

# **LONDON BOROUGH OF HOUNSLOW SMALL SITES SMALL BUILDERS PROGRAMME FLORENCE GARDENS, CHISWICK, W4 3JX**

## **Geotechnical and Geo-Environmental Desk Study**

NOVEMBER 2019



# FLORENCE GARDENS, CHISWICK, W4 3JX

## Geotechnical and Geo-Environmental Desk Study

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Report No	10030793-ARC-XX-XX-RP-YY-0182-01-Geo Report	
Date	NOVEMBER 2019	

## VERSION CONTROL

Version	Date	Author	Changes
01	November 2019	Arya M S	First Issue

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# 1 INTRODUCTION

## 1.1 Terms of Reference

Arcadis Consulting (UK) Limited (Arcadis) has been commissioned by London Borough of Hounslow (LBH) 'the Client' to undertake a desk-based survey and site walkover for the garage block adjacent to Florence Gardens, Chiswick, W4 3JX ('the Site').

LBH is aiming to divest a number of small sites to enable positive regeneration. It is believed the proposed end use for the site will be for residential purposes. However, no proposed development plans are available for the Site at the time of writing.

The objectives of this review are to:

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

The Site location is shown in Figure 1 below.

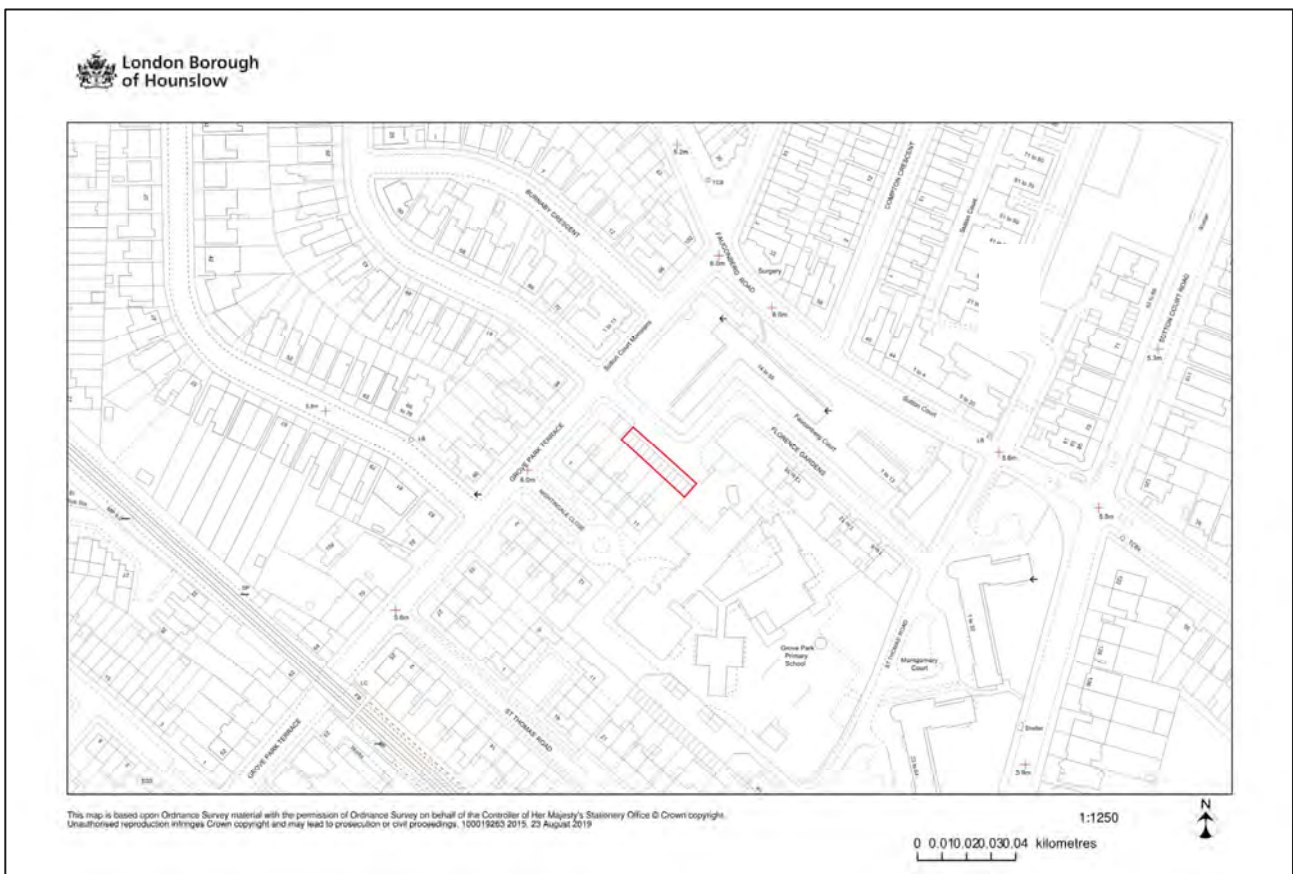


Figure 1: Site Location Plan provided by LBH

## 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);
- BGS 1:50,000 Map 270 (South London) solid and drift edition;
- 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 (Appendix B);
- Current publicly available aerial images and maps from Google maps (Ref. 2);
- Zetica Regional Unexploded Ordnance Map & Pre-Desk Study Assessment report (contained within the Arcadis UXO Assessment report for this site, 10030793-ARC-XX-XX-RP-YY-0186-01-UXO Report);
- Department for Environment, Food and Rural Affairs “Magic” website (Ref.7); and
- Zetica Bomb map (Ref.9.).

## 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	Florence Gardens, Chiswick, W4 3JX
National Grid Reference	520111,177659
Approximate Site Area	The Site is roughly rectangular in shape and covers an area of approximately 0.03 Ha (hectares).
Description of Site	<p>The Site is currently occupied by 13 no. garages with spaces for car parking at the front. The garage is of brick construction. The door frames are timber and in good condition as are 11 of the doors which are probably original and made in a herring bone pattern. The other two are of a powder coated metal construction. The hardstanding in front of the site is asphalt which is in good condition although there is some standing water at the kerbstones that delineate the boundary between the hardstanding and Florence Gardens. The roof is of uncertain construction although the central area is covered by sheeting visually similar to asbestos type. The site is in an urban residential area.</p> <p>Site photographs are included in Appendix C.</p>
Topography	The topography of the Site is generally flat at approximately 6 m Above Ordnance Datum (AOD). The hardstanding slopes down towards Florence Gardens.
Surrounding Area	The Site lies within in urban setting, surrounded by residential homes. There is an electricity sub-station at the north-western end separated from the site by a heavy-duty fence and gate. The Site lies directly adjacent to Grove Park Primary School. The River Thames is approximately 450m to the south-west.

### 2.2 Site History

A review of the available historical Ordnance Survey 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

Map Dates	Historical Detail
1867 - 1874	<p>Site appears to be a part of wider woodland / orchard .</p> <p>The surrounding area is generally undeveloped with buildings noted at 100m north and along the Little Sutton Lane beyond, 150m northeast ,480m south and 150m southwest.</p> <p>The London and Southwest Railway loop line was running in a northwest to south east orientation at approximately 150m southwest at its closest point. The Chiswick Station is noted approximately 500m southeast.</p> <p>A fish pond is located at approx. 250m north and Duke's Lake is located approx. 450m northwest. The River Thames is approximately 450m to the south-west.</p>

Map Dates	Historical Detail
1894 - 1898	<p>The Site now appears to be a part of cricket ground, with pavilions located to 85m northeast and 120m southeast.</p> <p>Extensive development within the wider area beyond the Site with residential buildings to the west of the Site, and south of the Site beyond the railway. A tennis court is noted to the east followed by the Chiswick Park Farm.</p> <p>A malthouse is noted approximately 320m west.</p>
1915 - 1933	<p>The cricket ground, which the Site is a part of, is now shown as an athletic ground.</p> <p>Continued development with predominantly residential and some commercial buildings noted surrounding of the Site.</p> <p>The fishpond to the north is no longer present.</p> <p>A timber yard is noted approximately 250m west of the Site.</p>
1935 - 1948	<p>No significant changes noted to the Site.</p> <p>Timber yard to the west is no longer present, instead shown as redeveloped with buildings.</p>
1951	<p>The Site is undeveloped however the wider athletic ground has been redeveloped.</p> <p>An electric substation is shown adjacent to the west of the Site</p> <p>The immediate surrounding of the Site within 100m has redeveloped extensively. The Athletic Ground is now marked with terrace building to the southwest, Grove Park Primary School to the east and Fauconberg Court to the north-northeast.</p> <p>Tennis court to the west is redeveloped to Montgomery Court (flats)</p> <p>A garage is noted at 250m southeast (1951).</p>
1954 - 1974	<p>The Site had now been developed into its present configuration with 13 garages.</p> <p>Depots noted at 250m west and 350m north of the Site.</p>
1987	<p>No significant changes in the configuration of the Site.</p>
1991 - Present	<p>No significant changes to the Site.</p> <p>Continued development of residential and commercial properties surrounding the Site.</p>

### 2.2.1 Summary of Site History

The Site is mapped as a woodland in 1867 and later became a part of a cricket and athletic ground. From 1951 these grounds were redeveloped and by 1965 the present-day configuration of the site comprising 13 number garages with car parking had been established. The historical on-site sources of potential contamination are therefore:

- Made Ground
- Use as a car park / garage

The surrounding land has seen growth in residential development (primarily) and a school, with limited commercial and industrial development. The most pertinent potentially contaminative activities which could have viably impacted the Site are summarised as follows:

- Electricity substation

- Railway siding 150m southwest
- Timber yard approximately 200m west

Other surrounding land uses and potential sources of contamination are not considered to pose a significant risk due to their distance from the Site and are not considered further.

- Unspecified depot noted to 250m west
- Infilled fishpond 250m north
- Garage 250m southeast

## **2.3 Unexploded Ordnance**

With reference to the Zetica unexploded bomb risk map (Ref 9) the Site lies within an area of 'High' bomb risk.

An Unexploded Ordnance (UXO) assessment has been undertaken for the Site, the findings of which are detailed in 10030793-ARC-XX-XX-RP-YY-0184-01-UXO Report, November 2019.

The Preliminary Desk Study Assessment (PDSA) from Zetica recommends that a detailed desk study needs to be commissioned to assess, and potentially zone, the UXO hazard level on the Site. The detailed desk study provides an in-depth review of a site's history with respect to UXO, and each hazard zone will detail the potential type/depth of UXO which could be encountered. This will ultimately help inform proposed construction techniques and for the selection of appropriate mitigation measures during intrusive works.

### 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	<p>Superficial Deposits: Kempton Park Gravel Member - Sand and Gravel which is designated as a Secondary A Aquifer.</p> <p>Solid Geology: London Clay Formation - Clay and Silt which is designated as Unproductive Strata.</p> <p>Made Ground is also anticipated onsite associated with the historical onsite development.</p>
BGS Boreholes (within 100m of the site)	Borehole records are not available within 250m of the Site.
Within a Source Protection Zone	None recorded within 500m of the Site boundary.
Licensed Groundwater Abstraction Points	Two active groundwater abstraction points are located within 1km of the Site, the closest being located to 737m southwest registered to The Secretary of State for Justice used for Evaporative Cooling as well as Make-Up Or Top Up Water.
Surface Water Feature	The River Thames is located approximately 420m southwest of the Site. Another surface water feature is noted within the Chiswick House and Gardens located to approximately 500m northeast of the Site.
Likely Groundwater Flow Direction	<p>The Superficial Deposits of sand and gravel are designated a Secondary A Aquifer which is considered permeable and likely to contain groundwater at shallow depths. Significant groundwater content and sub-surface flow is not expected within the underlying bedrock.</p> <p>Based on the local topography of Site and surrounding area, any shallow groundwater would likely flow south or southwest towards the River Thames.</p>

#### 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.

Table 3.2: Environmental Data

Data type	Description	Distance (m) and Direction-
Radon	The Site is in a lower probability radon area as less than 1% of properties are above the Action Level. No radon protection measures are considered necessary for new dwellings.	N/A
Licensed Discharge Consents	None identified within 250m of site.	N/A
Mining Features	None identified within 250m of site.	N/A
Pollution Incident to controlled waters	None identified within 250m of site	N/A
Landfill sites (current and historical)	None with in 250m of the Site The nearest recorded is Environment Agency/Natural Resources Wales Historic Landfill Site: Staveley Road, Grove Park, Chiswick, Hounslow, London Inert waste type. Last recorded license on 31 <sup>st</sup> Dec 1951.	460m southeast
Potentially Infilled Land	Fishpond	217m north 220m north 221m north 227m north
	Pond	224m northeast 227m north
Local Authority pollution prevention and controls	None identified within 250m of site	N/A
Contemporary Trade Directory	Computer repair and servicing	118m east
	Unspecified works	167m southwest
	Electric Substation	227m west 237m southwest
Fuel Station Entries	No records of petrol or fuel sites have been identified within 250m of site	N/A
Flooding information	Groundwater flooding susceptibility areas within 50m of the boundary of the study site have been identified and associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding). The Site benefits from flood defences. The Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating is very low.	Onsite



Data type	Description	Distance (m) and Direction-
Designated environmentally sensitive sites	Royal Botanic Gardens, Kew Buffer Zone (World Heritage site England)	843m west
	Local Nature Reserve- Gunnersbury Triangle	861m north
Tunnels	None within 500m of the site	N/A

### 3.2.1 Summary

In terms of the environmental public register information identified in Table 3.2, the identified potential sources of contamination are not considered to pose a significant risk due to their distance from the Site and are not considered further.

## 4 PRELIMINARY CONCEPTUAL MODEL

Geo-environmental assessments are required in accordance with current regulatory guidance (CIRIA C552 - Ref. 3 and LC:RM – Ref. 4) to consider the significance of potential contamination in terms of plausible source-pathway-receptor pollutant linkages. As part of this process, it is necessary to develop a conceptual model of these potential pollutant linkages by identifying the potential contamination sources, sensitive receptors and any potential exposure pathways. A risk assessment is then undertaken to determine the likelihood that these potential pollutant linkages are complete.

### 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 site and within the surrounding area (Table 4.1).

Table 4.1: Potential sources of contamination on site

Source	Potential Contaminants
<b>On Site</b>	
Made Ground is likely to be present on the site from previous development and demolition.	Asbestos, metals, polycyclic aromatic hydrocarbons (PAH), hydrocarbons, ground gas
London Clay	Sulphates
Vehicle Parking/Domestic Garages	Hydrocarbons, lubricants and solvents (volatile organic compounds VOC)) from potential spills/leaks from vehicle maintenance activities and asbestos.
<b>Off Site</b>	
Made Ground from offsite developments	Metals, PAH, hydrocarbons, ground gas
Electricity Substation	Polychlorinated Biphenyls (PCBs) and hydrocarbons from potential spills/ leaks.
Timber Works	Hydrocarbons, PAH, organo tin compounds, pesticides / pyrethroids, creosote (phenols), heavy metals, and VOC.
Infilled land	Metals, PAH, hydrocarbons, ground gas

Compounds in green are of low mobility and have been discounted further when from off-site sources.

Pesticides / pyrethroids have been identified associated with the off-site timber works, given the distance from the Site, the time elapsed, and the lack of specific information about their use the risk to the Site from these contaminants of concern is considered to be low and they have not been considered further.

### 4.2 Potential Receptors

At the time of writing the proposed end use of the Site will comprise residential dwellings, however no design plans are available.

As a precautionary approach the potential human health receptor detailed below take into consideration the most conservative 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

- Future 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 the 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. 5) or any other relevant guidance. Construction workers are not considered further as human health receptors.

### 4.2.2 Controlled Waters

- The Superficial Deposits beneath the Site are classified as a Secondary A Aquifer and therefore considered a potential receptor at risk.
- The nearest surface water feature is the River Thames located 450m southwest of the Site. Considering the significant distance from site it is considered unlikely for any potential pollutants to reach the river. Therefore, for the purposes of this report surface waters has not been considered as a potential receptor.

### 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	Description
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.</p>
Controlled Waters (Secondary A Aquifer)	<p>Vertical migration of contaminants through the unsaturated zone into groundwater beneath the Site.</p> <p>Lateral migration of contaminants onto the Site from offsite sources and subsequent leaching to the ground water beneath.</p>
Buildings and structures including water supply pipes	<p>Direct contact of building services or foundations with contaminants in the soil and Made Ground leading to degradation of concrete or tainting of water supply.</p> <p>Migration of ground gases into buildings and accumulation of gasses in confined and poorly ventilated spaces leading to explosive gases or vapour.</p>

#### **4.4 Preliminary Qualitative Risk Assessment**

Potential sources of contamination are considered present on site and pathways and receptors will be introduced during redevelopment and as such potential pollutant linkages exist. The main potential sources of contamination identified within this report is Made Ground, although records indicate the Site was previously a cricket and athletics field the potential that Made Ground was introduced during redevelopment cannot be discounted.

Additional potential sources of contamination requiring consideration are the electric substation adjacent to the Site and contamination from offsite sources highlighted above. The degree of risk will need to be assessed prior to redevelopment. A ground investigation and assessment is recommended for the Site.

## **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. The waste contractor may require testing of the actual material to be disposed of 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**

From experience, the potential risk for significant remediation to be required, is likely to be low given the Site has not previously been used for industrial or commercial use. However, a detailed ground investigation has not been undertaken, therefore ground conditions are still unknown at this point and this assessment is a guide.

A ground investigation is recommended to determine the potential contamination present on the Site and any potential geotechnical constraints. Given the Site being underlain by sand and gravel and a Secondary A Aquifer, an investigation is recommended to identify potential impacts on the aquifer.

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

- Potential for asbestos to be present in existing structures;
- Asbestos protection measures during disturbance of Made Ground (depending on the findings of the ground investigation);
- Provision of gas protection measures (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 clean cover system in garden areas and public open space;
- Potentially further investigation and consultancy advice to support planning obligations;
- Potential for UXO;
- Potential presence of public utilities and services; and
- Reference should be made to the Ecological Assessment Report (Ref: 10030793-ARC-XX-XX-RP-EC-0218-01) with respect to potential presence of invasive species.

## 6 GEOTECHNICAL CONSIDERATIONS

### 6.1 General Comments

No relevant historical borehole data has been identified for the Site. Based on the lack of site-specific intrusive investigation the following potential geotechnical constraints and ground engineering abnormal should be considered which may influence future development. These are not conclusive and site-specific ground investigation should be carried out to confirm prevailing constraints:

- **Ground Conditions** - A ground investigation will be required to determine the nature of the ground conditions including contamination and geotechnical data to establish the depth to competent bearing strata for foundation design. The nature and thickness of the Made Ground (if present) is unknown. The likely engineering performance of the Made Ground is not known. Kempton Park Gravel Member comprising sands and gravels may be suitable for shallow foundations for light weight structures but will need to be confirmed with the Ground Investigation.
- **Ground Gas** - Future development may need to be designed to mitigate against soils borne ground gas from Made Ground.
- **Shrinkable Clays** - The plasticity of the Made Ground and Superficial Deposits and depth to the London Clay Formation are not known and therefore consideration will need to be given to the potential impact of shrinkable clays, existing offsite vegetation and future planting when considering the depths of foundations.
- **Variable Ground Conditions** - The presence of Made Ground and superficial deposits and their potentially heterogeneous nature is likely to produce variable conditions across the Site depending on thickness and composition.
- **Underground Structures** - Former foundations, services and concrete obstructions (if present) from historical on-site development may need removal.
- **Shallow Groundwater** - Should shallow groundwater be present dewatering measures and excavation support would be required (depending on the findings of the ground investigation). This may also have implication upon the foundation design.
- **Contamination** - Potential contamination may require mitigation for future development, site users and controlled waters.
- **Sulphates** - Buried concrete may need to be designed to mitigate against natural adverse chemical conditions.
- **Underground Services** - Provision of contaminant resistant water supply pipes maybe required (depending on the findings of the ground investigation). An electrical substation is present on the southern boundary.
- **Excavations / Support** - The consequences of trench stability can vary, but usually pose a problem to the Contractor either by collapse into an already excavated trench or by the removal of support to plant, equipment or materials located adjacent to the excavation. The need to ensure stability and limit ground movements is of prime importance where excavations are adjacent to structures, roads, and public utilities or where man entry is envisaged. The suitability of the Contractor's proposals for ground support will be particularly important in such areas.

It is anticipated that excavations within the Made Ground and superficial deposits should be achievable using a suitable size of conventional excavation plant. Excavations within these materials are unlikely to remain stable even in the short term and close lateral support will always be required or the sides of the excavation battered back to a safe angle. Groundwater may require management. Obstructions may require breaking out.

- **Instability of nearby structures** - Consideration will need to be given to the potential impacts of instability of excavations upon adjacent to existing buildings/structures. Ground movement and vibrations may affect existing structures and may require mitigation.

## 6.2 Foundations

Potential founding solutions will be dependent on the thickness of Made Ground and the geotechnical properties of the natural deposits. Made Ground is generally considered unsuitable for foundations due to its variable composition and its potential for high total and differential settlement.

At this stage based on development history it is envisaged that where Made Ground is absent or shallow, the Kempton Park Gravel Member, if comprising competent sands and gravels, may be suitable for shallow foundations for light weight structures. Ground conditions will need to be confirmed via an appropriate ground investigation.

In areas of deeper Made Ground, or where deeper soft compressible or loose material is present (the depth of which would need to be determined) deeper foundation options including piles or ground improvement methods maybe required.

## 7 CONCLUSIONS AND RECOMMENDATIONS

The Site is currently used as car parking and garages. An intrusive site investigation has not been undertaken. The Site was previously a cricket and athletics field until it was redeveloped to its current layout in mid 1950s.

### 7.1 Design Considerations

Potential sources of contamination have been identified, as shown in table 4.1 and potential pollutant linkages exist. Therefore, an appropriate ground investigation is recommended to determine ground conditions for foundation design and the chemical regime to assess the degree of risk to end users and controlled waters. This should include for chemical testing of soils, groundwater monitoring (if present) and gas monitoring in accordance with the recommendations in CIRIA C665 (Ref. 6) and LC:RM (Ref. 4) and consideration of shrinkage and swelling, compressible ground stability 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 PPE and follow the site-specific contractors risk assessment which should include risks to human health from potential contamination including soil borne gas. Due to the historic phases of development, demolition and redevelopment consideration should be given to the potential presence of asbestos within the Made Ground, soil contamination and the potential for impacted groundwaters.

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 risk to the underlying Principal Aquifer if foundations or piling which penetrate the base of the Made Ground are proposed.

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 ground services may be present the Site. These will need to be taken into consideration during the proposed development.



## 8 REFERENCES

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8. Unexploded Ordnance Survey (Arcadis Ref: [10030793-ARC-XX-XX-RP-YY-0184-01-UXO Report](#))
9. Zetica unexploded bomb map accessed November 2019.

## **APPENDIX A**

### **Historical Ordnance Survey Maps**

#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** County Series

**Map date:** 1840

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1840  
 Revised 1840  
 Edition N/A  
 Copyright N/A  
 Levelling N/A

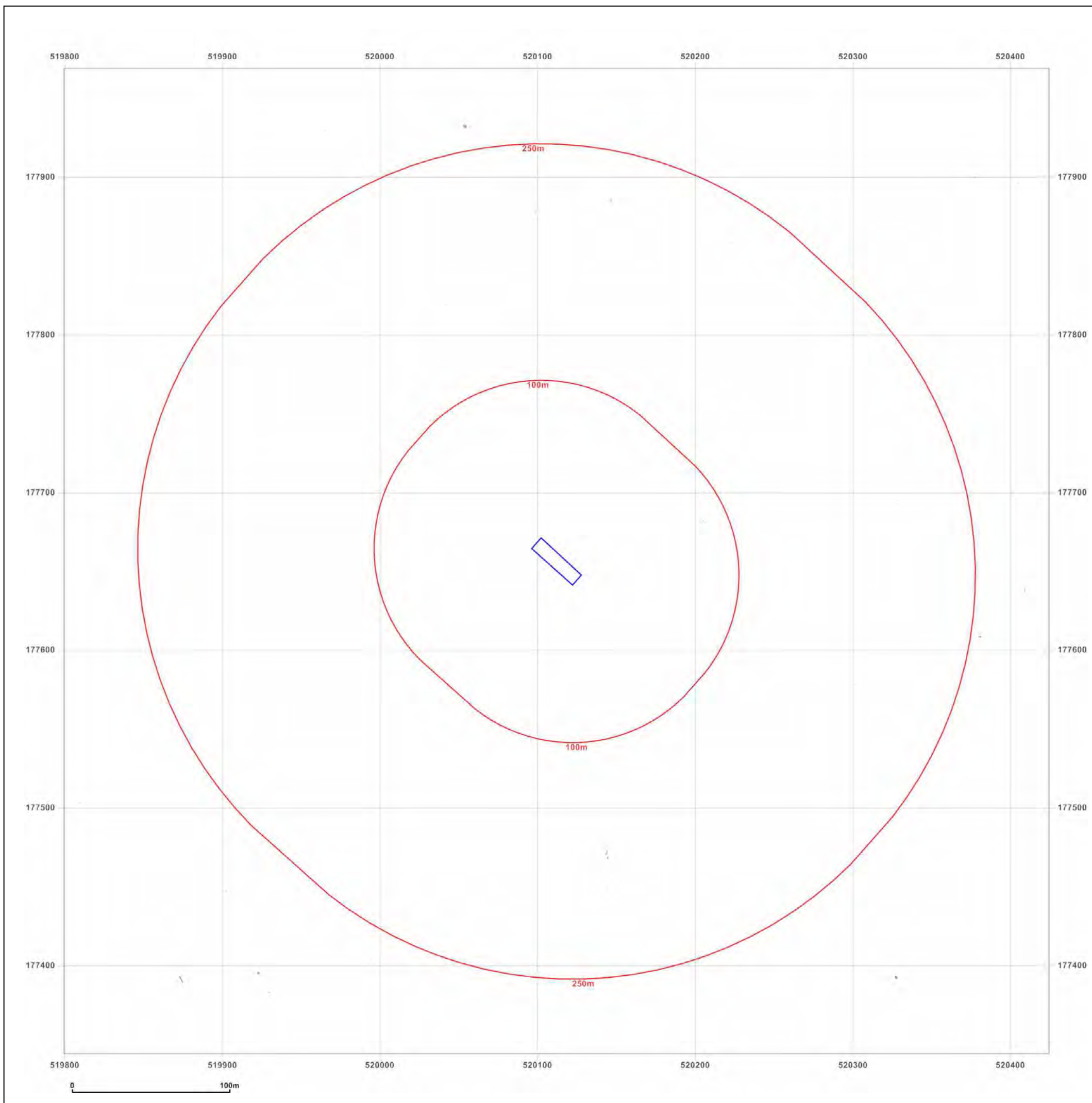


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Production date: 08 November 2019

Map legend available at:  
[www.groundsure.com/sites/default/files/groundsure\\_legend.pdf](http://www.groundsure.com/sites/default/files/groundsure_legend.pdf)



#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** County Series

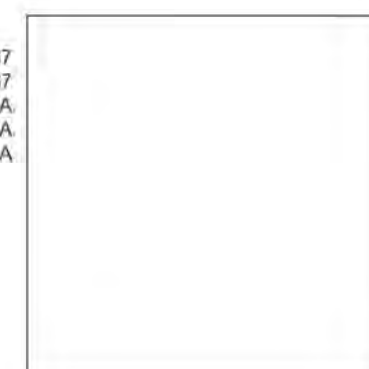
**Map date:** 1867

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1867  
 Revised 1867  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

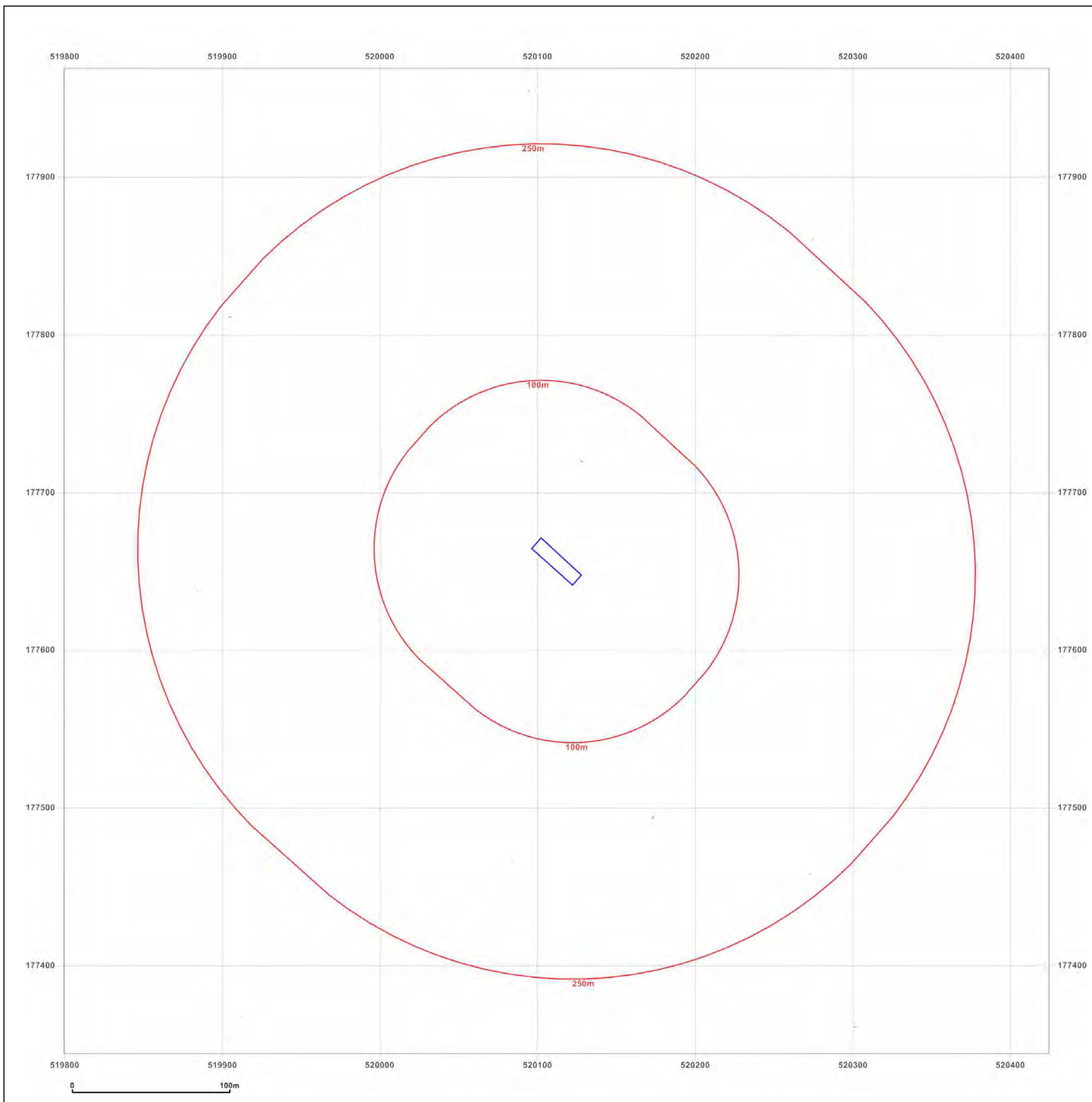


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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: County Series

Map date: 1867

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1867  
Revised 1867  
Edition N/A  
Copyright N/A  
Levelled N/A

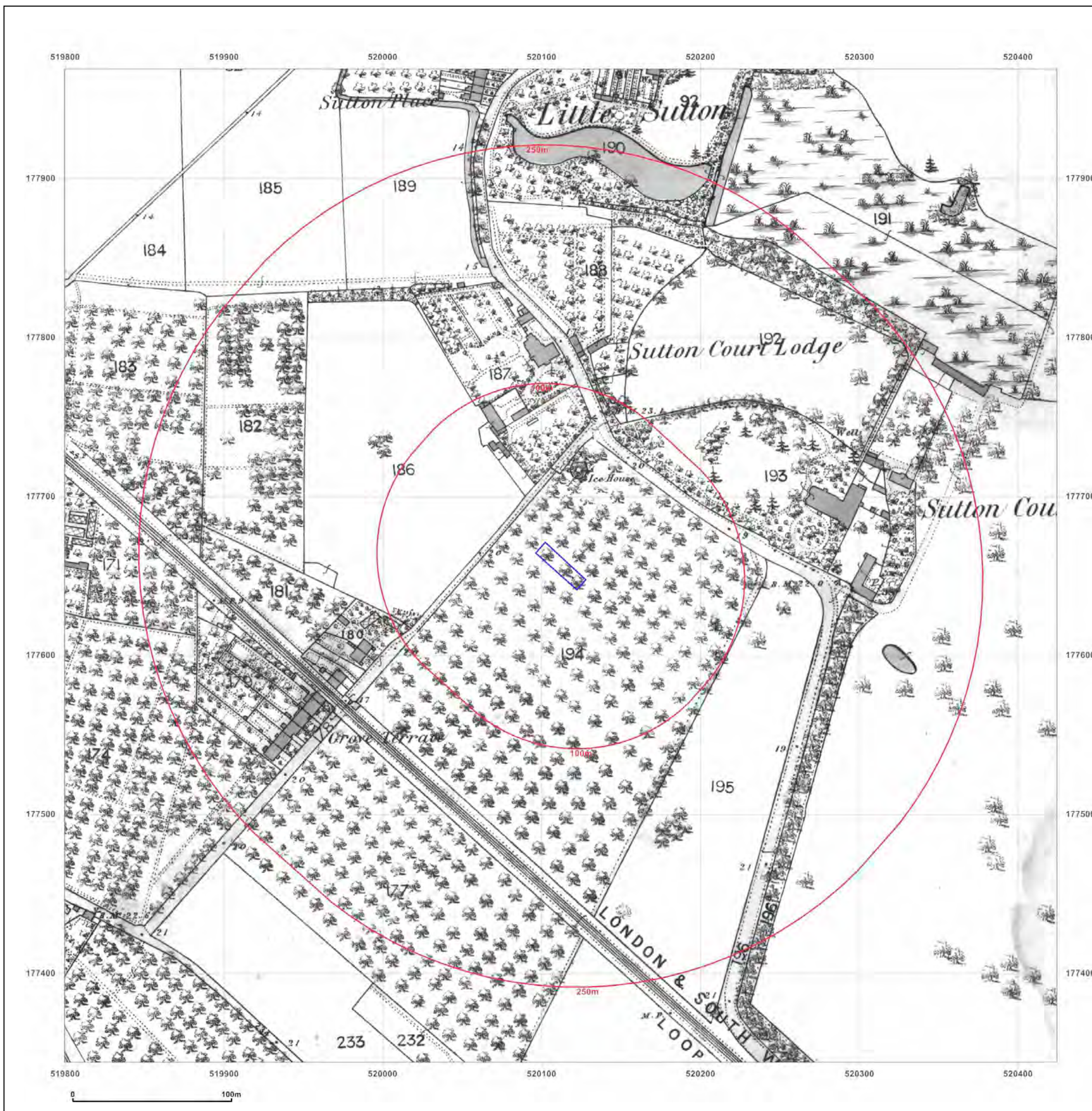


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** County Series

**Map date:** 1868

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1868  
 Revised N/A  
 Edition N/A  
 Copyright N/A  
 Levellad N/A

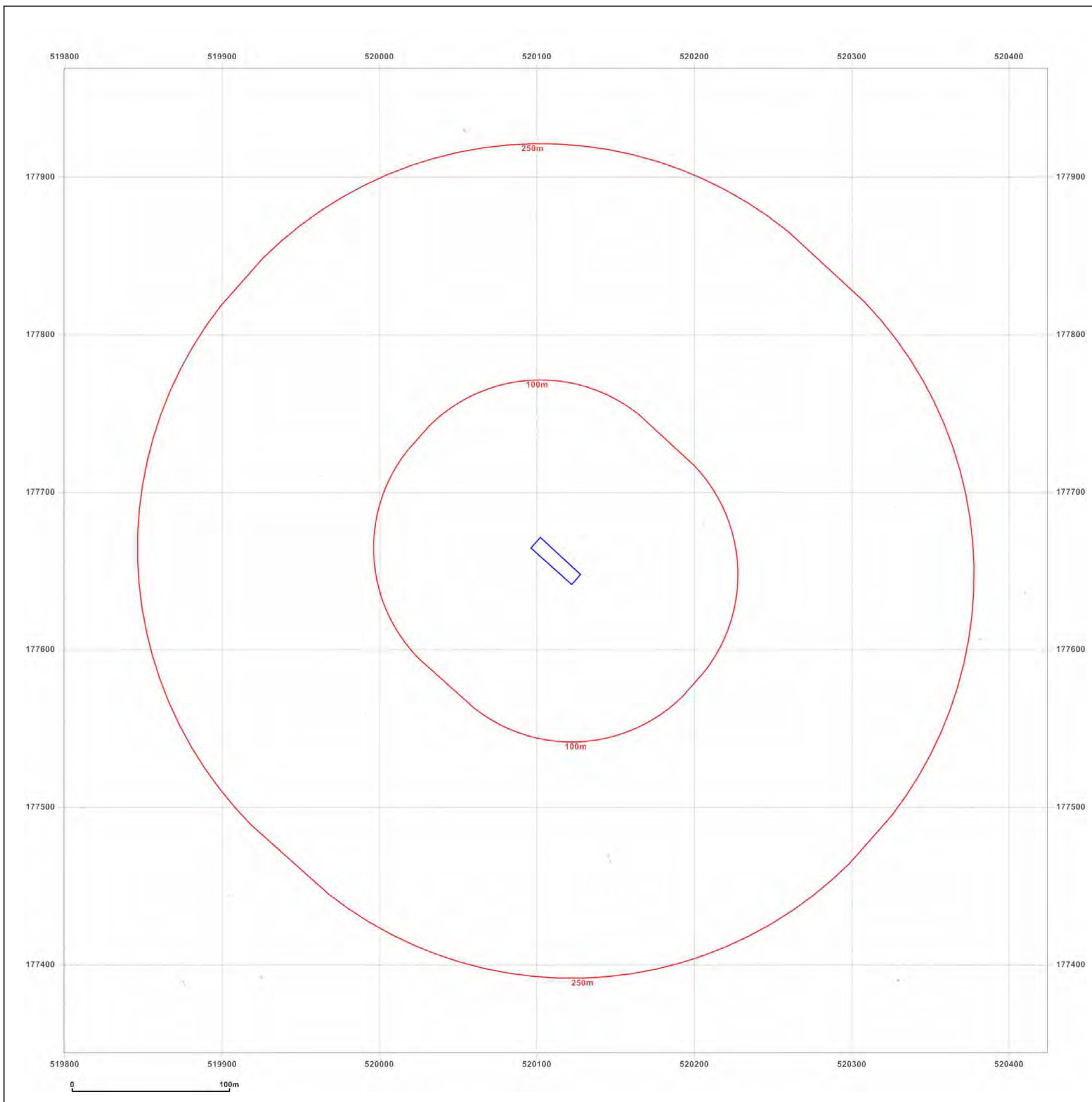


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** 1056 Scale Town Plan

**Map date:** 1896

**Scale:** 1:1,056

**Printed at:** 1:1,056



Surveyed 1891  
 Revised N/A  
 Edition 1896  
 Copyright N/A  
 Levelled N/A

Surveyed 1891  
 Revised N/A  
 Edition 1896  
 Copyright N/A  
 Levelled N/A

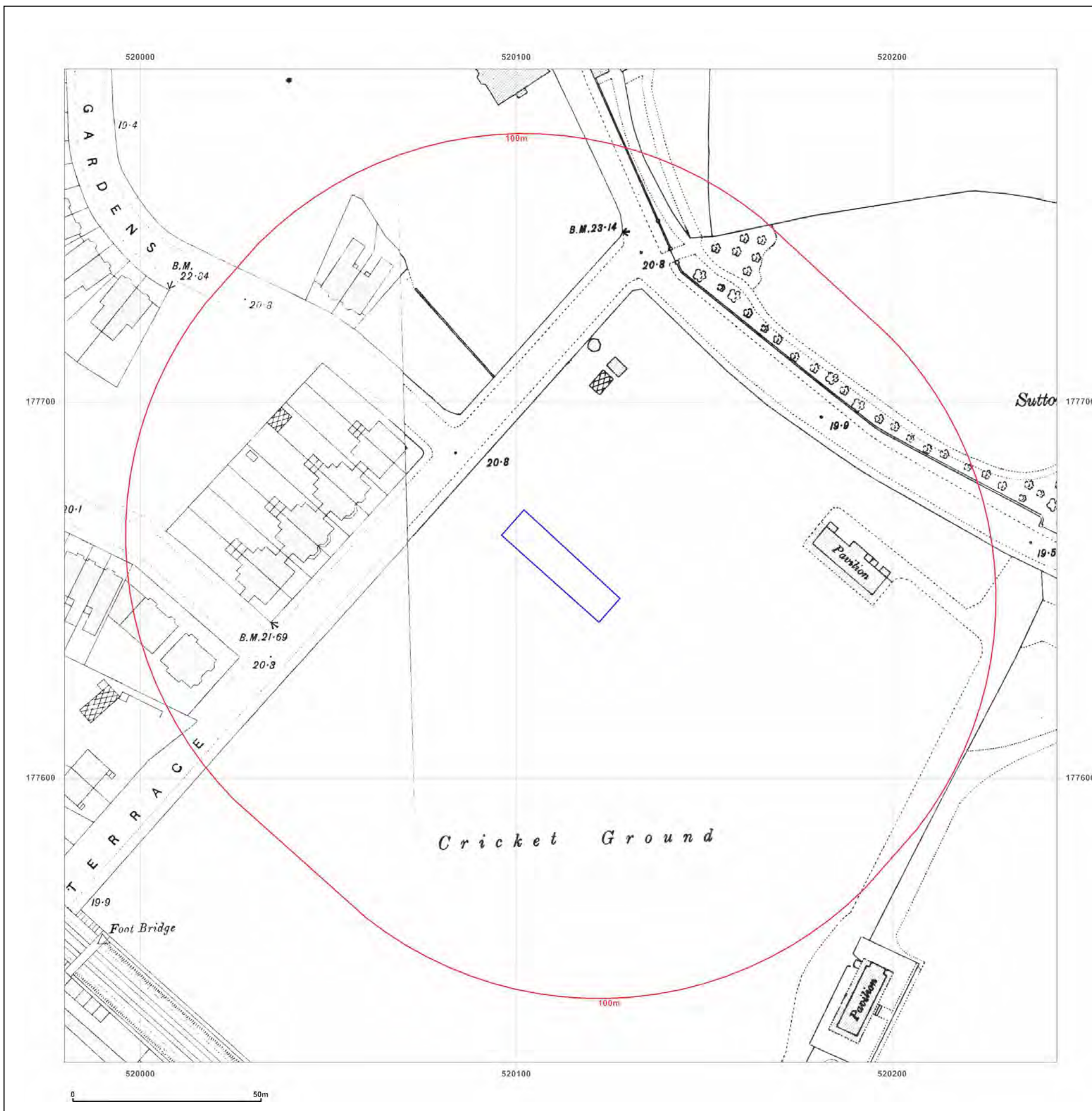


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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: County Series

Map date: 1896

Scale: 1:2,500

Printed at: 1:2,500



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

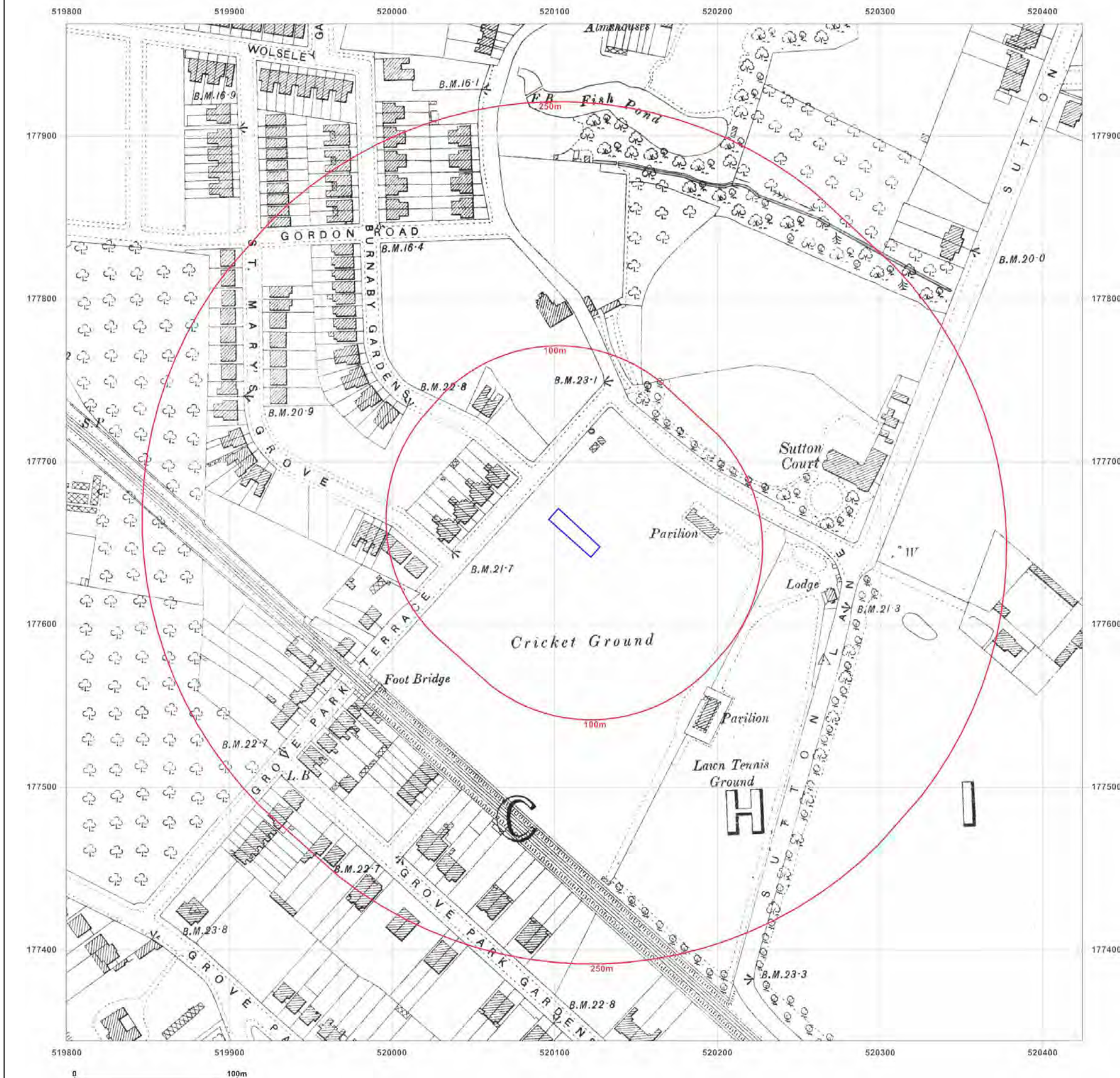


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** County Series

**Map date:** 1915

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1915  
 Revised 1915  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

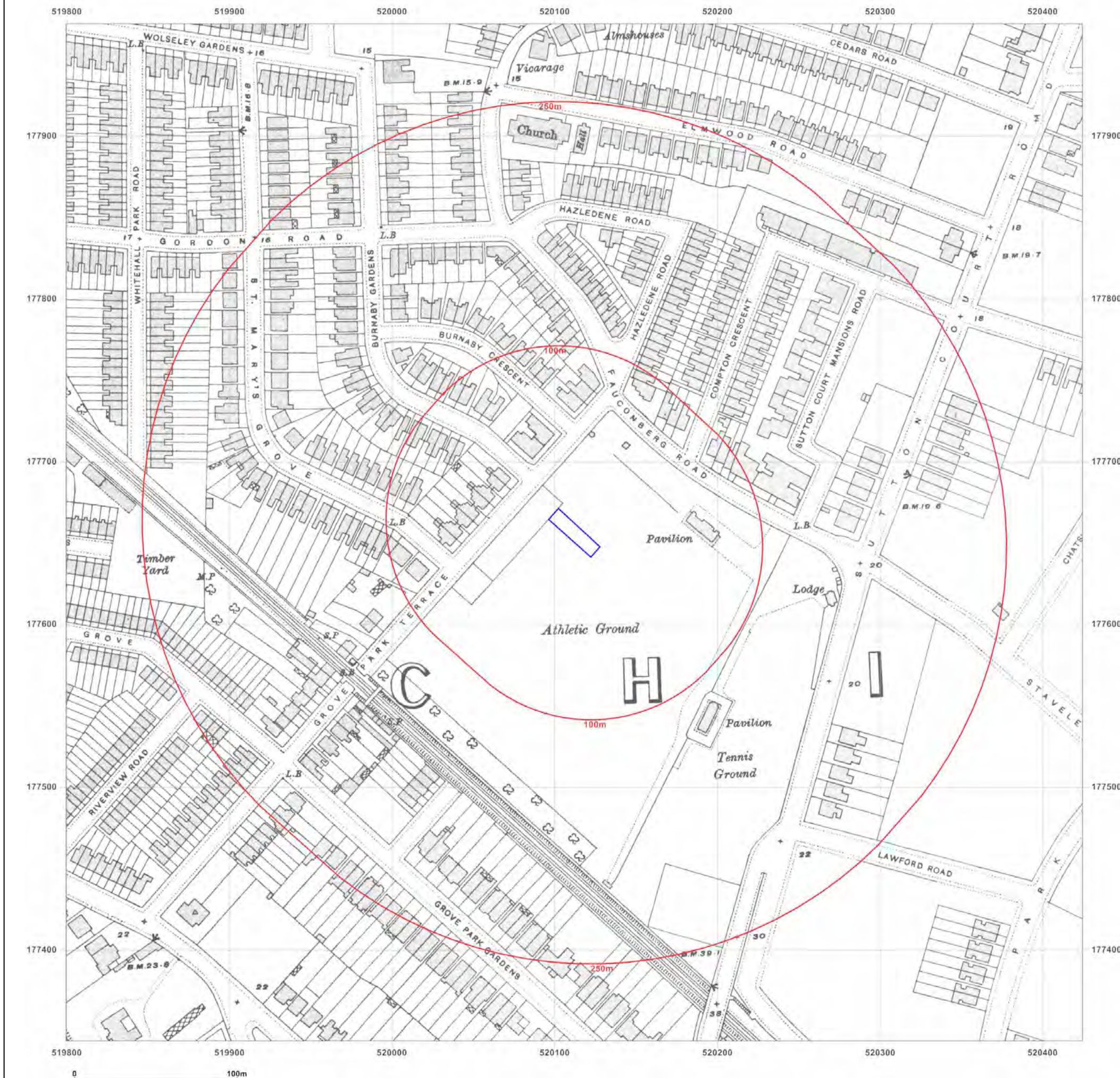


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** County Series

**Map date:** 1933

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1933  
 Revised 1933  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

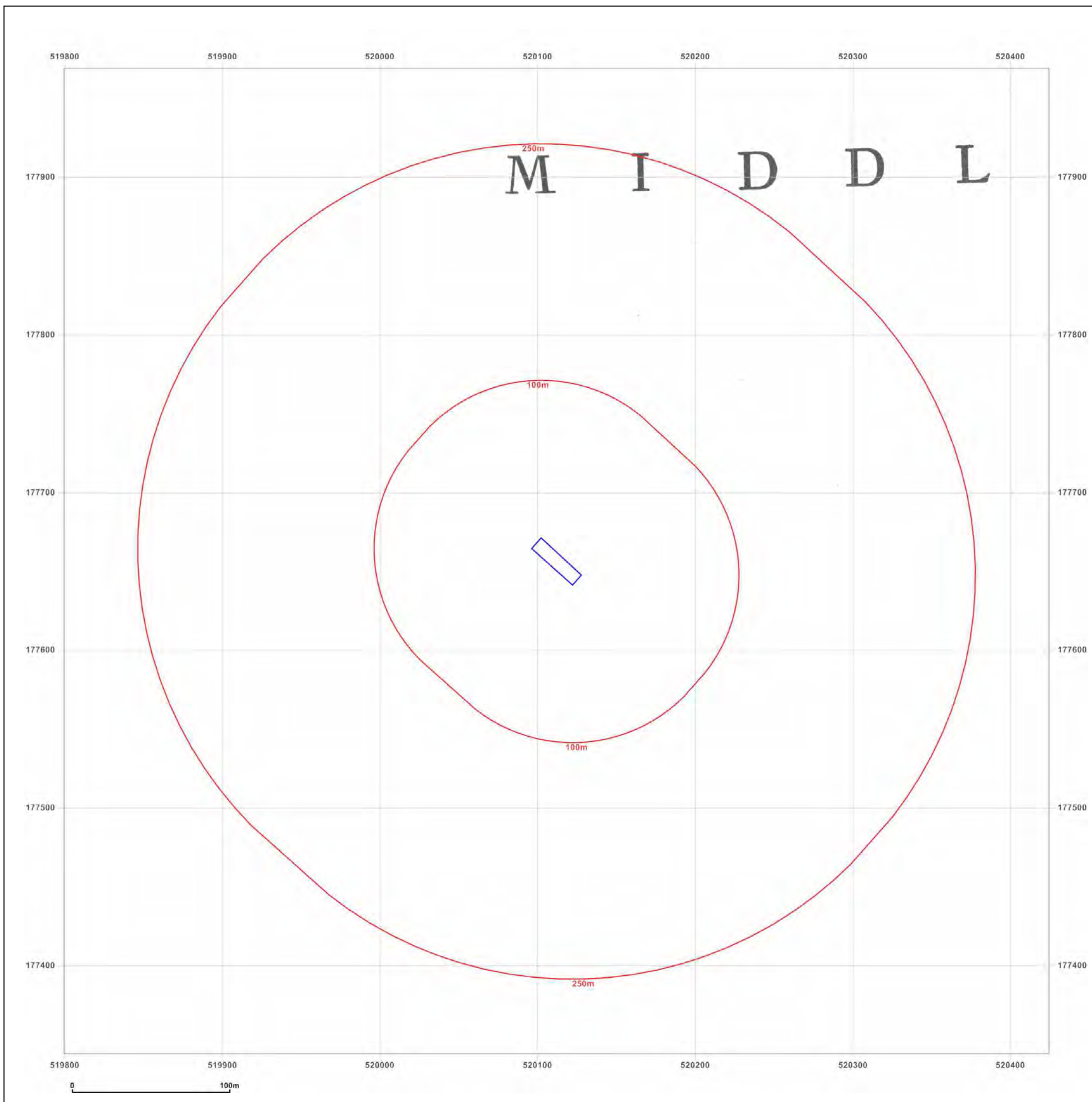


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** County Series

**Map date:** 1935

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1935  
 Revised 1935  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

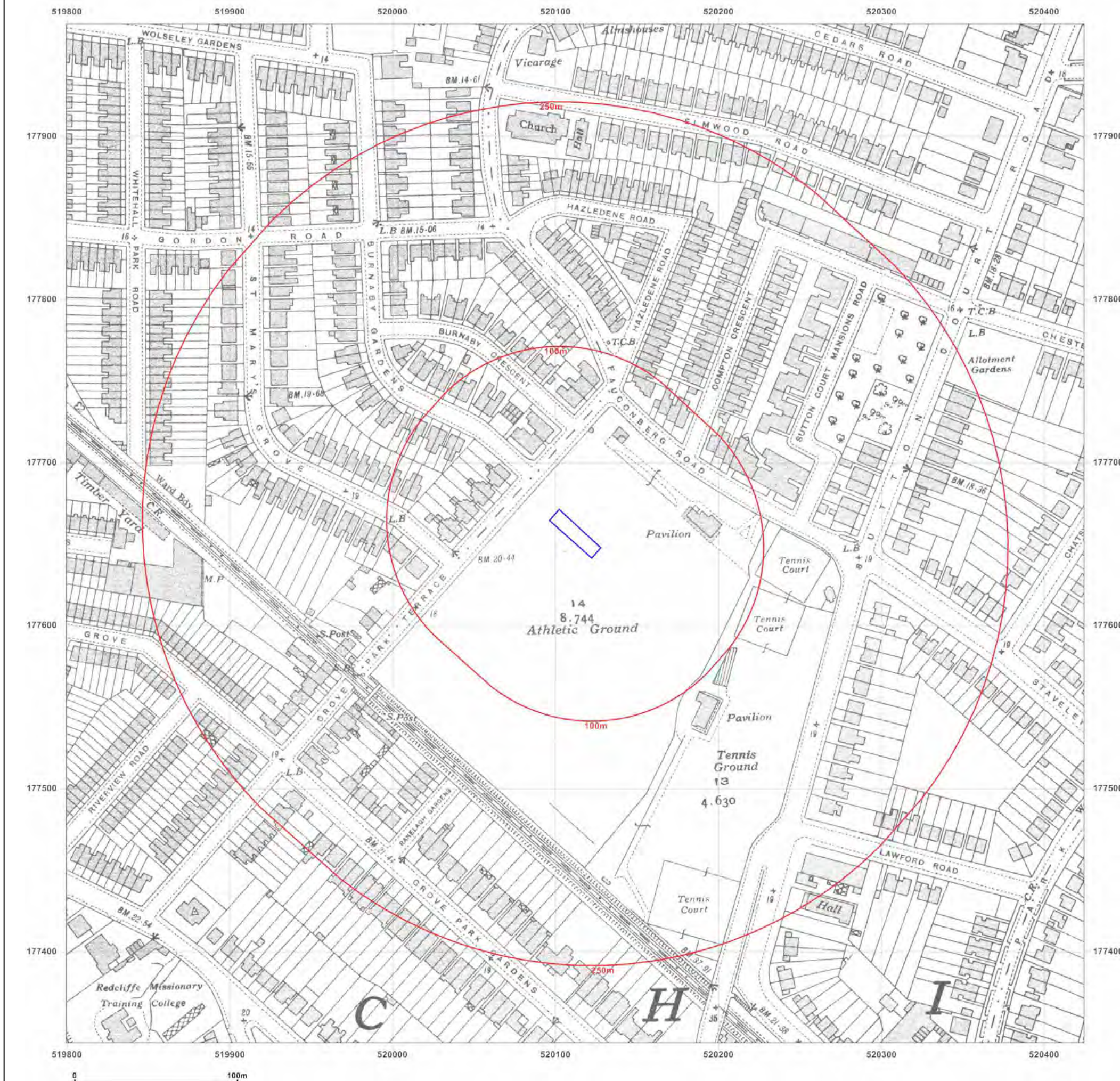


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** County Series

**Map date:** 1940

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1940  
 Revised 1940  
 Edition N/A  
 Copyright N/A  
 Levelling N/A

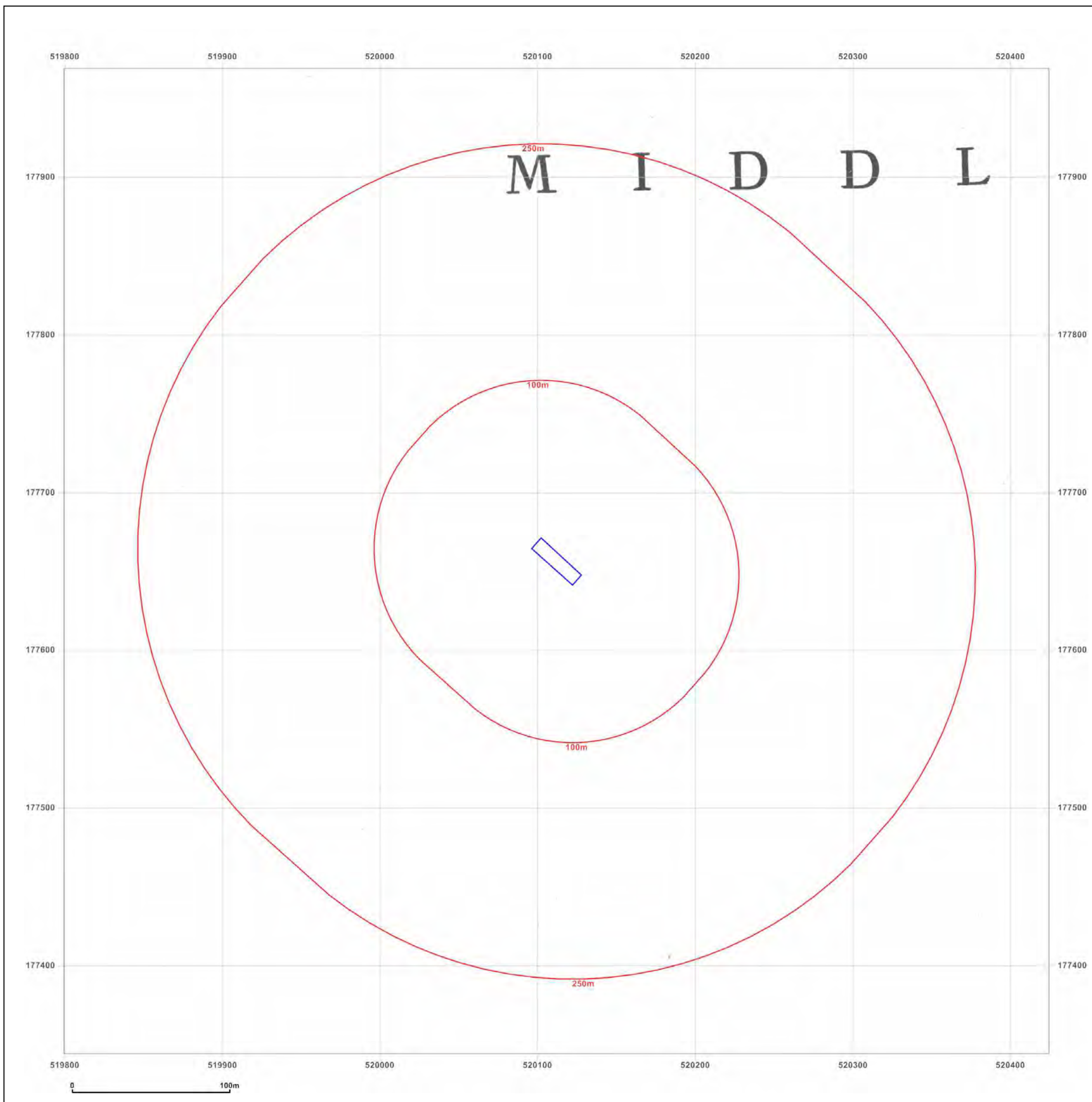


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1951

**Scale:** 1:1,250

**Printed at:** 1:2,000



Surveyed 1951  
 Revised 1951  
 Edition N/A  
 Copyright N/A  
 Levelled 1932

Surveyed 1951  
 Revised 1951  
 Edition N/A  
 Copyright N/A  
 Levelled 1932

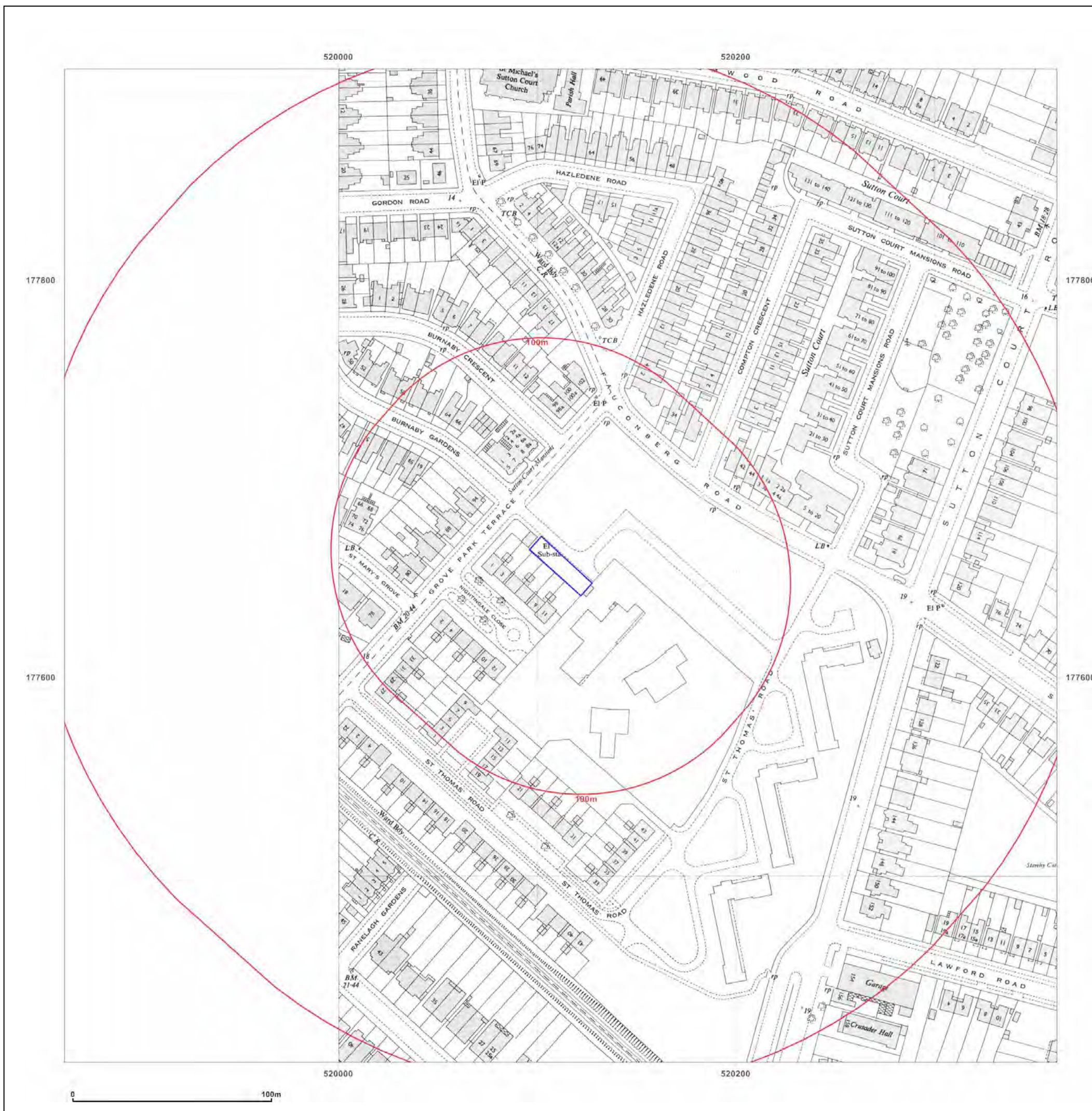


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#### Site Details:

520111 177659

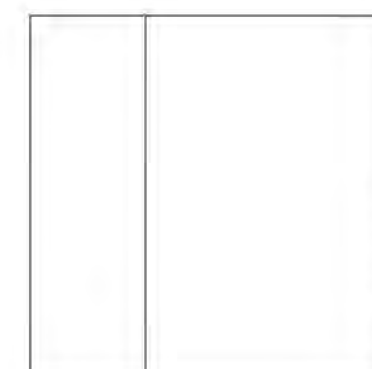
**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1951

**Scale:** 1:2,500

**Printed at:** 1:2,500



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



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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1954

**Scale:** 1:1,250

**Printed at:** 1:2,000



Surveyed 1951  
 Revised 1954  
 Edition N/A  
 Copyright N/A  
 Levelled 1932

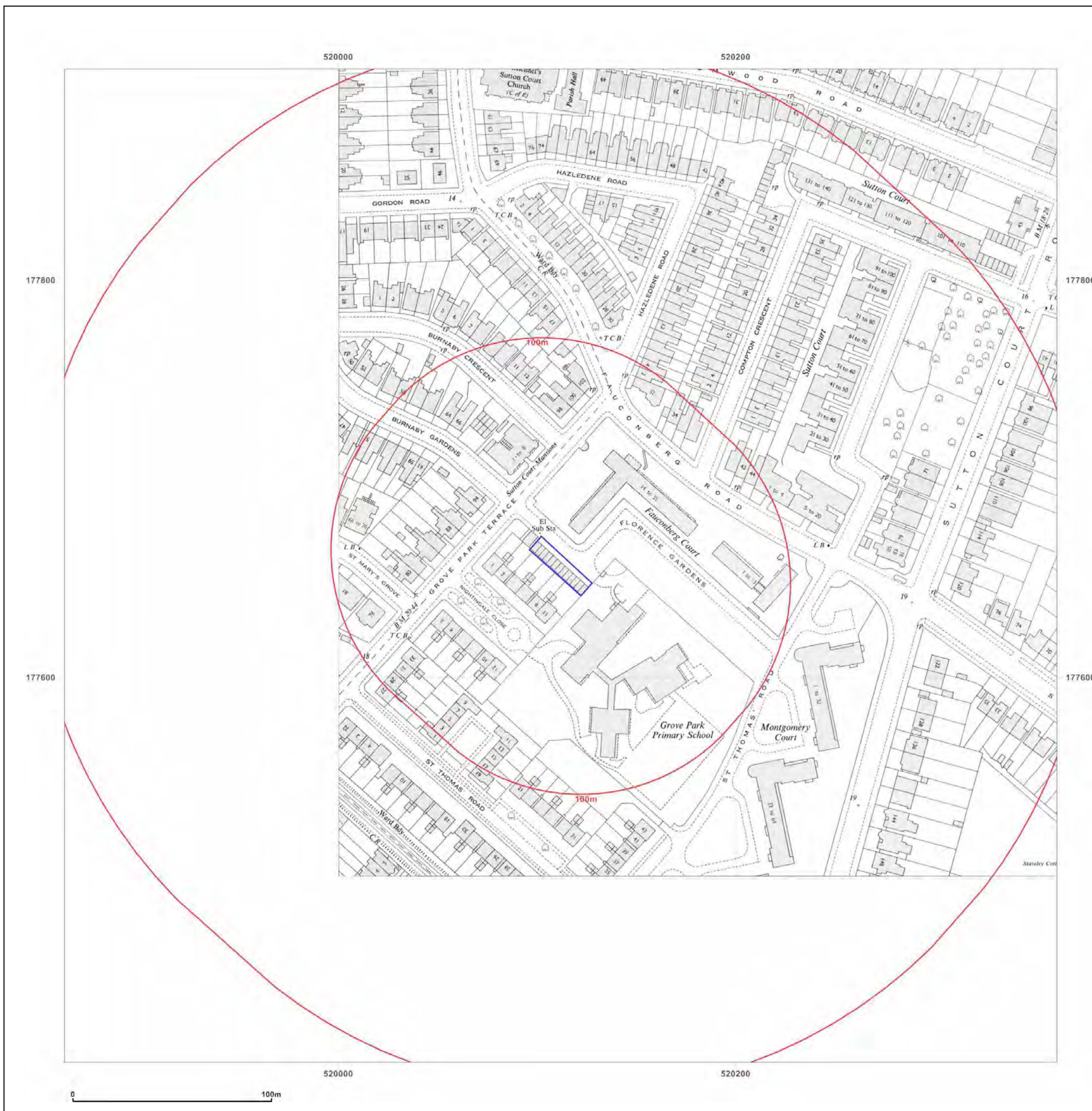


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1955-1960

**Scale:** 1:1,250

**Printed at:** 1:2,000



Surveyed 1959  
 Revised 1959  
 Edition N/A  
 Copyright 1960  
 Levelled 1954

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

Surveyed 1959  
 Revised 1959  
 Edition N/A  
 Copyright 1960  
 Levelled 1954

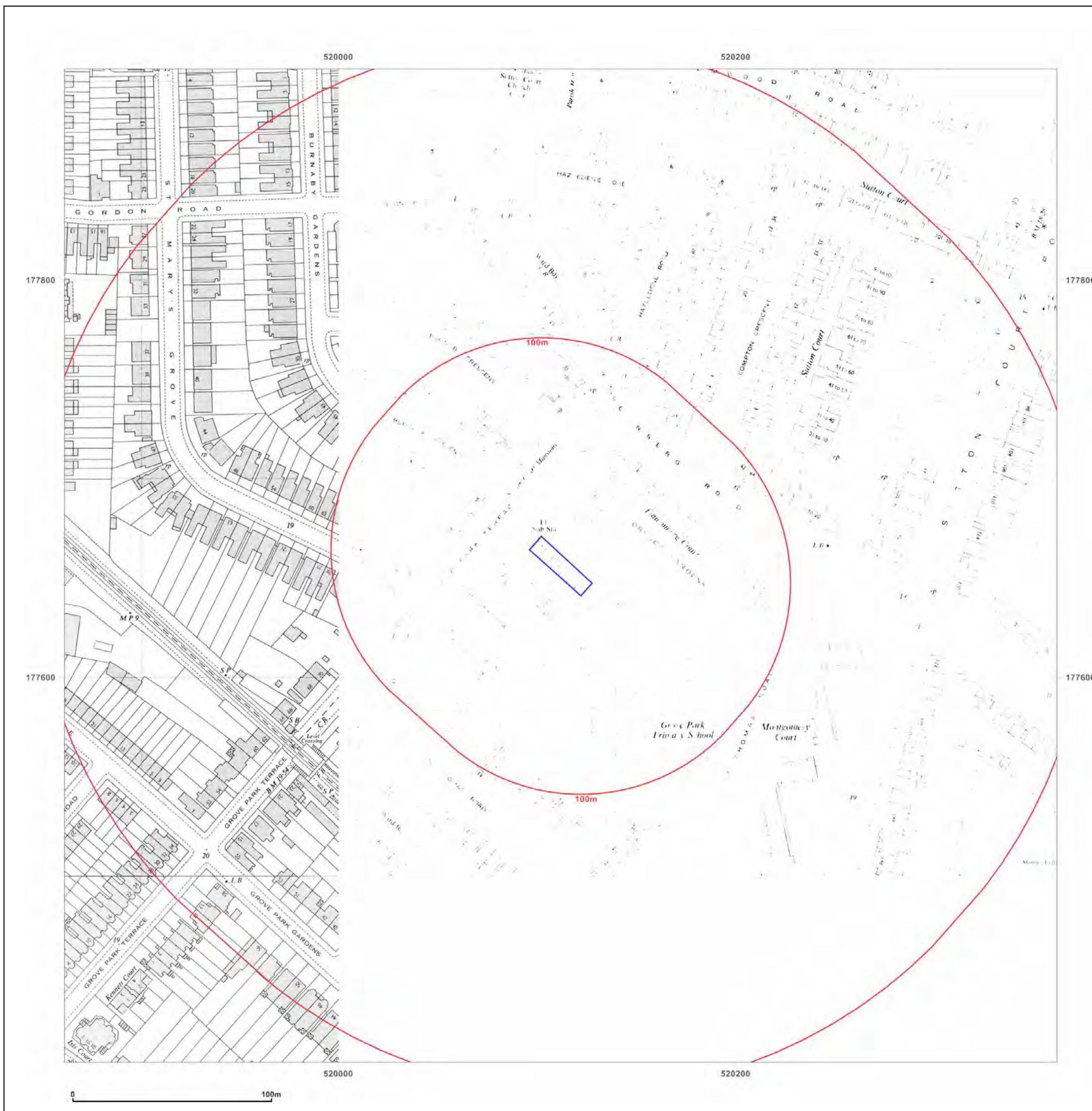


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

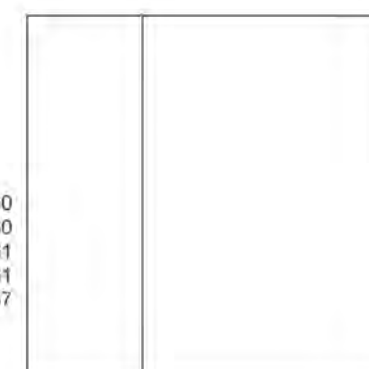
**Map date:** 1960

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1960  
 Revised 1960  
 Edition 1961  
 Copyright 1961  
 Levelled 1957

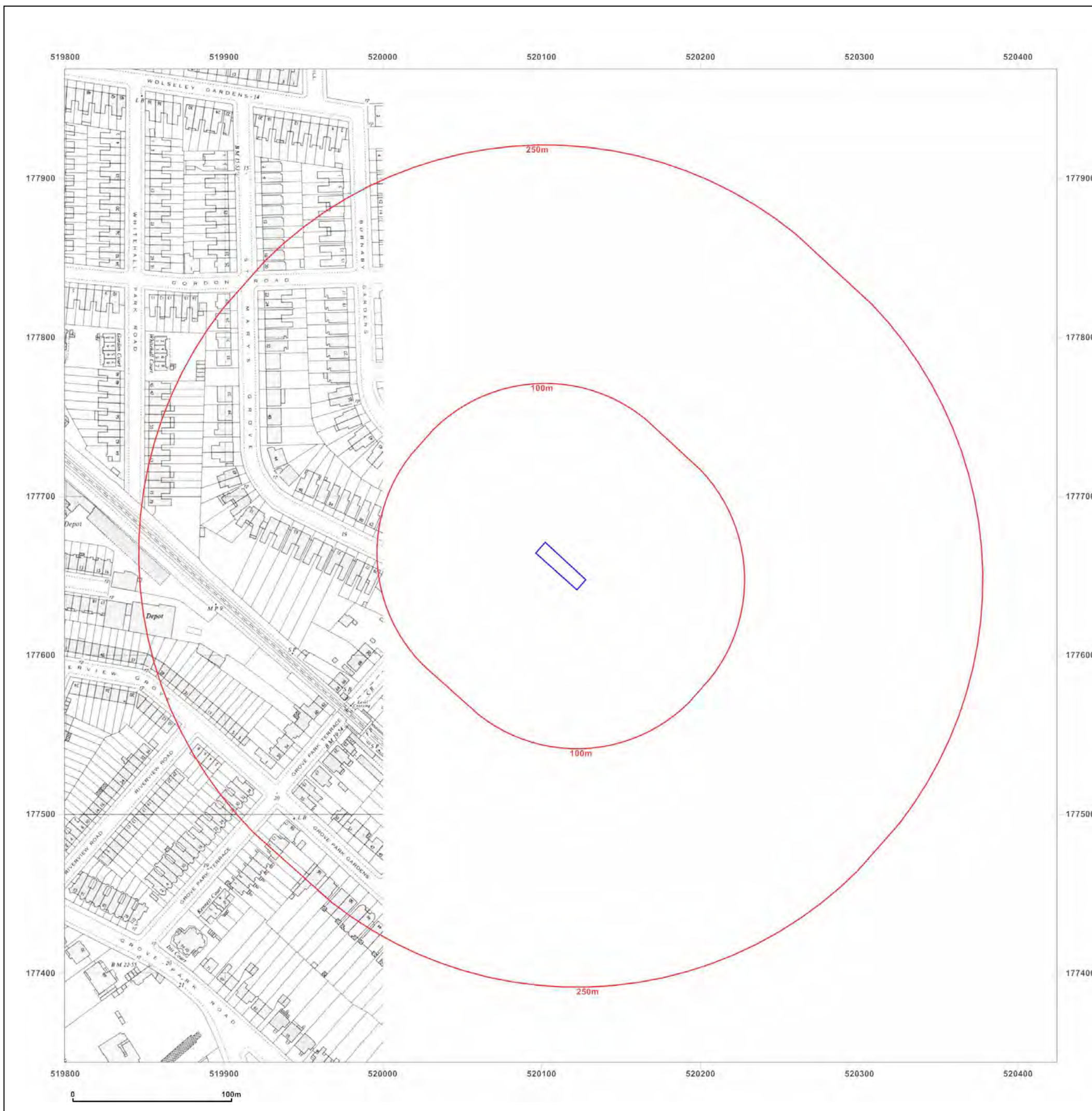


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1963-1965

**Scale:** 1:1,250

**Printed at:** 1:2,000



	<p>Surveyed 1951  Revised 1964  Edition N/A  Copyright 1965  Levelled 1954</p>
	<p>Surveyed 1951  Revised 1963  Edition N/A  Copyright 1963  Levelled 1954</p>

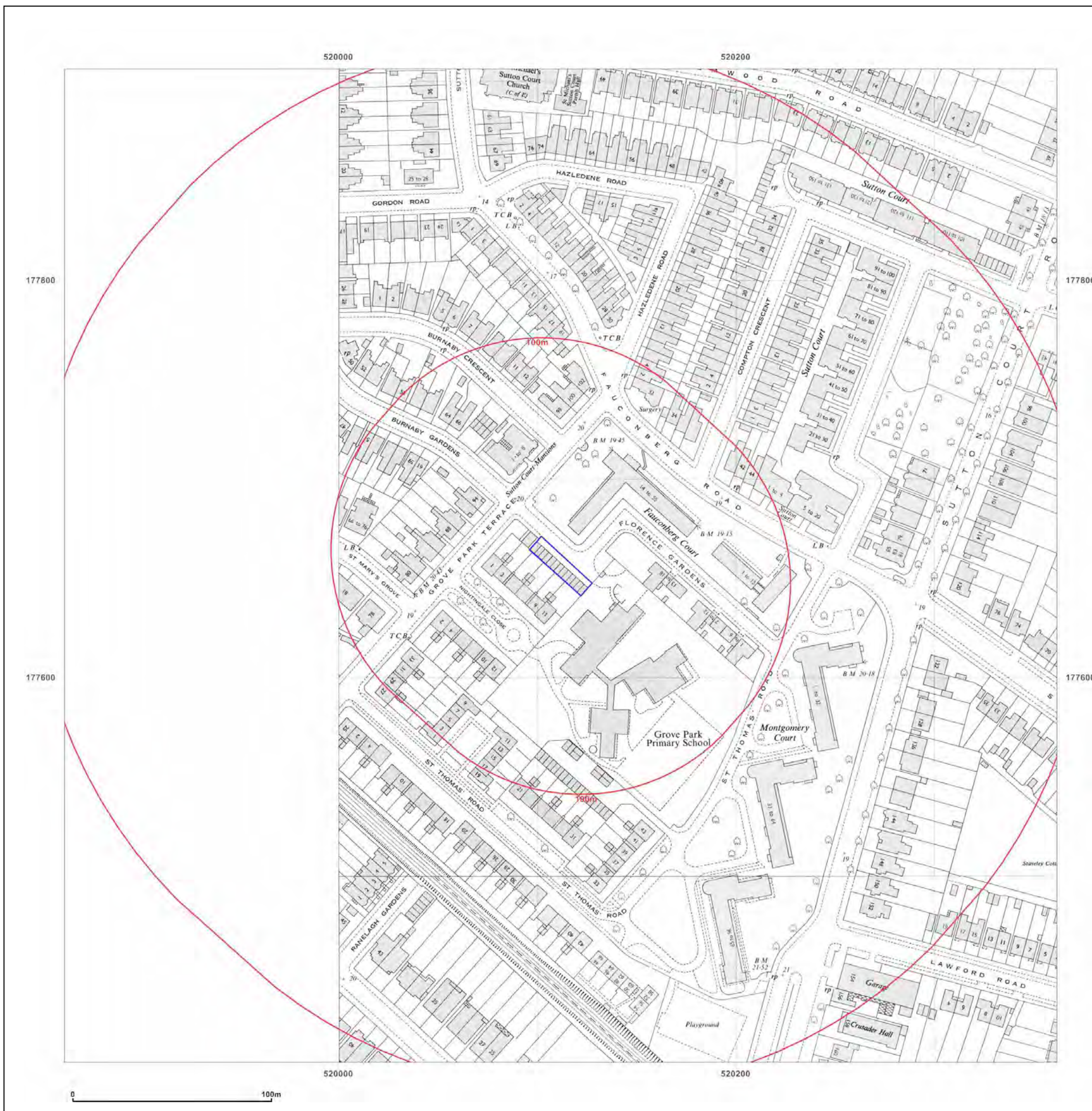


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1961-1965

**Scale:** 1:2,500

**Printed at:** 1:2,500



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

Surveyed 1965  
 Revised 1965  
 Edition N/A  
 Copyright 1967  
 Levelled 1954

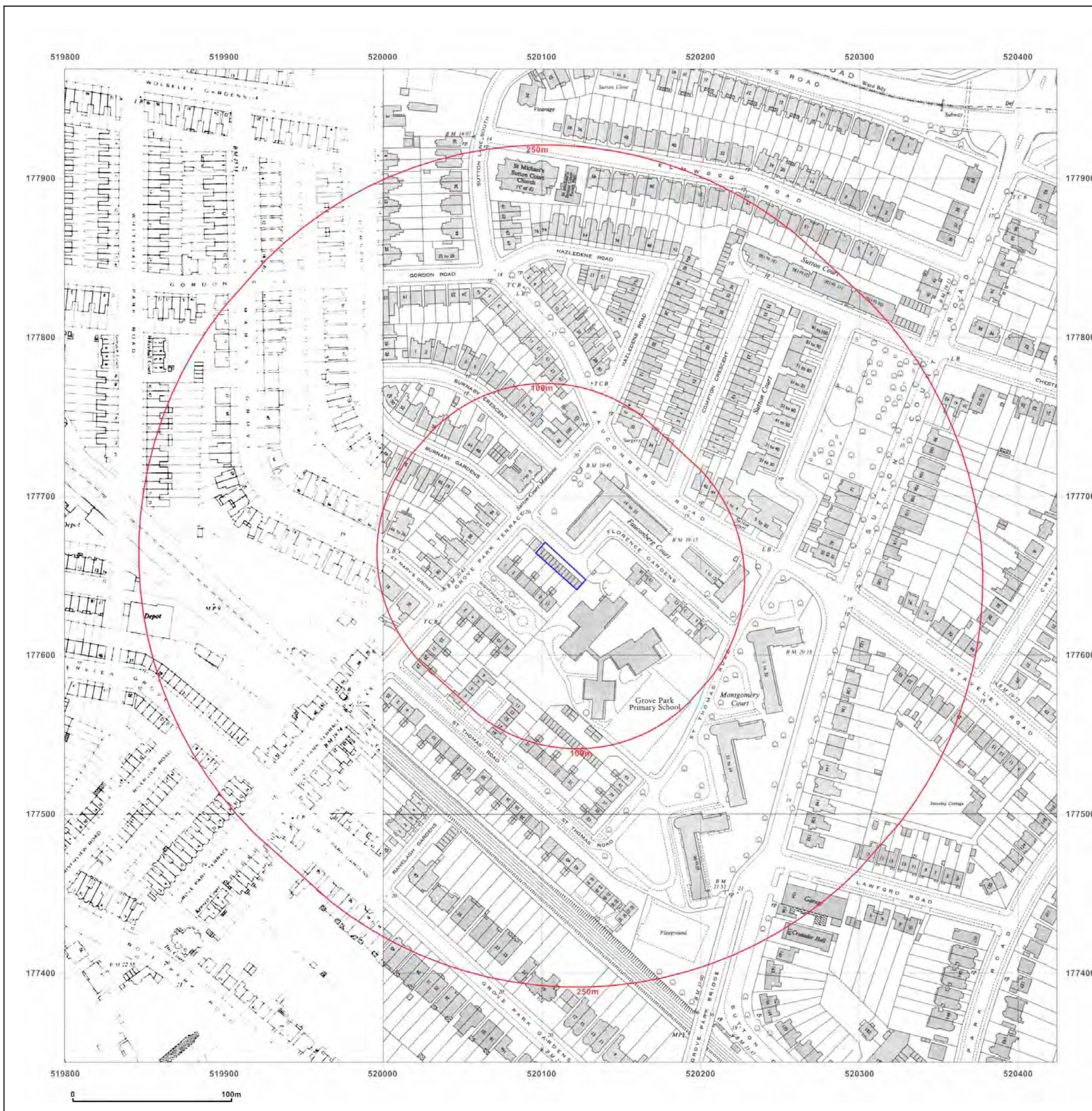


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1965-1967

**Scale:** 1:2,500

**Printed at:** 1:2,500



Surveyed 1960  
 Revised 1965  
 Edition N/A  
 Copyright 1961  
 Levelled 1957

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

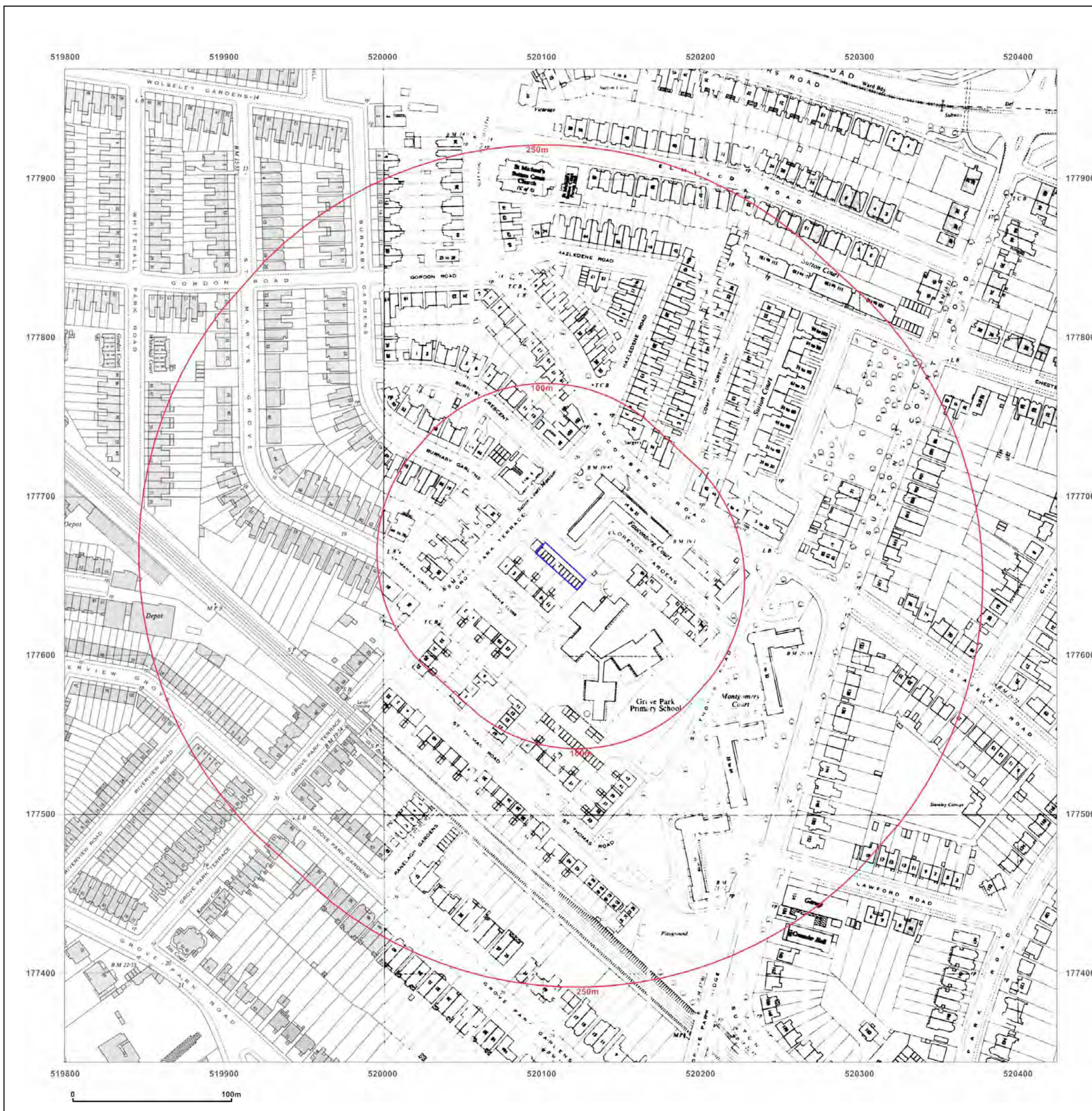


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1972-1974

**Scale:** 1:1,250

**Printed at:** 1:2,000



Surveyed 1959  
 Revised 1971  
 Edition N/A  
 Copyright 1972  
 Levelled 1954

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



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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1975-1985

**Scale:** 1:1,250

**Printed at:** 1:2,000



Surveyed 1954  
 Revised 1985  
 Edition N/A  
 Copyright 1985  
 Levelled 1954

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

Surveyed 1980  
 Revised 1980  
 Edition N/A  
 Copyright 1980  
 Levelled N/A

Surveyed 1973  
 Revised 1983  
 Edition N/A  
 Copyright 1983  
 Levelled 1973



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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1987-1991

**Scale:** 1:1,250

**Printed at:** 1:2,000



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

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

Surveyed 1975  
 Revised 1987  
 Edition N/A  
 Copyright 1987  
 Levelled 1975

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

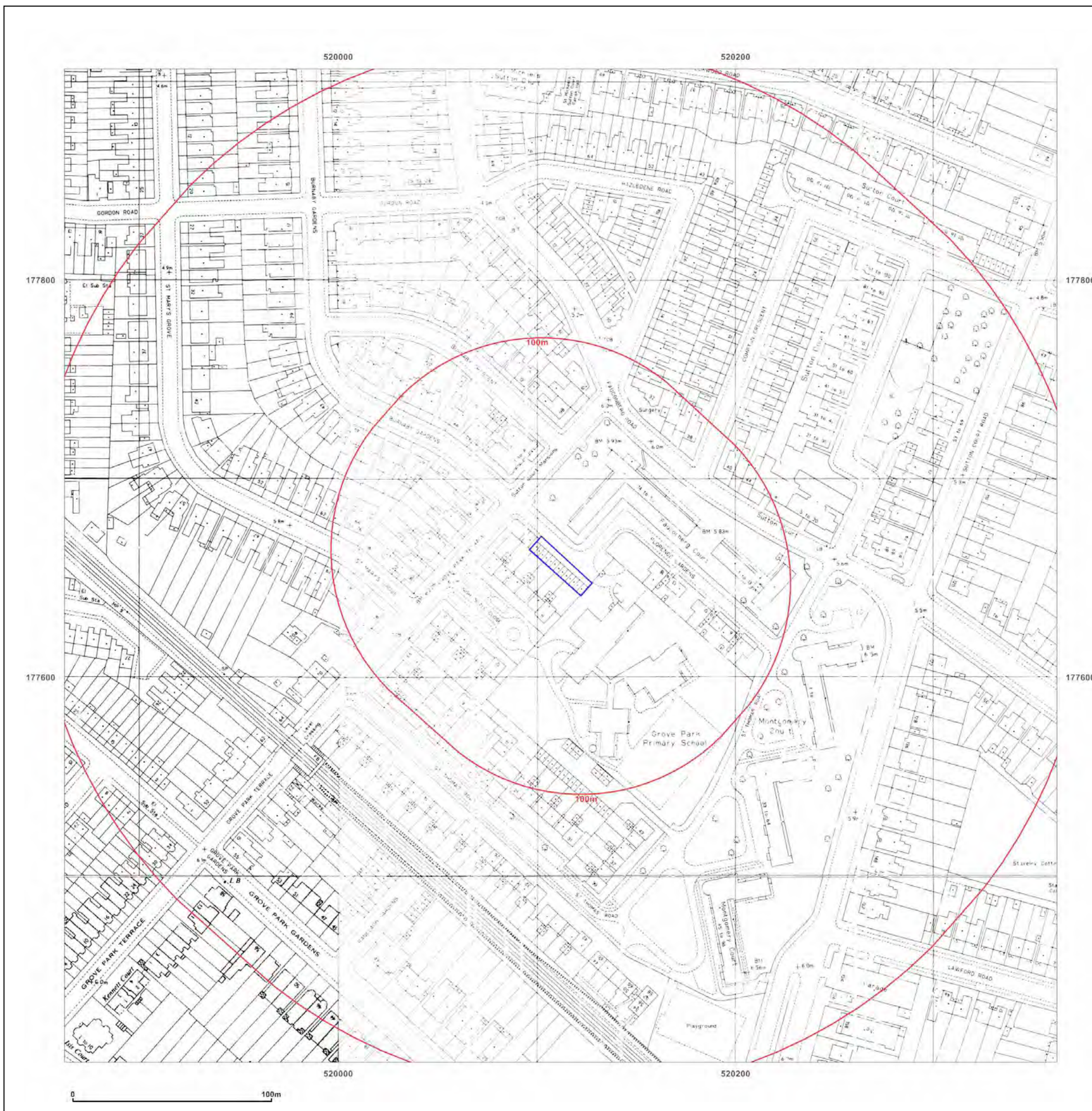


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1992

**Scale:** 1:1,250

**Printed at:** 1:2,000



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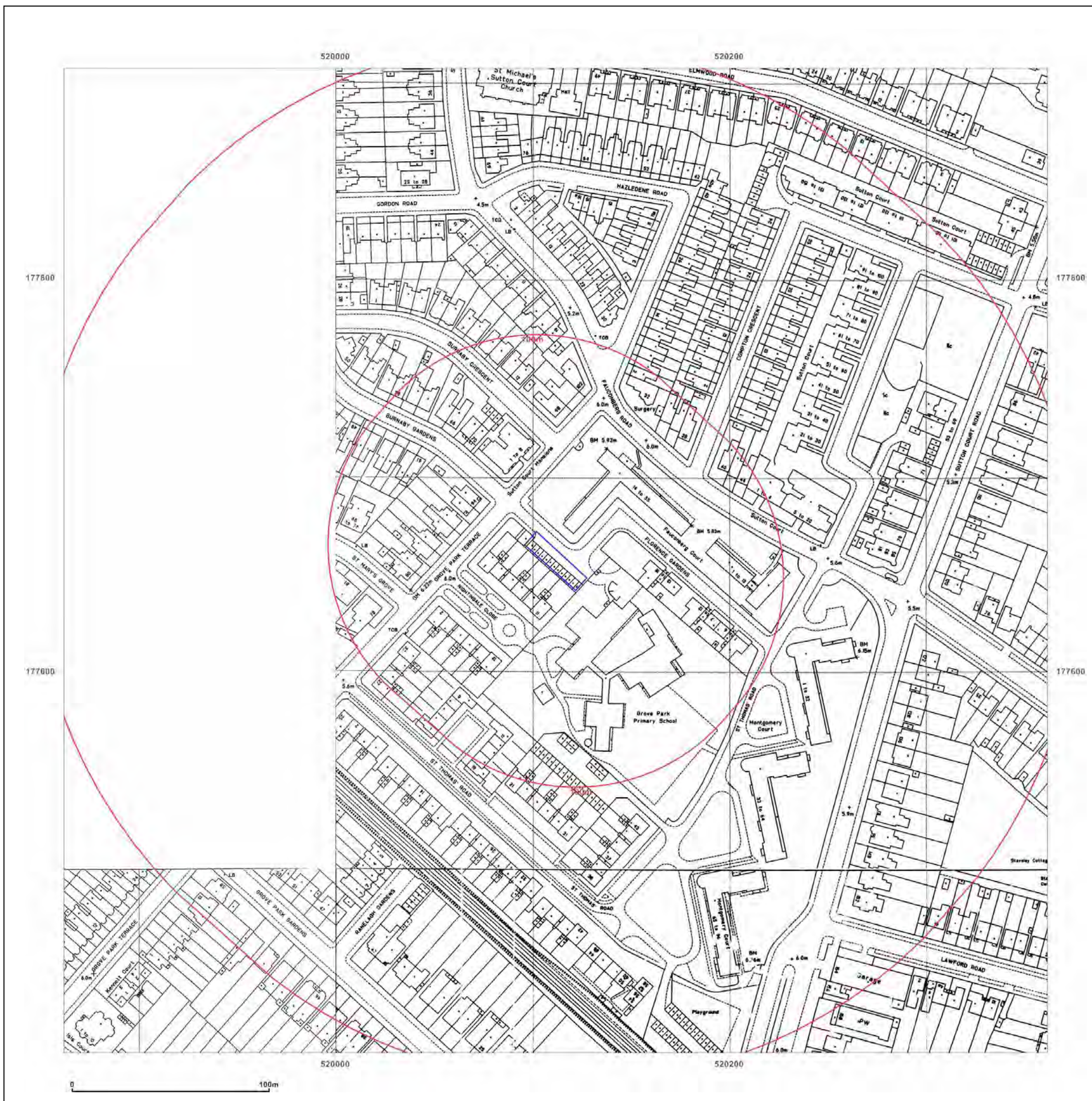


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1991-1994

**Scale:** 1:1,250

**Printed at:** 1:2,000



Surveyed 1994  
 Revised 1994  
 Edition N/A  
 Copyright 1994  
 Levelled N/A

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

Surveyed N/A  
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 Copyright 1992  
 Levelled N/A

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

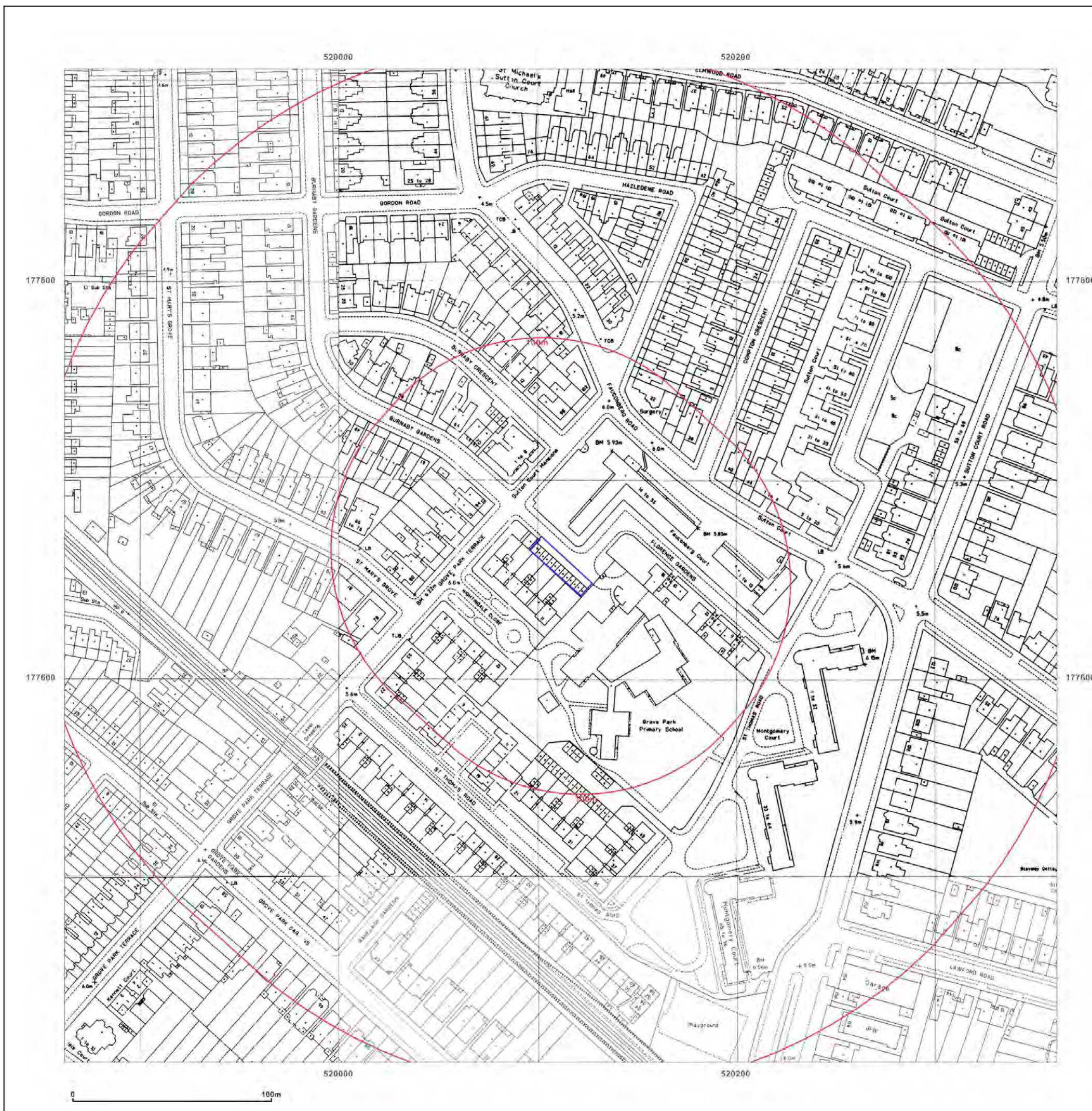


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1991-1994

**Scale:** 1:1,250

**Printed at:** 1:2,000



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 Edition N/A  
 Copyright 1994  
 Levelled N/A

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

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 Revised 1991  
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 Copyright 1991  
 Levelled N/A

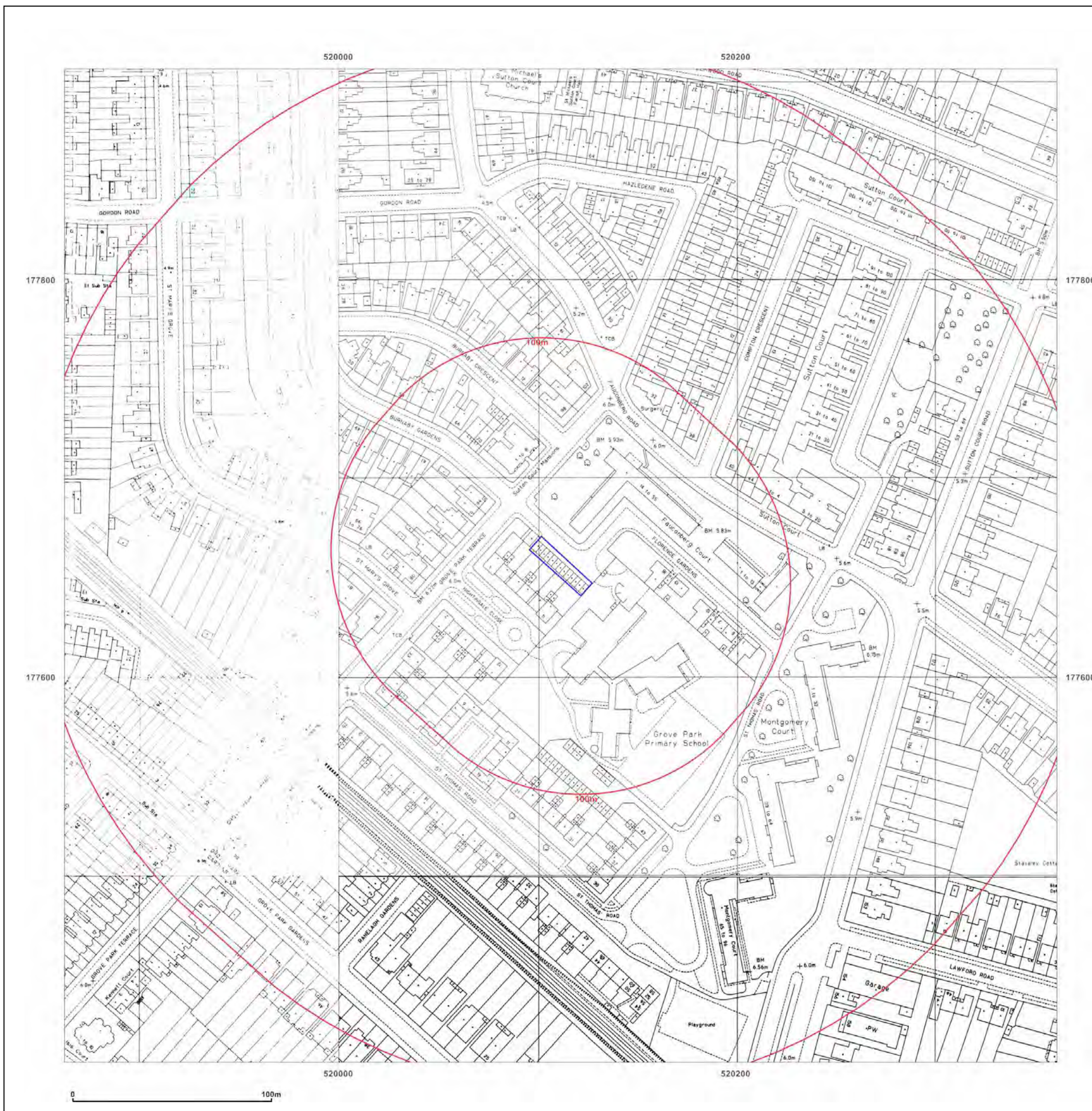


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 E: [info@groundsure.com](mailto:info@groundsure.com)  
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Production date: 08 November 2019

Map legend available at:  
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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** LandLine

**Map date:** 2003

**Scale:** 1:1,250

**Printed at:** 1:1,250



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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** County Series

**Map date:** 1866-1867

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1867  
 Revised 1867  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

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

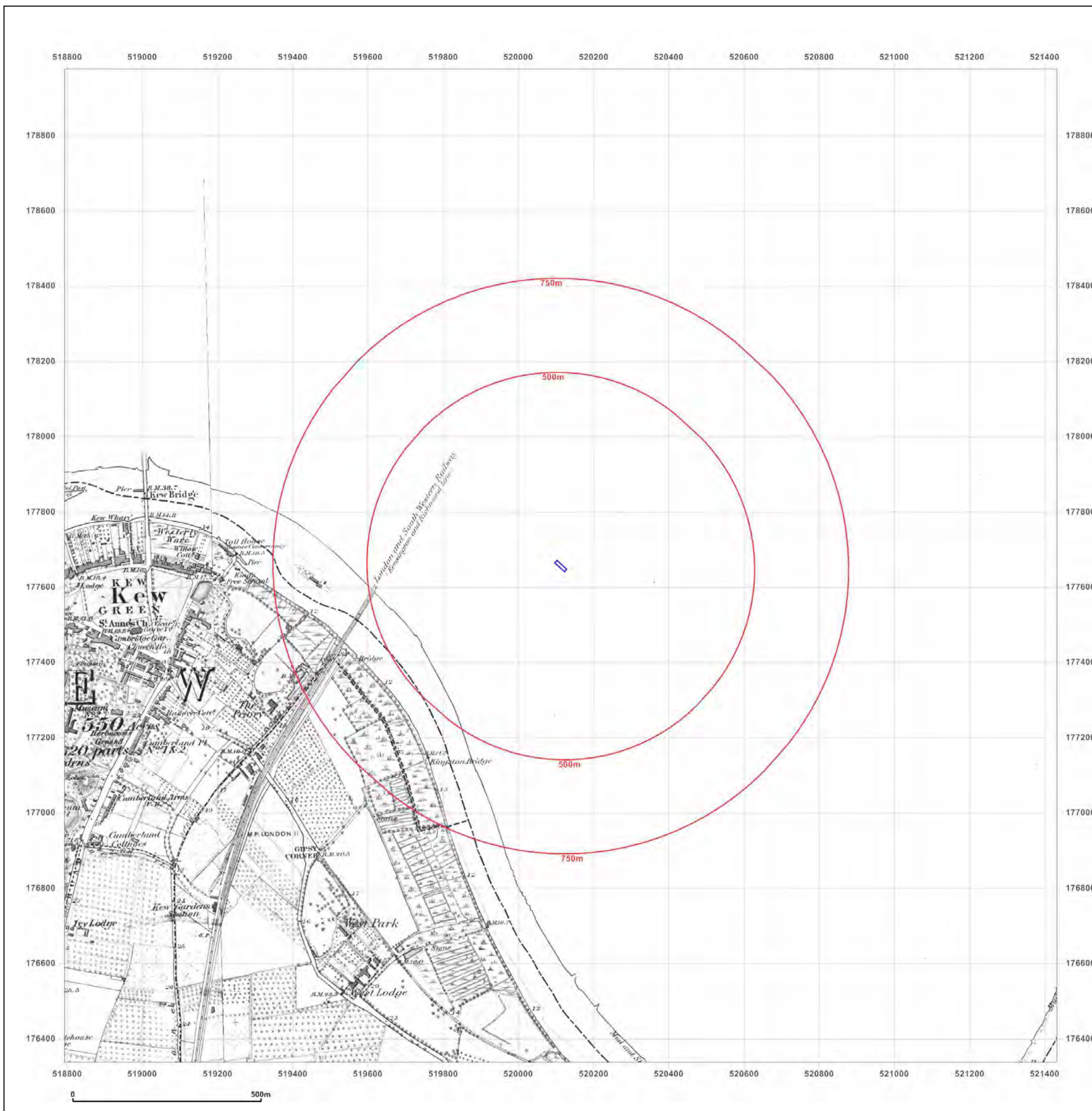


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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: County Series

Map date: 1873-1874

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1866  
Revised 1873  
Edition N/A  
Copyright N/A  
Levelled N/A

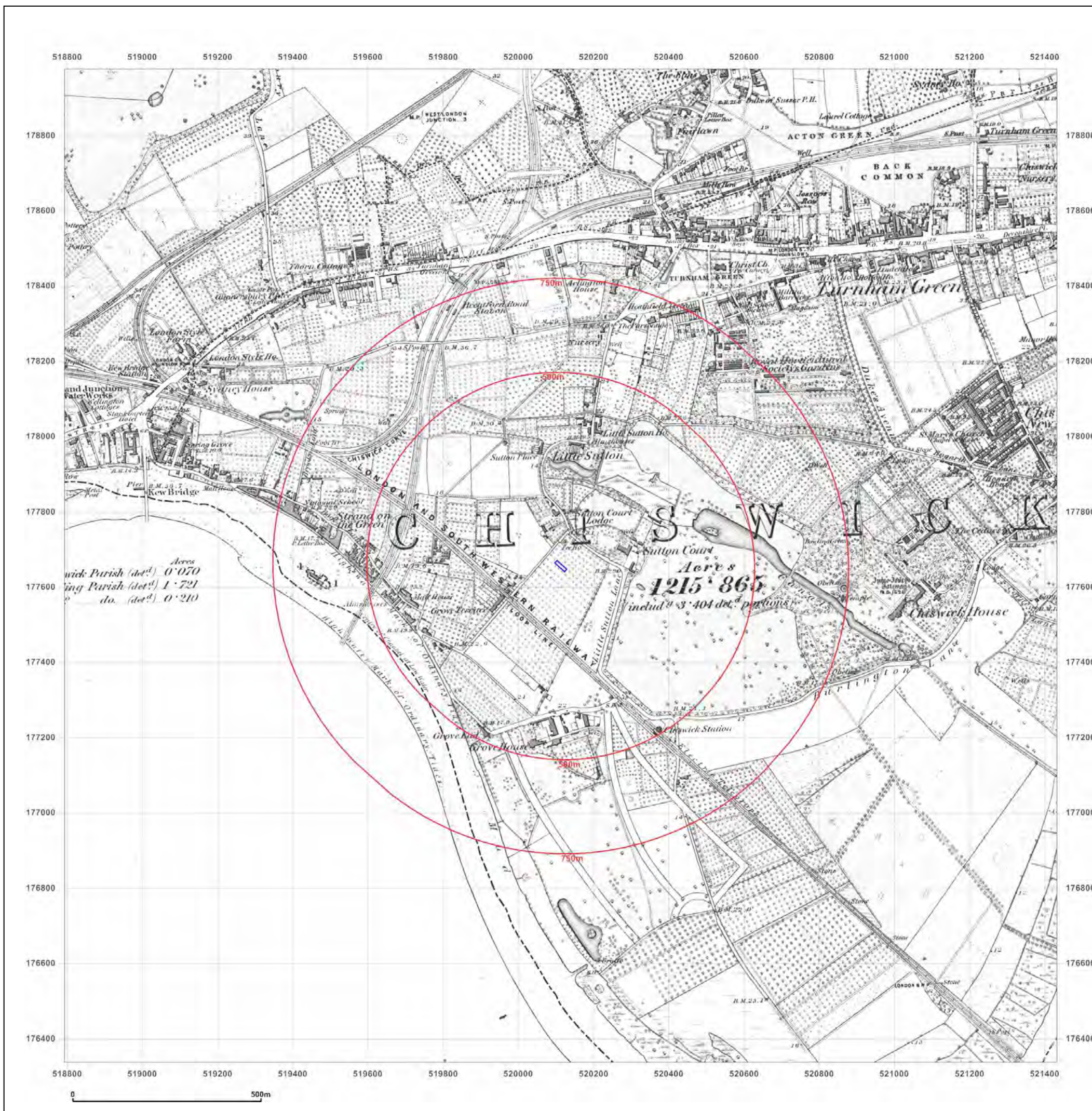


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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: County Series

Map date: 1893-1894

Scale: 1:10,560

Printed at: 1:10,560



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

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

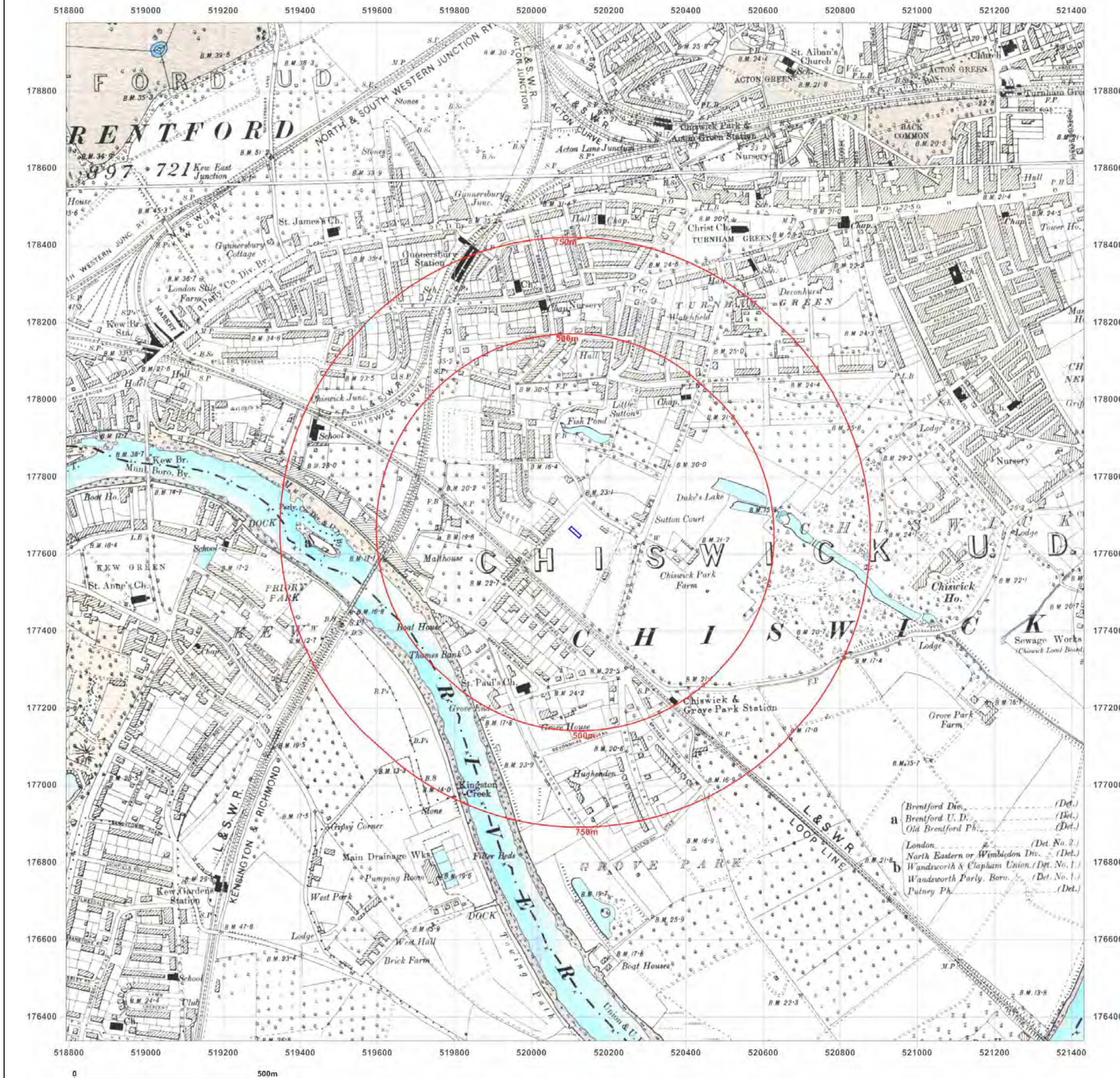


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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: County Series

Map date: 1894

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1866  
Revised 1894  
Edition N/A  
Copyright N/A  
Levelled N/A

Surveyed 1866  
Revised 1894  
Edition N/A  
Copyright N/A  
Levelled N/A

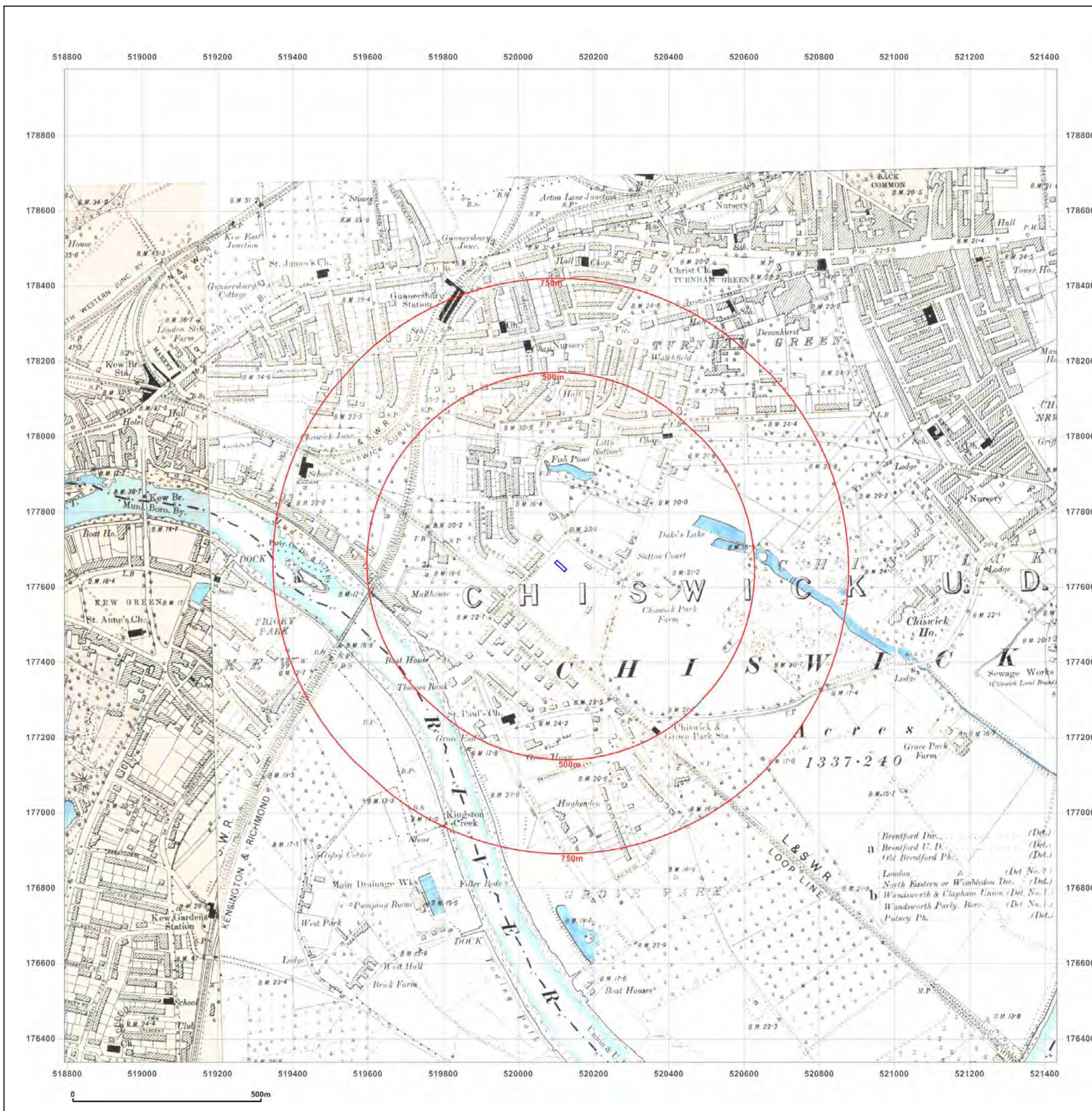


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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: County Series

Map date: 1896

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1894  
Revised N/A  
Edition 1896  
Copyright N/A  
Levelled N/A

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

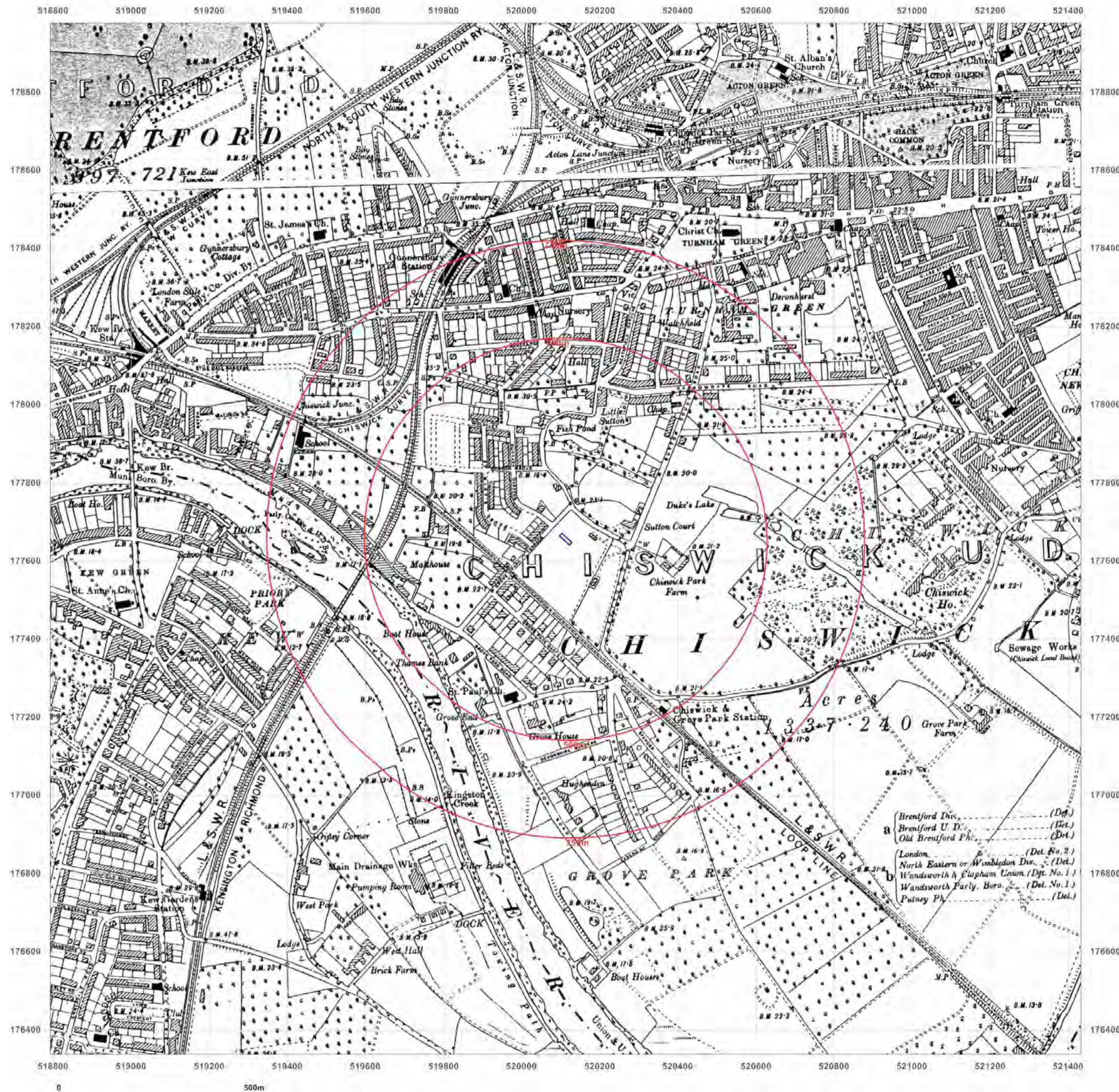


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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: County Series

Map date: 1894-1898

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1866  
Revised 1894  
Edition N/A  
Copyright N/A  
Levelled N/A

Surveyed 1866  
Revised 1894  
Edition N/A  
Copyright N/A  
Levelled N/A

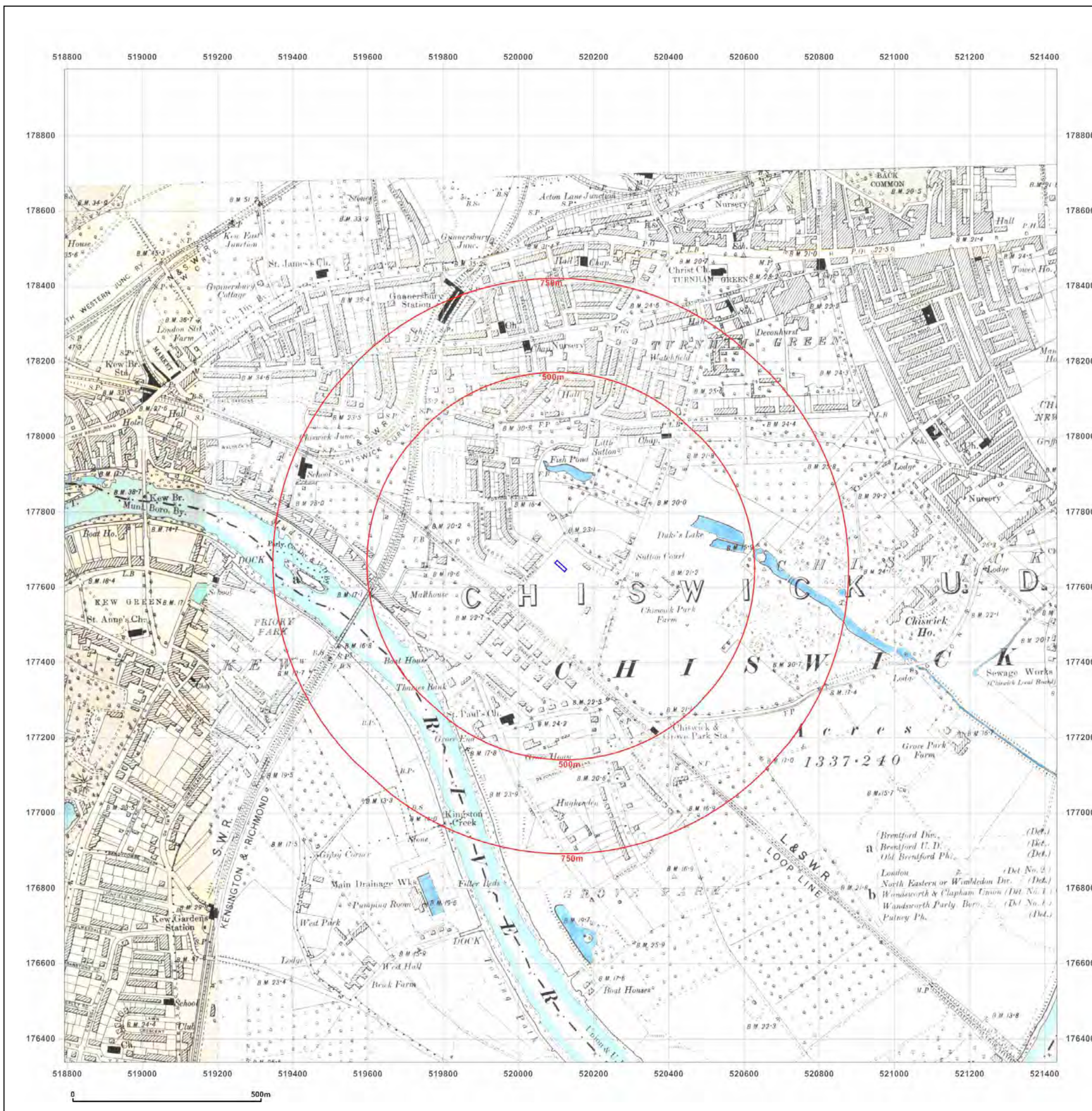


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** County Series

**Map date:** 1919-1920

**Scale:** 1:10,560

**Printed at:** 1:10,560



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

Surveyed 1866  
 Revised 1911  
 Edition 1920  
 Copyright N/A  
 Levelled 1911

Surveyed 1866  
 Revised 1919  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

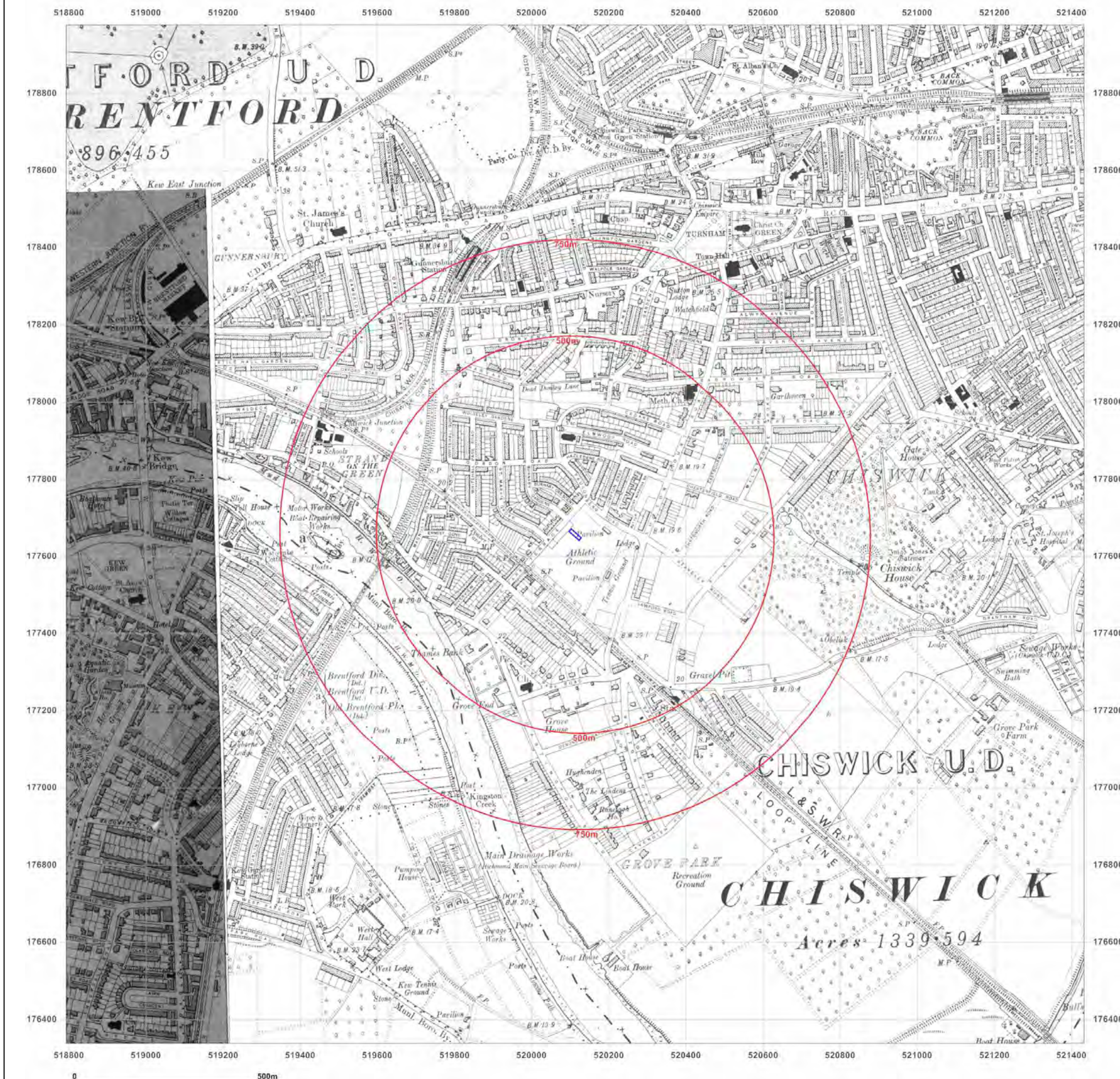


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#### Site Details:

520111 177659

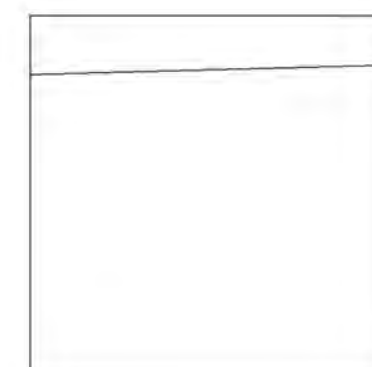
Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: County Series

Map date: 1920

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1867  
Revised 1920  
Edition N/A  
Copyright N/A  
Levelled N/A

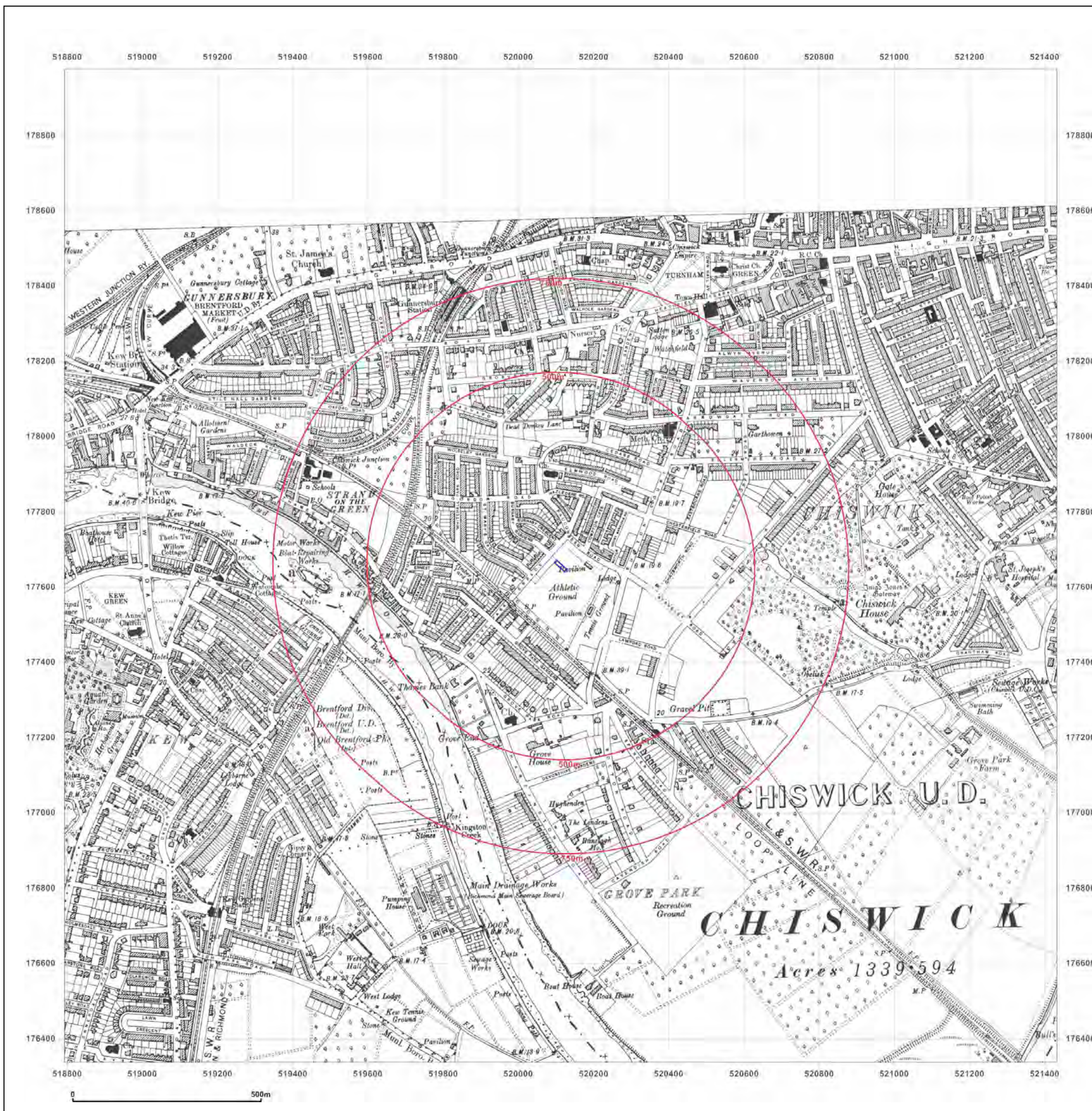


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** County Series

**Map date:** 1933

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1866  
 Revised 1933  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

Surveyed 1866  
 Revised 1933  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

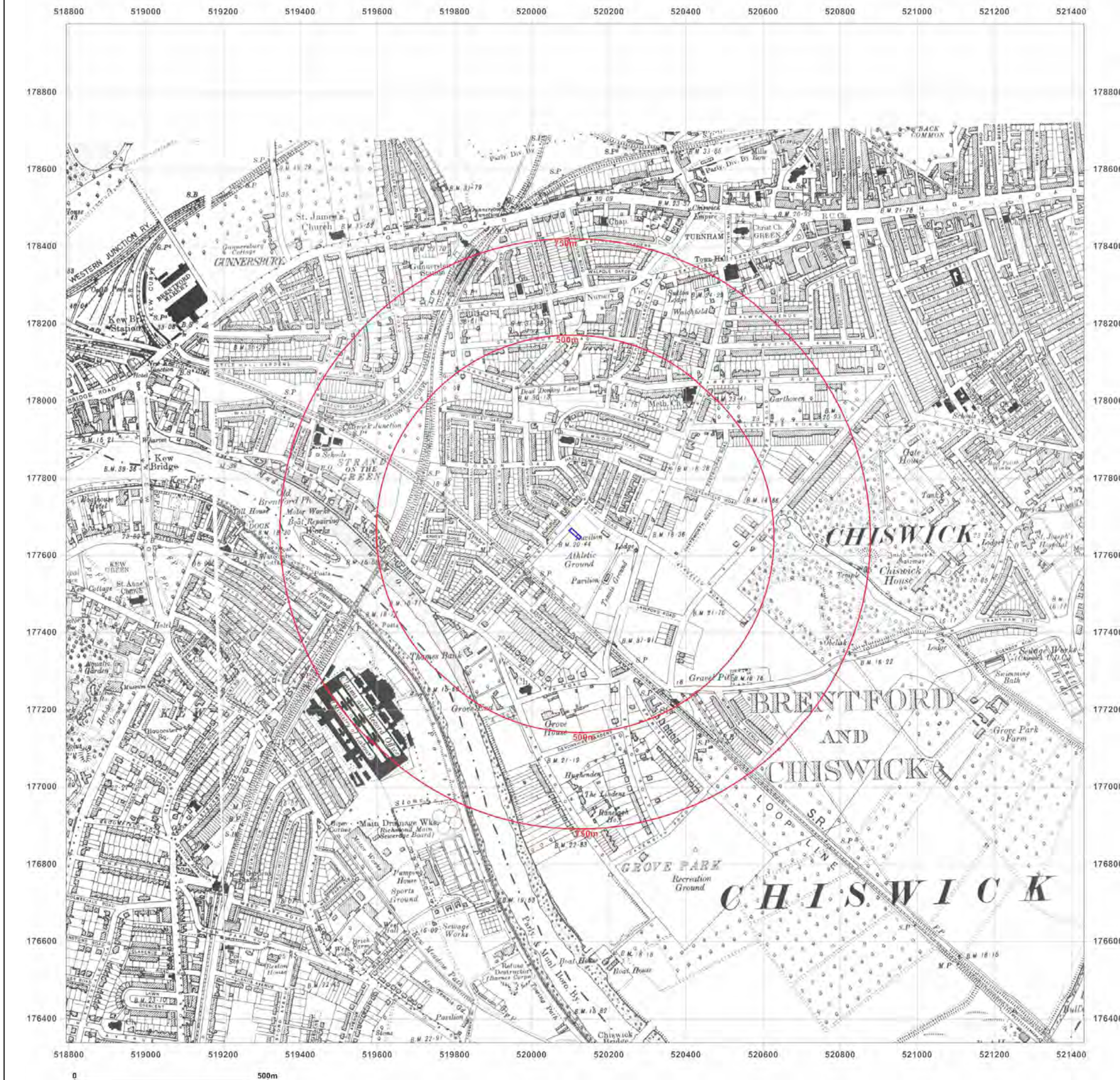


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#### Site Details:

520111 177659

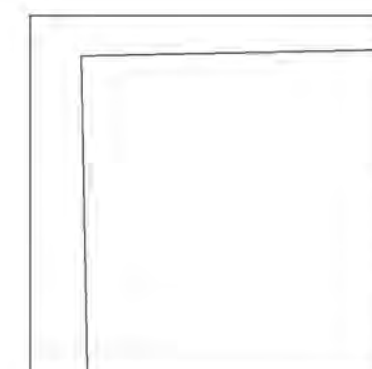
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Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: County Series

Map date: 1933

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1866  
Revised 1933  
Edition N/A  
Copyright N/A  
Levelled N/A

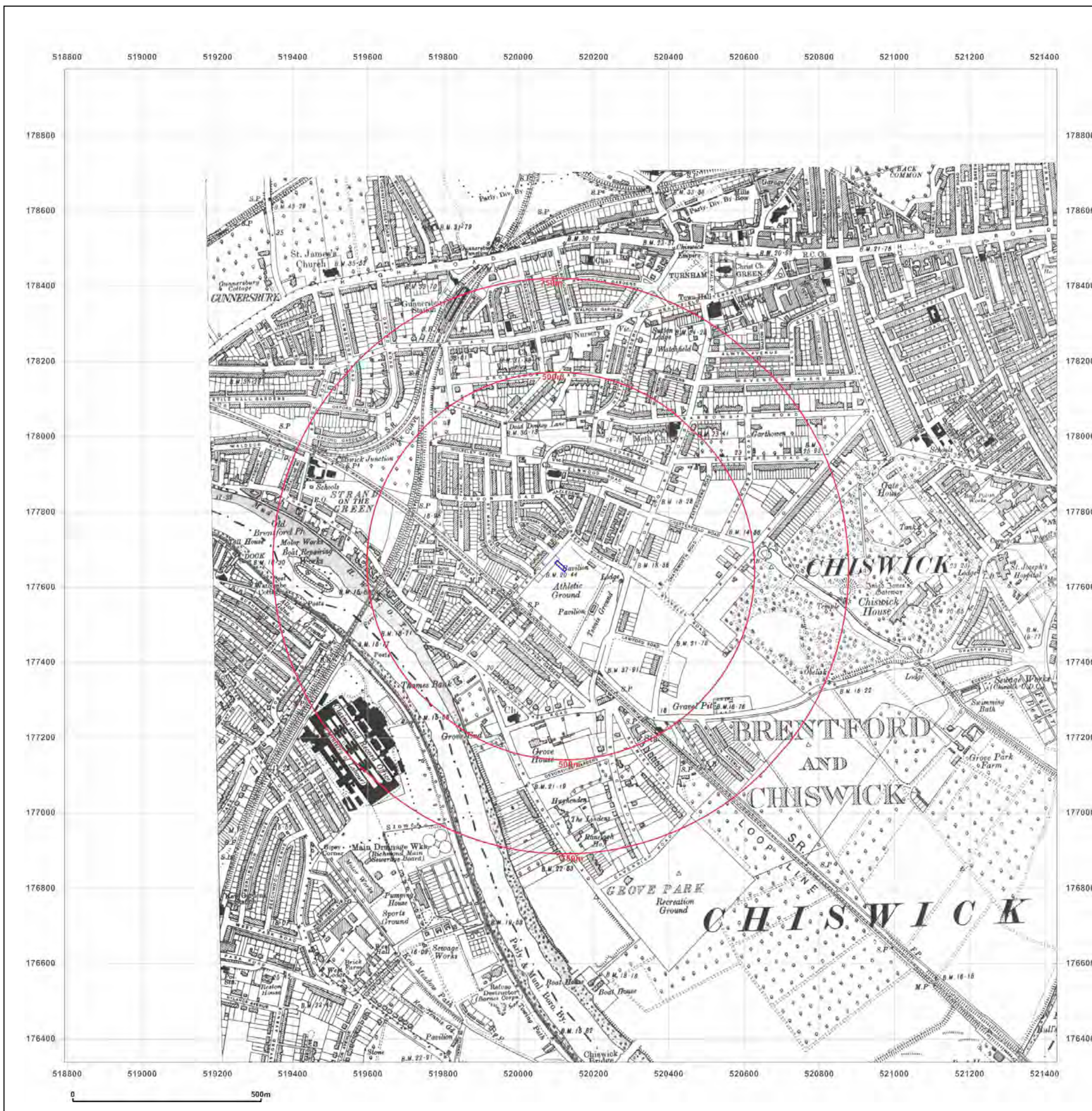


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#### Site Details:

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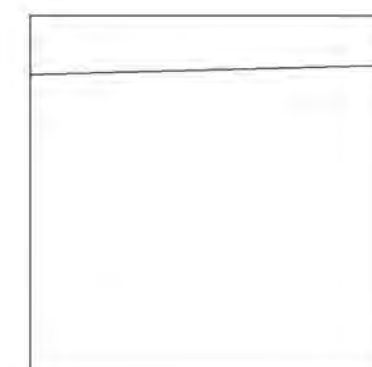
Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1867  
Revised 1938  
Edition N/A  
Copyright N/A  
Levelled N/A

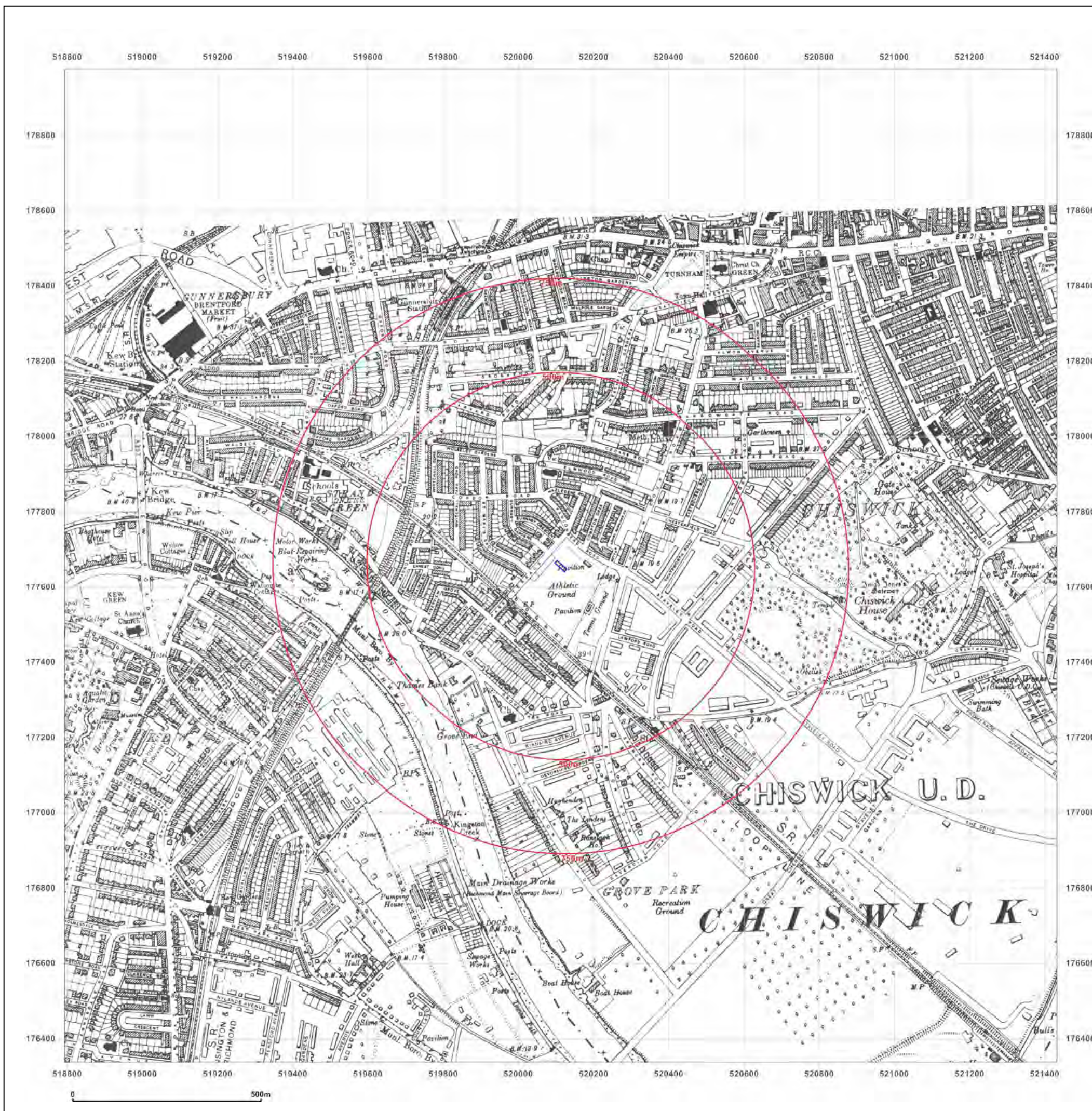


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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: Provisional

Map date: 1947-1948

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1940  
Revised 1948  
Edition N/A  
Copyright N/A  
Levelled 1934

Surveyed 1940  
Revised 1947  
Edition N/A  
Copyright N/A  
Levelled N/A

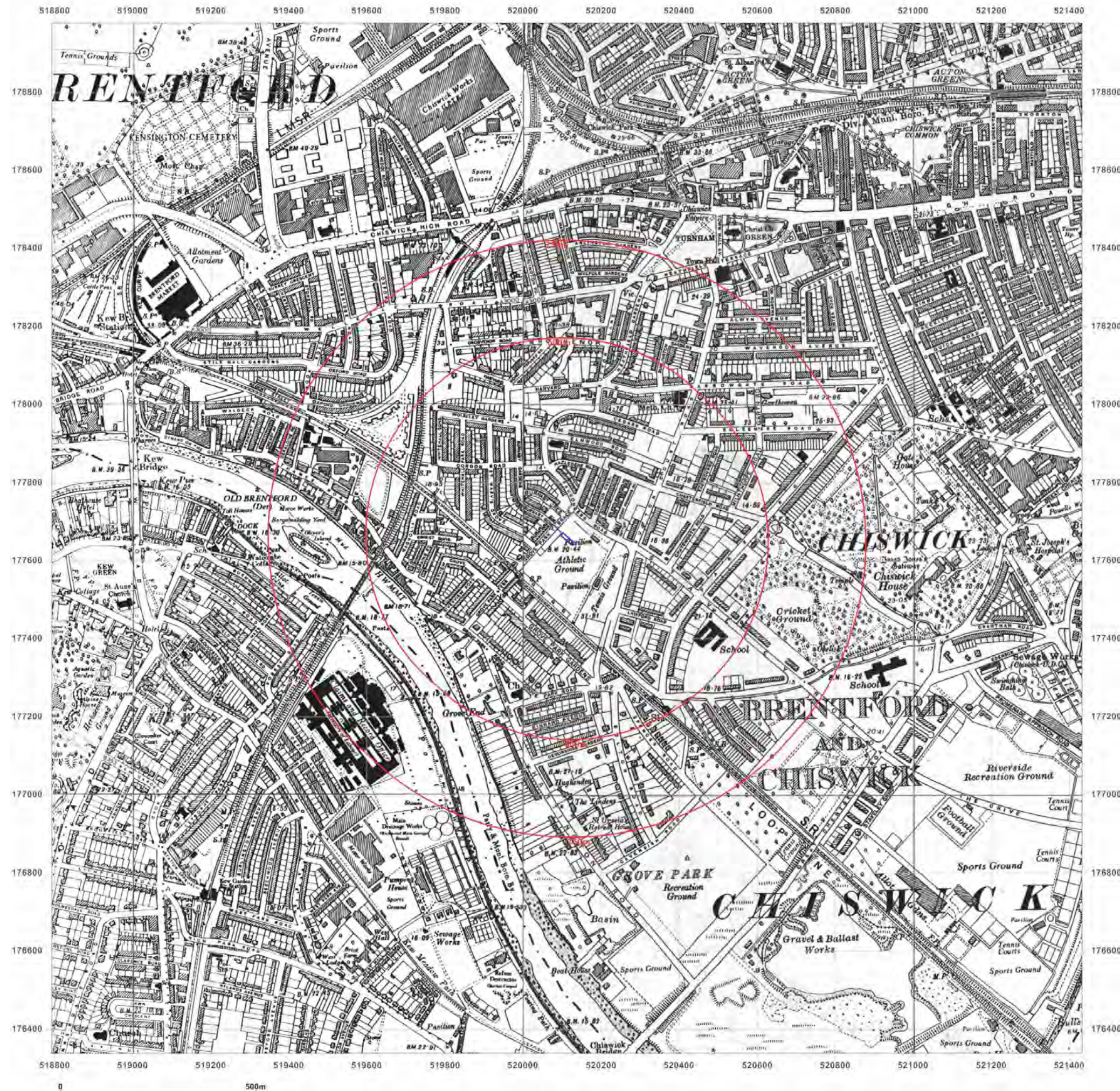


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** Provisional

**Map date:** 1948

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed N/A  
 Revised 1948  
 Edition N/A  
 Copyright N/A  
 Levelled 1934

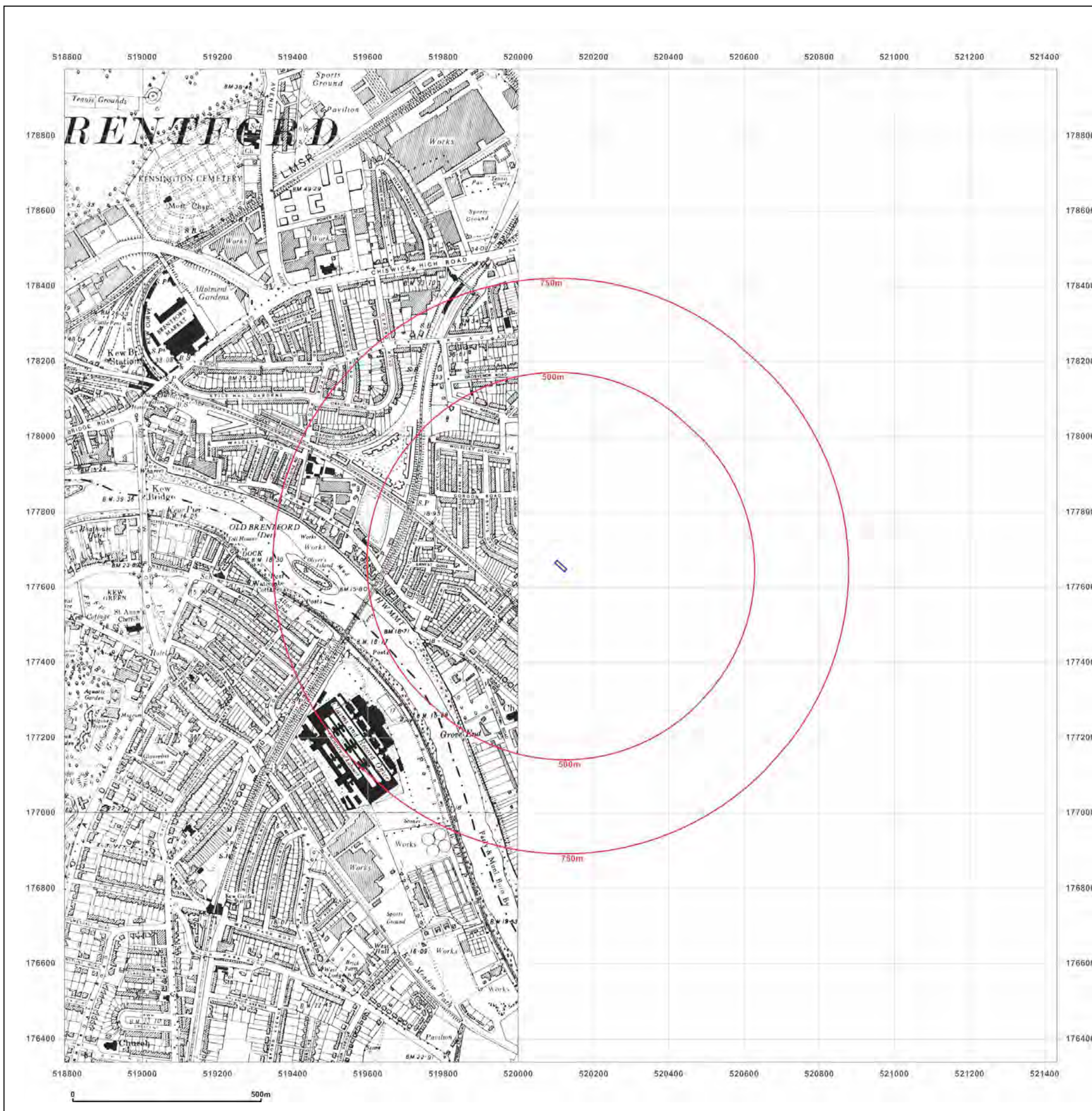


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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: Provisional

Map date: 1958-1961

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1940  
Revised 1961  
Edition N/A  
Copyright N/A  
Levelled N/A

Surveyed 1958  
Revised 1958  
Edition N/A  
Copyright N/A  
Levelled N/A

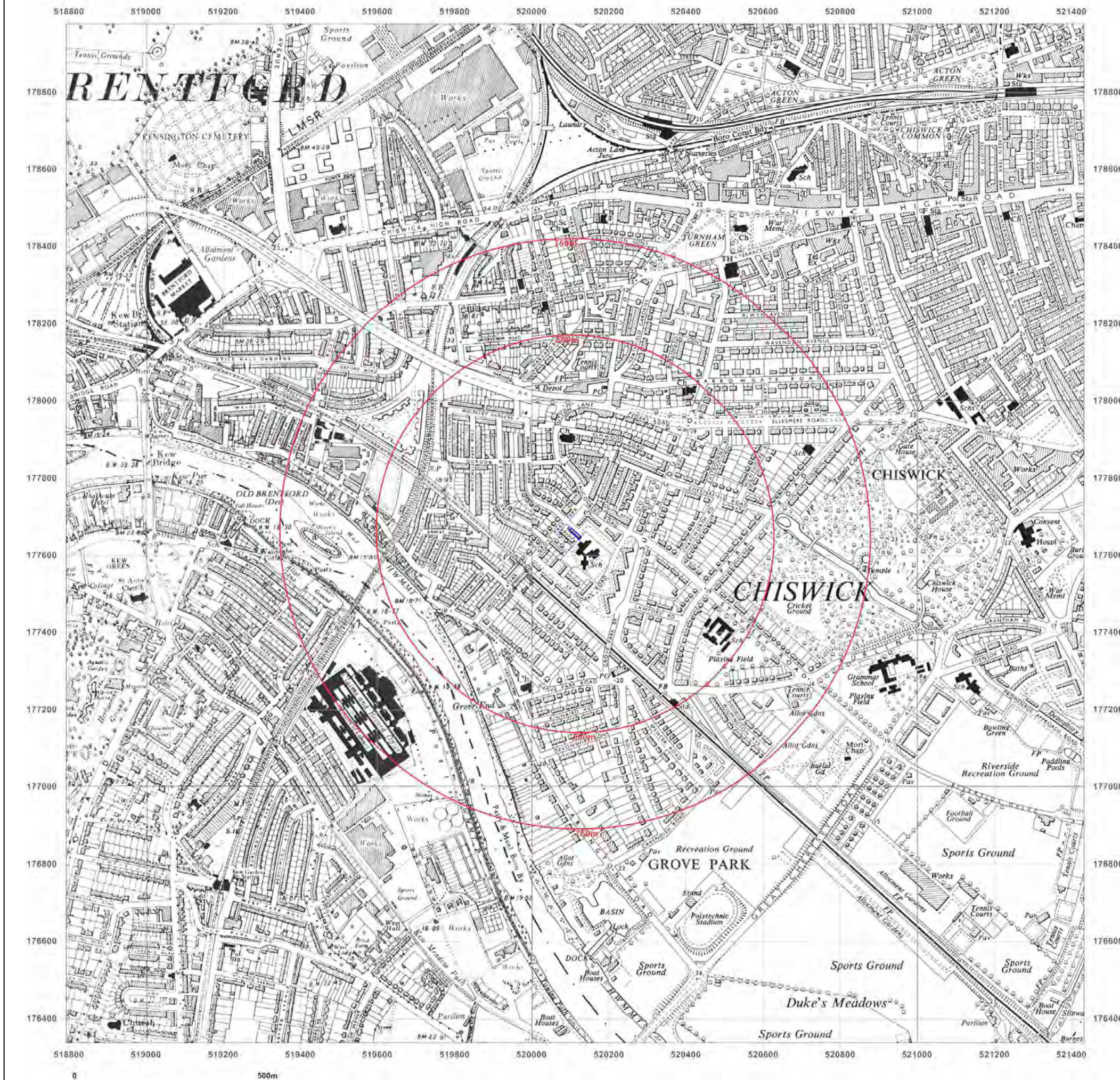


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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: Provisional

Map date: 1962-1966

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1966  
Revised 1966  
Edition N/A  
Copyright N/A  
Levelled N/A

Surveyed 1958  
Revised 1962  
Edition N/A  
Copyright N/A  
Levelled N/A

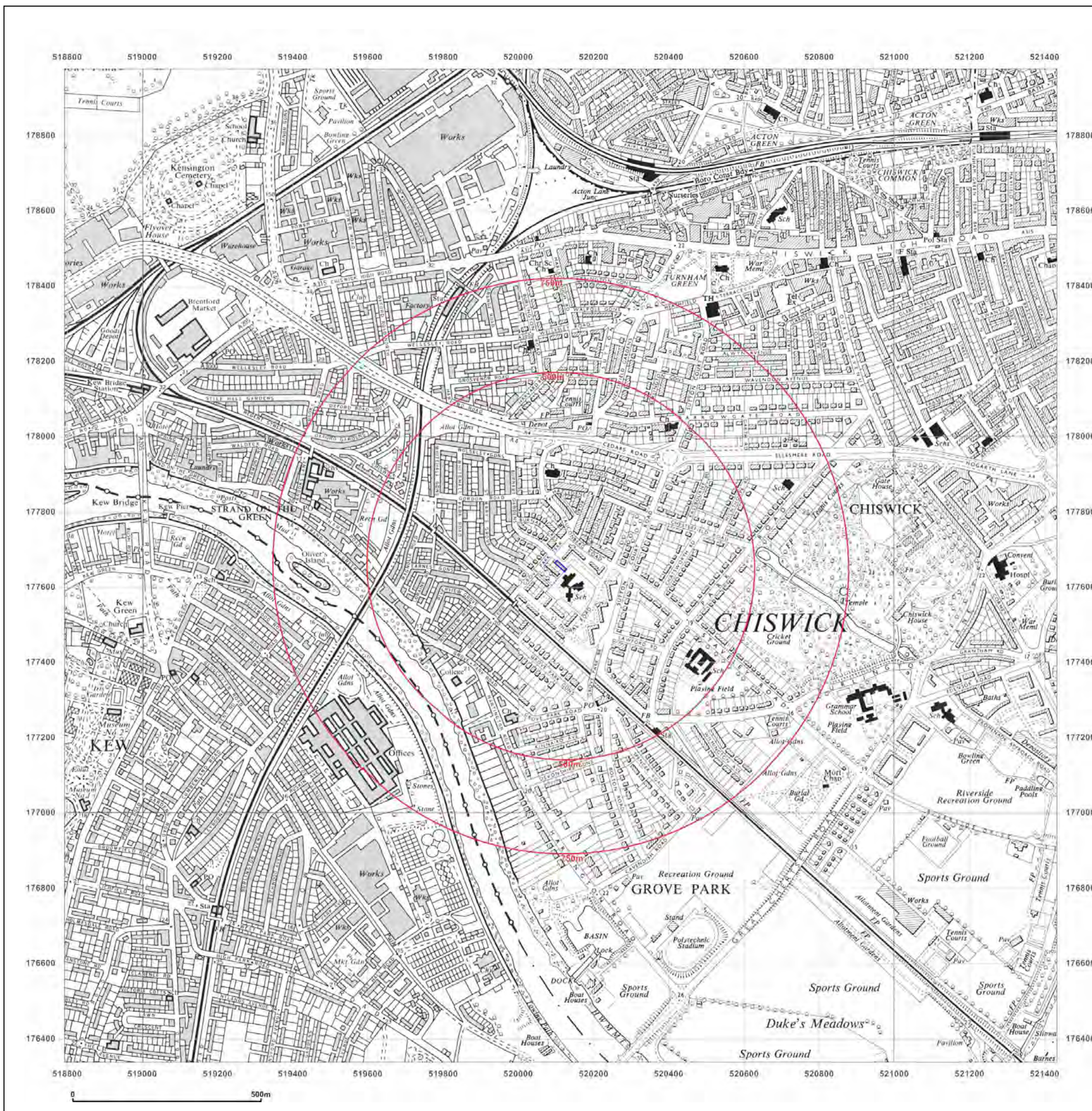


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#### Site Details:

520111 177659

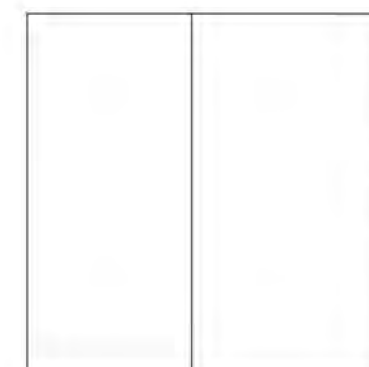
**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** Provisional

**Map date:** 1967

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1967  
 Revised 1967  
 Edition N/A  
 Copyright N/A  
 Levelled N/A



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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1974

**Scale:** 1:10,000

**Printed at:** 1:10,000



Surveyed 1973  
 Revised 1974  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

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

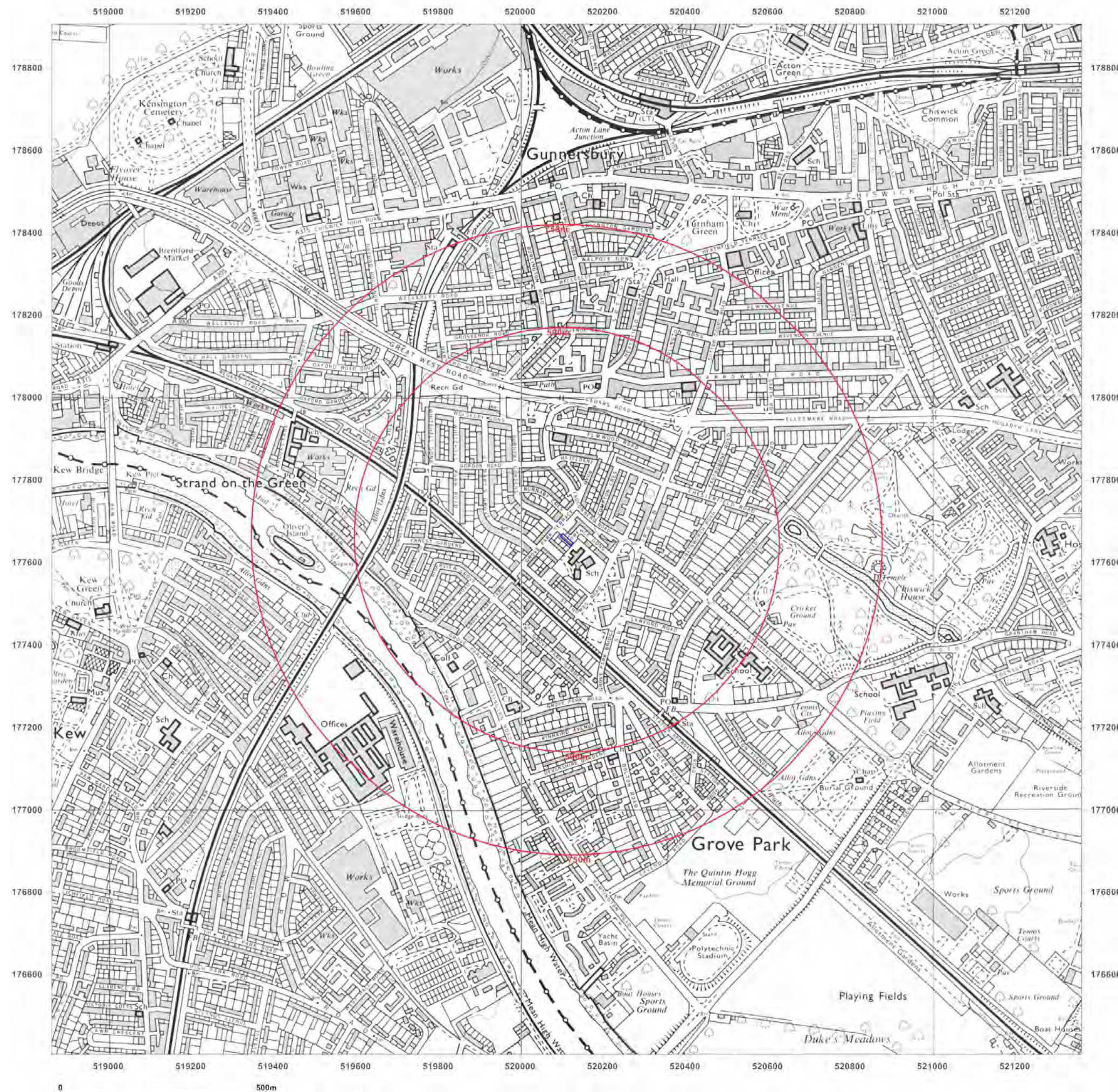


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#### Site Details:

520111 177659

**Client Ref:** 14032643  
**Report Ref:** GS-6449831  
**Grid Ref:** 520112, 177656

**Map Name:** National Grid

**Map date:** 1987

**Scale:** 1:10,000

**Printed at:** 1:10,000



Surveyed 1982  
 Revised 1987  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

Surveyed 1981  
 Revised 1987  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

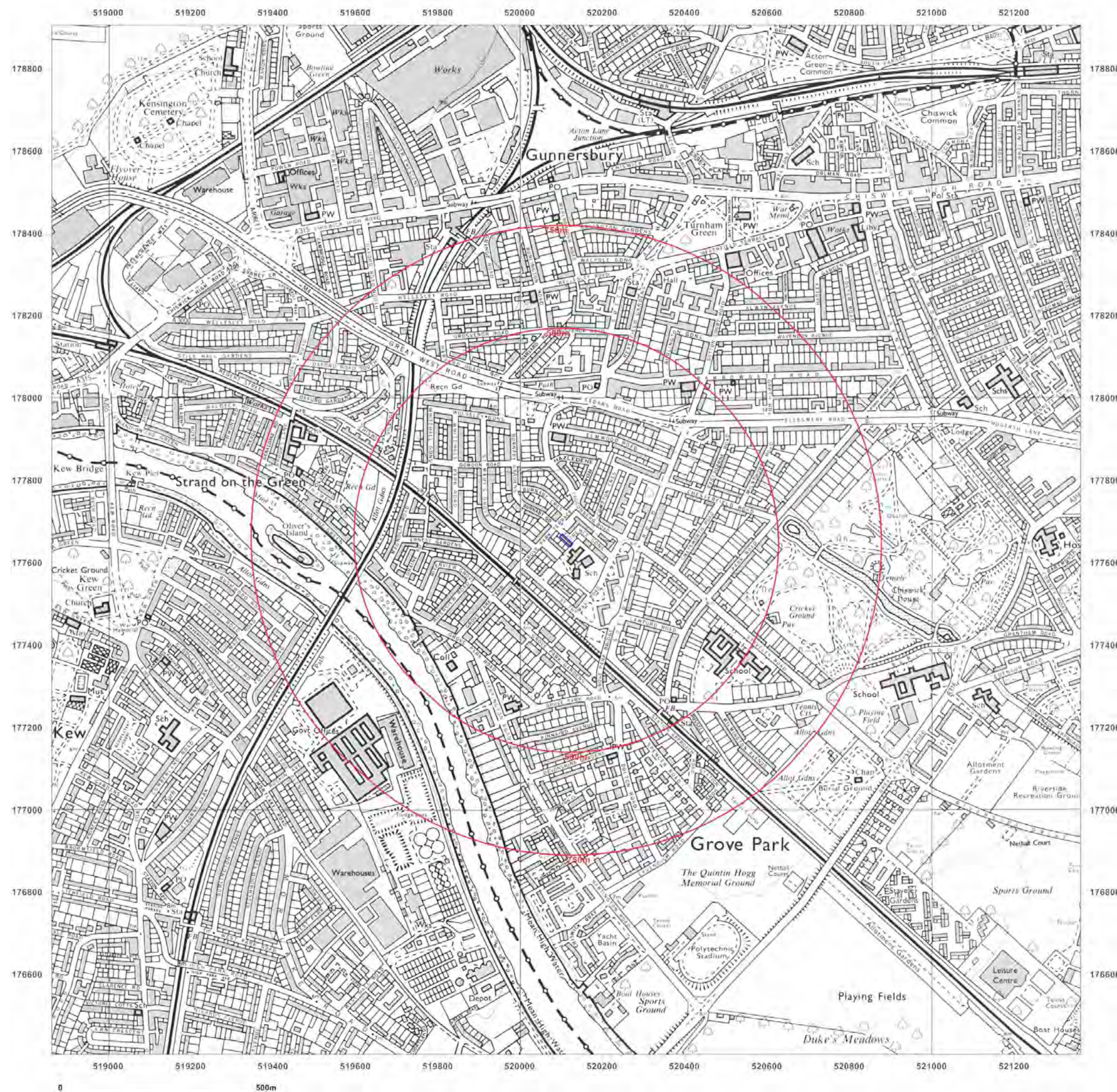


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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



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#### Site Details:

520111 177659

Client Ref: 14032643  
Report Ref: GS-6449831  
Grid Ref: 520112, 177656

Map Name: National Grid

Map date: 2019

Scale: 1:10,000

Printed at: 1:10,000

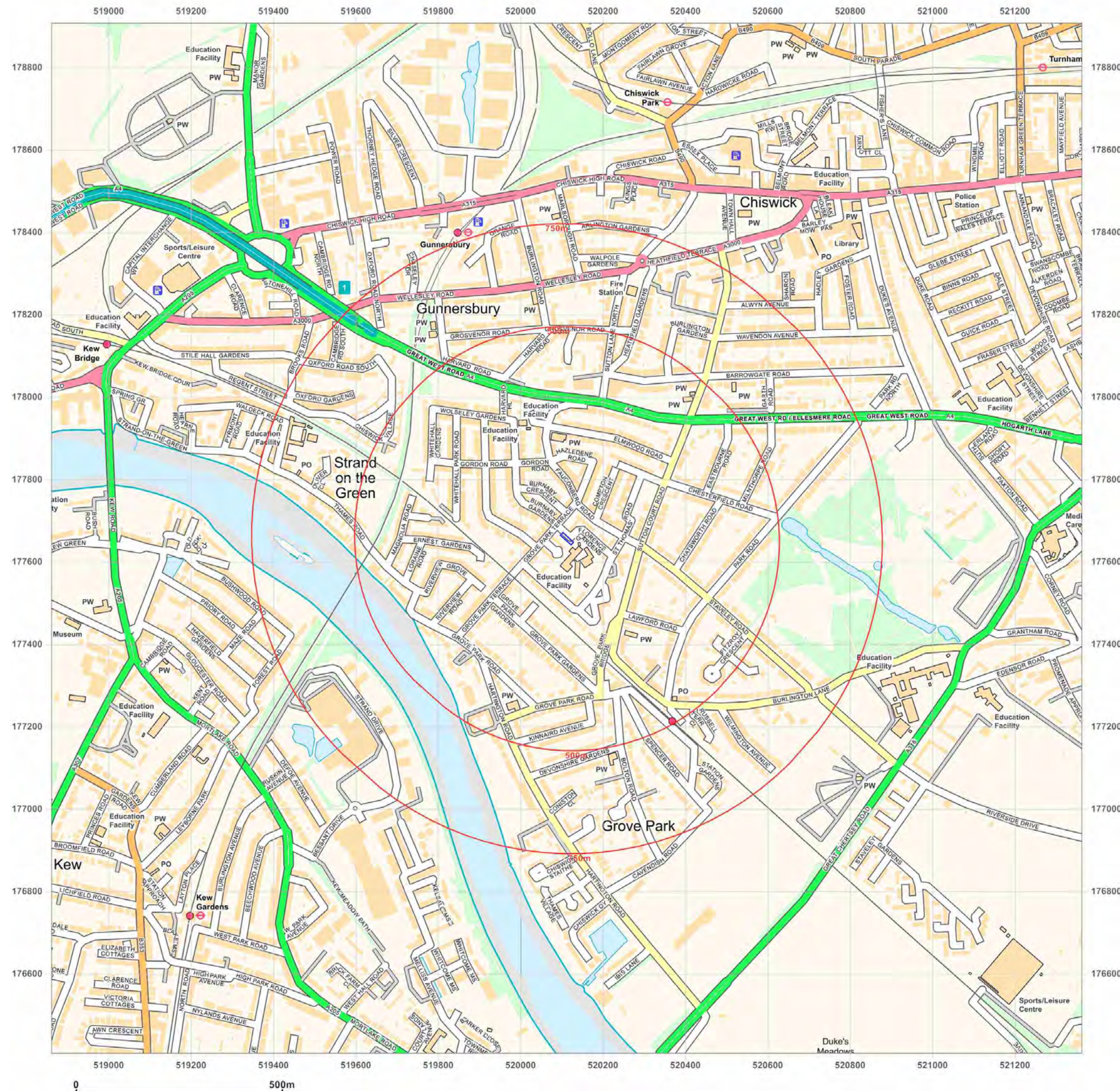


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## **APPENDIX B**

### **Groundsure Data Sheets and Site Sensitivity Maps**





Arcadis Consulting UK Ltd

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

Groundsure  
Reference:

GS-6449829

Your Reference: 14032643

Report Date 8 Nov 2019

Report Delivery Method: Email - pdf

## Enviro Insight

Address: 520111 177659,

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: 520111 177659,  
Date: 8 Nov 2019  
Reference: GS-6449829  
Client: Arcadis Consulting UK Ltd

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 20-Apr-2015  
Grid Reference: 520111,177659  
Site Size: 0.0304ha

Report Reference: GS-6449829  
Client Reference: 14032643



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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	0	0	4	39
1.2 Additional Information – Historical Tank Database	0	0	5	3
1.3 Additional Information – Historical Energy Features Database	2	1	7	11
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	8	13
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	6	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	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	0
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	0
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0



Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
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	1	2	8
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	1
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	14

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	5	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	18
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	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	6	15
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	0
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)	1	0	1	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	2	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	Identified					
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	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	Identified					
7.6 Areas used for Flood Storage within 250m of the study site	None identified					
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Potential below Surface					
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	High					

## 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	1	3
8.8 Records of World Heritage Sites	0	0	0	0	1	1
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	Very Low
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Negligible
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

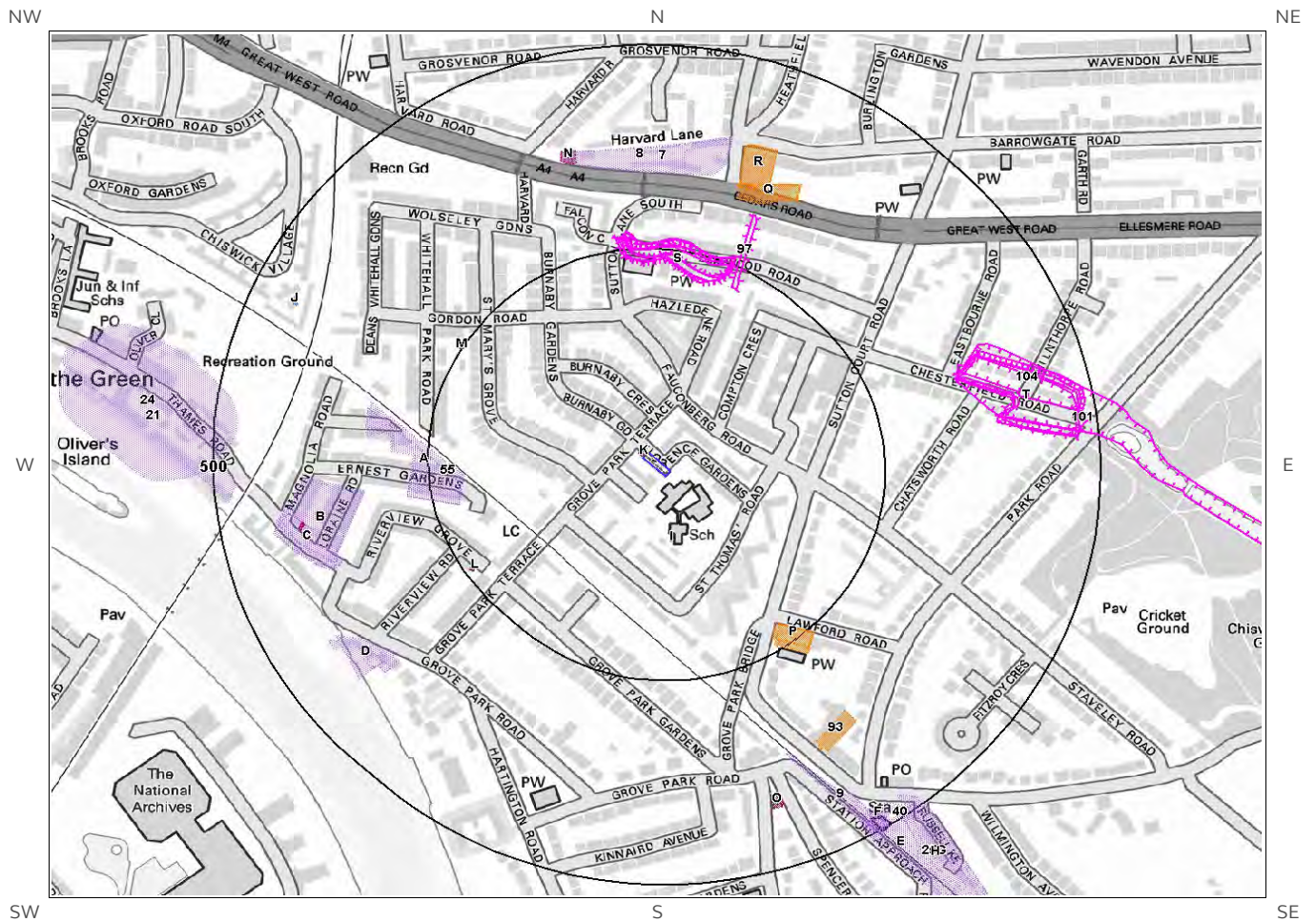
Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes 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".

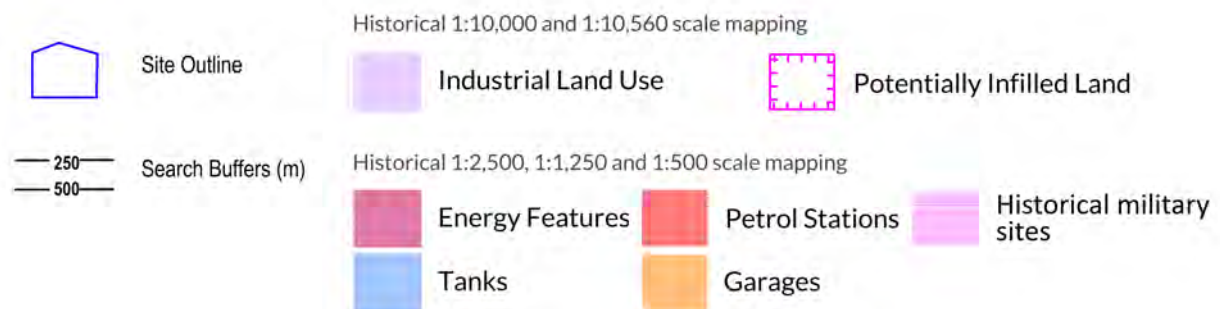
All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.



# 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: 43

ID	Distance [m]	Direction	Use	Date
1A	209	W	Timber Yard	1910
2A	209	W	Timber Yard	1933
3A	214	W	Timber Yard	1933
4A	215	W	Timber Yard	1920
5B	326	W	Malthouse	1898
6B	329	W	Malthouse	1894
7	344	N	Unspecified Depot	1962
8	344	N	Unspecified Depot	1958
9	367	S	Railway Station	1911
10C	369	W	Malthouse	1893
11C	373	W	Malthouse	1911
12C	374	W	Malthouse	1866
13D	374	SW	Boat House	1893
14D	386	SW	Boat House	1911
15D	389	SW	Boat House	1894
16D	391	SW	Boat House	1898
17E	441	SE	Railway Station	1933
18E	459	SE	Railway Station	1962
19F	472	SE	Railway Station	1933
20F	472	SE	Railway Station	1910
21	472	W	Unspecified Commercial/Industrial	1966
22G	473	SE	Railway Sidings	1910
23G	473	SE	Railway Sidings	1933
24	474	W	Unspecified Works	1961
25	475	SE	Railway Station	1967
26F	475	SE	Railway Station	1894
27F	476	SE	Railway Station	1898
28F	477	SE	Railway Station	1893
29F	477	SE	Railway Station	1958
30F	477	SE	Railway Station	1947
31F	480	SE	Railway Station	1987
32F	480	SE	Railway Station	1967
33F	480	SE	Railway Station	1974



34F	481	SE	Railway Station	1866
35F	482	SE	Railway Station	1938
36F	482	SE	Railway Station	1920
37H	487	SE	Railway Sidings	1920
38H	487	SE	Railway Sidings	1938
39G	492	SE	Railway Sidings	1962
40	492	SE	Railway Building	1958
41G	492	SE	Railway Sidings	1947
42G	492	SE	Railway Sidings	1958
43G	492	SE	Railway Sidings	1933

## 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
44I	76	S	Unspecified Tank	1991
45I	76	S	Unspecified Tank	1965
46I	76	S	Unspecified Tank	1991
47I	76	S	Unspecified Tank	1975
48I	76	S	Unspecified Tank	1992
49J	443	NW	Tanks	1972
50J	443	NW	Tanks	1994
51J	444	NW	Tanks	1985

## 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:

21

ID	Distance (m)	Direction	Use	Date
52K	0	On Site	Electricity Substation	1954
53K	0	NW	Electricity Substation	1951
54K	1	NW	Electricity Substation	1951
55	227	W	Electricity Substation	1994
56L	235	SW	Electricity Substation	1972
57L	235	SW	Electricity Substation	1994



58L	235	SW	Electricity Substation	1985
59M	248	NW	Electricity Substation	1994
60M	248	NW	Electricity Substation	1972
61M	249	NW	Electricity Substation	1985
62N	363	N	Electricity Substation	1950
63N	370	N	Electricity Substation	1950
64C	402	W	Electricity Substation	1994
65C	402	W	Electricity Substation	1972
66C	403	W	Electricity Substation	1985
67O	409	S	Electricity Substation	1951
68O	410	S	Electricity Substation	1991
69O	410	S	Electricity Substation	1991
70O	410	S	Electricity Substation	1983
71O	411	S	Electricity Substation	1992
72O	417	S	Electricity Substation	1951

#### 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: 21

ID	Distance (m)	Direction	Use	Date
73P	220	SE	Garage	1963
74P	220	SE	Garage	1951
75P	221	SE	Garage	1992
76P	221	SE	Garage	1983
77P	221	SE	Garage	1991
78P	221	SE	Garage	1991
79P	224	SE	Garage	1951
80P	224	SE	Garage	1965
81Q	328	N	Garage	1951
82Q	342	N	Garage	1965
83Q	342	N	Garage	1965



84R	346	N	Garage	1962
85R	346	N	Garage	1950
86Q	347	N	Garage	1991
87Q	347	N	Garage	1975
88Q	347	N	Garage	1992
89R	347	N	Garage	1983
90R	347	N	Garage	1991
91Q	348	N	Garage	1991
92R	348	N	Garage	1951
93	354	SE	Garage	

## 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

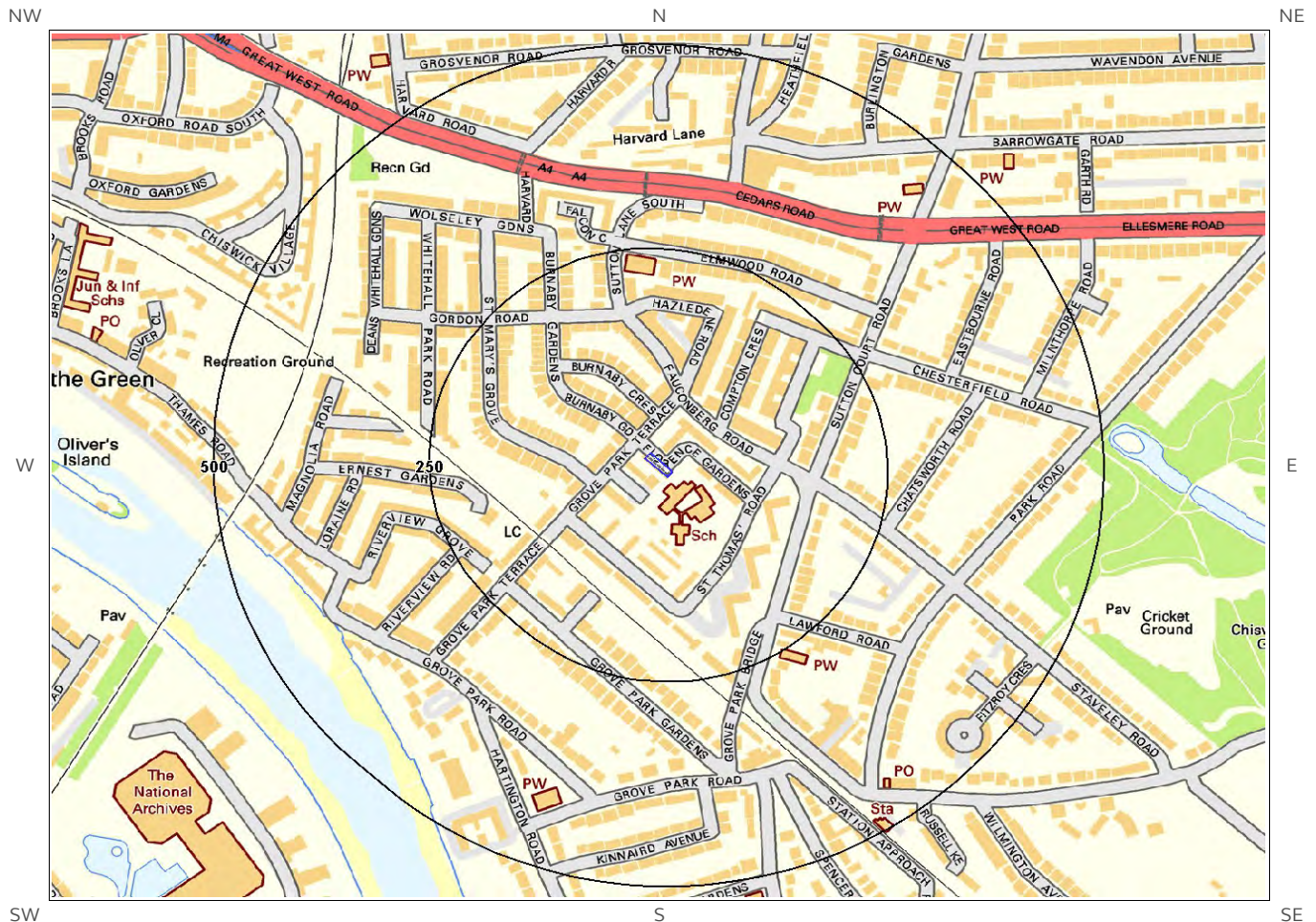
Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 11

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

ID	Distance(m)	Direction	Use	Date
94S	217	N	Fish Pond	1894
95S	220	N	Fish Pond	1911
96S	221	N	Fish Pond	1898
97	224	NE	Pond	1866
98S	227	N	Fish Pond	1893
99S	227	N	Pond	1866
100T	350	E	Lake	1894
101	350	E	Canal	1866
102T	353	E	Water Body	1911
103T	354	E	Water Body	1898
104	358	E	Lake	1893



## 2. Environmental Permits, Incidents and Registers Map



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## 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:

0

Database searched and no data found.

---

#### 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:

0

Database searched and no data found.

---

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

0

Database searched and no data found.

---

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

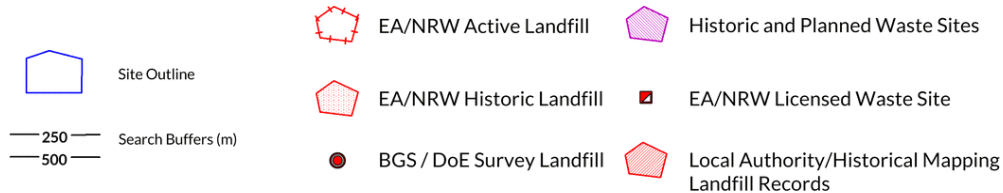
Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0

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:

11

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details
1	460	SE		Site Address: Staveley Road, Grove Park, Chiswick, Hounslow, London Waste Licence: - Site Reference: 8HO062 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1913 Last Recorded: 31-Dec-1951
Not shown	778	S		Site Address: Cubitts Basin, Grove Park, Chiswick, Hounslow, London Waste Licence: - Site Reference: 8HO046 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	984	SE		Site Address: Hartington Road Sports Ground, Hartington Road Waste Licence: - Site Reference: 8HO041 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Ham River Grit Licence Holder: - First Recorded: - Last Recorded: 31-Dec-1935
Not shown	1011	S		Site Address: Hartington Road Sports Ground, Hartington Road Waste Licence: - Site Reference: 8HO041 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Ham River Grit Licence Holder: - First Recorded: - Last Recorded: 31-Dec-1934
Not shown	1014	SE		Site Address: Dukes Meadow, Great Chertsey Road, London Waste Licence: - Licence Issue: Licence Surrendered: Licence Holder Address: -



ID	Distance (m)	Direction	NGR	Details
				Site Reference: 8HO040 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Operator: Ham River Grit Licence Holder: London Borough of Hounslow First Recorded: 31-Dec-1945 Last Recorded: 31-Dec-1950
Not shown	1034	S		Site Address: Ibis Rowing Club, Grove Park, Chiswick, Hounslow, London Waste Licence: - Site Reference: 8HO063 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1041	NW		Site Address: Texas DIY, Ibis lane, Hartington Road Waste Licence: - Site Reference: 8HO064 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: 31-Dec-1935
Not shown	1085	E		Site Address: Corney Road, Chiswick, London W4 Waste Licence: - Site Reference: 8HO081 Waste Type: Inert, Industrial, Special Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1946 Last Recorded: 31-Dec-1949
Not shown	1401	W		Site Address: Green Dragon Lane Flats, Green Dragon Lane Waste Licence: - Site Reference: 8HO065 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1964 Last Recorded: 31-Dec-1966
Not shown	1415	W		Site Address: Old Thames Water Gas Works, Brentford, Hounslow, London Waste Licence: - Site Reference: 8HO082 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1960 Last Recorded: 31-Dec-1966
Not shown	1454	W		Site Address: Watermans Park, High Street, Brentford Waste Licence: - Site Reference: 8HO066 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: 31-Dec-1865

### 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:

1

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	1292	E	521479 177512	Corney Road, Chiswick	London Borough Of Hounslow	Polygon

## 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:

14

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	1141	S	519857 176532	<p>Site Address: Richmond Upon Thames London B C, Townmead Civic Amenity Site, Townmead Road, Kew, Surrey, TW9 4EL Type: Household, Commercial &amp; Industrial Waste T Stn Size: &gt;= 25000 tonnes &lt; 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RIC002 EPR reference: EA/EPR/BP3490EL/V003 Operator: Richmond Upon Thames London Borough Council Waste Management licence No: 83209 Annual Tonnage: 75000.0</p> <p>Issue Date: 05/12/1996 Effective Date: - Modified: 27/07/2007 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Townmead Civic Amenity Site Correspondence Address: -</p>
Not shown	1144	S	519895 176520	<p>Site Address: Richmond upon Thames London BC, Townmead Civic Amenity Site, Townmead Road, Off Mortlake Road, Kew, Surrey, TW9 4EL Type: Household, Commercial &amp; Industrial Waste T Stn Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RIC001 EPR reference: BP3890EF/V002 Operator: Richmond Upon Thames London Borough Council</p> <p>Issue Date: 25/05/1994 Effective Date: - Modified: 12/11/1996 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Townmead C A S Correspondence Address: -</p>



ID	Distance (m)	Direction	NGR	Details	
				Waste Management licence No: 83208 Annual Tonnage: 109200.0	
Not shown	1144	S	519895 176520	Site Address: Richmond upon Thames London BC, Townmead Civic Amenity Site, Townmead Road, Off Mortlake Road, Kew, Surrey, TW9 4EL Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RIC001 EPR reference: - Operator: Richmond Upon Thames London B C Waste Management licence No: 83208 Annual Tonnage: 109200.0	Issue Date: 25/05/1994 Effective Date: - Modified: 12/11/1996 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Townmead C A S Correspondence Address: Richmond Upon Thames London B C, Richmond Upon Thames L B C, London Road, Twickenham, Middx, TW1 3QB
Not shown	1144	S	519895 176520	Site Address: Richmond Upon Thames London B C, Townmead Civic Amenity Site, Townmead Road, Kew, Surrey, TW9 4EL Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RIC002 EPR reference: - Operator: Richmond Upon Thames London B C Waste Management licence No: 83209 Annual Tonnage: 107018.0	Issue Date: 05/12/1996 Effective Date: - Modified: 08/05/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Townmead Road Cas, Kew, Tw9 Correspondence Address: Richmond Upon Thames London B C, Contract Services Dept, Regal House, London Road, Twickenham, Middx, TW1 3QB
Not shown	1144	S	519895 176520	Site Address: Richmond upon Thames London BC, Townmead Civic Amenity Site, Townmead Road, Kew, Surrey, TW9 4EL Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RIC001 EPR reference: - Operator: Richmond Upon Thames London B C Waste Management licence No: 83208 Annual Tonnage: 109200.0	Issue Date: 25/05/1994 Effective Date: - Modified: 12/11/1996 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Townmead Road Cas, Kew, Tw9 Correspondence Address: Richmond Upon Thames London B C, ""Contract Services Dept, Regal House"", London Road, Twickenham, Middx, TW1 3QB
Not shown	1144	S	519895 176520	Site Address: Richmond upon Thames London BC, Townmead Civic Amenity Site, Townmead Road, Kew, Surrey, TW9 4EL Type: Household, Commercial & Industrial Waste T Stn Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: RIC001 EPR reference: - Operator: Richmond Upon Thames London B C Waste Management licence No: 83208 Annual Tonnage: 109200.0	Issue Date: 25/05/1994 Effective Date: - Modified: 12/11/1996 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Townmead Road Cas, Kew, Tw9 Correspondence Address: Richmond Upon Thames London B C, Contract Services Dept, Regal House, London Road, Twickenham, Middx, TW1 3QB
Not shown	1144	S	519895 176520	Site Address: Richmond upon Thames London BC, Townmead Civic Amenity Site, Townmead Road, Off Mortlake Road, Kew, Surrey, TW9 4EL Type: Household Waste Amenity Site Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RIC001 EPR reference: EA/EPR/BP3890EF/V002 Operator: Richmond Upon Thames London Borough Council	Issue Date: 25/05/1994 Effective Date: - Modified: 12/11/1996 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Townmead C A S Correspondence Address: -



ID	Distance (m)	Direction	NGR	Details	
				Waste Management licence No: 83208 Annual Tonnage: 109200.0	
Not shown	1289	NW	518935 178224	Site Address: Ward Ltd, British Rail Goods Yard North, Lionel Road, Kew Bridge, Brentford, Middlesex, TW8 0JA Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WAR001 EPR reference: EA/EPR/RP3996NS/V002 Operator: Ward Ltd Waste Management licence No: 80074 Annual Tonnage: 165740.0	Issue Date: 15/12/1992 Effective Date: - Modified: 25/03/1997 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Br Goods Yard (north), Brentford Correspondence Address: -
Not shown	1317	NW	518953 178319	Site Address: British Rail Goods Yard, Kew Bridge North, Lionel Road, Brentford, Middlesex, TW8 0JA Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: QUA003 EPR reference: EA/EPR/PP3993ET/S002 Operator: Quattro ( U K ) Ltd Waste Management licence No: 80724 Annual Tonnage: 0.0	Issue Date: 23/11/2007 Effective Date: - Modified: - Surrendered Date: Feb 7 2019 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Quattro - Brentford Correspondence Address: -
Not shown	1326	NW	518925 178286	Site Address: Chiswick Skips Ltd, B R Goods Yard, Kew Bridge North, Lionel Road, Brentford, Middlesex, TW8 0JA Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: QUA004 EPR reference: EA/EPR/NP3996NJ/T004 Operator: Quattro ( U K ) Ltd Waste Management licence No: 80020 Annual Tonnage: 172200.0	Issue Date: 04/12/1991 Effective Date: 19/10/2006 Modified: 05/03/1999 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked Site Name: Quattro U K, Brentford Correspondence Address: -
Not shown	1326	NW	518925 178286	Site Address: Chiswick Skips Ltd, Kew Bridge North, Lionel Road, Brentford, Middlesex, TW8 0JA Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: QUA004 EPR reference: EA/EPR/NP3996NJ/T004 Operator: Quattro ( U K ) Limited Waste Management licence No: 80020 Annual Tonnage: 172200.0	Issue Date: 04/12/1991 Effective Date: 19/10/2006 Modified: 05/03/1999 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: British Rail Goods Yard Correspondence Address: -
Not shown	1326	NW	518925 178286	Site Address: Chiswick Skips Ltd, BR Goods Yard, Kew Bridge North, Lionel Road, Brentford, Middlesex, TW8 0JA Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CHI001 EPR reference: - Operator: Chiswick Skips Ltd Waste Management licence No: 80020 Annual Tonnage: 0.0	Issue Date: 04/12/1991 Effective Date: - Modified: 05/03/1999 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Chiswick Skips, Brentford Correspondence Address: Chiswick Skips Ltd, BR Goods Yard, Kew Bridge North, Lionel Road, Brentford, Middlesex, TW8 0JA
Not shown	1327	NW	518920 178280	Site Address: Old British Rail Goods Yard, Lionel Road, Brentford, Brentford, Middlesex, TW8 0JA	Issue Date: 15/11/2004 Effective Date: - Modified: -



ID	Distance (m)	Direction	NGR	Details	
				Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRE012 EPR reference: - Operator: Brentford Commercials Ltd Waste Management licence No: 80618 Annual Tonnage: 0.0	Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Brentford Commercials (waste) Ltd Correspondence Address: Old British Rail Goods Yard, Lionel Road, Brentford, Middlesex, TW8 0JA
Not shown	1347	NW	518898 178281	Site Address: Old British Rail Goods Yard, Lionel Road, Brentford, Brentford, Middlesex, TW8 0JA Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRE012 EPR reference: EA/EPR/VP3097NN/A001 Operator: Brentford Commercials Ltd Waste Management licence No: 80618 Annual Tonnage: 74999.0	Issue Date: 15/11/2004 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Brentford Commercials ( Waste ) Ltd Correspondence Address: -



# 4. Current Land Use Map



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## 4. Current Land Uses

### 4.1 Current Industrial Data

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

5

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	118	E	Flavius Computer Repairs	520239 177610	Montgomery Court, St Thomas Road, London, Greater London, W4 3LA	Electrical Equipment Repair and Servicing	Repair and Servicing
2	167	SW	Works	519986 177539	Greater London, W4	Unspecified Works Or Factories	Industrial Features
3	227	W	Electricity Sub Station	519870 177646	Greater London, W4	Electrical Features	Infrastructure and Facilities
4	237	E	Sports Day Records	520350 177726	100, Sutton Court Road, London, Greater London, W4 3EQ	Recording Studios and Record Companies	IT, Advertising, Marketing and Media Services
5	237	SW	Electricity Sub Station	519900 177531	Greater London, W4	Electrical Features	Infrastructure and Facilities

### 4.2 Petrol and Fuel Sites

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

0

Database searched and no data found.



### 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:

18

The following Underground Electricity Transmission Cable records are represented as linear features on the Current Land Use map:

ID	Distance (m)	Direction	Details	
6A	353	E	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
7A	353	E	Cable Set: SOUTH (BICC) CABLE SECT 47 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N
8A	354	E	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
9B	357	E	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
10B	359	E	Cable Set: SOUTH (BICC) CABLE SECT 48 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N
11B	360	E	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
12C	404	N	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
13C	404	N	Cable Set: SOUTH (BICC) CABLE SECT 52 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N
14C	405	N	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
15D	419	NE	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
16D	420	NE	Cable Set: SOUTH (BICC) CABLE SECT 51 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N



ID	Distance (m)	Direction	Details	
17D	421	NE	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
18E	421	E	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
19E	422	E	Cable Set: SOUTH (BICC) CABLE SECT 49 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N
20E	422	E	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
21F	494	N	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -
22F	495	N	Cable Set: SOUTH (BICC) CABLE SECT 53 Cable Route: WIMBLEDON - WILLESSEN Cable Make: BICC 275KV OIL	Cable Type: A/C Operating Voltage (kV): 275 Year of installation: 1967 Cable in tunnel: N
23F	495	N	Cable Set: - Cable Route: - Cable Make: -	Cable Type: PILOT Operating Voltage (kV): - Year of installation: - Cable in tunnel: -

#### 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

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

Lex Code	Description	Rock Type
KPGR-XSV	KEMPTON PARK GRAVEL MEMBER	SAND AND GRAVEL

---

## 5.3 Bedrock and Solid Geology

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

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

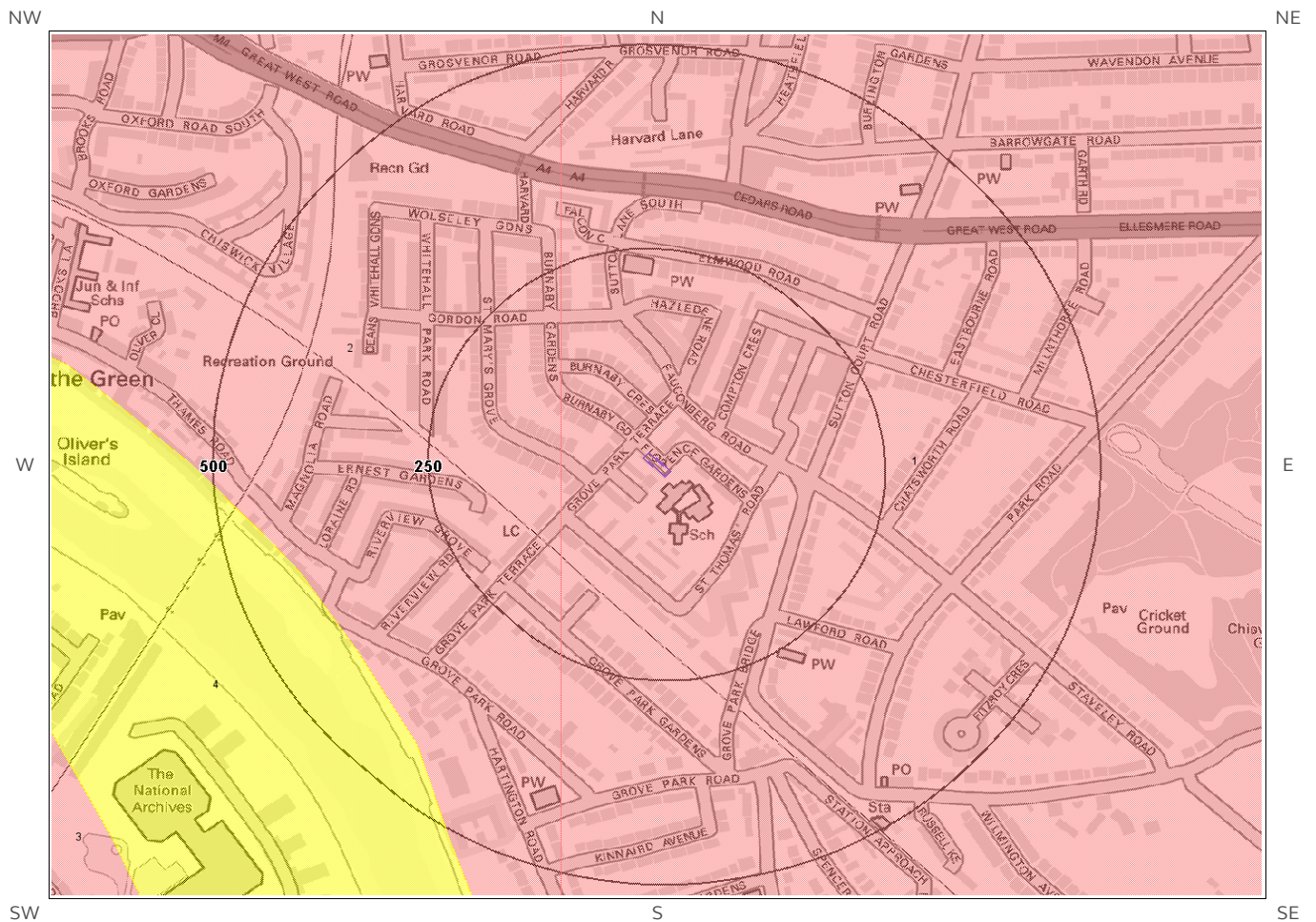
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

---

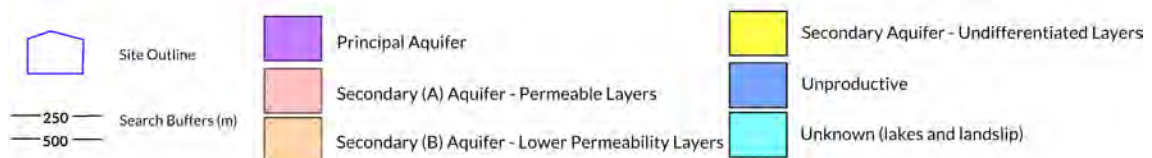


# 6 Hydrogeology and Hydrology

## 6a. Aquifer Within Superficial Geology



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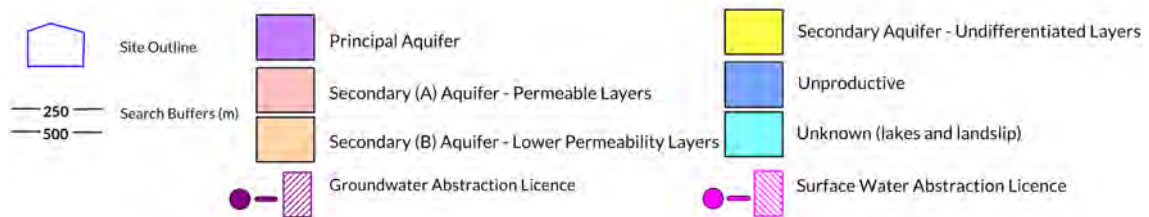




# 6b. Aquifer Within Bedrock Geology and Abstraction Licences

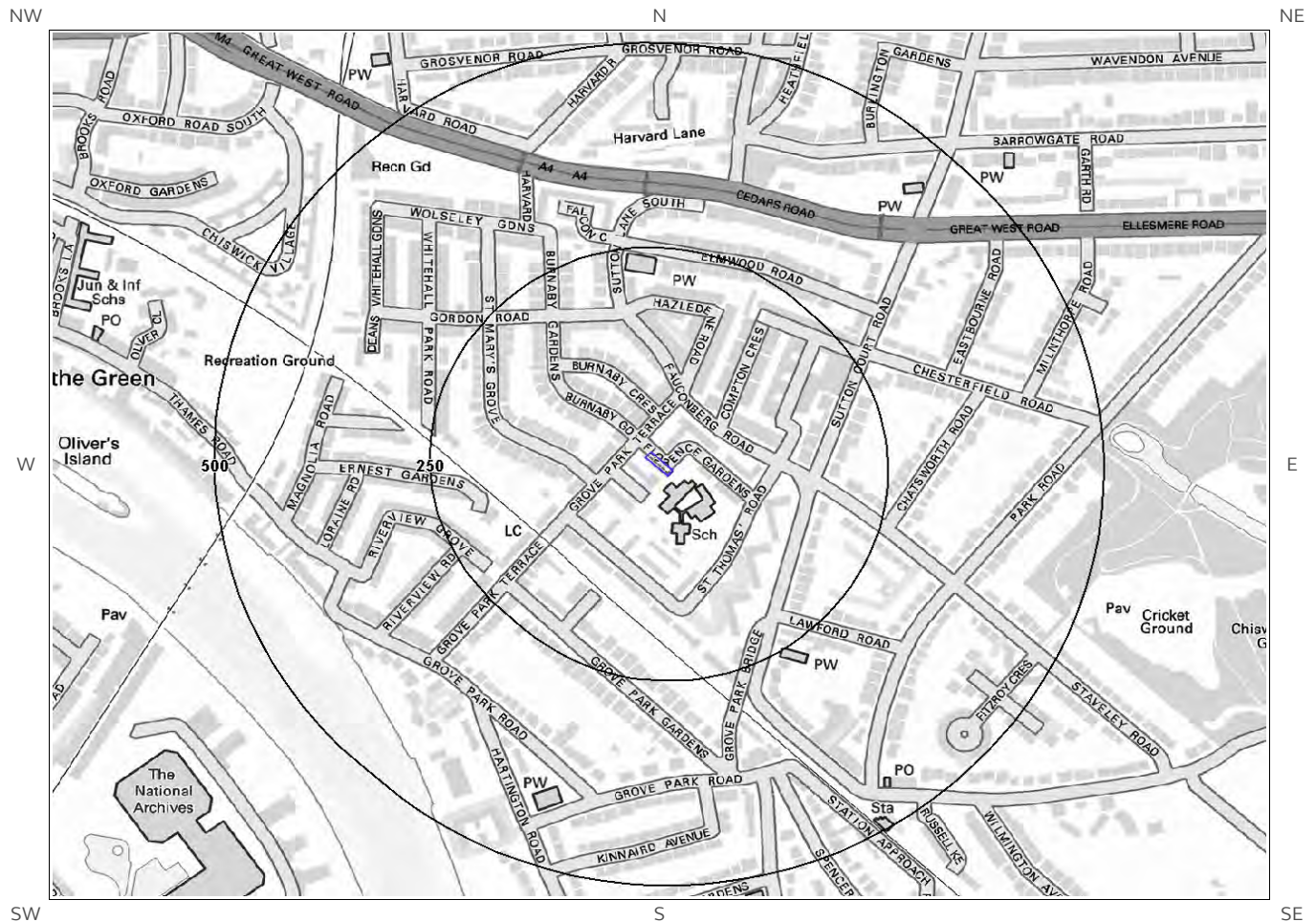


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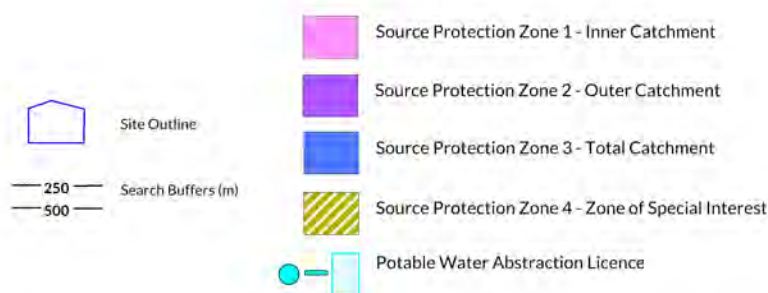




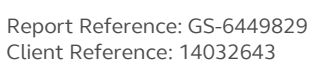
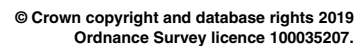
# 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



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# 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
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	96	W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	408	SW	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

## 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	96	W	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
3A	737	SW	519480 177260	Status: Active Licence No: TH/039/0035/002 Details: Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: WELL 1 AT THE NATIONAL ARCHIVES. KEW, RICHMOND, SURREY Data Type: Point Name: The Secretary of State for Justice Annual Volume (m <sup>3</sup> ): 10,000 Max Daily Volume (m <sup>3</sup> ): 30 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 23/06/2014 Version End Date:
4A	737	SW	519480 177260	Status: Active Licence No: TH/039/0035/002 Details: Make-Up Or Top Up Water Direct Source: THAMES GROUNDWATER Point: WELL 1 AT THE NATIONAL ARCHIVES. KEW, RICHMOND, SURREY Data Type: Point Name: The Secretary of State for Justice Annual Volume (m <sup>3</sup> ): 10,000 Max Daily Volume (m <sup>3</sup> ): 30 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 23/06/2014 Version End Date:
5B	752	SW	519490 177220	Status: Active Licence No: TH/039/0035/002 Details: Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: WELL 2 AT THE NATIONAL ARCHIVES, KEW, RICHMOND, SURREY Data Type: Point Name: The Secretary of State for Justice Annual Volume (m <sup>3</sup> ): 10,000 Max Daily Volume (m <sup>3</sup> ): 30 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 23/06/2014 Version End Date:
6B	752	SW	519490 177220	Status: Active Licence No: TH/039/0035/002 Details: Make-Up Or Top Up Water Direct Source: THAMES GROUNDWATER Point: WELL 2 AT THE NATIONAL ARCHIVES, KEW, RICHMOND, SURREY Data Type: Point Name: The Secretary of State for Justice Annual Volume (m <sup>3</sup> ): 10,000 Max Daily Volume (m <sup>3</sup> ): 30 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 23/06/2014 Version End Date:
Not shown	829	N	520120 178500	Status: Historical Licence No: 28/39/39/0216 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: CHISWICK SERVICE STATION, CHISWICK, LONDON W4-POINT 'A'. Data Type: Point Name: TOTAL UK LIMITED Annual Volume (m <sup>3</sup> ): 6,935 Max Daily Volume (m <sup>3</sup> ): 19 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 10/03/2005 Version End Date:
Not shown	829	N	520120 178500	Status: Historical Licence No: 28/39/39/0200 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: POINT 'A' AT CHISWICK SERVICE STATION, CHISWICK, LONDON W4. Data Type: Point Name: TOTALFINAELF UK LTD Annual Volume (m <sup>3</sup> ): - Max Daily Volume (m <sup>3</sup> ): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 28/03/2002 Version End Date:



ID	Distance (m)	Direction	NGR	Details	
Not shown	1161	N	519831 178800	Status: Historical Licence No: TH/039/0039/030 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT CHISWICK HIGH ROAD, LONDON Data Type: Point Name: CHISWICK PARK ESTATE MANAGEMENT LIMITED	Annual Volume (m³): 19,540 Max Daily Volume (m³): 588 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 05/09/2014 Version End Date:
Not shown	1161	N	519831 178800	Status: Historical Licence No: TH/039/0039/030 Details: Make-Up Or Top Up Water Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT CHISWICK HIGH ROAD, LONDON Data Type: Point Name: CHISWICK PARK ESTATE MANAGEMENT LIMITED	Annual Volume (m³): 19,540 Max Daily Volume (m³): 588 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 05/09/2014 Version End Date:
Not shown	1161	N	519831 178800	Status: Active Licence No: TH/039/0039/030/R01 Details: Make-Up Or Top Up Water Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT CHISWICK HIGH ROAD, LONDON Data Type: Point Name: CHISWICK PARK ESTATE MANAGEMENT LIMITED	Annual Volume (m³): 23,540 Max Daily Volume (m³): 294 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 18/04/2019 Version End Date:
Not shown	1161	N	519831 178800	Status: Active Licence No: TH/039/0039/030/R01 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT CHISWICK HIGH ROAD, LONDON Data Type: Point Name: CHISWICK PARK ESTATE MANAGEMENT LIMITED	Annual Volume (m³): 23,540 Max Daily Volume (m³): 294 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 18/04/2019 Version End Date:
Not shown	1161	N	519830 178800	Status: Historical Licence No: 28/39/39/0197 Details: Make-Up Or Top Up Water Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT CHISWICK HIGH ROAD, LONDON Data Type: Point Name: CHISWICK PARK ESTATE MANAGEMENT LTD	Annual Volume (m³): 19,540 Max Daily Volume (m³): 294 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 02/07/2007 Version End Date:
Not shown	1161	N	519830 178800	Status: Historical Licence No: 28/39/39/0197 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT CHISWICK HIGH ROAD, LONDON Data Type: Point Name: CHISWICK PARK ESTATE MANAGEMENT LTD	Annual Volume (m³): 19,540 Max Daily Volume (m³): 294 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 02/07/2007 Version End Date:
Not shown	1374	S	520500 176320	Status: Active Licence No: 28/39/39/0180 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: DUKES MEADOW GOLF CLUB, LONDON - BOREHOLE Data Type: Point Name: D & D LEISURE SPORTS LTD	Annual Volume (m³): 8,000 Max Daily Volume (m³): 55 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 01/04/2008 Version End Date:



ID	Distance (m)	Direction	NGR	Details	
Not shown	1431	W	518665 177680	Status: Active Licence No: TH/039/0035/001/R01 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (1) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW	Annual Volume (m³): 124,300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 19/05/2016 Version End Date:
Not shown	1431	W	518665 177680	Status: Historical Licence No: TH/039/0035/001 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (1) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW	Annual Volume (m³): 124,300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 10/07/2014 Version End Date:
Not shown	1447	W	518649 177670	Status: Active Licence No: TH/039/0035/001/R01 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (2) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW	Annual Volume (m³): 124,300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 19/05/2016 Version End Date:
Not shown	1447	W	518649 177670	Status: Historical Licence No: TH/039/0035/001 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (2) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW	Annual Volume (m³): 124,300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 10/07/2014 Version End Date:
Not shown	1453	W	518643 177669	Status: Historical Licence No: TH/039/0035/001 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (3) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW	Annual Volume (m³): 124,300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 10/07/2014 Version End Date:
Not shown	1453	W	518643 177669	Status: Active Licence No: TH/039/0035/001/R01 Details: Heat Pump Direct Source: THAMES GROUNDWATER Point: KEW GARDENS, RICHMOND - BOREHOLE (3) Data Type: Point Name: THE BOARD OF TRUSTEES OF THE ROYAL BOTANIC GARDENS, KEW	Annual Volume (m³): 124,300 Max Daily Volume (m³): 380 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 19/05/2016 Version End Date:
Not shown	1494	E	521600 177900	Status: Historical Licence No: 28/39/39/0137 Details: Non-Evaporative Cooling Direct Source: THAMES GROUNDWATER Point: WELL AT GRIFFIN BREWERY, CHISWICK, LONDON W4 Data Type: Point Name: FULLER SMITH & TURNER LTD	Annual Volume (m³): 81,828 Max Daily Volume (m³): 327 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 14/09/1970 Version End Date:



ID	Distance (m)	Direction	NGR	Details	
Not shown	1644	SE	521200 176400	Status: Historical Licence No: 28/39/39/0174 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: DUKES MEADOW, CHISWICK - BOREHOLE Data Type: Point Name: RIVERSIDE RACQUETS CLUB LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 08/12/1993 Version End Date:

## 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

None identified

Database searched and no data found.

## 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 Identified

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

## 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

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	498 SW	River Thames	Tidal river or stream.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	498 SW	River Thames	Tidal river or stream.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

## 6.11 Surface Water Features

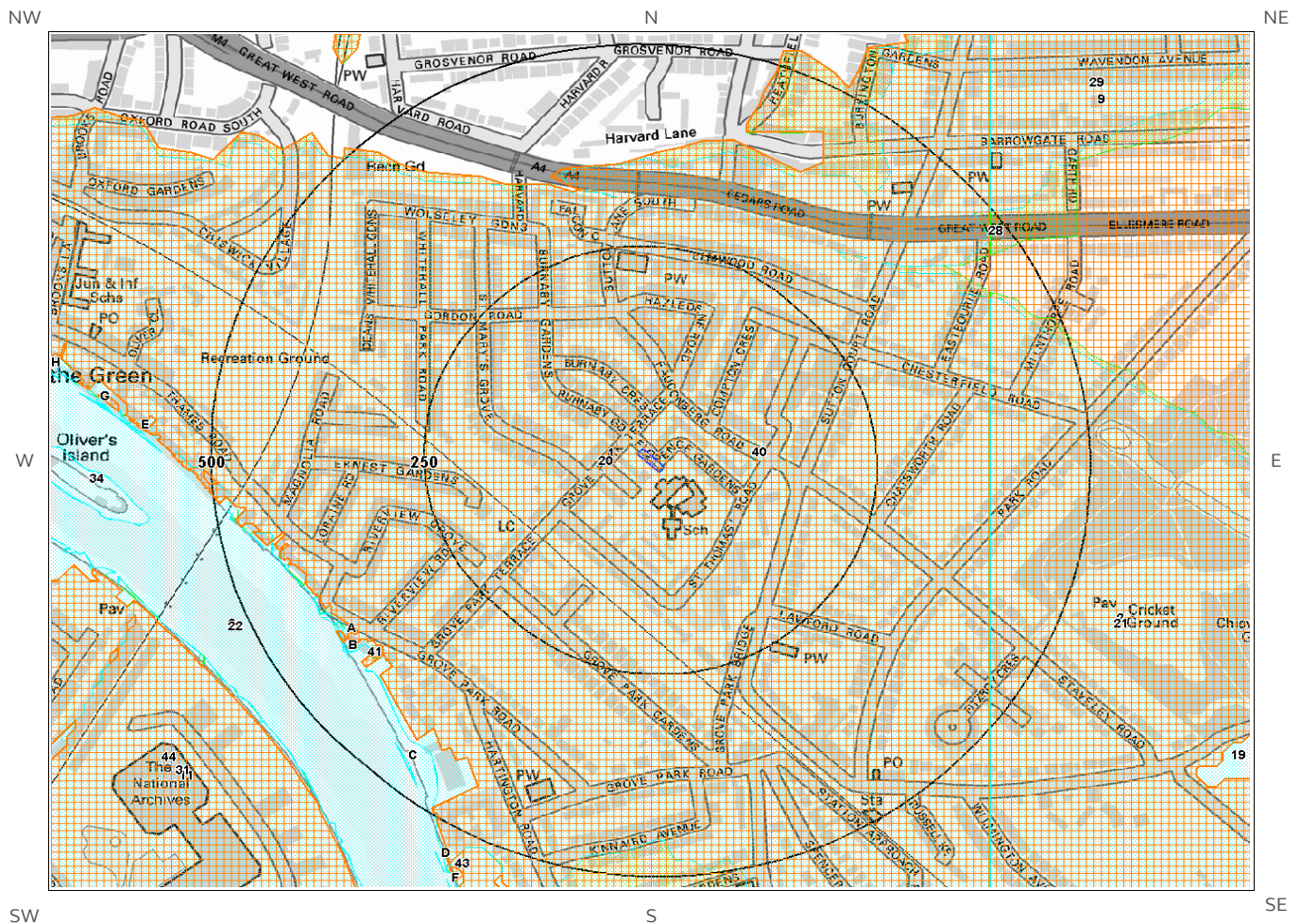
Surface water features within 250m of the study site

None identified

Database searched and no data found.



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

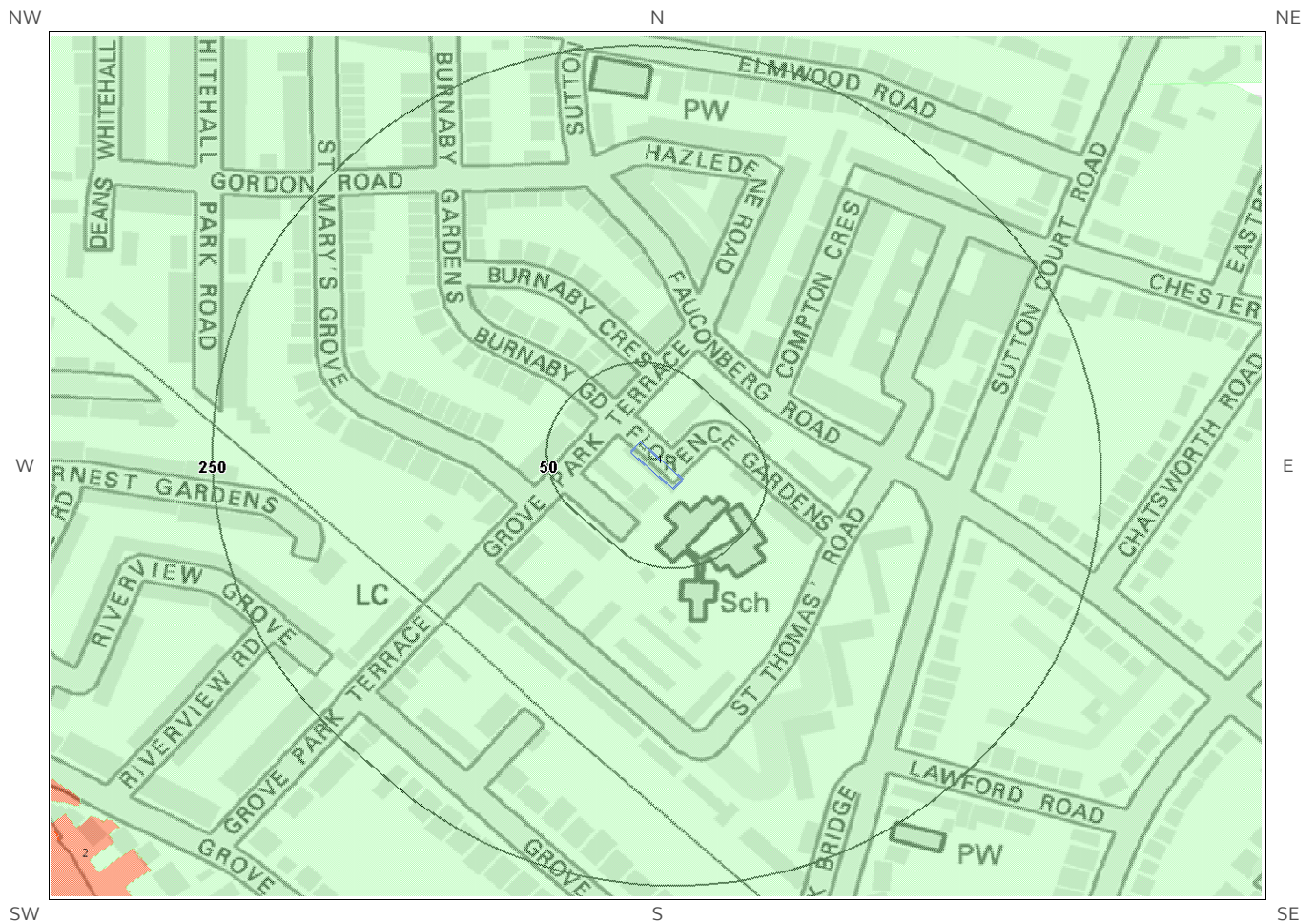


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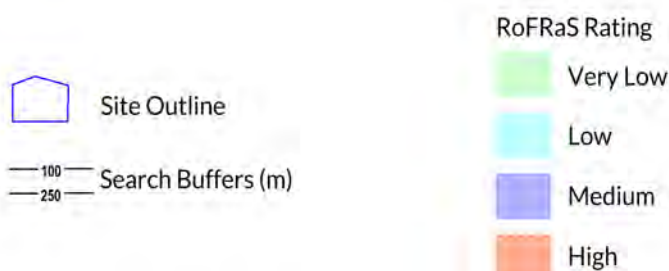




# 7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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# 7 Flooding

## 7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m

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:

ID	Distance (m)	Direction	Update	Type
1	0	On Site	09-Sep-2019	Zone 2 - (Fluvial /Tidal Models)

## 7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m

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.

ID	Distance (m)	Direction	Update	Type
1	0	On Site	09-Sep-2019	Zone 3 - (Fluvial Models)

## 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.

Any relevant data within 250m is represented on the RoFRaS Flood map. Data to 50m is reported in the table below.

ID	Distance (m)	Direction	RoFRaS flood Risk
1	0.0	On Site	Very Low



## 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 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 Identified

Clearwater Flooding or Superficial Deposits Flooding Superficial Deposits Flooding

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

---

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

Potential below Surface

Where potential for groundwater flooding of property situated below ground level is indicated, this means that given the geological conditions there may be a groundwater flooding hazard to basements and other below surface infrastructure. Unless other relevant information, e.g. records of previous flooding, suggests groundwater flooding has occurred before in this area you need take no further action in relation to groundwater flooding hazard. If there are records of previous incidences of groundwater flooding, then is recommended that other information e.g. rainfall history, property type, and land drainage information in addition to previous records of flooding be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

---

## 7.8 Groundwater Flooding Confidence Areas

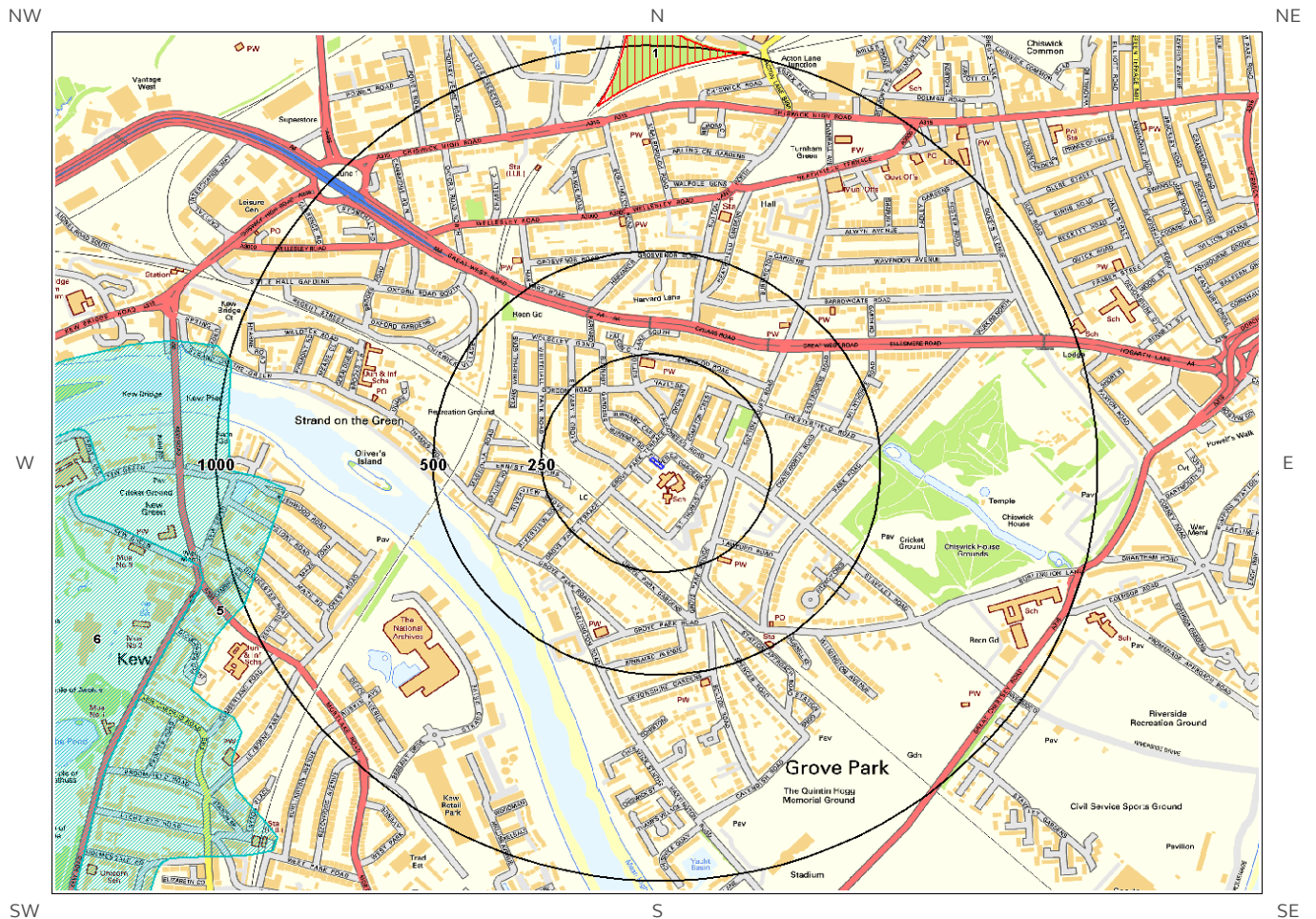
British Geological Survey confidence rating in this result High

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
---	------------

---

## 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:

4

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	861	N	Gunnersbury Triangle	Natural England
Not shown	1568	E	Leg of Mutton Reservoir	Natural England
Not shown	1655	E	Chiswick Eyot	Natural England
Not shown	1678	SE	Duke's Hollow	Natural England

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

2

The following World Heritage Site records provided by English Heritage and Cadw are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	World Heritage Site Name	Data Source
5	843	W	Royal Botanic Gardens, Kew Buffer Zone	Historic England
6	1069	W	Royal Botanic Gardens, Kew	Historic England

## 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 Negligible

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

Hazard
Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

### 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.

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### 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**

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

Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)

BGS Geological Hazards Reports and general geological enquiries:  
[enquiries@bgs.ac.uk](mailto: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](http://www.environment-agency.gov.uk)

Email: [enquiries@environment-agency.gov.uk](mailto:enquiries@environment-agency.gov.uk)

**Public Health England**

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Public Health England, Wellington House  
133-155 Waterloo Road, London, SE1 8UG  
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Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
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200 Lichfield Lane  
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[www.coal.gov.uk](http://www.coal.gov.uk)

**Ordnance Survey**

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SO16 0AS  
Tel: 08456 050505

**Local Authority**

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Phone: 020 8583 2000

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

Address: Civic Centre, Lampton Road, Hounslow, London, TW3 4DN

**Gemapping PLC**

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Hampshire RG27 8NW  
Tel: 01252 845444





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

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<https://www.groundsure.com/terms-and-conditions-feb11-2019>



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BRISTOL, BS1 2NL

Groundsure  
Reference:

GS-6449830

Your Reference: 14032643

Report Date 8 Nov 2019

Report Delivery Method: Email - pdf

## Geo Insight

Address: 520111 177659,

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:** 520111 177659,  
**Date:** 8 Nov 2019  
**Reference:** GS-6449830  
**Client:** Arcadis Consulting UK Ltd

NW N NE

W E



SW S SE

Aerial Photograph Capture date: 20-Apr-2015  
Grid Reference: 520111,177659  
Site Size: 0.0304ha



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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?*	Yes
	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?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	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	6	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	2

## 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



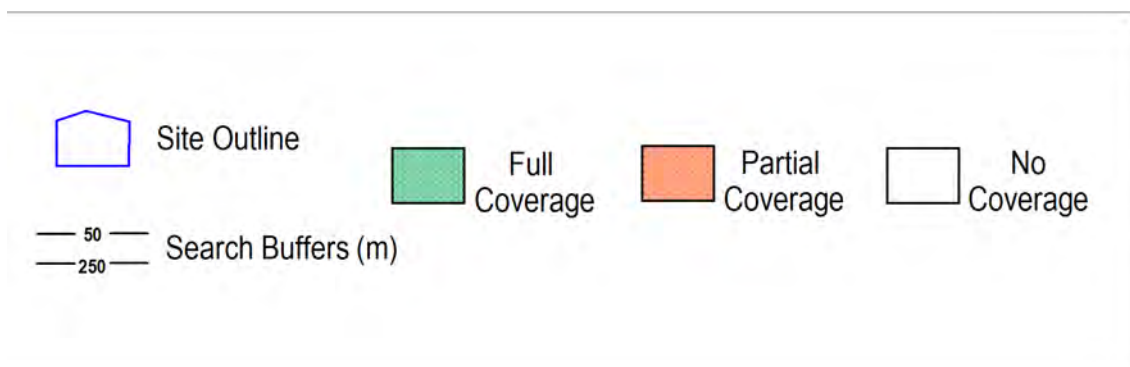
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Cornwall and Devon Metalliferous Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Negligible				
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	0	0		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	1	0	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	8	Not Searched	
9.5 Railway Projects	0	0	0	0	

# 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	96.0	Some deposits are mapped	Full	Full	No coverage

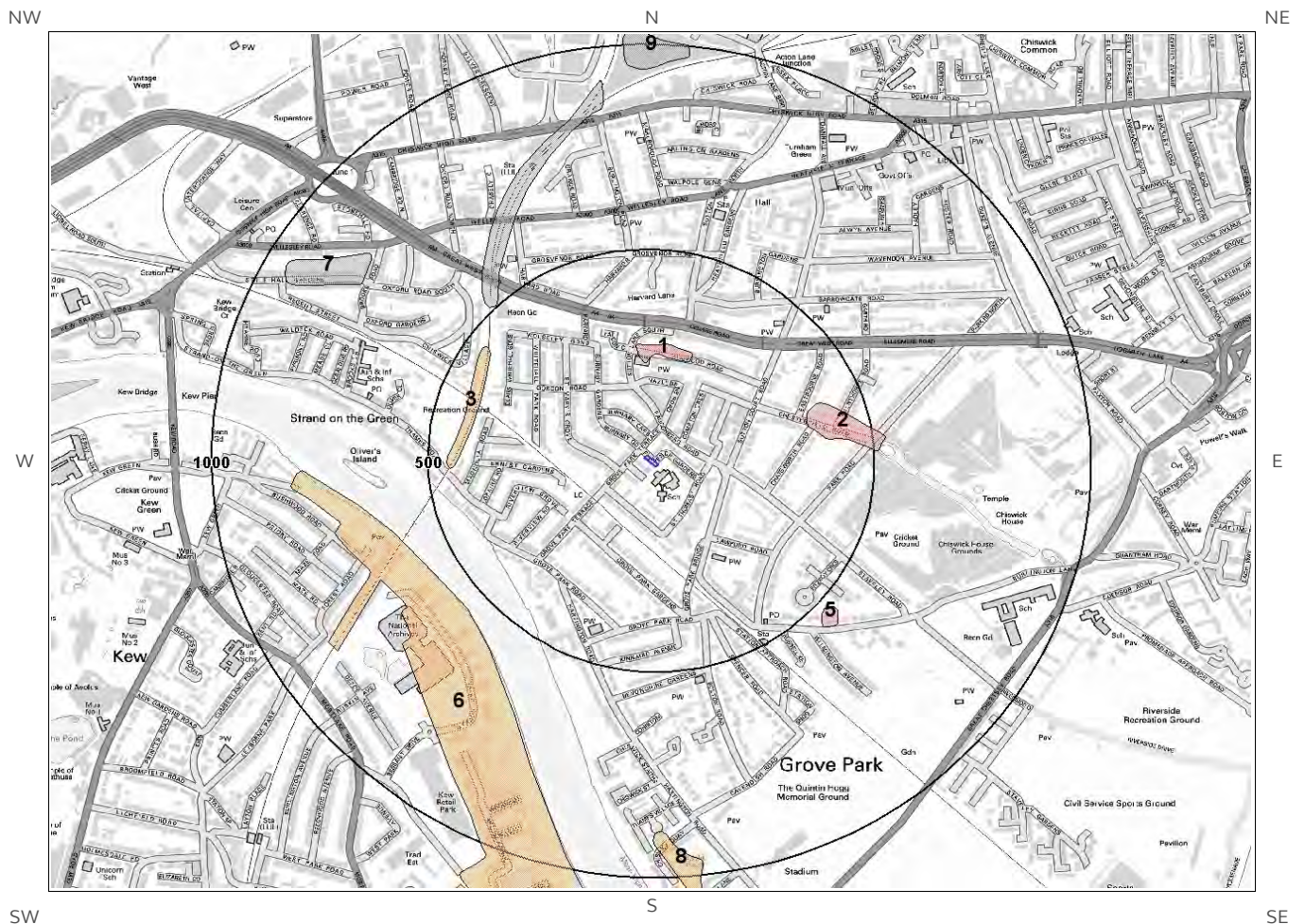
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not 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

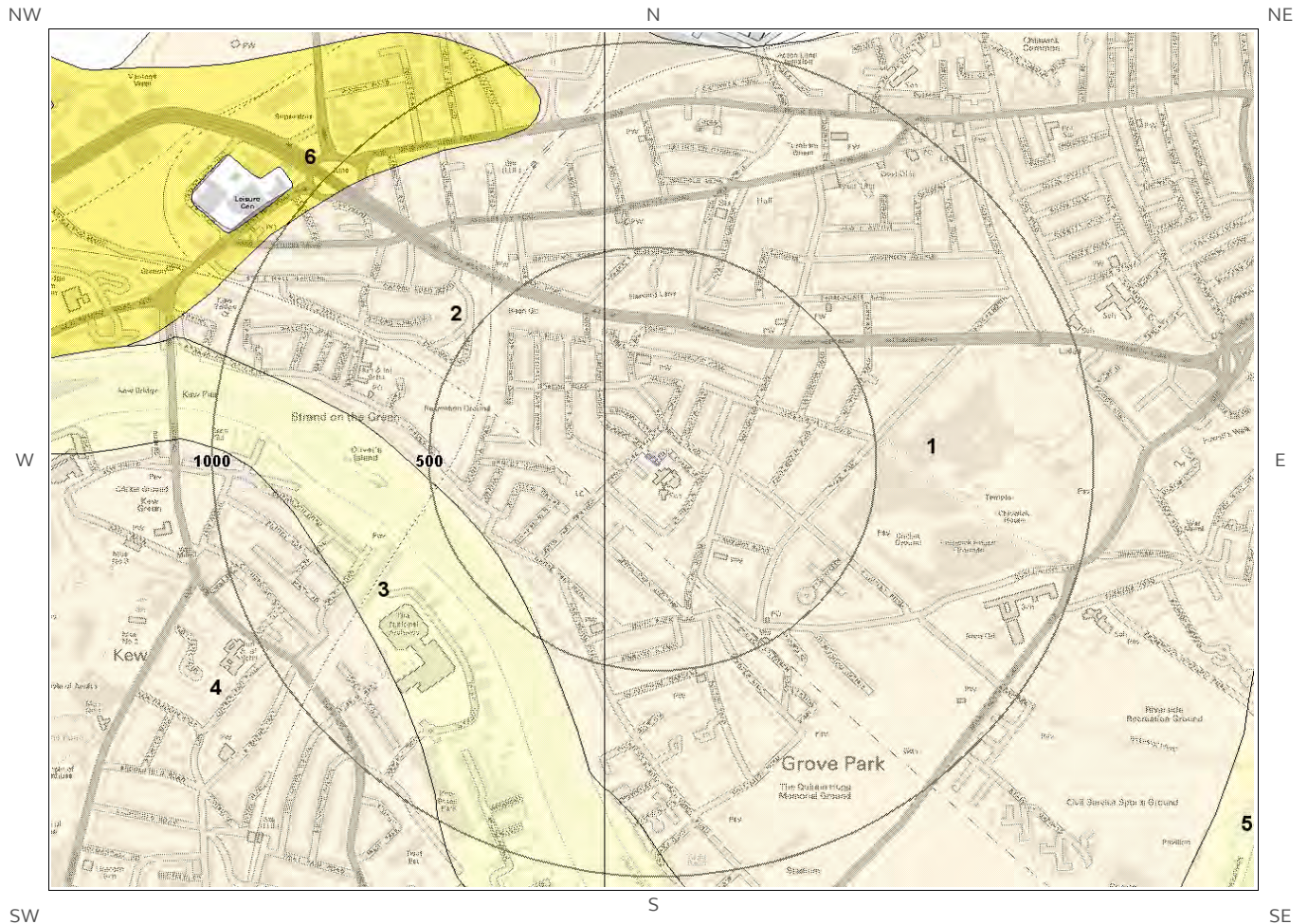
## 1.1 Artificial Ground

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? Yes

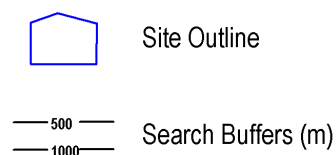
ID	Distance	Direction	LEX Code	Description	Rock Description
1	224.0	N	WMGR- UNKNOWN	Infilled Ground	Unknown/unclassified Entry
2	357.0	E	WMGR- UNKNOWN	Infilled Ground	Unknown/unclassified Entry
3	403.0	W	MGR- UNKNOWN	Made Ground (Undivided)	Unknown/unclassified Entry

# 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? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	KPGR-XSV	Kempton Park Gravel Formation - Sand And Gravel	Sand And Gravel
2	96.0	W	KPGR-XSV	Kempton Park Gravel Formation - Sand And Gravel	Sand And Gravel
3	419.0	SW	ALV-Z	Alluvium - Silt (unlithified Deposits Coding Scheme)	Silt

## 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

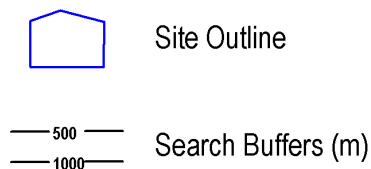
This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

# 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	96.0	W	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.

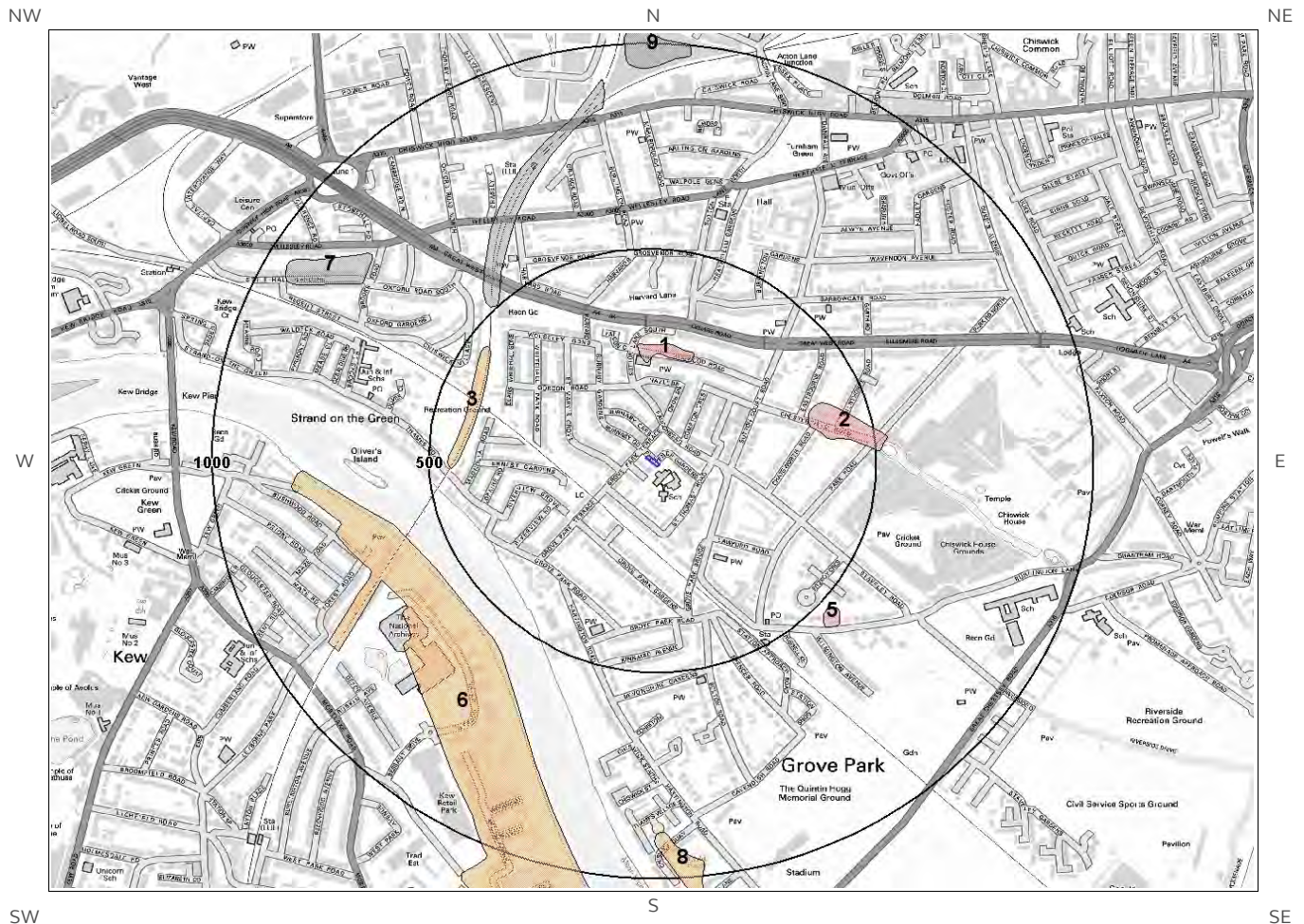
The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

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.

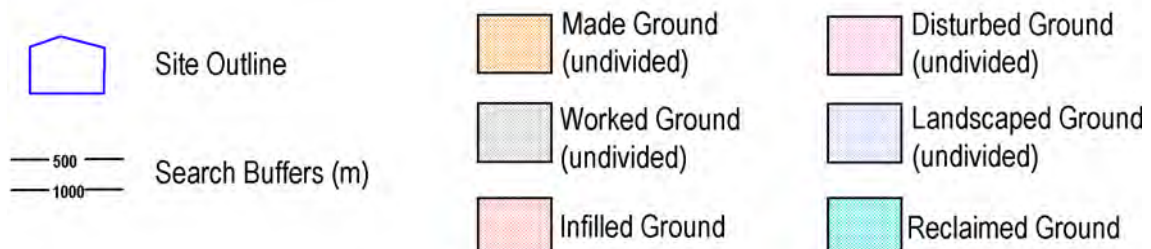
---

# 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: 270

#### 2.1.1 Artificial/ Made Ground

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

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	225.0	N	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
2	358.0	E	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
3	403.0	W	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

---

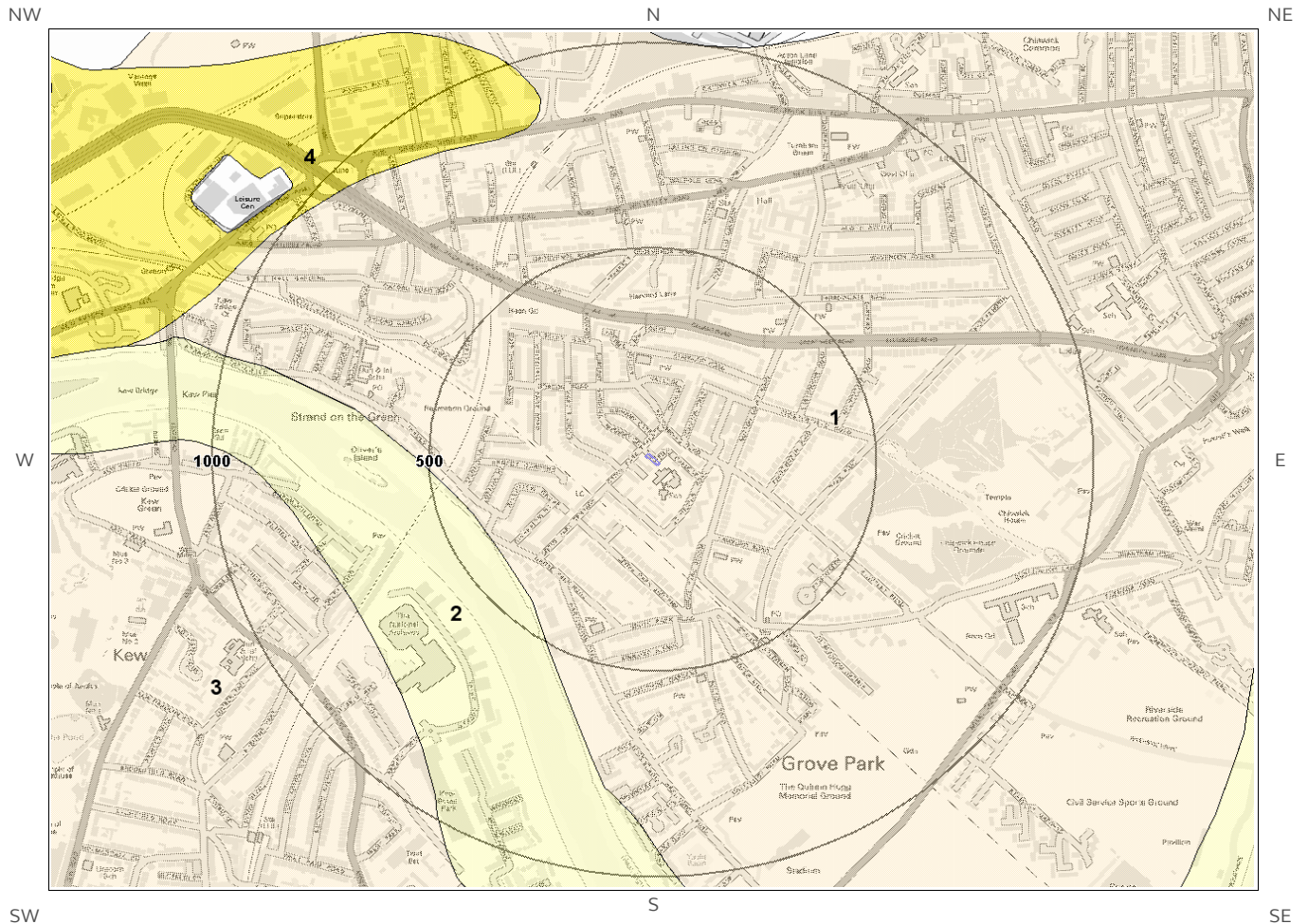
#### 2.1.2 Permeability of Artificial Ground

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

Database searched and no data found.

---

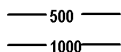
## 2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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Site Outline



Search Buffers (m)



## 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	0.0	On Site	KPGR-XSV	KEMPTON PARK GRAVEL MEMBER	SAND AND GRAVEL
2	408.0	SW	ALV-XCZSP	ALLUVIUM	CLAY, SILT, SAND AND PEAT

### 2.2.2 Permeability of Superficial Ground

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

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

### 2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

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

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

### 2.2.4 Landslip Permeability

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

Database searched and no data found.

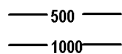
## 2.3 Bedrock and linear features map (1:50,000 scale)



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Site Outline



Search Buffers (m)



## 2.3 Bedrock, Solid Geology & linear features

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

### 2.3.1 Bedrock/Solid Geology

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

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

### 2.3.2 Permeability of Bedrock Ground

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

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	Low	Very Low

### 2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? No

Database searched and no data found.

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

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

# 3 Radon Data

## 3.1 Radon Affected Areas

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

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

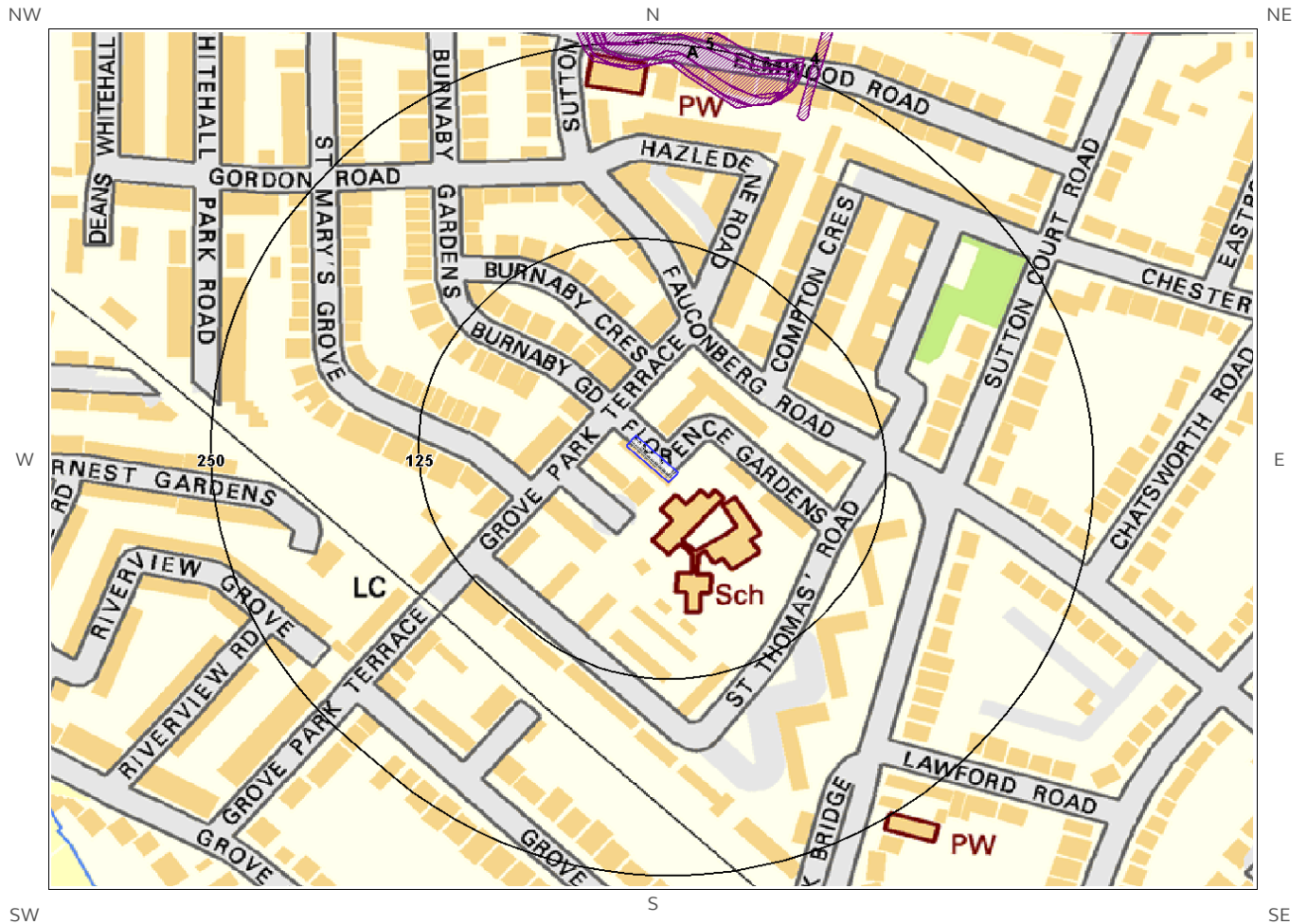
---

## 3.2 Radon Protection

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



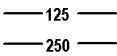

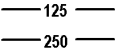


# 4 Ground Workings map



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? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1A	217.0	N	520130 177906	Fish Pond	1894
2A	220.0	N	520135 177908	Fish Pond	1911
3A	221.0	N	520133 177908	Fish Pond	1898
4	224.0	NE	520214 177917	Pond	1873
5	227.0	N	520139 177913	Fish Pond	1893
6A	227.0	N	520139 177915	Pond	1873

## 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

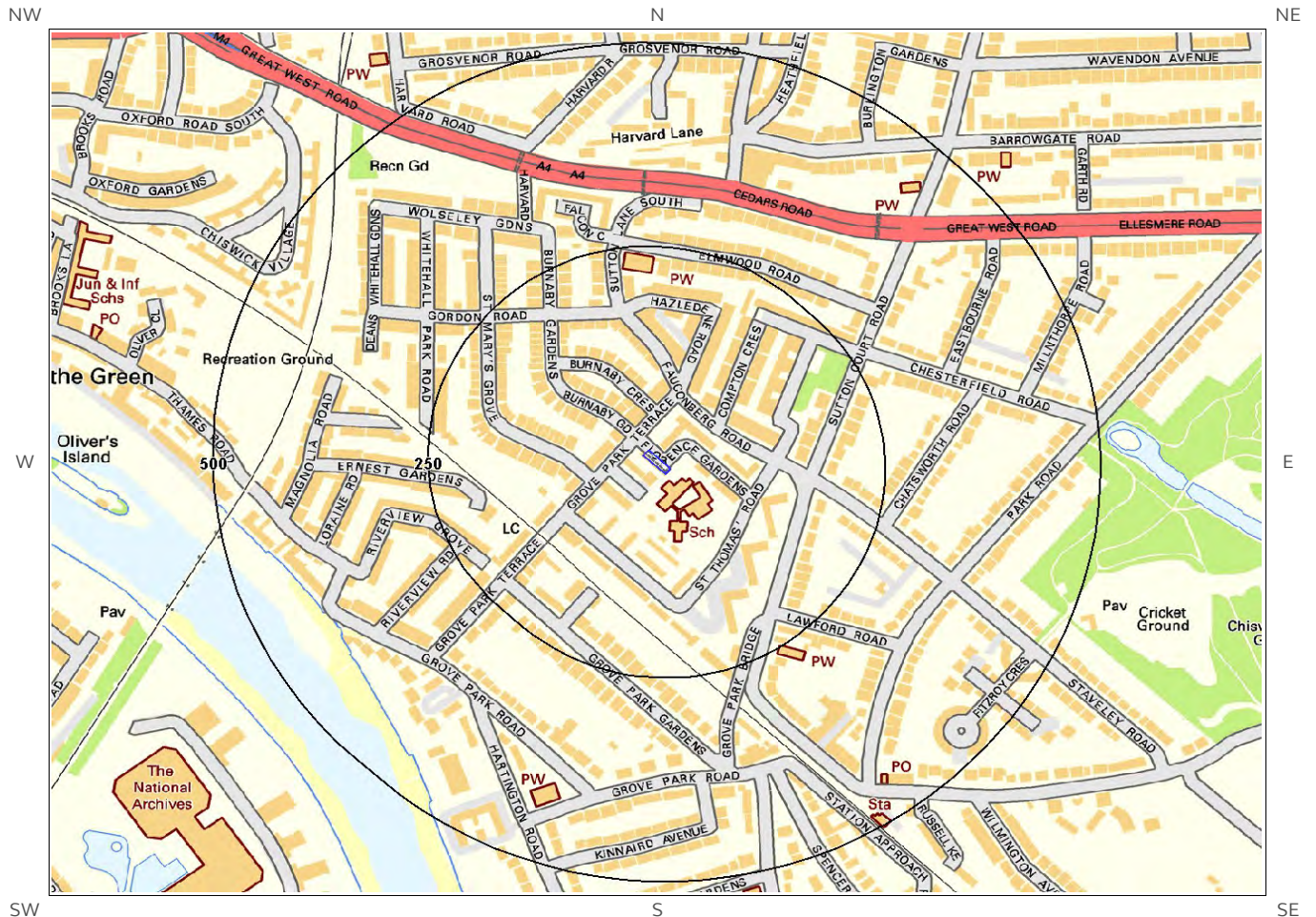
This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

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	554.0	SE	520544 177283	Sand & Gravel	Burlington Lane Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	982.0	N	520099 178653	Sand & Gravel	Acton Curve Ballast Pit	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?

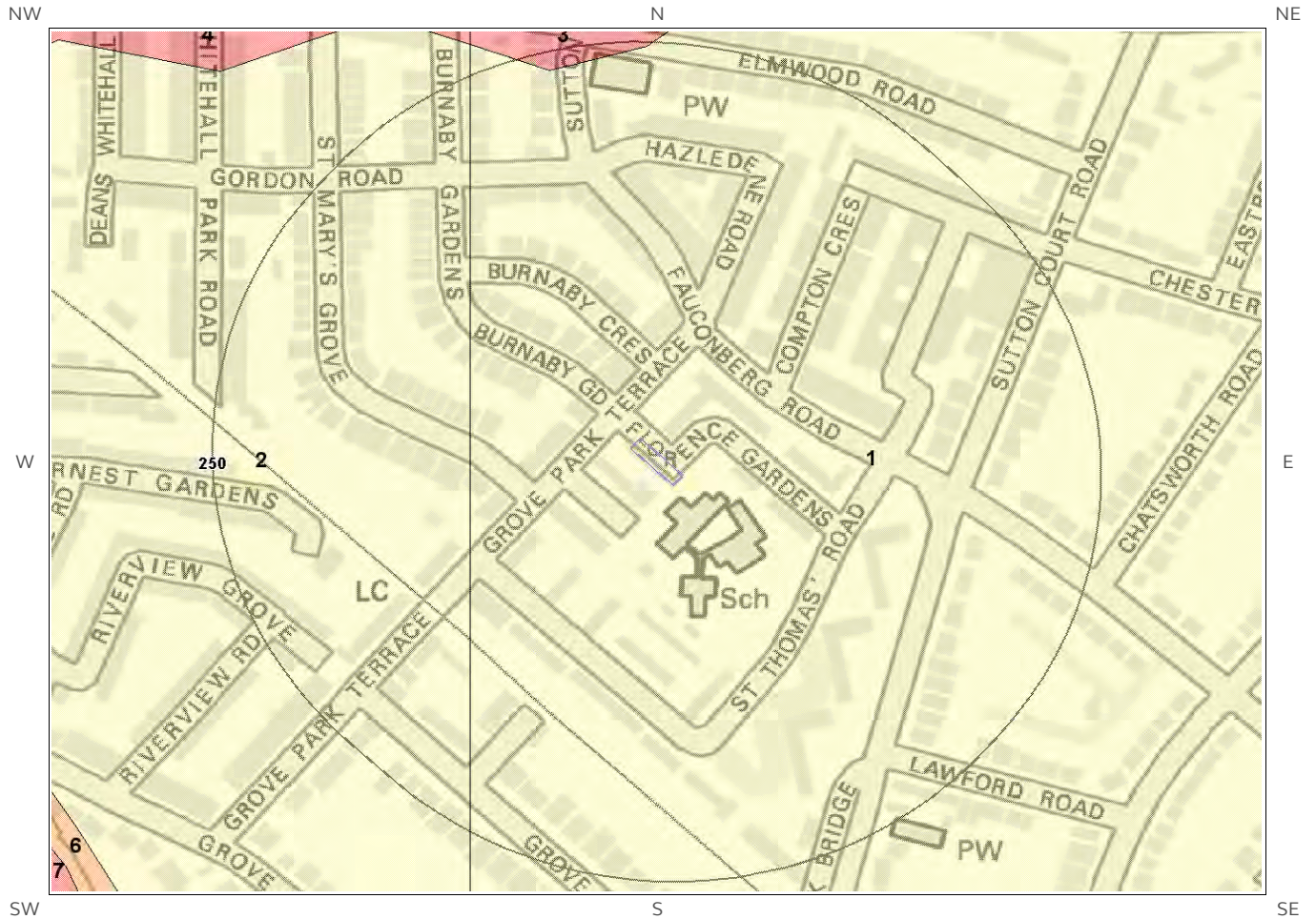
No

Database searched and no data found.

---

# 6 Natural Ground Subsidence

## 6.1 Shrink-Swell Clay map



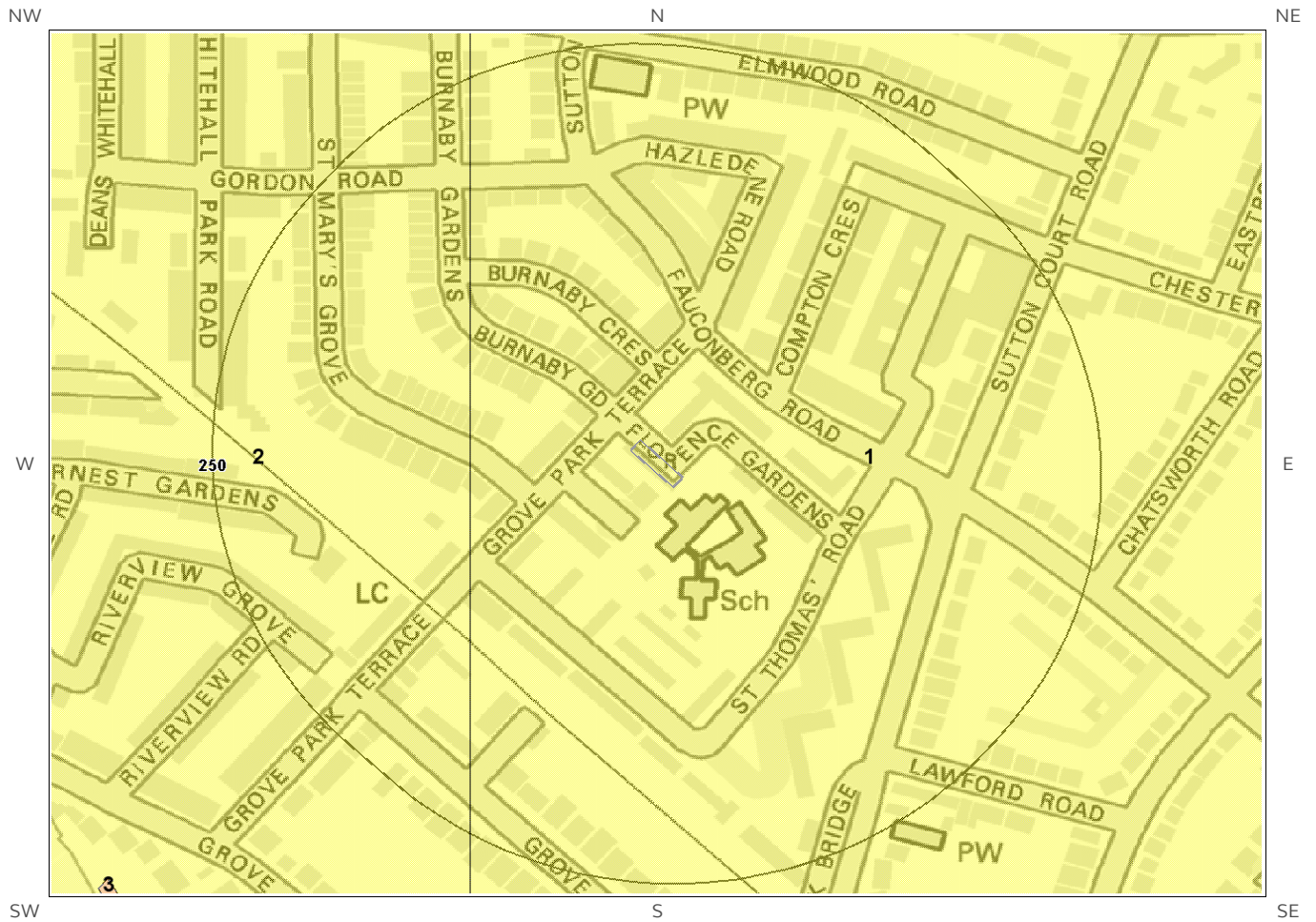
Shrink Swell Clay Legend

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## 6.2 Landslides map



Landslides Legend

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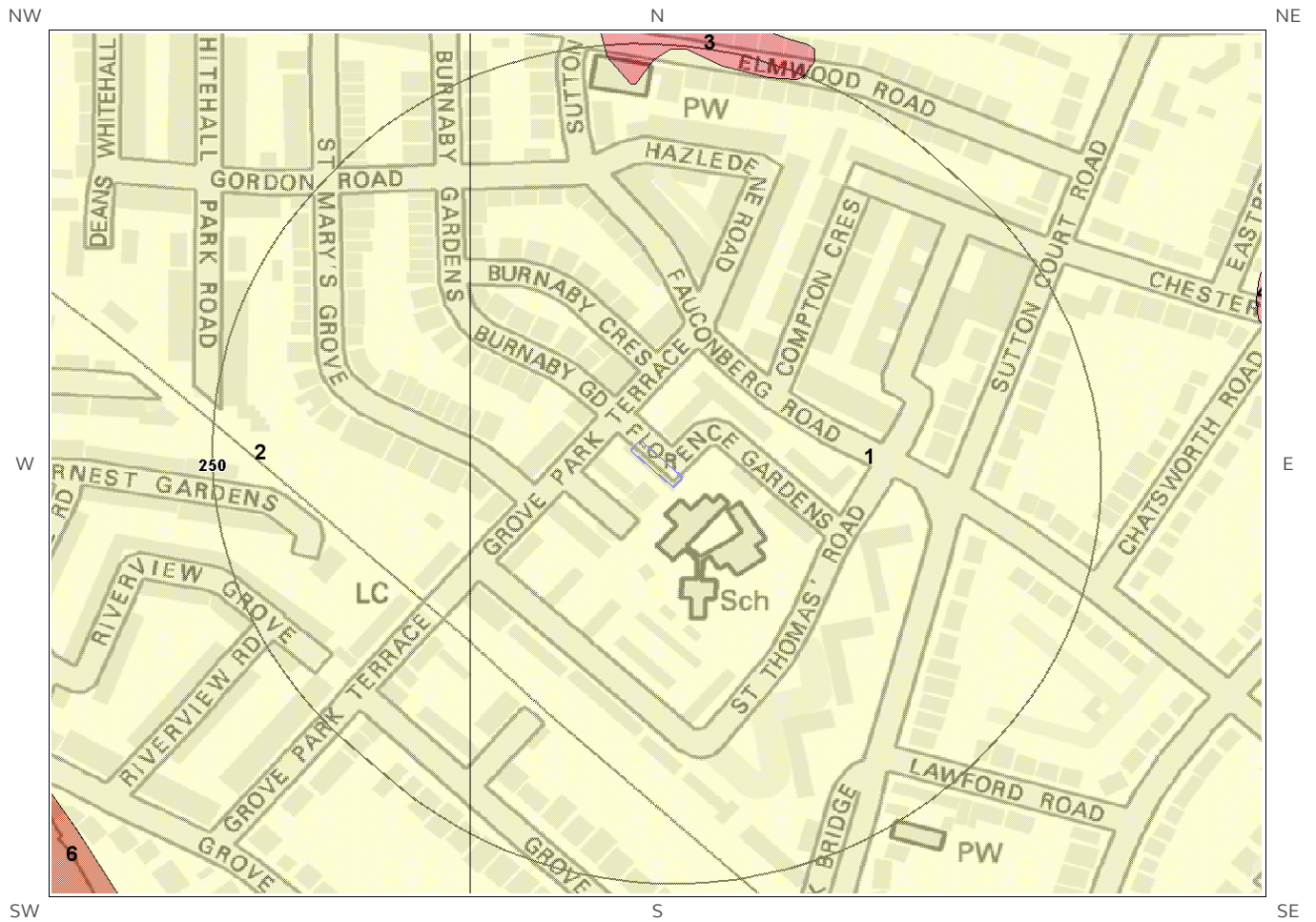


## 6.3 Ground Dissolution of Soluble Rocks map





## 6.4 Compressible Deposits map

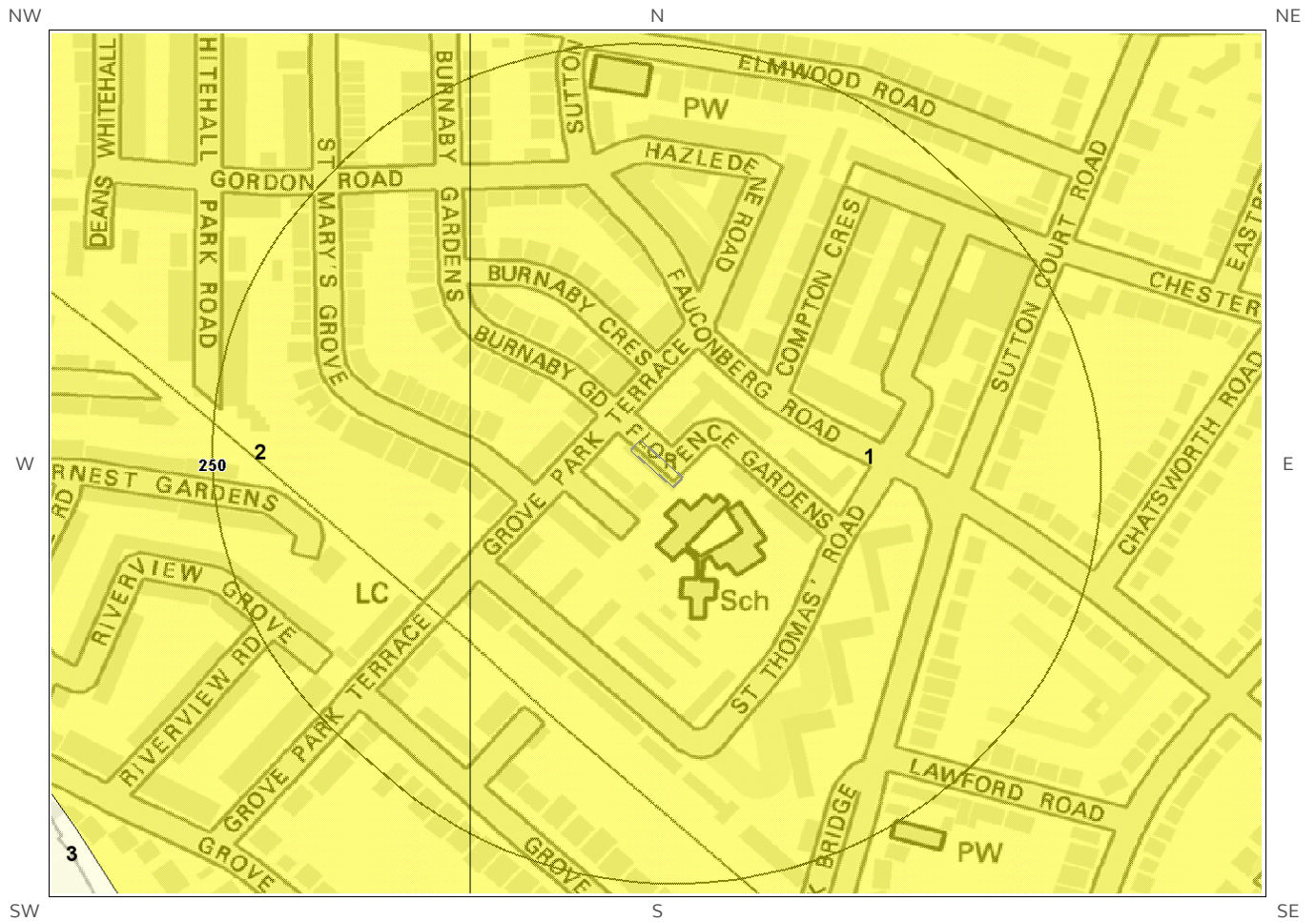


Compressible Deposits Legend

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## 6.5 Collapsible Deposits map



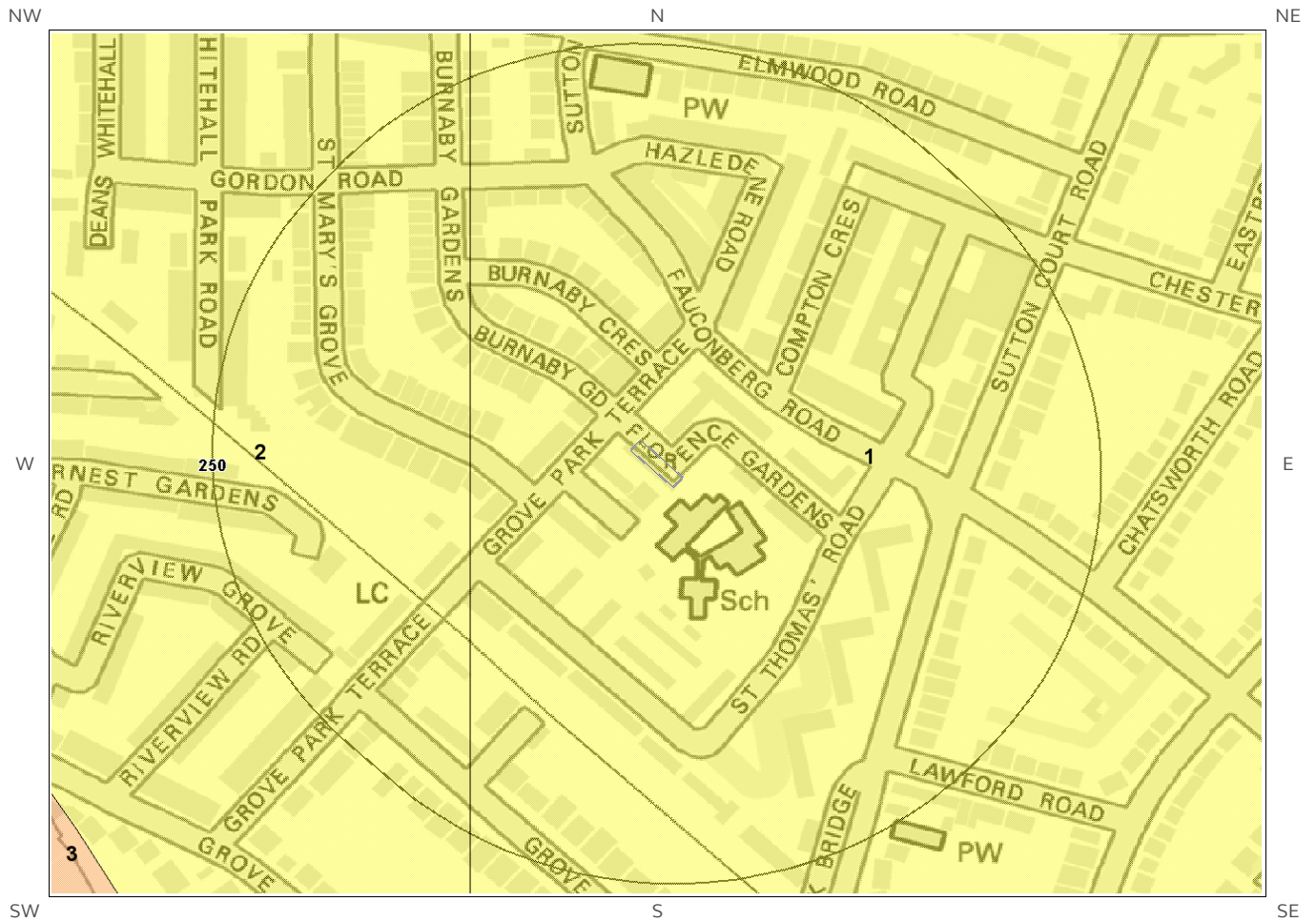
Collapsible Deposits Legend

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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?      Very Low

## 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	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

## 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.

## 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.

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



## 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:

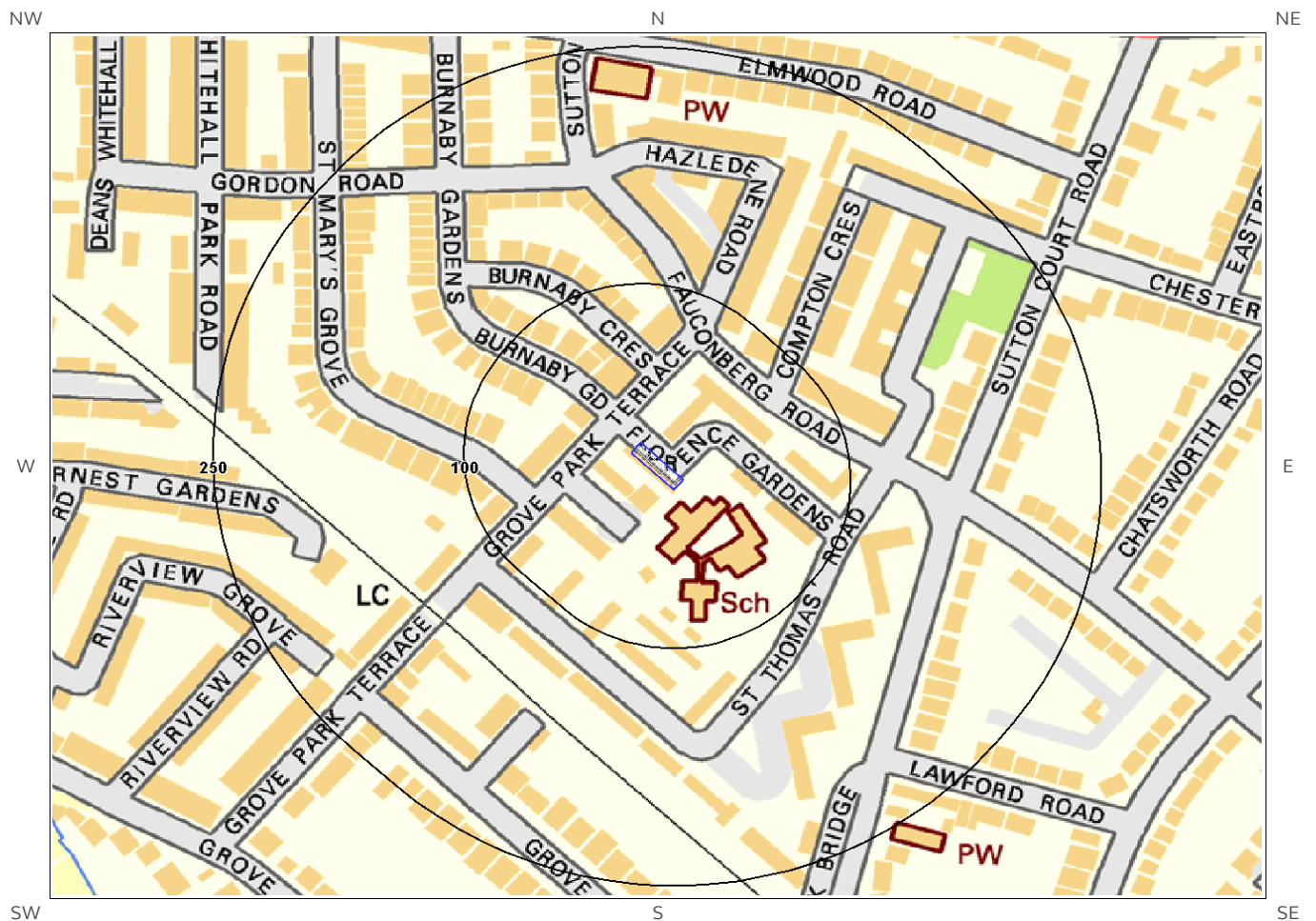
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible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

## 6.6 Running Sands

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

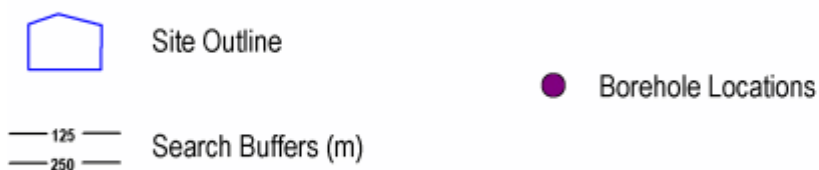
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased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

0

Database searched and no data found.

---

## 8 Estimated Background Soil Chemistry

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

1

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

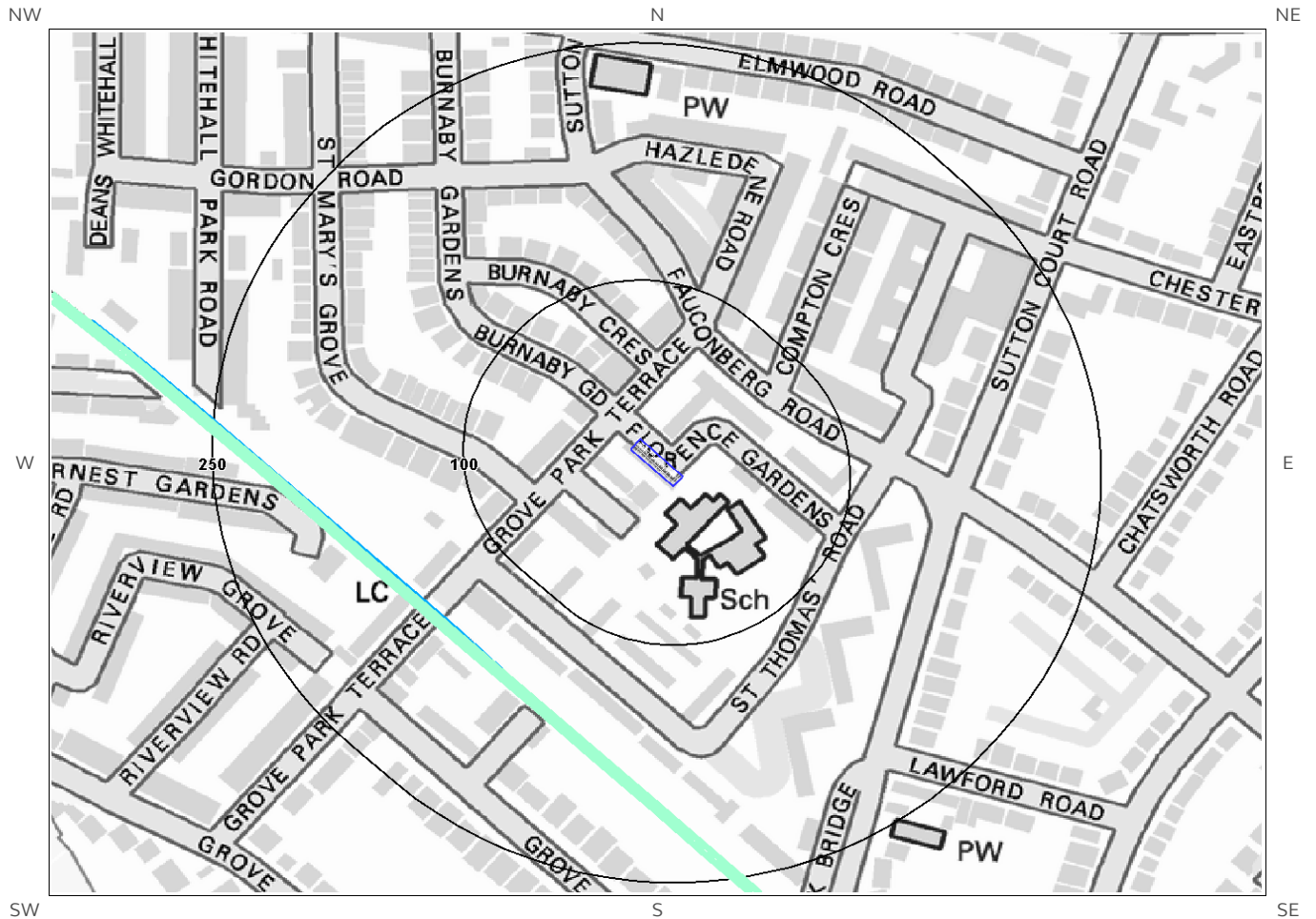
Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	London	No data	No data	No data	No data	No data

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

---

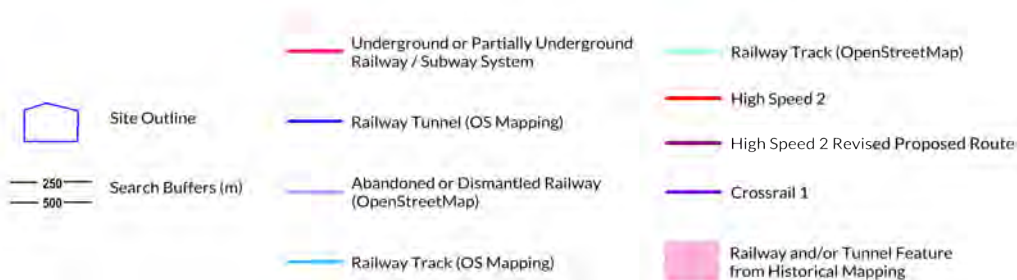


# 9 Railways and Tunnels map



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? No

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

Database searched and no data found.

*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? No

Have any historical railway or tunnel features been identified within 250m of the study site boundary? No

Database searched and no data found.

*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? Yes

Distance (m)	Direction	Name	Type
153	SW	Not given	Multi Track
153	SW	Not given	Multi Track
155	SW	Hounslow Loop Line	rail
155	SW	Hounslow Loop Line	rail
159	SW	Hounslow Loop Line	rail
159	SW	Hounslow Loop Line	rail
199	S	Hounslow Loop Line	rail
199	S	Hounslow Loop Line	rail

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

## 9.5 Railway Projects

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

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

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

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

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

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

# Contact Details

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BGS Geological Hazards Reports and general geological enquiries

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## The Coal Authority

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[www.coal.gov.uk](http://www.coal.gov.uk)



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# Standard Terms and Conditions

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<https://www.groundsure.com/terms-and-conditions-feb11-2019>



## **APPENDIX C**

### **Site Photographs**

CLIENT:	London Borough of Hounslow	DATE:	11/2019	 <b>ARCADIS</b> <small>Design &amp; Consultancy for natural and built assets</small>	
REFERENCE:	10030793	SITE NAME:	Florence Gardens	2 Glass Wharf, Temple Quay, Bristol, BS2 0FR	T: 0161 245 8700 F: 0161 245 8701
Plate 1 – View of the garages to the northwest of the Site					
Plate 2 – View of the garages to the northeast of the Site					




<b>CLIENT:</b>	London Borough of Hounslow	<b>DATE:</b>	11/2019	 <b>ARCADIS</b>	Design & Consultancy for natural and built assets
<b>REFERENCE:</b>	10030793	<b>SITE NAME:</b>	Florence Gardens		
				2 Glass Wharf, Temple Quay, Bristol, BS2 0FR	T: 0161 245 8700 F: 0161 245 8701

Plate 3 – View of the gate on the northwest corner



Plate 4 – View of electric substation on the north western end



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