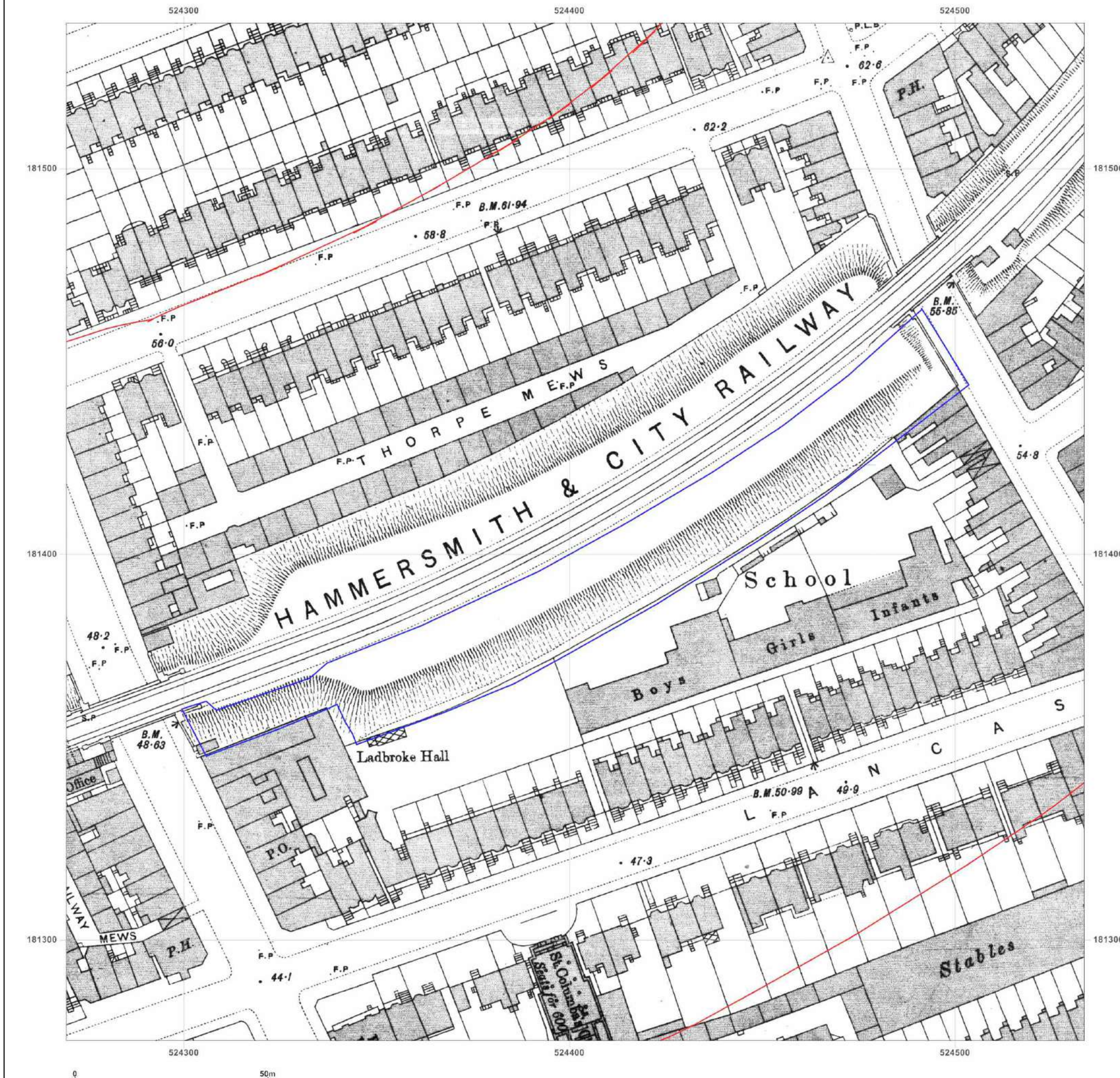


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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: County Series

Map date: 1896

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1896
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Site Details:

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Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: County Series

Map date: 1916

Scale: 1:2,500

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BRIDGE, LADBROKE GROVE,
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Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1953

Scale: 1:1,250

Printed at: 1:2,000



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Revised 1953
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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1953-1954

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
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Revised N/A
Edition N/A
Copyright N/A
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Revised 1953
Edition N/A
Copyright N/A
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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1954

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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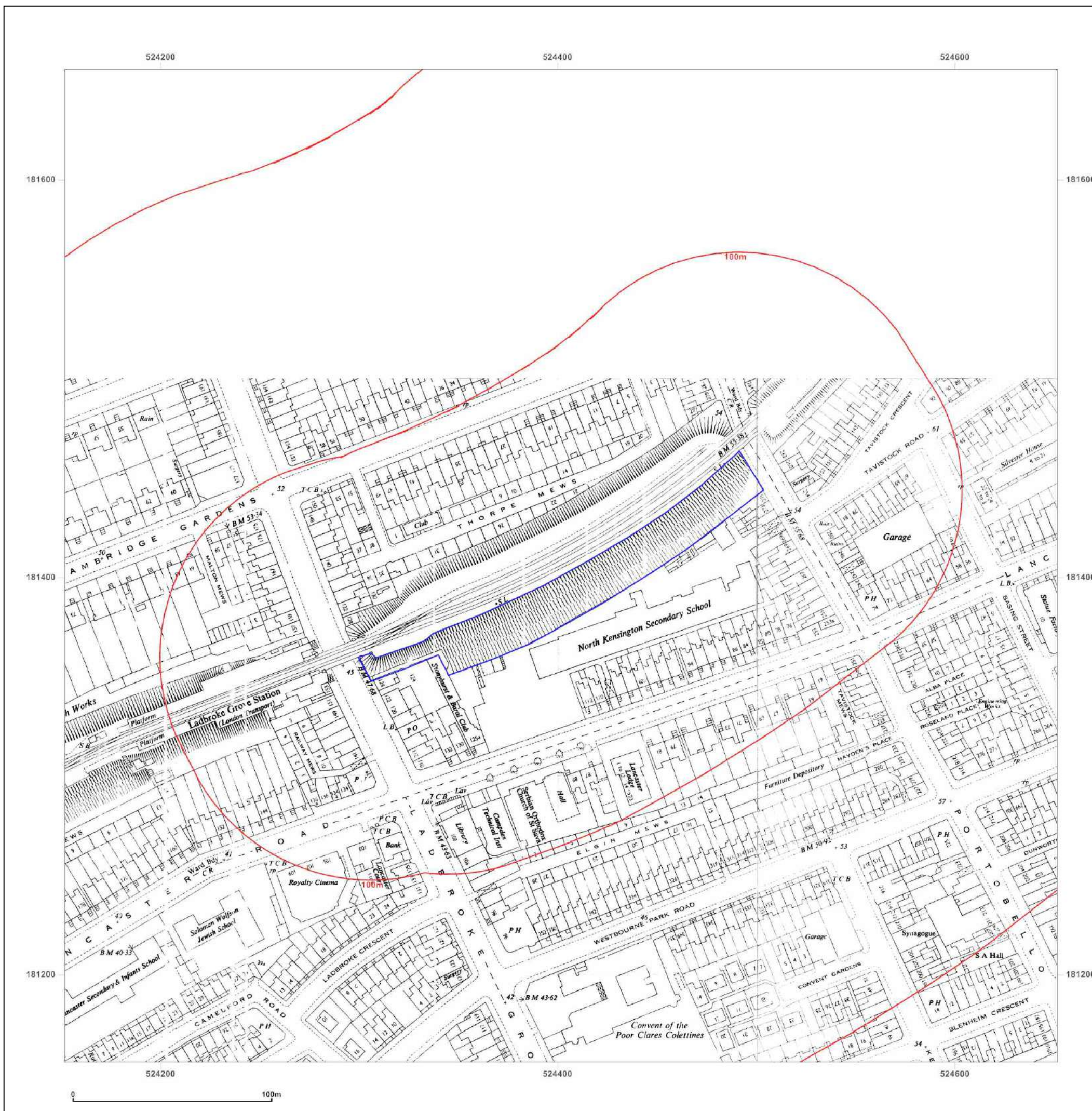


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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1954

Scale: 1:1,250

Printed at: 1:2,000



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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1955

Scale: 1:2,500

Printed at: 1:2,500



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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

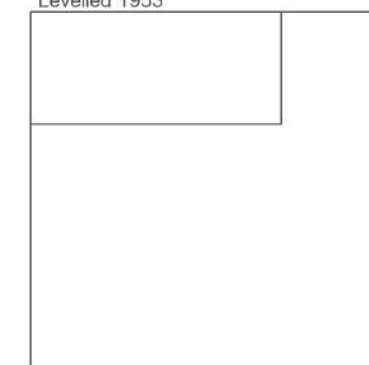
Map date: 1962

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1953
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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1969-1972

Scale: 1:1,250

Printed at: 1:2,000



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Revised 1971
Edition N/A
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Revised 1971
Edition N/A
Copyright 1972
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Surveyed 1953
Revised 1968
Edition N/A
Copyright 1969
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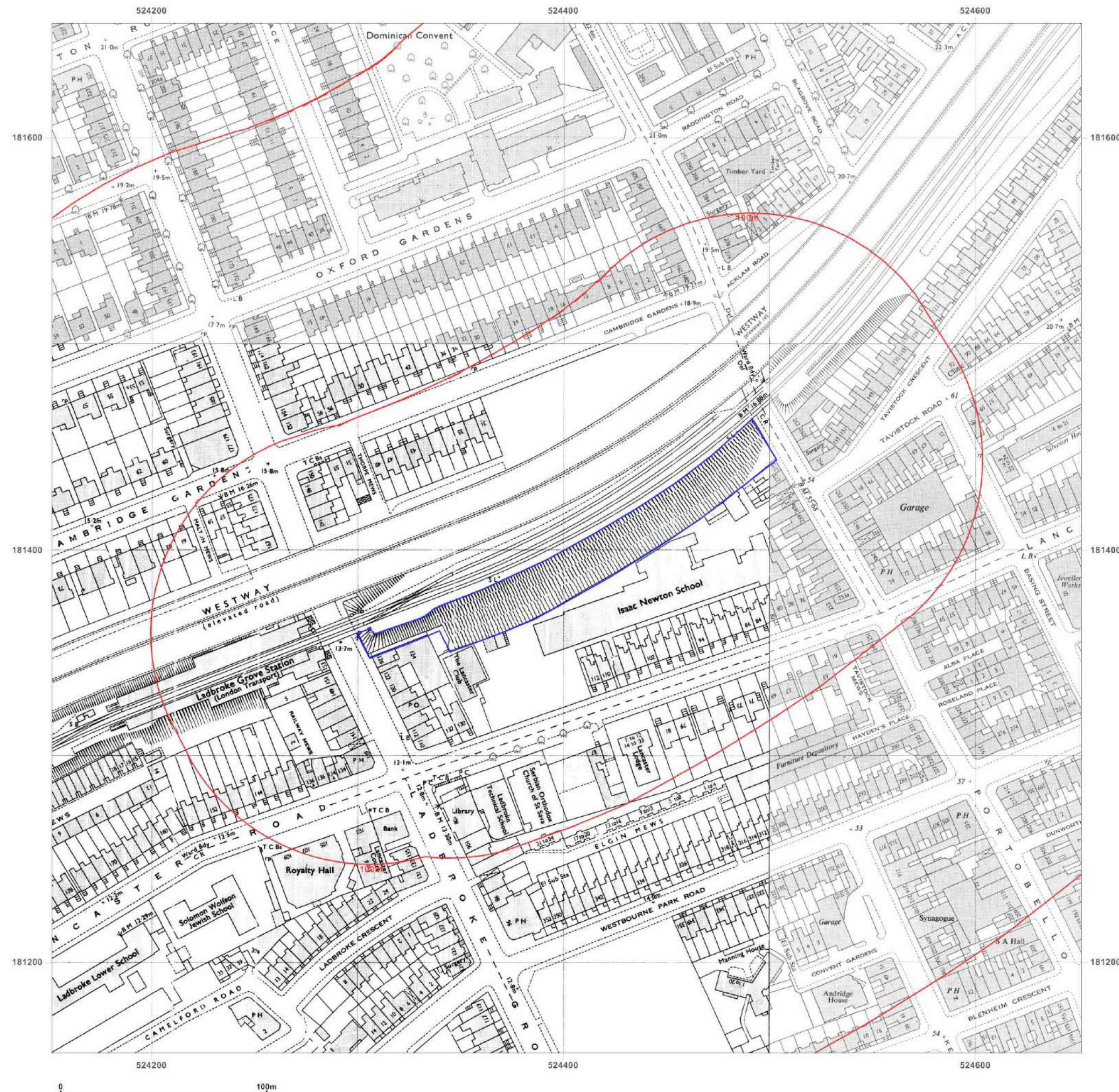


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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1973

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

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Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1953
Revised 1971
Edition N/A
Copyright 1973
Levelled 1953

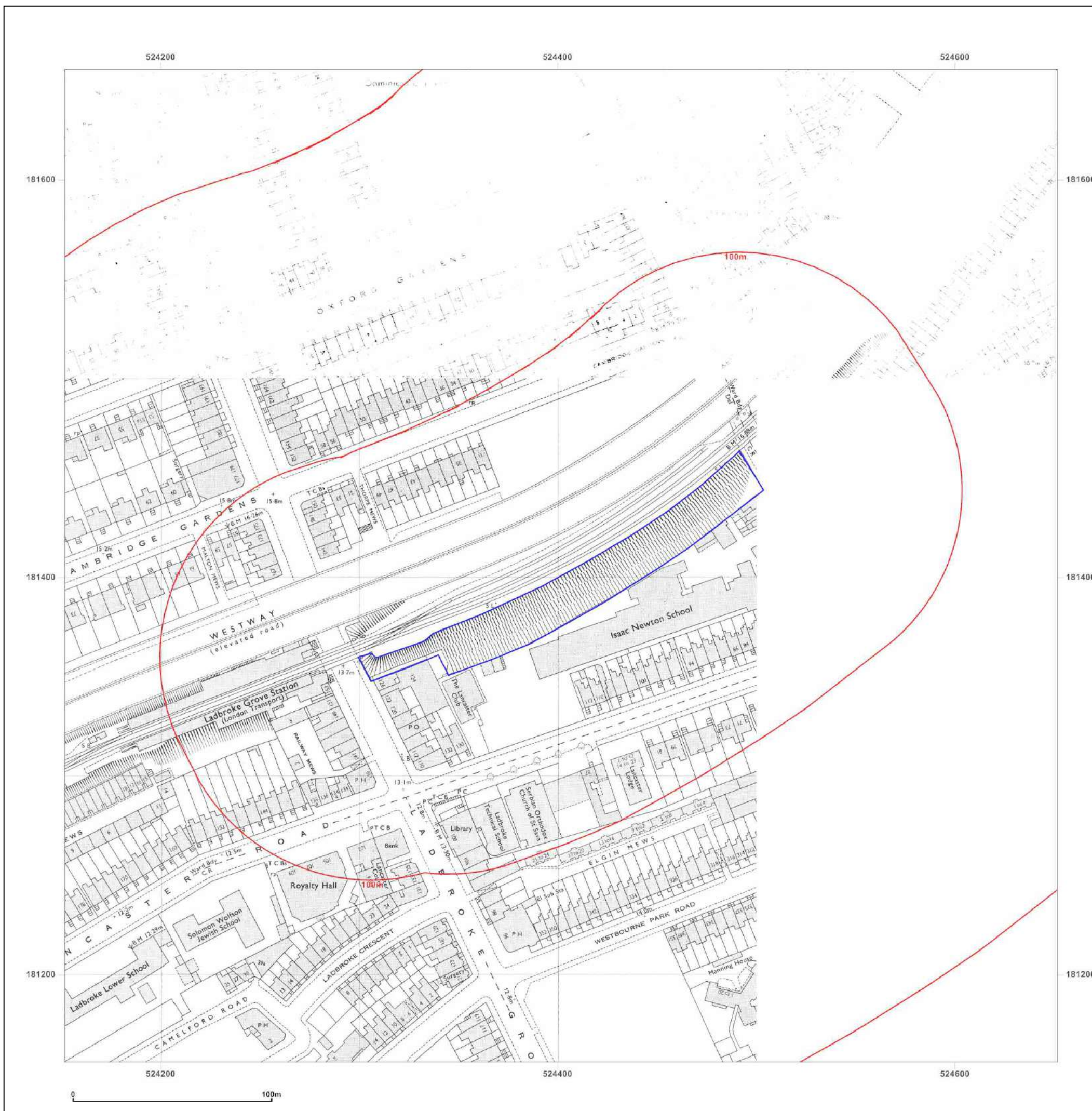


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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1977-1980

Scale: 1:1,250

Printed at: 1:2,000



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Surveyed N/A
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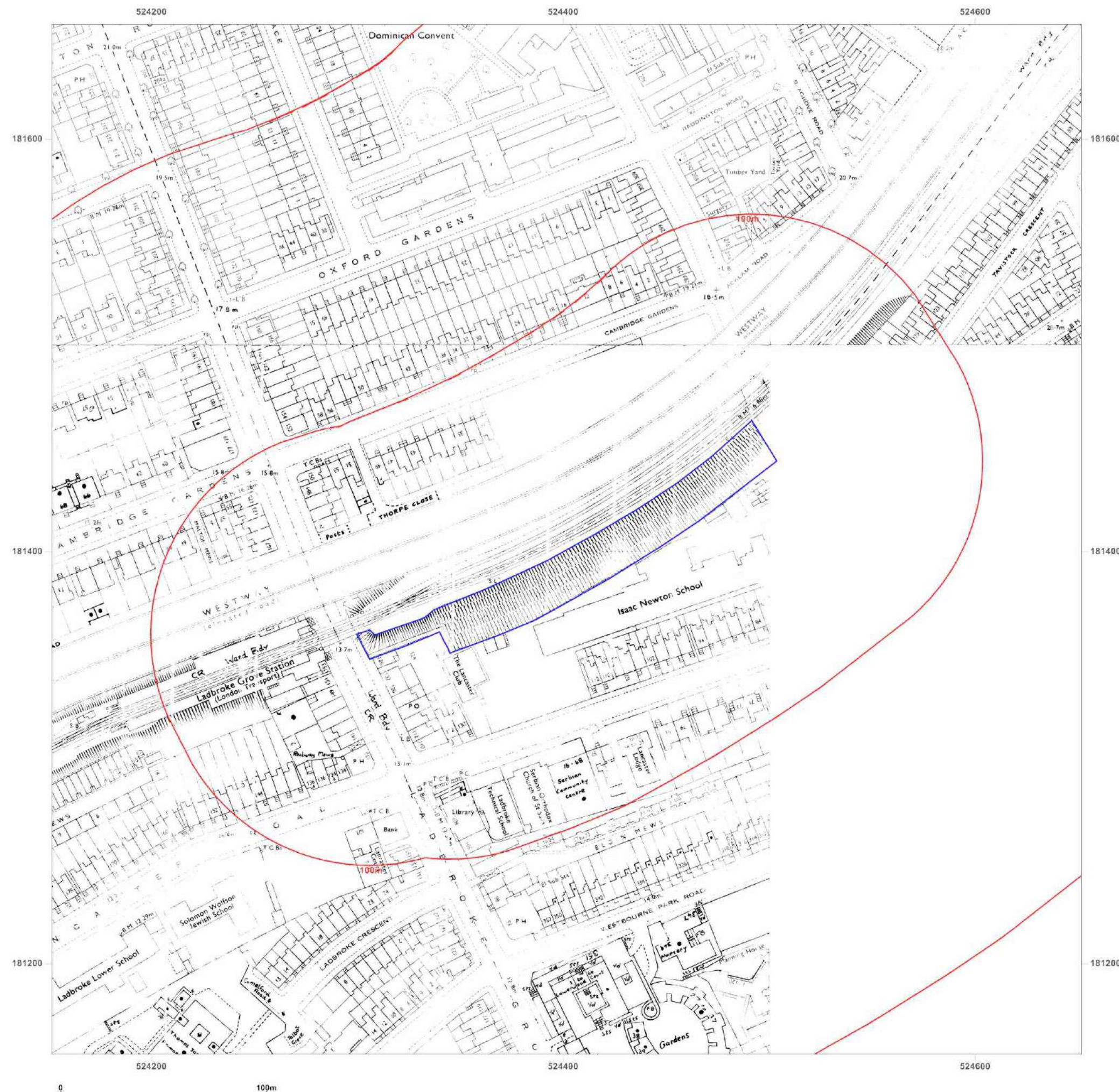


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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1981-1984

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
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Revised N/A
Edition N/A
Copyright 1984
Levelled 1974

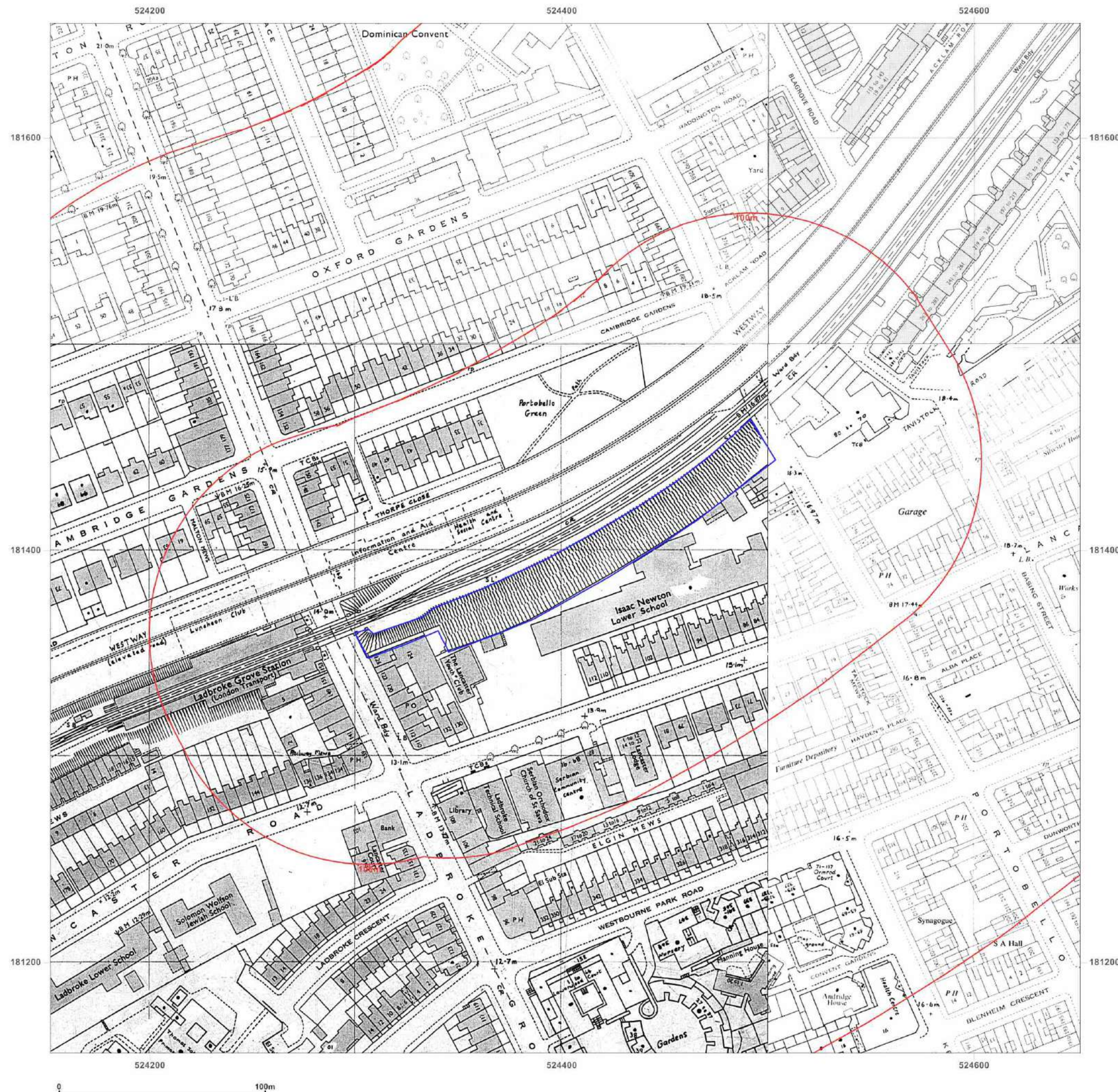


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Site Details:

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LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1983-1986

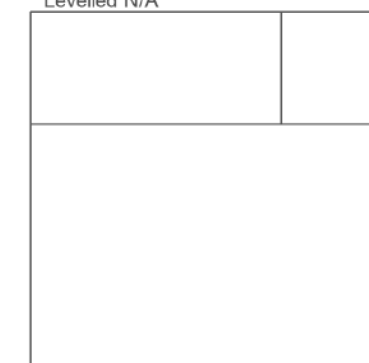
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Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1991

Scale: 1:1,250

Printed at: 1:2,000



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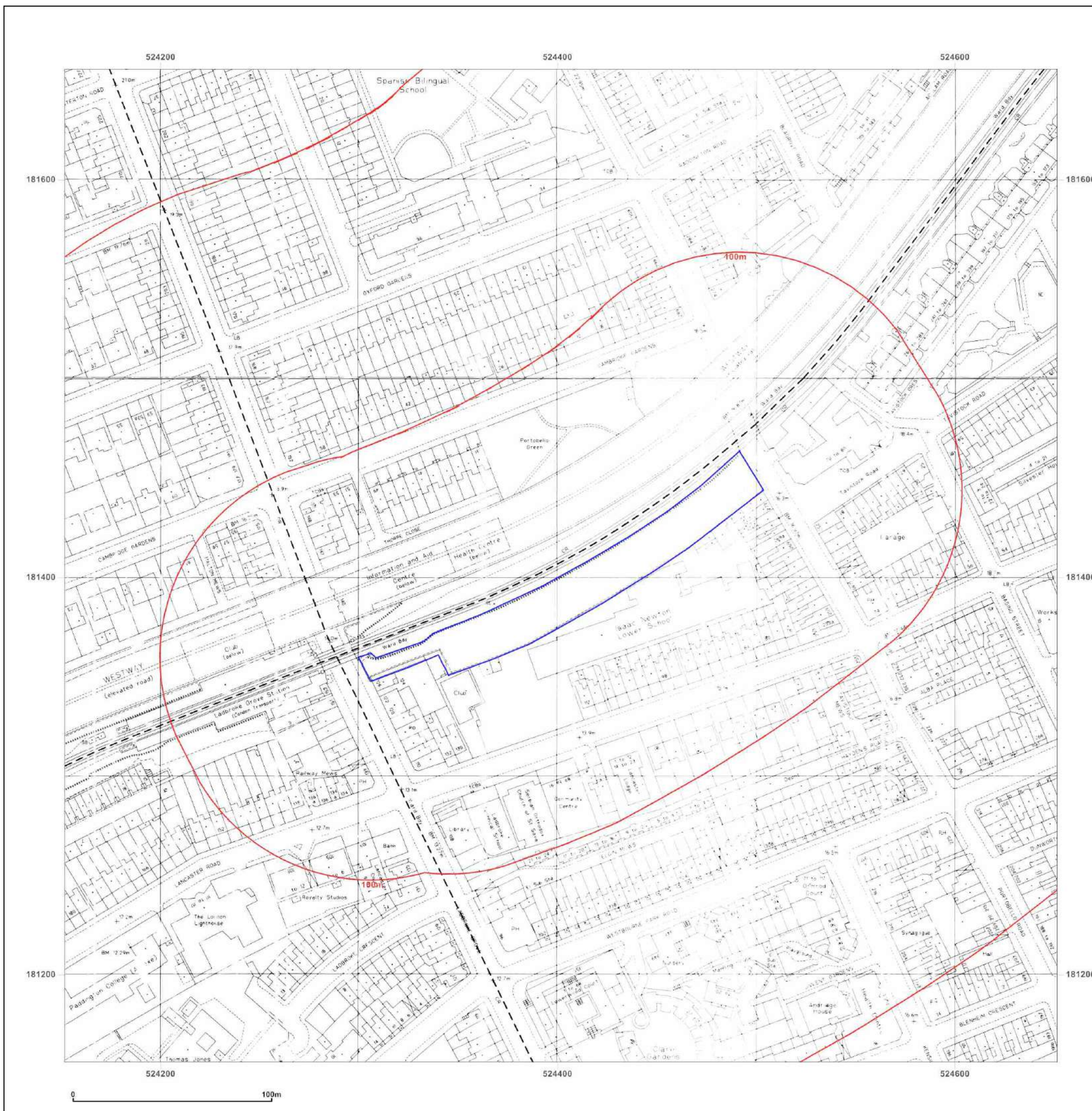


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Site Details:

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Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1991

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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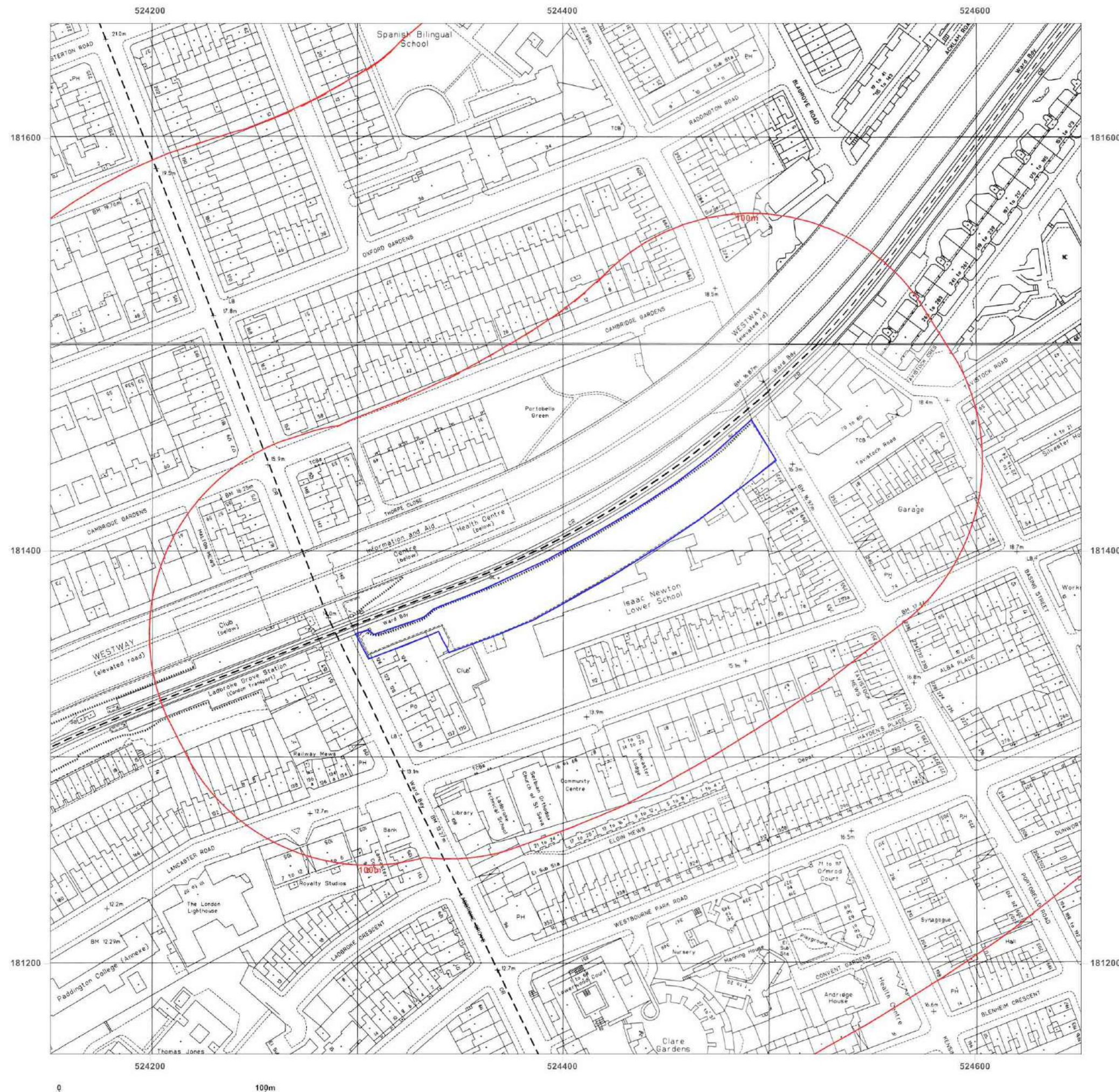


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Site Details:

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Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1991-1995

Scale: 1:1,250

Printed at: 1:2,000



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Surveyed 1991
Revised 1991
Edition N/A
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Revised N/A
Edition N/A
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

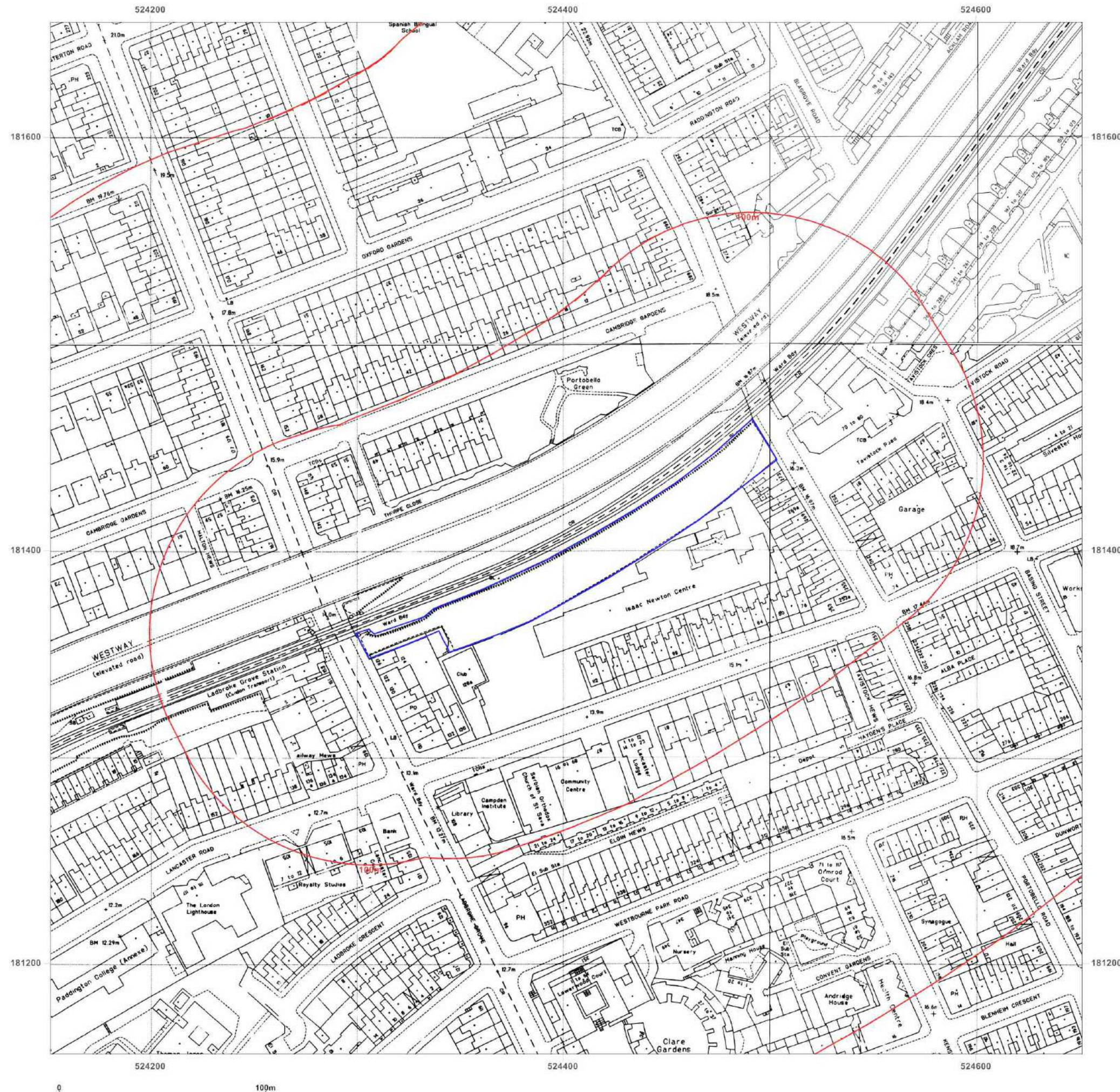


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Site Details:

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LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1992-1995

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
Copyright 1992
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1993
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright N/A
Levelled N/A

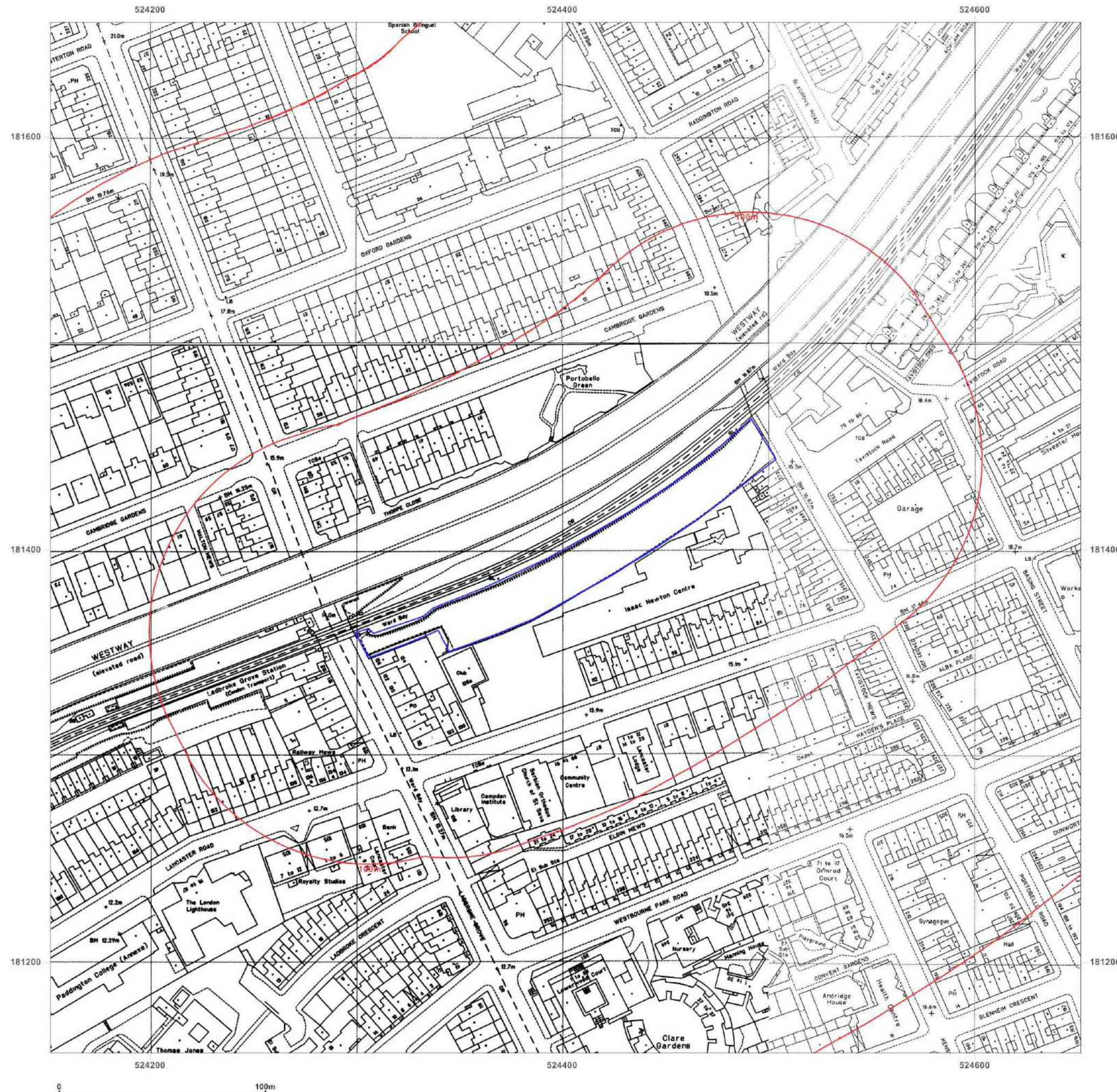


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Site Details:

BRIDGE, LADBROKE GROVE,
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Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1995

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
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Site Details:

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LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1995

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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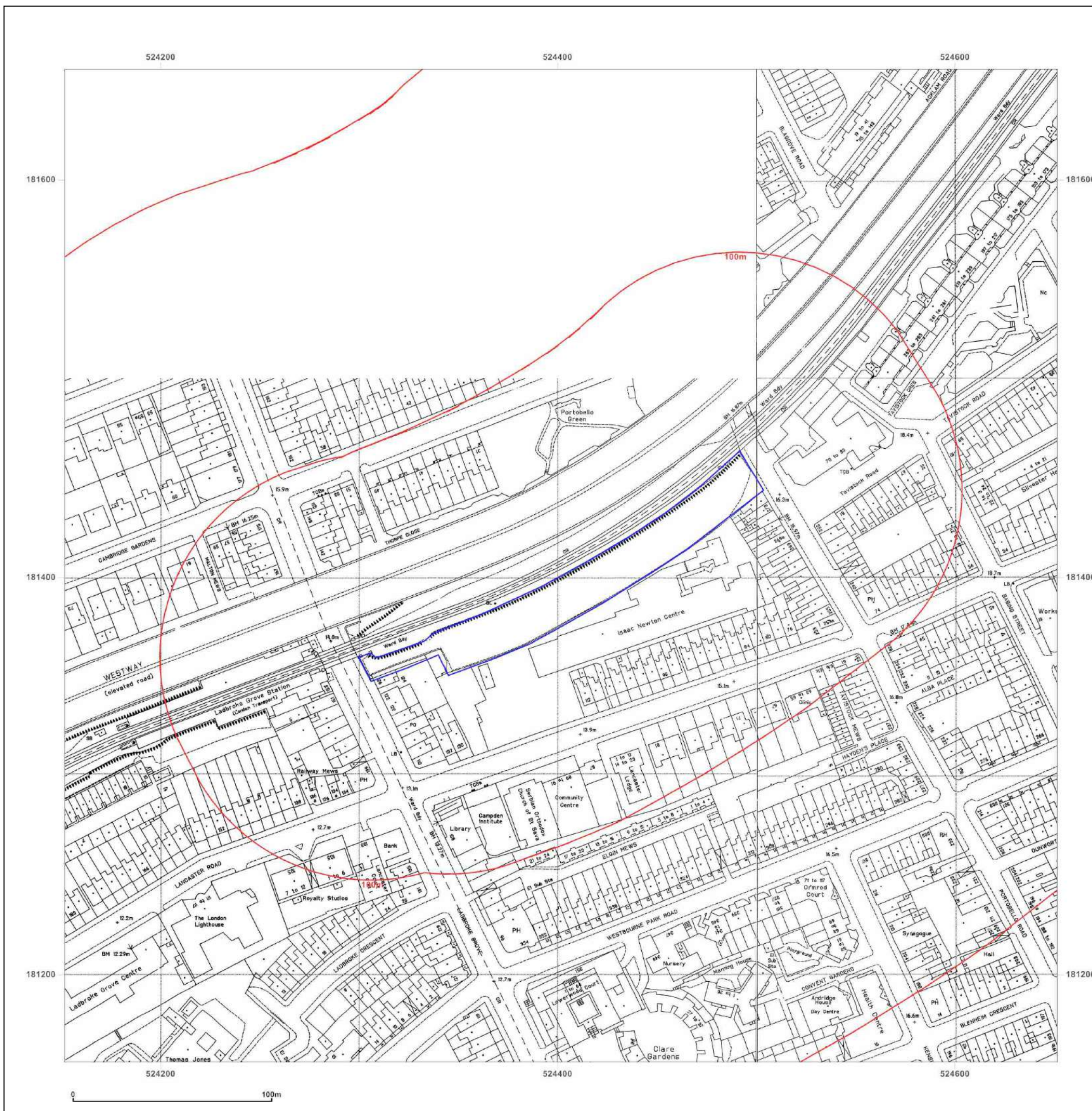


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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

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2003



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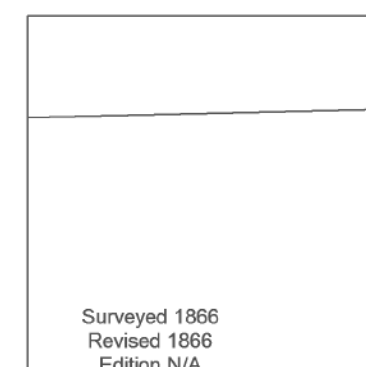
Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: County Series

Map date: 1866

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1866
Revised 1866
Edition N/A
Copyright N/A
Levelled N/A

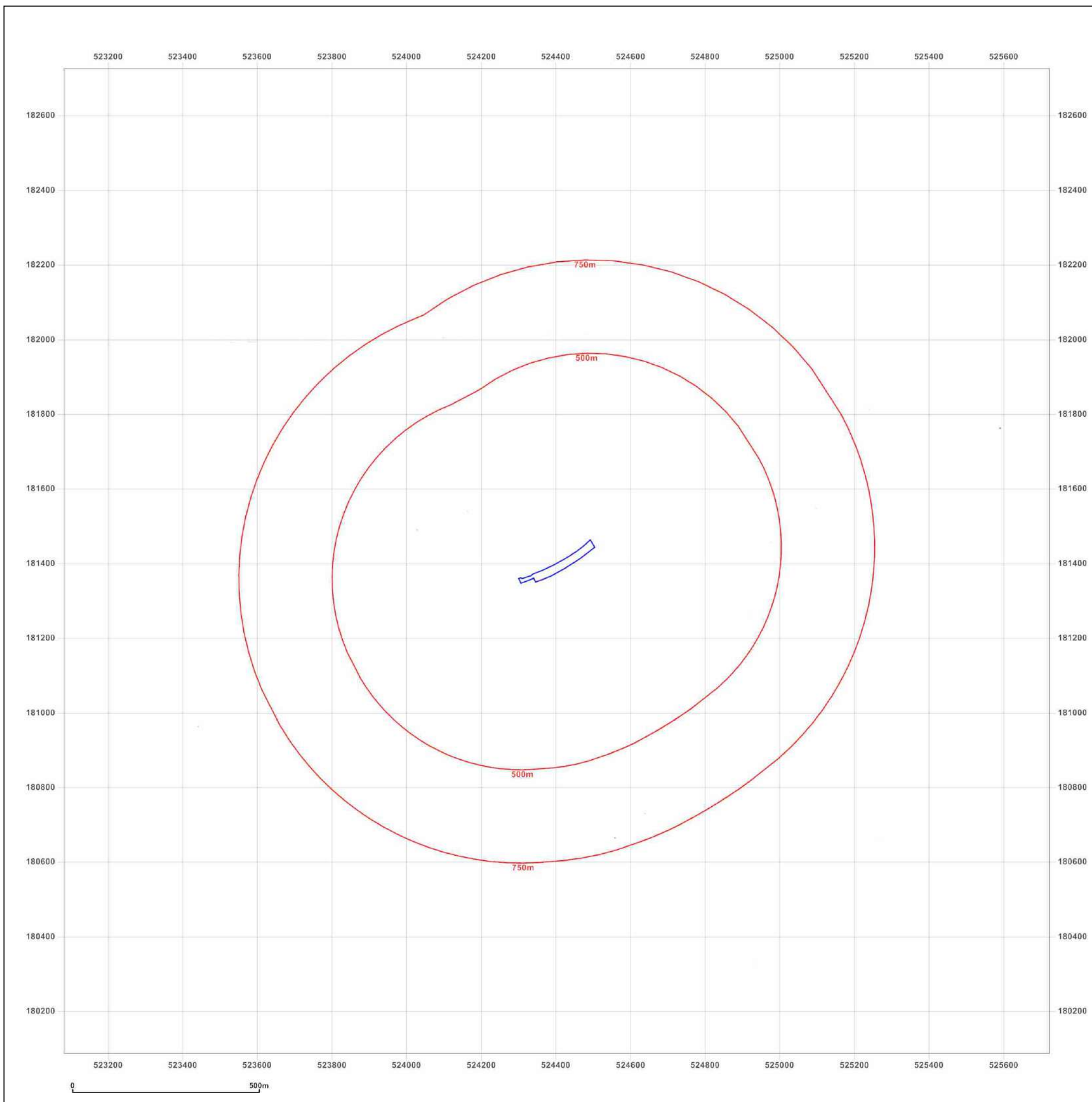


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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: County Series

Map date: 1874

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1866
Revised 1874
Edition N/A
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Levelled N/A

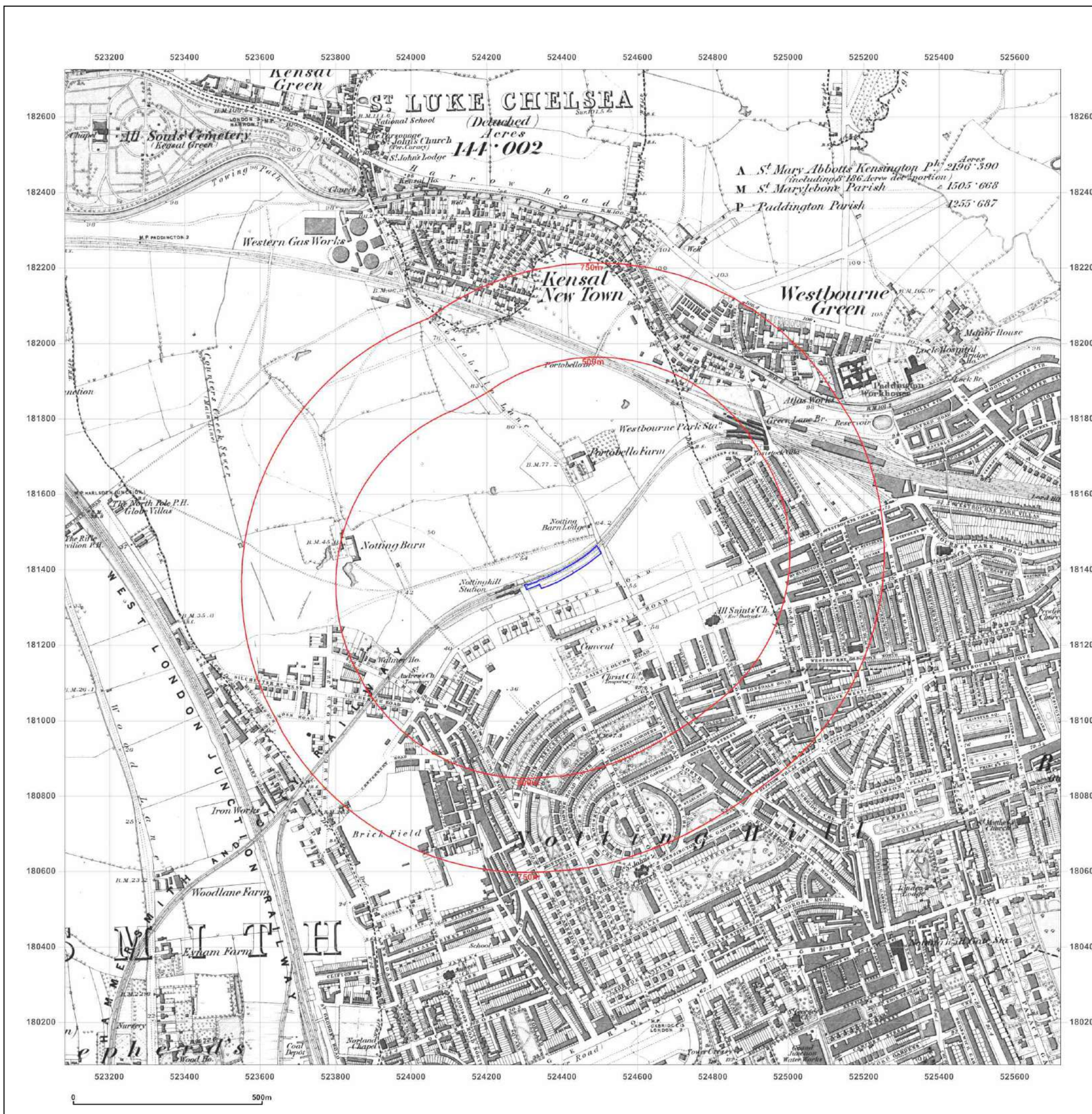


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Site Details:

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LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: County Series

Map date: 1894

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1894
Revised 1894
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1894
Revised 1894
Edition N/A
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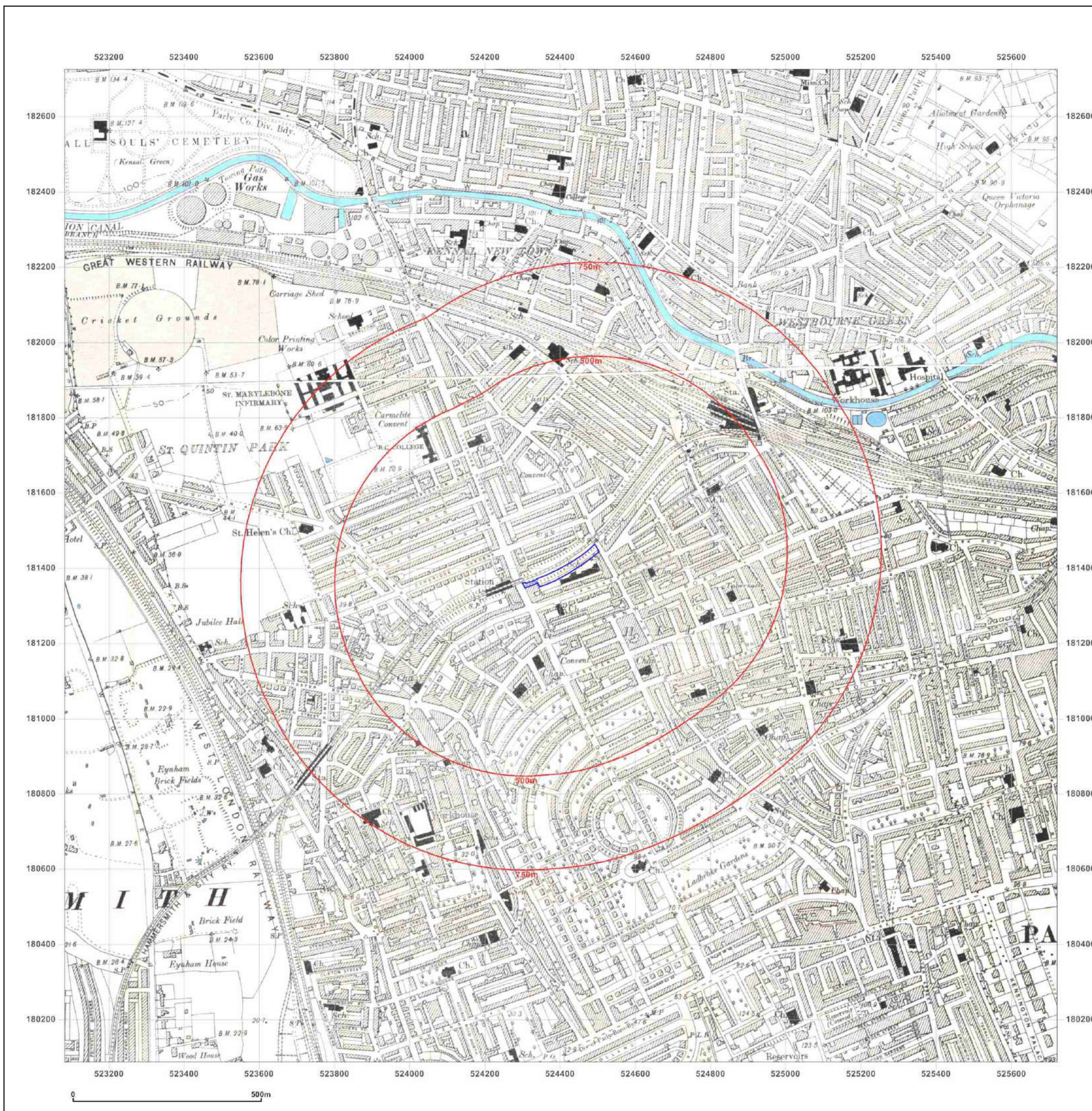


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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: County Series

Map date: 1920

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1865
Revised 1920
Edition N/A
Copyright N/A
Levelled N/A

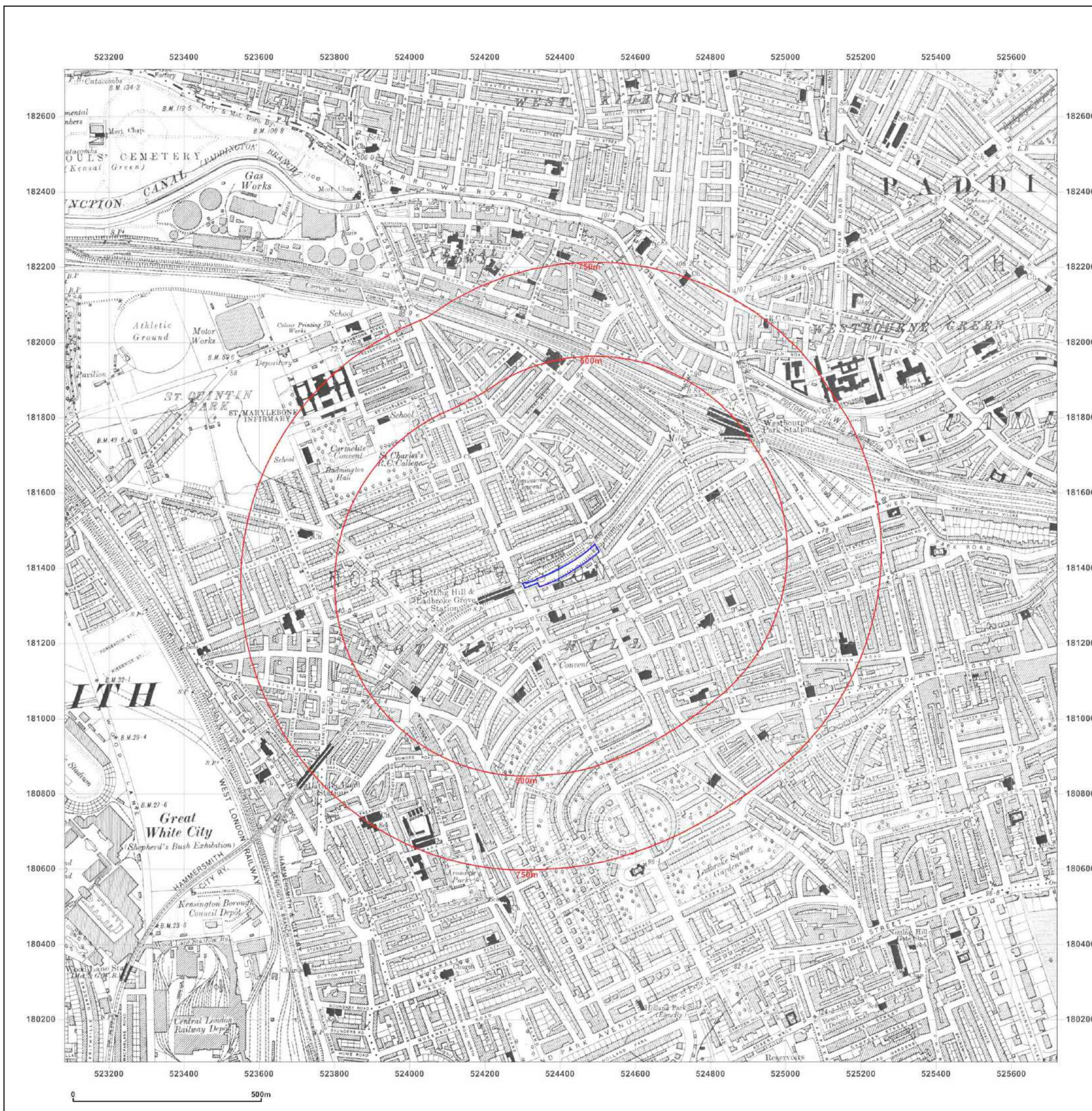


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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: Provisional

Map date: 1951

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised 1948
Edition 1951
Copyright N/A
Levelled N/A

Surveyed N/A
Revised 1949
Edition N/A
Copyright 1951
Levelled N/A

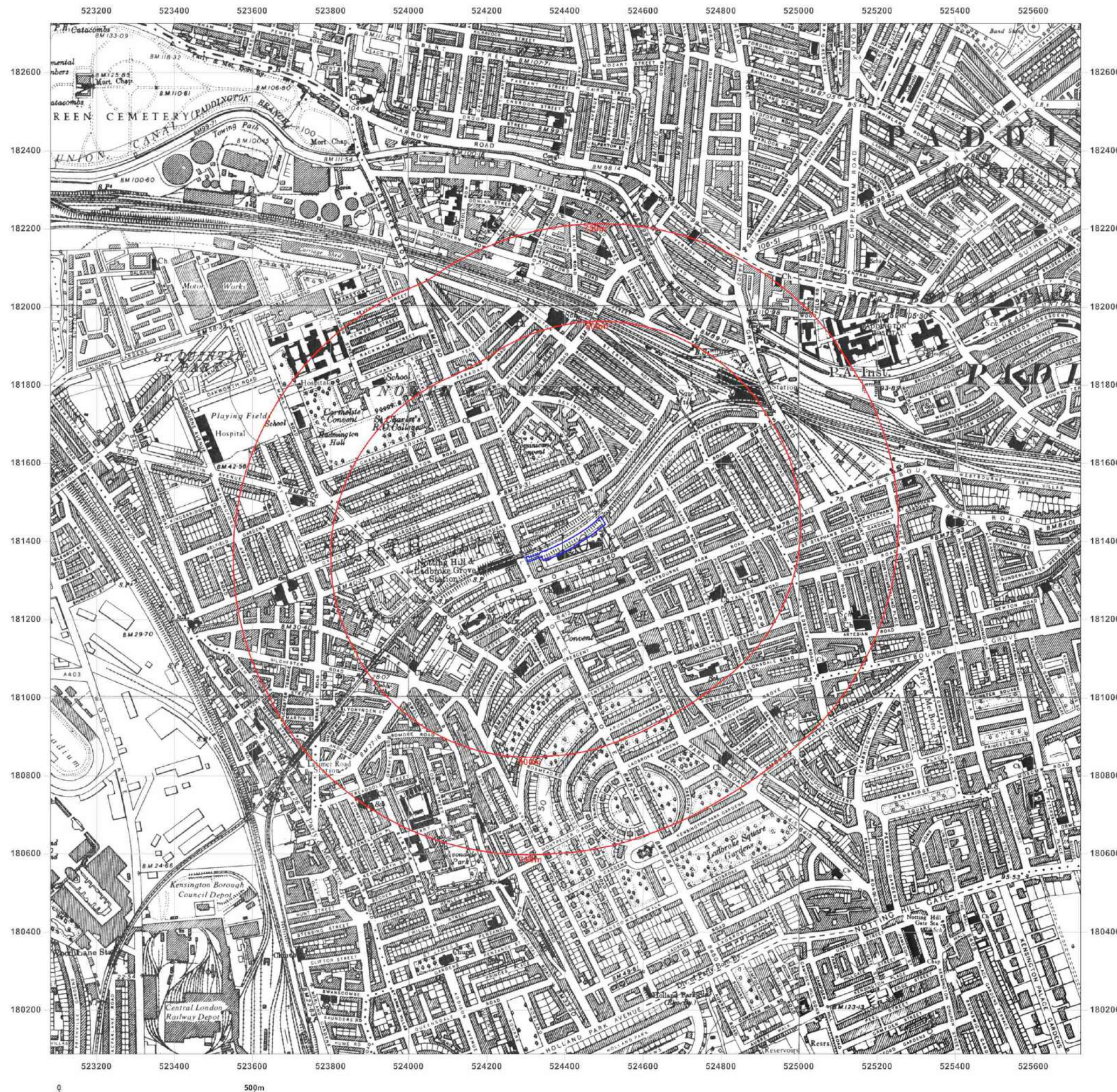


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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: Provisional

Map date: 1957

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1957
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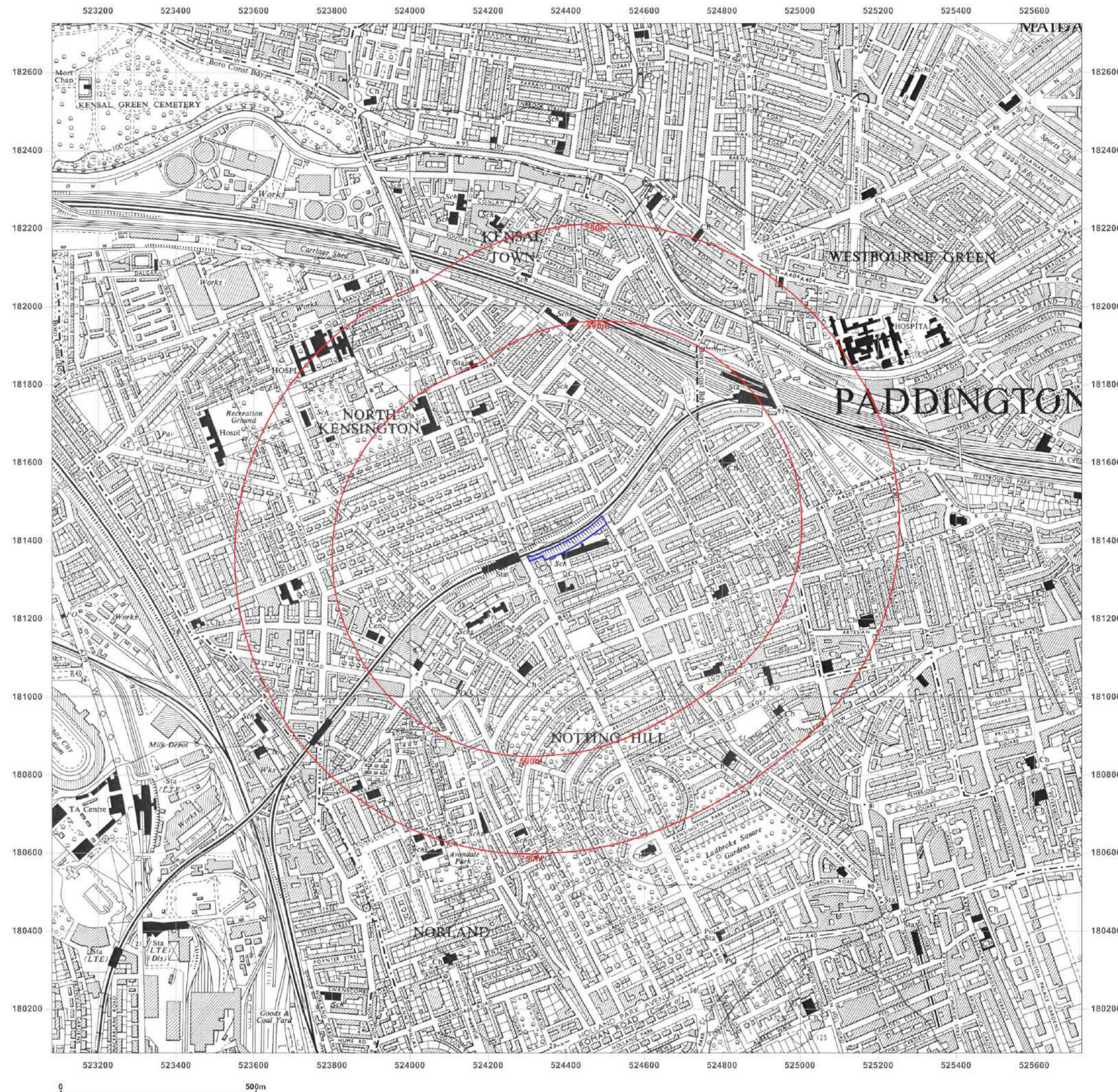


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Site Details:

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Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: Provisional

Map date: 1967-1968

Scale: 1:10,560

Printed at: 1:10,560



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Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 1973

Scale: 1:10,000

Printed at: 1:10,000



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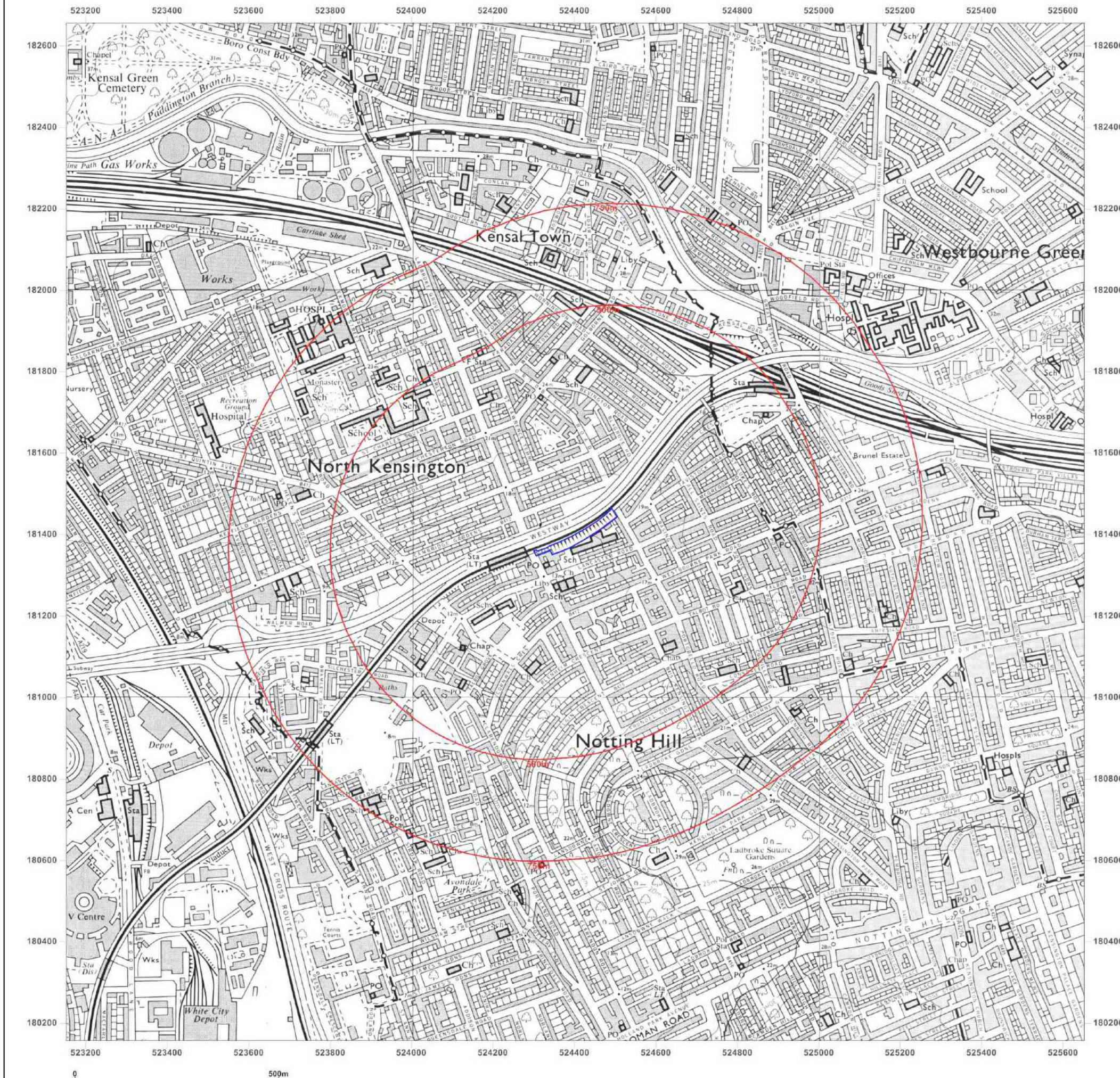


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Site Details:

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LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

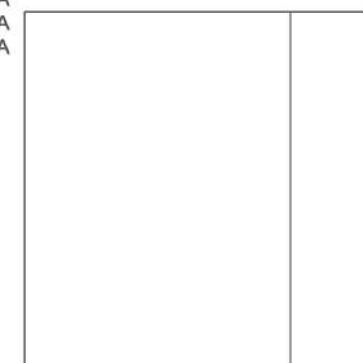
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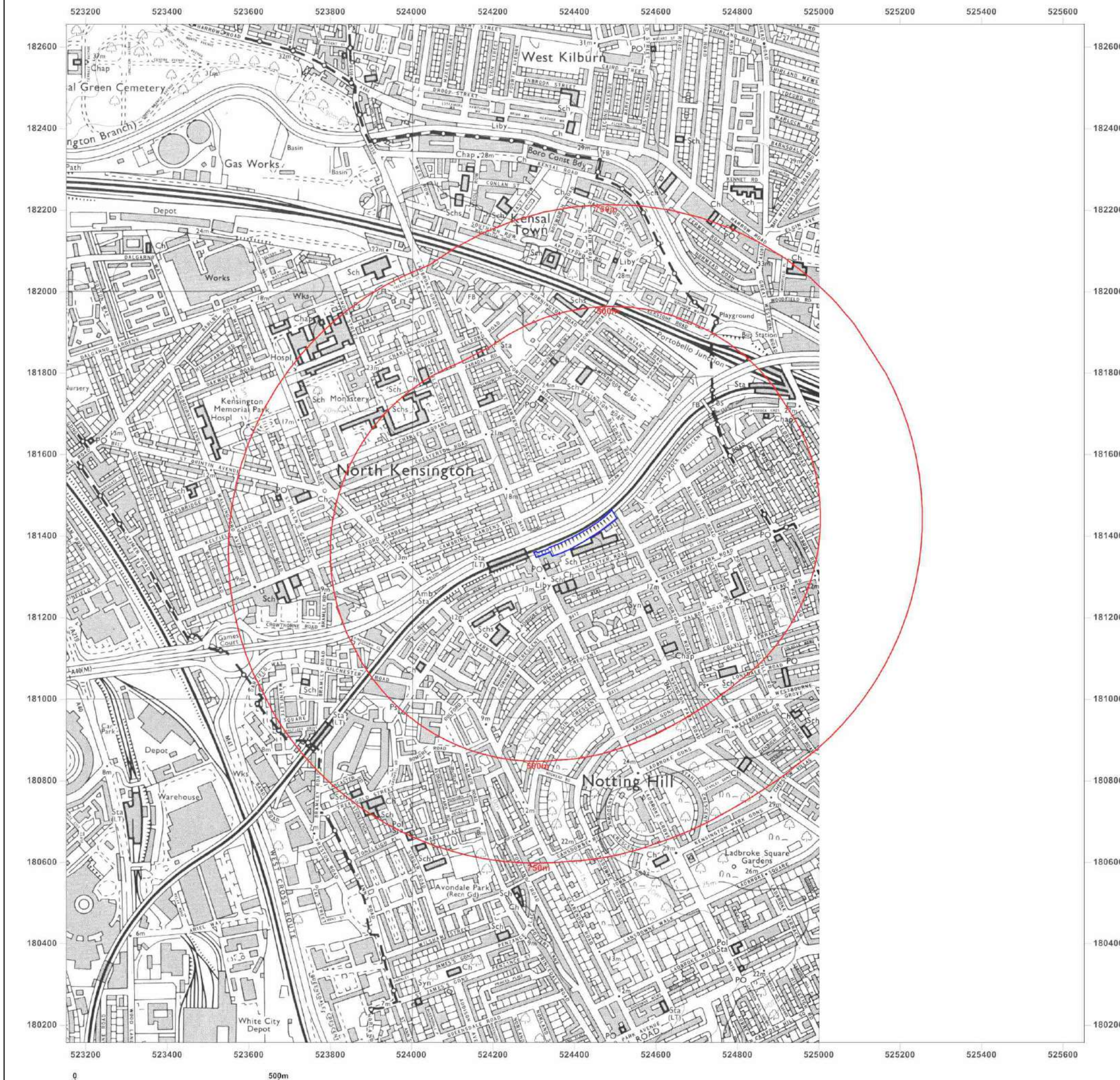


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Report Ref: GS-6578281
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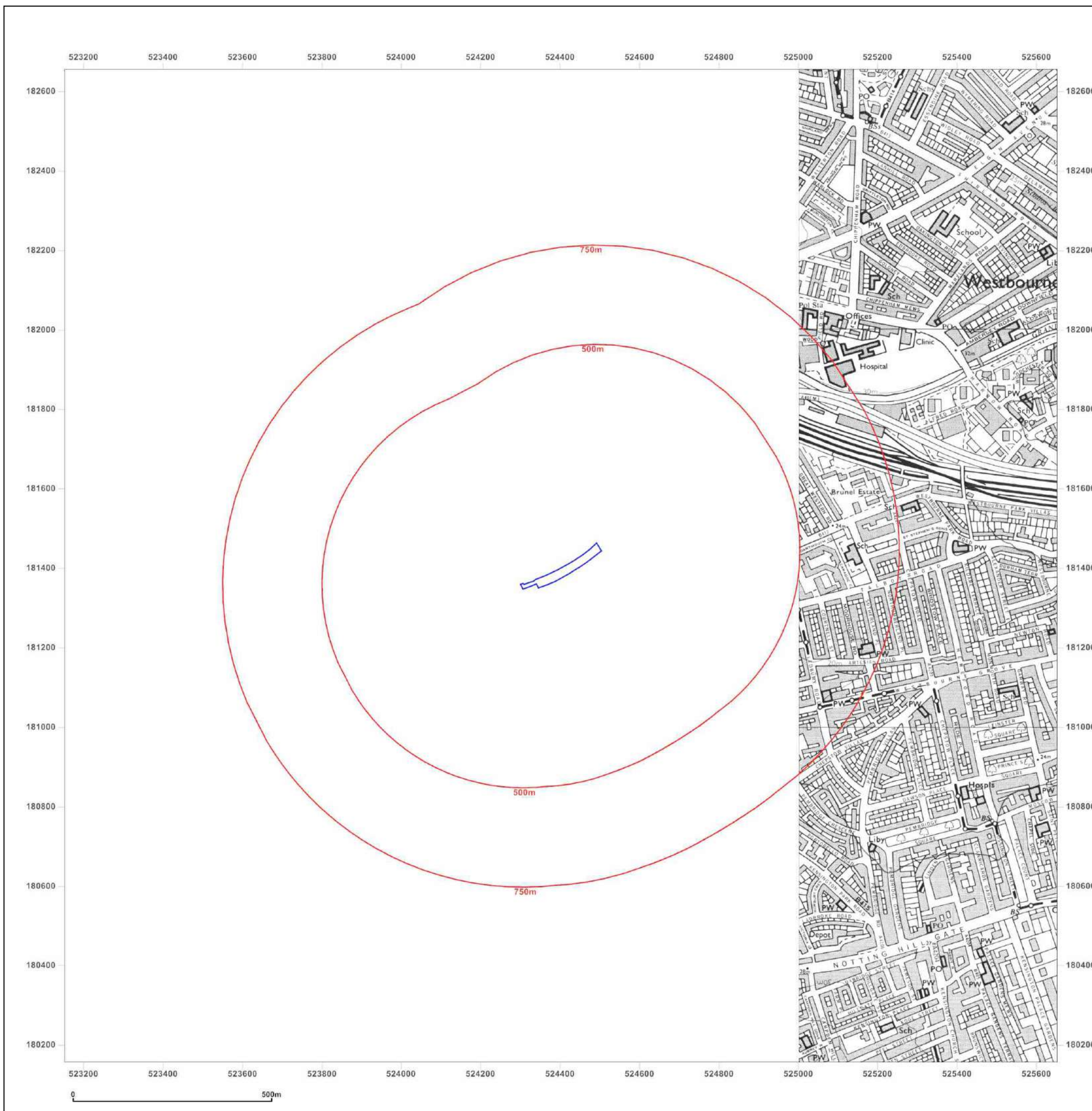


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Site Details:

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Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

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2001



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Site Details:

BRIDGE, LADBROKE GROVE,
LONDON, W10 6HJ

Client Ref: 14034794
Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



2010



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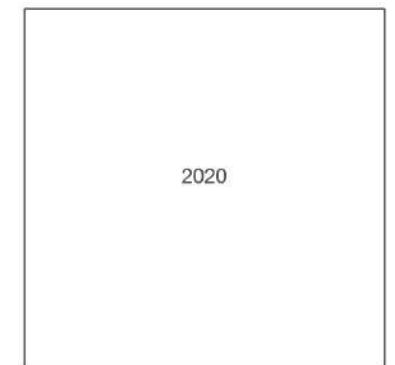
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Report Ref: GS-6578281
Grid Ref: 524401, 181406

Map Name: National Grid

Map date: 2020

Scale: 1:10,000

Printed at: 1:10,000

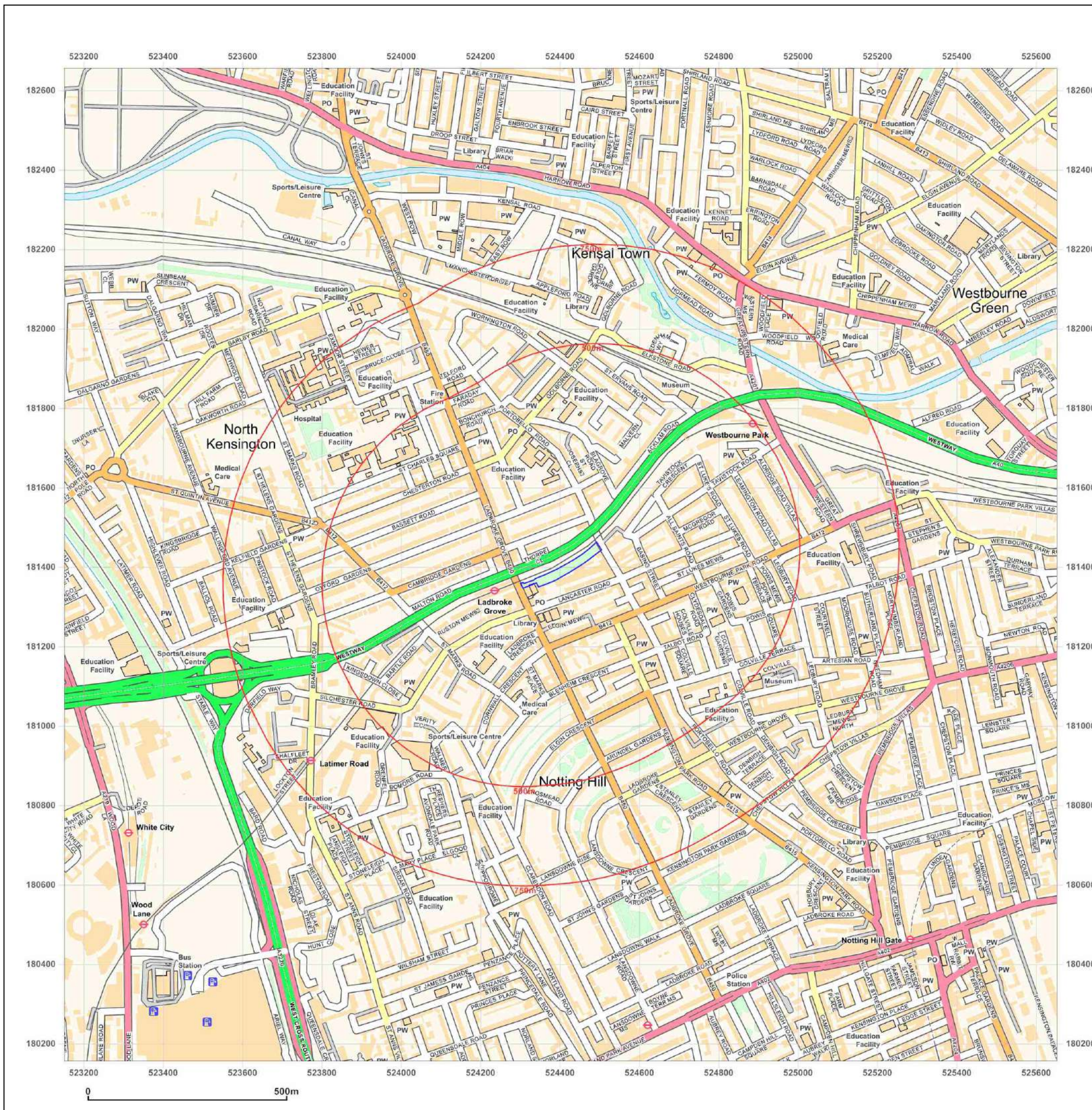


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APPENDIX B

Groundsure Data Sheets



Arcadis Consulting UK Ltd

Arcadis CONSULTING UK LTD, THE PITHAY,
BRISTOL, BS1 2NL

Groundsure
Reference:

GS-6578279

Your Reference: 14034794

Report Date

28 Jan 2020

Report Delivery
Method:

Email - pdf

Enviro Insight

Address: BRIDGE, LADBROKE GROVE, LONDON, W10 6HJ

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,

Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Address: BRIDGE, LADBROKE GROVE, LONDON, W10 6HJ

Date: 28 Jan 2020

Reference: GS-6578279

Client: Arcadis Consulting UK Ltd

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 07-Jun-2015

Grid Reference: 524372,181377

Site Size: 0.4455ha

Report Reference: GS-6578279

Client Reference: 14034794

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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	1	15	2	32
1.2 Additional Information – Historical Tank Database	0	0	1	7
1.3 Additional Information – Historical Energy Features Database	0	0	38	71
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	21	5
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	0	5
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	0	3
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	1	1
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	1000-1500
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 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, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	1

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	3	23	Not searched
4.2 Records of Petrol and Fuel Sites	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	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	None identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology				0-500m		
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site				Identified		
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site				Identified		
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	2	27
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	6
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	0	0	0	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

0-500m

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
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 Environment 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	Not Prone					
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Not Applicable					

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
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	3
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	1000-2000
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	Moderate
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	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	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Very Low
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?	The site is not in a Radon Affected Area, as less than 1% of properties 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?	No radon protective measures are necessary.

Section 10: Mining	
10.1 Coal mining areas within 75m of the study site	None identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	None identified
10.3 Brine affected areas within 75m of the study site	None identified

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.

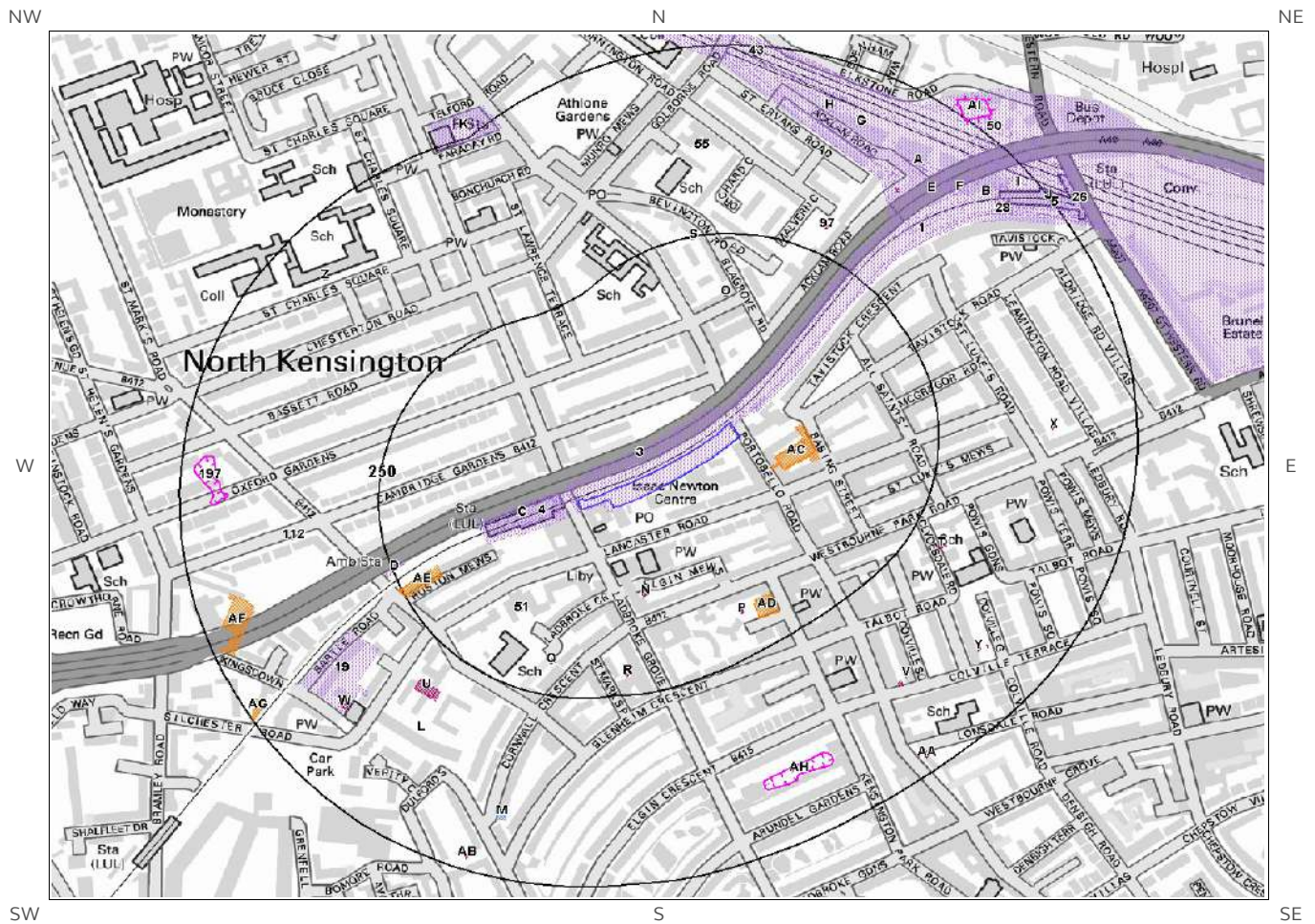
Note: Maps

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).

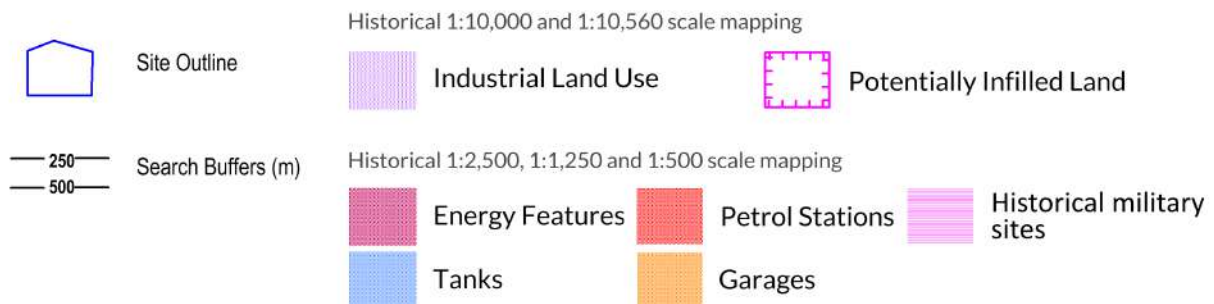
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

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



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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: 50

ID	Distance [m]	Direction	Use	Date
1	0	On Site	Railway Sidings	1920
2C	6	W	Railway Station	1951
3	10	N	Railway Sidings	1951
4	16	SW	Railway Station	1866
5	18	NE	Railway Sidings	1894
6A	19	NE	Railway Sidings	1951
7A	19	NE	Railway Sidings	1957
8B	19	NE	Railway Sidings	1967
9B	19	NE	Railway Sidings	1973
10C	19	SW	Railway Station	1957
11C	19	SW	Railway Station	1996
12C	19	SW	Railway Station	1982
13C	19	SW	Railway Station	1973
14C	19	SW	Railway Station	1967
15C	27	SW	Railway Station	1894
16C	28	W	Railway Station	1920
17D	230	W	Ambulance Station	1996
18D	230	W	Ambulance Station	1982
19	315	SW	Unspecified Depot	1973
20B	333	NE	Sawmill	1920
21E	358	NE	Sawmill	1951
22E	369	NE	Railway Buildings	1894
23G	388	NE	Railway Sidings	1982
24F	414	NE	Railway Building	1920
25F	423	NE	Railway Building	1951
26	423	NE	Railway Sidings	1866
27G	427	N	Railway Building	1920
28	430	NE	Railway Building	1973
29H	432	N	Railway Building	1920
30F	435	NE	Railway Building	1894
31H	438	N	Railway Buildings	1951
32I	440	NE	Railway Station	1920
33I	444	NE	Railway Station	1951
34H	447	N	Railway Building	1894

35J	448	NE	Railway Station	1996
36J	448	NE	Railway Station	1982
37J	448	NE	Railway Station	1973
38I	449	NE	Railway Station	1957
39I	449	NE	Railway Station	1967
40J	450	NE	Railway Station	1866
41I	454	NE	Railway Station	1894
42I	455	NE	Railway Building	1894
43	458	N	Railway Sidings	1894
44K	484	NW	Fire Station	1996
45K	491	NW	Fire Station	1982
46K	491	NW	Fire Station	1967
47K	491	NW	Fire Station	1973
48K	496	NW	Fire Station	1957
49AI	498	NE	Cuttings	1894
50	500	NE	Railway Building	1894

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:

8

ID	Distance (m)	Direction	Use	Date
51	152	SW	Unspecified Tank	1896
52L	354	SW	Unspecified Tank	1993
53L	354	SW	Unspecified Tank	1995
54L	354	SW	Unspecified Tank	1991
55	364	N	Unspecified Tank	1991
56M	408	S	Unspecified Tank	1953
57M	408	S	Unspecified Tank	1953
58M	408	S	Unspecified Tank	1953

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:

109

ID	Distance (m)	Direction	Use	Date
----	--------------	-----------	-----	------

59N	118	S	Electricity Substation	1995
60N	118	S	Electricity Substation	1993
61N	118	S	Electricity Substation	1991
62N	119	S	Electricity Substation	1981
63N	119	S	Electricity Substation	1991
64N	119	S	Electricity Substation	1973
65O	166	N	Electricity Substation	1972
66O	166	N	Electricity Substation	1986
67O	174	N	Electricity Substation	1995
68O	175	N	Electricity Substation	1984
69O	175	N	Electricity Substation	1980
70O	175	N	Electricity Substation	1991
71P	189	SE	Electricity Substation	1969
72P	189	SE	Electricity Substation	1995
73P	189	SE	Electricity Substation	1992
74P	189	SE	Electricity Substation	1991
75P	190	SE	Electricity Substation	1991
76P	190	SE	Electricity Substation	1984
77Q	202	S	Electricity Substation	1973
78Q	202	S	Electricity Substation	1993
79Q	202	S	Electricity Substation	1995
80Q	202	S	Electricity Substation	1991
81Q	202	S	Electricity Substation	1991
82Q	202	S	Electricity Substation	1981
83R	218	S	Electricity Substation	1995
84R	218	S	Electricity Substation	1993
85R	218	S	Electricity Substation	1991
86R	219	S	Electricity Substation	1991
87R	219	S	Electricity Substation	1981
88R	219	S	Electricity Substation	1973
89S	247	N	Electricity Substation	1953
90S	247	N	Electricity Substation	1972
91S	247	N	Electricity Substation	1986
92S	247	N	Electricity Substation	1953
93S	247	N	Electricity Substation	1984
94S	247	N	Electricity Substation	1980
95S	247	N	Electricity Substation	1991
96S	248	N	Electricity Substation	1995
97	283	NE	Electricity Substation	1972
98T	287	SE	Electricity Substation	1984
99T	287	SE	Electricity Substation	1991
100T	288	SE	Electricity Substation	1992
101T	288	SE	Electricity Substation	1991
102T	288	SE	Electricity Substation	1995
103T	290	SE	Electricity Substation	1969
104U	300	SW	Electricity Substation	1993

105U	300	SW	Electricity Substation	1991
106U	301	SW	Electricity Substation	1953
107U	301	SW	Electricity Substation	1953
108U	301	SW	Electricity Substation	1953
109U	301	SW	Electricity Substation	1973
110U	302	SW	Electricity Substation	1981
111U	302	SW	Electricity Substation	1991
112	358	W	Electricity Substation	1972
113B	370	NE	Electricity Substation	1972
114B	370	NE	Electricity Substation	1995
115B	370	NE	Electricity Substation	1992
116B	370	NE	Electricity Substation	1991
117B	370	NE	Electricity Substation	1983
118B	370	NE	Electricity Substation	1983
119B	371	NE	Electricity Substation	1991
120B	371	NE	Electricity Substation	1991
121B	371	NE	Electricity Substation	1991
122V	376	SE	Electricity Substation	1995
123V	377	SE	Electricity Substation	1992
124V	377	SE	Electricity Substation	1969
125V	379	SE	Electricity Substation	1991
126V	380	SE	Electricity Substation	1984
127V	380	SE	Electricity Substation	1991
128W	391	SW	Electricity Substation	1981
129W	391	SW	Electricity Substation	1984
130X	391	E	Electricity Substation	1991
131X	391	E	Electricity Substation	1992
132X	391	E	Electricity Substation	1995
133X	391	E	Electricity Substation	1991
134X	391	E	Electricity Substation	1969
135X	392	E	Electricity Substation	1995
136W	392	SW	Electricity Substation	1993
137W	392	SW	Electricity Substation	1991
138W	392	SW	Electricity Substation	1991
139Y	408	SE	Electricity Substation	1984
140Y	408	SE	Electricity Substation	1991
141Y	408	SE	Electricity Substation	1992
142Y	415	SE	Electricity Substation	1995
143Y	415	SE	Electricity Substation	1991
144Z	430	NW	Electricity Substation	1992
145Z	430	NW	Electricity Substation	1994
146Z	430	NW	Electricity Substation	1993
147Z	430	NW	Electricity Substation	1976
148Z	430	NW	Electricity Substation	1985
149Z	431	NW	Electricity Substation	1985
150Z	431	NW	Electricity Substation	1991

151Z	431	NW	Electricity Substation	1991
152Z	431	NW	Electricity Substation	1991
153AA	476	SE	Electricity Substation	1984
154AA	476	SE	Electricity Substation	1969
155AA	476	SE	Electricity Substation	1953
156AA	476	SE	Electricity Substation	1953
157AA	476	SE	Electricity Substation	1953
158AA	476	SE	Electricity Substation	1991
159AA	477	SE	Electricity Substation	1995
160AA	477	SE	Electricity Substation	1992
161AA	477	SE	Electricity Substation	1976
162AB	478	S	Electricity Substation	1976
163AB	478	S	Electricity Substation	1981
164AB	479	S	Electricity Substation	1991
165AB	479	S	Electricity Substation	1992
166AB	479	S	Electricity Substation	1991
167AB	479	S	Electricity Substation	

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: 0

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: 26

ID	Distance (m)	Direction	Use	Date
168AC	51	SE	Garage	1953
169AC	51	SE	Garage	1953
170AC	51	SE	Garage	1969
171AC	51	SE	Garage	1992
172AC	51	SE	Garage	1991
173AC	52	SE	Garage	1953
174AC	52	SE	Garage	1991
175AC	52	SE	Garage	1984
176AD	187	SE	Garage	1969

177AD	187	SE	Garage	1953
178AD	187	SE	Garage	1953
179AD	187	SE	Garage	1953
180AE	196	SW	Garage	1991
181AE	196	SW	Garage	1995
182AE	196	SW	Garage	1993
183AE	197	SW	Garage	1953
184AE	197	SW	Garage	1973
185AE	197	SW	Garage	1953
186AE	197	SW	Garage	1953
187AE	206	SW	Garage	1991
188AE	206	SW	Garage	1981
189AF	430	W	Garage	1953
190AF	430	W	Garage	1953
191AF	430	W	Garage	1953
192AG	471	SW	Garage	1995
193AG	471	SW	Garage	1993

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: 5














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

ID	Distance(m)	Direction	Use	Date
194AH	404	SE	Ponds	1982
195AH	404	SE	Ponds	1973
196AH	404	SE	Ponds	1996
197	440	W	Pond	1866
198AI	498	NE	Cuttings	1894

2. Environmental Permits, Incidents and Registers Map



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- | | | | | | |
|---|-------------------------------|---|--|---|---|
|  | Site Outline |  | Recorded Pollution Incident |  | RAS 3 & 4 Authorisations |
|  | Dangerous Substances (List 1) |  | Part A(1) Authorised Processes and Historic IPC Authorisations |  | Part A(2) and Part B Authorised Processes |
|  | Dangerous Substances (List 2) |  | COMAH / NIHS Sites |  | Sites Determined as Contaminated Land |
|  | Water Industry Referrals |  | Hazardous Substance Consents and Enforcements | | |
|  | Licenced Discharge Consents | | | | |
|  | Red List Discharge Consents | | | | |

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:

0

Database searched and no data found.

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

0

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

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

Database searched and no data found.

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 (m)	Direction	NGR	Details
3	305	SE	524644 181167	Address: Ken's Dry Cleaners, 193 Portobello Road, London, W11 2ED Process: Dry Cleaning Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
4	346	NW	524352 181781	Address: Spic and Span, 103 Golborne Road, London, W10 5NL Process: Dry Cleaning Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
5	397	NW	524255 181783	Address: Portobello Dry Cleaners, 343 Portobello Road, London, W10 5SA Process: Dry Cleaning Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

0

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

Database searched and no data found.

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

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site:

0

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:

2

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
1	157	W	524143.0 181348.0	Incident Date: 20-Jan-2003 Incident Identification: 132187.0 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
2	285	W	524025.0 181283.0	Incident Date: 15-Aug-2002 Incident Identification: 100367.0 Pollutant: Oils and Fuel Pollutant Description: Other Oil or Fuel Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

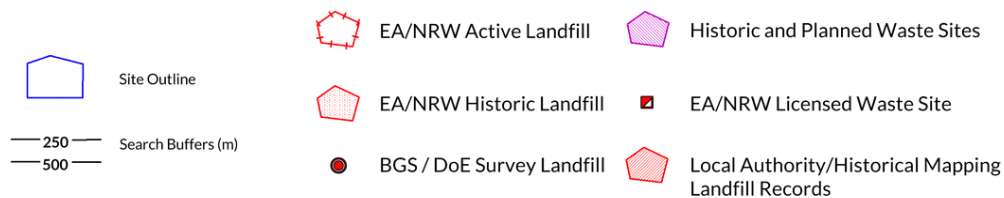
Database searched and no data found.

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

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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

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:

0

Database searched and no data found.

3.2 Other Waste Sites

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

0

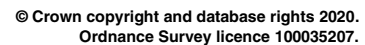
Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Details
Not shown	1316	SW	523693 180183	<p>Site Address: H & G Lorry Park, 38, Wood Lane, London, W12 7DT</p> <p>Type: Household, Commercial & Industrial Waste T Stn</p> <p>Size: >= 25000 tonnes < 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: BRI014</p> <p>EPR reference: EA/EPR/VP3296NV/S004</p> <p>Operator: Bridgemarts Ltd</p> <p>Waste Management licence No: 80047</p> <p>Annual Tonnage: 19600.0</p> <p>Issue Date: 30/06/1992</p> <p>Effective Date: 20/12/2003</p> <p>Modified: 20/12/2002</p> <p>Surrendered Date: Jul 22 2004 12:00AM</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Surrendered</p> <p>Site Name: H & G Lorry Park, Wood Lane</p> <p>Correspondence Address: -</p>



4. Current Land Uses

4.1 Current Industrial Data

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

26

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1A	32	SW	Ladbroke Grove Computer Repair	524285 181323	Ladbroke Grove, London, Greater London, W10 6HJ	Electrical Equipment Repair and Servicing	Repair and Servicing
2A	33	SW	P C Garage	524284 181322	147, Ladbroke Grove, London, Greater London, W10 6HJ	Electrical Equipment Repair and Servicing	Repair and Servicing
3	48	SE	Repairmend	524471 181361	92, Lancaster Road, London, Greater London, W11 1QS	Electrical Equipment Repair and Servicing	Repair and Servicing
4	51	NE	SITA UK Ltd	524547 181470	Portobello Road Market Office 72, Tavistock Road, London, Greater London, W11 1AN	Recycling, Reclamation and Disposal	Recycling Services
5B	53	NW	Rosie Life	524468 181511	Unit 6 Portobello Green 281, Portobello Road, London, Greater London, W10 5TZ	Clothing, Components and Accessories	Consumer Products
6B	53	NW	The Chinese Tea Company	524468 181511	Unit 14 Portobello Green 281, Portobello Road, London, Greater London, W10 5TZ	Milling, Refining and Food Additives	Foodstuffs
7	68	SW	Ladbroke Grove	524238 181331	Ladbroke Grove Station, Ladbroke Grove, London, Greater London, W10 6HJ	Underground Network Stations	Public Transport, Stations and Infrastructure
8	74	SE	Law Business Research	524417 181300	87, Lancaster Road, London, Greater London, W11 1QQ	Published Goods	Industrial Products
9C	79	N	Mobile & Computers	524278 181436	150, Ladbroke Grove, London, Greater London, W10 5NE	Electrical Equipment Repair and Servicing	Repair and Servicing
10C	79	N	Laptop Repair Guru Ltd	524278 181436	150, Ladbroke Grove, London, Greater London, W10 5NE	Electrical Equipment Repair and Servicing	Repair and Servicing
11	86	NW	Vintageyewear Optical	524452 181540	293, Portobello Road, London, Greater London, W10 5TD	Photographic and Optical Equipment	Household, Office, Leisure and Garden
12	115	S	Electricity Sub Station	524385 181243	Greater London, W11	Electrical Features	Infrastructure and Facilities
13	131	W	Bsg Garages	524170 181342	8a, Malton Road, London, Greater London, W10 5UP	Vehicle Repair, Testing and Servicing	Repair and Servicing
14	147	NE	Zendegii	524557 181595	Unit 6a 10, Acklam Road, London, Greater London,	Catering and Non Specific Food Products	Foodstuffs

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
W10 5QZ							
15	161	W	Kensington Autocare Ltd	524141 181329	10, Malton Road, London, Greater London, W10 5UP	Vehicle Repair, Testing and Servicing	Repair and Servicing
16	174	N	Electricity Sub Station	524483 181638	Greater London, W10	Electrical Features	Infrastructure and Facilities
17	190	NE	Demarquette Ltd	524583 181629	Unit 2-3 10, Acklam Road, London, Greater London, W10 5QZ	Baking and Confectionery	Foodstuffs
18	197	SE	Electricity Sub Station	524508 181209	Greater London, W11	Electrical Features	Infrastructure and Facilities
19	202	S	Electricity Sub Station	524268 181149	Greater London, W11	Electrical Features	Infrastructure and Facilities
20	214	SW	Andrews Garage Ltd	524113 181255	22, St Mark's Road, London, Greater London, W11 1UF	Petrol and Fuel Stations	Road and Rail
21	216	S	Electricity Sub Station	524357 181135	Greater London, W11	Electrical Features	Infrastructure and Facilities
22	217	E	Portobello Music	524718 181412	13, All Saints Road, London, Greater London, W11 1HA	Sports and Leisure Equipment Repair	Repair and Servicing
23D	223	E	Revival Upholstery	524726 181456	22, All Saints Road, London, Greater London, W11 1HG	Furniture	Consumer Products
24D	226	E	Pret a Vivre	524729 181451	20, All Saints Road, London, Greater London, W11 1HG	Curtains and Blinds	Consumer Products
25	237	N	Eco Valeting Express	524221 181583	188, Ladbroke Grove, London, Greater London, W10 5LZ	Vehicle Cleaning Services	Personal, Consumer and Other Services
26	244	E	Powervibe Fitness Studios	524737 181373	1, All Saints Road, London, Greater London, W11 1HA	Special Purpose Machinery and Equipment	Industrial Products

4.2 Petrol and Fuel Sites

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

1

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

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
27	250	SW	524083 181233	POWER	22, St Marks Road, Notting Hill, London, Inner London, W11 1RE	No	Open

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:

0

Database searched and no data found.

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:

0

Database searched and no data found.

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

Database searched and no data found.

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

5.3 Bedrock and Solid Geology

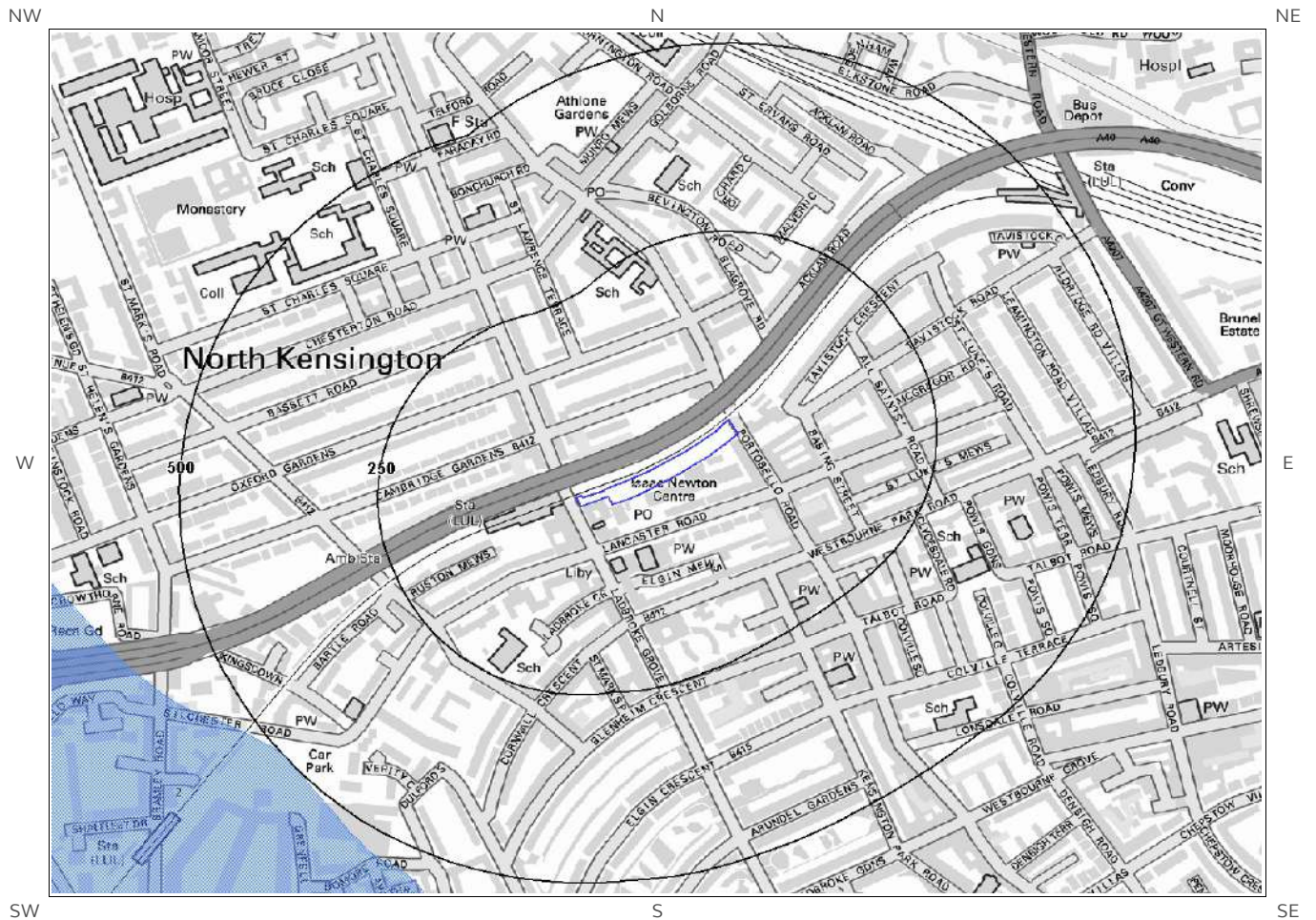
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
LC-XCZS	LONDON CLAY FORMATION	CLAY, SILT AND SAND

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

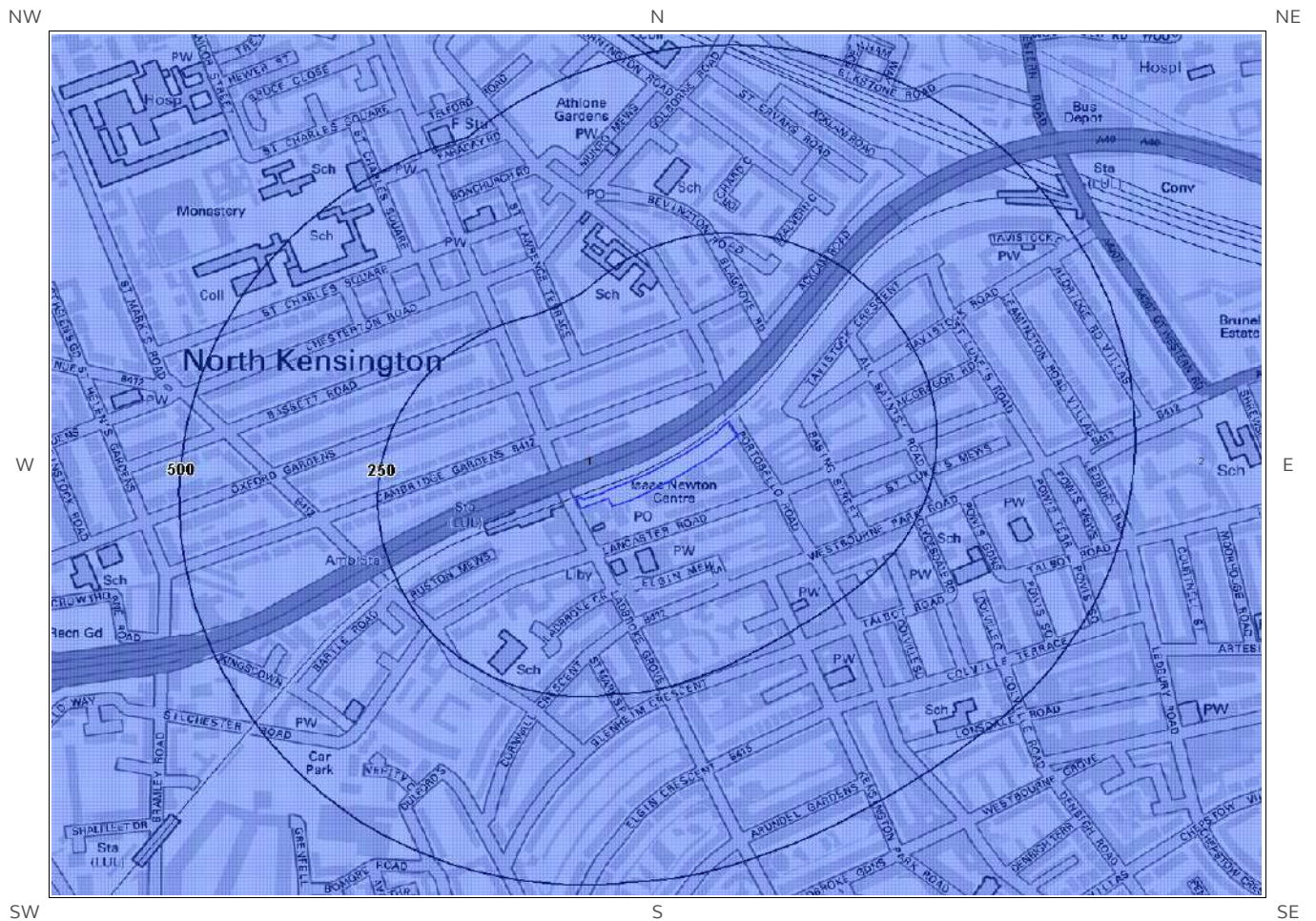
6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



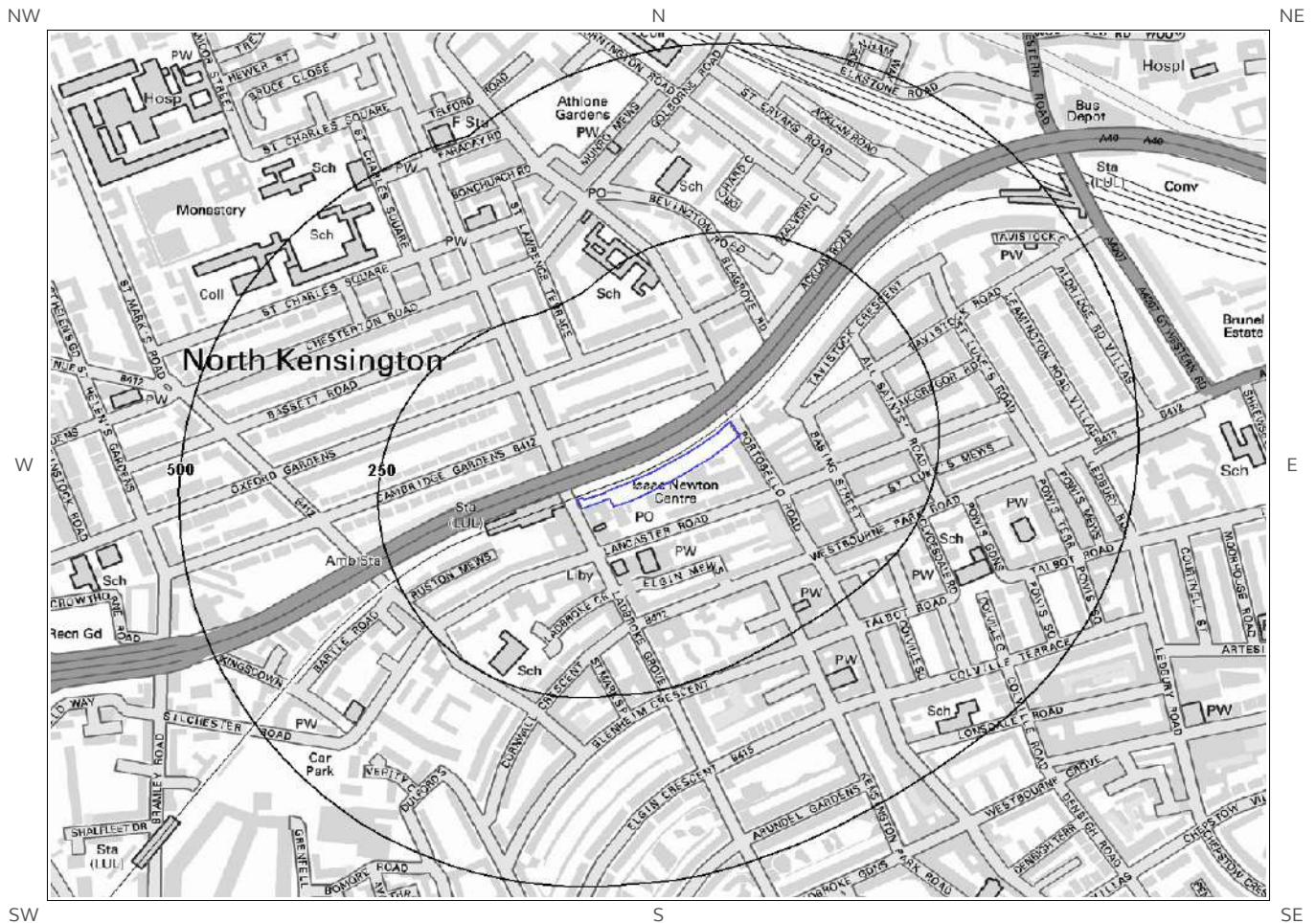
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6b. Aquifer Within Bedrock Geology and Abstraction Licences

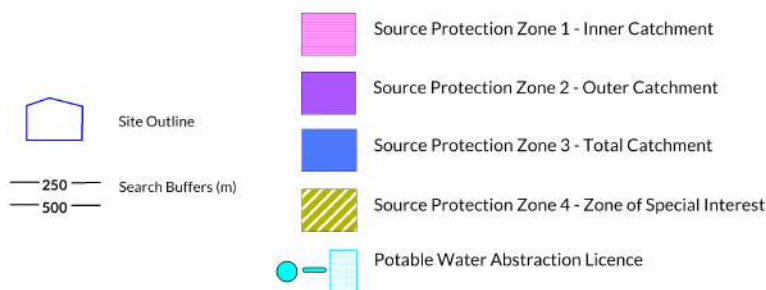


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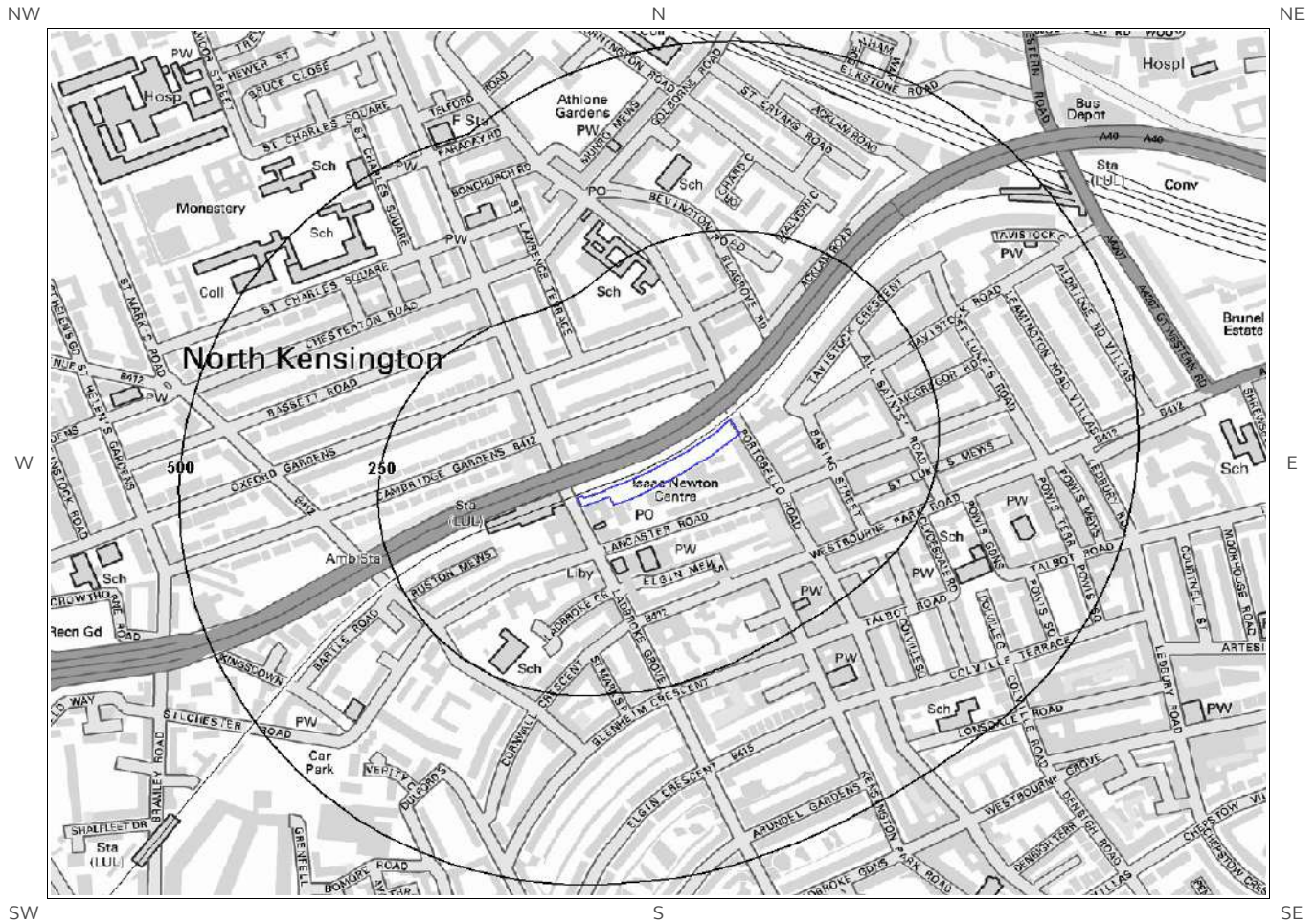
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



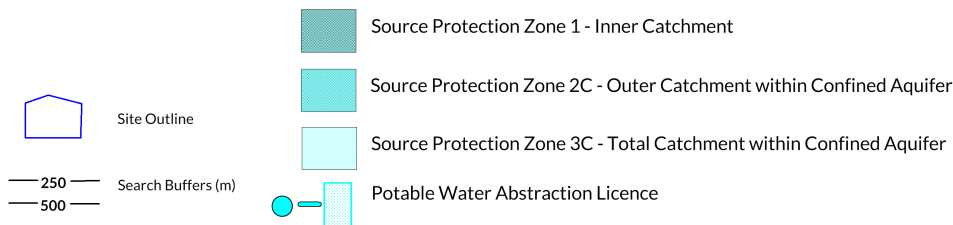
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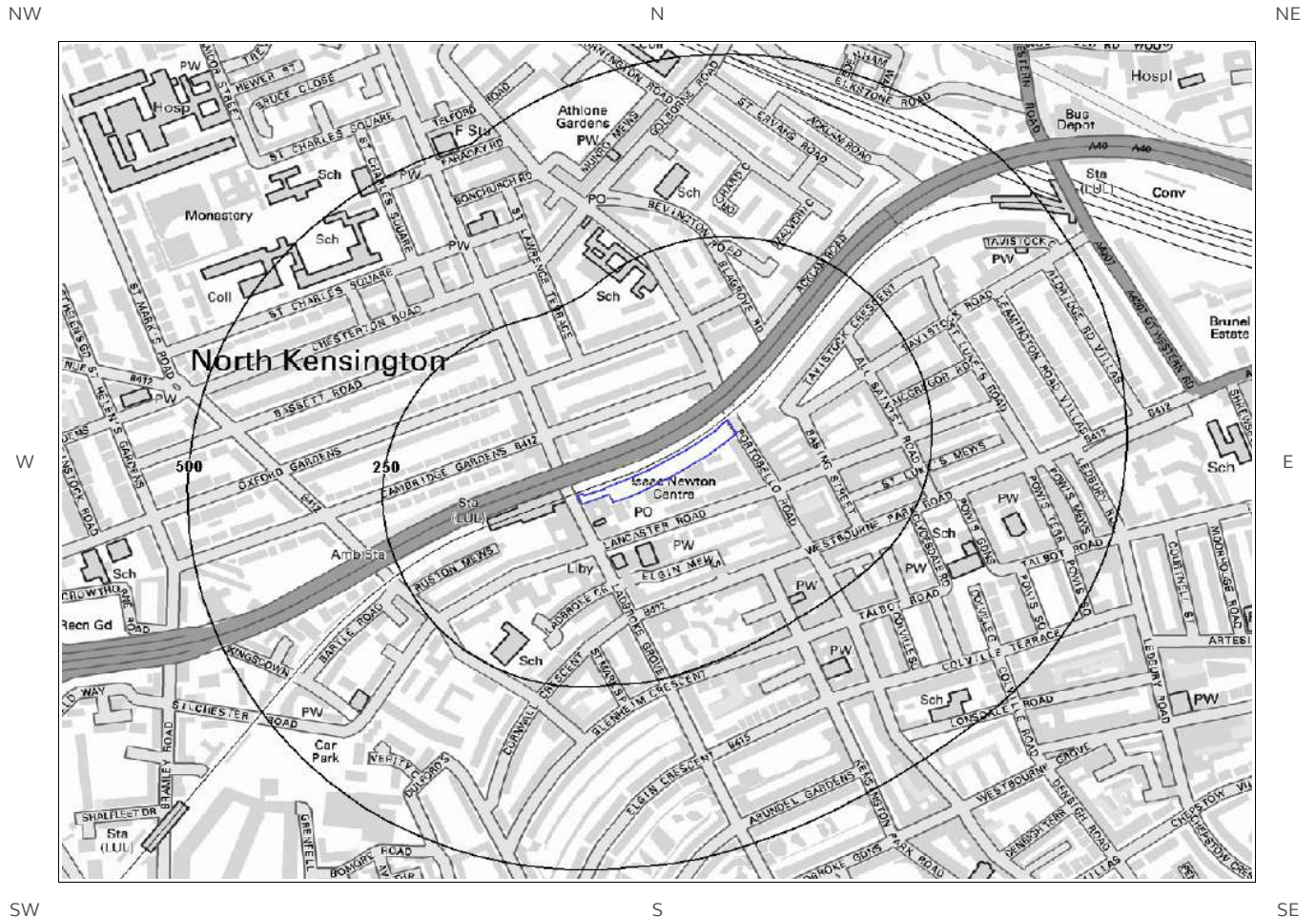
6d. Hydrogeology – Source Protection Zones within confined aquifer



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6e. Hydrology – Watercourse Network and River Quality



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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	Distance (m)	Direction	Designation	Description
2	500	SW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

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	Distance (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	496	E	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 (m)	Direction	NGR	Details
Not shown	752	SE	524703 180685	Status: Active Licence No: TH/039/0039/024/R01 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: BOREHOLE-NOTTING HILL LONDON Data Type: Point Name: Cohen Annual Volume (m ³): 36,500 Max Daily Volume (m ³): 200 Original Application No: - Original Start Date: 01/04/2019 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 01/04/2019 Version End Date:
Not shown	752	SE	524703 180685	Status: Historical Licence No: TH/039/0039/024 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: BOREHOLE-NOTTING HILL LONDON Data Type: Point Name: Cohen Annual Volume (m ³): 73,000 Max Daily Volume (m ³): 200 Original Application No: - Original Start Date: 24/05/2010 Expiry Date: 31/03/2019 Issue No: 1 Version Start Date: 24/05/2010 Version End Date:
Not shown	1023	W	523285 181229	Status: Active Licence No: TH/039/0039/083 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT IMPERIAL COLLEGE WEST (BLOCK C) Data Type: Point Name: Imperial College of Science, Technology and Medicine Annual Volume (m ³): 213,442 Max Daily Volume (m ³): 2,172 Original Application No: - Original Start Date: 29/06/2016 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 29/06/2016 Version End Date:
Not shown	1634	E	526131 181594	Status: Historical Licence No: TH/039/0039/070 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: THE NOVOTEL, 3 KINGDOM ST, PADDINGTON, LONDON, W2 - BOREHOLE Data Type: Point Name: ACCOR UK BUSINESS & LEISURE HOTELS LIMITED Annual Volume (m ³): 70,000 Max Daily Volume (m ³): 390 Original Application No: - Original Start Date: 20/06/2013 Expiry Date: 31/03/2019 Issue No: 2 Version Start Date: 20/06/2013 Version End Date:
Not shown	1723	E	526220 181590	Status: Historical Licence No: 28/39/39/0237 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: THE NOVOTEL, 3 KINGDOM ST, PADDINGTON, LONDON, W2 - BOREHOLE Data Type: Point Name: ACCOR UK BUSINESS & LEISURE HOTELS LIMITED Annual Volume (m ³): 70,000 Max Daily Volume (m ³): 390 Original Application No: - Original Start Date: 18/12/2008 Expiry Date: 31/03/2013 Issue No: 1 Version Start Date: 18/12/2008 Version End Date:
Not shown	1757	SE	525680 180139	Status: Active Licence No: TH/039/0039/092 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: KENSINGTON PARK GARDENS - BH A Data Type: Point Name: KPG, LLC Annual Volume (m ³): 27,700 Max Daily Volume (m ³): 166 Original Application No: - Original Start Date: 17/01/2014 Expiry Date: 31/03/2025 Issue No: 2 Version Start Date: 21/07/2014 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1757	SE	525680 180139	Status: Active Licence No: TH/039/0039/092 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KENSINGTON PARK GARDENS - BH A Data Type: Point Name: KPG, LLC	Annual Volume (m³): 27,700 Max Daily Volume (m³): 166 Original Application No: - Original Start Date: 17/01/2014 Expiry Date: 31/03/2025 Issue No: 2 Version Start Date: 21/07/2014 Version End Date:
Not shown	1776	W	522526 181262	Status: Active Licence No: TH/039/0039/033/R01 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT IMPERIAL COLLEGE HAMMERSMITH CAMPUS Data Type: Point Name: IMPERIAL COLLEGE LONDON	Annual Volume (m³): 214,434 Max Daily Volume (m³): 951 Original Application No: - Original Start Date: 05/06/2019 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 05/06/2019 Version End Date:
Not shown	1776	W	522526 181262	Status: Historical Licence No: TH/039/0039/033 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT IMPERIAL COLLEGE HAMMERSMITH CAMPUS Data Type: Point Name: IMPERIAL COLLEGE LONDON	Annual Volume (m³): 240,451 Max Daily Volume (m³): 951 Original Application No: - Original Start Date: 22/12/2010 Expiry Date: 31/03/2019 Issue No: 1 Version Start Date: 22/12/2010 Version End Date:
Not shown	1845	W	522455 181382	Status: Active Licence No: TH/039/0039/104 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT HAMMERSMITH HOSPITAL, DUCANE ROAD, LONDON Data Type: Point Name: IMPERIAL COLLEGE HEALTHCARE NHS TRUST	Annual Volume (m³): 300,000 Max Daily Volume (m³): 1,000 Original Application No: - Original Start Date: 13/10/2014 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 13/10/2014 Version End Date:
Not shown	1850	W	522450 181380	Status: Historical Licence No: 28/39/39/0198 Details: General use relating to Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT HAMMERSMITH HOSPITAL, LONDON W12 Data Type: Point Name: THE HAMMERSMITH HOSPITAL NHS TRUST	Annual Volume (m³): 356,870 Max Daily Volume (m³): - Original Application No: - Original Start Date: - Expiry Date: 31/12/2009 Issue No: 1 Version Start Date: 05/03/2001 Version End Date:
Not shown	1850	W	522450 181380	Status: Historical Licence No: 28/39/39/0198 Details: Potable Water Supply - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT HAMMERSMITH HOSPITAL, LONDON W12 Data Type: Point Name: ENVIRO-LOGIC LIMITED	Annual Volume (m³): 356,870 Max Daily Volume (m³): - Original Application No: - Original Start Date: 05/03/2001 Expiry Date: 31/12/2009 Issue No: 4 Version Start Date: 01/04/2003 Version End Date:
Not shown	1850	W	522450 181380	Status: Historical Licence No: 28/39/39/0198 Details: Potable Water Supply - Direct Direct Source: THAMES GROUNDWATER Point: HAMMERSMITH HOSPITAL, LONDON W12- BOREHOLE A Data Type: Point Name: ENVIRO-LOGIC LIMITED	Annual Volume (m³): 356,870 Max Daily Volume (m³): - Original Application No: - Original Start Date: 05/03/2001 Expiry Date: 31/12/2009 Issue No: 4 Version Start Date: 01/04/2003 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1850	W	522450 181380	Status: Historical Licence No: 28/39/39/0198 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: HAMMERSMITH HOSPITAL, LONDON W12- BOREHOLE A Data Type: Point Name: IMPERIAL COLLEGE HEALTH CARE NHS TRUST	Annual Volume (m³): 356,870 Max Daily Volume (m³): - Original Application No: - Original Start Date: 05/03/2001 Expiry Date: 31/12/2009 Issue No: 6 Version Start Date: 21/01/2008 Version End Date:
Not shown	1850	W	522450 181380	Status: Historical Licence No: 28/39/39/0198 Details: General use relating to Secondary Category (Medium Loss) Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT HAMMERSMITH HOSPITAL, LONDON W12 Data Type: Point Name: THE HAMMERSMITH HOSPITAL NHS TRUST	Annual Volume (m³): 356,870 Max Daily Volume (m³): - Original Application No: - Original Start Date: - Expiry Date: 31/12/2009 Issue No: 1 Version Start Date: 05/03/2001 Version End Date:
Not shown	1886	SE	526216 180654	Status: Historical Licence No: TH/039/0039/079 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: LANCASTER GATE - ABSTRACTION BOREHOLE 4 Data Type: Point Name: The Lancasters Management Limited	Annual Volume (m³): 352,000 Max Daily Volume (m³): 3,024 Original Application No: - Original Start Date: 06/08/2013 Expiry Date: 31/03/2019 Issue No: 2 Version Start Date: 06/07/2016 Version End Date:
Not shown	1886	SE	526216 180654	Status: Historical Licence No: TH/039/0039/002 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: LANCASTER GATE - ABSTRACTION BOREHOLE 4 Data Type: Point Name: LANCASTER GATE (HYDE PARK) LTD	Annual Volume (m³): 352,000 Max Daily Volume (m³): 3,024 Original Application No: - Original Start Date: 09/04/2009 Expiry Date: 31/03/2013 Issue No: 2 Version Start Date: 30/06/2009 Version End Date:
Not shown	1886	SE	526216 180654	Status: Active Licence No: TH/039/0039/079/R01 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: LANCASTER GATE - ABSTRACTION BOREHOLE 4 Data Type: Point Name: The Lancasters Management Limited	Annual Volume (m³): 352,000 Max Daily Volume (m³): 3,024 Original Application No: - Original Start Date: 01/04/2019 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 01/04/2019 Version End Date:
Not shown	1886	SE	526216 180654	Status: Historical Licence No: TH/039/0039/002 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: LANCASTER GATE - ABSTRACTION BOREHOLE 4 Data Type: Point Name: LANCASTER GATE (HYDE PARK) LTD	Annual Volume (m³): 352,000 Max Daily Volume (m³): 3,024 Original Application No: - Original Start Date: 09/04/2009 Expiry Date: 31/03/2013 Issue No: 3 Version Start Date: 20/01/2012 Version End Date:
Not shown	1894	E	526390 181280	Status: Historical Licence No: 28/39/39/0218 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: 40 EASTBOURNE TERRACE- BOREHOLE B Data Type: Point Name: Westlink Global Investments Limited	Annual Volume (m³): 527,500 Max Daily Volume (m³): 1,994 Original Application No: - Original Start Date: 07/11/2005 Expiry Date: 31/03/2013 Issue No: 3 Version Start Date: 09/12/2009 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1894	E	526390 181280	Status: Historical Licence No: 28/39/39/0218 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: 40 EASTBOURNE TERRACE- BOREHOLE B Data Type: Point Name: Britel Fund Trustees Limited	Annual Volume (m³): 527,500 Max Daily Volume (m³): 1,994 Original Application No: - Original Start Date: 07/11/2005 Expiry Date: 31/03/2013 Issue No: 5 Version Start Date: 06/01/2012 Version End Date:
Not shown	1894	SE	526226 180656	Status: Historical Licence No: TH/039/0039/002 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: LANCASTER GATE - ABSTRACTION BOREHOLE 3 Data Type: Point Name: LANCASTER GATE (HYDE PARK) LTD	Annual Volume (m³): 352,000 Max Daily Volume (m³): 3,024 Original Application No: - Original Start Date: 09/04/2009 Expiry Date: 31/03/2013 Issue No: 2 Version Start Date: 30/06/2009 Version End Date:
Not shown	1894	SE	526226 180656	Status: Historical Licence No: TH/039/0039/079 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: LANCASTER GATE - ABSTRACTION BOREHOLE 3 Data Type: Point Name: The Lancasters Management Limited	Annual Volume (m³): 352,000 Max Daily Volume (m³): 3,024 Original Application No: - Original Start Date: 06/08/2013 Expiry Date: 31/03/2019 Issue No: 2 Version Start Date: 06/07/2016 Version End Date:
Not shown	1894	SE	526226 180656	Status: Historical Licence No: TH/039/0039/002 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: LANCASTER GATE - ABSTRACTION BOREHOLE 3 Data Type: Point Name: LANCASTER GATE (HYDE PARK) LTD	Annual Volume (m³): 352,000 Max Daily Volume (m³): 3,024 Original Application No: - Original Start Date: 09/04/2009 Expiry Date: 31/03/2013 Issue No: 3 Version Start Date: 20/01/2012 Version End Date:
Not shown	1894	SE	526226 180656	Status: Active Licence No: TH/039/0039/079/R01 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: LANCASTER GATE - ABSTRACTION BOREHOLE 3 Data Type: Point Name: The Lancasters Management Limited	Annual Volume (m³): 352,000 Max Daily Volume (m³): 3,024 Original Application No: - Original Start Date: 01/04/2019 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 01/04/2019 Version End Date:
Not shown	1911	E	526410 181310	Status: Historical Licence No: 28/39/39/0218 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: 40 EASTBOURNE TERRACE- BOREHOLE A Data Type: Point Name: Westlink Global Investments Limited	Annual Volume (m³): 527,500 Max Daily Volume (m³): 1,994 Original Application No: - Original Start Date: 07/11/2005 Expiry Date: 31/03/2013 Issue No: 3 Version Start Date: 09/12/2009 Version End Date:
Not shown	1911	E	526410 181310	Status: Historical Licence No: 28/39/39/0218 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: 40 EASTBOURNE TERRACE- BOREHOLE A Data Type: Point Name: Britel Fund Trustees Limited	Annual Volume (m³): 527,500 Max Daily Volume (m³): 1,994 Original Application No: - Original Start Date: 07/11/2005 Expiry Date: 31/03/2013 Issue No: 5 Version Start Date: 06/01/2012 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1930	E	526430 181330	<p>Status: Historical Licence No: 28/39/39/0235 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: 20 EASTBOURNE TERRACE, PADDINGTON, LONDON - BOREHOLE Data Type: Point Name: LAND SECURITIES PROPERTIES LIMITED</p> <p>Annual Volume (m³): 30,750 Max Daily Volume (m³): 205 Original Application No: - Original Start Date: 22/04/2008 Expiry Date: 31/03/2013 Issue No: 1 Version Start Date: 22/04/2008 Version End Date:</p>
Not shown	1930	E	526430 181323	<p>Status: Active Licence No: TH/039/0039/071 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: THAMES GROUNDWATER Point: 20 EASTBOURNE TERRACE, PADDINGTON, LONDON - BOREHOLE Data Type: Point Name: LAND SECURITIES PROPERTIES LIMITED</p> <p>Annual Volume (m³): 10,000 Max Daily Volume (m³): 205 Original Application No: - Original Start Date: 18/04/2013 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 18/04/2013 Version End Date:</p>

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

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	Distance (m)	Direction	NGR	Details
Not shown	1850	W	522450 181380	<p>Status: Historical Licence No: 28/39/39/0198 Details: Potable Water Supply - Direct Direct Source: THAMES GROUNDWATER Point: HAMMERSMITH HOSPITAL, LONDON W12- BOREHOLE A Data Type: Point Name: ENVIRO-LOGIC LIMITED</p> <p>Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 05/03/2001 Expiry Date: 31/12/2009 Issue No: 4 Version Start Date: Version End Date:</p>
Not shown	1850	W	522450 181380	<p>Status: Historical Licence No: 28/39/39/0198 Details: Potable Water Supply - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT HAMMERSMITH HOSPITAL, LONDON W12 Data Type: Point Name: ENVIRO-LOGIC LIMITED</p> <p>Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: 05/03/2001 Expiry Date: 31/12/2009 Issue No: 4 Version Start Date: Version End Date:</p>
Not shown	1894	E	526390 181280	<p>Status: Historical Licence No: 28/39/39/0218</p> <p>Annual Volume (m³): 527,500 Max Daily Volume (m³): 1,994</p>

ID	Distance (m)	Direction	NGR	Details
				<p>Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services</p> <p>Direct Source: THAMES GROUNDWATER Point: 40 EASTBOURNE TERRACE- BOREHOLE B</p> <p>Data Type: Point</p> <p>Name: Westlink Global Investments Limited</p> <p>Original Application No: - Original Start Date: 07/11/2005 Expiry Date: 31/03/2013 Issue No: 3 Version Start Date: Version End Date:</p>
Not shown	1911	E	526410 181310	<p>Status: Historical</p> <p>Licence No: 28/39/39/0218</p> <p>Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services</p> <p>Direct Source: THAMES GROUNDWATER Point: 40 EASTBOURNE TERRACE- BOREHOLE A</p> <p>Data Type: Point</p> <p>Name: Westlink Global Investments Limited</p> <p>Annual Volume (m³): 527,500 Max Daily Volume (m³): 1,994 Original Application No: - Original Start Date: 07/11/2005 Expiry Date: 31/03/2013 Issue No: 3 Version Start Date: Version End Date:</p>
Not shown	1930	E	526430 181330	<p>Status: Historical</p> <p>Licence No: 28/39/39/0235</p> <p>Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services</p> <p>Direct Source: THAMES GROUNDWATER Point: 20 EASTBOURNE TERRACE, PADDINGTON, LONDON - BOREHOLE</p> <p>Data Type: Point</p> <p>Name: LAND SECURITIES PROPERTIES LIMITED</p> <p>Annual Volume (m³): 30,750 Max Daily Volume (m³): 205 Original Application No: - Original Start Date: 22/04/2008 Expiry Date: 31/03/2013 Issue No: 1 Version Start Date: Version End Date:</p>
Not shown	1930	E	526430 181323	<p>Status: Active</p> <p>Licence No: TH/039/0039/071</p> <p>Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services</p> <p>Direct Source: THAMES GROUNDWATER Point: 20 EASTBOURNE TERRACE, PADDINGTON, LONDON - BOREHOLE</p> <p>Data Type: Point</p> <p>Name: LAND SECURITIES PROPERTIES LIMITED</p> <p>Annual Volume (m³): 10,000 Max Daily Volume (m³): 205 Original Application No: - Original Start Date: 18/04/2013 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: Version End Date:</p>

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

None identified

Database searched and no data found.

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 None identified

Database searched and no data found.

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:

Database searched and no data found.

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.

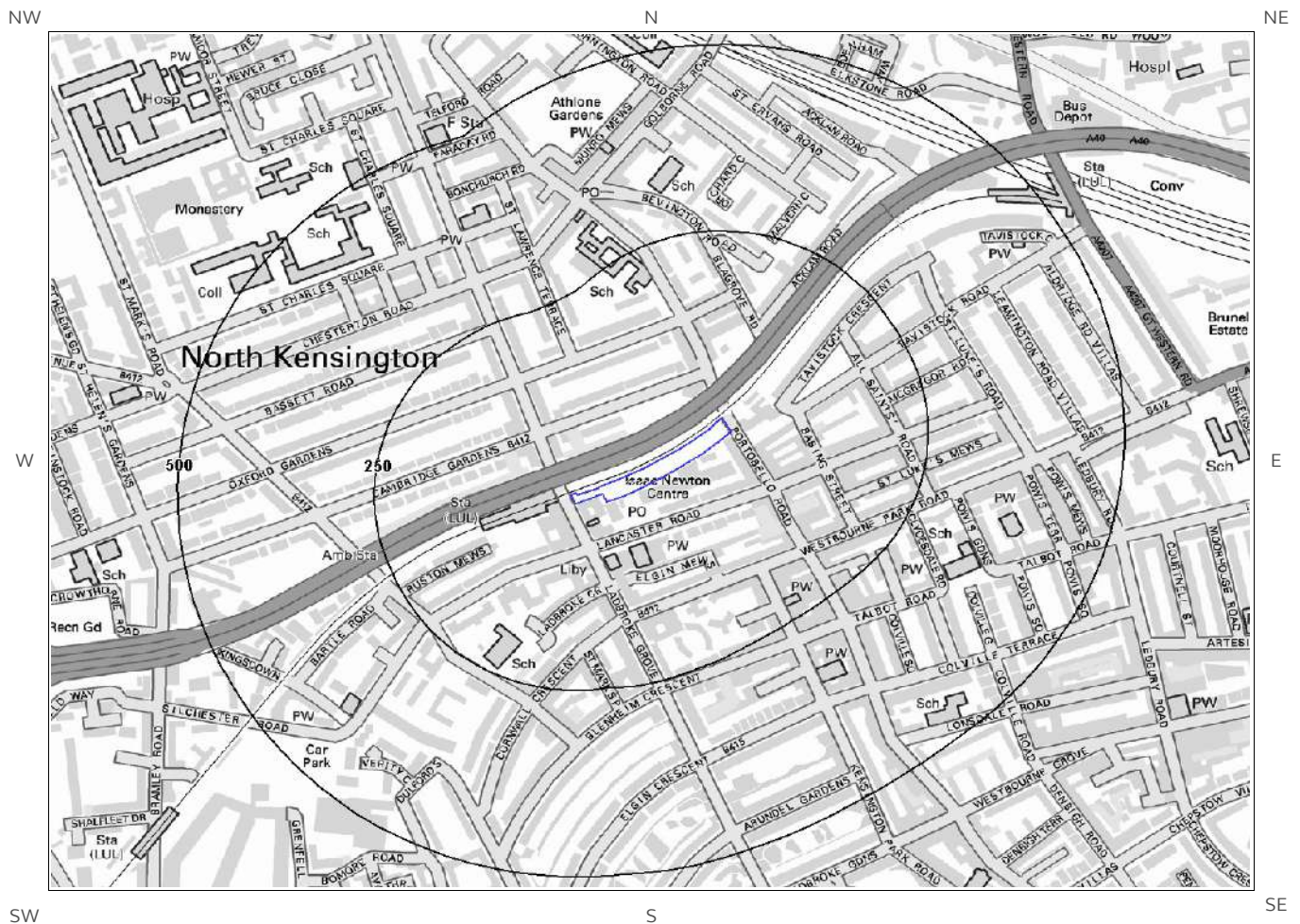
6.11 Surface Water Features

Surface water features within 250m of the study site

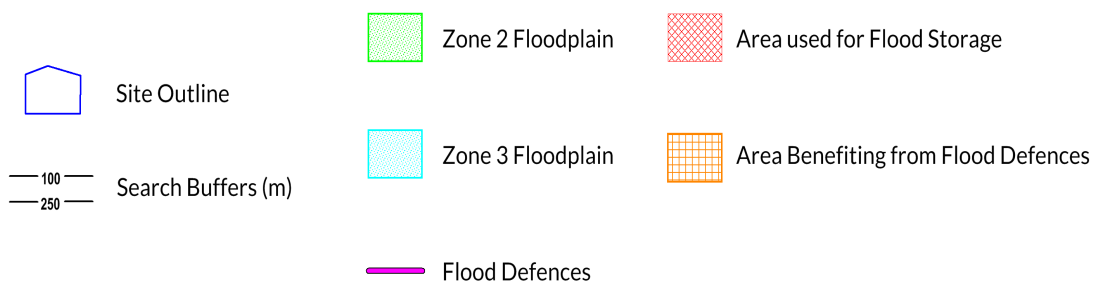
None identified

Database searched and no data found.

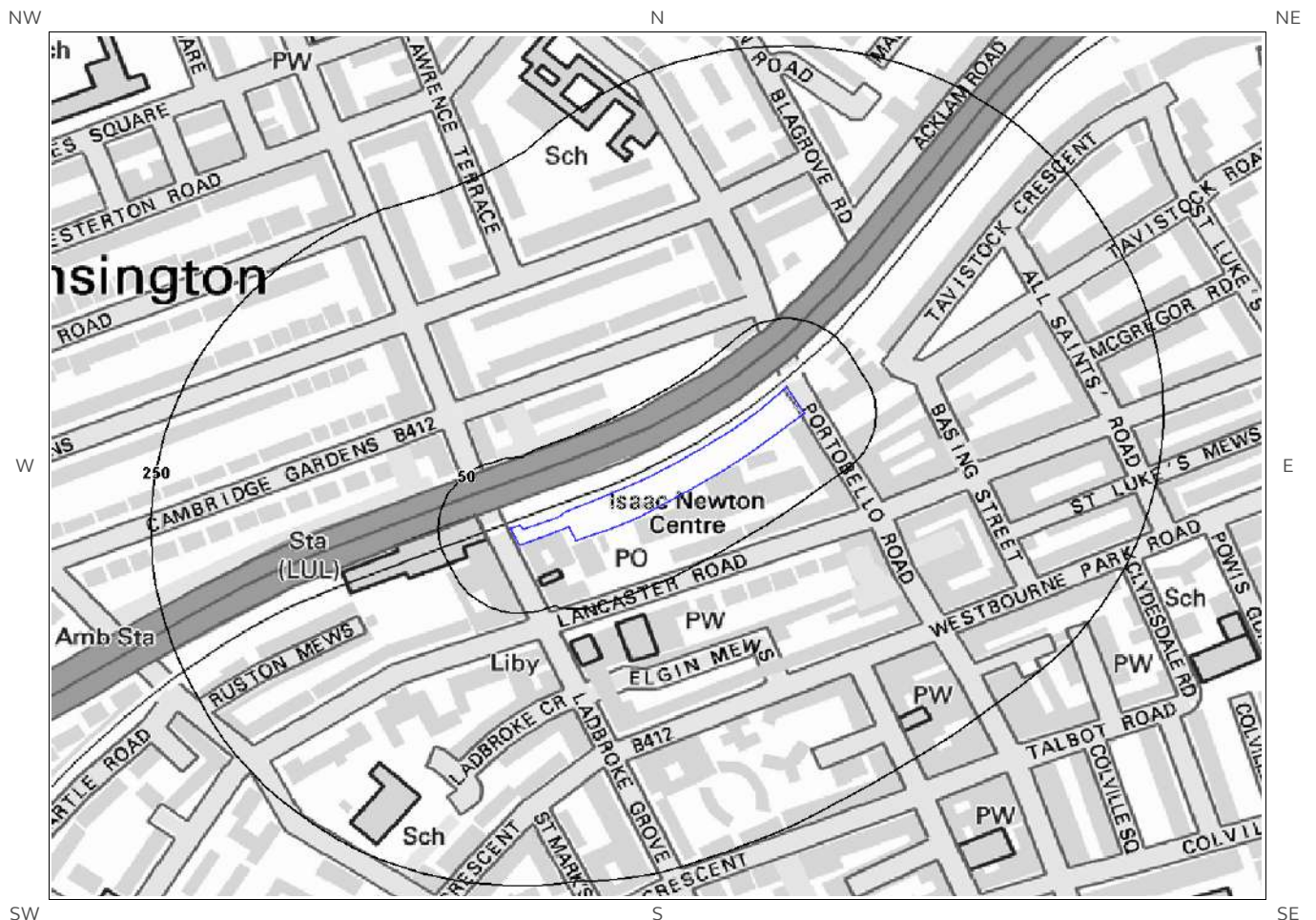
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



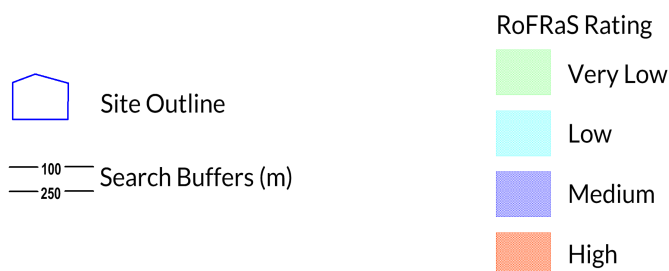
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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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 Very Low

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 None identified
Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site None identified

7.6 Areas benefiting from Flood Storage

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

None identified

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

None identified

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

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

7.8 Groundwater Flooding Confidence Areas

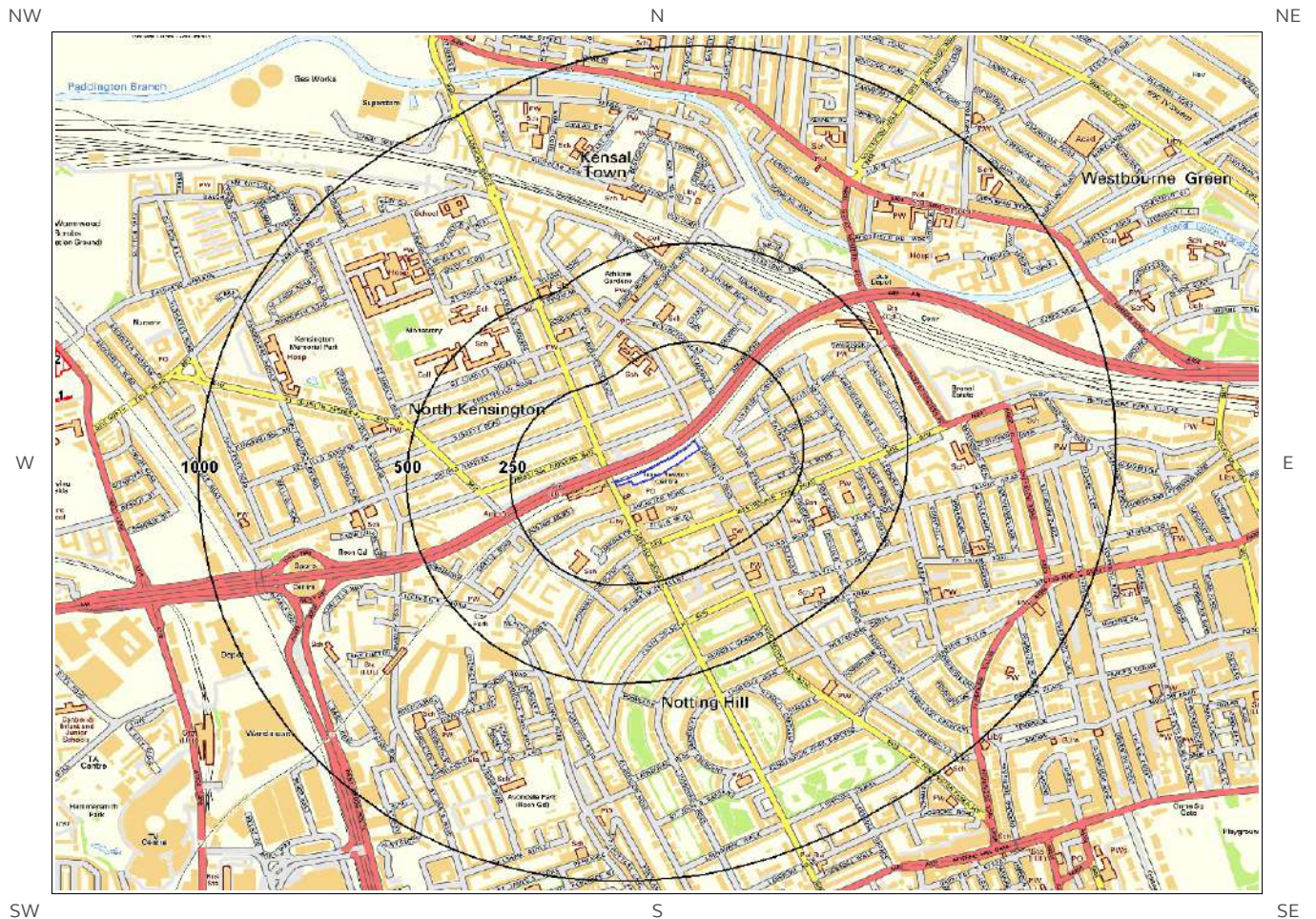
British Geological Survey confidence rating in this result

Not Applicable

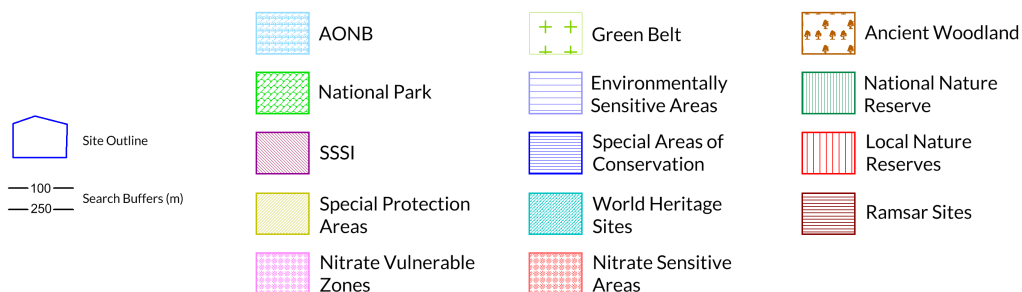
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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



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8. Designated Environmentally Sensitive Sites

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

3

The following Local Nature Reserve (LNR) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	LNR Name	Data Source
1	1322	W	Wormwood Scrubs	Natural England
2	1337	W	Wormwood Scrubs	Natural England
Not shown	1958	W	Wormwood Scrubs	Natural England

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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 Moderate

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 Very Low

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

Hazard
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.

9.1.3 Soluble Rocks

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

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

Hazard
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.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site

Negligible

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

Hazard
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.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site

Very Low

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

Hazard
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

Very Low

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.

* This indicates an automatically generated 50m buffer and site.

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

None identified

Database searched and no data found.

10.2 Non-Coal Mining

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

None identified

Database searched and no data found.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site

None identified

Guidance: No Guidance Required.

Contact Details

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

British Geological Survey Enquiries

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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: www.environment-agency.gov.uk

Email: enquiries@environment-agency.gov.uk

Public Health England

Public information access office
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www.gov.uk/phe

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www.coal.gov.uk

Ordnance Survey

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Local Authority

Authority: Royal Borough of Kensington and Chelsea
Phone: 020 7361 3000

Web: <http://www.rbkc.gov.uk/>

Address: The Town Hall, Hornton Street, London, W8 7NX

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**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL



**Environment
Agency**



**Public Health
England**



**The Coal
Authority**



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<https://www.groundsure.com/terms-and-conditions-jan-2020/>

Arcadis Consulting UK Ltd

Arcadis CONSULTING UK LTD, THE PITHAY,
BRISTOL, BS1 2NL

Groundsure
Reference:

GS-6578280

Your Reference: 14034794

Report Date

28 Jan 2020

Report Delivery
Method:

Email - pdf

Geo Insight

Address: BRIDGE, LADBROKE GROVE, LONDON, W10 6HJ

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,



Managing Director
Groundsure Limited

Enc.
Groundsure Geo Insight

Address: BRIDGE, LADBROKE GROVE, LONDON, W10 6HJ

Date: 28 Jan 2020

Reference: GS-6578280

Client: Arcadis Consulting UK Ltd



Aerial Photograph Capture date: 07-Jun-2015
Grid Reference: 524372,181377
Site Size: 0.4455ha

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental 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 Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	No
	1.2.2 Are there any records of landslide within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	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: Geology 1:50,000 Scale

2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	No
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	No
	2.2.3 Are there any records of landslide within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features

2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.

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

Yes

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

No

Section 3: Radon

3. Radon

3.1 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?

The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

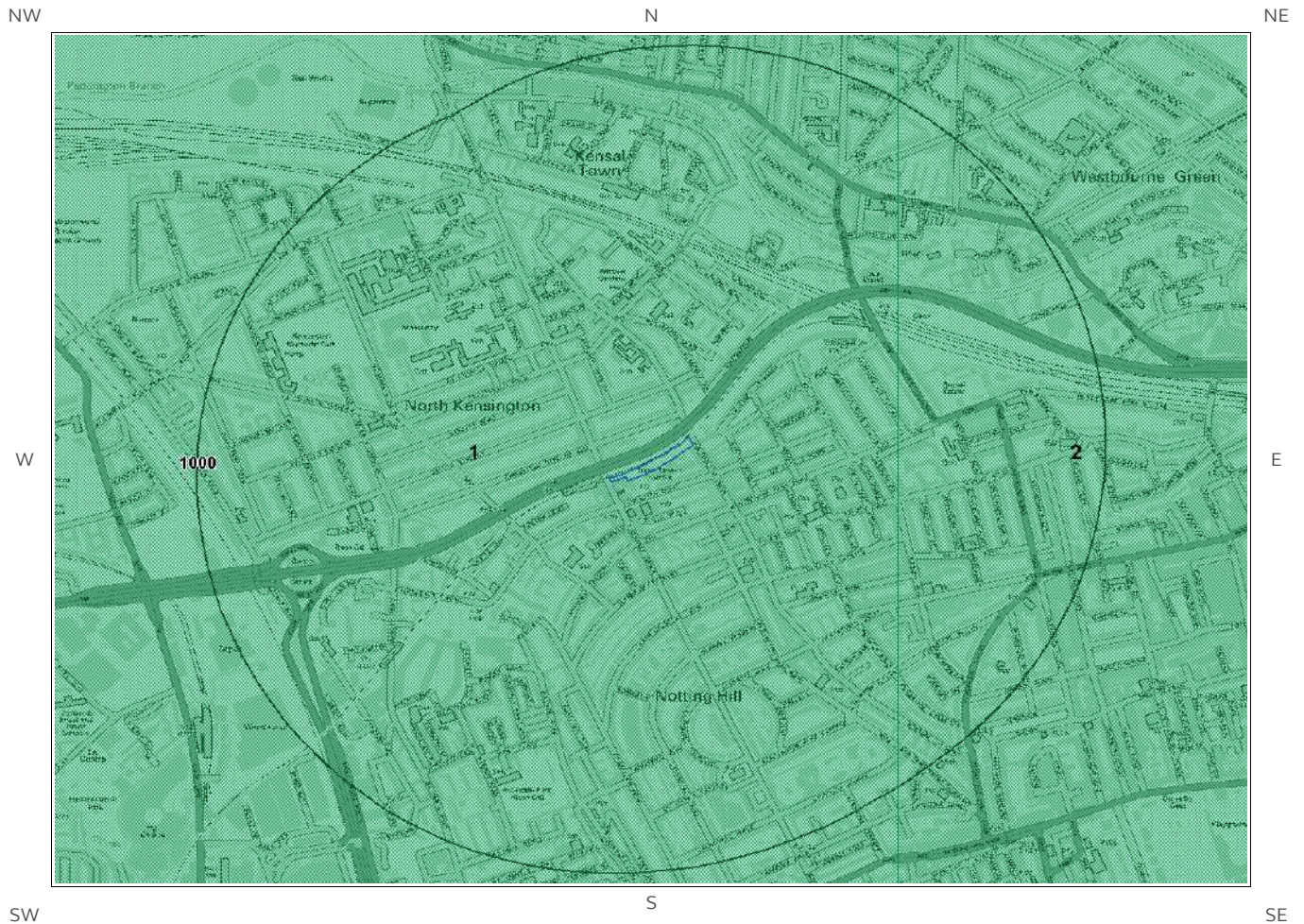
	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	0	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	11

Section 5: Mining, Extraction & Natural Cavities

	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	0	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	0	0	0	0	0
5.4 Non-Coal Mining*	0	0	0	0	0
5.5 Non-Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

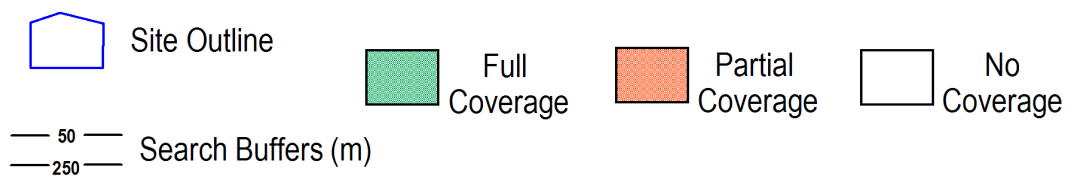
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Cornwall and Devon Metalliferous Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Moderate				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Negligible				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Very Low				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	0	10	35		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	2	2	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	2	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	7	21	1	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	0	Not Searched	
9.5 Railway Projects	0	0	0	1	

1:10,000 Scale Availability



1_10,000 Availability Legend

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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 Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	No coverage
2	496.0	Some deposits are mapped	Full	Full	No coverage
N3	1348.0	Some deposits are mapped	Full	Full	No coverage
N4	1498.0	Some deposits are mapped	Full	Full	No coverage

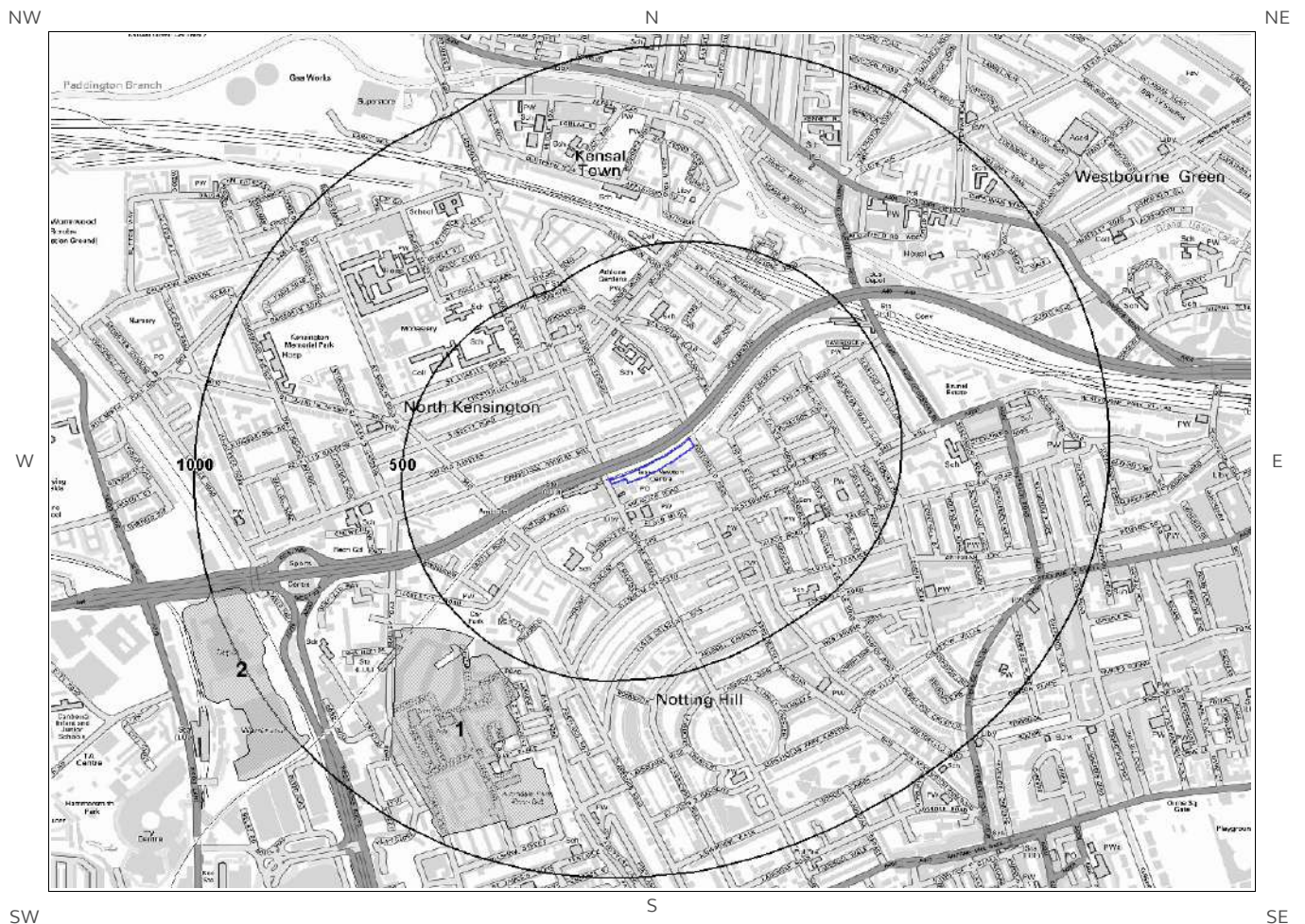
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not 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 mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been 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

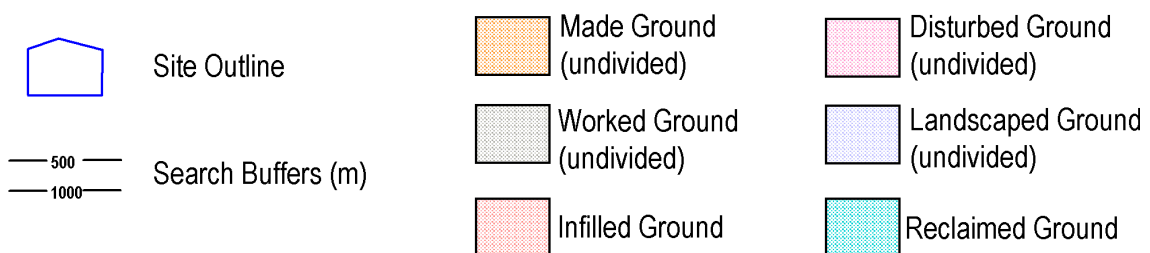
1 Geology (1:10,000 scale).

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



Artificial Ground Legend

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1. Geology 1:10,000 scale

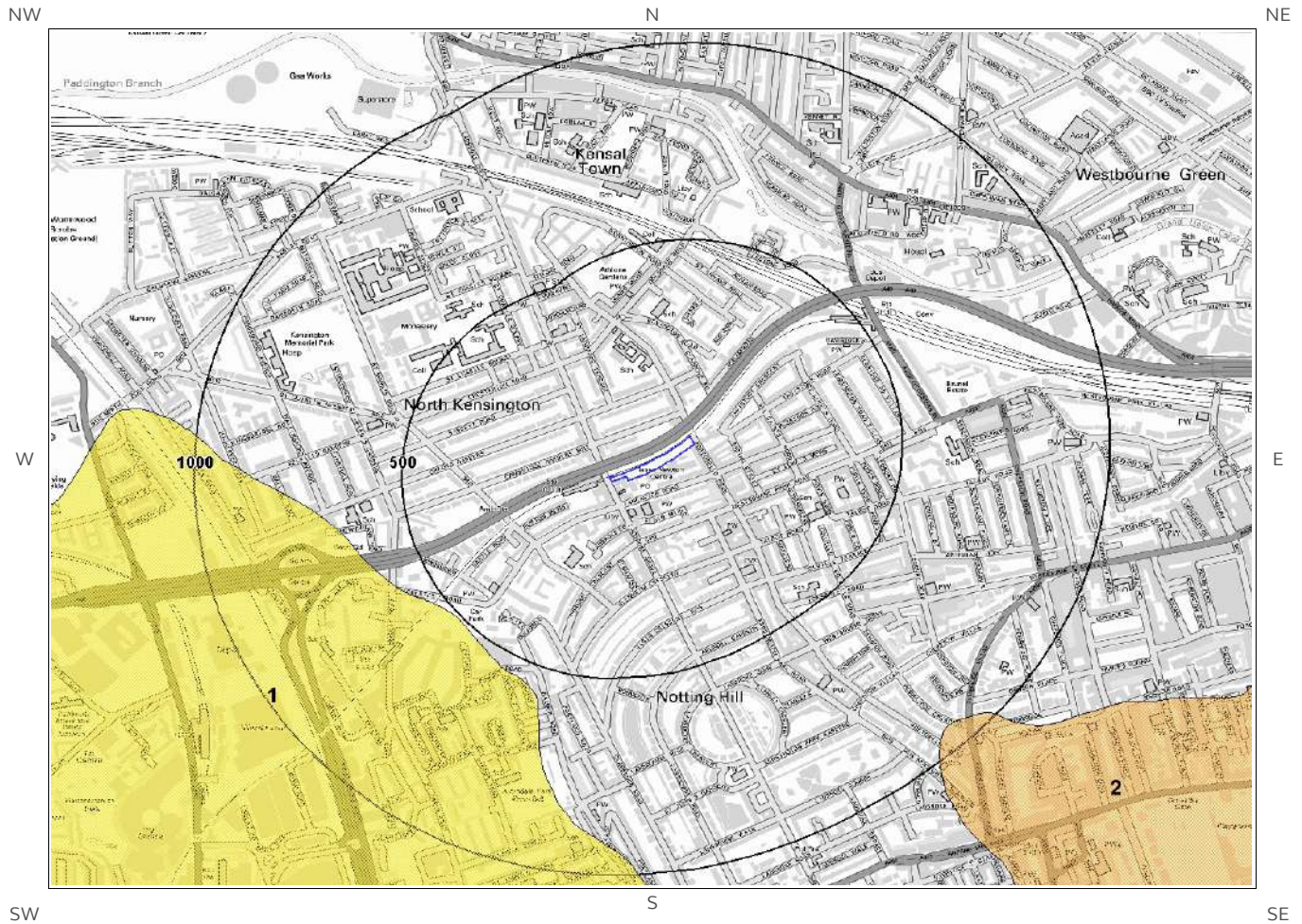
1.1 Artificial Ground

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

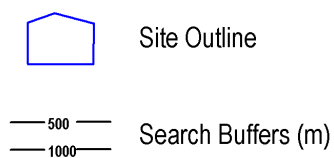
Database searched and no data found.

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



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? No

Database searched and no data found.

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

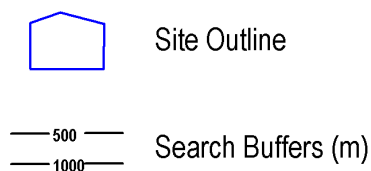
This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

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



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 (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	LC-CLAY	London Clay Formation - Clay	Eocene Epoch
2	496.0	E	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

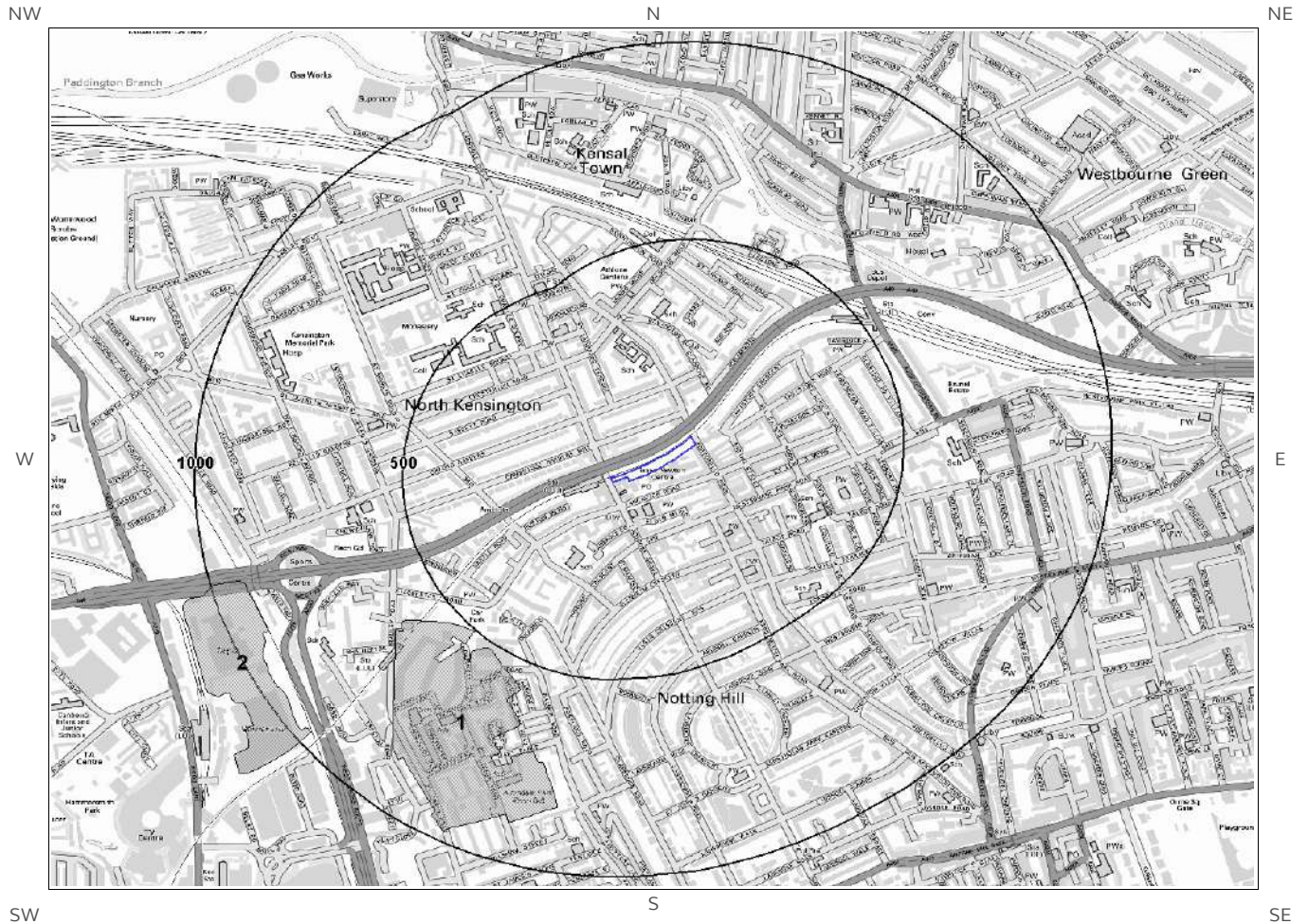
Database searched and no data found at this scale.

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.

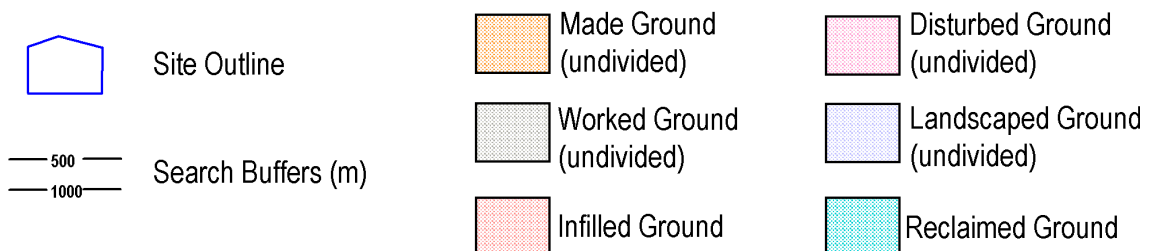
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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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: 256

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? No

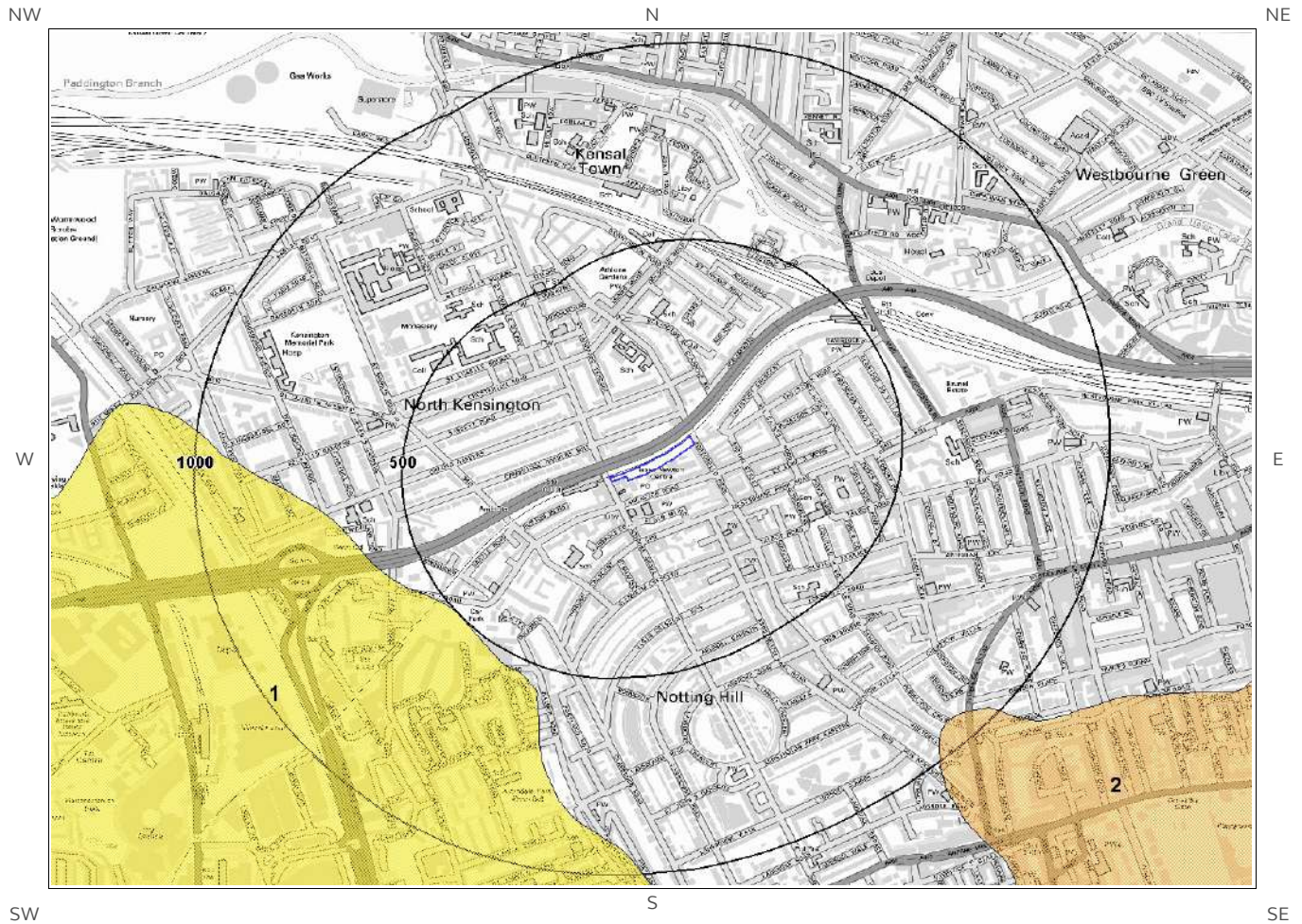
Database searched and no data found.

2.1.2 Permeability of Artificial Ground

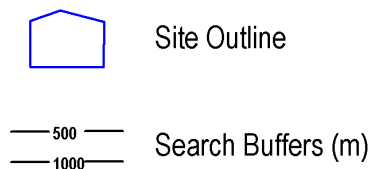
Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

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



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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

ID	Distance	Direction	LEX Code	Description	Rock Description
1	500.0	SW	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT

2.2.2 Permeability of Superficial Ground

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

Database searched and no data found.

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.

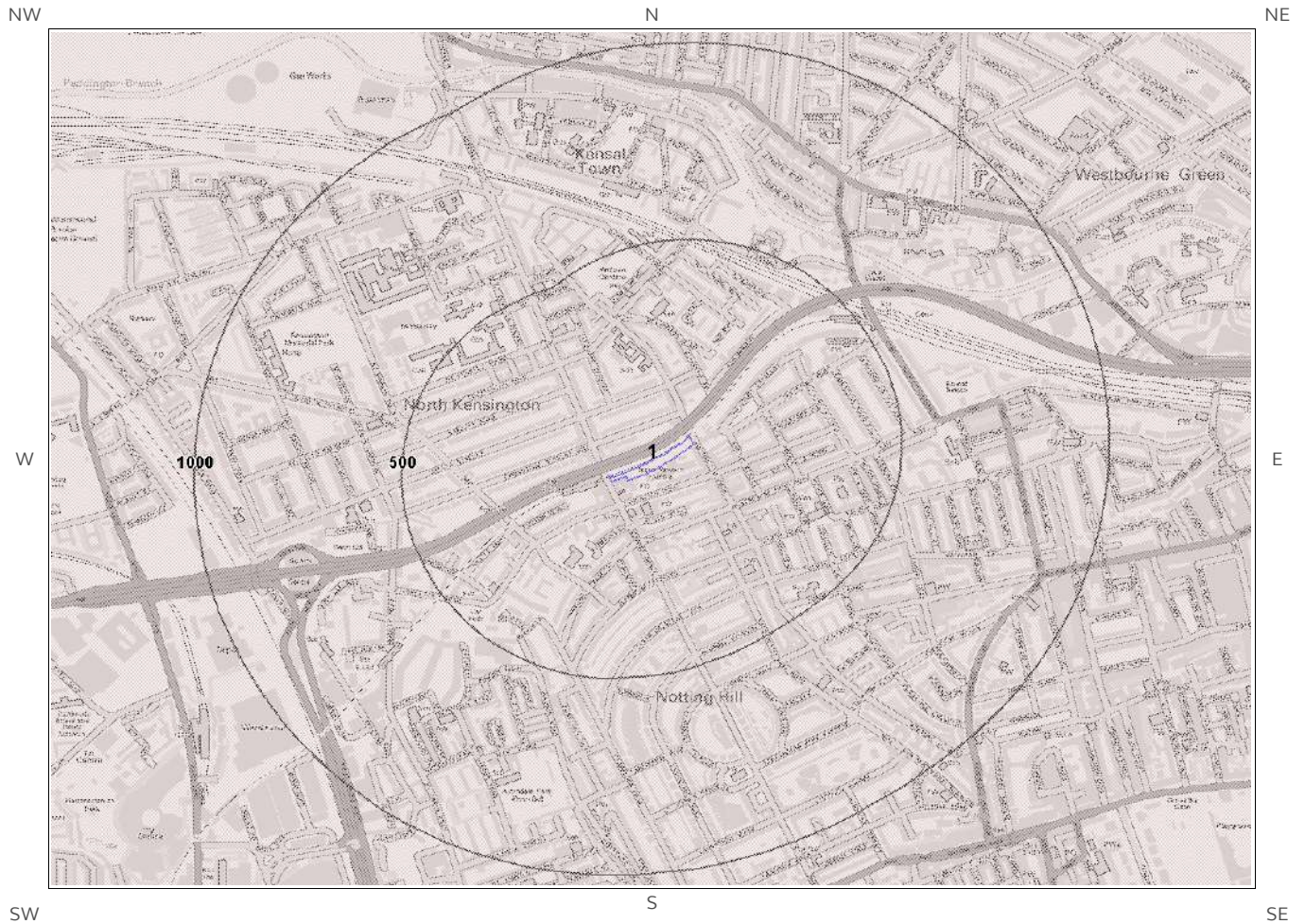
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

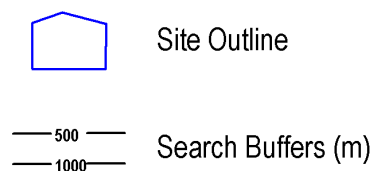
Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

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



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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: 256

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-XCZS	LONDON CLAY FORMATION - CLAY, SILT AND SAND	YPRESIAN

2.3.2 Permeability of Bedrock Ground

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

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Moderate	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

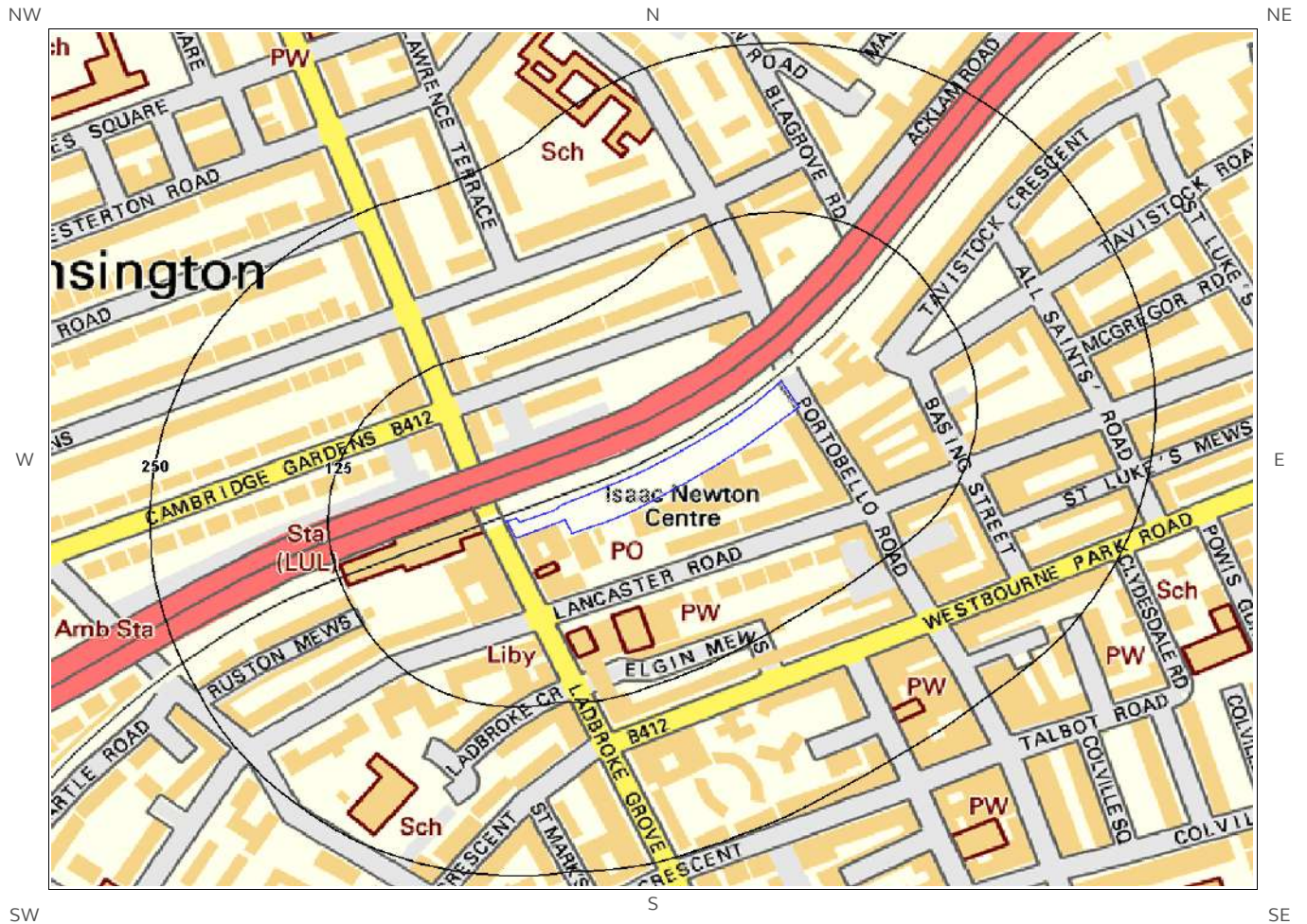
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

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



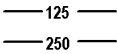


Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings map



Ground Workings Legend

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- | | | | |
|---|--------------------|---|----------------------------------|
|  | Site Outline |  | Historic Surface Ground Workings |
|  | Search Buffers (m) |  | Historic Underground Workings |
| | |  | 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.

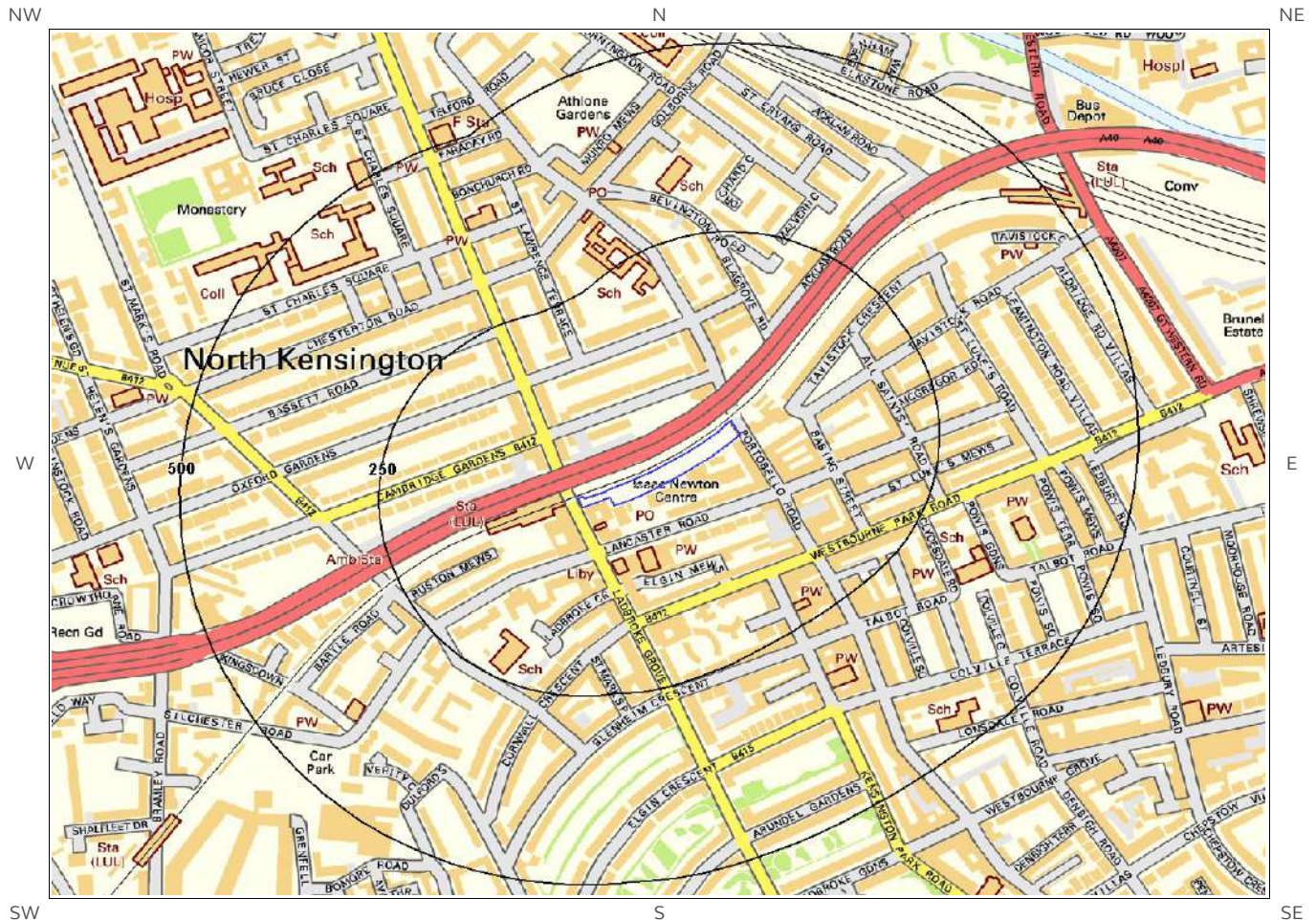
Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	535.0	SW	524030 180889	Clay & Shale	Potteries Clay Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	556.0	S	524105 180829	Clay & Shale	Potteries Clay Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	573.0	SW	523982 180875	Clay & Shale	Potteries Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	579.0	S	524160 180787	Clay & Shale	Potteries Clay Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	631.0	SW	523851 180910	Clay & Shale	Notting Hill Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

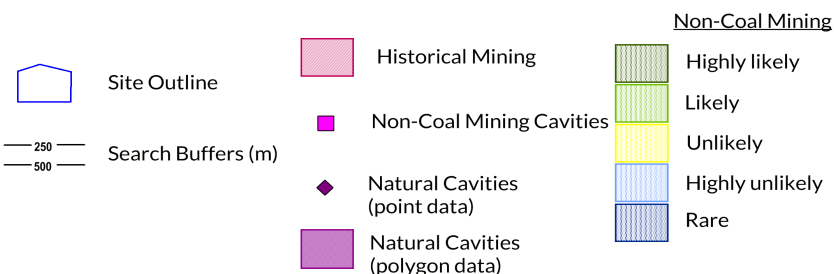
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	643.0	NE	525045 181790	Marine Sand & Gravel	Paddington New Yard	A site where mineral commodities are unloaded from rail trucks and stored	Active
Not shown	691.0	S	524067 180699	Clay & Shale	Potteries Clay Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	733.0	S	524121 180638	Clay & Shale	Potteries Field Clay Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	759.0	SW	523934 180686	Clay & Shale	Notting Hill Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	831.0	S	524107 180541	Clay & Shale	Notting Hill Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	903.0	S	523972 180509	Clay & Shale	Notting Hill Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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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? No

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

5.4 Non-Coal Mining

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

Are there any Non-Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

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

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? No

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? No

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

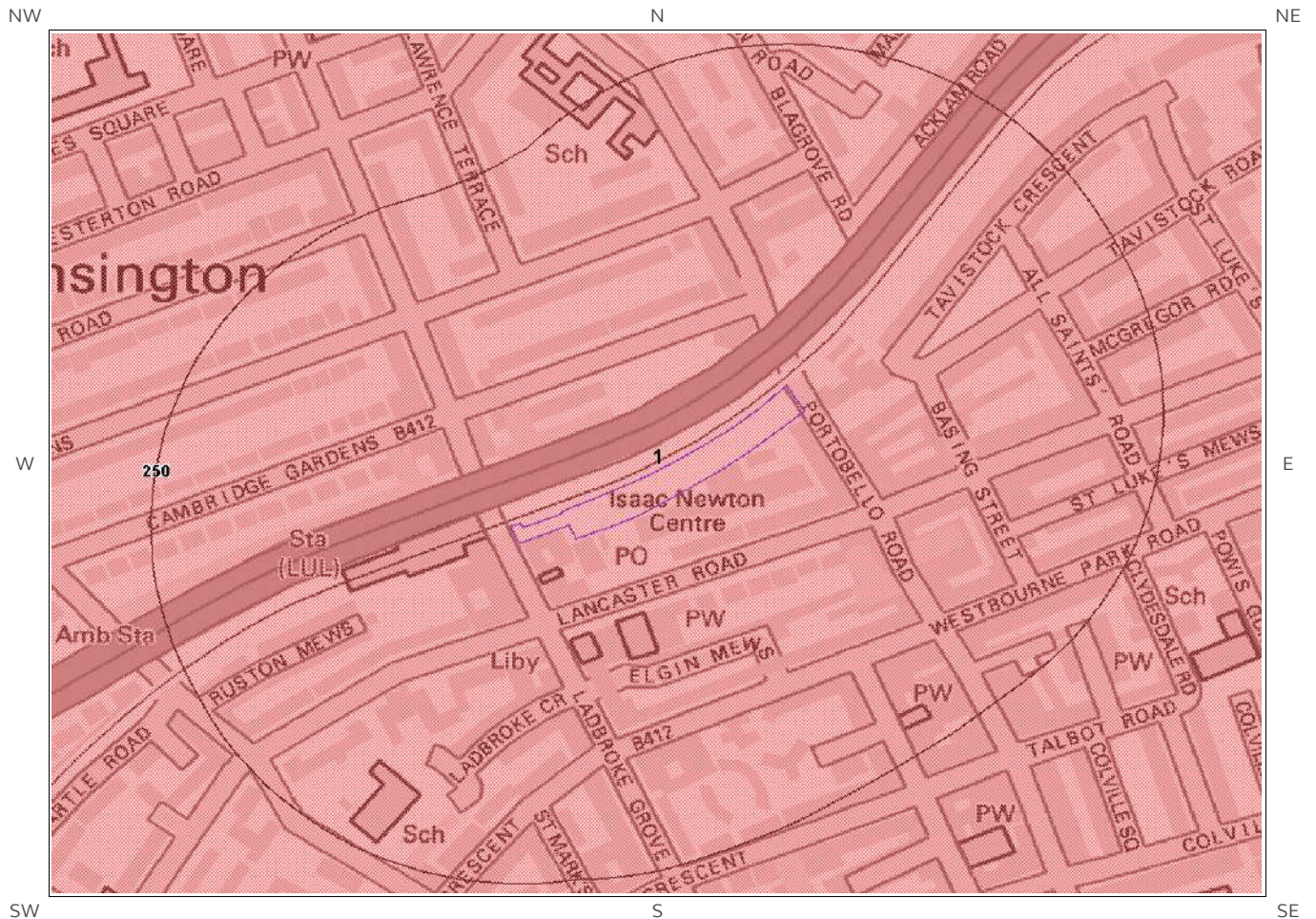
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

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

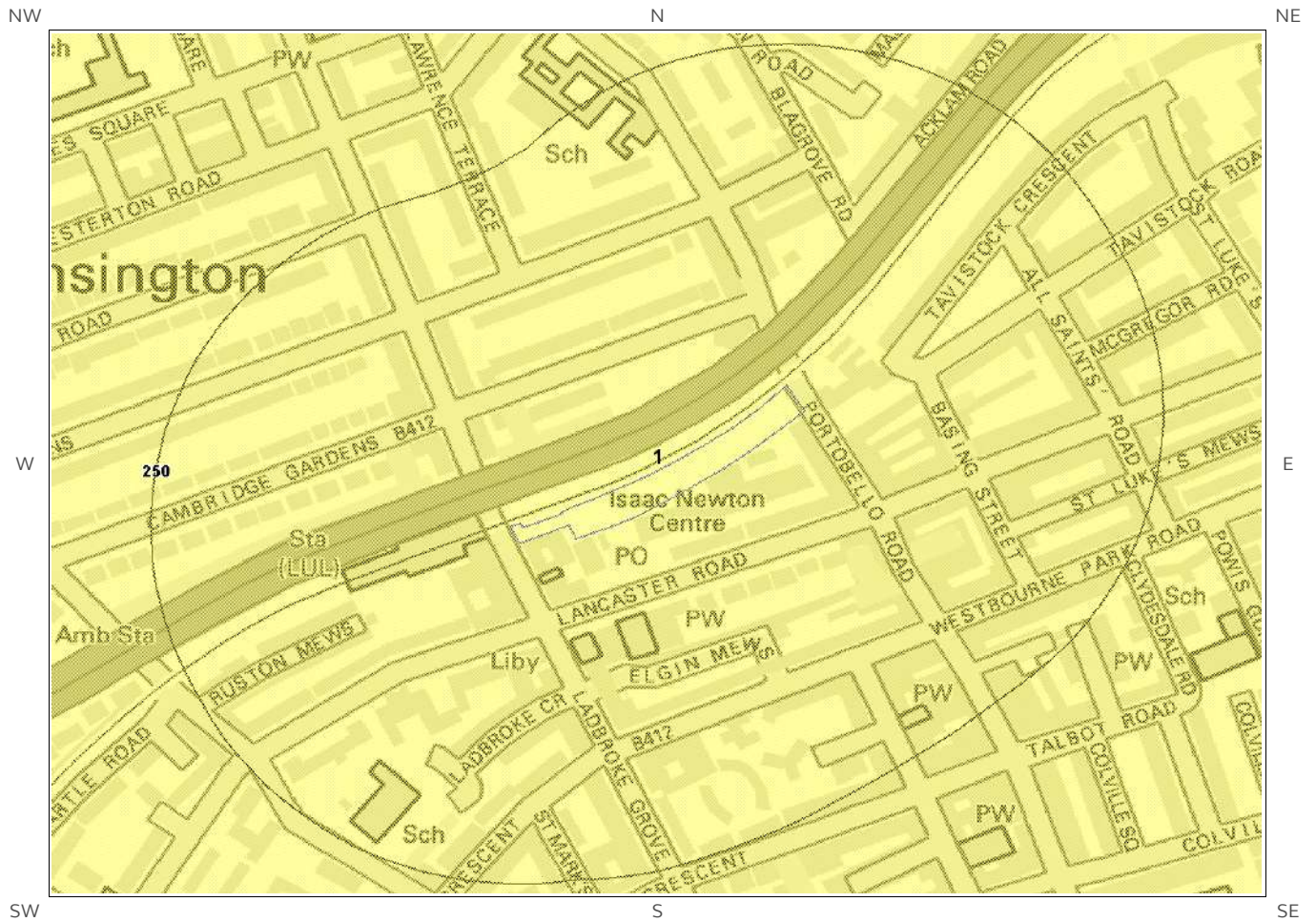


Shrink Swell Clay Legend

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6.2 Landslides map

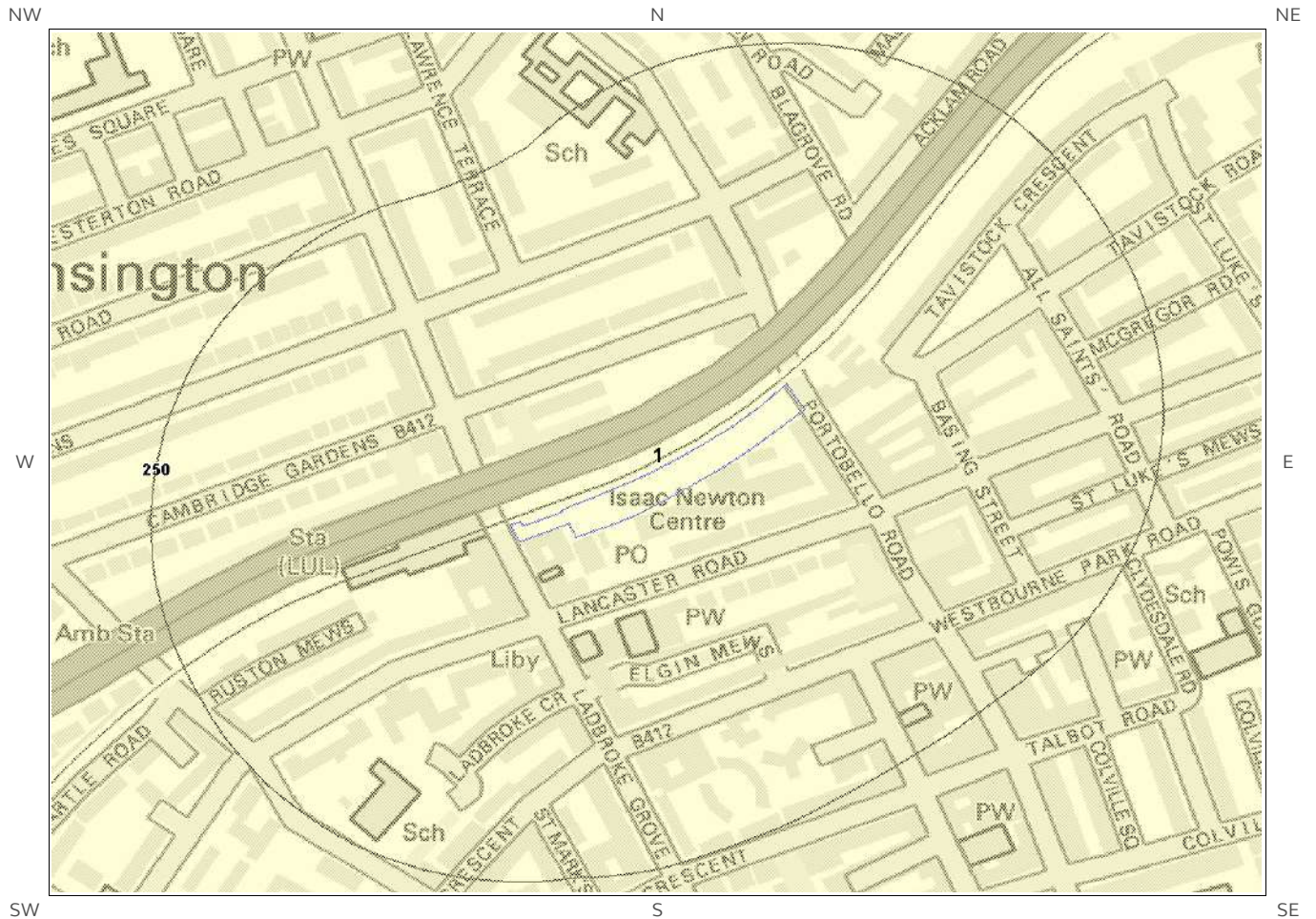


Landslides Legend

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6.3 Ground Dissolution of Soluble Rocks map

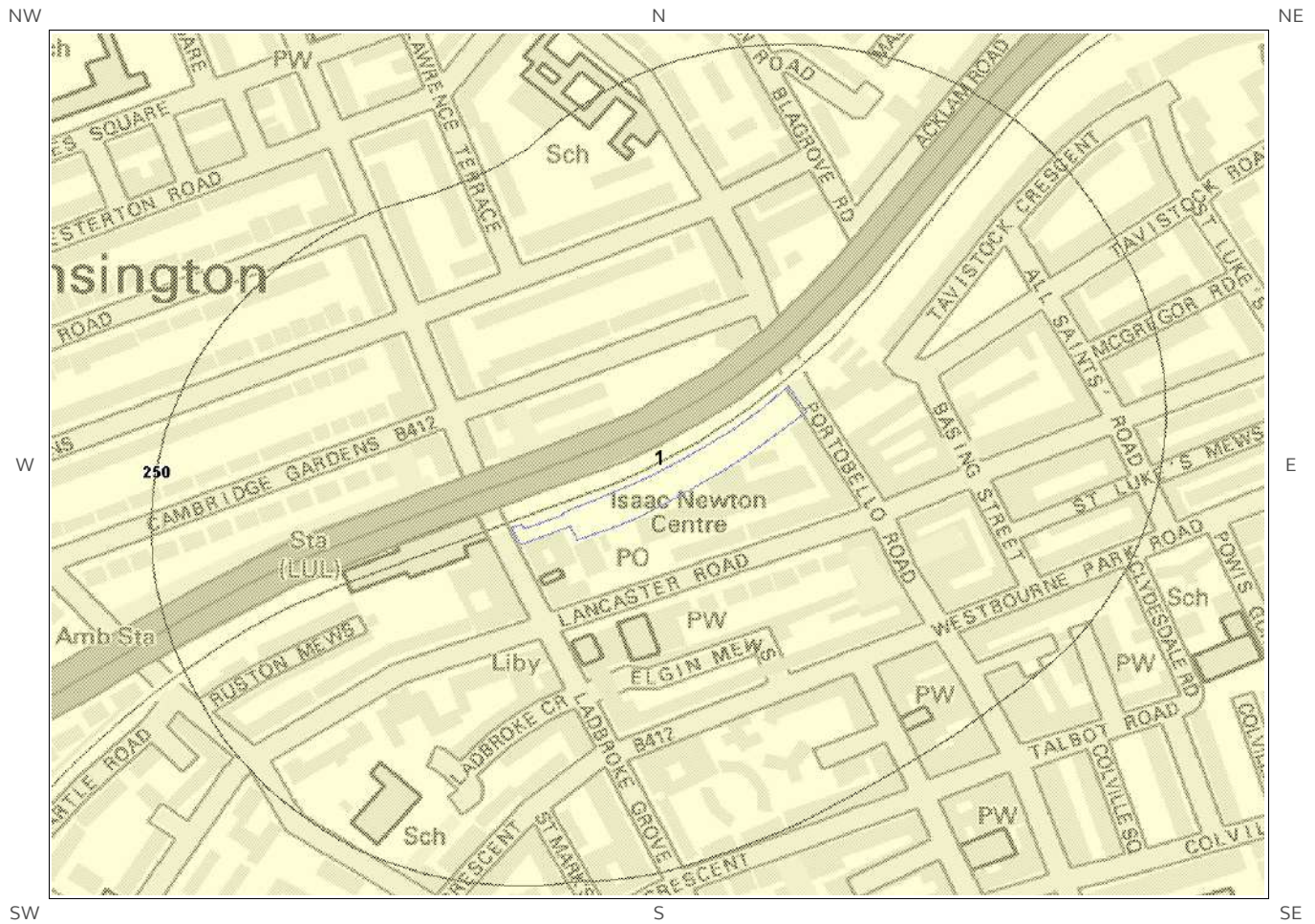


Ground Dissolution
Soluble Rocks Legend

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6.4 Compressible Deposits map

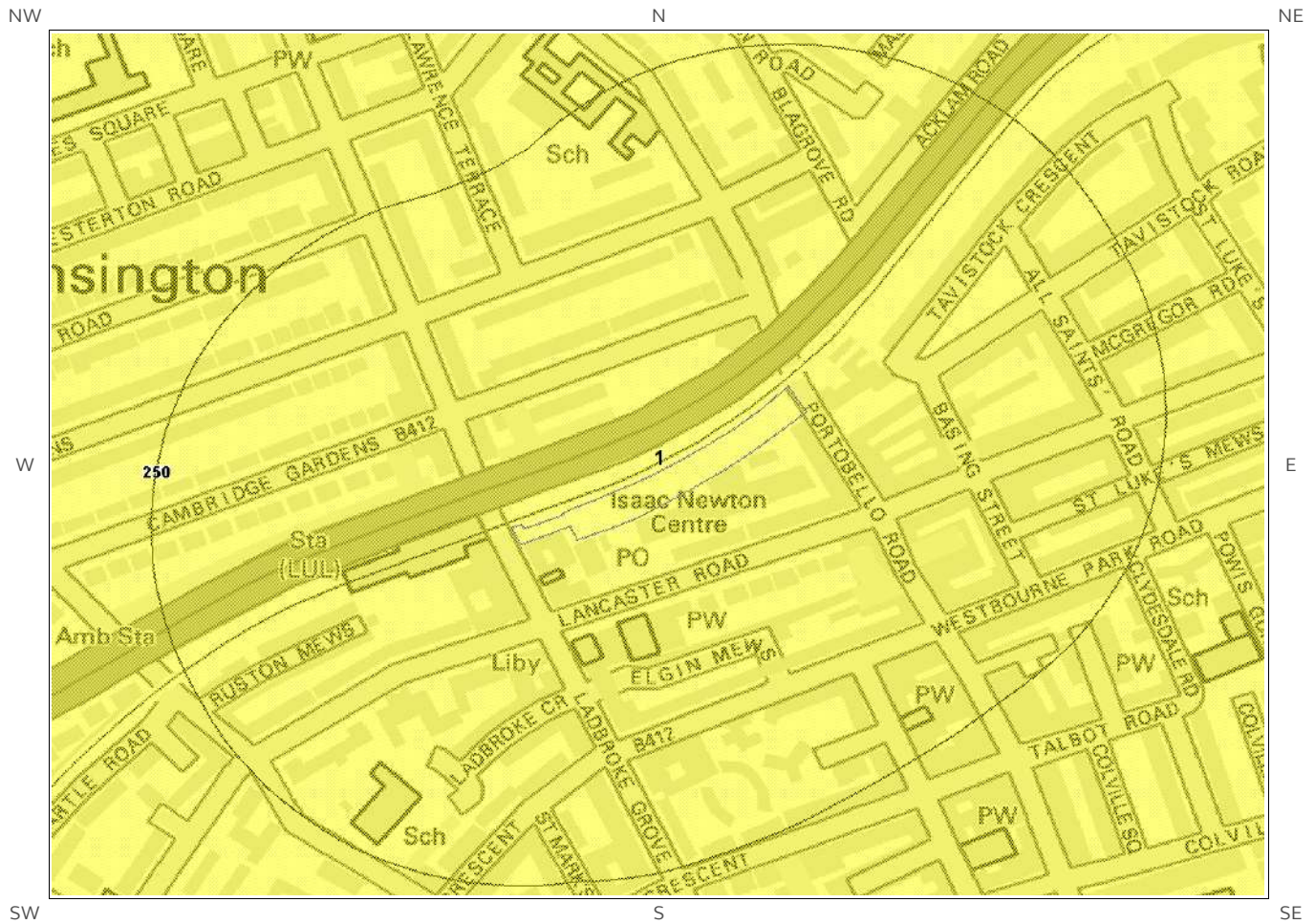


Compressible Deposits Legend

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6.5 Collapsible Deposits map

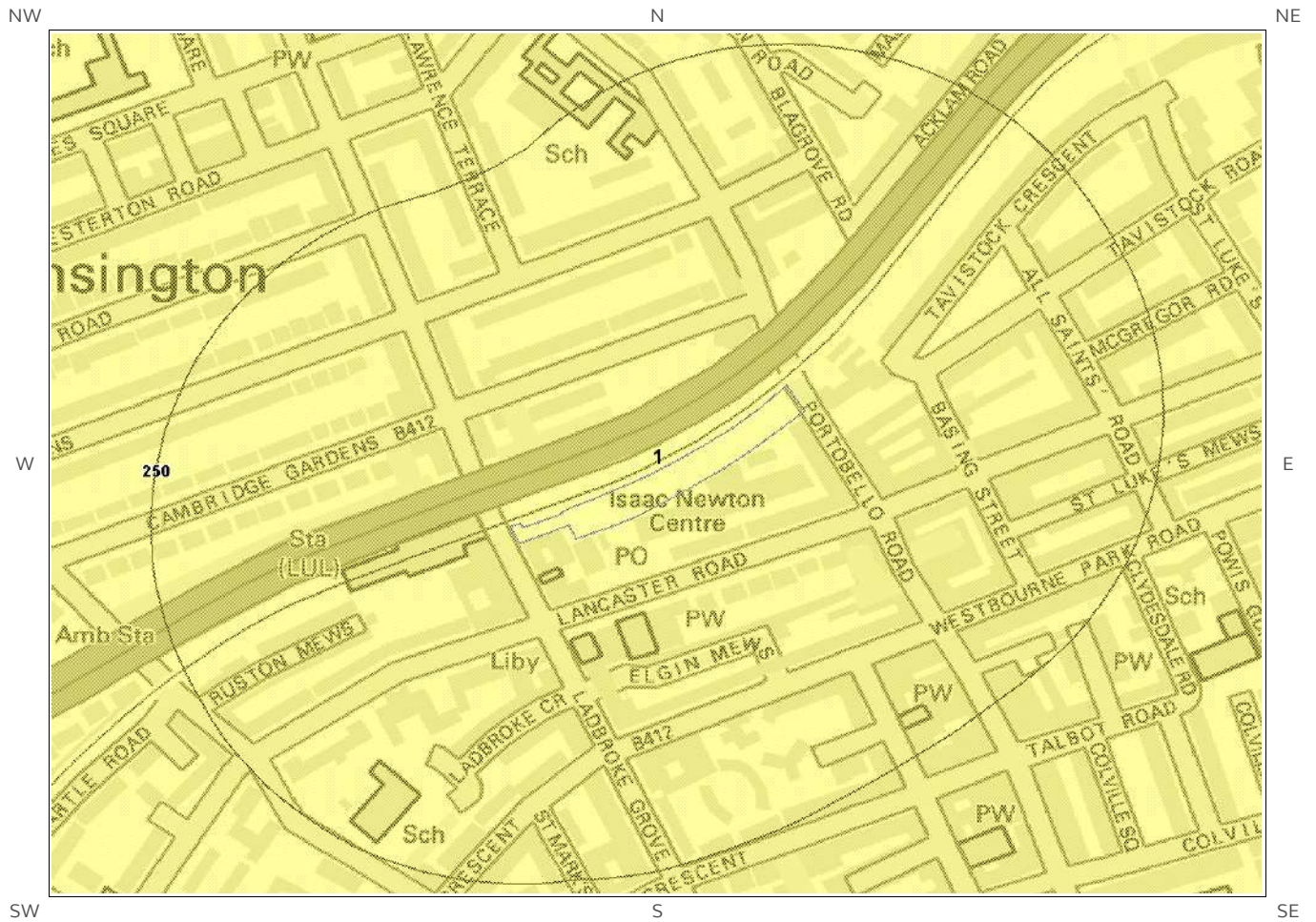


Collapsible Deposits Legend

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6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

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

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

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

6.1 Shrink-Swell Clays

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Moderate	Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce 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.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

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

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

6.3 Ground Dissolution of Soluble Rocks

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

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

6.4 Compressible Deposits

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

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

6.5 Collapsible Deposits

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

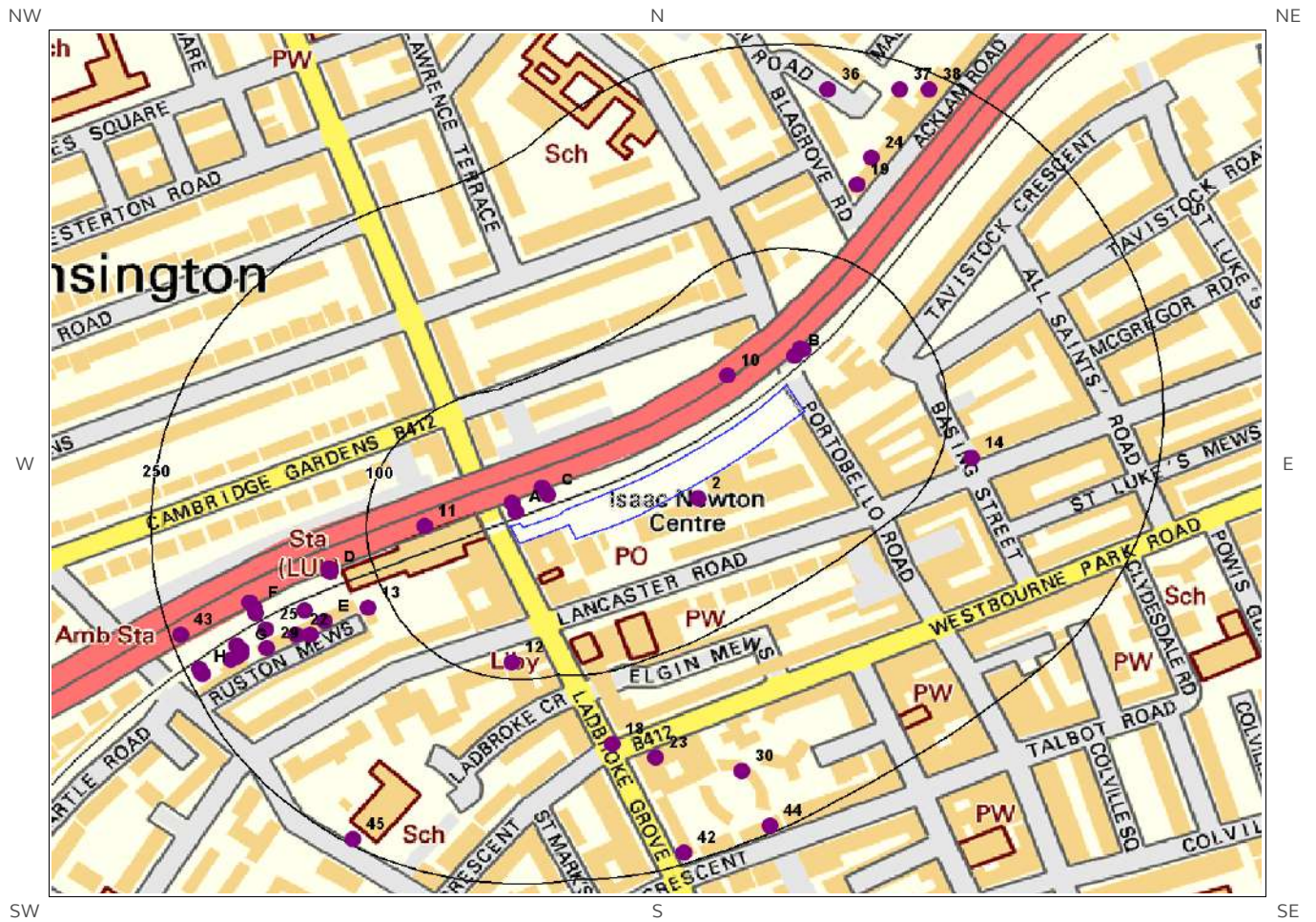
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible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

6.6 Running Sands

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

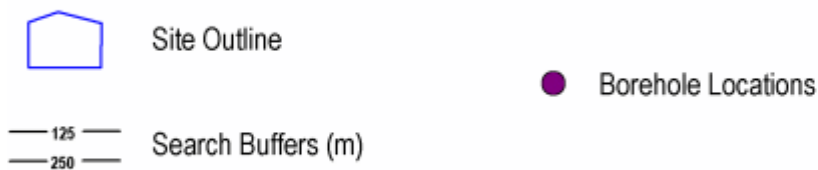
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased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

7 Borehole Records map



Borehole Records Legend

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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:

45

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1A	9.0	N	524303 181370	TQ28SW904	5	M176 EM1 & EM2 M176A02WA
2	10.0	SE	524430 181380	TQ28SW71	6.09	ISAAC NEWTON SCHOOL N KENSINGTON
3A	16.0	N	524300 181377	TQ28SW903	2.2	M176 EM1 & EM2 M176A01W
4C	16.0	NW	524325 181383	TQ28SW906	7	M176 EM1 & EM2 M176A04W
5B	22.0	N	524497 181485	TQ28SW909	1.5	M176 EM1 & EM2 M176B03O
6B	22.0	N	524497 181485	TQ28SW985	2.3	M176 EM1 & EM2 M176B03OA
7C	23.0	N	524321 181388	TQ28SW905	4	M176 EM1 & EM2 M176A03W
8B	28.0	NE	524503 181489	TQ28SW908	5	M176 EM1 & EM2 M176B02W
9B	28.0	N	524501 181490	TQ28SW907	3	M176 EM1 & EM2 M176B01W
10	32.0	NW	524450 181470	TQ28SW289	18.89	WESTERN AVENUE EXTENSION II BH14
11	59.0	W	524240 181360	TQ28SW288	25.9	WESTERN AVENUE EXTENSION II BH13
12	88.0	S	524300 181260	TQ28SW321	155.45	ROSES DAIRY, NOTTING HILL
13	116.0	SW	524200 181300	TQ28SW348	15	LADBROKE GROVE 1
14	121.0	E	524620 181410	TQ28SW39	6.25	LANCASTER RD & BASING ROAD H139
15D	130.0	W	524174 181326	TQ28SW918	7	M178 EM1 & EM2 M178A08W
16D	130.0	W	524173 181329	TQ28SW917	4	M178 EM1 & EM2 M178A07W
17E	147.0	SW	524170 181290	TQ28SW661	9.54	RUSTON MEWS W11 3
18	153.0	S	524370 181200	TQ28SW41	4.75	LADBROKE GROVE RD & CORNWALL RD H4
19	154.0	N	524540 181610	TQ28SW283	2.4	SWINBROOK RD KENSINGTON & CHELSEA TP A
20E	156.0	SW	524156 181298	TQ28SW927	5.4	M178 EM1 & EM2 M178B07W
21E	161.0	SW	524160 181280	TQ28SW659	9.47	RUSTON MEWS W11 1

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
22	169.0	SW	524150 181280	TQ28SW266	9.47	NUMBER NOT USED (RE-REGISTERED AS TQ28SW/659 - 661)
23	170.0	S	524400 181190	TQ28SW232	18	OLD CONVENT SITE LADBROKE GROVE BH22
24	176.0	N	524550 181630	TQ28SW121	20	SWINBROOK ROAD BH11
25	187.0	SW	524129 181284	TQ28SW928	6.9	M178 EM1 & EM2 M178B08W
26F	188.0	W	524121 181300	TQ28SW915	6	M178 EM1 & EM2 M178A05W
27F	189.0	W	524122 181296	TQ28SW916	7	M178 EM1 & EM2 M178A06W
28F	190.0	W	524118 181304	TQ28SW914	6	M178 EM1 & EM2 M178A04W
29	192.0	SW	524130 181270	TQ28SW660	9.57	RUSTON MEWS W11 2
30	201.0	S	524460 181180	TQ28SW233	9	OLD CONVENT SITE LADBROKE GROVE BH23
31G	208.0	SW	524112 181269	TQ28SW923	3.9	M178 EM1 & EM2 M178B05W
32G	210.0	SW	524112 181266	TQ28SW924	0.15	M178 EM1 & EM2 M178B06W
33G	210.0	SW	524109 181272	TQ28SW922	5	M178 EM1 & EM2 M178B04W
34G	213.0	SW	524109 181264	TQ28SW925	0.15	M178 EM1 & EM2 M178B06WA
35G	218.0	SW	524105 181262	TQ28SW926	4	M178 EM1 & EM2 M178B06WB
36	218.0	N	524520 181680	TQ28SW117	15	SWINBROOK ROAD BH7
37	230.0	N	524570 181680	TQ28SW122	20	SWINBROOK ROAD BH12
38	238.0	NE	524590 181680	TQ28SW284	2	SWINBROOK RD KENSINGTON & CHELSEA TP.B
39H	241.0	SW	524084 181253	TQ28SW920	3	M178 EM1 & EM2 M178B02W
40H	241.0	SW	524085 181251	TQ28SW921	4	M178 EM1 & EM2 M178B03W
41H	241.0	SW	524083 181255	TQ28SW919	3.9	M178 EM1 & EM2 M178B01W
42	243.0	S	524420 181120	TQ28SW234	9	OLD CONVENT SITE LADBROKE GROVE BH24
43	243.0	W	524070 181280	TQ28SW258	20.12	WESTERN AVENUE EXTENSION BH12
44	245.0	SE	524480 181140	TQ28SW235	9	OLD CONVENT SITE LADBROKE GROVE BH25
45	247.0	SW	524190 181130	TQ28SW174	12	LANCASTER ROAD SITE BH39

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.

#1A: scans.bgs.ac.uk/sobi_scans/boreholes/20358288
#2: scans.bgs.ac.uk/sobi_scans/boreholes/590978
#3A: scans.bgs.ac.uk/sobi_scans/boreholes/20358287
#4C: scans.bgs.ac.uk/sobi_scans/boreholes/20358290
#5B: scans.bgs.ac.uk/sobi_scans/boreholes/20358293
#6B: scans.bgs.ac.uk/sobi_scans/boreholes/20403419
#7C: scans.bgs.ac.uk/sobi_scans/boreholes/20358289
#8B: scans.bgs.ac.uk/sobi_scans/boreholes/20358292
#9B: scans.bgs.ac.uk/sobi_scans/boreholes/20358291
#10: scans.bgs.ac.uk/sobi_scans/boreholes/591202
#11: scans.bgs.ac.uk/sobi_scans/boreholes/591201
#12: scans.bgs.ac.uk/sobi_scans/boreholes/591234
#13: scans.bgs.ac.uk/sobi_scans/boreholes/591261
#14: scans.bgs.ac.uk/sobi_scans/boreholes/590943
#15D: scans.bgs.ac.uk/sobi_scans/boreholes/20358302
#16D: scans.bgs.ac.uk/sobi_scans/boreholes/20358301
#17E: scans.bgs.ac.uk/sobi_scans/boreholes/17084906
#18: scans.bgs.ac.uk/sobi_scans/boreholes/590945
#19: scans.bgs.ac.uk/sobi_scans/boreholes/591196
#20E: scans.bgs.ac.uk/sobi_scans/boreholes/20358311
#21E: scans.bgs.ac.uk/sobi_scans/boreholes/17084904
#22: scans.bgs.ac.uk/sobi_scans/boreholes/591179
#23: scans.bgs.ac.uk/sobi_scans/boreholes/591144
#24: scans.bgs.ac.uk/sobi_scans/boreholes/591033
#25: scans.bgs.ac.uk/sobi_scans/boreholes/20358312
#26F: scans.bgs.ac.uk/sobi_scans/boreholes/20358299
#27F: scans.bgs.ac.uk/sobi_scans/boreholes/20358300
#28F: scans.bgs.ac.uk/sobi_scans/boreholes/20358298
#29: scans.bgs.ac.uk/sobi_scans/boreholes/17084905
#30: scans.bgs.ac.uk/sobi_scans/boreholes/591145
#31G: scans.bgs.ac.uk/sobi_scans/boreholes/20358307
#32G: scans.bgs.ac.uk/sobi_scans/boreholes/20358308
#33G: scans.bgs.ac.uk/sobi_scans/boreholes/20358306
#34G: scans.bgs.ac.uk/sobi_scans/boreholes/20358309
#35G: scans.bgs.ac.uk/sobi_scans/boreholes/20358310
#36: scans.bgs.ac.uk/sobi_scans/boreholes/591029
#37: scans.bgs.ac.uk/sobi_scans/boreholes/591034
#38: scans.bgs.ac.uk/sobi_scans/boreholes/591197
#39H: scans.bgs.ac.uk/sobi_scans/boreholes/20358304
#40H: scans.bgs.ac.uk/sobi_scans/boreholes/20358305
#41H: scans.bgs.ac.uk/sobi_scans/boreholes/20358303
#42: scans.bgs.ac.uk/sobi_scans/boreholes/591146
#43: scans.bgs.ac.uk/sobi_scans/boreholes/591171
#44: scans.bgs.ac.uk/sobi_scans/boreholes/591147
#45: scans.bgs.ac.uk/sobi_scans/boreholes/591086

8 Estimated Background Soil Chemistry

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

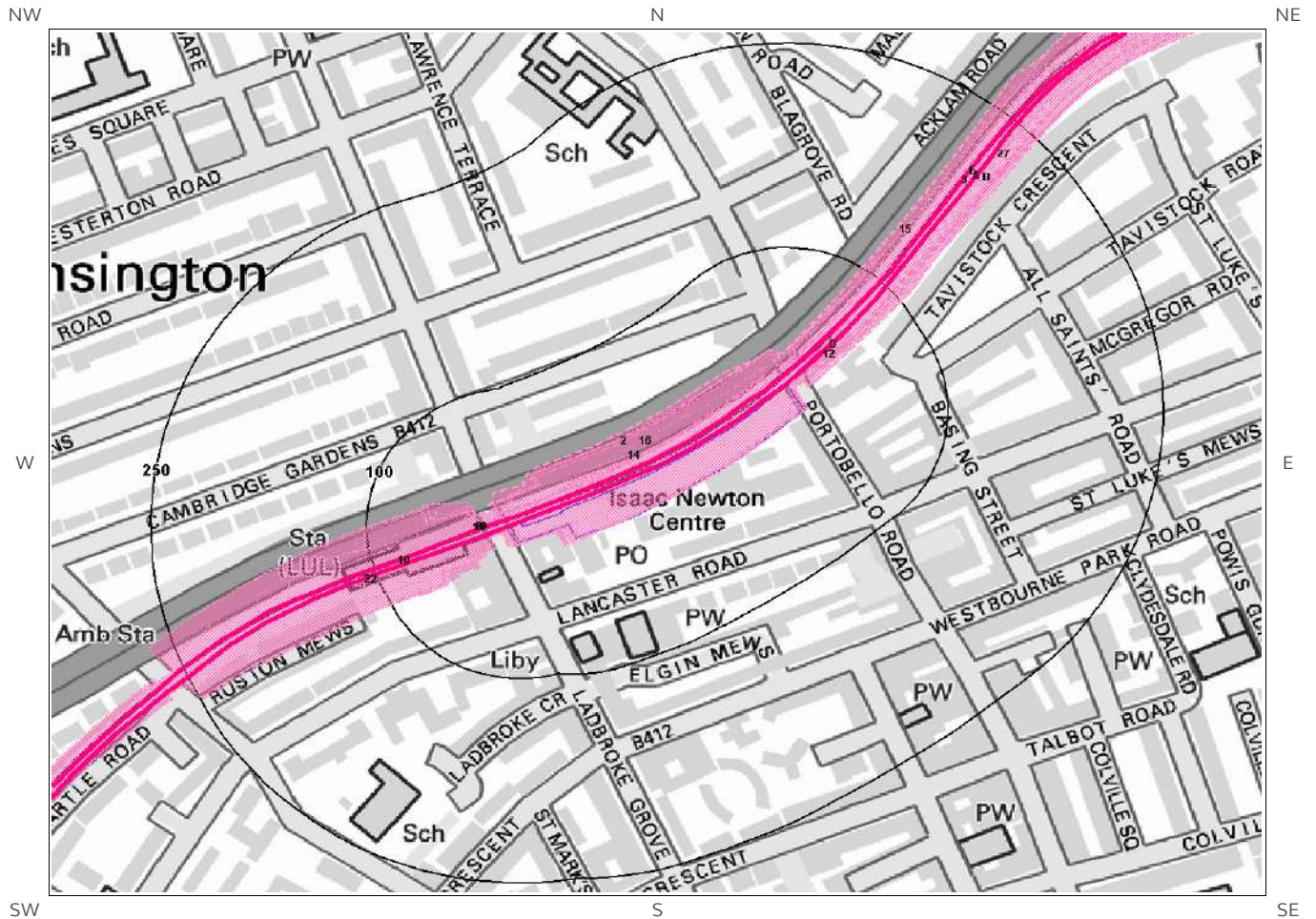
4

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
0.0	On Site	London	No data	No data	No data	No data	No data
36.0	N	London	No data	No data	No data	No data	No data
37.0	N	London	No data	No data	No data	No data	No data

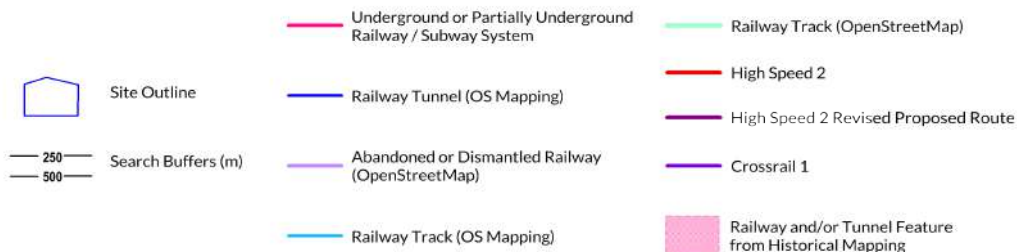
*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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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? Yes

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

Distance (m)	Direction	Detail
0	NW	London Underground - Hammersmith & City Line
0	NW	London Underground - Circle 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: Hammersmith and City Line Depth: 0mbgl Track Type: Surface Track

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? No

Database searched and no data found.

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 (m)	Direction	NGR	Details	Date
1	0	On Site	521271 183072	Railway Sidings	1920
8	0	On Site	n/a	Railway	1896
9	0	On Site	n/a	Railway	1930
10	0	On Site	n/a	Railway	1863
11	0	On Site	n/a	Railway	1930
12	0	On Site	n/a	Railway	1890
13	0	On Site	n/a	Railway	1930
14	1	N	524401 181415	Railway Sidings	1953
15	5	NW	n/a	Railways	1897
16	9	N	524387 181421	Railway Sidings	1916
17C	9	NW	524420 181425	Railway Sidings	1981
18C	9	NW	524414 181423	Railway Sidings	1981
2	10	N	524372 181418	Railway Sidings	1951
19C	10	NW	524423 181428	Railway Sidings	1953
20C	10	NW	524423 181428	Railway Sidings	1953
21C	10	NW	524423 181428	Railway Sidings	1973
22	17	SW	n/a	Railway	1896
3	18	NE	524647 181656	Railway Sidings	1894
4A	19	NE	524676 181874	Railway Sidings	1951
5A	19	NE	524676 181874	Railway Sidings	1957
6B	19	NE	524726 181711	Railway Sidings	1973
7B	19	NE	524726 181711	Railway Sidings	1967
23D	29	NE	524525 181490	Railway Sidings	1953
24D	29	NE	524525 181490	Railway Sidings	1953
25E	31	NE	524691 181699	Railway Sidings	1896
26D	34	NE	524525 181490	Railway Sidings	1969
27	34	NE	524769 181739	Railway Sidings	1953

ID	Distance (m)	Direction	NGR	Details	Date
28E	34	NE	524698 181703	Railway Sidings	1916
29	207	NE	524680 181686	Railway Sidings	1953

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

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? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above

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

9.5 Railway Projects

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

Is the study site within 5km of the route of the High Speed 2 rail project? Yes

Is the study site within 500m of the route of the Crossrail 1 rail project? Yes

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

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The Coal
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<https://www.groundsure.com/terms-and-conditions-jan-2020/>

APPENDIX C

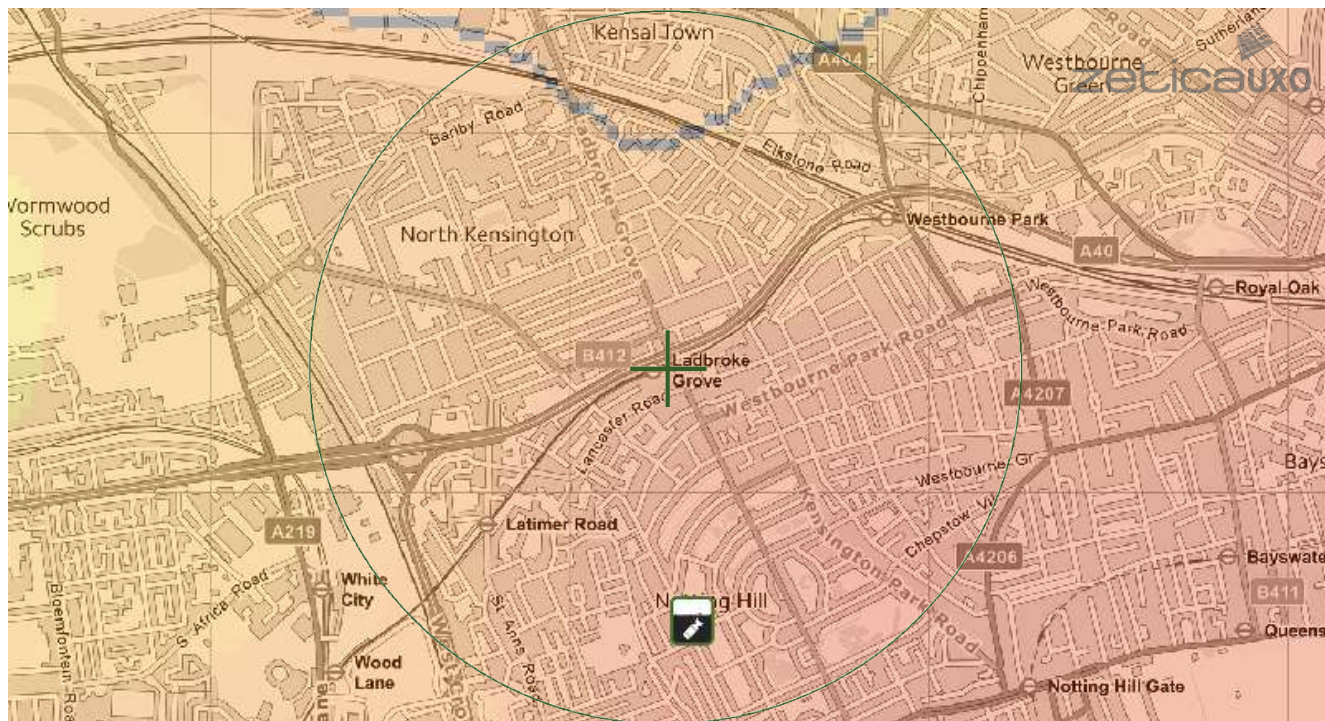
Zetica UXO Map and Pre-Desk Study Assessment

UNEXPLODED BOMB RISK MAP



SITE LOCATION

Location: W10 6HJ,
Map Centre: 524279,181348



LEGEND

London Bomb Risk



	military		industry		UXO find		Other
	transport		dock		Luftwaffe targets		
	utilities		abandoned bombs		Bombing decoy		

How to use your Unexploded Bomb (UXB) risk map?

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

Relative UXB risk across London

The relative risk for the London area is established by plotting the recorded bombing densities.

These are represented as counts of high explosive bombs in km2 area. The areas coloured green represent a record of less than 10 bombs per km2.

Compared to other areas of the UK, this still represents a significant density. However, this is much lower than parts of Central London, where the red colouration indicates in excess of 150 bombs falling per km2, representing a very significant bombing density.

What do I do if my site is in a moderate or high density area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites with a moderate or high bombing density.

Similarly, if your site is near to a designated Luftwaffe target or bombing decoy then additional detailed research is recommended.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirms that there is a low potential for UXO to be present on your site then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682
email: uxo@zetica.com
web: www.zeticauxo.com

The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: (<https://zeticauxo.com/downloads-and-resources/risk-maps/>)

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It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.

Pre-Desk Study Assessment

Site:	Portobello Road, Kensington & Chelsea, London
Client:	Arcadis
Contact:	Alison Pugh
Date:	3 rd January 2020
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	<p>The following strategic targets were located in the vicinity of the Site:</p> <ul style="list-style-type: none"> ■ Transport infrastructure and public utilities. ■ Royal Flying Corps (RFC) Wormwood Scrubs. ■ Wharves and quays along the River Thames. ■ Industries important to the war effort including munitions, aircraft and engineering works. ■ Military barracks and training areas. ■ Anti-Aircraft (AA) guns.
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified.
WWII Strategic Targets (within 5km of Site)	<p>The following strategic targets were located in the vicinity of the Site:</p> <ul style="list-style-type: none"> ■ Transport infrastructure and public utilities. ■ Wharves and quays along the River Thames. ■ Industries important to the war effort including aircraft and engineering works. ■ Military barracks and training areas. ■ AA and anti-invasion defences.
WWII Bombing Decoys (within 5km of Site)	None.
WWII Bombing	<p>During WWII the Site was located in the Metropolitan Borough (MB) of Kensington, which officially recorded 568No. HE bombs with a bombing density of 248 bombs per 405 hectares (ha).</p> <p>Readily available records have been found to indicate that several HE bombs fell in close proximity to the Site.</p>
Post-WWII Military Activity on or Affecting the Site	None identified.
Recommendation	It is recommended that a detailed desk study is commissioned to assess, and potentially zone, the Unexploded Ordnance (UXO) hazard level on the Site.

This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.

It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.

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