

# **LONDON BOROUGH OF HOUNSLOW SMALL SITES SMALL BUILDERS PROGRAMME**

## **GARAGE BLOCK ADJACENT TO 20 BYFIELD ROAD, ISLEWORTH, TW7 7AF**

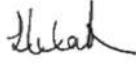


### **Geotechnical and Geo-Environmental Desk Study**

SEPTEMBER 2019

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

# Garage Block Adjacent to 20 Byfield Road, Isleworth, TW7 7AF

## Geotechnical and Geo-Environmental Desk Study

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Date	SEPTEMBER 2019	

## VERSION CONTROL

Version	Date	Author	Changes
01	September 2019	HA	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 for garage block adjacent 20 Byfield Road, Isleworth, TW7 7AF ('the Site'). The site location is shown in Figure 1 below.

LBH is aiming to divest a number of small sites to enable positive regeneration for residential purposes – no proposed development plans are available for the site at the time of writing.

The objectives of this desk study 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.

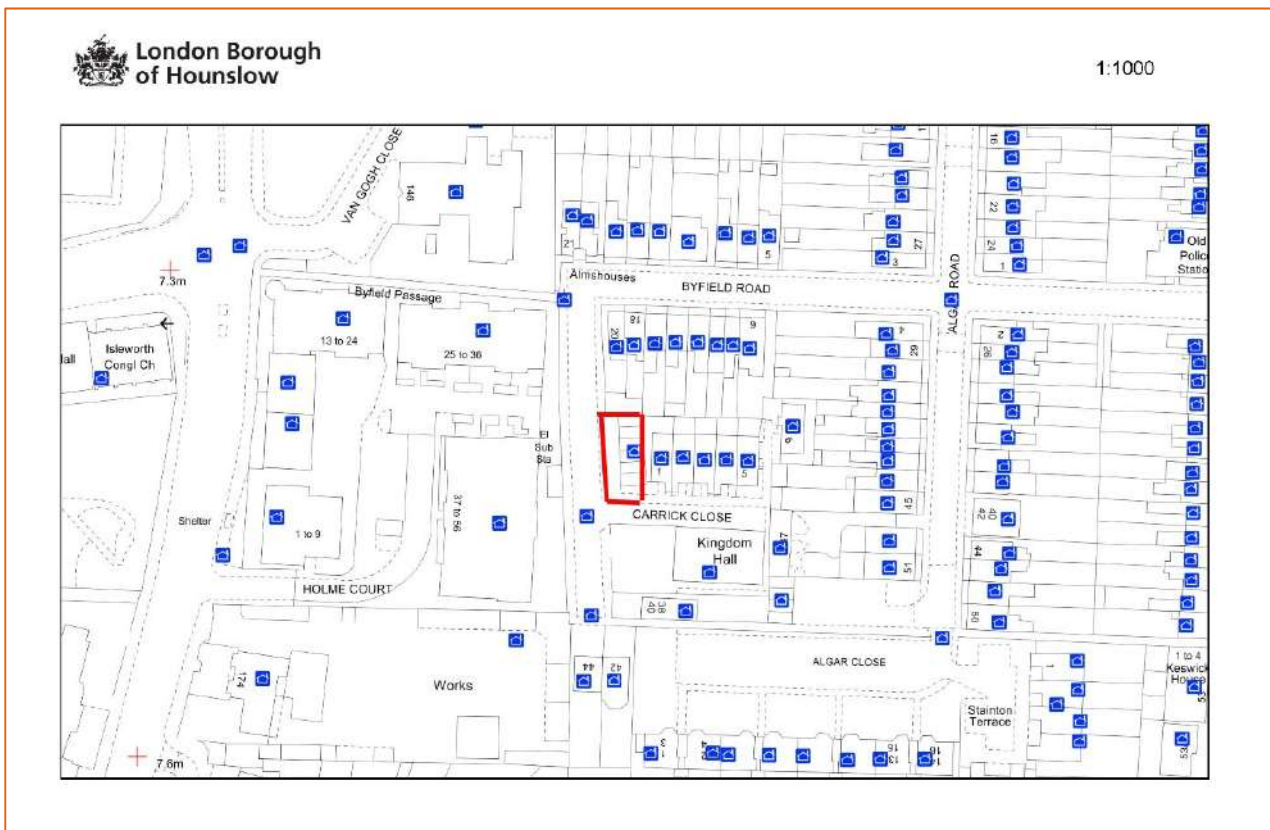


Figure 1: Site Location Plan provided by LBH

## 1.2 Sources of Information

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

- British Geological Survey (BGS) online<sup>1</sup>
- Records of boreholes, shafts and wells from all forms of drilling and site investigation work, British Geological Survey (BGS) online<sup>1</sup>
- Historical Ordnance Survey (OS) maps, presented in Appendix A
- Environmental and Geotechnical Search Reports (Groundsure Ltd), presented in Appendix B

- Publicly available Google satellite imagery and maps<sup>2</sup>
- Unexploded Ordnance Survey (including Pre-Desk Study Assessment by Zetica Ltd), Arcadis<sup>3</sup>
- Department for Environment, Food and Rural Affairs, Magic Interactive Mapping online<sup>4</sup>

### **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 Description

A site reconnaissance visit was undertaken on 5th August 2019 by Arcadis. Photographs taken during the site walkover are included as Appendix C and the table below summarises the observations made.

Table 2-1: Site Description

Site Location / Address	Garage Block Adjacent 20, Byfield Road, Isleworth, TW7 7AF
National Grid Reference	516224, 175583
Approximate Site Area	The site covers an area of approximately 0.0195 hectares
Description of Site	<p>The site comprises 6no shuttered garages off Byfield Road with bituminous and gravel hardstanding, a small area of shrub bed soft landscaping is present on-site to the south of the garage units. Carrick Close comprises the southern boundary. A bungalow is located to the east. Private garages which appear to belong to the properties on Byfield Road comprise the northern boundary. The surrounding area is predominantly residential / commercial use.</p> <p>Rain guttering channels were observed along the front of the garages discharging to floor level via downpipes into a 'blocked' drain which presumably channels to nearby sewer mains.</p>
Topography	The site topography is flat at an elevation of approximately 6m Above Ordnance Datum (AOD). The immediate surrounding area is also flat, with the regional topography sloping gently toward the River Thames ~500m in the east.
Surrounding Area	The site lies within a predominantly residential / commercial area. The area becomes more industrial ~250m west with the existence of warehouse units (builders' goods, vehicle service centre, distribution, supermarkets), and ~500m southwest a large water treatment works. The River Thames lies ~500m to the east and is oriented on a north-south tangent.

### 2.2 Site History

A review of the historical Ordnance Survey maps (presented in Appendix A) was undertaken to assess the Site and surrounding areas in terms of historical potentially contaminative activities. The table below summarises significant historical changes to land-use and highlights potential sources of contamination that could have impacted Site.

Table 2-2: Site History Summary

Map Dates	Detail
1865 - 1894	Site is vegetated parkland with residential properties and gardens located ~100m to the north and west. A public house is present ~170m north of Site. The larger area south of site is dominated by parkland and sporadic housing.
1894 - 1935	Site is occupied by terraced residential properties, and the surrounding area has become more developed with additional residential and commercial buildings and a reduction in parkland area. A fire station has been built ~200m north of Site.
1935 - 1960	Site configuration remains unchanged but there has been continued development of the wider area with residential and industrial properties. A laundry is present ~100m north, and an

	electricals factory ~80m south of Site. A large concrete pipes works/factory has been built ~200m northwest, and a very large water purification works is present ~500m to the southwest.
1960 - 1977	Site configuration remains unchanged but there has been continued development of the wider area with residential and industrial properties. Several un-named works and electrical engineering workshops have been built within close proximity of the Site, with the closest units being 10m to the west, and 50-100m south. A public baths is present ~150m southwest, and a vehicle service garage ~150m northeast.
1977	Terraced properties on site have been demolished and site appears to be vacant. There appear to be no significant changes to the surrounding area.
1991 - 1995	Site configuration includes vehicle parking garages in the current layout. Carrick Close and properties has been constructed. There appear to be no significant changes to the surrounding area.
2003 - Present	Site remains in the same configuration. The surrounding area appears to have become less industrial. Residential development has occurred at the sites of former industrial use.

### 2.2.1 Summary of Site History

The 1865 map indicates the site was parkland. By 1894, a number of terraced residential properties had been built on site. The houses were demolished between 1970 and 1974 the present-day configuration of the site comprising vehicle parking garages had been established by 1987. The historical on-site sources of potential contamination are therefore:

- Buried Made Ground from demolition of the residences
- Vehicle parking garages

The surrounding land has seen growth in residential, commercial, and industrial development. The most pertinent potentially contaminative activities which could have viably (within 250m) impacted Site are summarised as follows:

- Electricals factory
- Un-named works and electrical engineering workshops
- Concrete pipes works/factory

## 2.3 Unexploded Ordnance

With reference to the Zetica Regional UXO Map (contained within the Unexploded Ordnance Survey (Ref 3)) the Site is located in an area of Moderate relative risk (in London) for Unexploded Bombs (UXB) to be present.

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. Considering the preliminary findings of the report, and that a potentially significant source of UXO hazard has been identified on site, the PDSA recommends that a Detailed Desk Study Assessment (DDSA) be commissioned to assess, and potentially zone, the UXO hazard level.

### 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: Ground Characteristics Summary

Geology / Aquifer Status	<p>Superficial Deposits: Kempton Park Gravel Member described as sand and gravel, locally with lenses of silt, clay or peat. The aquifer within these deposits is designated a Principal Aquifer.</p> <p>Bedrock Geology: London Clay Formation described as clay and silt. The aquifer within these deposits is designated as Unproductive Strata.</p> <p>Made Ground is also anticipated onsite associated with the historical development.</p>
BGS Boreholes (within 100m of the site)	<p>The closest borehole to site (TQ17NE284) and located above a similar geological succession is ~120m west and summarised below:</p> <ul style="list-style-type: none"> <li>• Made Ground: 0 – 0.61m bgl</li> <li>• Unrecorded: 0.61 – 1.68m bgl</li> <li>• Sandy clay: 1.68 – 2.29m bgl</li> <li>• Sand and gravel: 2.29 – 7.62m bgl</li> <li>• Firm brown clay: 7.62 – 7.92m bgl (depth of termination)</li> <li>• Resting groundwater level was recorded at 4.72m bgl.</li> </ul> <p>The historical archived borehole log is presented in Appendix D.</p>
Within a Source Protection Zone	None recorded within 500m of site.
Licensed Groundwater Abstraction Points	There are no licensed and active groundwater abstraction points within 1km of the Site.
Surface Water Features	The River Thames is located ~450m east of the site, flowing in a north-south direction. The River Crane is located approximately ~400m southwest and The Duke of Northumberland's River approximately ~450m north; both of which flow into The River Thames from a westerly direction.
Likely Groundwater Flow Direction	<p>The Superficial Deposits are considered highly permeable and likely to contain groundwater at shallow depths. Conversely, significant groundwater content or sub-surface flow within the underlying bedrock geology is not expected.</p> <p>Considering the proximity of nearby surface water features and the lie of the land, it is likely that groundwater flows eastward toward the River Thames.</p>
Risk of Flooding	<p>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).</p> <p>An Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m has not been identified.</p> <p>An Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m has not been identified.</p> <p>The Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating is very low.</p>

Radon Gas	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.  No radon protective measures are necessary for new properties or extensions to existing ones.
Mining Affected Areas (coal, metals, stone)	No coal mining areas within 75m, and no non-coal mining areas within 50m of Site have been identified.

## 3.2 Environmental Public Register

The Environment Agency licenses industry, business and individuals to carry out certain activities that have the potential to pollute the environment. The EA holds this public register information, and that relevant to this Site (within a 250m radius) is summarised in the Environmental Search Report (Appendix B) and below:

Table 3-2: Environmental Public Register Information

Information	Detail	Distance and Direction
Licensed Discharge Consents	None recorded	n/a
Pollution Incident to Controlled Waters	None recorded	n/a
Local Authority Pollution Prevention and Controls	None recorded	n/a
Landfill and Other Waste Sites	Environment Agency/Natural Resources Wales Historic Landfill Sites: Greenhams Sand and Gravel. Redlees Park, Isleworth, Hounslow, London. Inert waste type. Last recorded license on 31 <sup>st</sup> Dec 1946.	105m west
Potentially Infilled Land	2no Unspecified Ground Workings	153m west
Historical Potentially Contaminative Industrial Sites / Features	Unspecified Works	11m west 49m south 73 – 79m south 5no 162m west 237m southwest
	Concrete Pipes Works	161 – 162m west 180m northwest
	Fire Station	187 – 206m north
	Railway Sidings	215 – 227m west
	Unspecified Tank	82m south 87m south 4no 154m southeast
	Electricity Substation / Transformer	3no 8m west

Information	Detail	Distance and Direction
Current Potentially Contaminative Industrial Sites		156m east 2no 163m east
	Garage and Motor Vehicle Repair	145 – 150m northeast
	Electricity Substation	11m west 171m east 209m northeast 209m southeast 240m west
	Unspecified Works or Factories	55m southwest 180 – 194m west 217m northwest 227m northwest
	Vehicle Repair, Testing and Servicing	147m north 154m northeast
	Waste Storage, Processing and Disposal	227m south
	Electrical and Electronic Engineers	232 northwest
Petrol and Fuel Sites	None recorded	n/a

In terms of the environmental public register information, the most pertinent potentially contaminative activities which could have viably impacted Site are summarised as follows:

- Historical landfill circa 100m west
- Historical and current unspecified works/factories present within the immediate vicinity of the Site
- Historical Concrete Pipes Works circa 180m northwest
- Electricity Substation / Transformer present within the immediate vicinity of the Site
- Unspecified tanks circa 80m south

## 4 PRELIMINARY CONCEPTUAL SITE MODEL

Geo-environmental assessments are required in accordance with current regulatory guidance (CIRIA C552 – Ref. 4 and CLR11 – Ref. 5) to consider the significance of potential contamination in terms of plausible source-pathway-receptor pollutant linkages.

As part of this process, it is necessary to develop a Conceptual Site Model (CSM) of these potential pollutant linkages by identifying the potential contamination sources, sensitive receptors and any potentially active exposure pathways.

A Preliminary Risk Assessment (PRA) is then undertaken to determine the likelihood that these potential pollutant linkages are complete.

### 4.1 Potential Contaminant Sources

Based on the information obtained and detailed above, the following potential sources of contamination have been identified on site and within the surrounding area.

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

Table 4-1: Potential Sources of Contamination

Source	Potential Contaminants
<b>On Site</b>	
Made Ground	Asbestos, Metals, Inorganics, Polycyclic Aromatic Hydrocarbons (PAH), Hydrocarbons, Ground Gas
Vehicle Parking Garages	Petroleum Hydrocarbons, PAH, VOC/SVOC (from lubricants and solvents), Toxic Metals
<b>Off Site</b>	
Historical Landfill	Leachate potentially containing various contaminants, ground gas
Historical and current unspecified works/factories	TPH, PAH, VOC/SVOC, ground gasses
Historical Concrete Pipes Works	TPH, PAH, VOC/SVOC, ground gasses
Electricity Substation / Transformer	Petroleum Hydrocarbons, PCBs
Unspecified tanks	TPH, VOC/SVOC, ground gasses.
Historical Electricals Factory	TPH, PAH, VOC/SVOC (solvents, degreasers), ground gasses

### 4.2 Potential Receptors

LBH is aiming to divest a number of small sites to enable positive regeneration for residential purposes. Therefore, as a precautionary approach the potential human receptors detailed below are reflective of the most conservative future land use – low-density residential properties with private gardens and soft-landscaping.

#### 4.2.1 Human Health

- Future site users – residents, neighbouring residents, visitors, maintenance workers and contractors.



- Construction Workers – environmental 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. 6) or any other relevant guidance. Construction workers are not considered further as human health receptors.

#### 4.2.2 Controlled Waters

- Principal Aquifer within superficial deposits.
- The nearest surface water course is approximately 400m from 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

These pathways are the routes by which potential contamination sources can migrate to and potentially affect the sensitive receptors identified above.

Table 4-7: Potential Sensitive Receptors

Receptor Class	Pathway Detail
Human Health (future site users/residentials, visitors, maintenance workers and contractors)	Incidental ingestion of contaminants within soil, water and dust. Inhalation of contaminated dust, vapours and ground gases. Direct contact of contaminants within soil, water and dust Ingestion of contaminated home grown produce.
Controlled Waters	Leaching of potential contaminants from surface or buried Made Ground to groundwater.
Buildings and Infrastructure	Sulphate (from London Clay) and/or chemical attack of buried infrastructure – secondary impact of tainting water supplies Migration of ground gases into buildings and accumulation of gasses in confined and poorly ventilated spaces leading to explosive gases or vapour.

### 4.4 Preliminary Qualitative Risk Assessment

Potential Sources of contamination, pathways and receptors are considered present on site or will be introduced during redevelopment and as such potential pollutant linkages exist. The main potential sources of contamination identified within this report are Made Ground from previous developments, potential contamination from the sites current use 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. It should be noted that 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**

Below ground services may be present beneath the site.

The existing macadam hardstanding may need to be removed or broken out and the existing garage buildings demolished.

Buried obstructions may be present given the historical development.

## 6 GEOTECHNICAL CONSIDERATIONS

### 6.1 General Comments

The presence of Made Ground is anticipated as the site has previously been developed. The nearest available BGS historical borehole log (Ref. TQ17NE284) (approximately 115m West), suggests Made Ground may be underlain by a sandy clay layer and then gravel and sand of the Kempton Park Gravel Member overlying London Clay bedrock.

Based on the lack of site specific intrusive investigation the following potential geotechnical constraints and ground engineering abnormalities 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 GI.
- **Shrinkable Clays** – The presence of superficial clays and the depth to the London Clay Formation is not known and therefore consideration will need to be given to the presence of vegetation that is removed, retained or planted in the future trees when considering the depths of foundations.
- **Ground Gas** – Future development may need to be designed to mitigate against ground gas including that from Made Ground – dependent on findings of a GI.
- **Sulphates** – Buried concrete may need to be designed to mitigate against natural adverse chemical conditions.
- **Existing Infrastructure & Underground Structures** - Excavation and removal of existing hardstanding, former foundations, utilities and concrete obstructions (if present) related to historical on-site development may need removal.
- **Groundwater** – Shallow groundwater could be present and dewatering measures and excavation support would be required (depending on the findings of the GI). This may also have implication upon the foundation design.
- **Contamination** – Potential contamination may require mitigation for future development, site users and controlled waters.
- **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 be required or the sides of the excavation battered back to a safe angle. Groundwater may require management. Obstructions may require breaking out.

## **7 CONCLUSIONS AND RECOMMENDATIONS**

### **7.1 Design Considerations**

The Site is currently used as garages. An intrusive site investigation has not been undertaken. The Site previously contained some residential properties. These were demolished and the site redeveloped as garages between 1970s and 1980s.

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 the degree of risk to end users and controlled waters and for foundation design. This should include for chemical testing of soils, groundwater monitoring (if present) and gas monitoring in accordance with the recommendations in CIRIA C665 (Ref. 7) and LC:RM (Ref. 6) and consideration of shrinkage and swelling, compressible ground 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. Due to the historic phases of development and demolition 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.

According to the Arcadis Unexploded Ordnance assessment has been undertaken for the Site, the report recommends that a detailed desk study needs to be commissioned to assess, and potentially zone, the UXO hazard level on the Site.

## 8 REFERENCES

1. British Geological Survey (BGS) online, website: <https://mapapps.bgs.ac.uk/geologyofbritain/home.html>, accessed 11<sup>th</sup> September 2019
2. Google Maps online, website: <https://www.google.co.uk/maps>, accessed 11<sup>th</sup> September 2019
3. Unexploded Ordnance Survey (including Pre-Desk Study Assessment by Zetica Ltd), Arcadis, ref. 10030793-ARC-XX-XX-RP-YY-0151-01-UXO Report, September 2019
4. Department for Environment, Food and Rural Affairs, Magic Interactive Mapping online, <https://magic.defra.gov.uk/MagicMap.aspx>, accessed 11<sup>th</sup> September 2019
5. CIRIA C552 (2001) Contaminated land risk assessment. A guide to good practice.
6. Land contamination: risk management, Environment Agency, June 2019 (LCRM).
7. The Construction (Design and Management) Regulations 2015.
8. CIRIA C665 (2007) Assessing risks posed by hazardous ground gases to buildings (revised).

Geotechnical and Geo-Environmental Desk Study  
Garage Block Adjacent to 20 Byfield Road, Isleworth, TW7 7AF

## **APPENDIX A**

### **Historical Ordnance Survey Maps**



#### Site Details:

516224, 175583

Client Ref: 10030793\_-\_Byfield\_Road  
Report Ref: GS-6295828  
Grid Ref: 516221, 175581

Map Name: County Series

Map date: 1865

Scale: 1:2,500

Printed at: 1:2,500



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

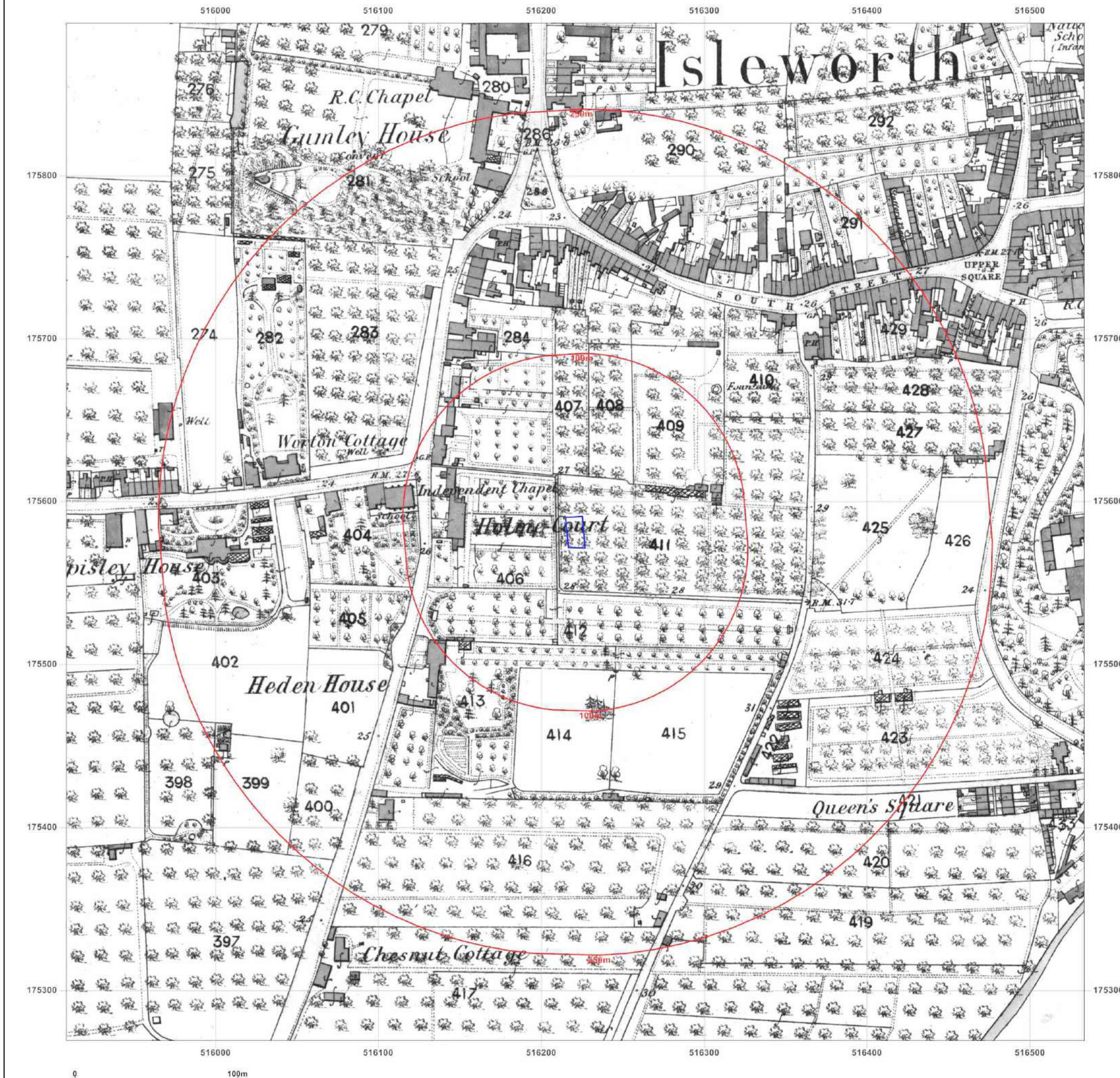


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Map legend available at:  
[www.groundsure.com/sites/default/files/groundsure\\_legend.pdf](http://www.groundsure.com/sites/default/files/groundsure_legend.pdf)





#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** 1056 Scale Town Plan

**Map date:** 1896

**Scale:** 1:1,056

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



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

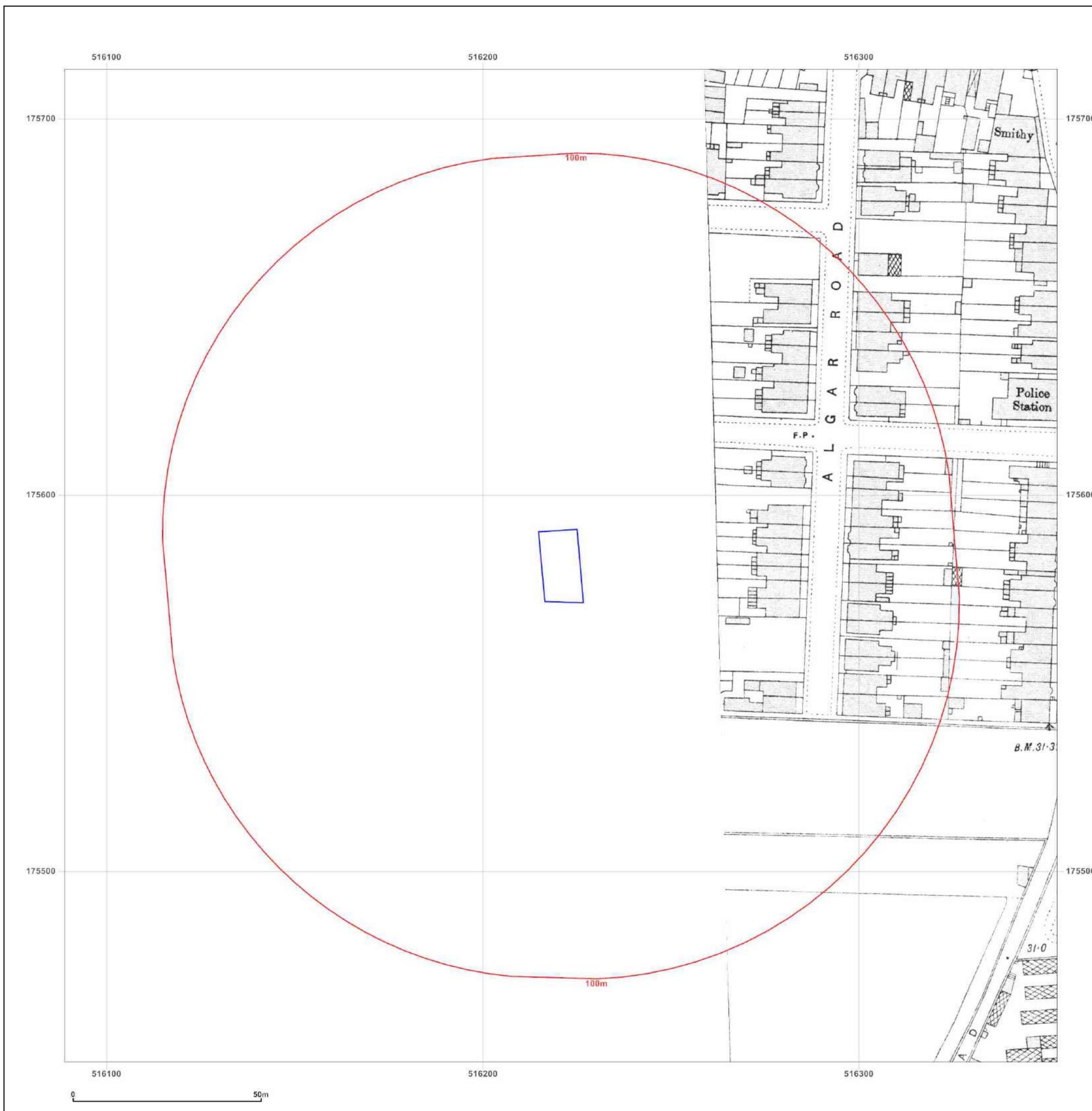


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#### Site Details:

516224, 175583

Client Ref: 10030793\_-\_Byfield\_Road  
Report Ref: GS-6295828  
Grid Ref: 516221, 175581

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

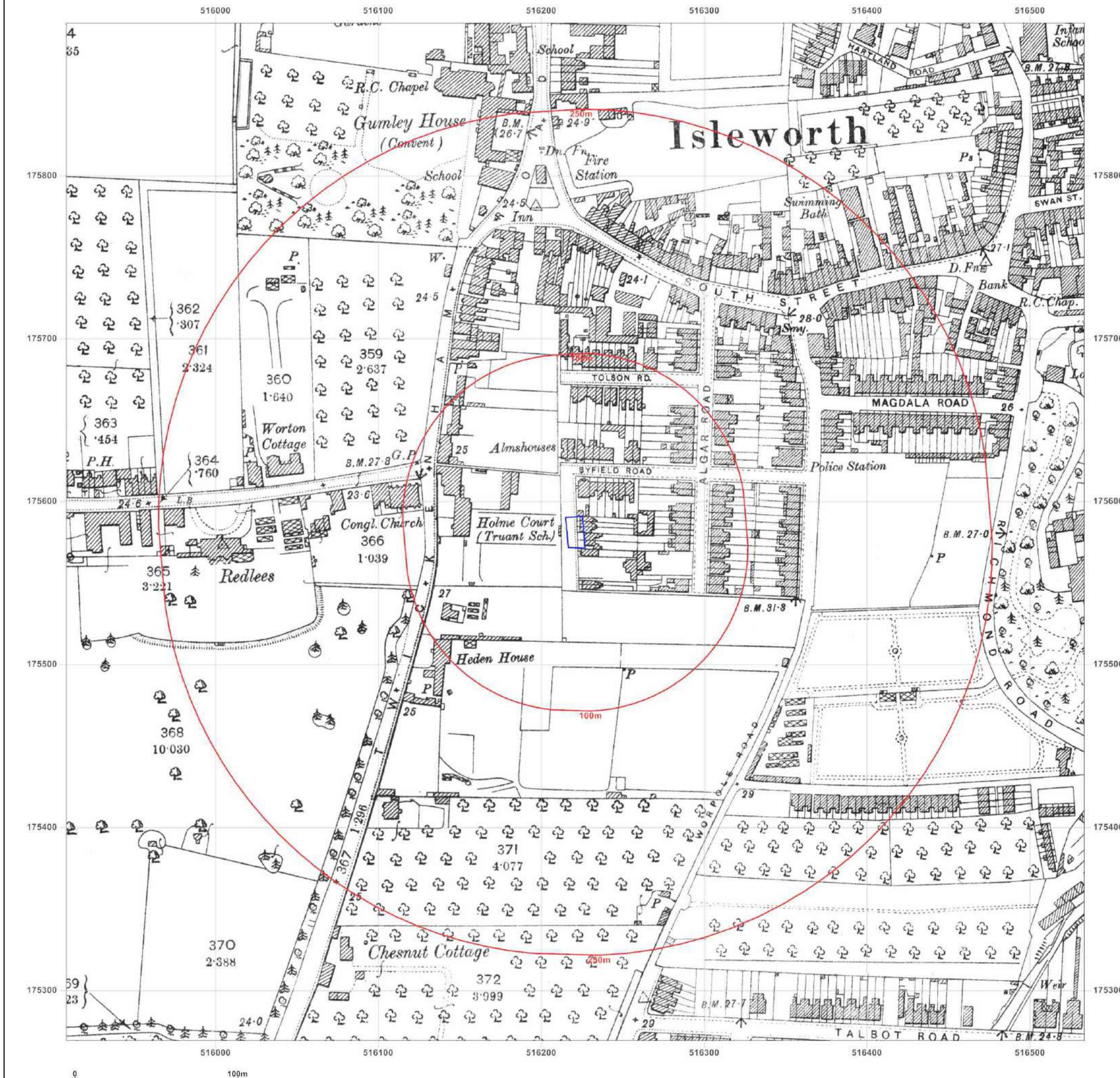


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** County Series

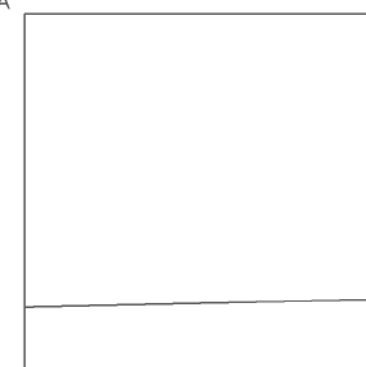
**Map date:** 1913

**Scale:** 1:2,500

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



Surveyed 1913  
 Revised 1913  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

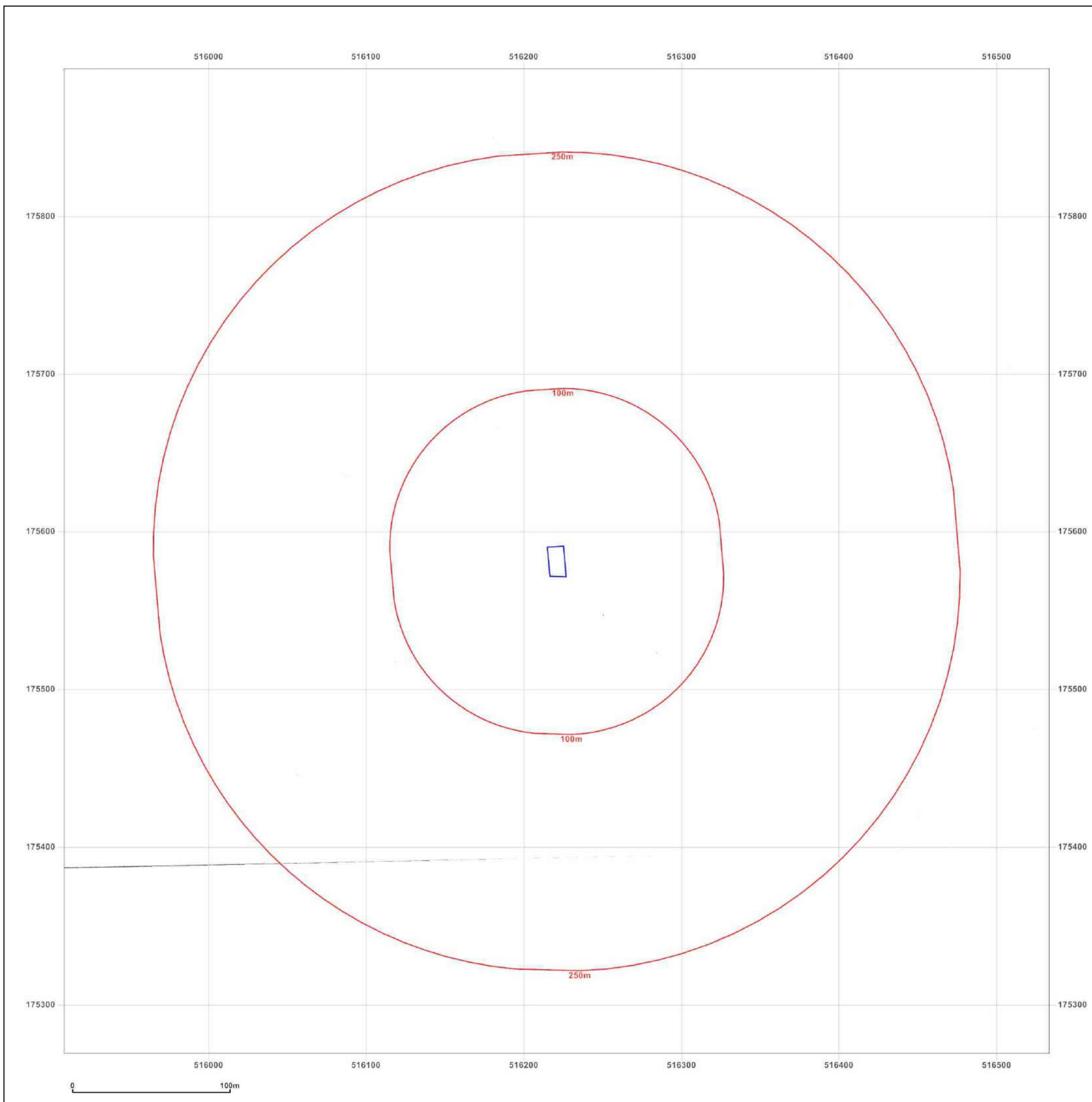


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**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

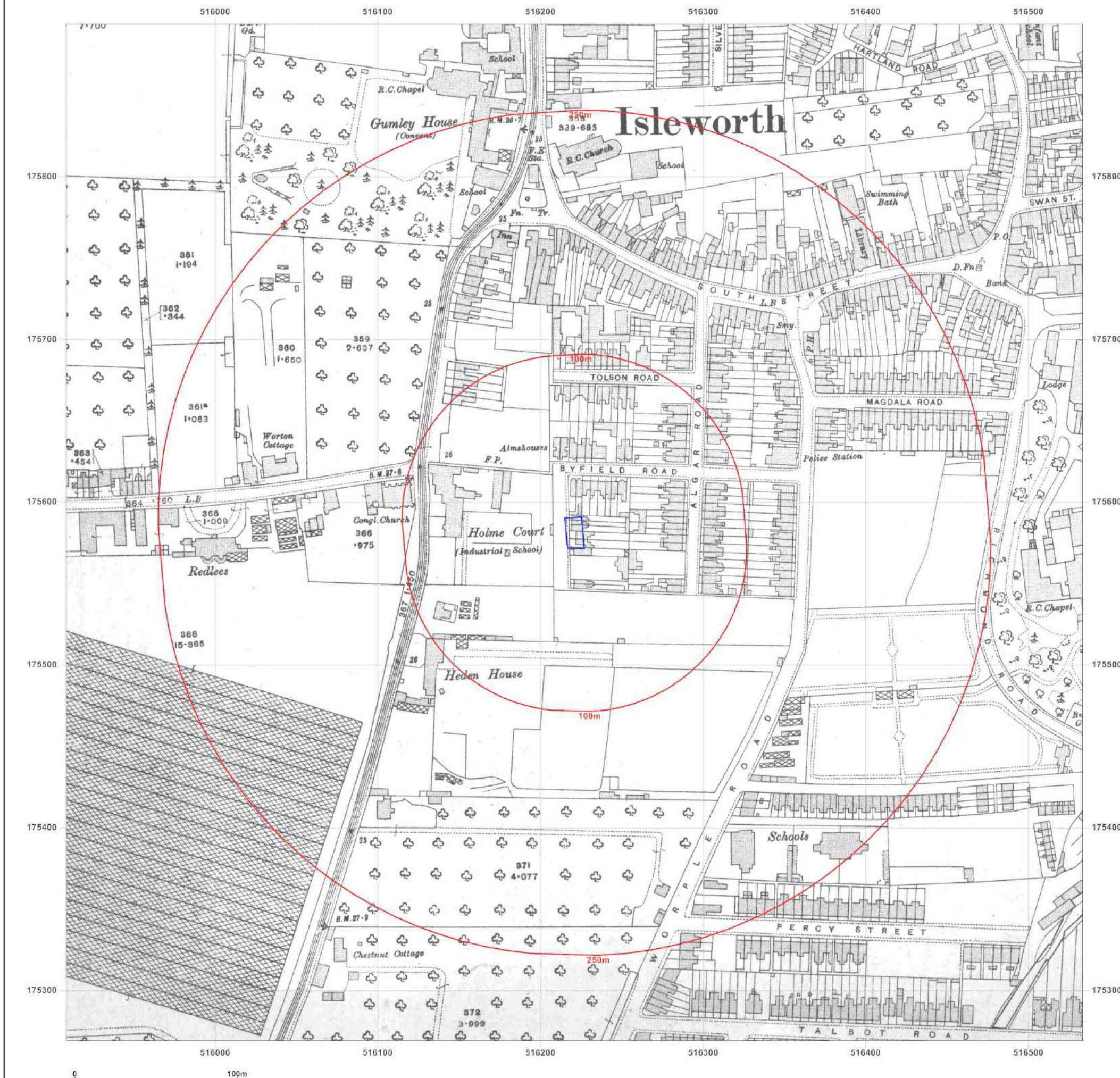


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#### Site Details:

516224, 175583

Client Ref: 10030793\_-\_Byfield\_Road  
Report Ref: GS-6295828  
Grid Ref: 516221, 175581

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

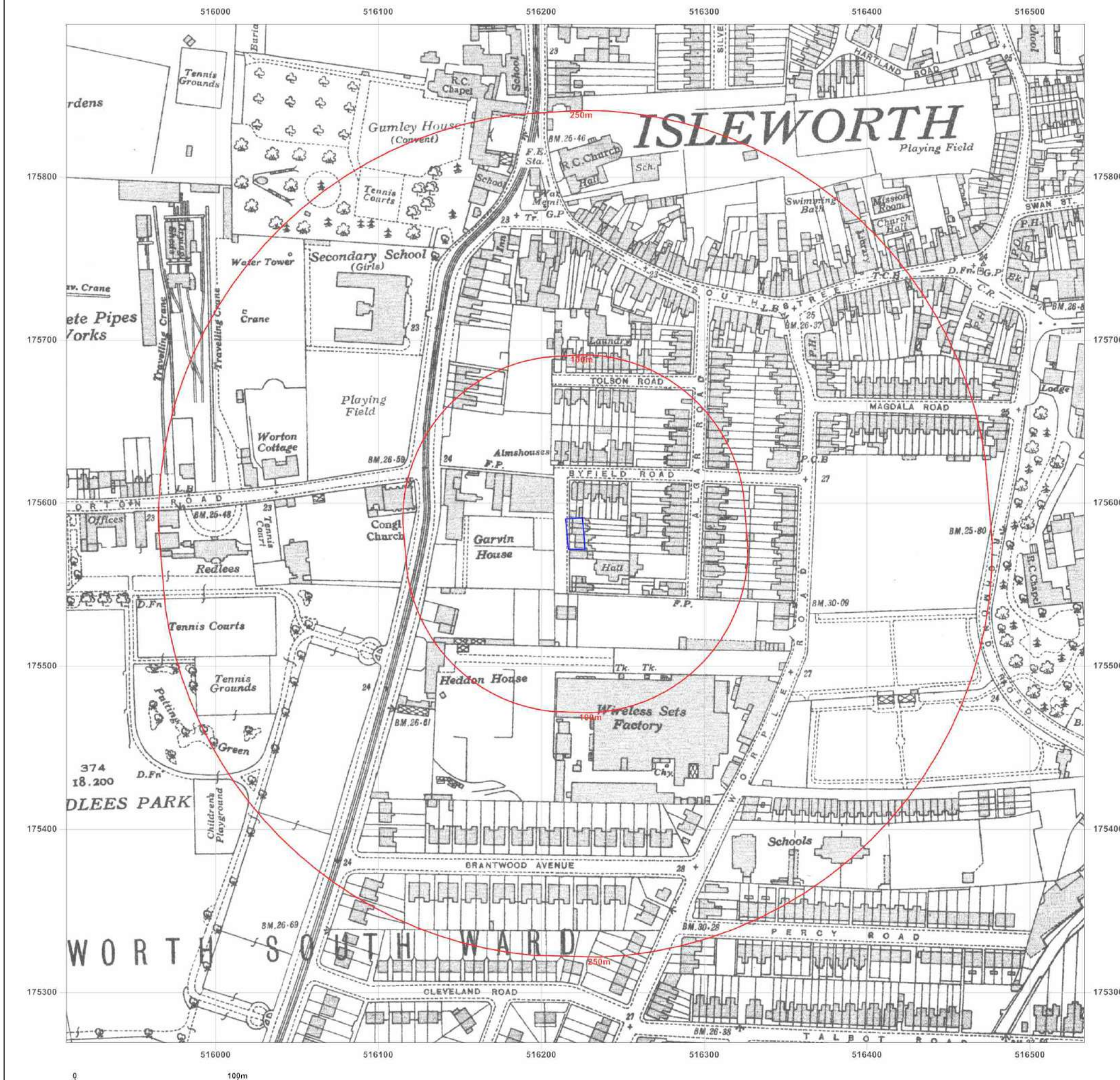


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1960

**Scale:** 1:1,250

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



Surveyed 1959  
 Revised 1959  
 Edition N/A  
 Copyright 1960  
 Levelled 1957

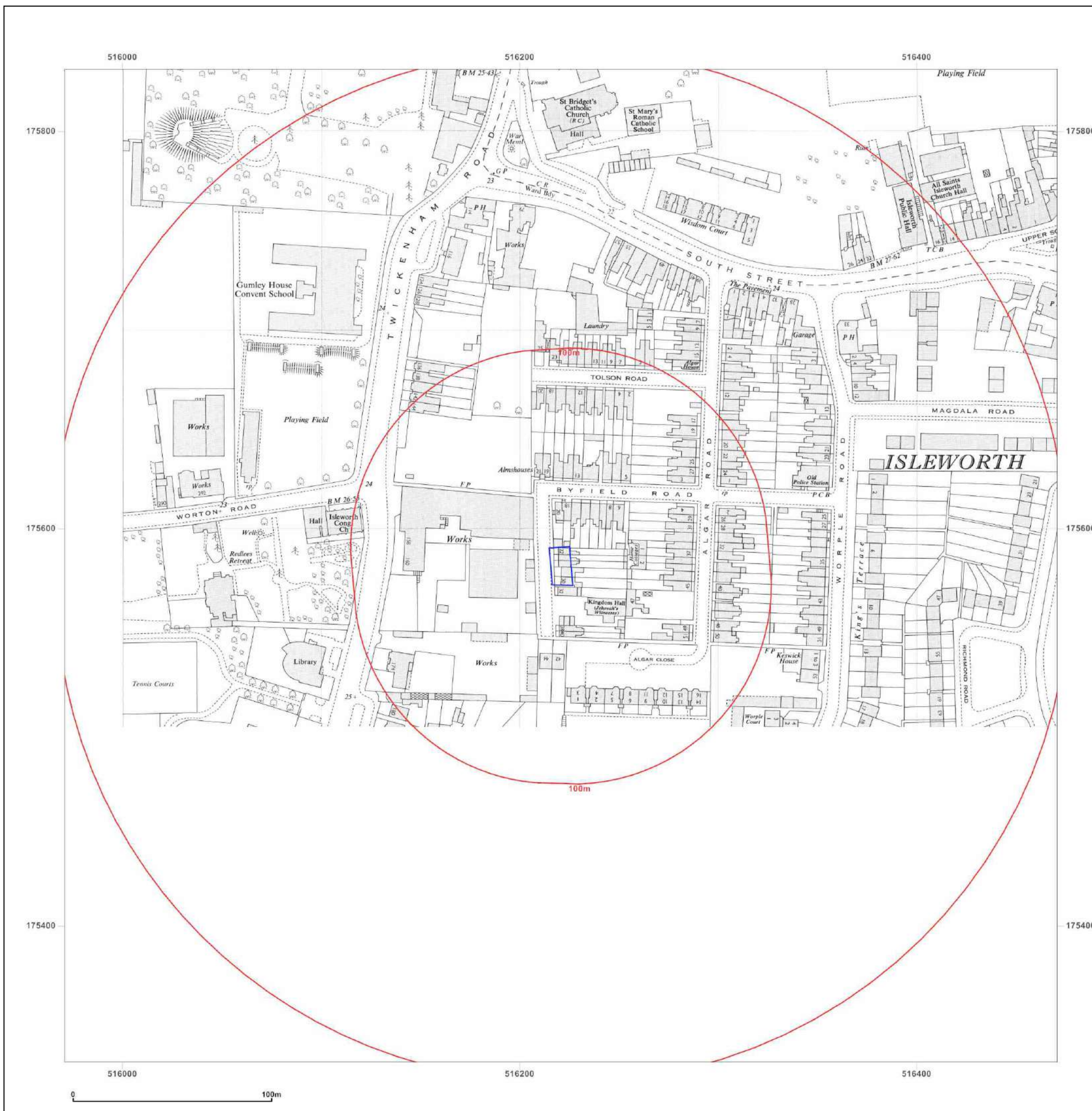


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1960-1962

**Scale:** 1:1,250

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



Surveyed 1961  
 Revised 1961  
 Edition N/A  
 Copyright 1962  
 Levelled 1957

Surveyed 1959  
 Revised 1959  
 Edition N/A  
 Copyright 1960  
 Levelled 1957

Surveyed 1961  
 Revised 1961  
 Edition N/A  
 Copyright 1962  
 Levelled 1957

Surveyed 1959  
 Revised 1959  
 Edition N/A  
 Copyright 1960  
 Levelled 1957

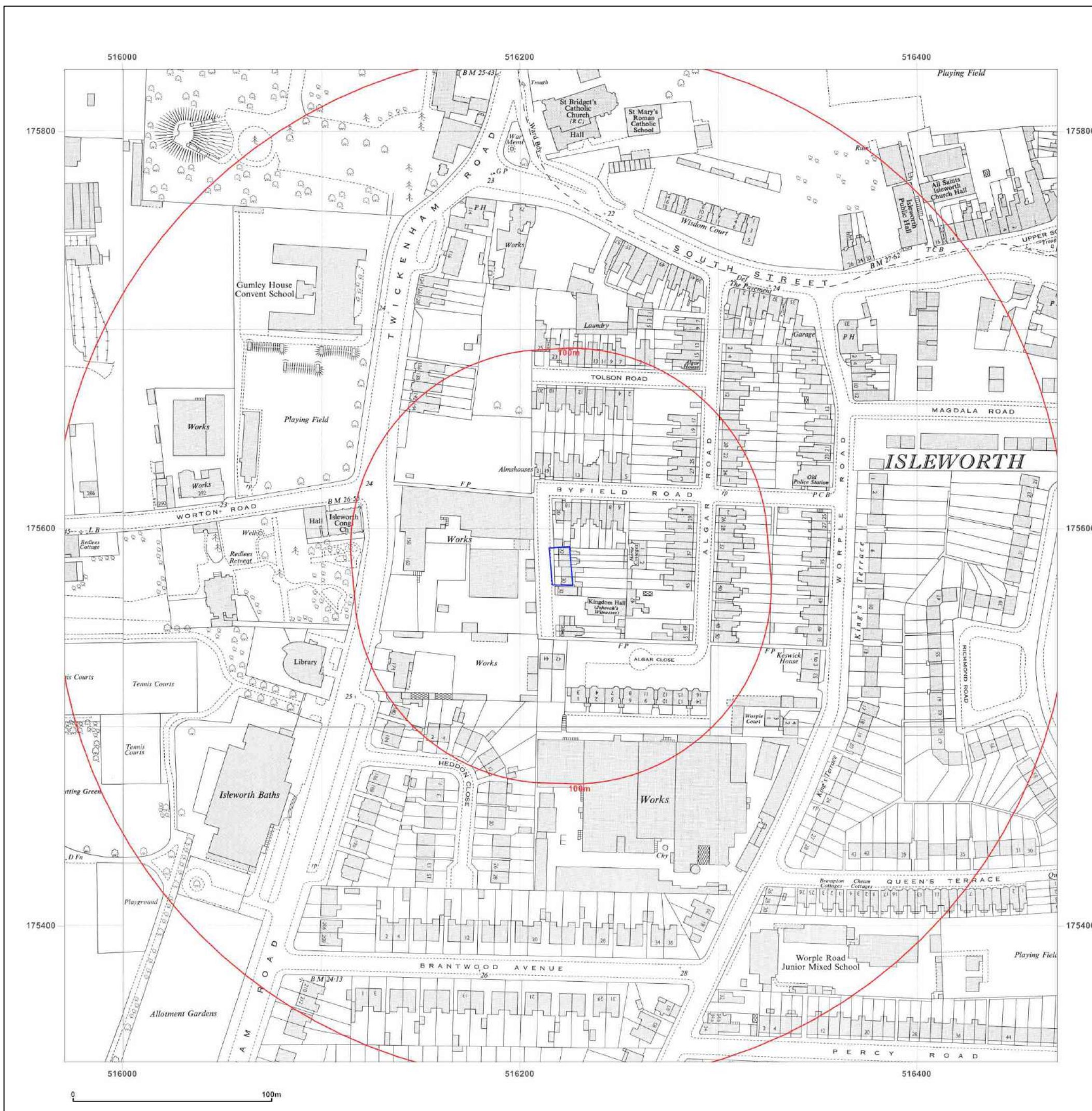


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1959-1962

**Scale:** 1:2,500

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



Surveyed 1961  
 Revised 1961  
 Edition 1963  
 Copyright 1963  
 Levelled 1957

Surveyed 1959  
 Revised 1959  
 Edition 1960  
 Copyright 1960  
 Levelled 1957

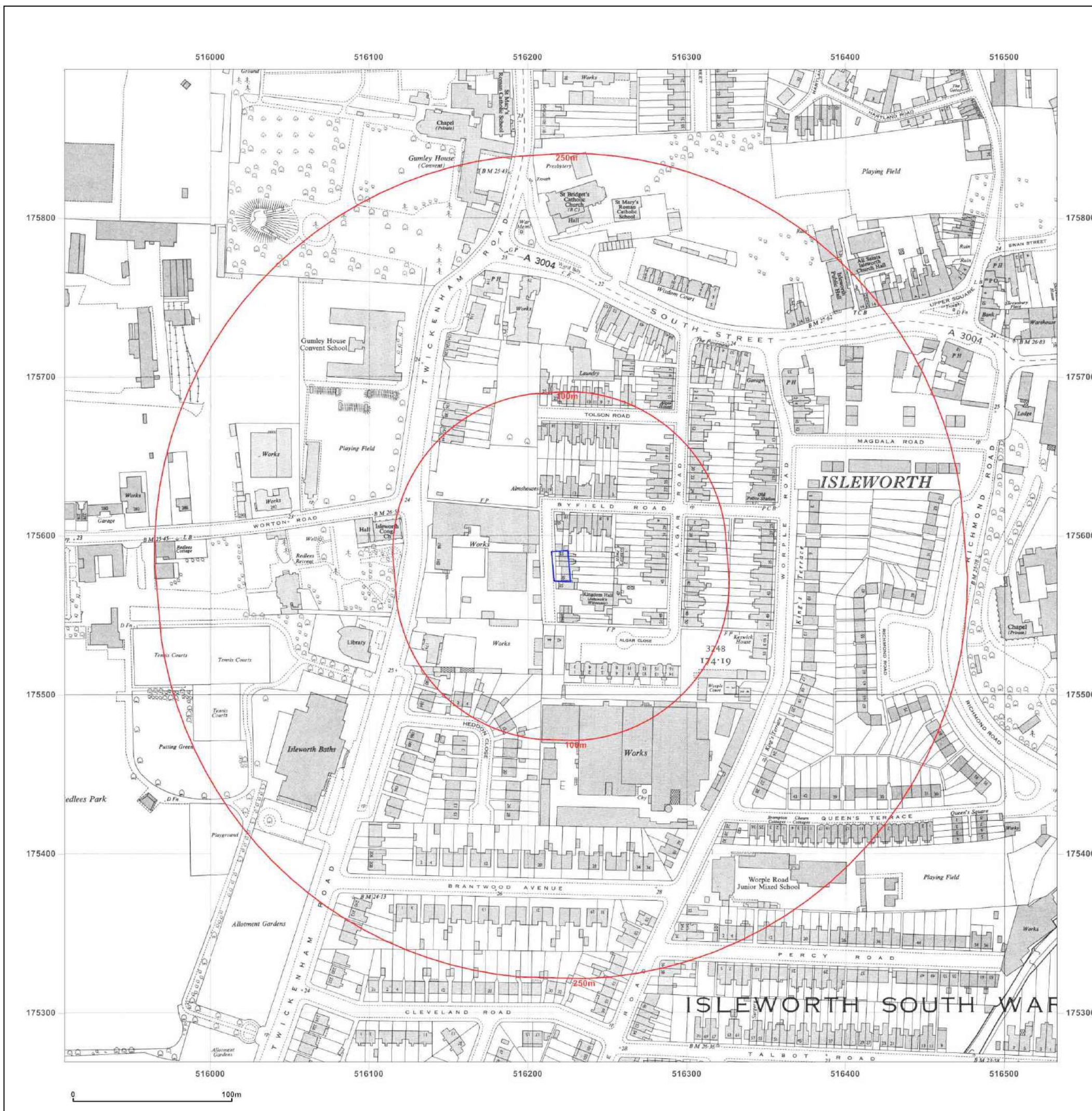


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1959-1962

**Scale:** 1:2,500

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



Surveyed 1962  
 Revised 1962  
 Edition 1963  
 Copyright 1963  
 Levelled 1957

Surveyed 1959  
 Revised 1959  
 Edition 1960  
 Copyright 1960  
 Levelled 1957

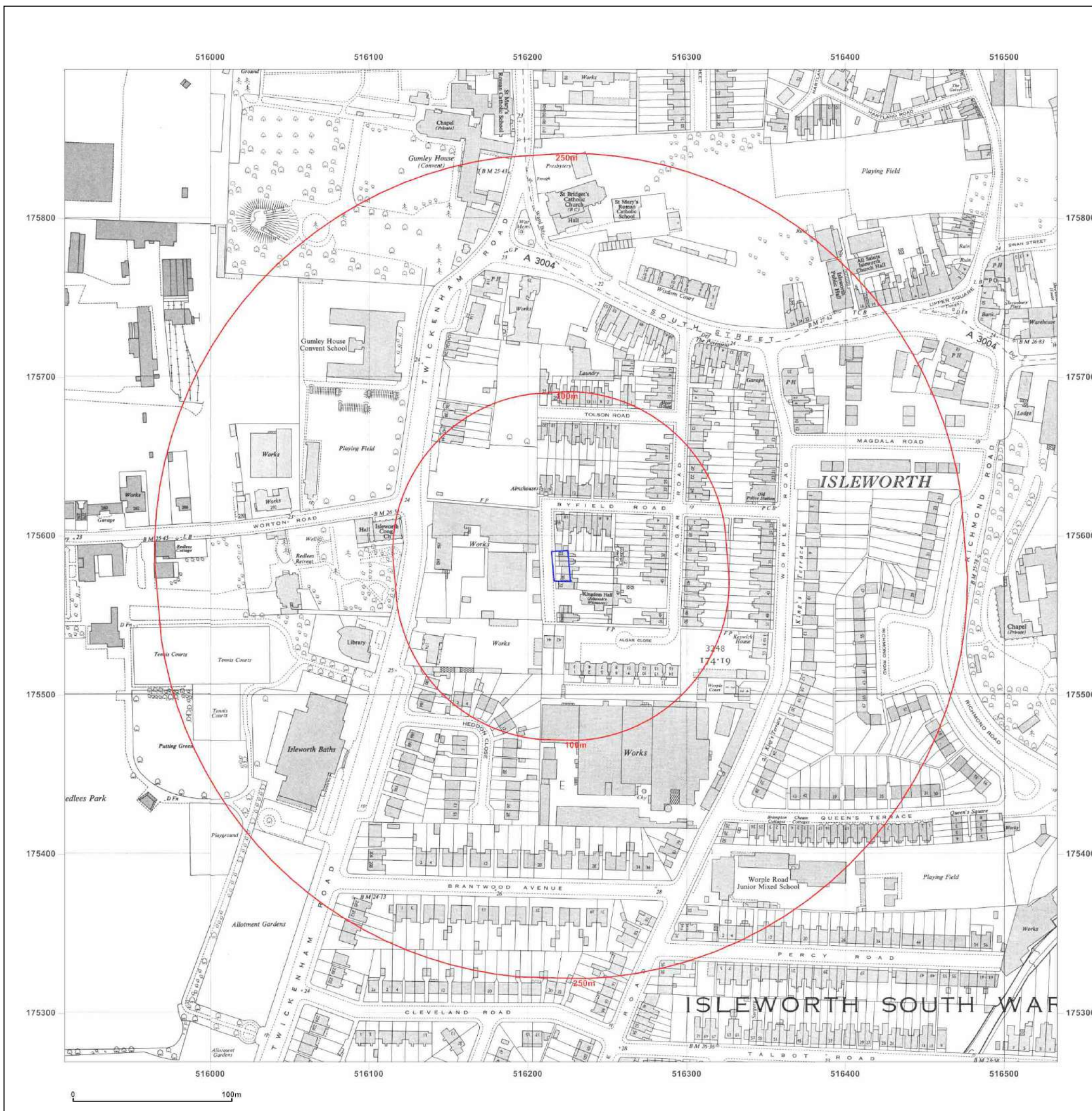


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1970-1974

**Scale:** 1:1,250

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



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

Surveyed 1959  
 Revised 1970  
 Edition N/A  
 Copyright 1970  
 Levelled 1957

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



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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1974-1977

**Scale:** 1:1,250

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



Surveyed 1961  
 Revised 1976  
 Edition N/A  
 Copyright 1977  
 Levelled 1957

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

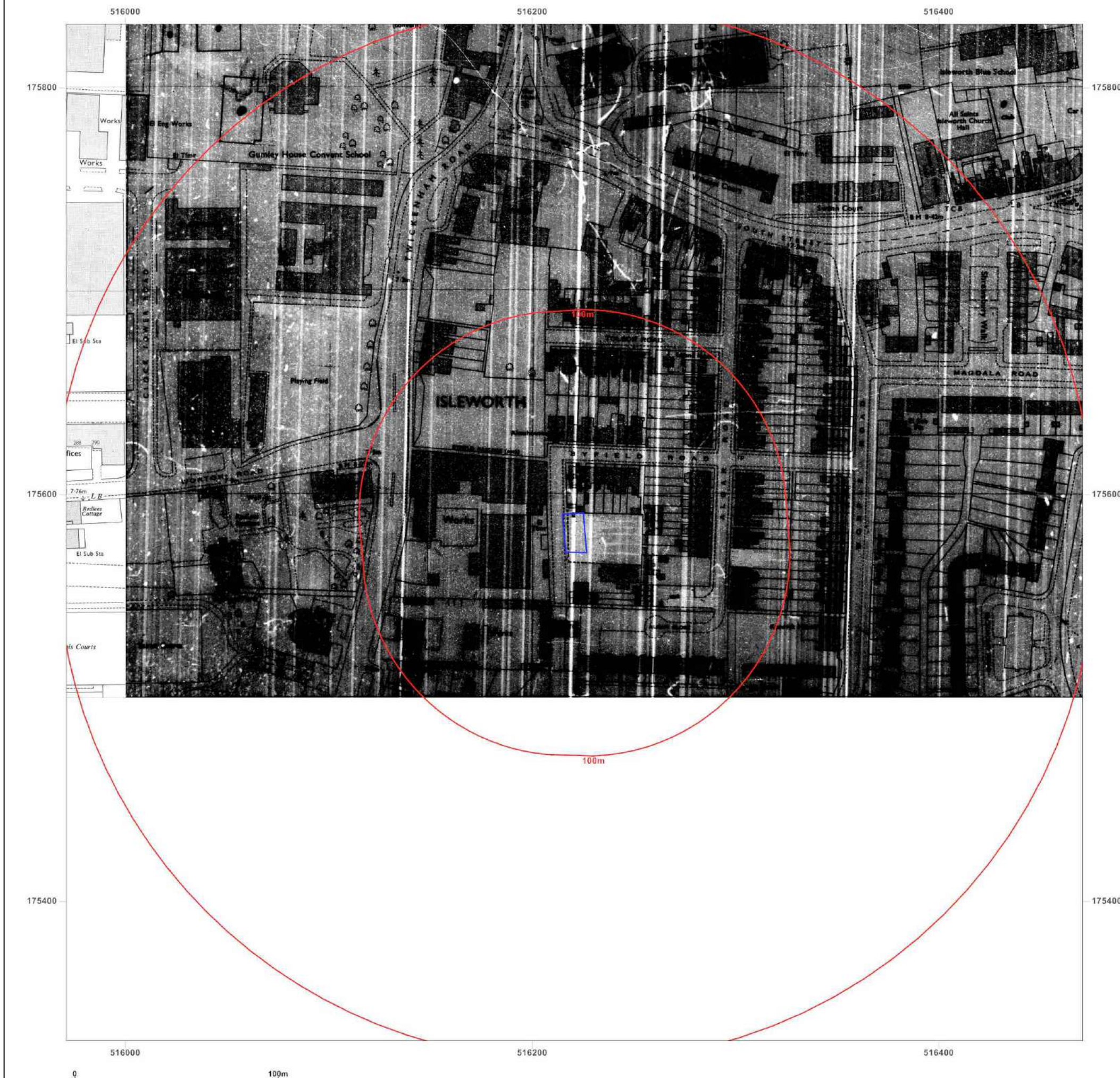


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1977

**Scale:** 1:1,250

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



Surveyed N/A  
 Revised N/A  
 Edition N/A  
 Copyright 1977  
 Levelled N/A



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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1986-1991

**Scale:** 1:1,250

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



Surveyed 1957  
 Revised 1986  
 Edition N/A  
 Copyright 1986  
 Levelled 1957

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

Surveyed 1957  
 Revised 1986  
 Edition N/A  
 Copyright 1986  
 Levelled 1957

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

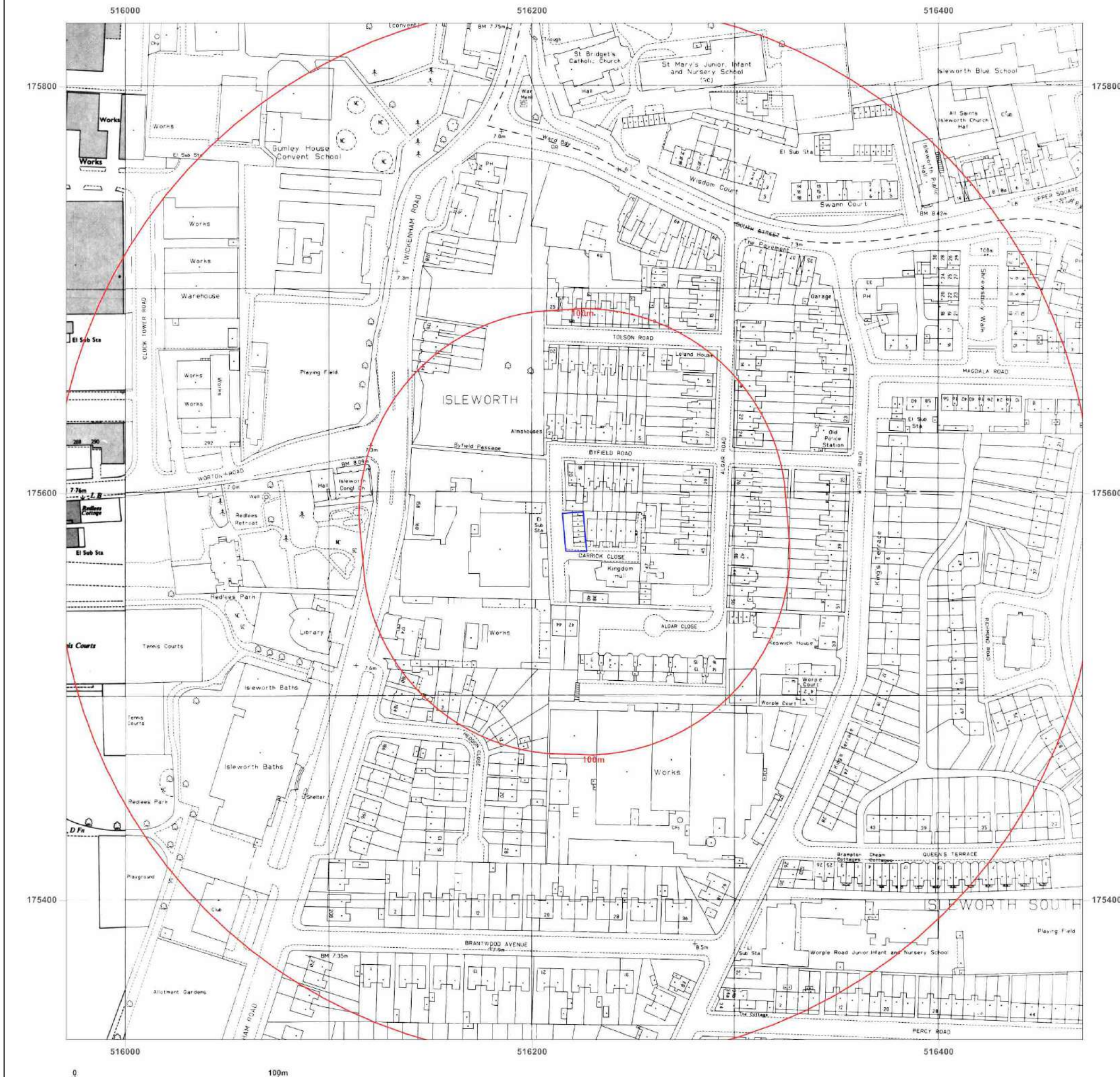


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1991-1995

**Scale:** 1:1,250

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



Surveyed N/A  
 Revised N/A  
 Edition N/A  
 Copyright 1995  
 Levelled N/A

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

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

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



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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1994-1995

**Scale:** 1:1,250

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



Surveyed 1995  
 Revised 1995  
 Edition N/A  
 Copyright 1995  
 Levelled N/A

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

Surveyed N/A  
 Revised N/A  
 Edition N/A  
 Copyright 1995  
 Levelled N/A

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



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#### Site Details:

516224, 175583

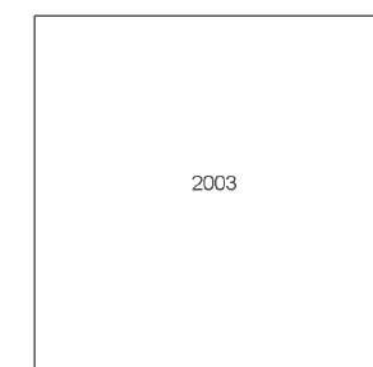
**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** LandLine

**Map date:** 2003

**Scale:** 1:1,250

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



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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** County Series

**Map date:** 1865

**Scale:** 1:10,560

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



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



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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** County Series

**Map date:** 1867-1868

**Scale:** 1:10,560

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



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

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

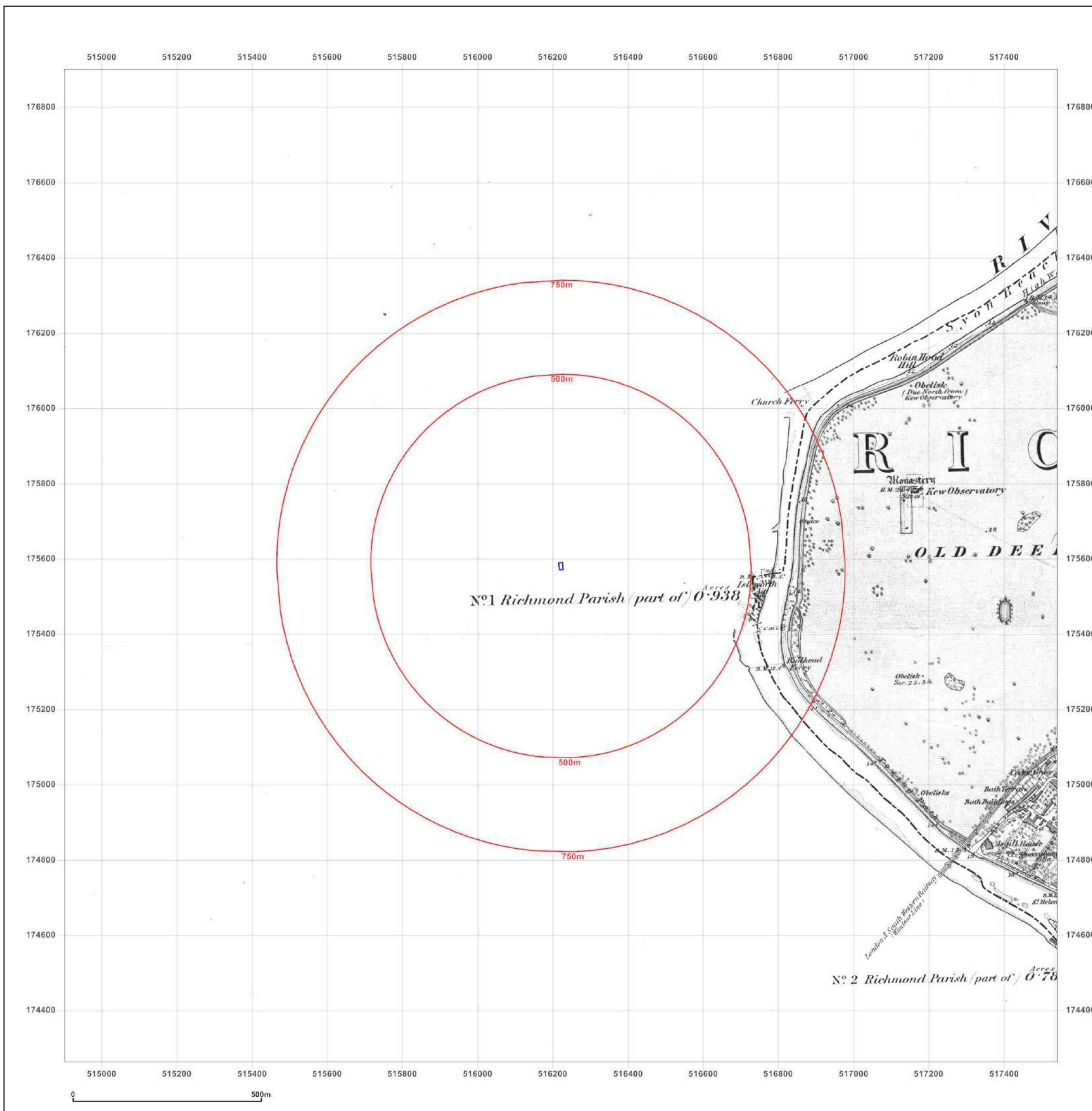


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** County Series

**Map date:** 1894

**Scale:** 1:10,560

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



Surveyed 1865  
 Revised 1894  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

Surveyed 1868  
 Revised 1894  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

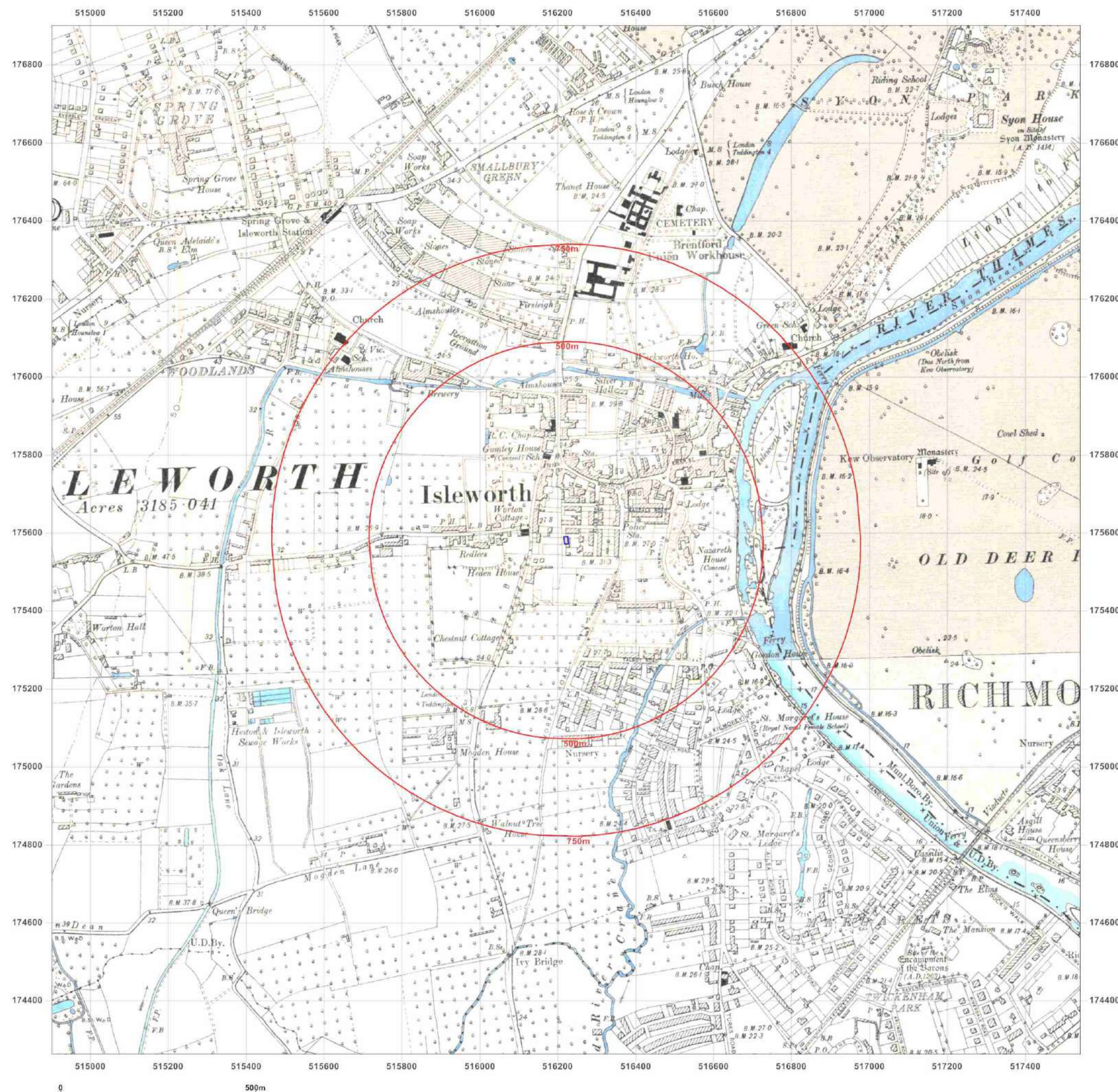


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#### Site Details:

516224, 175583

Client Ref: 10030793\_-\_Byfield\_Road  
Report Ref: GS-6295828  
Grid Ref: 516221, 175581

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

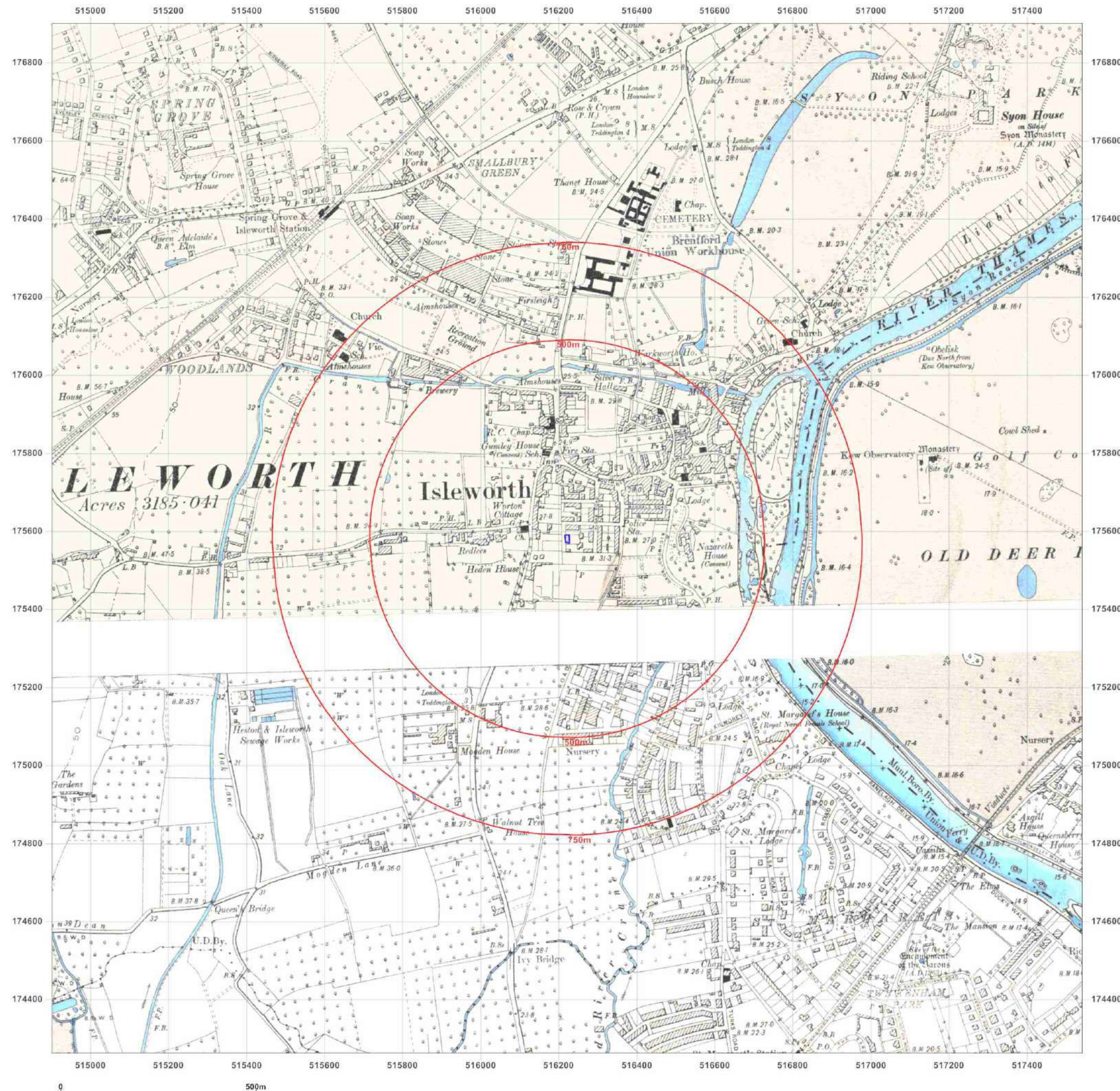


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#### Site Details:

516224, 175583

Client Ref: 10030793\_-\_Byfield\_Road  
Report Ref: GS-6295828  
Grid Ref: 516221, 175581

Map Name: County Series

Map date: 1896

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1865  
Revised 1896  
Edition 1896  
Copyright N/A  
Levelled N/A

Surveyed 1866  
Revised 1894  
Edition 1896  
Copyright N/A  
Levelled N/A

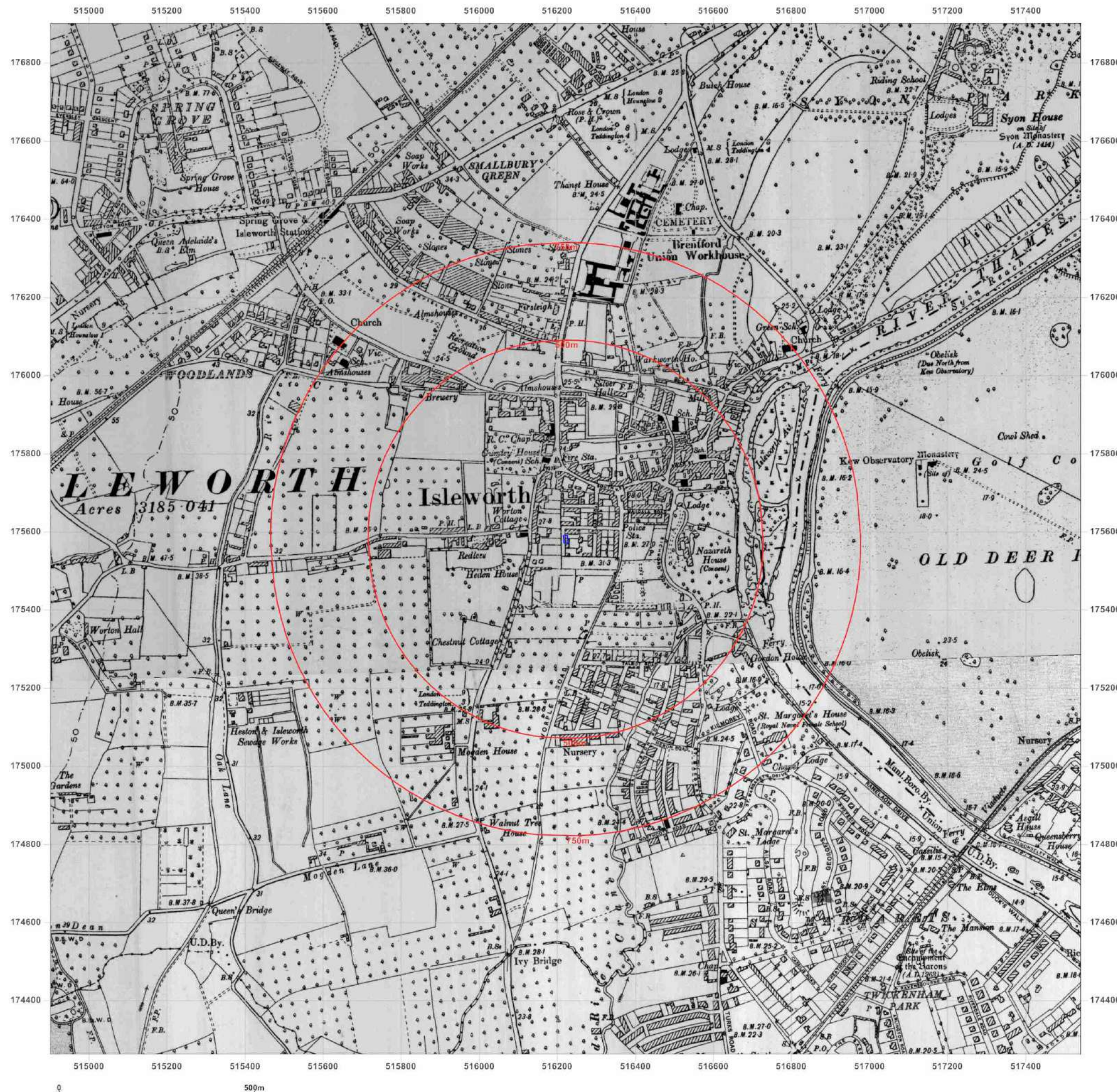


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**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 1868  
 Revised 1894  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

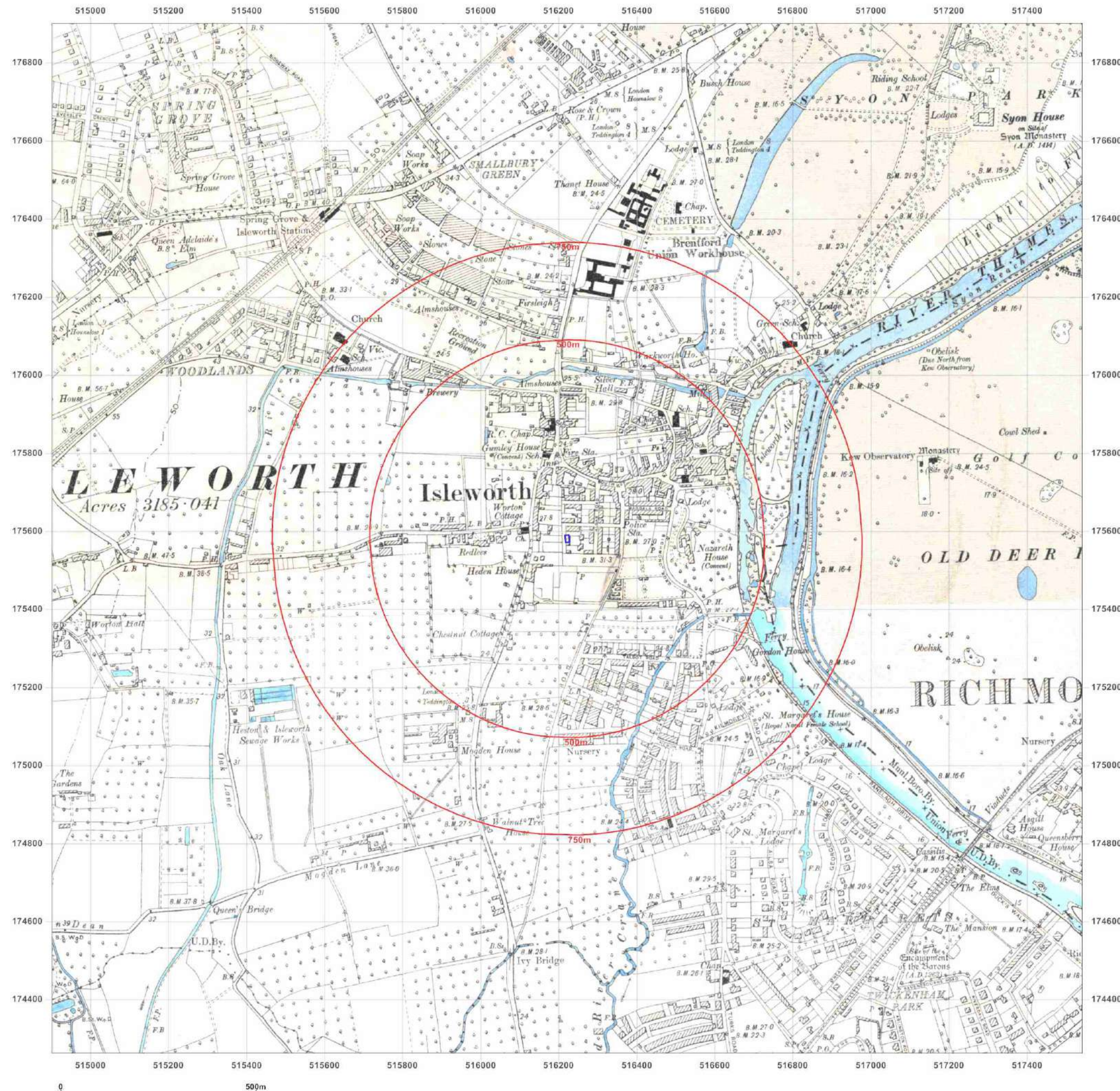


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** County Series

**Map date:** 1912

**Scale:** 1:10,560

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



Surveyed 1866  
 Revised 1912  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

Surveyed 1866  
 Revised 1912  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

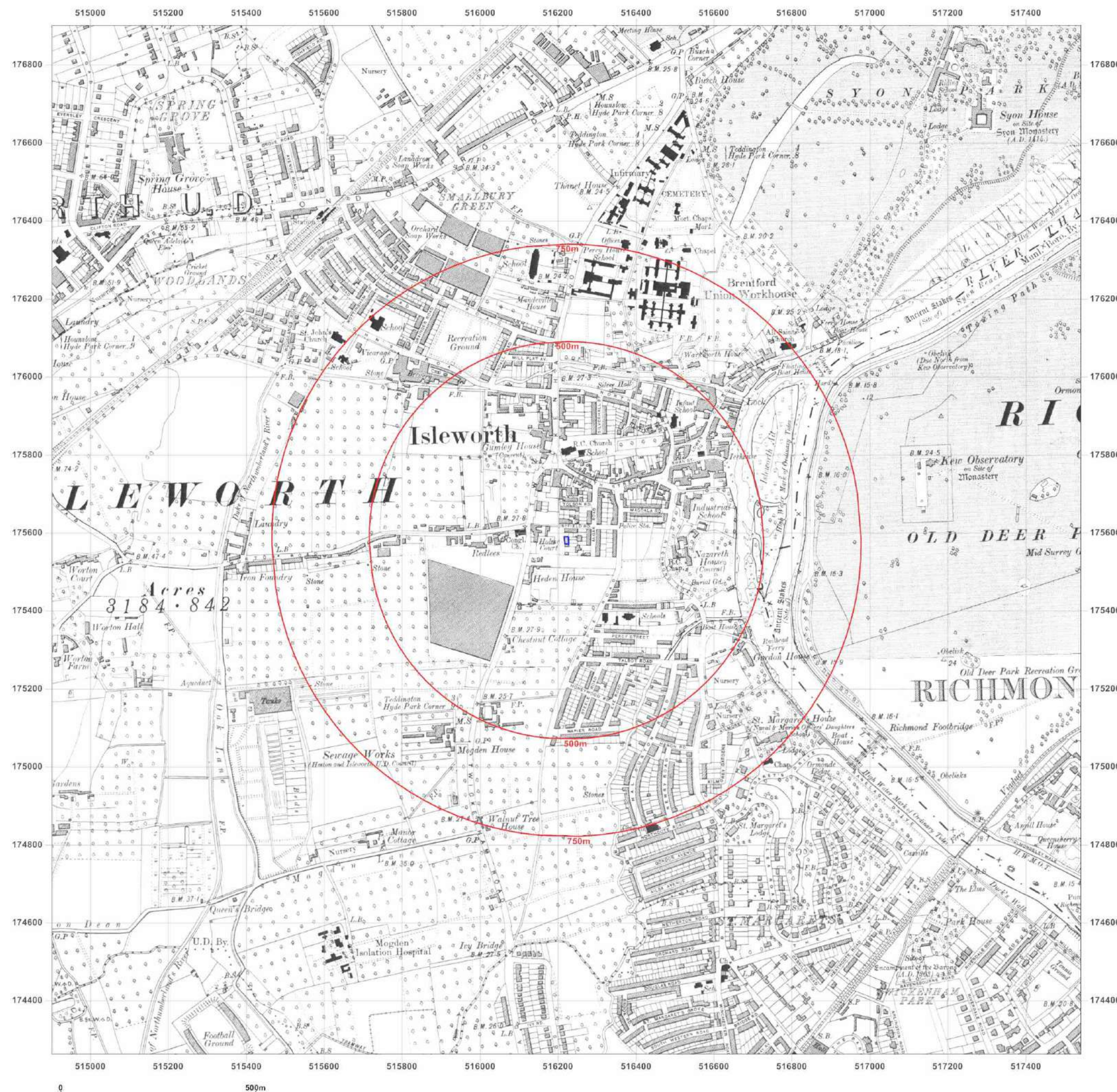


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** County Series

**Map date:** 1912

**Scale:** 1:10,560

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



Surveyed 1863  
 Revised 1912  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

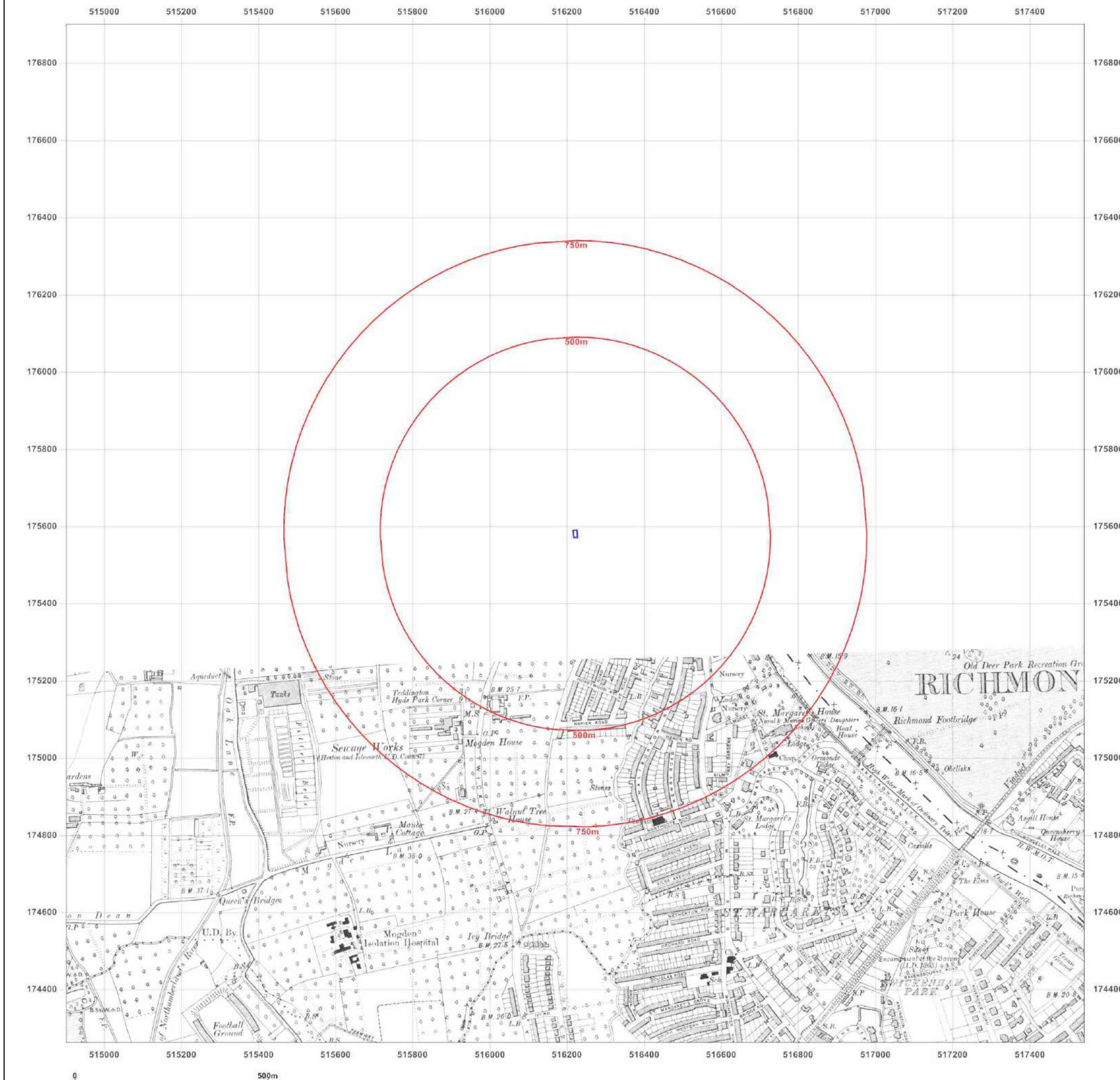


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** County Series

**Map date:** 1912

**Scale:** 1:10,560

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



Surveyed 1866  
 Revised 1912  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

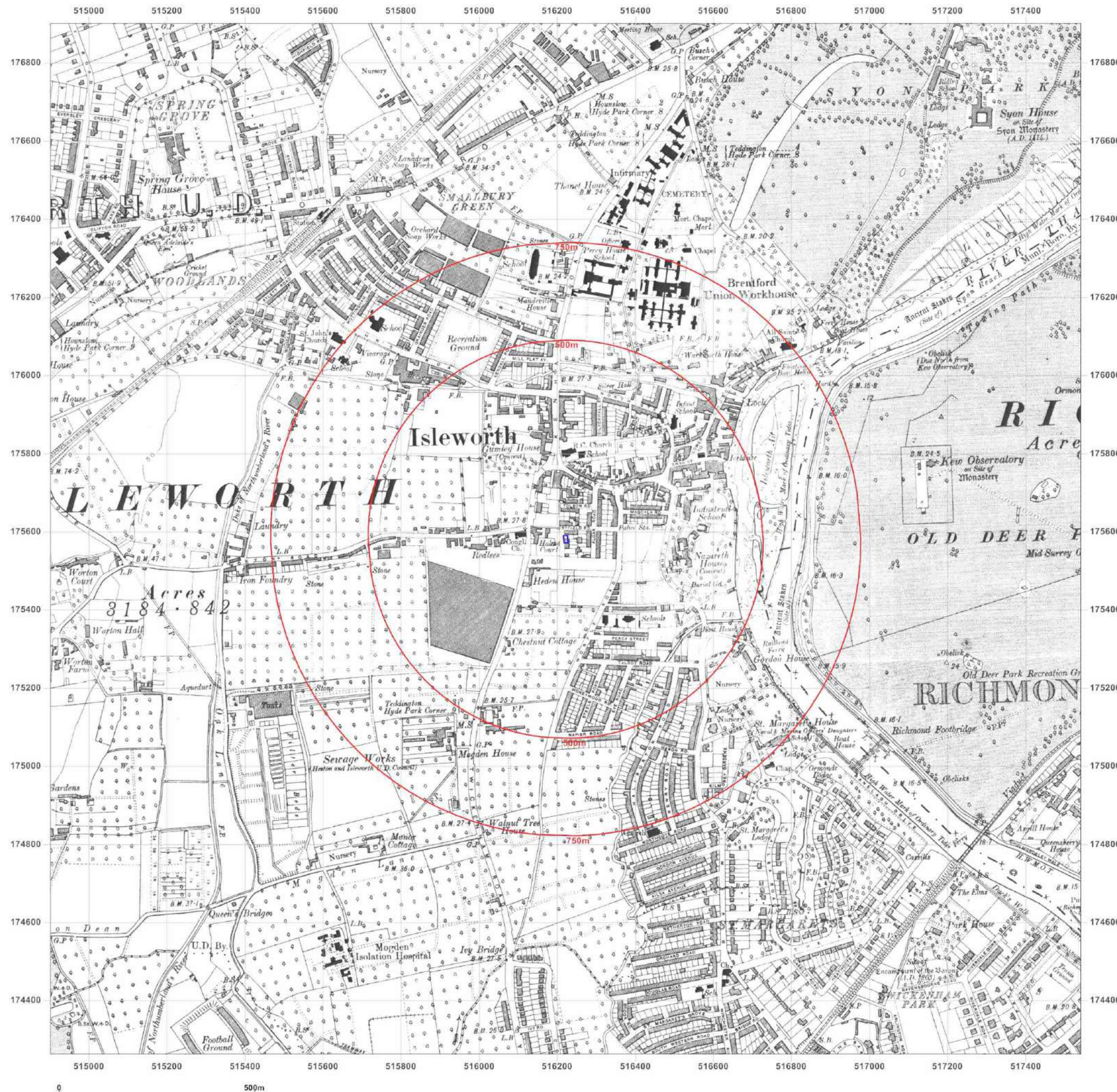


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#### Site Details:

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**Map Name:** County Series

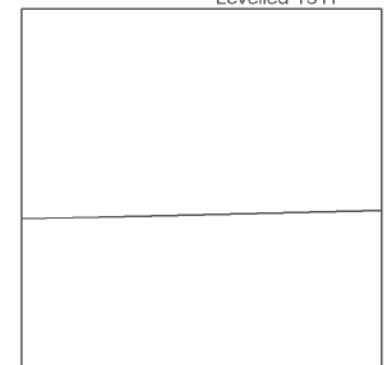
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**Scale:** 1:10,560

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



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

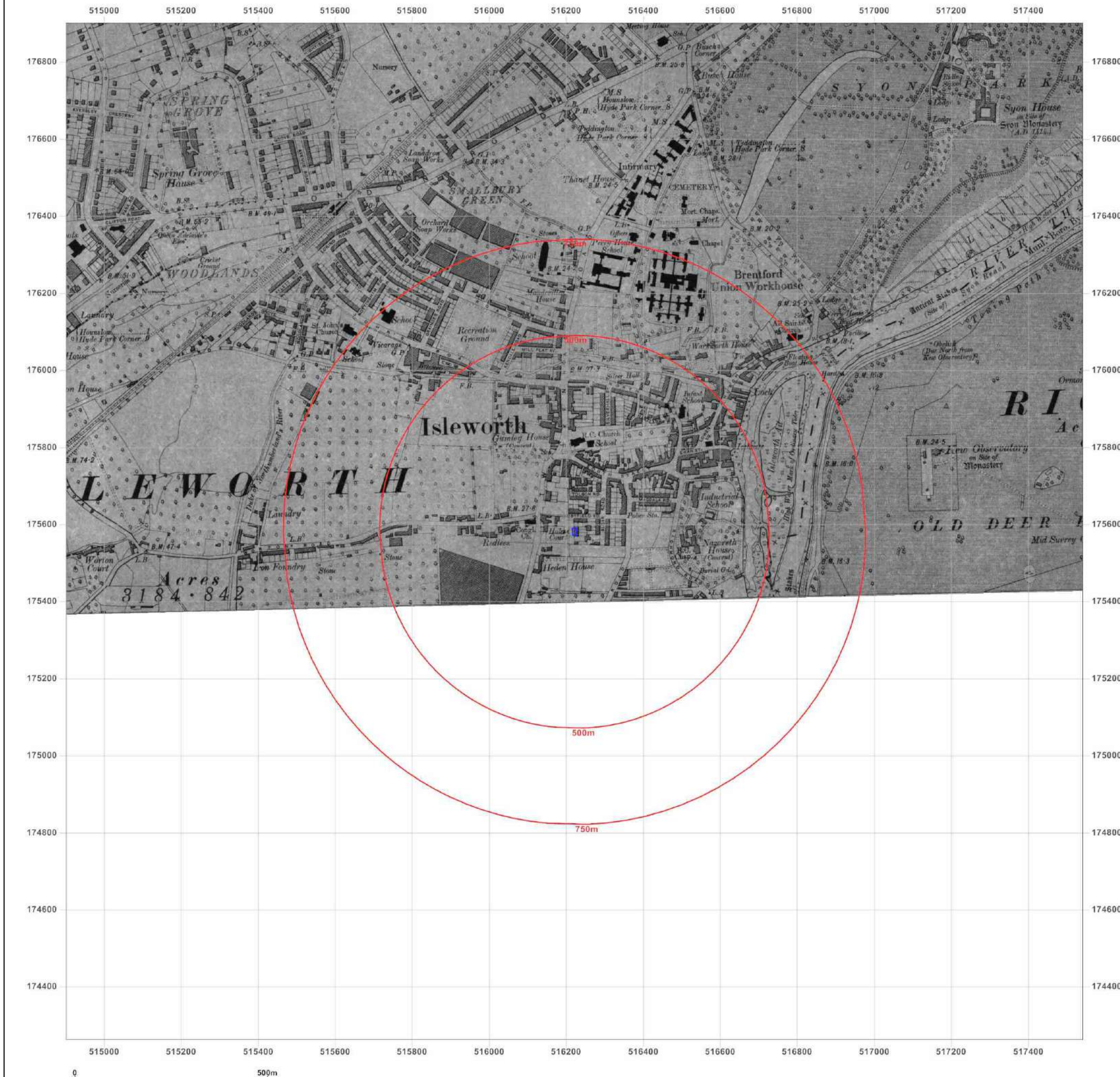


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**Site Details:**

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**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

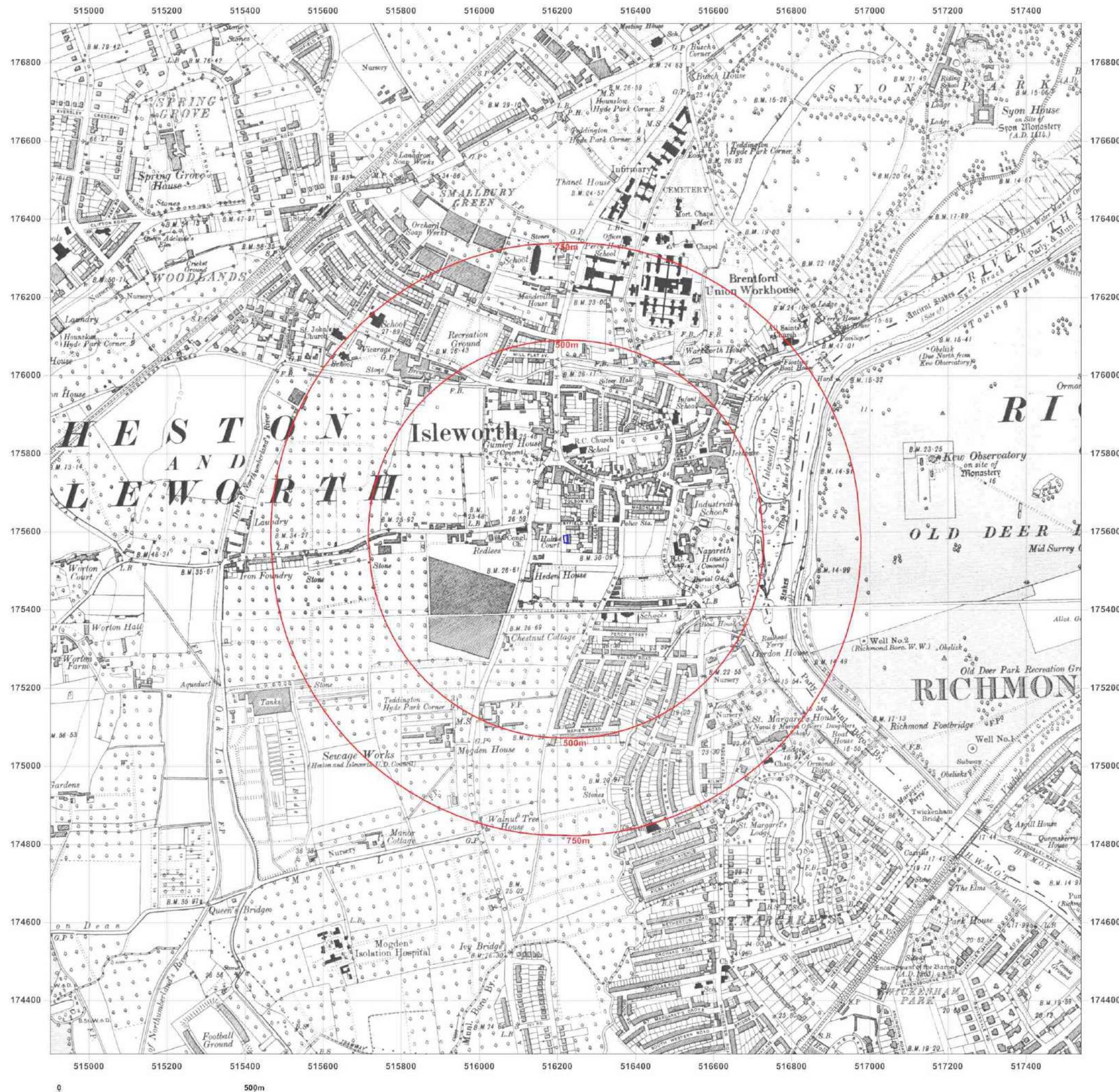


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516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** County Series

**Map date:** 1935

**Scale:** 1:10,560

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



Surveyed 1866  
 Revised 1935  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

Surveyed 1863  
 Revised 1935  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

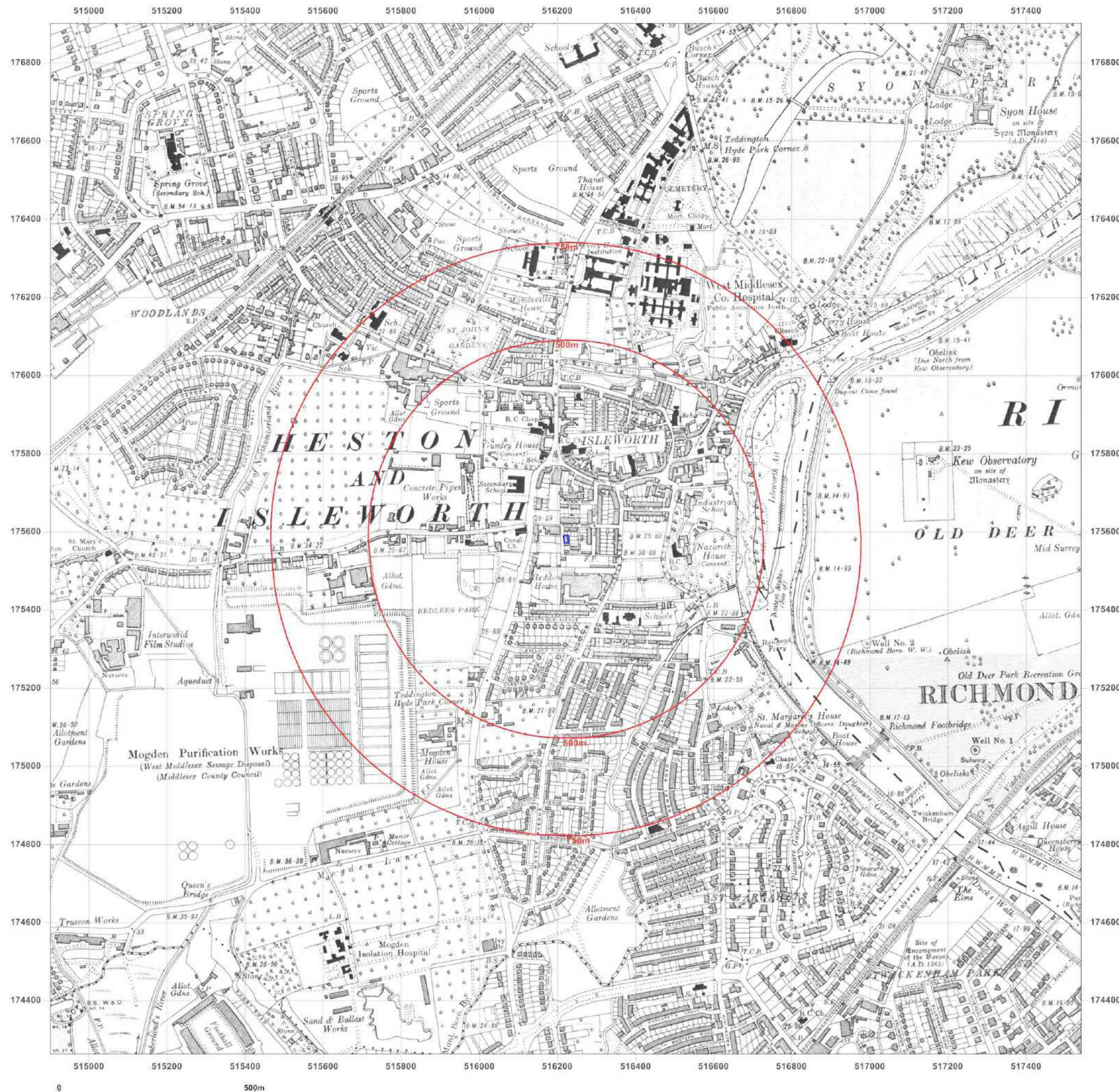


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#### Site Details:

516224, 175583

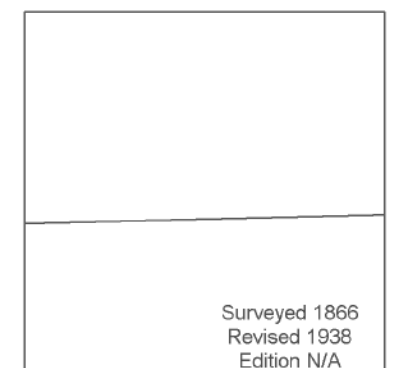
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**Grid Ref:** 516221, 175581

**Map Name:** County Series

**Map date:** 1938

**Scale:** 1:10,560

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



Surveyed 1866  
 Revised 1938  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

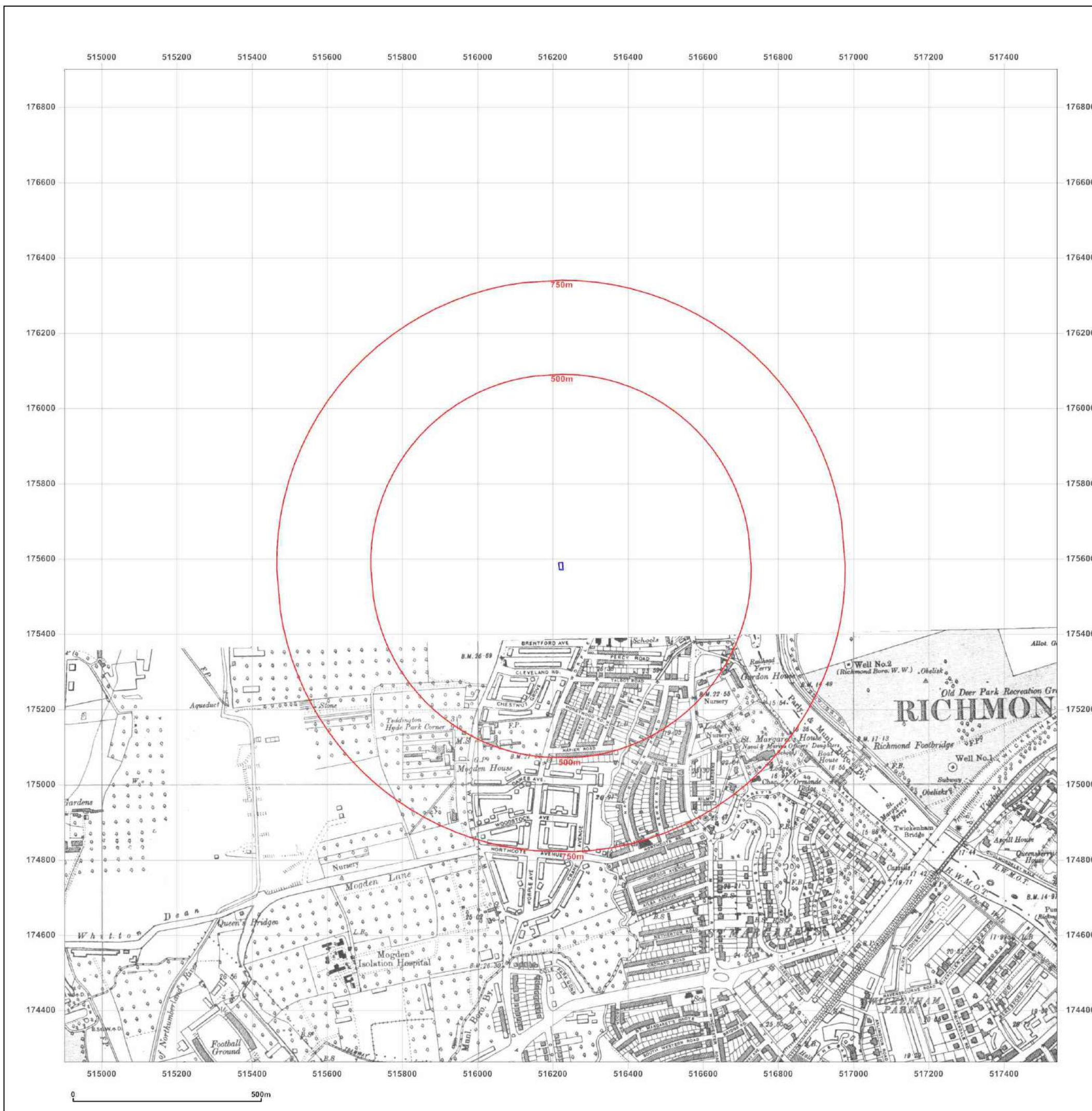


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#### Site Details:

516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** County Series

**Map date:** 1938

**Scale:** 1:10,560

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



Surveyed 1863  
 Revised 1938  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

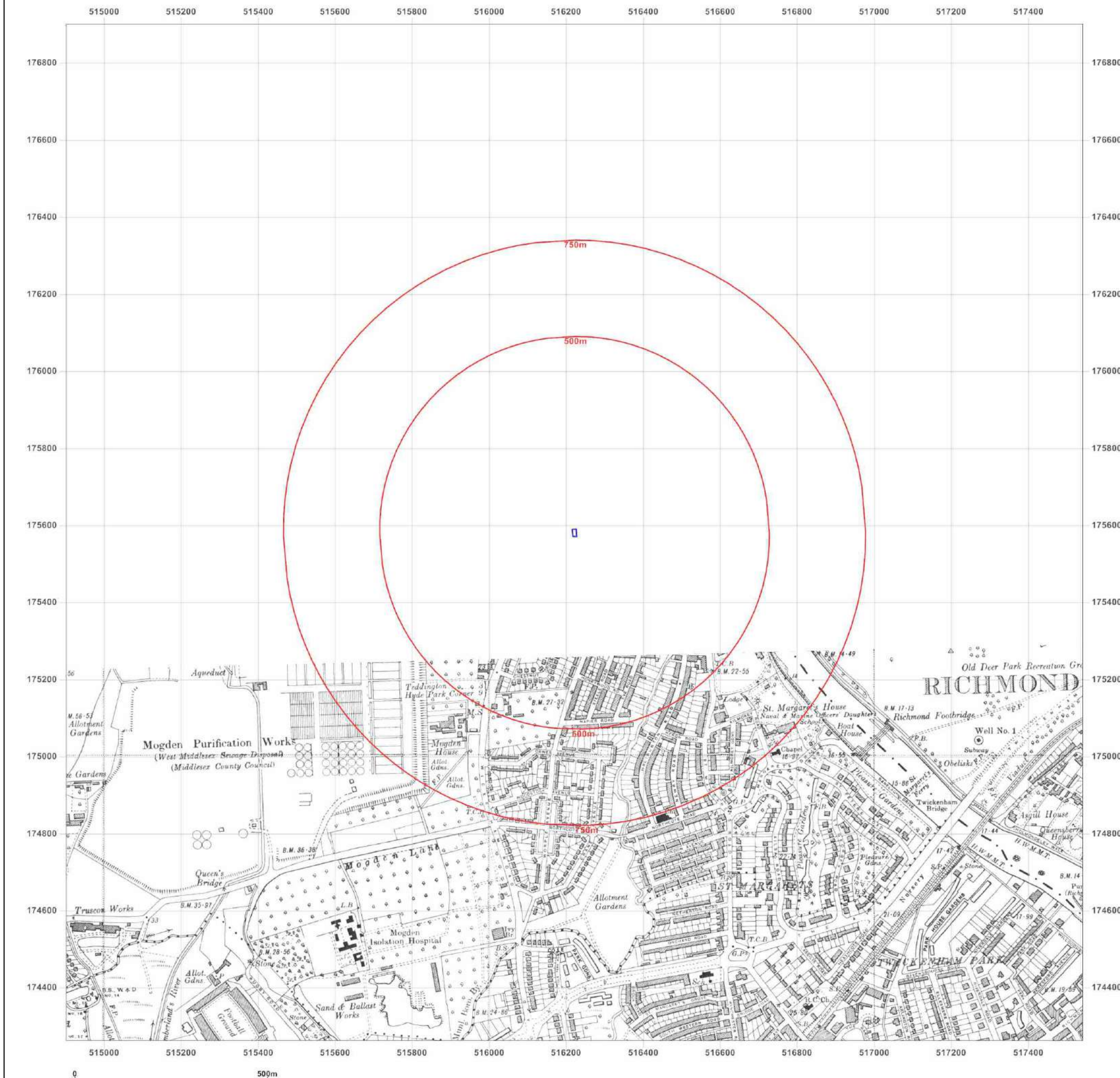


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#### Site Details:

516224, 175583

Client Ref: 10030793\_-\_Byfield\_Road  
Report Ref: GS-6295828  
Grid Ref: 516221, 175581

Map Name: Provisional

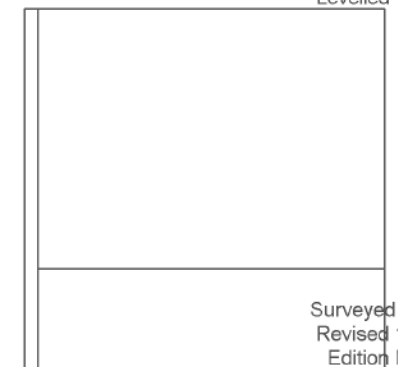
Map date: 1948

Scale: 1:10,560

Printed at: 1:10,560



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



Surveyed 1940  
Revised 1948  
Edition N/A  
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Client Ref: 10030793\_-\_Byfield\_Road  
Report Ref: GS-6295828  
Grid Ref: 516221, 175581

Map Name: Provisional

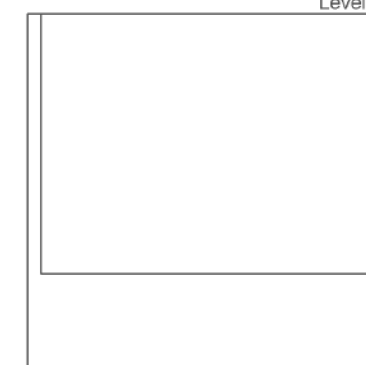
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Scale: 1:10,560

Printed at: 1:10,560



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Revised 1948  
Edition N/A  
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**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** Provisional

**Map date:** 1960-1961

**Scale:** 1:10,560

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



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

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

Surveyed 1955  
 Revised 1959  
 Edition N/A  
 Copyright 1960  
 Levelled N/A

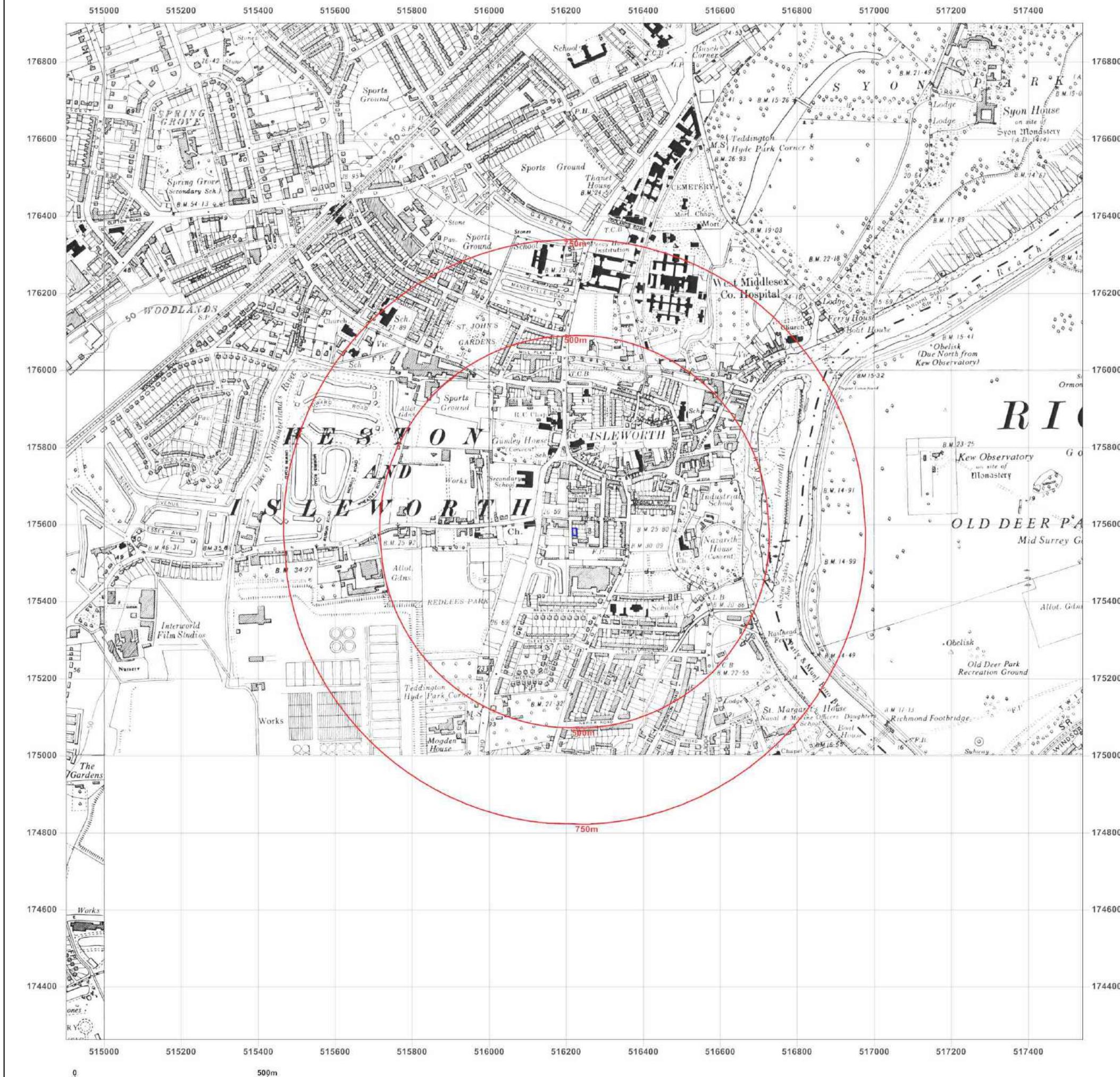


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516224, 175583

**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** Provisional

**Map date:** 1966

**Scale:** 1:10,560

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



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

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

Surveyed 1966  
 Revised 1966  
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**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1973-1974

**Scale:** 1:10,000

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



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

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

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

Surveyed 1973  
 Revised 1973  
 Edition N/A  
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**Client Ref:** 10030793\_-\_Byfield\_Road  
**Report Ref:** GS-6295828  
**Grid Ref:** 516221, 175581

**Map Name:** National Grid

**Map date:** 1983-1987

**Scale:** 1:10,000

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



Surveyed 1984  
 Revised 1985  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

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

Surveyed 1982  
 Revised 1983  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

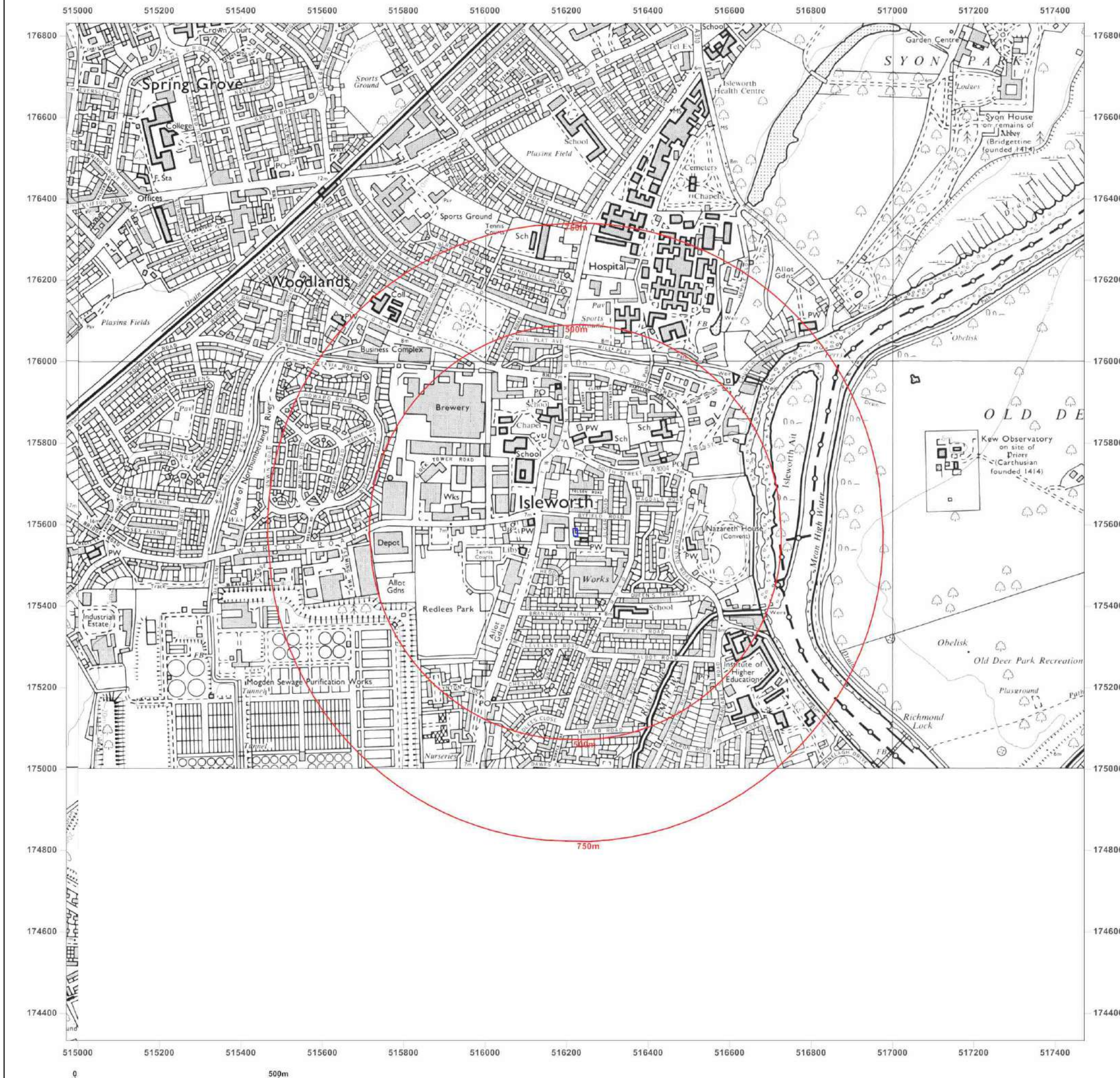


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**Client Ref:** 10030793\_-\_Byfield\_Road  
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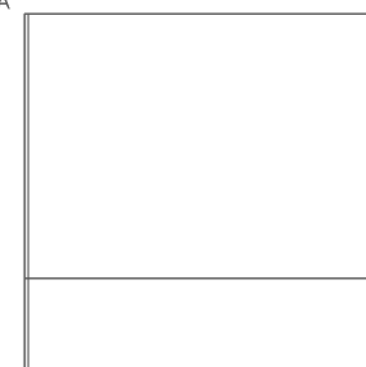
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 Edition N/A  
 Copyright N/A  
 Levelled N/A



Surveyed 1988  
 Revised 1991  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

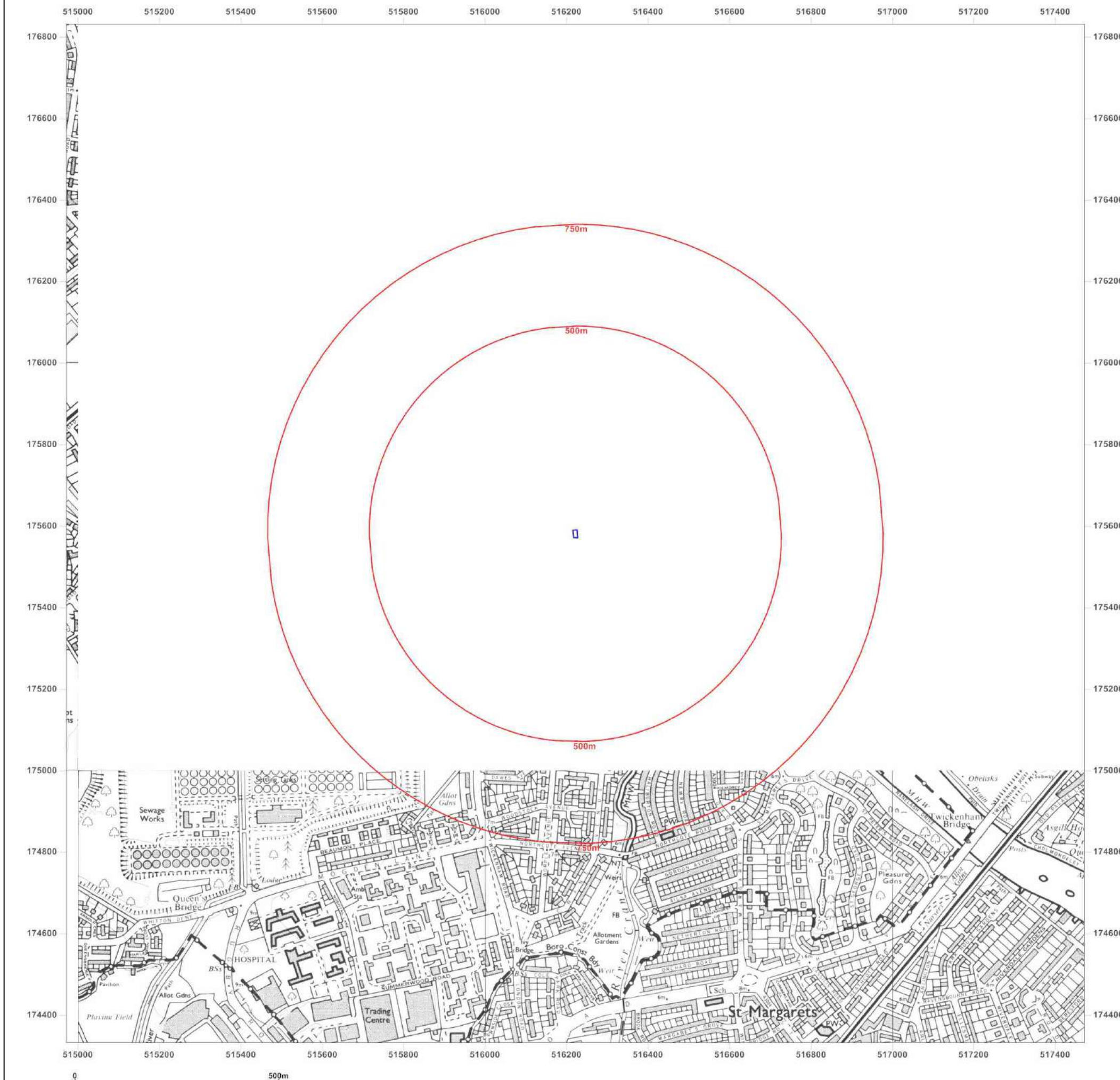


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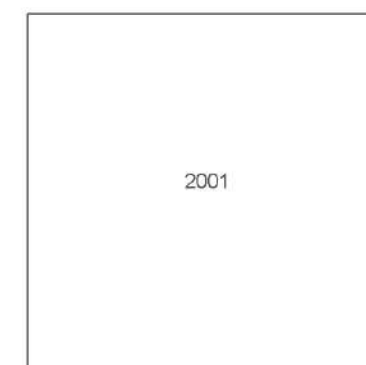
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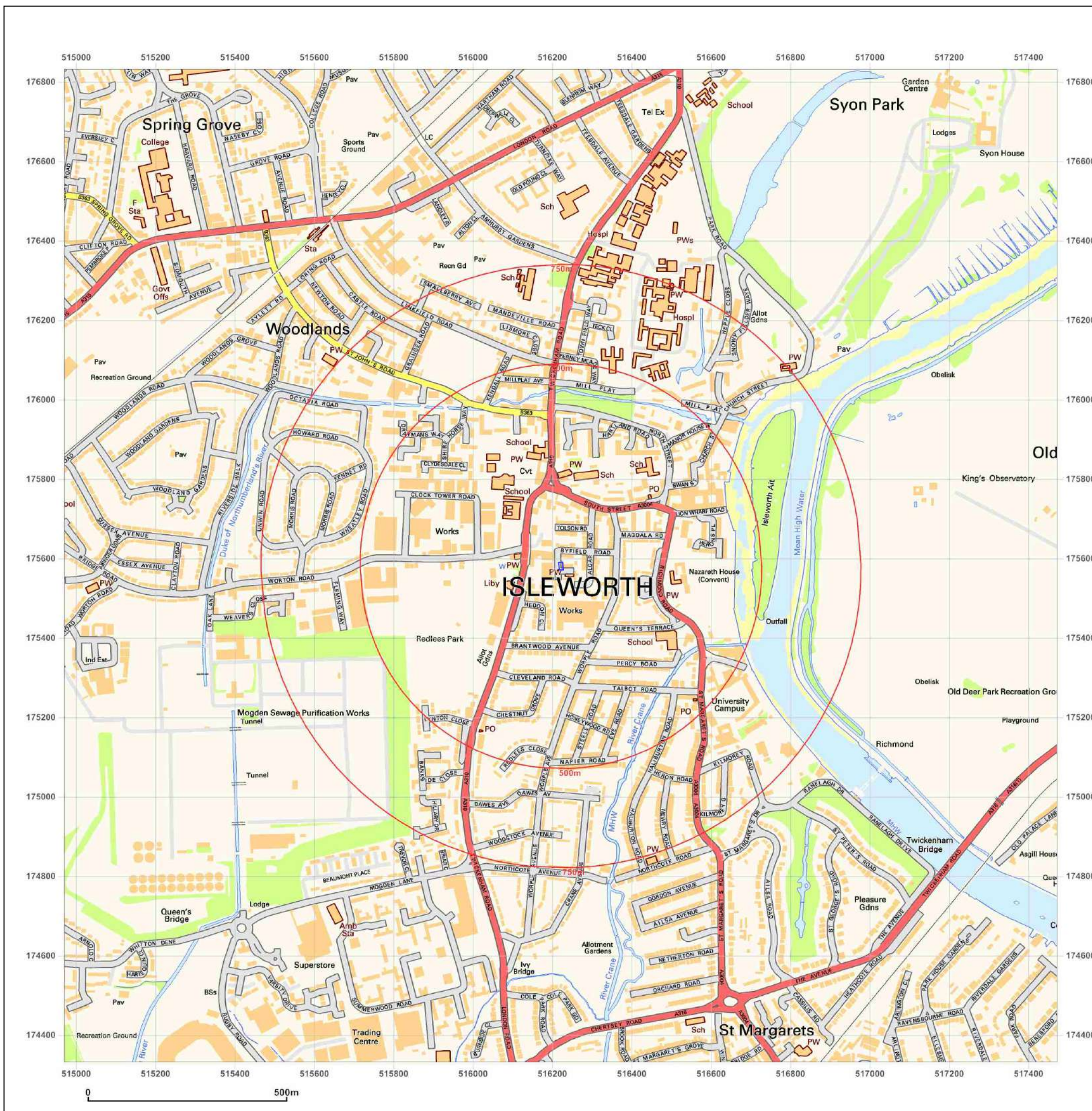


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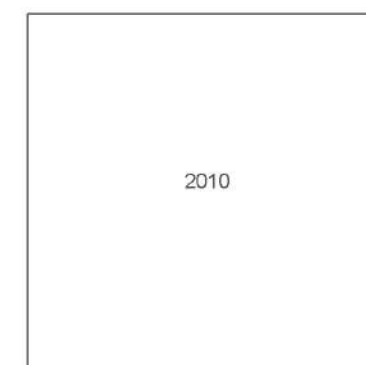
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**Map Name:** National Grid

**Map date:** 2010

**Scale:** 1:10,000

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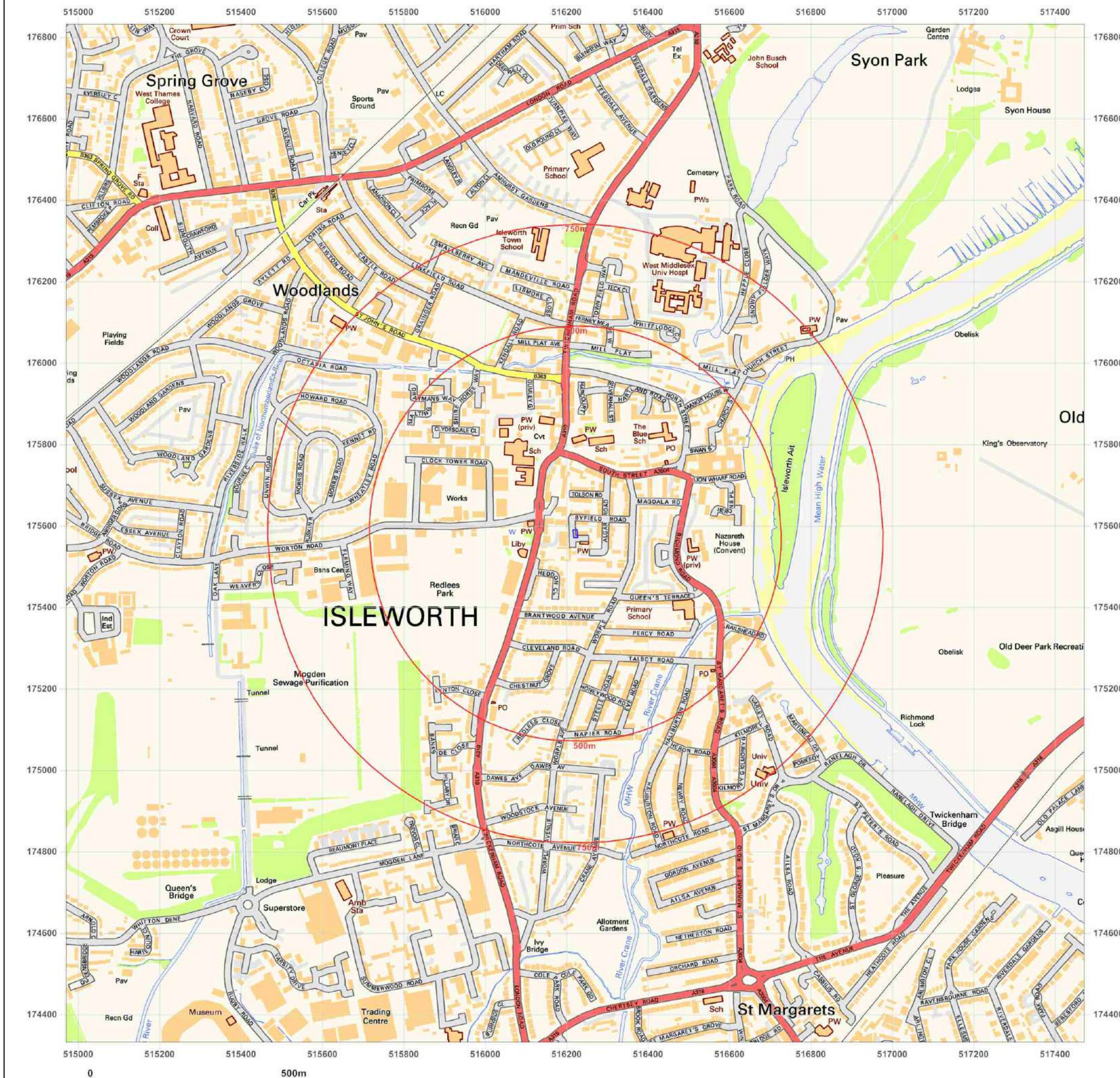


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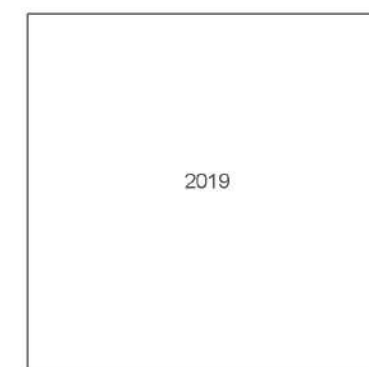
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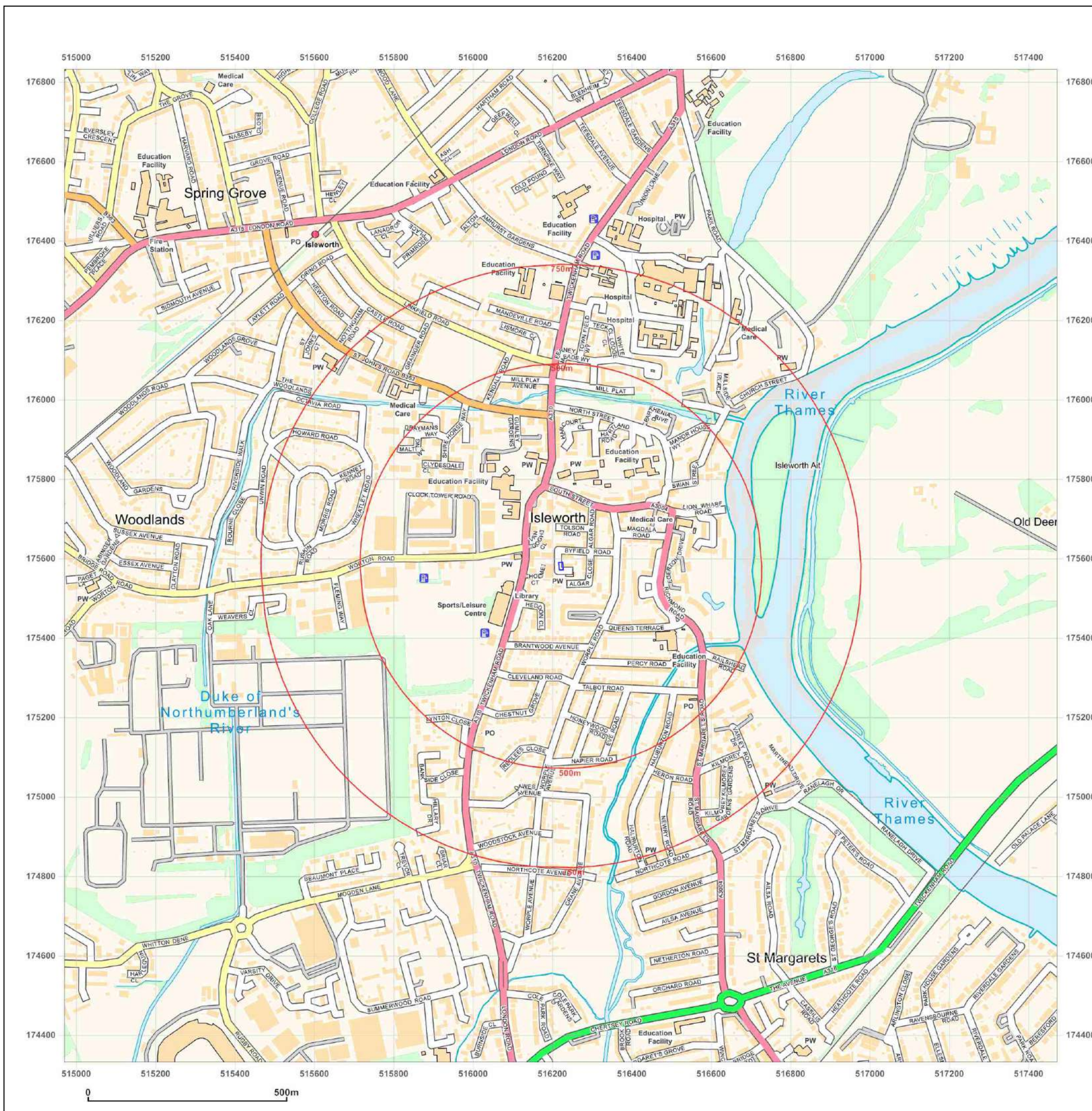


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Geotechnical and Geo-Environmental Desk Study  
Garage Block Adjacent to 20 Byfield Road, Isleworth, TW7 7AF

## **APPENDIX B**

### **Environmental Search Reports & Site Sensitivity Maps**





Arcadis Consulting UK Ltd  
Rydon House, PYNES HILL,  
EXETER, EX2 5AZ

Groundsure Reference: GS-6295826  
Your Reference: 10030793\_-\_Byfield\_Road  
Report Date 9 Sep 2019  
Report Delivery Method: Email - pdf

## Enviro Insight

Address: 516224, 175583,

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: 516224, 175583,  
Date: 9 Sep 2019  
Reference: GS-6295826  
Client: Arcadis Consulting UK Ltd

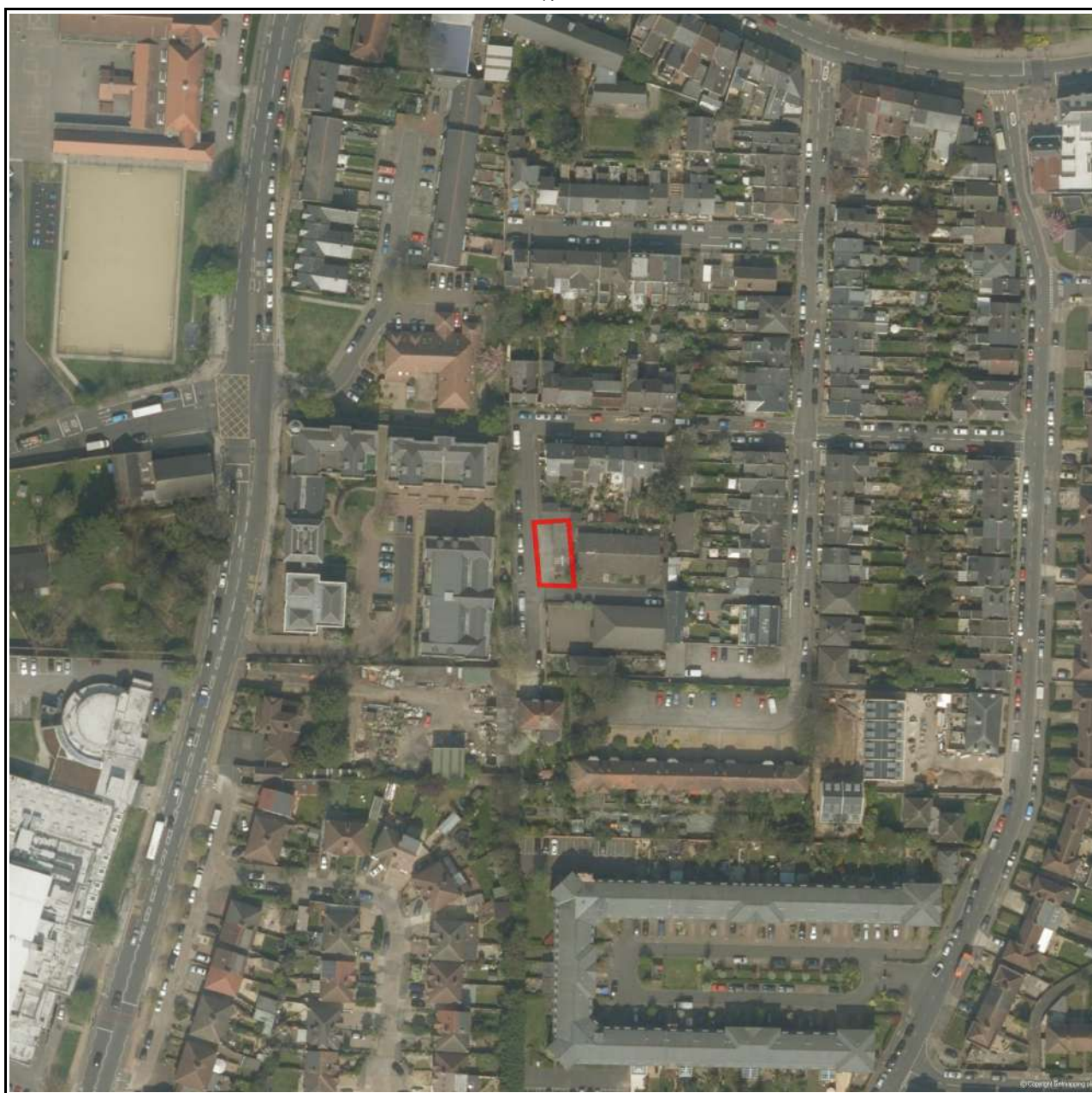
NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 20-Apr-2015  
Grid Reference: 516223,175583  
Site Size: 0.0195ha

Report Reference: GS-6295826  
Client Reference: 10030793\_-\_Byfield\_Road



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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	3	31	79
1.2 Additional Information – Historical Tank Database	0	0	6	8
1.3 Additional Information – Historical Energy Features Database	0	3	12	33
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	7	23
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	2	26
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	2
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	54
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	1	3
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	4
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	1
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	4
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	1	0	3	3
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	1	4

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	1	15	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	1
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	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	0	14
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	6
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	0	1	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	12	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	No	Not searched	Not searched	Not searched

## Section 7: Flooding

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

## Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	1	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	1	0	0
8.8 Records of World Heritage Sites	0	0	0	1	0	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

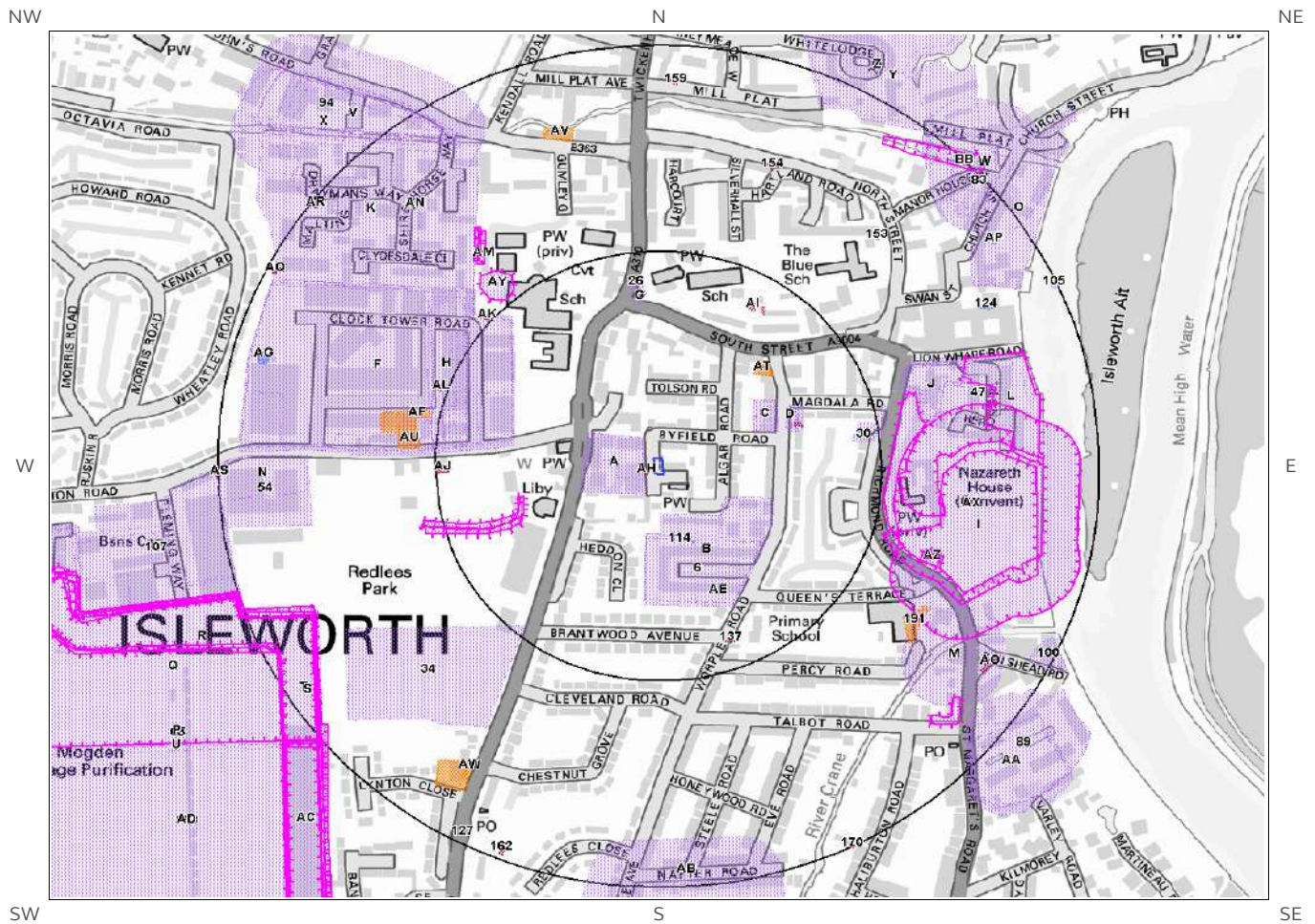
Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes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

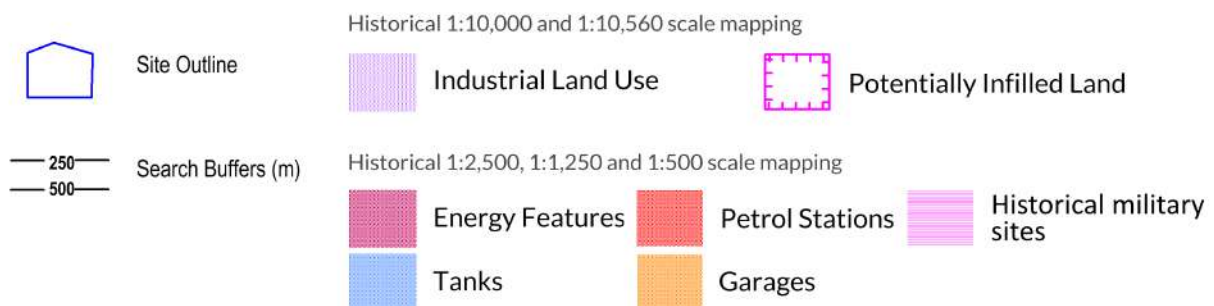
All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.



# 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: 113

ID	Distance [m]	Direction	Use	Date
1A	11	W	Unspecified Works	1974
2A	12	W	Unspecified Works	1966
3B	49	S	Unspecified Works	1987
4B	73	S	Unspecified Works	1974
5B	73	S	Unspecified Works	1966
6	79	S	Unspecified Commercial/Industrial	1961
7C	108	E	Police Station	1894
8C	111	E	Police Station	1933
9D	145	E	Police Station	1912
10D	147	E	Police Station	1898
11D	147	E	Police Station	1896
12D	148	E	Police Station	1894
13E	153	W	Unspecified Ground Workings	1898
14E	154	W	Unspecified Ground Workings	1896
15F	161	W	Concrete Pipes Works	1938
16F	162	W	Unspecified Works	1987
17F	162	W	Unspecified Works	1974
18F	162	W	Unspecified Works	1966
19F	162	W	Unspecified Works	1961
20F	162	W	Works	1948
21F	162	W	Concrete Pipes Works	1948
22F	180	NW	Concrete Pipes Works	1935
23G	187	N	Fire Station	1896
24G	198	N	Fire Station	1894
25G	199	N	Fire Station	1898
26	206	N	Fire Station	1894
27H	215	W	Railway Sidings	1961
28H	216	W	Railway Sidings	1948
29H	216	W	Railway Sidings	1948
30	220	E	Police Station	1912
31	225	E	Police Station	1913
32H	225	W	Railway Sidings	1938



33H	227	W	Railway Sidings	1935
34	237	SW	Unspecified Commercial/Industrial	1933
35AX	254	E	Burial Ground	1933
36AY	255	NW	Unspecified Heap	1966
37I	260	E	Burial Ground	1912
38I	266	E	Burial Ground	1912
39J	286	E	Industrial School	1948
40J	286	E	Industrial School	1948
41J	287	E	Industrial School	1961
42J	288	E	Industrial School	1912
43J	288	E	Industrial School	1938
44J	288	E	Industrial School	1935
45K	289	NW	Brewery	1987
46K	289	NW	Brewery	1974
47	295	E	Industrial School	1933
48AZ	311	E	Burial Ground	1913
49M	340	SE	Boat House	1912
50K	342	NW	Brewery	1966
51L	358	E	Unspecified Wharf	1974
52L	358	E	Unspecified Wharf	1966
53M	385	SE	Boat House	1912
54	396	W	Unspecified Depot	1987
55N	397	W	Unspecified Works	1974
56N	397	W	Unspecified Works	1966
57V	410	NW	Brewery	1865
58O	414	NE	Unspecified Commercial/Industrial	1987
59O	414	NE	Unspecified Commercial/Industrial	1974
60O	414	NE	Unspecified Commercial/Industrial	1966
61P	420	SW	Unspecified Works	1974
62P	423	W	Sewage Purification Works	1987
63R	423	SW	Unspecified Heap	1938
64Q	423	SW	Purification Works	1938
65	423	SW	Unspecified Works	1966
66BA	424	SE	Unspecified Ground Workings	1898
67Q	427	SW	Purification Works	1935
68R	427	SW	Unspecified Heaps	1935
69R	427	SW	Unspecified Heaps	1935
70S	429	SW	Unspecified Heap	1974
71S	429	SW	Unspecified Heap	1961
72S	429	SW	Unspecified Heap	1966
73U	429	SW	Unspecified Works	1961
74T	429	SW	Unspecified Heaps	1948



75T	429	SW	Unspecified Heaps	1948
76U	429	SW	Sewage Disposal Purification Works	1948
77U	429	SW	Works	1948
78W	435	NE	Flour Mill	1865
79V	437	NW	Brewery	1896
80AB	441	S	Nursery	1894
81V	445	NW	Brewery	1894
82W	446	NE	Unspecified Mill	1898
83	447	NE	Unspecified Mill	1896
84V	448	NW	Brewery	1898
85W	449	NE	Unspecified Mill	1894
86X	449	NW	Unspecified Commercial/Industrial	1961
87X	451	NW	Brewery	1912
88V	451	NW	Brewery	1894
89	452	SE	Nursery	1938
90V	452	NW	Brewery	1933
91V	453	NW	Brewery	1913
92BB	455	NE	Unspecified Mill	1894
93AG	458	W	Unspecified Tank	1987
94	460	NW	Brewery	1966
95AA	460	SE	Nursery	1912
96Y	461	NE	Hospital	1948
97Y	461	NE	Hospital	1948
98Z	467	NE	Hospital	1987
99Z	467	NE	Hospital	1974
100	475	SE	Boat House	1933
101AA	476	SE	Nursery	1912
102AA	476	SE	Nursery	1933
103AA	488	SE	Nursery	1912
104AB	492	S	Nursery	1896
105	492	NE	Ice House	1913
106AB	493	S	Nursery	1898
107	495	W	Unspecified Commercial/Industrial	1987
108AD	499	SW	Sewage Disposal Works	1935
109AC	499	SW	Unspecified Heap	1935
110AC	499	SW	Unspecified Heap	1935
111AD	499	SW	Sewage Disposal Works	1935
112AC	500	SW	Unspecified Heap	1938
113	500	SW	Purification Works	1938



## 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:

14

ID	Distance (m)	Direction	Use	Date
114	82	S	Unspecified Tank	1935
115B	87	S	Unspecified Tank	1935
116AE	154	SE	Unspecified Tank	1959
117AE	154	SE	Unspecified Tank	1959
118AE	154	SE	Unspecified Tank	1960
119AE	154	SE	Unspecified Tank	1994
120AF	275	W	Unspecified Tank	1986
121AF	275	W	Unspecified Tank	1986
122AF	275	W	Unspecified Tank	1997
123AF	275	W	Unspecified Tank	1995
124	407	NE	Tanks	1865
125AG	457	W	Unspecified Tank	1995
126AG	457	W	Unspecified Tank	1997
127	489	SW	Tank or Trough	1865

## 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:

48

ID	Distance (m)	Direction	Use	Date
128AH	8	W	Electricity Substation	1994
129AH	8	W	Electricity Substation	1997
130AH	8	W	Electricity Transformer	1970
131D	156	E	Electricity Substation	1970
132D	163	E	Electricity Substation	1997
133D	163	E	Electricity Substation	1994
134AI	206	NE	Electricity Transformer	1970
135AI	208	NE	Electricity Substation	1994
136AI	208	NE	Electricity Substation	1997
137	213	S	Electricity Substation	1994
138AJ	235	W	Electricity Substation	1997
139AJ	235	W	Electricity Substation	1995



140AJ	235	W	Electricity Substation	1986
141AJ	235	W	Electricity Substation	1986
142AJ	235	W	Electricity Substation	1977
143AK	254	NW	Electricity Substation	1994
144AK	254	NW	Electricity Substation	1997
145AK	255	NW	Electricity Transformer	1970
146AL	256	W	Electricity Substation	1997
147AL	256	W	Electricity Substation	1995
148AL	256	W	Electricity Substation	1977
149AL	257	W	Electricity Substation	1986
150AL	257	W	Electricity Substation	1986
151AM	311	NW	Electricity Substation	1994
152AM	311	NW	Electricity Substation	1997
153	360	NE	Electricity Transformer	1970
154	371	N	Electricity Substation	1994
155AN	407	NW	Electricity Substation	1997
156AN	407	NW	Electricity Substation	1995
157AO	434	SE	Electricity Substation	1974
158AO	434	SE	Electricity Substation	1995
159	453	N	Electricity Substation	1997
160AP	459	NE	Electricity Substation	1991
161AP	459	NE	Electricity Substation	1989
162	484	S	Electricity Substation	1994
163AQ	488	NW	Electricity Substation	1986
164AQ	488	NW	Electricity Substation	1986
165AQ	488	NW	Electricity Substation	1997
166AQ	488	NW	Electricity Substation	1995
167AQ	489	NW	Electricity Substation	1977
168AR	491	NW	Electricity Substation	1997
169AR	491	NW	Electricity Substation	1995
170	496	SE	Electricity Substation	1994
171AS	497	W	Electricity Substation	1986
172AS	497	W	Electricity Substation	1986
173AS	498	W	Electricity Substation	1977
174AS	498	W	Electricity Substation	1995
175AS	498	W	Electricity Substation	1997

## 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: 30

ID	Distance (m)	Direction	Use	Date
176AT	145	NE	Garage	1959
177AT	145	NE	Garage	1959
178AT	149	NE	Garage	1994
179AT	149	NE	Garage	1997
180AT	150	NE	Garage	1960
181AT	150	NE	Garage	1960
182AT	150	NE	Garage	1970
183AF	260	W	Garage	1977
184AU	269	W	Garage	1962
185AU	269	W	Garage	1962
186AU	269	W	Garage	1962
187AU	269	W	Garage	1995
188AU	269	W	Garage	1997
189AF	271	W	Garage	1986
190AF	271	W	Garage	1986
191	324	SE	Garage	1974
192AV	395	N	Garage	1970
193AV	402	N	Garage	1960
194AV	402	N	Garage	1960
195AW	404	SW	Garage	1959
196AW	404	SW	Garage	1959
197AW	404	SW	Garage	1960
198AV	404	N	Garage	1959
199AV	404	N	Garage	1959
200AW	409	SW	Garage	1962
201AW	409	SW	Garage	1962
202AW	409	SW	Garage	1962
203AW	409	SW	Garage	1986
204AW	409	SW	Garage	1986
205AW	410	SW	Garage	1995



## 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: 28

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

ID	Distance(m)	Direction	Use	Date
206E	153	W	Unspecified Ground Workings	1898
207E	154	W	Unspecified Ground Workings	1896
208AX	254	E	Burial Ground	1933
209AY	255	NW	Unspecified Heap	1966
210I	260	E	Burial Ground	1912
211I	266	E	Burial Ground	1912
212AM	305	NW	Pond	1894
213AZ	311	E	Burial Ground	1913
214AM	312	NW	Pond	1933
215AM	312	NW	Pond	1894
216L	358	E	Unspecified Wharf	1974
217L	358	E	Unspecified Wharf	1966
218P	423	W	Sewage Purification Works	1987
219R	423	SW	Unspecified Heap	1938
220BA	424	SE	Unspecified Ground Workings	1898
221R	427	SW	Unspecified Heaps	1935
222R	427	SW	Unspecified Heaps	1935
223S	429	SW	Unspecified Heap	1961
224S	429	SW	Unspecified Heap	1966
225S	429	SW	Unspecified Heap	1974
226T	429	SW	Unspecified Heaps	1948
227T	429	SW	Unspecified Heaps	1948
228BB	457	NE	Pond	1865
229AC	499	SW	Unspecified Heap	1935

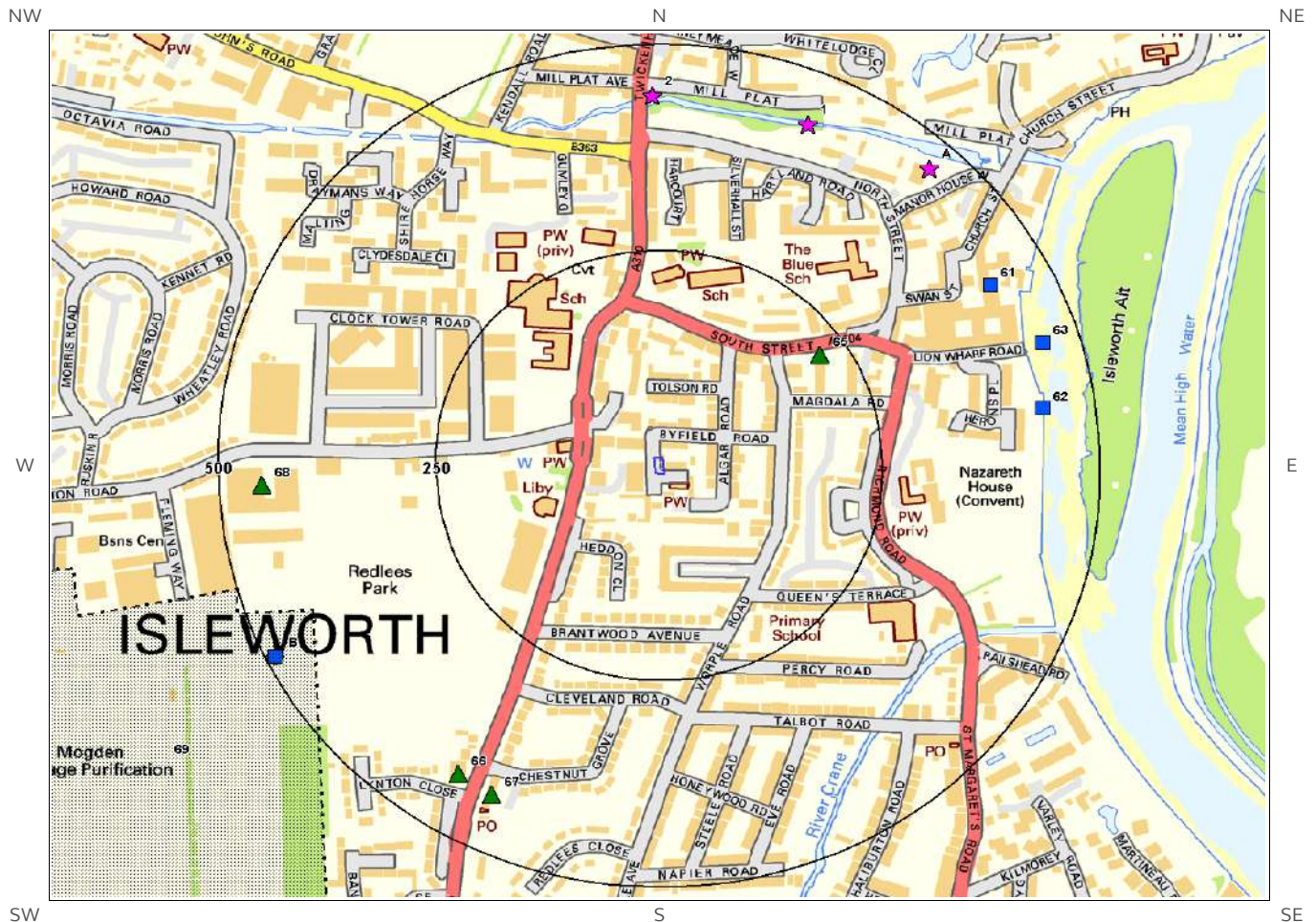


230AD	499	SW	Sewage Disposal Works	1935
231AC	499	SW	Unspecified Heap	1935
232AD	499	SW	Sewage Disposal Works	1935
233AC	500	SW	Unspecified Heap	1938

---



## 2. Environmental Permits, Incidents and Registers Map



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



## 2. Environmental Permits, Incidents and Registers

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

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

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

2

The following List 1 Dangerous Substance Inventory Site records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
5B	490	SW	515780 175350	Name: Lht Anodisers Ltd, Wallingford Rd, Uxbridge, Ub8 2sr Status: Active Receiving Water: - Authorised Substances: Mercury (other), Cadmium
6B	490	SW	515780 175350	Name: The Incinerator, Hillingdon Hosp, Pield Heath Rd, Ub8 3nn Status: Active Receiving Water: - Authorised Substances: Mercury (other), Cadmium



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

54

The following List 2 Dangerous Substance Inventory Site records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
7B	490	SW	515780 175350	Name: Lht Anodisers Ltd Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
8B	490	SW	515780 175350	Name: London's Radiator Specialists Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
9B	490	SW	515780 175350	Name: Glenmore Plating Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
10B	490	SW	515780 175350	Name: Schering Plough Ltd Status: Active Receiving Water: -	Authorised Substances: Copper, Silver, Zinc
11B	490	SW	515780 175350	Name: International Aeradio Limited Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
12B	490	SW	515780 175350	Name: London Borough Of Hillingdon Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Silver, Zinc, Phenol
13B	490	SW	515780 175350	Name: Brett Aggregates (west) Ltd Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Cyanide, Lead, Nickel, Zinc
14B	490	SW	515780 175350	Name: Waste Recycling Group (south West) Ltd Status: Active Receiving Water: -	Authorised Substances: Arsenic, Chromium, Copper, Cyanide, Lead, Nickel, Zinc
15B	490	SW	515780 175350	Name: Tmd Technologies Ltd. Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Cyanide, Lead, Nickel
16B	490	SW	515780 175350	Name: Et Enterprises Ltd Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Silver, Zinc
17B	490	SW	515780 175350	Name: Brunel University Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
18B	490	SW	515780 175350	Name: Kodak Ltd. Status: Active Receiving Water: -	Authorised Substances: Cyanide
19B	490	SW	515780 175350	Name: S.i.t.a. Products And Services Ltd Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Cyanide, Lead, Nickel, Zinc
20B	490	SW	515780 175350	Name: Owen Coyle Anodising Ltd Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper
21B	490	SW	515780 175350	Name: Ultra Electronics Sonar And Comms. Status: Active Receiving Water: -	Authorised Substances: Copper, Lead
22B	490	SW	515780 175350	Name: British Airways Plc Status: Active Receiving Water: -	Authorised Substances: Copper, Lead, Zinc



ID	Distance (m)	Direction	NGR	Details	
23B	490	SW	515780 175350	Name: Kidde Graviner Ltd Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Cyanide, Nickel
24B	490	SW	515780 175350	Name: Portalspace Ltd Status: Active Receiving Water: -	Authorised Substances: Nickel
25B	490	SW	515780 175350	Name: West London Waste Authority Status: Active Receiving Water: -	Authorised Substances: Copper, Lead
26B	490	SW	515780 175350	Name: Stockley Park North Perimeter Status: Active Receiving Water: -	Authorised Substances: Cyanide
27B	490	SW	515780 175350	Name: Stockley Park Consortium Ltd Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Cyanide, Lead, Nickel, Zinc
28B	490	SW	515780 175350	Name: The Incinerator, Hillingdon Hospital Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Silver, Zinc, Phenol
29B	490	SW	515780 175350	Name: Apl Industrial Ltd Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel
30B	490	SW	515780 175350	Name: Attewell Ltd Status: Active Receiving Water: -	Authorised Substances: Copper
31B	490	SW	515780 175350	Name: S.grundon (ewelme) Ltd Status: Active Receiving Water: -	Authorised Substances: Arsenic, Chromium, Copper, Cyanide, Lead, Nickel, Zinc
32B	490	SW	515780 175350	Name: Lgc Ltd Status: Active Receiving Water: -	Authorised Substances: Zinc
33B	490	SW	515780 175350	Name: Page Aerospace Limited Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
34B	490	SW	515780 175350	Name: Mays Pressure Diecastings Ltd, Silverdale Ind Est. Hayes Status: Active Receiving Water: -	Authorised Substances: Zinc
35B	490	SW	515780 175350	Name: Euro Sheet Metal Ltd, 6 Aintree Rd, Perivale, Middx Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
36B	490	SW	515780 175350	Name: Martin-baker Aircraft Co Ltd Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
37B	490	SW	515780 175350	Name: Colart Fine Art And Graphics Ltd Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
38B	490	SW	515780 175350	Name: Longford li Landfill Site, Old Bath Rd, Colnbrook, Surrey Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Cyanide, Lead, Nickel, Zinc
39B	490	SW	515780 175350	Name: Metro Engineering And Plating, Eskdale Rd, Uxbridge Status: Active Receiving Water: -	Authorised Substances: Chromium, Lead, Nickel
40B	490	SW	515780 175350	Name: British Airways Plc, Heathrow Airport, Hounslow Status: Active	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc



ID	Distance (m)	Direction	NGR	Details	
Receiving Water: -					
41B	490	SW	515780 175350	Name: Bj's Company Ltd, Bideford Avenue, Greenford Status: Active Receiving Water: -	Authorised Substances: Copper, Cyanide, Nickel, Zinc
42B	490	SW	515780 175350	Name: H J Oliff, Uxbridge Rd, Haye Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Cyanide, Lead, Nickel, Zinc
43B	490	SW	515780 175350	Name: Jackson Plating, Fairfields Rd, Hounslow Status: Not Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
44B	490	SW	515780 175350	Name: Abel Metal Finishing Ltd, Steyning Way, Hounslow Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Cyanide, Nickel, Zinc
45B	490	SW	515780 175350	Name: Star Powder Coaters, Pasadena Trading Estate, Hayes, Middex Status: Active Receiving Water: -	Authorised Substances: Chromium
46B	490	SW	515780 175350	Name: Wyko Industrial Services, Long Drive, Greenford Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead
47B	490	SW	515780 175350	Name: Tpm Plating Co Ltd, Harris Way, Sunbury On Thames Status: Not Active Receiving Water: -	Authorised Substances: Chromium, Copper, Cyanide, Nickel, Zinc
48B	490	SW	515780 175350	Name: Vigin Atlantic Hanger, Exeter Rd, Heathrow Airport, Hounslow Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
49B	490	SW	515780 175350	Name: British Airways Companant Engineering, Hayes Status: Active Receiving Water: -	Authorised Substances: Chromium, Nickel, Zinc
50B	490	SW	515780 175350	Name: Colart Fine Art & Graphics Ltd, Whitefriars Avenue, Harrow Status: Not Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Silver, Zinc
51B	490	SW	515780 175350	Name: Dellfield Precision Engineering, South Ruslip Status: Active Receiving Water: -	Authorised Substances: Chromium
52B	490	SW	515780 175350	Name: Dewhurst Plc, Inverness Rd, Hounslow Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Nickel, Zinc
53B	490	SW	515780 175350	Name: Trimite Ltd, Arundel Rd, Uxbridge Ind. Est. Uxbridge Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Silver, Zinc
54B	490	SW	515780 175350	Name: Heathrow Airport, Speedbird House, London Heathrow Airport Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
55B	490	SW	515780 175350	Name: West Middlesex Surface Trwatments Ltd, Eskdale Rd, Uxbridge Status: Active Receiving Water: -	Authorised Substances: Chromium, Copper, Cyanide, Nickel, Zinc



ID	Distance (m)	Direction	NGR	Details
56B	490	SW	515780 175350	Name: Ivo Textiles Ltd, Trident Way, Southall Status: Active Receiving Water: - Authorised Substances: Chromium, Copper, Lead, Nickel, Zinc
57B	490	SW	515780 175350	Name: Thames Valley Power, Building 523 Stirling Rd, Heathrow Status: Active Receiving Water: - Authorised Substances: Copper
58B	490	SW	515780 175350	Name: Heathrow Airport Ltd, Building 694 Central Chilling Stn Status: Active Receiving Water: - Authorised Substances: Copper, Zinc
59B	490	SW	515780 175350	Name: Airscrew Ltd, 111 Windmill Rd, Sunbury-on-thames Status: Active Receiving Water: - Authorised Substances: Chromium
60B	490	SW	515780 175350	Name: Mogden Stw Status: Active Receiving Water: - Authorised Substances: None Consented

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

4

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

ID	Distance (m)	Direction	NGR	Details
65	217	NE	516405 175713	Address: Concord Cleaners, 29 Shrewsbury Walk, Isleworth, TW7 7DE Process: Dry Cleaning Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
66	430	SW	515990 175206	Address: Shell UK Ltd, 403-405 Twickenham Road, Isleworth, Middlesex, TW7 7ES Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
67	434	SW	516028 175181	Address: Pearl Dry Cleaners, 256 Twickenham Road, Isleworth, TW7 7DT Process: Dry Cleaning Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
68	451	W	515765 175555	Address: Currie Motors Ltd, 207-209 Worton Road, Isleworth, Middlesex, TW7 6DS Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified



### 2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

4

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
61	429	NE	516600 175800	<p>Address: TOLSONS COURT, OLD ISLEWORTH, MIDDLE, TOLSONS COURT, OLD ISLEWORTH, MI, MIDDLESEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.1449 Permit Version: 1</p> <p>Receiving Water: TIDAL THAMES Status: REVOKED - UNSPECIFIED Issue date: 27/01/1987 Effective Date: 27-Jan-1987 Revocation Date: 15/12/1993</p>
62	439	E	516660 175650	<p>Address: NAZARETH HOUSE, OLD ISLEWORTH, MIDDLE, NAZARETH HOUSE, OLD ISLEWORTH, MI, MIDDLESEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.1457 Permit Version: 1</p> <p>Receiving Water: RIVER THAMES Status: Lapsed under Schedule 23 Environment Act 1995 Issue date: 17/02/1987 Effective Date: 17-Feb-1987 Revocation Date: 01/10/1996</p>
63	457	E	516660 175730	<p>Address: LION WHARF, OLD ISLEWORTH, MIDDLESEX, LION WHARF, OLD ISLEWORTH, MIDDLE, MIDDLESEX Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.1443 Permit Version: 1</p> <p>Receiving Water: TIDAL RIVER THAMES Status: REVOKED - UNSPECIFIED Issue date: 17/02/1987 Effective Date: 17-Feb-1987 Revocation Date: 02/06/1993</p>
64B	490	SW	515780 175350	<p>Address: Mogden Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: TEMP.2778 Permit Version: 1</p> <p>Receiving Water: TIDAL THAMES Status: REVOKED (WRA 91, S88 &amp; SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 02/11/1989 Effective Date: 02-Nov-1989 Revocation Date: 31/03/2005</p>

### 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:

1

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Company	Address	Operational Status	Tier
69	425	SW	Thames Water Utilities Limited	Thames Water Utilities Limited, Mogden Sewage Treatment Works, Mogden Sewage Treatment Works, Mogden Lane, Isleworth, Middlesex, TW7 7LP	Current COMAH Site	COMAH Upper Tier Operator

## 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:

4

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

ID	Distance (m)	Direction	NGR	Details
1	436	N	516390.0 175994.0	Incident Date: 28-Jul-2003 Incident Identification: 177165.0 Pollutant: Oils and Fuel Pollutant Description: Other Oil or Fuel Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
2	438	N	516212.0 176029.0	Incident Date: 07-May-2003 Incident Identification: 156615.0 Pollutant: Oils and Fuel Pollutant Description: Mixed/Waste Oils Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
3A	464	NE	516530.0 175940.0	Incident Date: 10-Jul-2002 Incident Identification: 90518.0 Pollutant: Other Pollutant Pollutant Description: Other Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
4A	464	NE	516530.0 175940.0	Incident Date: 10-Jul-2002 Incident Identification: 90518.0 Pollutant: Other Pollutant Pollutant Description: Other Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)



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

0

Database searched and no data found.

---

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

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

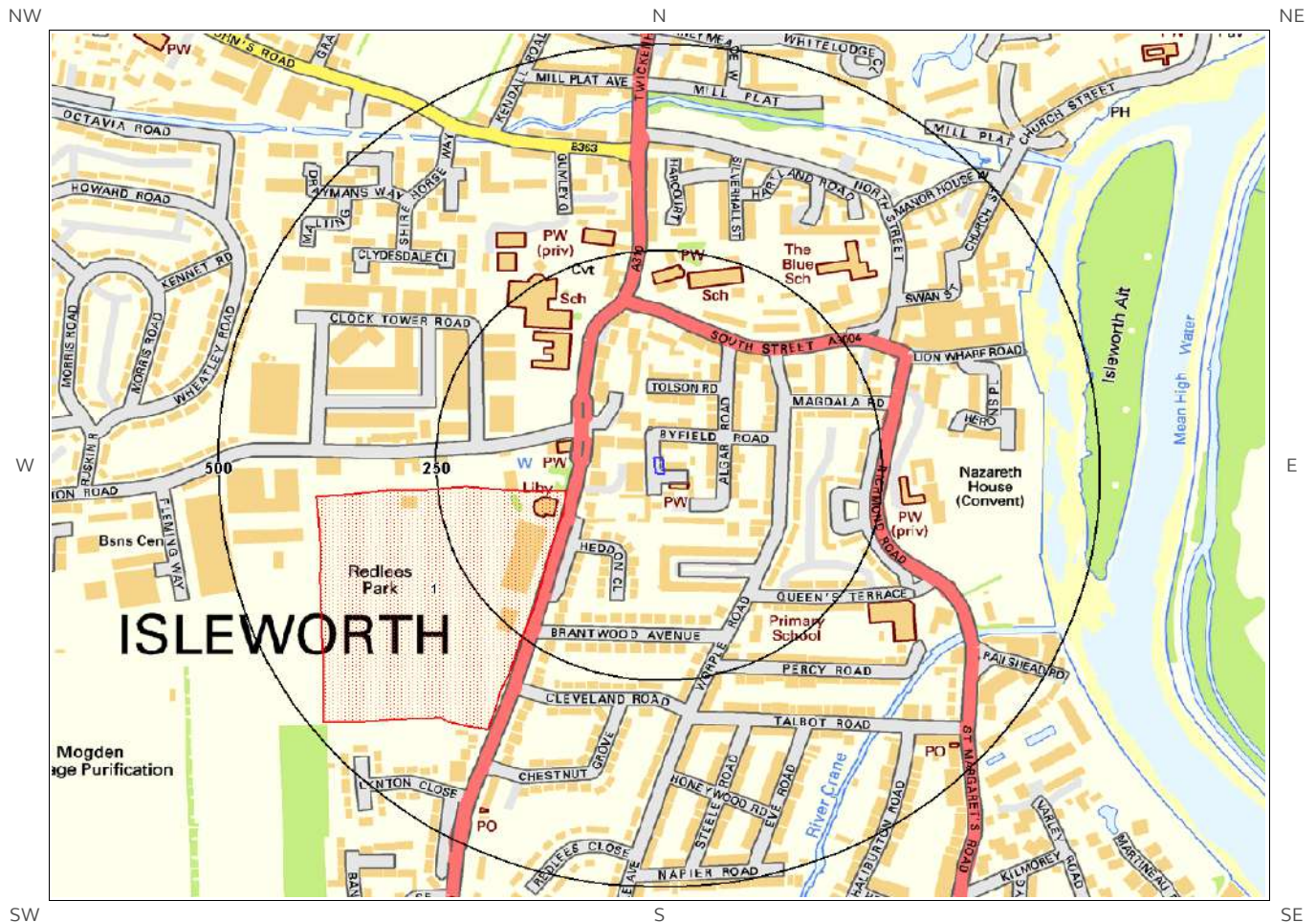
0

Database searched and no data found.

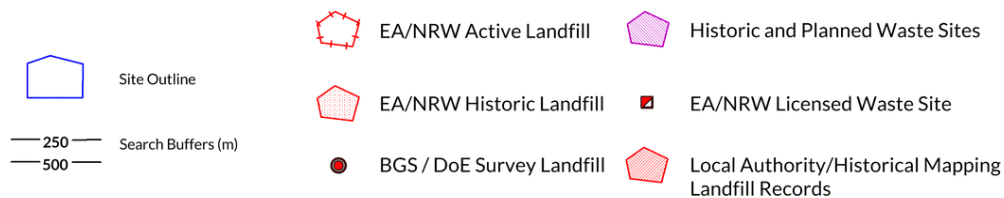
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# 3. Landfill and Other Waste Sites Map



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# 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:

7

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	105	W		Site Address: Redlees Park, Isleworth, Hounslow, London Waste Licence: - Site Reference: 8HO036 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Greenhams sand and Gravel Licence Holder: - First Recorded: 31-Dec-1912 Last Recorded: 31-Dec-1946
Not shown	789	S		Site Address: Crane Avenue Allotments, St. Maragrets, Isleworth, Hounslow, London Waste Licence: - Site Reference: 8HO085 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1949 Last Recorded: 31-Dec-1961
Not shown	795	S		Site Address: Ivybridge, Isleworth, Hounslow, London Waste Licence: - Site Reference: 8HO037, HOU038 Waste Type: Inert, Industrial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Willments Limited Licence Holder: Willmont Brothers First Recorded: 31-Dec-1955 Last Recorded: 31-Dec-1966
Not shown	906	SW		Site Address: Mogden Sewage Works, Lampton Road, Mogden Waste Licence: - Site Reference: 8HO059, HOUX12 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: Ham River Construction Limited First Recorded: 31-Dec-1930 Last Recorded: 31-Dec-1935
Not	1061	NW		Site Address: London Road Sports Licence Issue:



ID	Distance (m)	Direction	NGR	Details	
shown				Ground, London Road Waste Licence: - Site Reference: 8HO035, HOU036 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Surrendered: Licence Holder Address: - Operator: Greenhams sand and Gravel Licence Holder: - First Recorded: 31-Dec-1934 Last Recorded: 31-Dec-1951
Not shown	1132	S		Site Address: Twickenham Trading Estate, St. Maragrets, Isleworth, Hounslow, London Waste Licence: - Site Reference: 8HO038 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: Willments Limited Licence Holder: - First Recorded: 31-Dec-1946 Last Recorded: 31-Dec-1963
Not shown	1357	W		Site Address: Bridge Road, Woodlands, Hounslow, London Waste Licence: - Site Reference: 8HO068 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: 31-Dec-1946 Last Recorded: 31-Dec-1946

### 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	1065	NW	515057 176049	Thornbury Park	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:

5

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

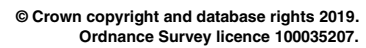
ID	Distance (m)	Direction	NGR	Details
Not shown	960	SW	515401 175066	<p>Site Address: Land / Premises At, Mogden Lane, Isleworth, Middlesex, TW7 7LP Type: Sewage sludge treatment Size: &gt;= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TWU014 EPR reference: EA/EPR/CP3999LE/A001 Operator: Thames Water Utilities Ltd Waste Management licence No: 100679 Annual Tonnage: 74999.0</p> <p>Issue Date: 15/01/2009 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Mogden Sewage Treatment Works Correspondence Address: -</p>
Not shown	1218	SW	515281 174792	<p>Site Address: Mogden Sewage Treatment Works, Mogden Lane, Isleworth, Middlesex, TW7 7LP Type: Landfill Gas Engine (&lt;3 mW) Size: &lt; 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TWA608 EPR reference: EA/EPR/WP3533LT/V003 Operator: Thames Water Utilities Limited Waste Management licence No: 400056 Annual Tonnage: 0.0</p> <p>Issue Date: 08/04/2013 Effective Date: - Modified: 17/03/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Mogden Combined Heat And Power Plant Correspondence Address: -</p>
Not shown	1391	SE	516986 174406	<p>Site Address: Sharpe Refinery Service (Hydocarbons) Lt, Arlington Works, 21, Arlington Road, Twickenham, Middx, TW1 2BB Type: Special Waste Transfer Station Size: &gt;= 25000 tonnes &lt; 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SHA002 EPR reference: - Operator: Sharpe Refinery Service (Hydocarbons) Ltd Waste Management licence No: 83207 Annual Tonnage: 60667.0</p> <p>Issue Date: 28/02/1995 Effective Date: - Modified: 04/02/1999 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Sharpes, Refinery, Twickenham, Tw1 Correspondence Address: Sharpe Refinery Service (Hydocarbons) Lt, Arlington Works, 21, Arlington Road, Twickenham, Middx, TW1 2BB</p>
Not shown	1395	SE	516962 174386	<p>Site Address: Sharpe Refinery Service (Hydocarbons) Lt, Arlington Works, Arlington Road, Twickenham, Middlesex, TW1 2BB Type: Special Waste Transfer Station Size: &gt;= 25000 tonnes &lt; 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SHA002 EPR reference: EA/EPR/BP3590EU/V003 Operator: Sharpe Refinery Service ( Hydro Carbons ) Ltd Waste Management licence No: 83207 Annual Tonnage: 60667.0</p> <p>Issue Date: 28/02/1995 Effective Date: - Modified: 04/02/1999 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Arlington Works Correspondence Address: -</p>
Not shown	1429	W	514794 175746	<p>Site Address: Hounslow London Borough Council, Bridge Road Depot, Pears Road, Hounslow, Middlesex, TW3 1SG Type: Transfer Station taking Non-Biodegradable Wastes Size: &gt;= 25000 tonnes &lt; 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HOU001 EPR reference: EA/EPR/VP3596NJ/A001</p> <p>Issue Date: 03/06/1996 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Pears Road, Hounslow Correspondence Address: -</p>



ID	Distance (m)	Direction	NGR	Details
				Operator: Hounslow London Borough Council Waste Management licence No: 80044 Annual Tonnage: 51100.0

---







## 4. Current Land Uses

### 4.1 Current Industrial Data

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

16

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	11	W	Electricity Sub Station	516204 175586	Greater London, TW7	Electrical Features	Infrastructure and Facilities
2	55	SW	Works	516179 175531	Greater London, TW7	Unspecified Works Or Factories	Industrial Features
3	147	N	Foundry Cars	516189 175735	79, South Street, Isleworth, Greater London, TW7 7AA	Vehicle Repair, Testing and Servicing	Repair and Servicing
4	154	NE	Jubilee Service Centre	516340 175693	South Street, Isleworth, Greater London, TW7 7AL	Vehicle Repair, Testing and Servicing	Repair and Servicing
5	171	E	Electricity Sub Station	516390 175635	Greater London, TW7	Electrical Features	Infrastructure and Facilities
6	180	W	Works	516046 175652	Greater London, TW7	Unspecified Works Or Factories	Industrial Features
7A	189	W	Works	516034 175644	Greater London, TW7	Unspecified Works Or Factories	Industrial Features
8A	194	W	Works	516033 175658	Greater London, TW7	Unspecified Works Or Factories	Industrial Features
9	209	NE	Electricity Sub Station	516338 175767	Greater London, TW7	Electrical Features	Infrastructure and Facilities
10	209	SE	Electricity Sub Station	516307 175378	Greater London, TW7	Electrical Features	Infrastructure and Facilities
11	212	NW	Warehouse	516032 175698	Greater London, TW7	Container and Storage	Transport, Storage and Delivery
12	217	NW	Works	516037 175714	Greater London, TW7	Unspecified Works Or Factories	Industrial Features
13B	227	NW	Works	516037 175732	Greater London, TW7	Unspecified Works Or Factories	Industrial Features
14	227	S	Wordsworth Transport Company	516261 175346	87, Worple Road, Isleworth, Greater London, TW7 7AS	Waste Storage, Processing and Disposal	Infrastructure and Facilities
15B	232	NW	Dalkia Ltd	516033 175735	135, Clock Tower Road, Isleworth, Greater London, TW7 6DT	Electrical and Electronic Engineers	Engineering Services
16	240	W	Electricity Sub Station	515976 175570	Greater London, TW7	Electrical Features	Infrastructure and Facilities



## 4.2 Petrol and Fuel Sites

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

1

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

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
17	422	SW	515995 175213	SHELL	403-405 Twickenham Road, Lynton Close, Isleworth, Outer London, TW7 7ES	No	Open

## 4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

0

Database searched and no data found.

## 4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

0

Database searched and no data found.



# 5. Geology

## 5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

---

## 5.2 Superficial Ground and Drift Geology

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)

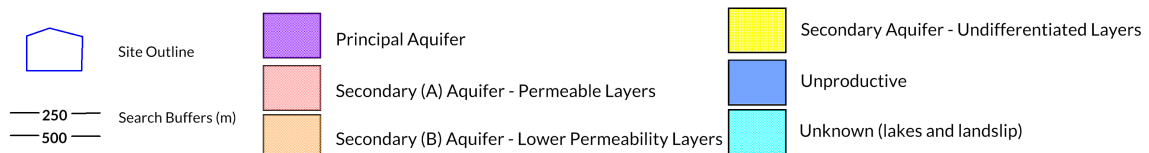


# 6 Hydrogeology and Hydrology

## 6a. Aquifer Within Superficial Geology



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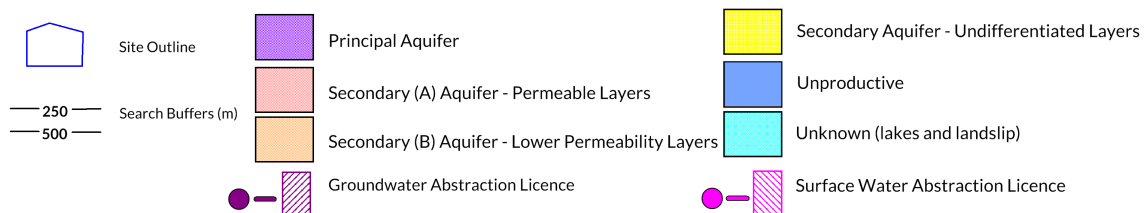




# 6b. Aquifer Within Bedrock Geology and Abstraction Licences

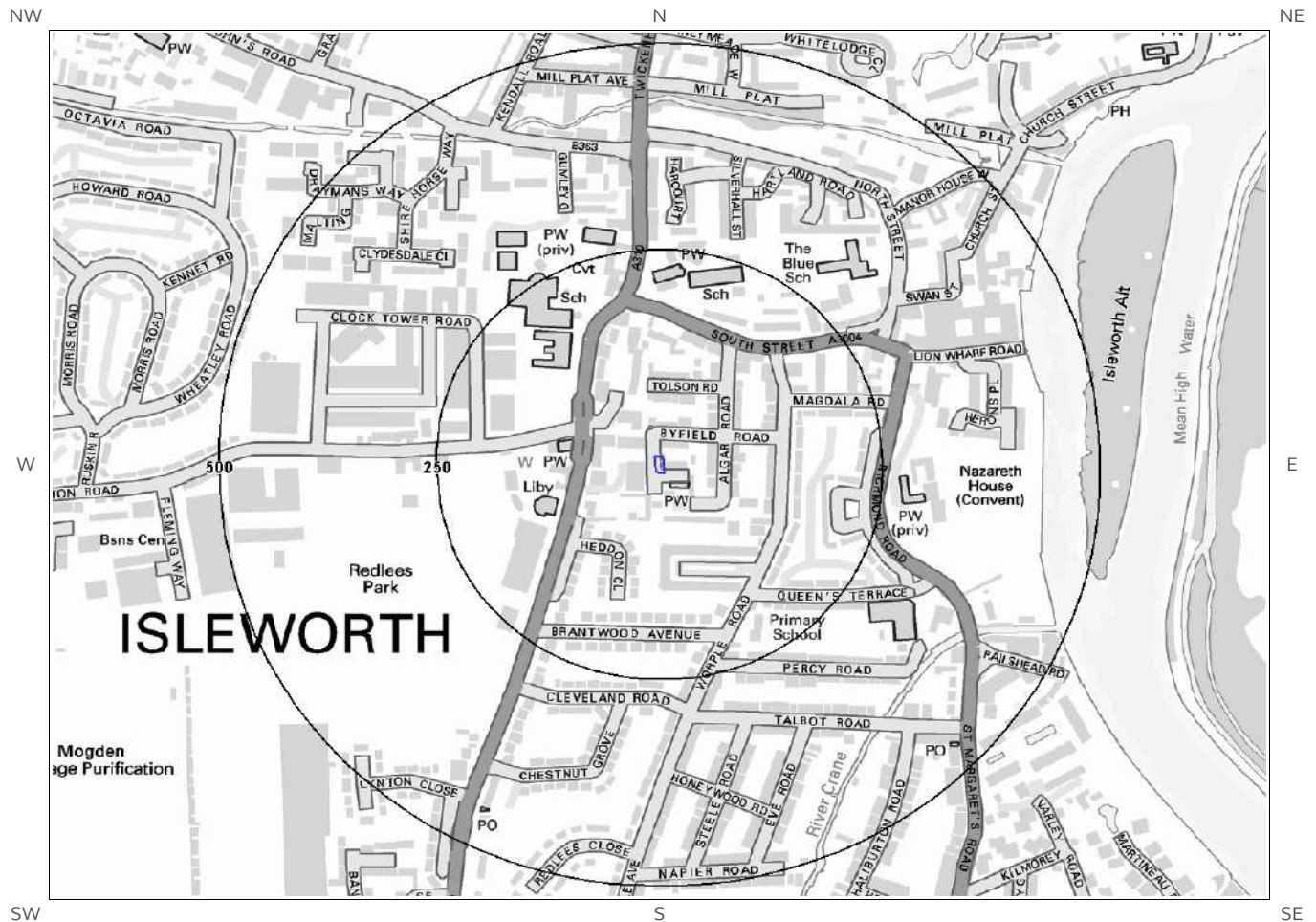


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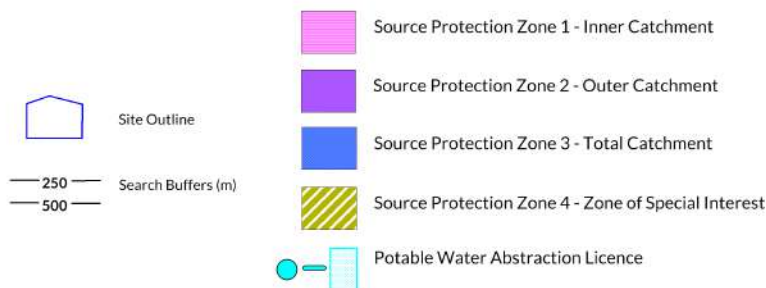




# 6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences

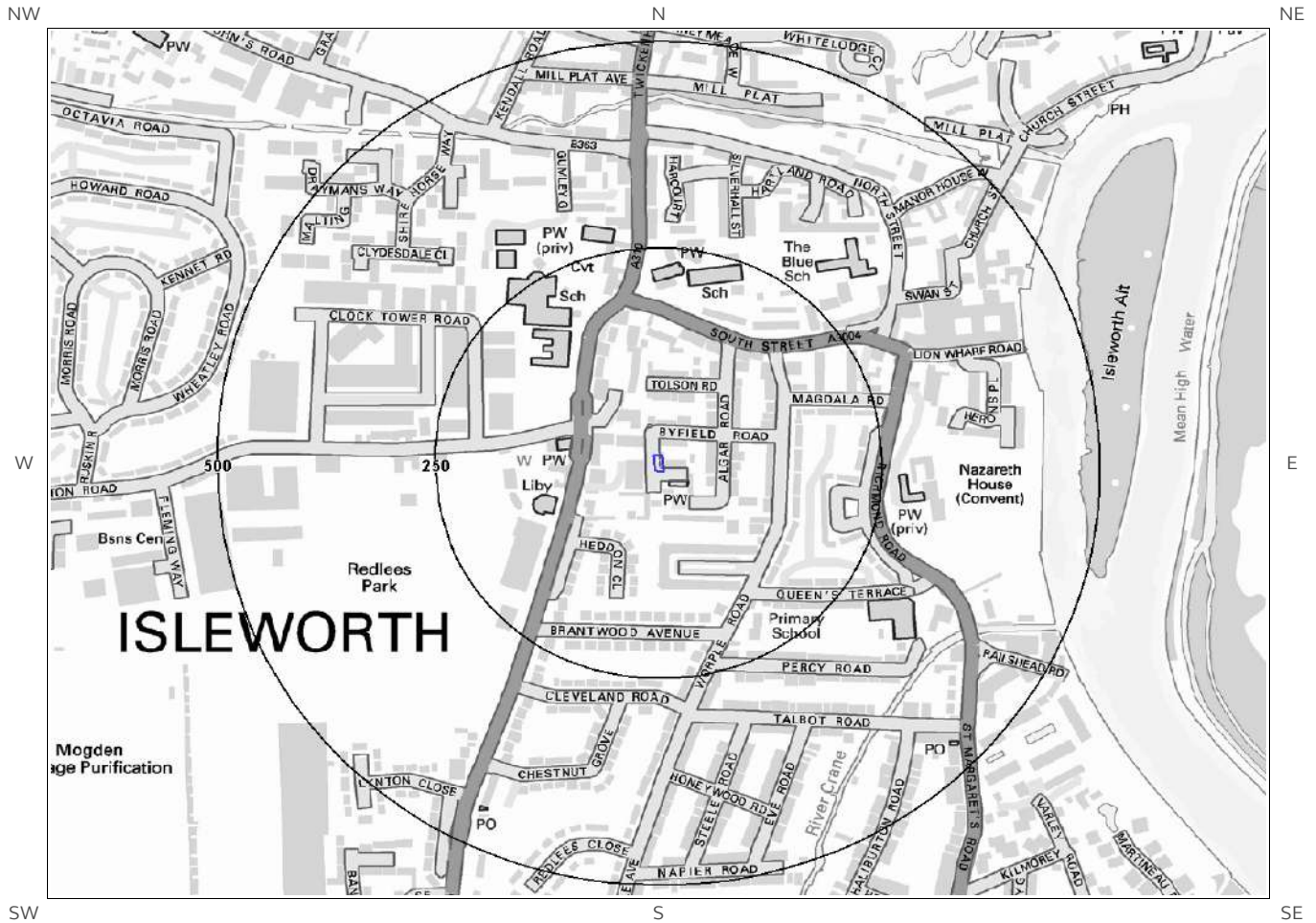


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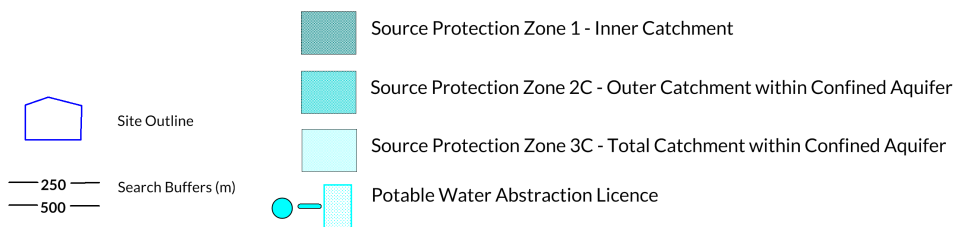




# 6d. Hydrogeology – Source Protection Zones within confined aquifer

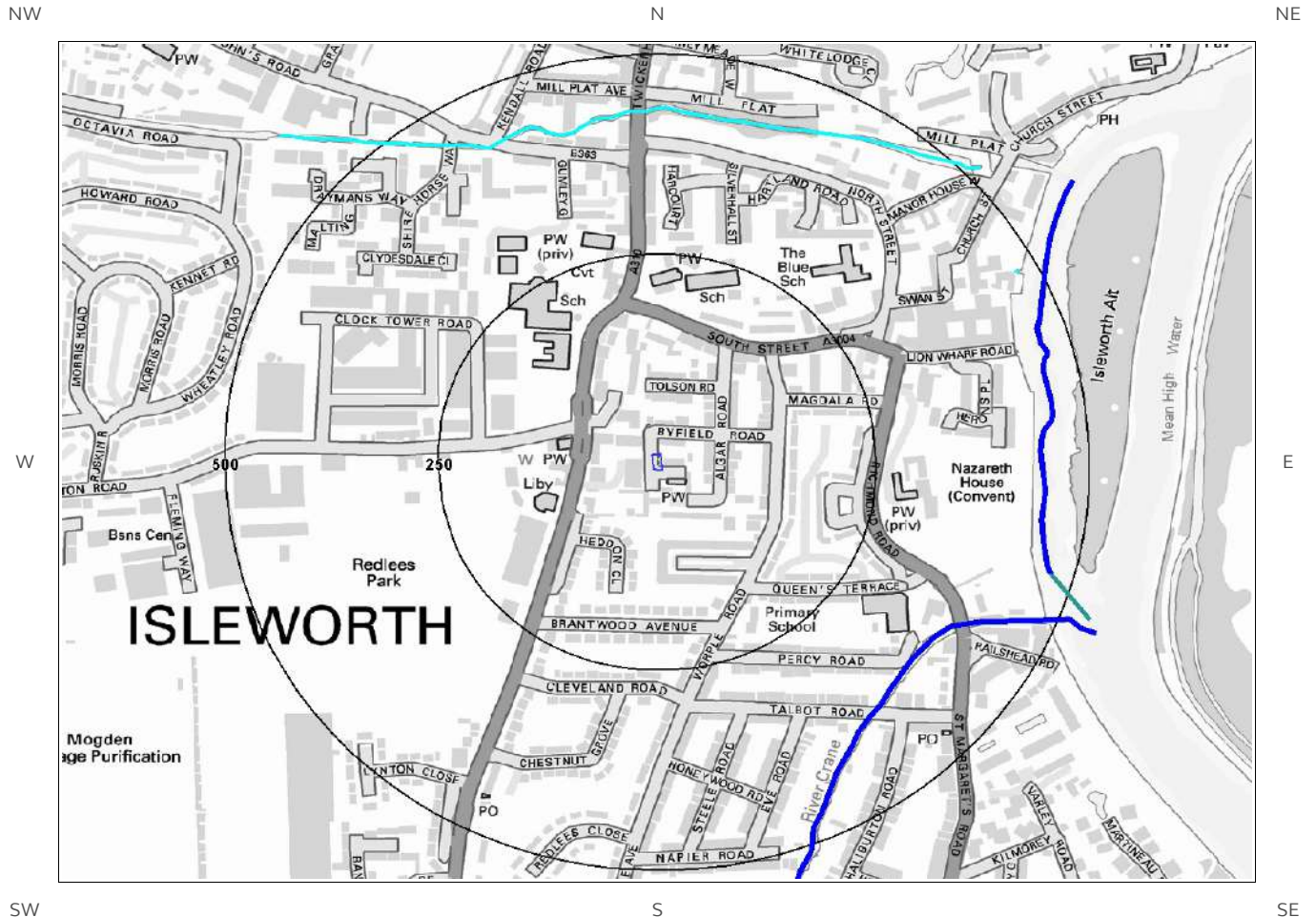


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# 6e. Hydrology – Watercourse Network and River Quality



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# 6. Hydrogeology and Hydrology

## 6.1 Aquifer within Superficial Deposits

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

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
9	123	W	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
2	149	W	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
7	418	E	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



## 6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

Identified

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

ID	Distance (m)	Direction	NGR	Details
Not shown	1128	SE	516800 174600	Status: Historical Licence No: 28/39/34/0006 Details: Lake & Pond Throughflow Direct Source: THAMES GROUNDWATER Point: BOREHOLE AT ST. MARGARET'S LAKE, TWICKENHAM Data Type: Point Name: ST MARGARETS RES GROUNDS Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: - Expiry Date: - Issue No: - Version Start Date: 08/10/1982 Version End Date: -
Not shown	1230	E	517450 175700	Status: Active Licence No: 28/39/35/0006 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE B GRAVEL AT ROYAL MID SURREY GOLF CLUB, RICHMOND Data Type: Point Name: ROYAL MID SURREY GOLF CLUB Annual Volume (m³): 43,000 Max Daily Volume (m³): 480 Original Application No: - Original Start Date: - Expiry Date: - Issue No: - Version Start Date: 28/03/1996 Version End Date: -
Not shown	1230	E	517460 175750	Status: Historical Licence No: 28/39/35/0006 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: GRAVEL AT ROYAL MID SURREY GOLF CLUB, RICHMOND Data Type: Line Name: ROYAL MID SURREY GOLF CLUB Annual Volume (m³): 43,000 Max Daily Volume (m³): 480 Original Application No: - Original Start Date: - Expiry Date: - Issue No: - Version Start Date: 28/03/1996 Version End Date: -
Not shown	1245	E	517460 175750	Status: Active Licence No: 28/39/35/0006 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE A GRAVEL AT ROYAL MID SURREY GOLF CLUB, RICHMOND Data Type: Point Name: ROYAL MID SURREY GOLF CLUB Annual Volume (m³): 43,000 Max Daily Volume (m³): 480 Original Application No: - Original Start Date: - Expiry Date: - Issue No: - Version Start Date: 28/03/1996 Version End Date: -
Not shown	1413	NE	517100 176700	Status: Active Licence No: 28/39/37/0005 Details: Horticultural Watering Direct Source: THAMES GROUNDWATER Point: BOREHOLE 'B' AT SYON PARK, BRENTFORD Data Type: Point Name: Trustees Of Syon Park Estate Annual Volume (m³): 9,092 Max Daily Volume (m³): 218 Original Application No: - Original Start Date: - Expiry Date: - Issue No: - Version Start Date: 28/09/2010 Version End Date: -
Not shown	1413	NE	517100 176700	Status: Active Licence No: 28/39/37/0005 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE 'B' AT SYON PARK, BRENTFORD Data Type: Point Name: Trustees Of Syon Park Estate Annual Volume (m³): 9,092 Max Daily Volume (m³): 218 Original Application No: - Original Start Date: - Expiry Date: - Issue No: - Version Start Date: 28/09/2010 Version End Date: -



ID	Distance (m)	Direction	NGR	Details	
Not shown	1557	W	514740 176090	Status: Historical Licence No: 28/39/37/0008 Details: Pollution Remediation Direct Source: THAMES GROUNDWATER Point: POINT 'A' AT BROADWAY SERVICE STATION, HOUNSLOW, MIDDLESEX Data Type: Point Name: TOTALFINAELF UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 28/03/2002 Version End Date:
Not shown	1575	E	517800 175650	Status: Active Licence No: 28/39/35/0009 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: GRAVEL AT RICHMOND ATHLETICS GROUND, KEW FOOT ROAD, RICHMOND Data Type: Point Name: RICHMOND ATHLETICS ASSOC LTD	Annual Volume (m³): 15,911 Max Daily Volume (m³): 75 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 01/04/2008 Version End Date:
Not shown	1608	NE	517000 177000	Status: Active Licence No: 28/39/37/0005 Details: Horticultural Watering Direct Source: THAMES GROUNDWATER Point: BOREHOLE 'A' AT SYON PARK, BRENTFORD Data Type: Point Name: Trustees Of Syon Park Estate	Annual Volume (m³): 9,092 Max Daily Volume (m³): 218 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 28/09/2010 Version End Date:
Not shown	1608	NE	517000 177000	Status: Active Licence No: 28/39/37/0005 Details: Spray Irrigation - Direct Direct Source: THAMES GROUNDWATER Point: BOREHOLE 'A' AT SYON PARK, BRENTFORD Data Type: Point Name: Trustees Of Syon Park Estate	Annual Volume (m³): 9,092 Max Daily Volume (m³): 218 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 28/09/2010 Version End Date:
Not shown	1727	SE	517448 174350	Status: Historical Licence No: TH/039/0034/003 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: THAMES GROUNDWATER Point: RIVER GRAVELS AT TWICKENHAM - POINT A Data Type: Point Name: Kier Construction Limited	Annual Volume (m³): 18,144 Max Daily Volume (m³): 432 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 23/04/2018 Version End Date:
Not shown	1734	SE	517490 174383	Status: Historical Licence No: TH/039/0034/003 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: THAMES GROUNDWATER Point: RIVER GRAVELS AT TWICKENHAM - POINT B Data Type: Point Name: Kier Construction Limited	Annual Volume (m³): 18,144 Max Daily Volume (m³): 432 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 23/04/2018 Version End Date:
Not shown	1780	SE	517480 174308	Status: Historical Licence No: TH/039/0034/003 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: THAMES GROUNDWATER Point: RIVER GRAVELS AT TWICKENHAM - POINT D Data Type: Point Name: Kier Construction Limited	Annual Volume (m³): 18,144 Max Daily Volume (m³): 432 Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 23/04/2018 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1782	SE	517521 174347	<p>Status: Historical Licence No: TH/039/0034/003 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: THAMES GROUNDWATER Point: RIVER GRAVELS AT TWICKENHAM - POINT C Data Type: Point Name: Kier Construction Limited</p> <p>Annual Volume (m³): 18,144 Max Daily Volume (m³): 432 Original Application No: - Original Start Date: - Expiry Date: - Issue No: - Version Start Date: 23/04/2018 Version End Date: -</p>

## 6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

Identified

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

ID	Distance (m)	Direction	NGR	Details
Not shown	1076	SW	515410 174860	<p>Status: Historical Licence No: 28/39/37/0007 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: THAMES SURFACE WATER - NON TIDAL Point: D.OF NORTHUMBERLAND- MOGDEN SEWAGE TREATMENT WRKS, ISLEWORTH Data Type: Point Name: THAMES WATER UTILITIES LTD</p> <p>Annual Volume (m³): 1,752,000 Max Daily Volume (m³): 7,200 Application No: - Original Start Date: 17/08/1999 Expiry Date: 31/08/2009 Issue No: 1 Version Start Date: 01/01/2007 Version End Date: -</p>
Not shown	1076	SW	515410 174860	<p>Status: Historical Licence No: 28/39/37/0007 Details: Non-Evaporative Cooling Direct Source: THAMES SURFACE WATER - NON TIDAL Point: D.OF NORTHUMBERLAND- MOGDEN SEWAGE TREATMENT WRKS, ISLEWORTH Data Type: Point Name: THAMES WATER UTILITIES LTD</p> <p>Annual Volume (m³): 1,752,000 Max Daily Volume (m³): 7,200 Application No: - Original Start Date: 17/08/1999 Expiry Date: 31/08/2009 Issue No: 1 Version Start Date: 17/08/1999 Version End Date: -</p>
Not shown	1076	SW	515410 174860	<p>Status: Historical Licence No: 28/39/37/0007 Details: Non-Evaporative Cooling Direct Source: THAMES SURFACE WATER - NON TIDAL Point: MOGDEN SEWAGE TREATMENT WORKS, ISLEWORTH Data Type: Point Name: THAMES WATER UTILITIES LTD</p> <p>Annual Volume (m³): - Max Daily Volume (m³): - Application No: - Original Start Date: - Expiry Date: 31/08/2009 Issue No: 1 Version Start Date: 17/08/1999 Version End Date: -</p>
Not shown	1080	SW	515406 174858	<p>Status: Historical Licence No: TH/039/0037/001 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: THAMES SURFACE WATER - NON TIDAL Point: DUKE OF NORTHUMBERLAND RIVER - MOGDEN SEWAGE TREATMENT WORKS Data Type: Point Name: THAMES WATER UTILITIES LTD</p> <p>Annual Volume (m³): 1,752,000 Max Daily Volume (m³): 7,200 Application No: - Original Start Date: 12/08/2009 Expiry Date: 31/03/2013 Issue No: 1 Version Start Date: 12/08/2009 Version End Date: -</p>
Not shown	1080	SW	515406 174858	<p>Status: Historical Licence No: TH/039/0037/001 Details: Non-Evaporative Cooling Direct Source: THAMES SURFACE WATER -</p> <p>Annual Volume (m³): 1,752,000 Max Daily Volume (m³): 7,200 Application No: - Original Start Date: 12/08/2009</p>



ID	Distance (m)	Direction	NGR	Details
				NON TIDAL Point: DUKE OF NORTHUMBERLAND RIVER - MOGDEN SEWAGE TREATMENT WORKS Data Type: Point Name: THAMES WATER UTILITIES LTD Expiry Date: 31/03/2013 Issue No: 1 Version Start Date: 12/08/2009 Version End Date:
Not shown	1080	SW	515406 174858	Status: Active Licence No: TH/039/0037/004 Details: General Use Relating To Secondary Category (Low Loss) Direct Source: THAMES SURFACE WATER - NON TIDAL Point: DUKE OF NORTHUMBERLAND RIVER - MOGDEN SEWAGE TREATMENT WORKS Data Type: Point Name: Thames Water Utilities Ltd Annual Volume (m³): 1,752,000 Max Daily Volume (m³): 7,200 Application No: - Original Start Date: 01/04/2013 Expiry Date: 31/03/2025 Issue No: 1 Version Start Date: 01/04/2013 Version End Date:

## 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	Major 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.
477	E	Major Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.

## 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	375	River Crane	Tidal river or stream.	Catchment Area: Thames Relationship to Ground Level: On ground surface



ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	SE			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
1	375	River Crane	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
	SE			
2	413	Duke of Northumberland's River	Inland river not influenced by normal tidal action.	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): 6.3
	N			
Not shown	413 N	Duke of Northumberland's River	Inland river not influenced by normal tidal action.	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): 6.3
3	444	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
	E			
Not shown	444 E	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
4	474	River Thames	Foreshore. Watercourse flows over the foreshore between mean high water and mean low water.	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
	E			
5	474	-	Inland river not influenced by normal tidal action.	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
	NE			
Not shown	474 E	River Thames	Foreshore. Watercourse flows over the foreshore between mean high water and mean low water.	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	474 NE	-	Inland river not influenced by normal tidal action.	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	475	-	Inland river not influenced by normal tidal action.	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
	NE			
Not shown	475 NE	-	Inland river not influenced by normal tidal action.	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

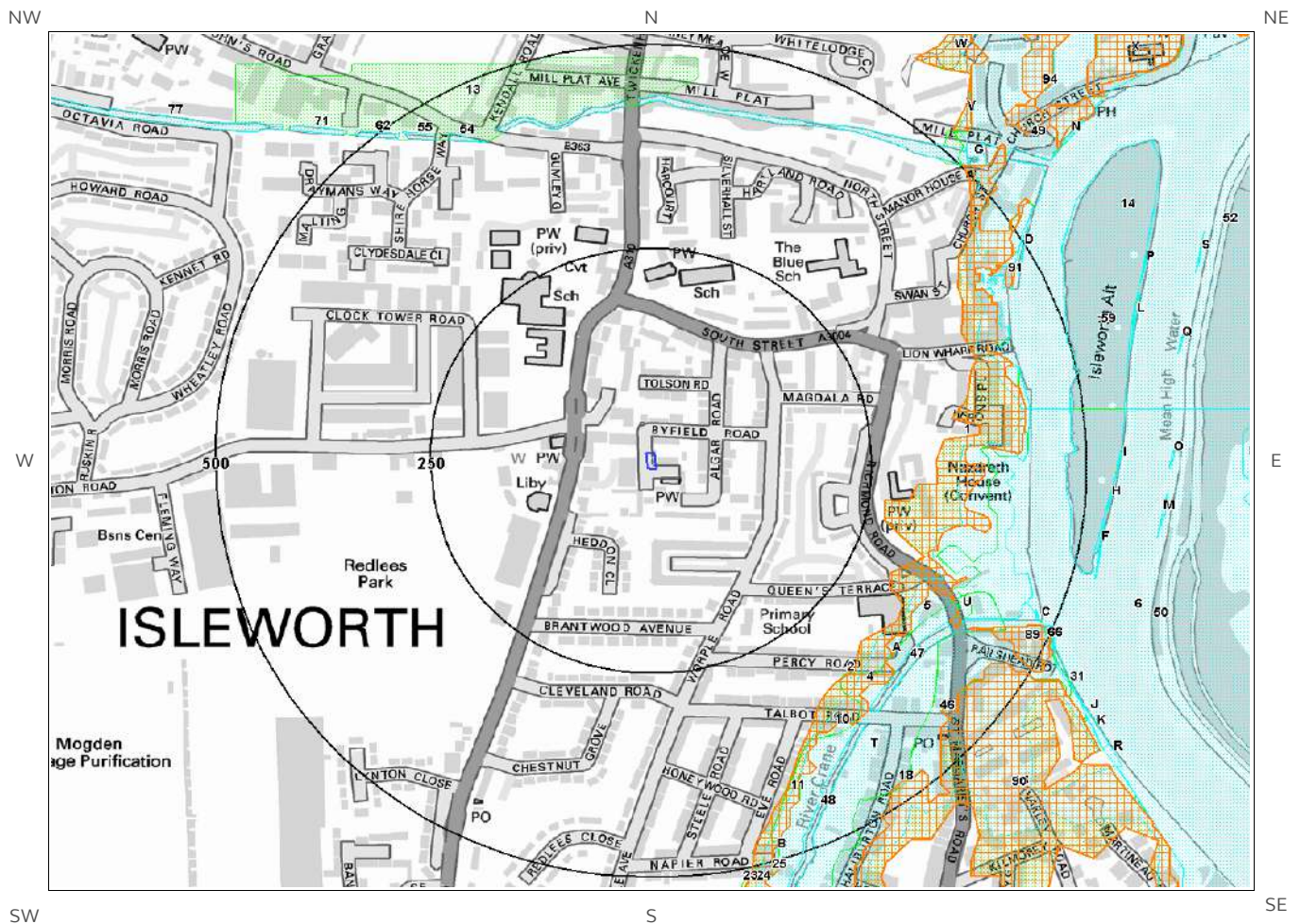
None identified

Database searched and no data found.

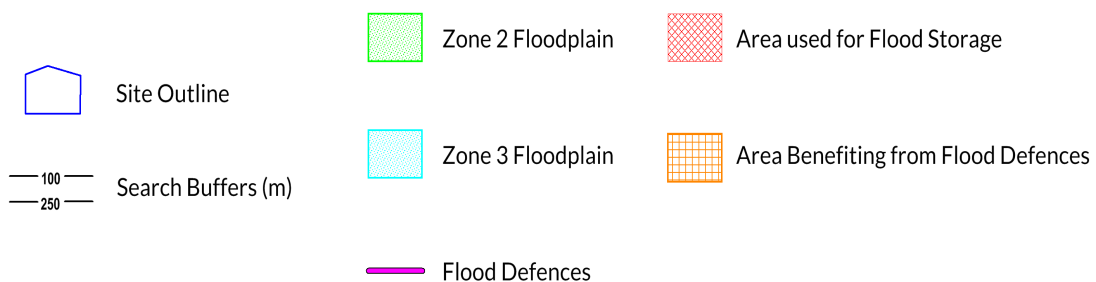
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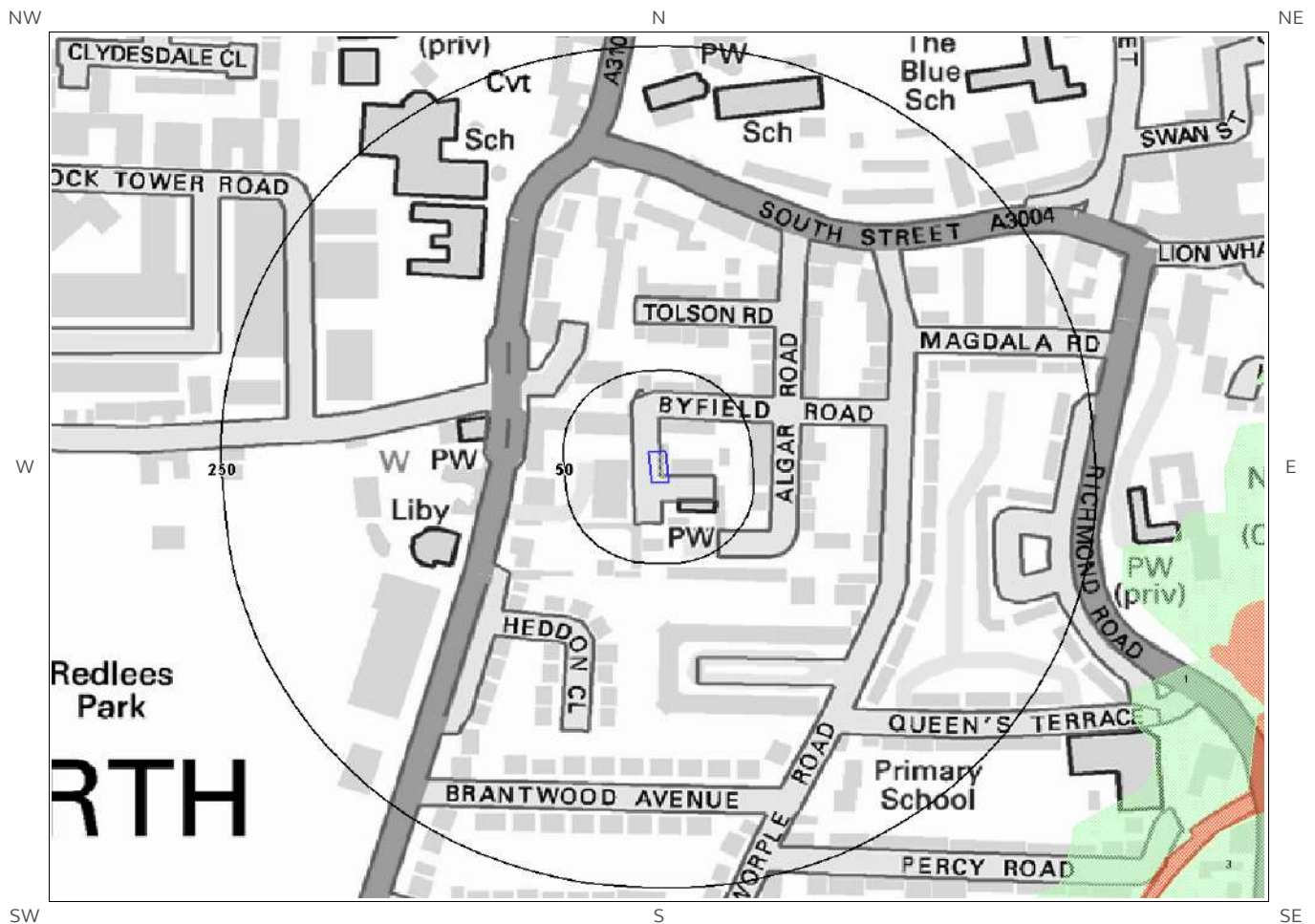
# 7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



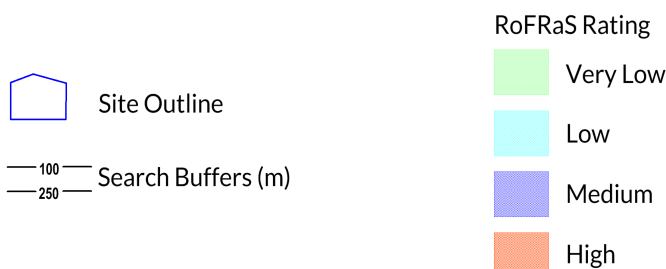
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# 7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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# 7 Flooding

## 7.1 River and Coastal Zone 2 Flooding

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

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

Database searched and no data found.

---

## 7.2 River and Coastal Zone 3 Flooding

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

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

Database searched and no data found.

---

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

Highest risk of flooding onsite Very Low

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

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

---

## 7.4 Flood Defences

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

---

## 7.5 Areas benefiting from Flood Defences

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

---

## 7.6 Areas benefiting from Flood Storage

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

None identified

---

## 7.7 Groundwater Flooding Susceptibility Areas

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

Identified

Clearwater Flooding or Superficial Deposits Flooding

Superficial Deposits Flooding

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

---

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

Potential at Surface

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

---

## 7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result

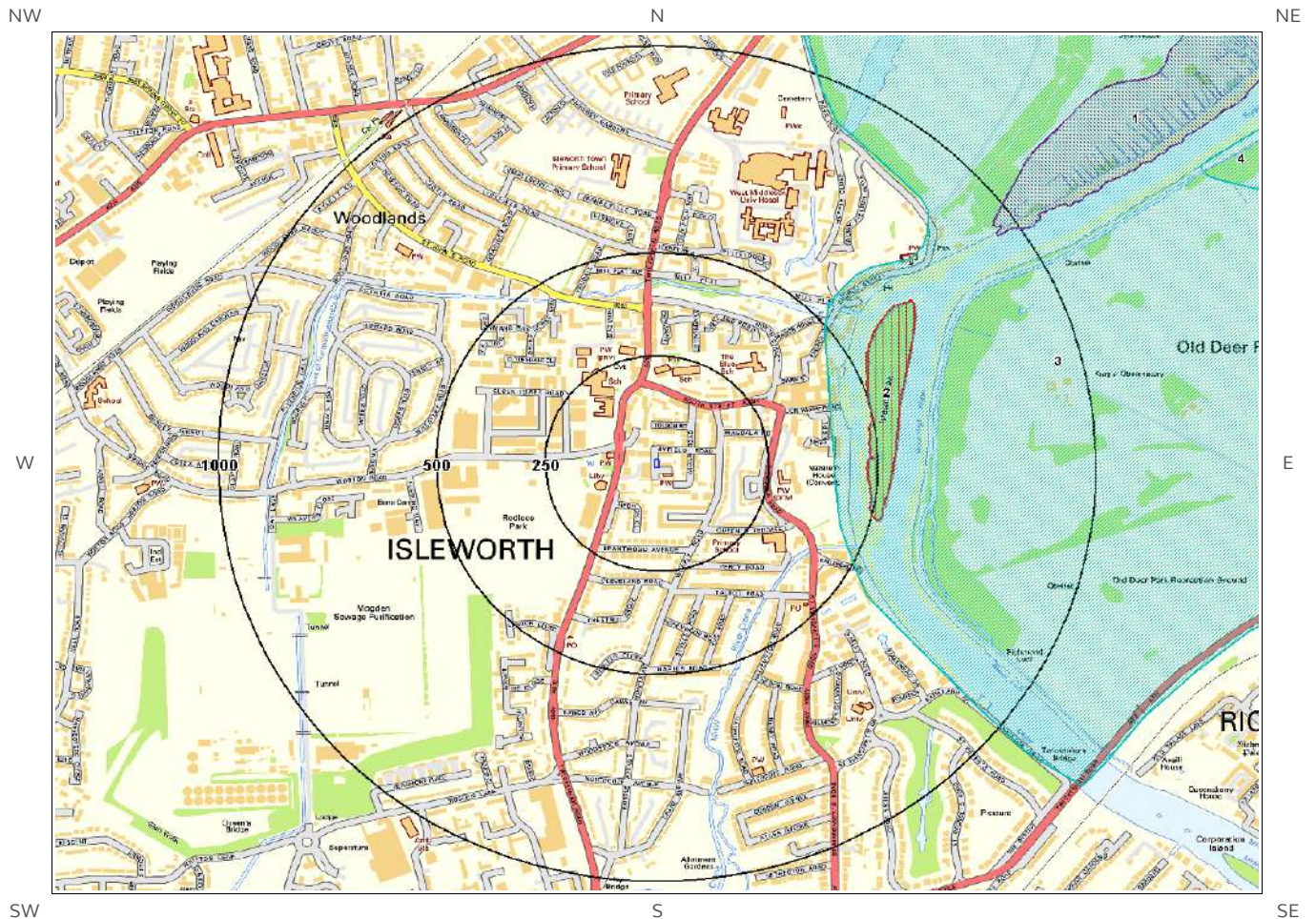
Moderate

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

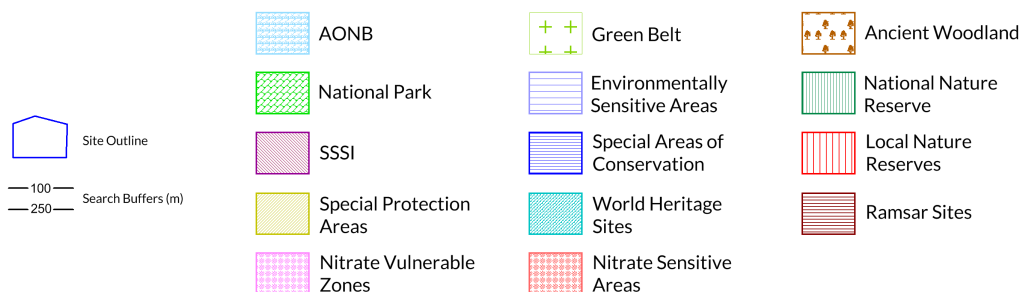
The confidence rating is on a threefold scale - Low, Moderate and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a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



# 8. Designated Environmentally Sensitive Sites Map



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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:

1

The following Site of Special Scientific Interest (SSSI) records provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	SSSI Name	Data Source
1	946	NE	Syon Park	Natural England

## 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:

1

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
2	474	E	Isleworth Ait	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
3	400	E	Royal Botanic Gardens, Kew Buffer Zone	Historic England
4	1430	NE	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.

---

### 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

Public information access office  
Public Health England, Wellington House  
133-155 Waterloo Road, London, SE1 8UG  
[www.gov.uk/phe](http://www.gov.uk/phe)

Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000

## The Coal Authority

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Mansfield  
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Tel: 0345 7626 848  
DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)

## Ordnance Survey

Adanac Drive, Southampton  
SO16 0AS  
Tel: 08456 050505

## Local Authority

Authority: London Borough of Hounslow  
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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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>

Arcadis Consulting UK Ltd  
Rydon House, PYNES HILL,  
EXETER, EX2 5AZ

Groundsure Reference: GS-6295827  
Your Reference: 10030793\_-\_Byfield\_Road  
Report Date: 9 Sep 2019  
Report Delivery Method: Email - pdf

## Geo Insight

Address: 516224, 175583,

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: 516224, 175583,  
Date: 9 Sep 2019  
Reference: GS-6295827  
Client: Arcadis Consulting UK Ltd



Aerial Photograph Capture date: 20-Apr-2015  
Grid Reference: 516223,175583  
Site Size: 0.0195ha

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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	2	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	6
4.3 Current Ground Workings	0	0	0	0	0

## 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	1		
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	9	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	0	Not Searched	
9.5 Railway Projects	0	0	0	0	

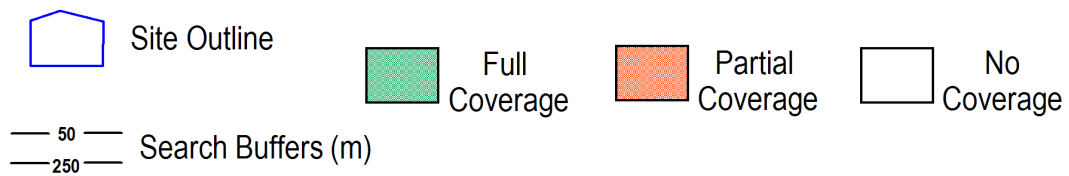


# 1:10,000 Scale Availability



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	571.0	Some deposits are mapped	Full	Full	Some deposits are mapped
3	1215.0	Some deposits are mapped	Full	Full	No coverage
4	1344.0	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.

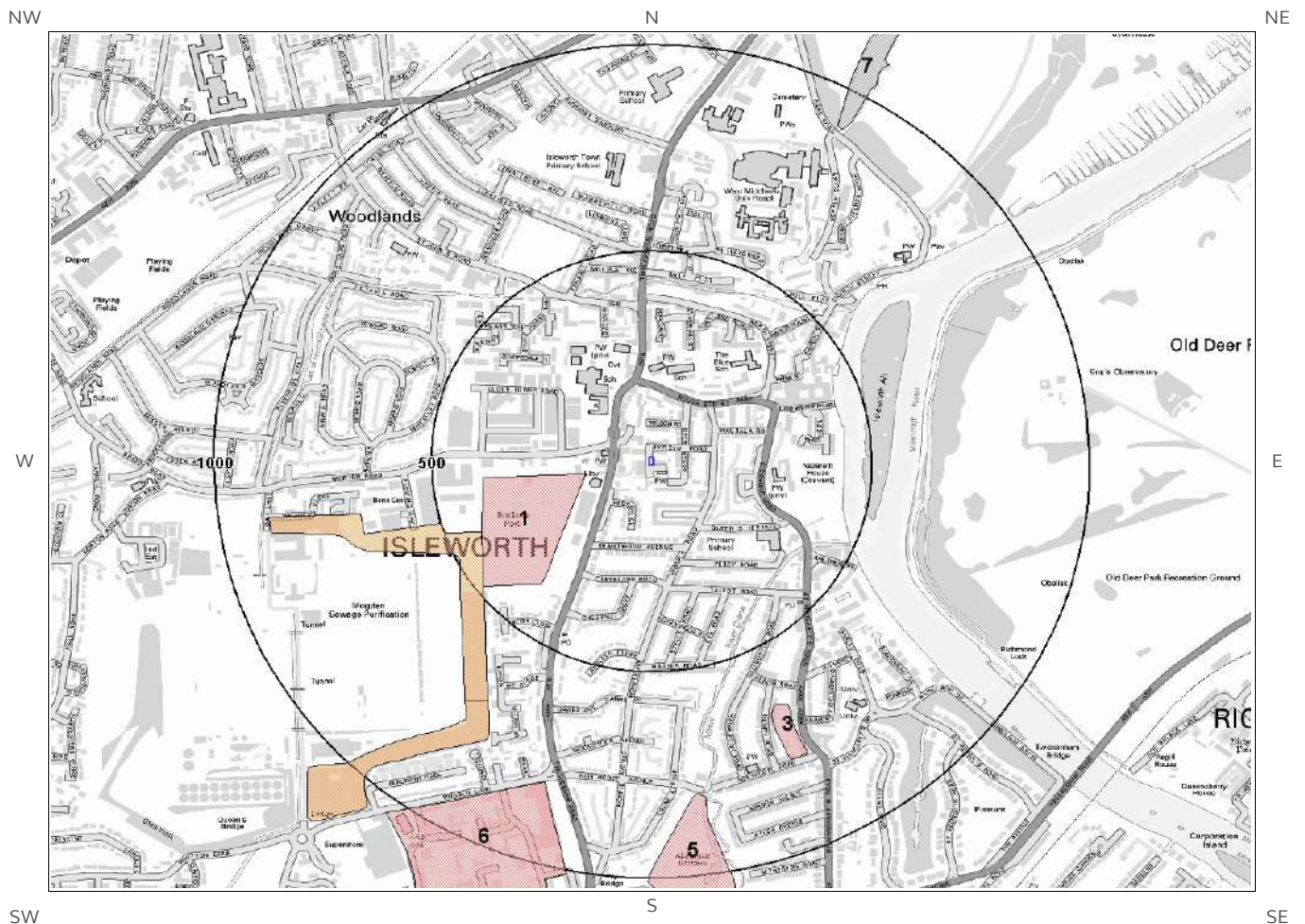
The definitions of coverage are as follows:

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



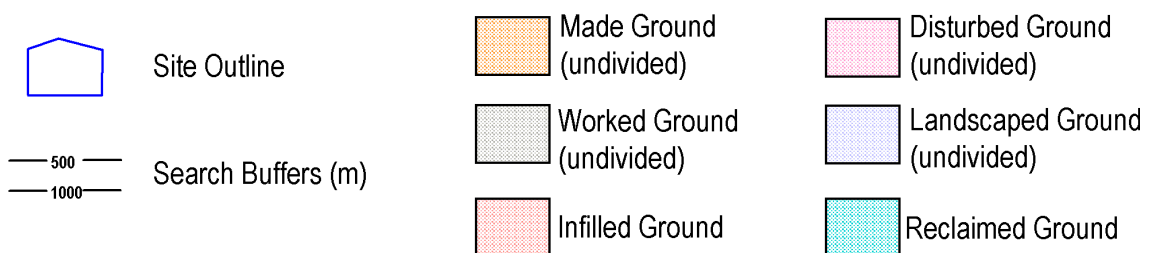
# 1 Geology (1:10,000 scale).

## 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

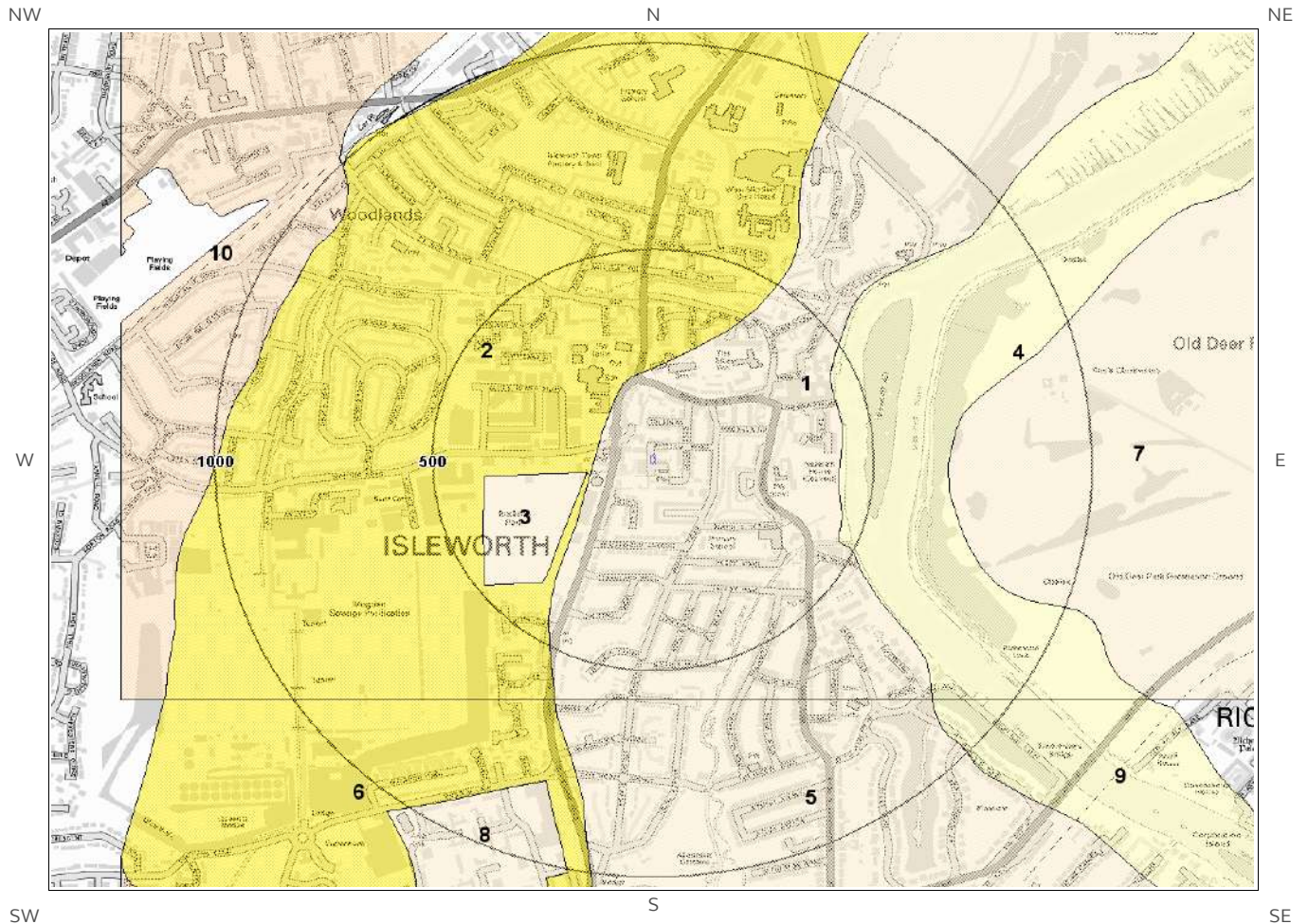
The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

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	149.0	W	WMGR- UNKNOWN	Infilled Ground	Unknown/unclassified Entry
2	418.0	SW	MGR- UNKNOWN	Made Ground (Undivided)	Unknown/unclassified Entry

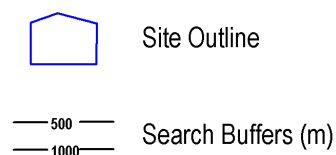


# 1.2 Superficial Deposits and Landslips map (1:10,000 scale)



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	123.0	W	LASI-Z	Langley Silt Member - Silt (unlithified Deposits Coding Scheme)	Silt
3	149.0	W	KPGR-XSV	Kempton Park Gravel Formation - Sand And Gravel	Sand And Gravel
4	421.0	E	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

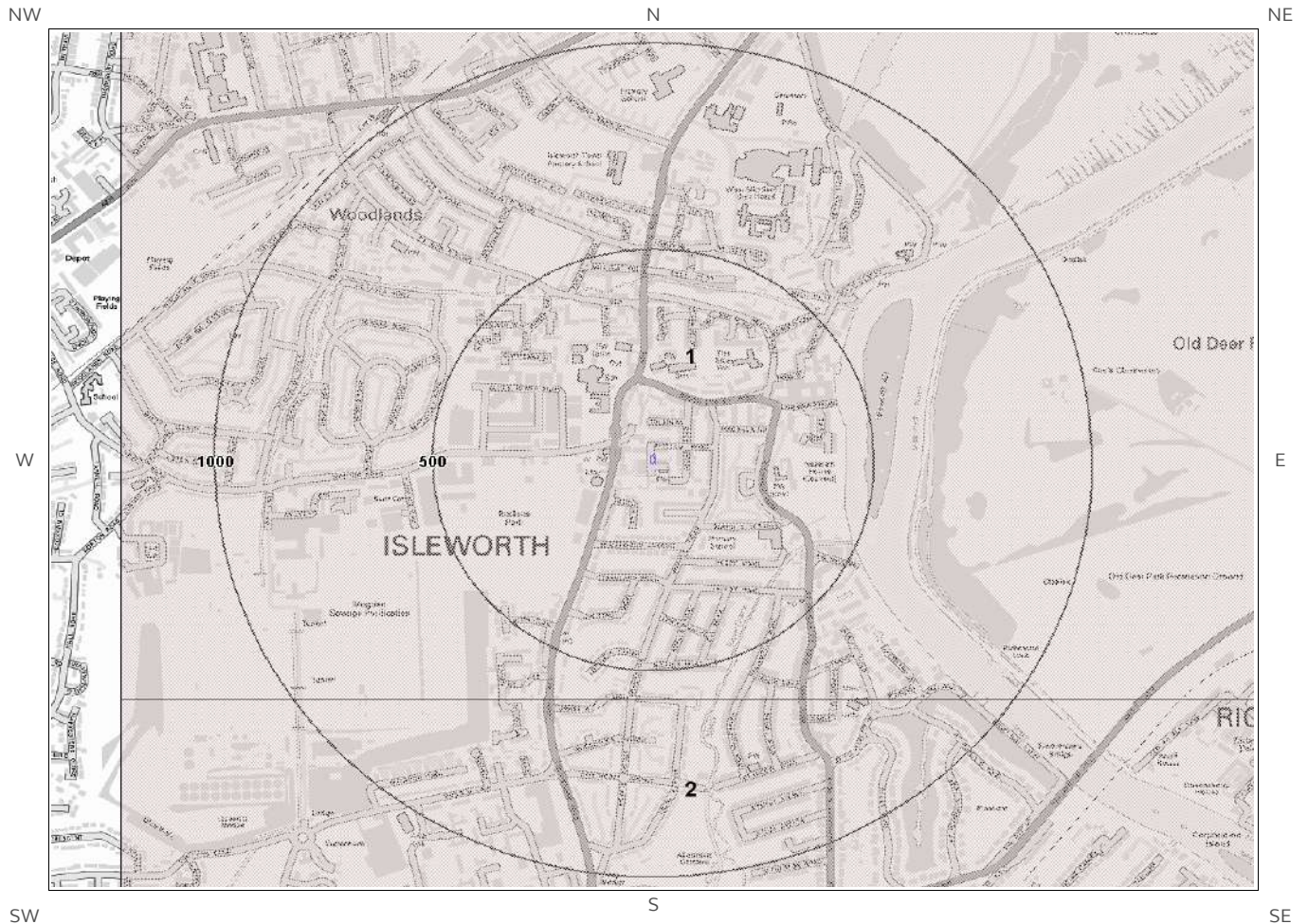
Database searched and no data found.

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.

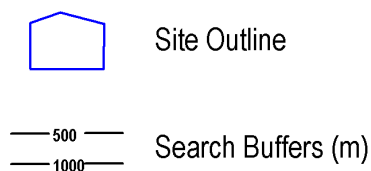


# 1.3 Bedrock and linear features map (1:10,000 scale)



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

---

### 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.

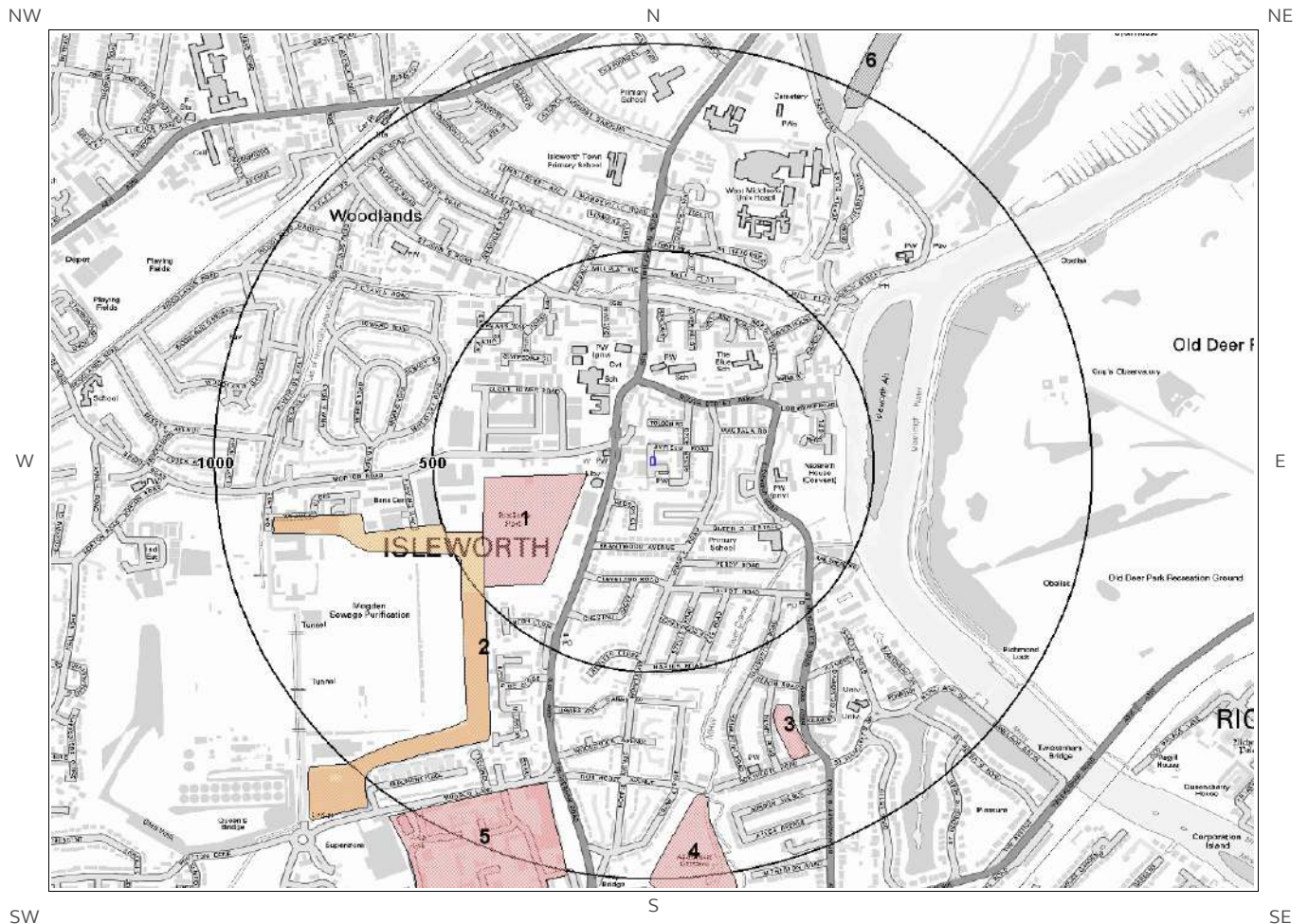
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

---

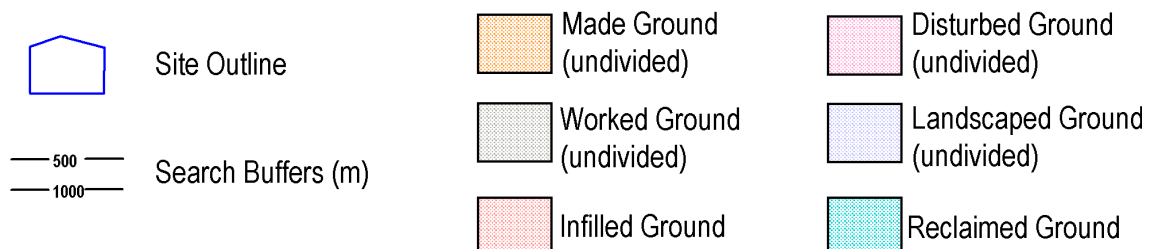


# 2 Geology 1:50,000 Scale

## 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	149.0	W	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT
2	419.0	SW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

---

#### 2.1.2 Permeability of Artificial Ground

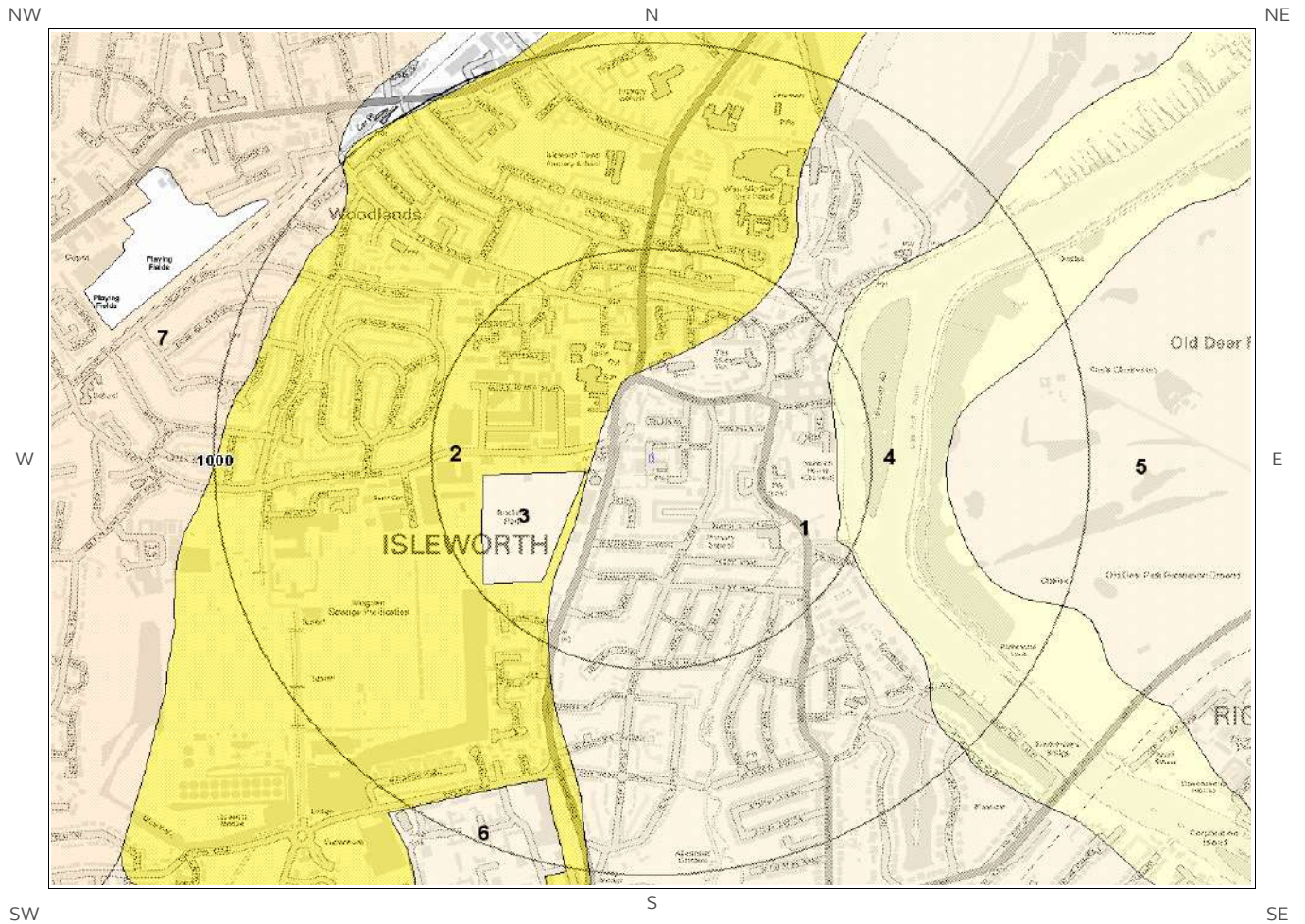
Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

---



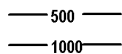
## 2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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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	123.0	W	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT
3	149.0	W	KPGR-XSV	KEMPTON PARK GRAVEL MEMBER	SAND AND GRAVEL
4	418.0	E	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.

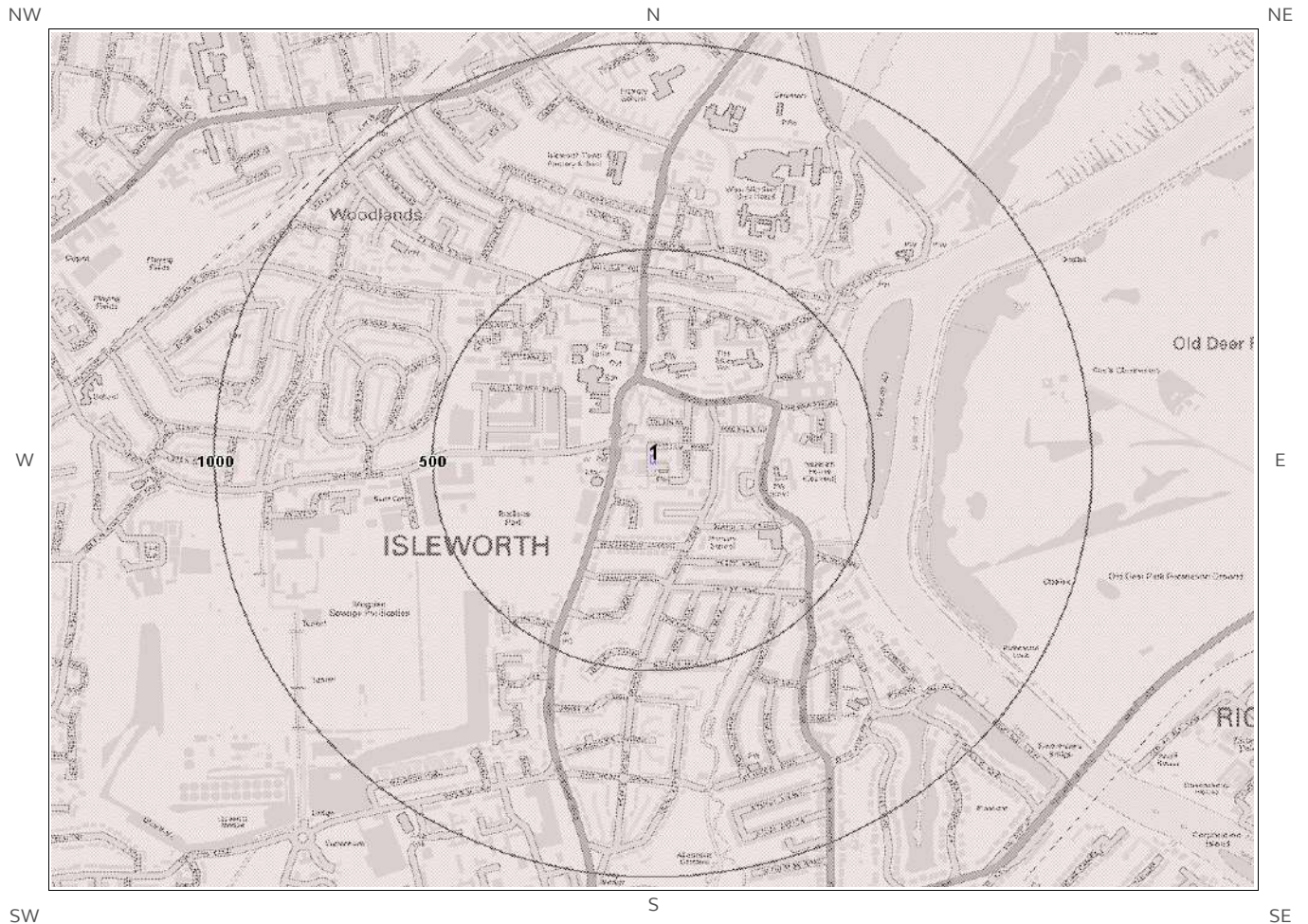
### 2.2.4 Landslip Permeability

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

Database searched and no data found.



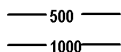
## 2.3 Bedrock and linear features map (1:50,000 scale)



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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.

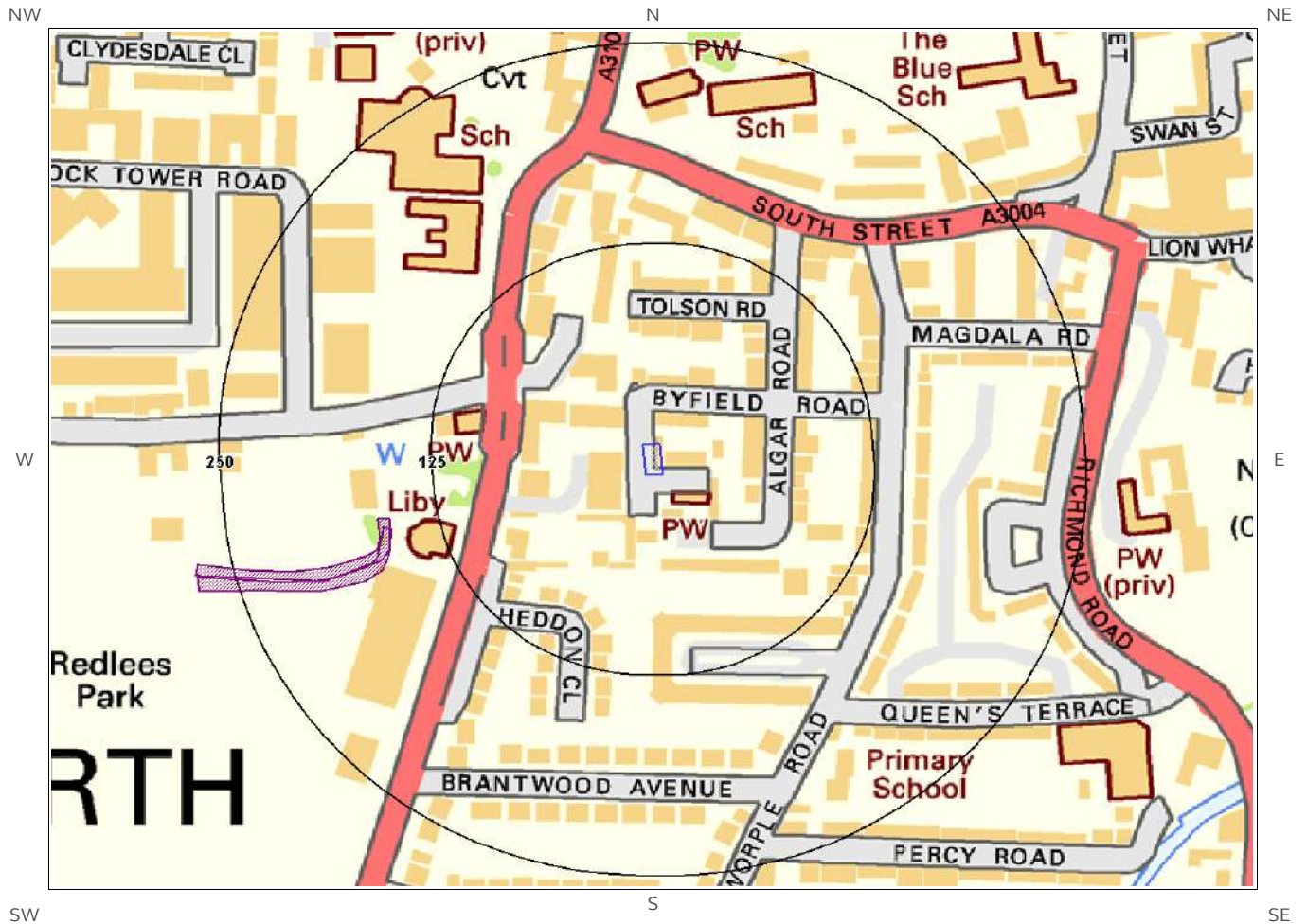
The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, 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



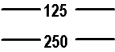


Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?      No radon protective measures are necessary.

# 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	153.0	W	516062 175525	Unspecified Ground Workings	1898
2A	154.0	W	516060 175519	Unspecified Ground Workings	1896

## 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? Yes

The following Historical Underground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	760.0	SW	515454 175039	Tunnel	1987
Not shown	760.0	SW	515454 175039	Tunnel	1974
Not shown	760.0	SW	515454 175039	Tunnel	1966
Not shown	893.0	SW	515397 175110	Tunnel	1987
Not shown	893.0	SW	515397 175110	Tunnel	1974
Not shown	893.0	SW	515397 175110	Tunnel	1966

### 4.3 Current Ground Workings

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

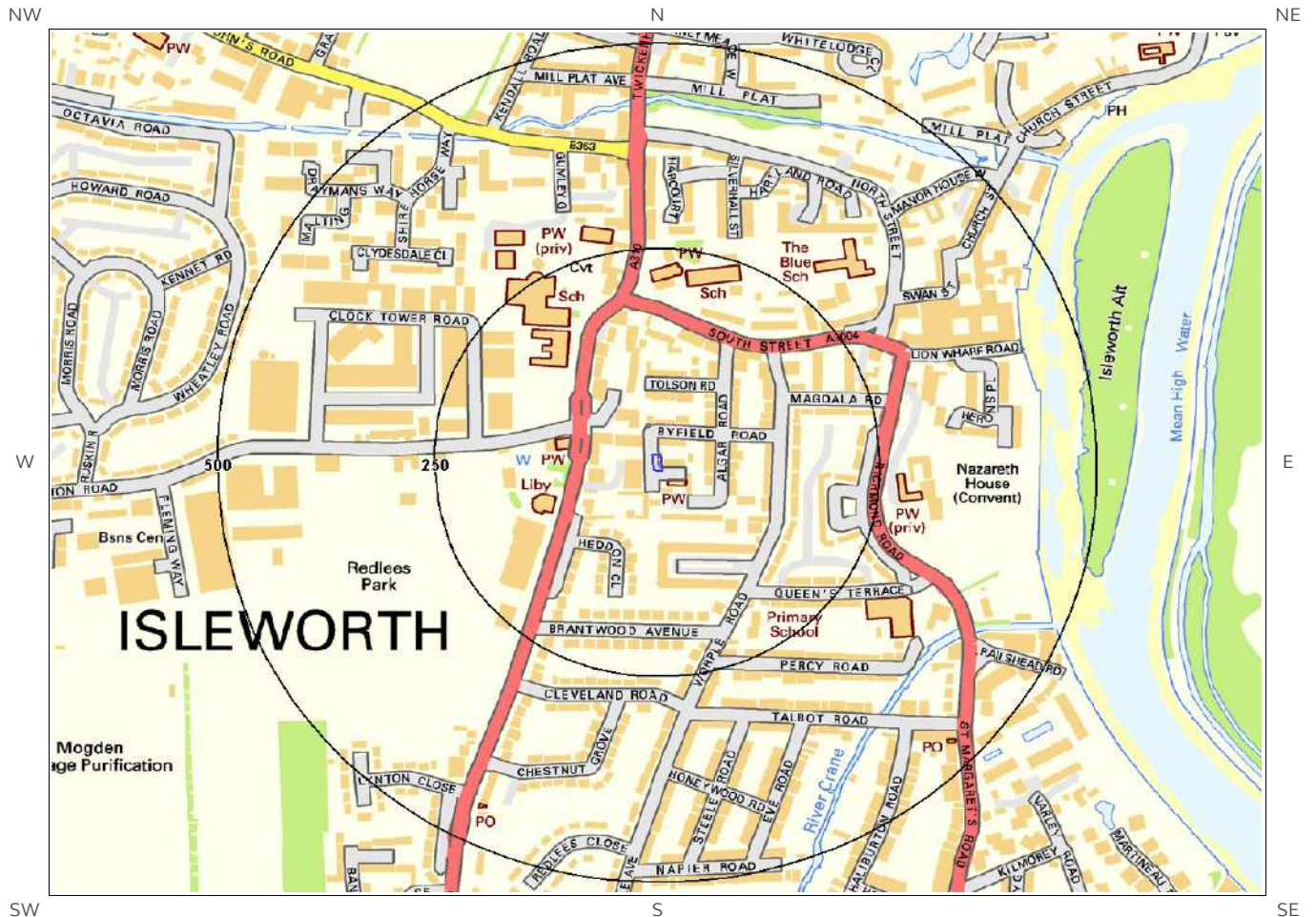
Are there any BGS Current Ground Workings within 1000m of the study site boundary? No

Database searched and no data found.

---

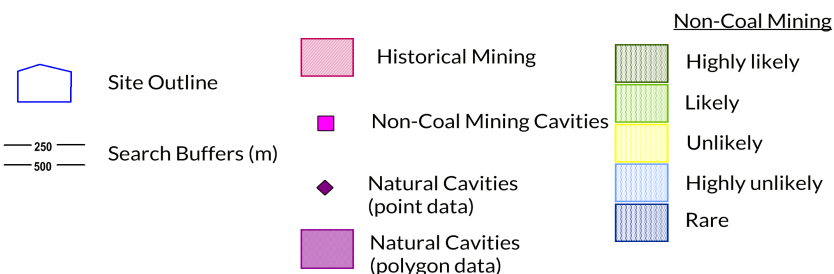


# 5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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# 5 Mining, Extraction & Natural Cavities

## 5.1 Historical Mining

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

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

## 5.2 Coal Mining

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

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

Database searched and no data found.

---

## 5.3 Johnson Poole and Bloomer

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

Are there any JPB Mining areas within 1000m of the study site boundary? No

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

---

## 5.4 Non-Coal Mining

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

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

Database searched and no data found.

---



## 5.5 Non-Coal Mining Cavities

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

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

Database searched and no data found.

---

## 5.6 Natural Cavities

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

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

---

## 5.7 Brine Extraction

This data provides information from the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

---

## 5.8 Gypsum Extraction

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

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

---

## 5.9 Cornwall and Devon Metalliferous Mining

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

Are there any Cornwall and Devon Metalliferous Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

## 5.10 Clay Mining

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

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

No

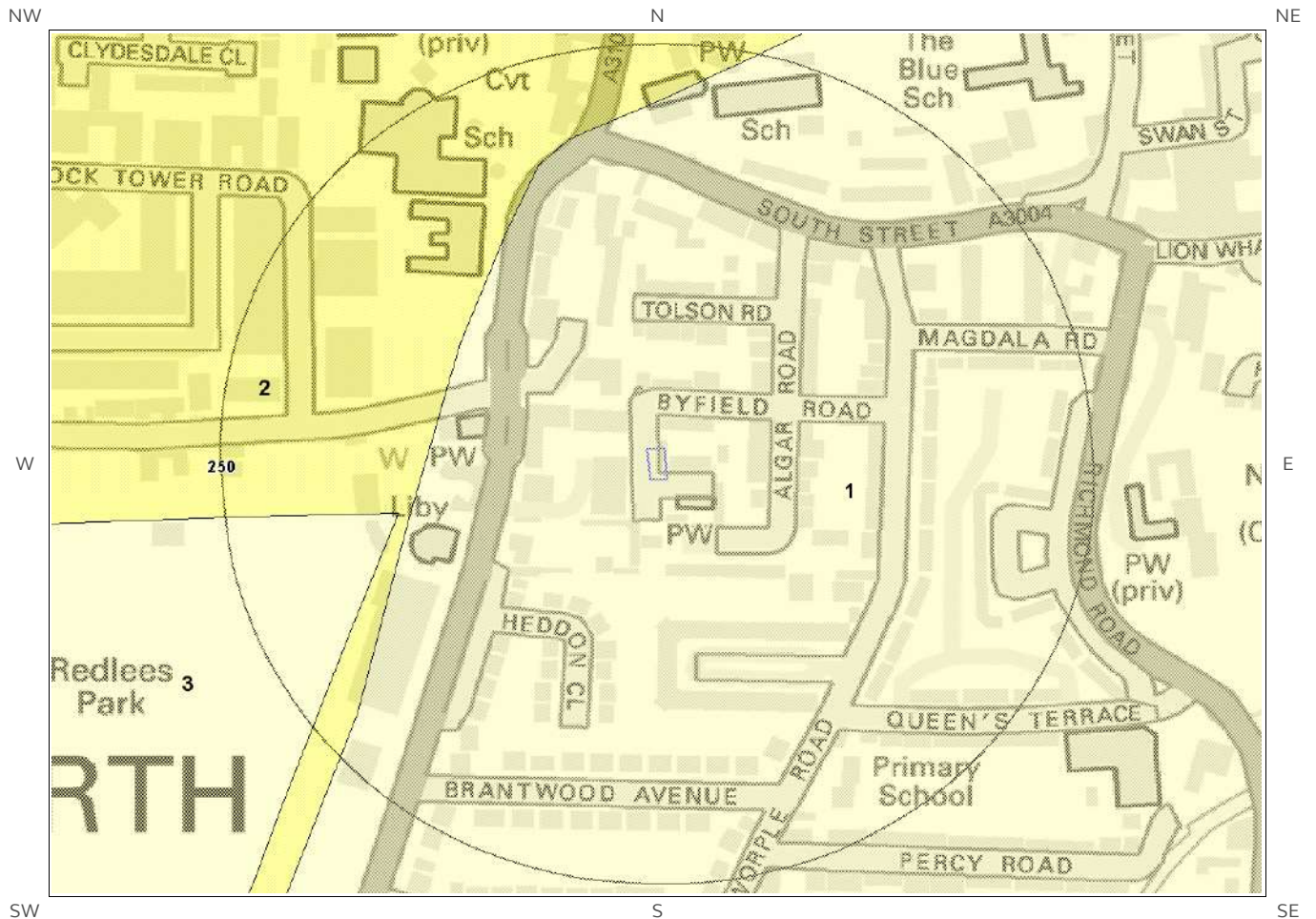
Database searched and no data found.

---



# 6 Natural Ground Subsidence

## 6.1 Shrink-Swell Clay map

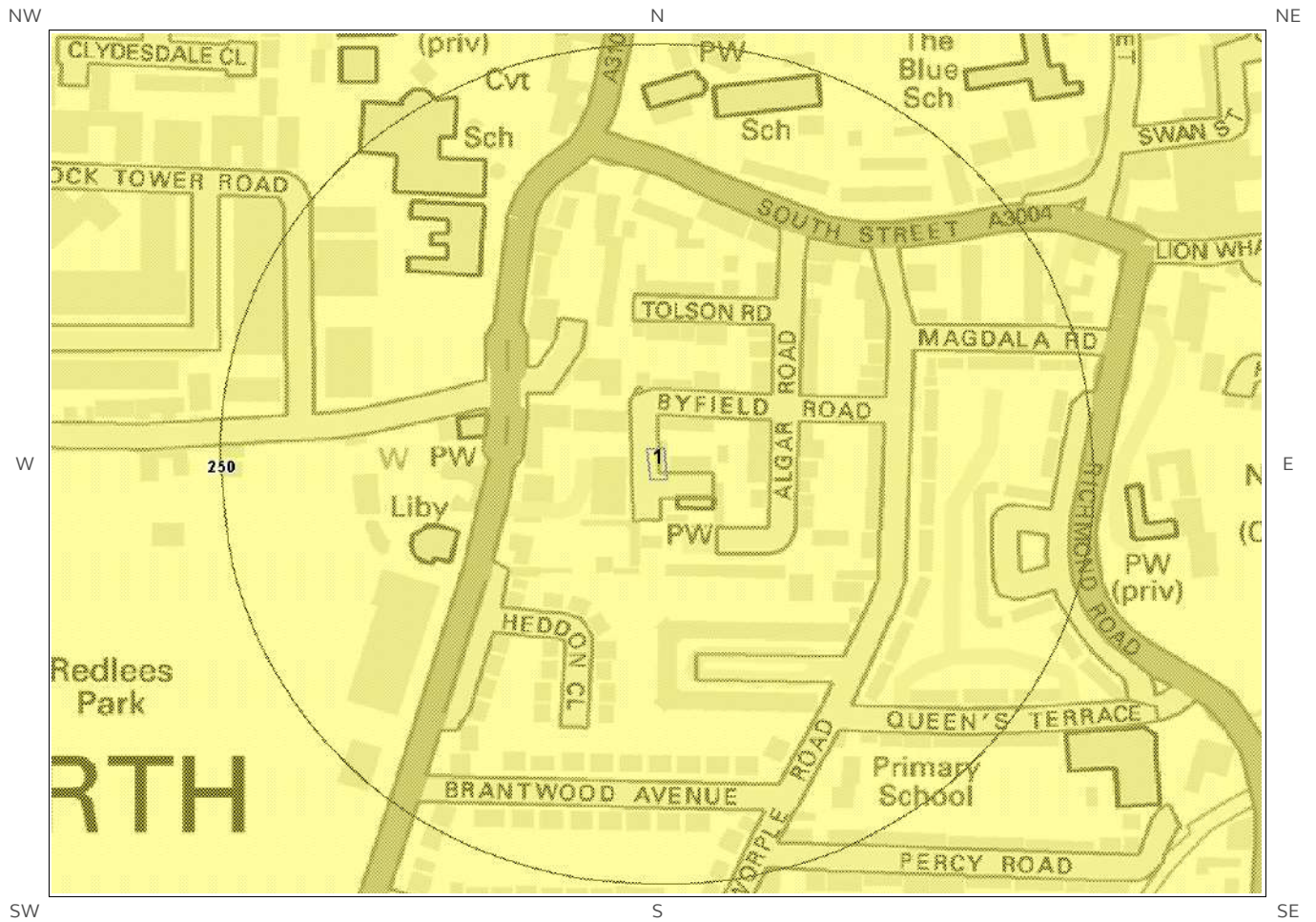


Shrink Swell Clay Legend

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## 6.2 Landslides map



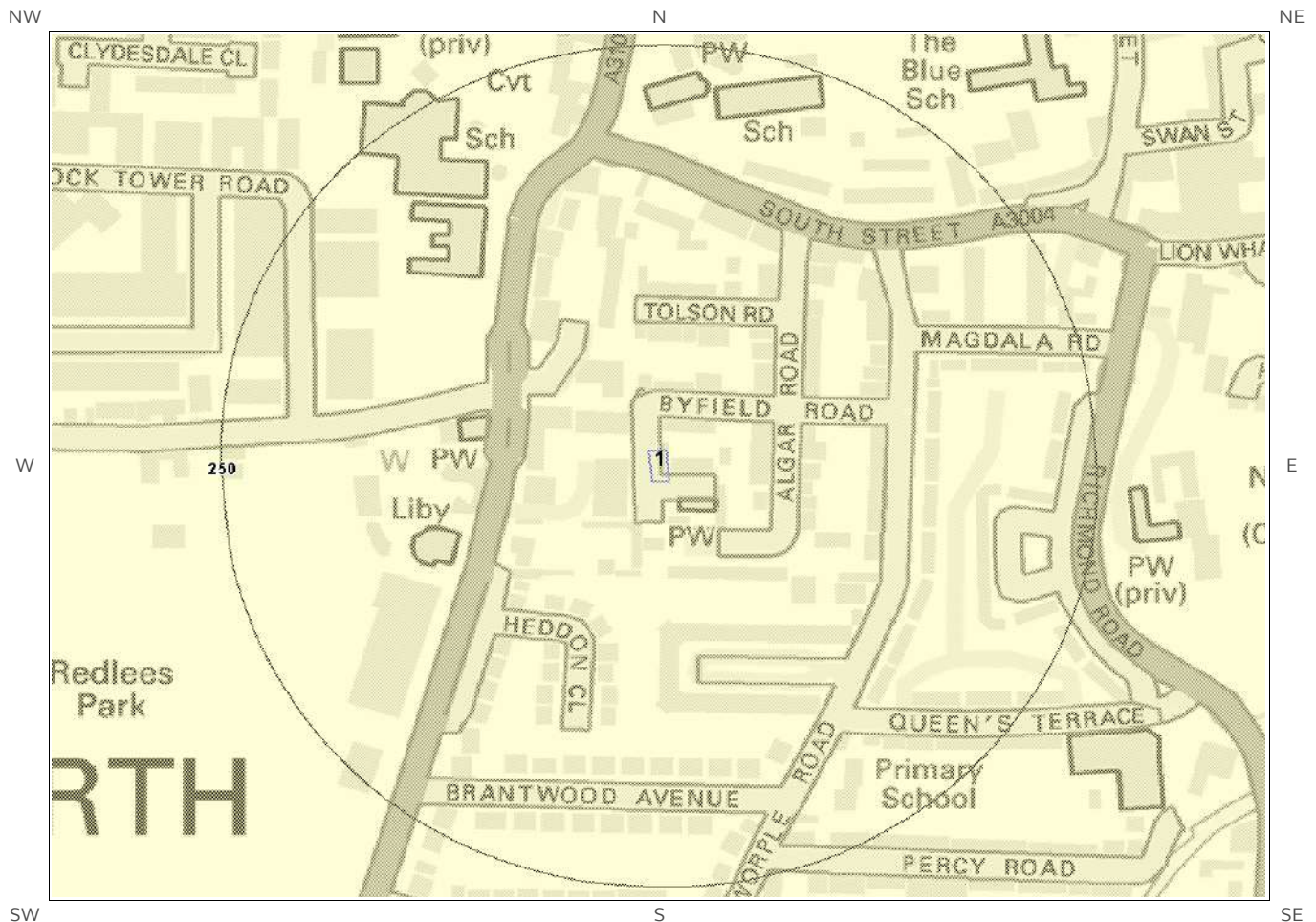
Landslides Legend

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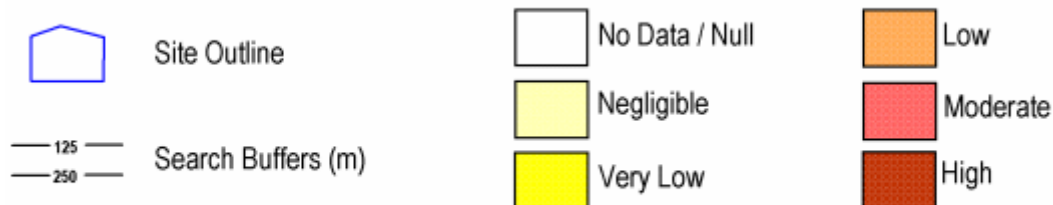


## 6.3 Ground Dissolution of Soluble Rocks map

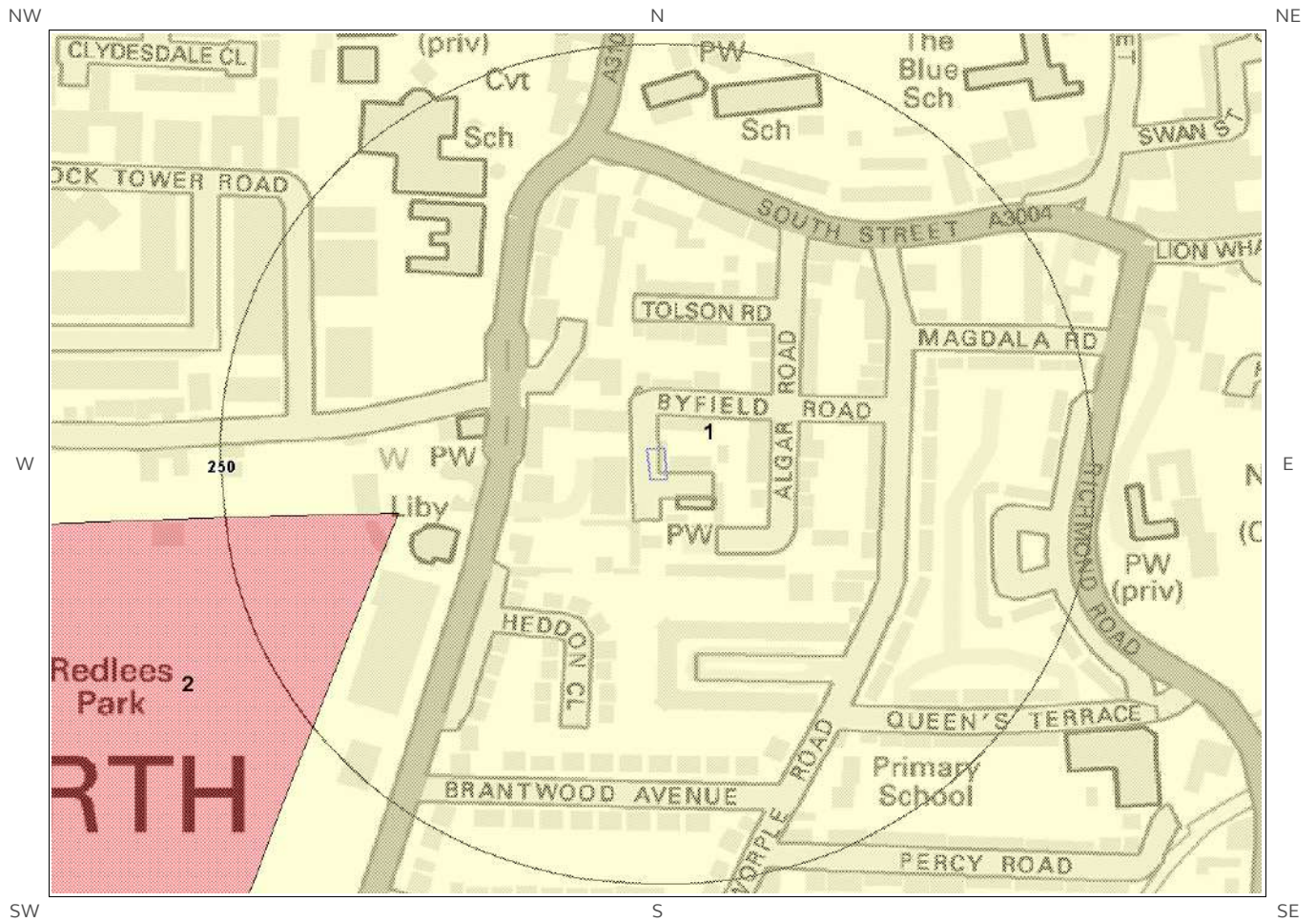


Ground Dissolution  
Soluble Rocks Legend

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## 6.4 Compressible Deposits map



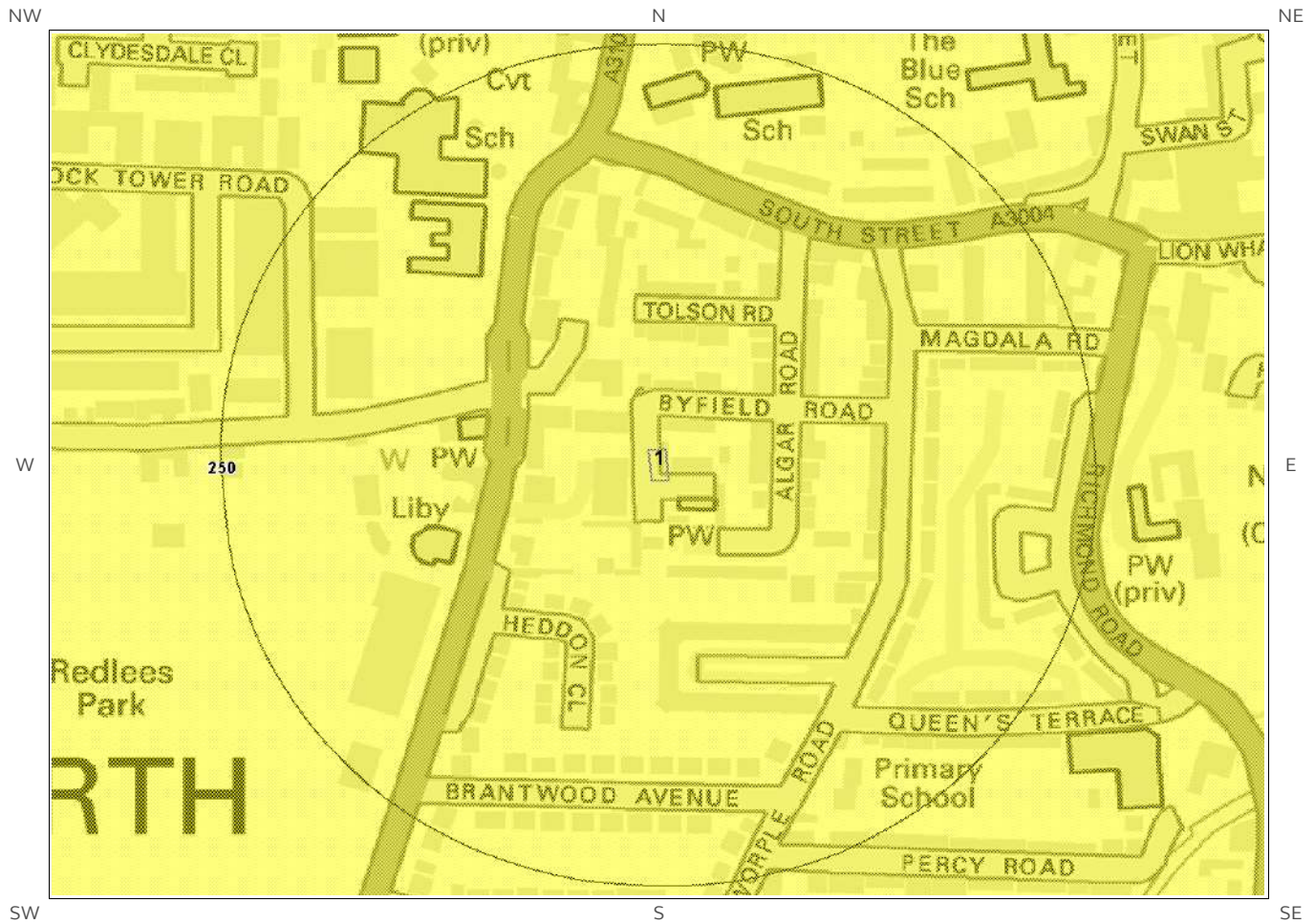
Compressible Deposits Legend

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## 6.5 Collapsible Deposits map

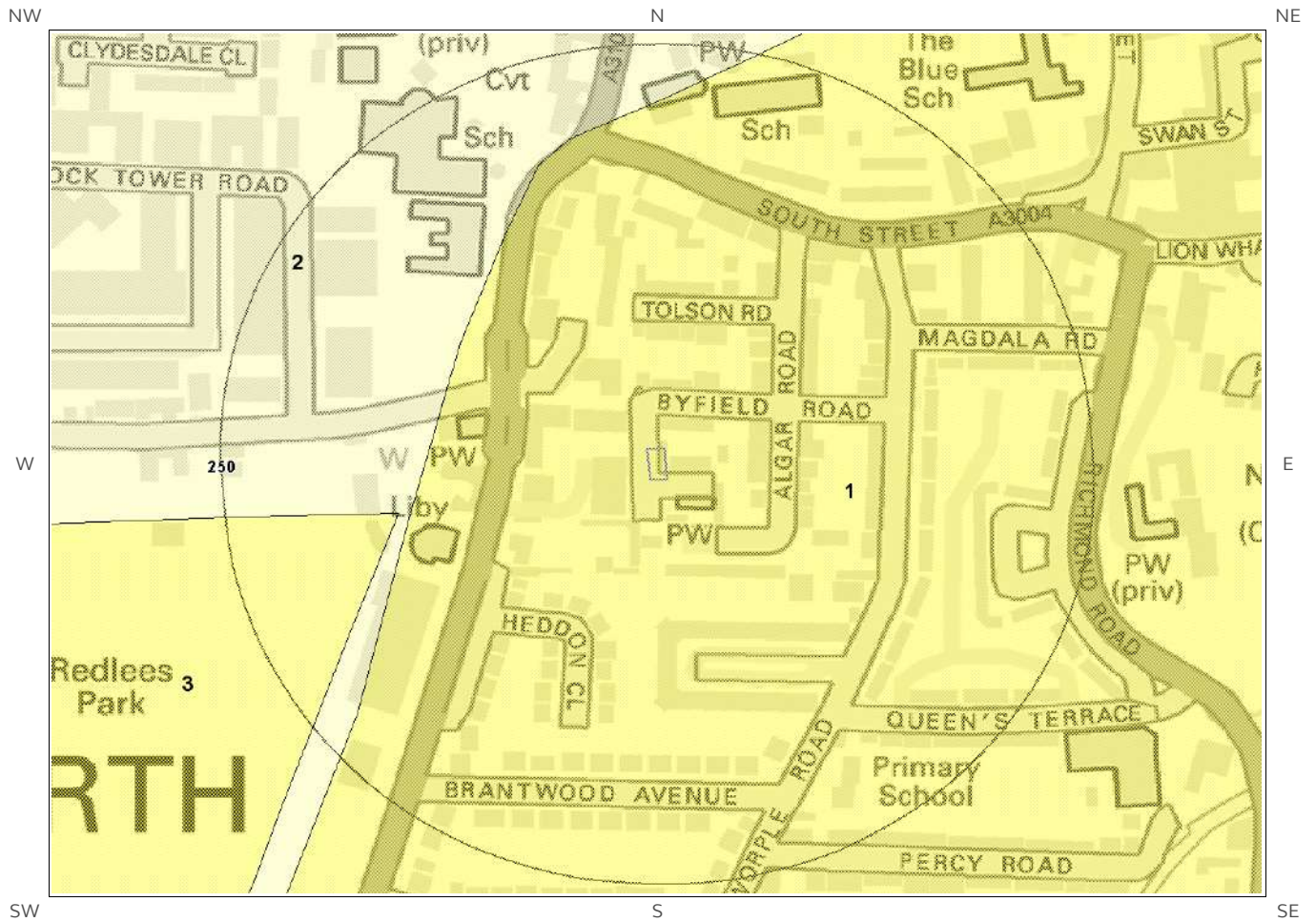


Collapsible Deposits Legend

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## 6.6 Running Sand map



Running Sand Legend

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## 6 Natural Ground Subsidence

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

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

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

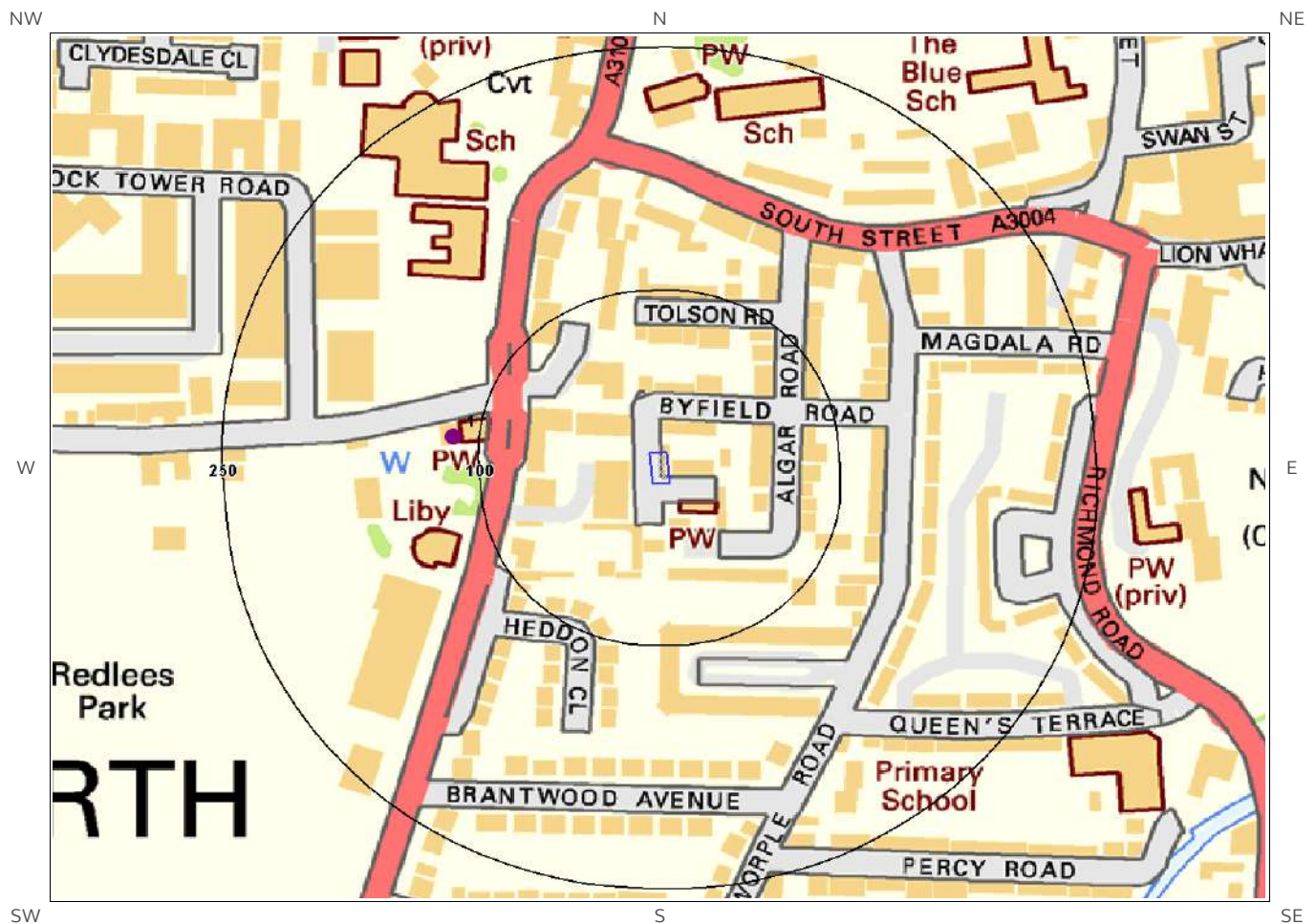
## 6.6 Running Sands

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.

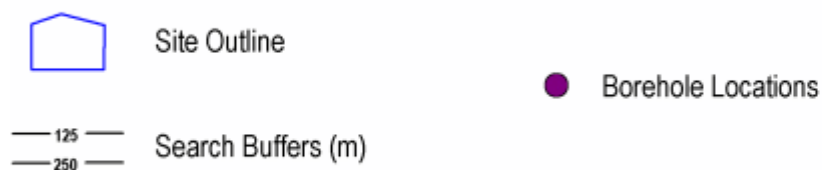


# 7 Borehole Records map



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:

1

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	115.0	W	516100 175600	TQ17NE284	Not Available	GARVIN HOUSE ISLEWORTH

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

#1: [scans.bgs.ac.uk/sobi\\_scans/boreholes/580929](https://scans.bgs.ac.uk/sobi_scans/boreholes/580929)



## 8 Estimated Background Soil Chemistry

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

1

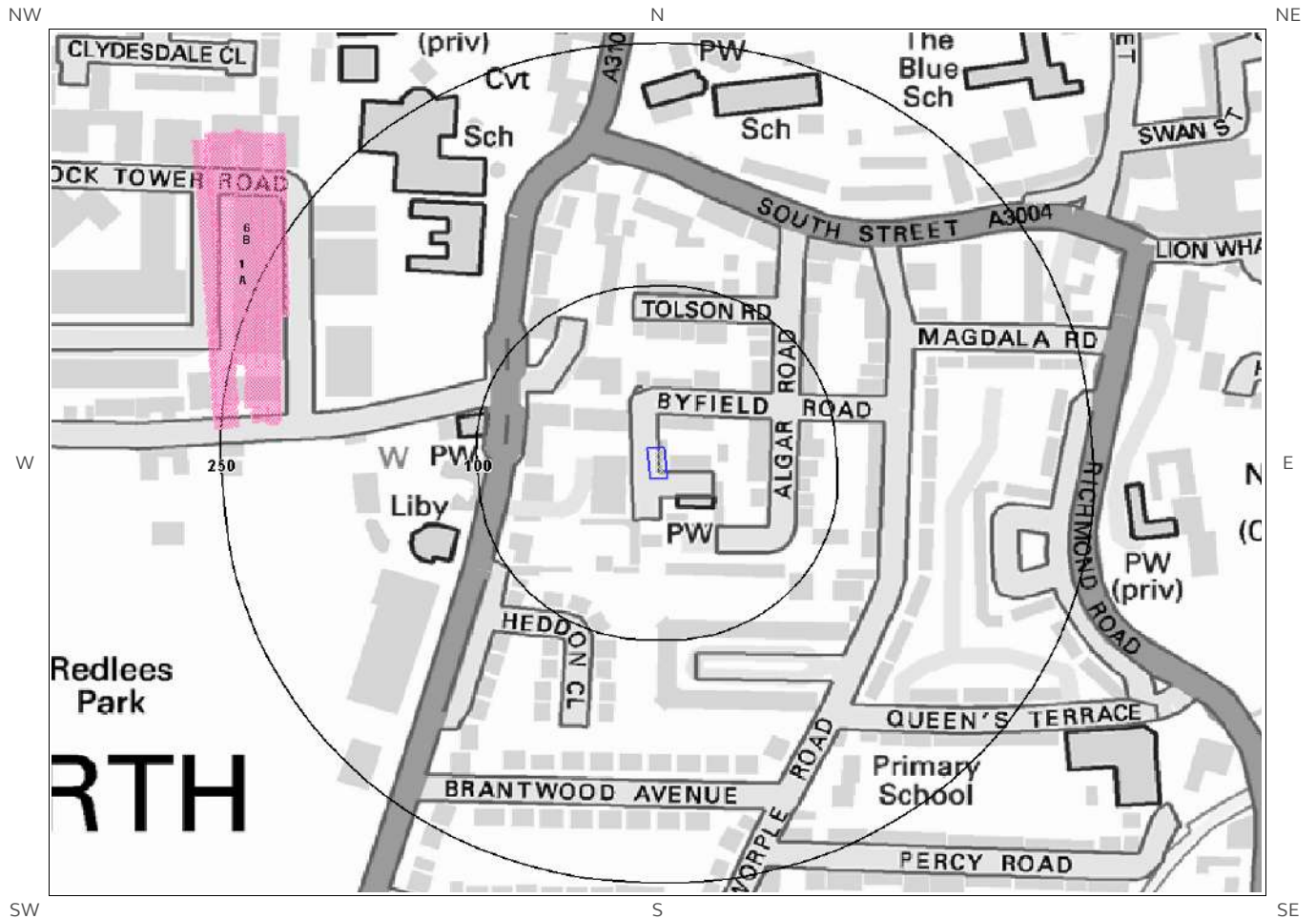
For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

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.

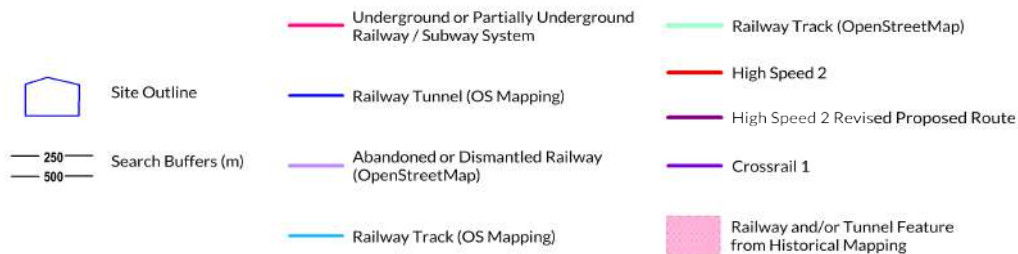
---

# 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? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1	215	W	515974 175694	Railway Sidings	1961
2A	216	W	515977 175691	Railway Sidings	1948
3A	216	W	515977 175691	Railway Sidings	1948
4B	225	W	515978 175702	Railway Sidings	1938
5B	227	W	515980 175694	Railway Sidings	1935
6	232	W	515979 175721	Railway Sidings	1935

ID	Distance (m)	Direction	NGR	Details	Date
7B	238	NW	515983 175715	Railway Sidings	1962
8B	238	NW	515983 175715	Railway Sidings	1962
9B	239	NW	515983 175715	Railway Sidings	1962

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

### 9.3 Historical Railways

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

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

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

Database searched and no data found.

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

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

### 9.4 Active Railways

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

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

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

Database searched and no data found.

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

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

### 9.5 Railway Projects

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

Is the study site within 5km of the route of the High Speed 2 rail project? No

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

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



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

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

# Contact Details

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



## British Geological Survey Enquiries

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Keyworth, Nottingham NG12 5GG  
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Fax: 0115 936 3276.  
Email: [enquiries@bgs.ac.uk](mailto:enquiries@bgs.ac.uk)  
Web: [www.bgs.ac.uk](http://www.bgs.ac.uk)

BGS Geological Hazards Reports and general geological enquiries



**British Geological Survey**  
NATURAL ENVIRONMENT RESEARCH COUNCIL

## British Gypsum

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East Leake  
Loughborough  
Leicestershire  
LE12 6HX



## The Coal Authority

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Mansfield  
Notts NG18 4RG  
Tel: 0345 7626 848  
DX 716176 Mansfield 5  
[www.coal.gov.uk](http://www.coal.gov.uk)



The Coal  
Authority

## Public Health England

Public information access office  
Public Health England, Wellington House  
133-155 Waterloo Road, London, SE1 8UG  
<https://www.gov.uk/government/organisations/public-health-england>  
Email: [enquiries@phe.gov.uk](mailto:enquiries@phe.gov.uk)  
Main switchboard: 020 7654 8000



Public Health  
England

## Johnson Poole & Bloomer Limited

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Website: [www.jpb.co.uk](http://www.jpb.co.uk)



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Website: <http://www.ordnancesurvey.co.uk/>



## Getmapping PLC

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Tel: 01252 845444  
Website: <http://www1.getmapping.com/>





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Website: <http://www.peterbrett.com/home>



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# Standard Terms and Conditions




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



Geotechnical and Geo-Environmental Desk Study  
Garage Block Adjacent to 20 Byfield Road, Isleworth, TW7 7AF

## **APPENDIX C**

### **Site Walkover Photolog**

CLIENT:	London Borough of Hounslow	DATE:	11/09/2019	 <b>ARCADIS</b> <small>Design &amp; Consultancy for natural and built assets</small>	
REFERENCE:	10030793	SITE NAME:	Byfield Road	10 <sup>th</sup> Floor Three Piccadilly Place Manchester M1 3BN	T: 0161 245 8700 F: 0161 245 8701
Plate 1 – View of the six garages from the intersection of Byfield Road with Carrick Close. Towards northeast.					
Plate 2 – View of the Site towards Carrick Close. Facing southeast.					






<b>CLIENT:</b>	London Borough of Hounslow	<b>DATE:</b>	11/09/2019	 <b>ARCADIS</b>	Design & Consultancy for natural and built assets
<b>REFERENCE:</b>	10030793	<b>SITE NAME:</b>	Byfield Road		
				10 <sup>th</sup> Floor Three Piccadilly Place Manchester M1 3BN	T: 0161 245 8700 F: 0161 245 8701

Plate 3 – View of the Site, facing north.



Plate 4 – View of roof gutter run off pipe running into blocked drain.



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<b>REFERENCE:</b>	10030793	<b>SITE NAME:</b>	Byfield Road	10 <sup>th</sup> Floor Three Piccadilly Place Manchester M1 3BN	T: 0161 245 8700 F: 0161 245 8701	
Plate 5 – View of contact between garages (right) and adjacent building (left).						



**APPENDIX D**

**Historical Archived Borehole Logs**



**NGRC  
BOREHOLE RECORDS  
ADJUSTMENT FORM**

**QUARTER SHEET** TS17NE

**BH REGISTRATION NUMBER** 265-301

**RECORDS ENTERED AND HELD BY WALLINGFORD**

**BH REGISTRATION NUMBER(S)**



SOUTHERN IS. 7 NAMES ON

Garven House, Isleworth. (No 2)

TQ 17/100

TQ17NE

Owner Garco Holdings Ltd.

Licence No. 36/40

Nat. Grid Ref. 161 756

Occupier

IGS Ref. No.

Status h.c.

Ground Level 7.32 m OD

ft. OD

Level of Well Top 7.32 m OD

ft. OD

Rest Water Level 4.72 m bwt

ft. bwt

(Date 15/10/76) 2.59 m OD

ft. OD

Construction

B

Summary of Geological Section

Thickness

Depth

Made ground + waste clay

0.61

0.61

Sandy clay

1.68

2.29

Sand + Gravel

5.33

7.62

Fine brown clay

0.30

7.92

Depth

Dia.

Linings (below well top)

From m

To m

Dia. mm

Type

7.62

152

0

6.10

152

Asbestos

6.10

7.62

152

Asbestos

Abstraction Rates

Type of Pump Sub. 2-be.

900 gph

Chem./Bact. Anal.

YES NO

10,000 gpd

Well Driller Bridge &amp; Ironworks Ltd.

If insufficient space has been allowed, continue in 'Notes' overleaf.

Oct. '76

<b>WATER RESOURCES BOARD</b>		W.R.B. REF. No. <u>TA 17/100</u>
<b>WELL RECORD</b>		R.A. LICENCE No. _____
<b>1. WELL IDENTITY</b>	NATIONAL GRID REFERENCE <u>TQ 161 756</u>	
Well at <u>Gaudin House</u> I.G.S. REF. No. _____		
<u>Isleworth</u> RIVER AUTHORITY _____		
Town _____ HYDROMETRIC AREA _____		
County _____ SUB-CATCHMENT _____		
Owner of well _____		
Well made by _____ Date of sinking _____		
Information from <u>T.W.A.</u> Date received <u>22/12/76</u>		
<b>2. WELL DESCRIPTION</b>		
Level of ground surface _____ m. If well top is not at above* _____ m.		
above sea level (O.D.) _____ ft. ground level how far below _____ ft.		
Shaft _____ m. deep; Diameter at top _____ mm; at bottom _____ mm		
_____ ft. _____ in. _____ in.		
Bore _____ m. deep; Diameter at top _____ mm; at bottom _____ mm		
_____ ft. _____ in. _____ in.		
Details of headings _____		
_____		
_____		
<b>DETAILS OF PERMANENT LINING TUBES</b>		
Length _____ m.; Diam. _____ mm; Length Slotted _____ m.; Diam. _____ mm; Top _____ m. above* surface		
Plain _____ ft.; _____ in. _____ ft. _____ in. _____ ft. below surface		
Length _____ m.; Diam. _____ mm; Length Slotted _____ m.; Diam. _____ mm; Top _____ m. above* surface		
Plain _____ ft.; _____ in. _____ ft. _____ in. _____ ft. below surface		
Length _____ m.; Diam. _____ mm; Length Slotted _____ m.; Diam. _____ mm; Top _____ m. above* surface		
Plain _____ ft.; _____ in. _____ ft. _____ in. _____ ft. below surface		
Details of well screen _____		
_____		
<b>DETAILS OF REST WATER LEVELS DURING CONSTRUCTION</b>		
Water struck at depths of _____ below well top		
Rest level of water _____ m. above* O.D.* _____ m. deep. Date _____		
_____ ft. below well top when bore _____ ft.		
Rest level of water _____ m. above* O.D.* _____ m. deep. Date _____		
_____ ft. below well top when bore _____ ft.		
Rest level of water _____ m. above* O.D.* _____ m. deep. Date _____		
on completion of bore _____ ft. below well top when bore _____ ft.		
Method of drilling _____		
Brief details of well development e.g. acid treatment etc. _____		
_____		
_____		



## British Geological Survey

British Geological Survey 1/6

## British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

British Geological Survey

## British Geological Survey

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## British Geological Survey

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British Geological Survey

British Geological Survey

## WELL RECORD

SHEET 2

R.A. LICENCE NO.

## 4. HYDROGEOLOGY

Topography AT WELL SITE

Local depression ☐ , Flat surface ☐ , Hill top ☐ , Hillside ☐ , Valley bottom ☐ , Terrace ☐

MAJOR AQUIFER ..... Lithology .....

Depth to top of aquifer ..... m.  
..... ft. Thickness penetrated ..... m.  
..... ft.Top of aquifer ..... m. AOD\*  
..... ft. BOD Total thickness of aquifer ..... m.  
..... ft.Coefficient of storage ..... Transmissibility .....  $\frac{\text{m}^2/\text{day}}{\text{galls/day/ft.}}$ 

MINOR AQUIFER (a) ..... Lithology .....

Depth to top of aquifer ..... m.  
..... ft. Thickness penetrated ..... m.  
..... ft.Top of aquifer ..... m. AOD\*  
..... ft. BOD Total thickness of aquifer ..... m.  
..... ft.Coefficient of storage ..... Transmissibility .....  $\frac{\text{m}^2/\text{day}}{\text{galls/day/ft.}}$ 

MINOR AQUIFER (b) ..... Lithology .....

Depth to top of aquifer ..... m.  
..... ft. Thickness penetrated ..... m.  
..... ft.Top of aquifer ..... m. AOD\*  
..... ft. BOD Total thickness of aquifer ..... m.  
..... ft.

ADDITIONAL NOTES:



## 5. STRATA

[illegible]

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