

LONDON BOROUGH OF HOUNSLOW SMALL SITES SMALL BUILDERS PROGRAMME

GARAGE BLOCK ADJACENT TO 60 MAGDALA ROAD, ISLEWORTH, TW7 7DD

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 has a diagonal line running from the bottom left towards the top right, and a horizontal line intersecting it. The shape is composed of two main triangular areas meeting at a diagonal line.

GARAGE BLOCK ADJACENT TO 60 MAGDALA ROAD, ISLEWORTH, TW7 7DD

Geotechnical and Geo-Environmental Desk Study

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This report dated 30 September 2019 has been prepared for London Borough of Hounslow (the "Client") in accordance with the terms and conditions of appointment dated 08 March 2019 (the "Appointment") between the Client and Arcadis Consulting (UK) Limited ("Arcadis") for the purposes specified in the Appointment. For avoidance of doubt, no other person(s) may use or rely upon this report or its contents, and Arcadis accepts no responsibility for any such use or reliance thereon by any other third party.

CONTENTS

1	INTRODUCTION	1
1.1	Terms of Reference	1
1.2	Sources of Information	2
1.3	Limitations and Expectations.....	2
2	SITE SETTING AND HISTORY	3
2.1	Site Location	3
2.2	Site History.....	3
2.2.1	Summary of Site History	4
2.3	Unexploded Ordnance	5
3	PHYSICAL AND ENVIRONMENTAL SETTING	6
3.1	Published Geology, Hydrogeology and Hydrology	6
3.2	Environmental Public Registers	6
3.2.1	Summary.....	8
4	PRELIMINARY CONCEPTUAL MODEL.....	9
4.1	Potential Contaminant Sources	9
4.2	Potential Receptors	9
4.2.1	Human Health	9
4.2.2	Controlled Waters	10
4.2.3	Buildings	10
4.3	Potential Pathways	10
4.4	Preliminary Qualitative Risk Assessment.....	10
5	WASTE MANAGEMENT AND POTENTIAL DEVELOPMENT CONSTRAINTS	11
5.1	Waste Management	11
5.2	Potential Development Constraints	11
6	GEOTECHNICAL CONSIDERATIONS	12
6.1	General Comments	12
6.2	Foundations	13

7 CONCLUSIONS AND RECOMMENDATIONS 14

7.1 Design Considerations.....14

7.2 Construction Considerations14

8 REFERENCES 15

APPENDICES

APPENDIX A

Historical Ordnance Survey Maps

APPENDIX B

Groundsure Data Sheets and Site Sensitivity Maps

APPENDIX C

Site Photographs

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 the garage block adjacent to 60 Magdala Road, Isleworth, TW7 7DD ('the Site').

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

The objectives of this review are to:

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

The site location is shown in Figure 1 below.

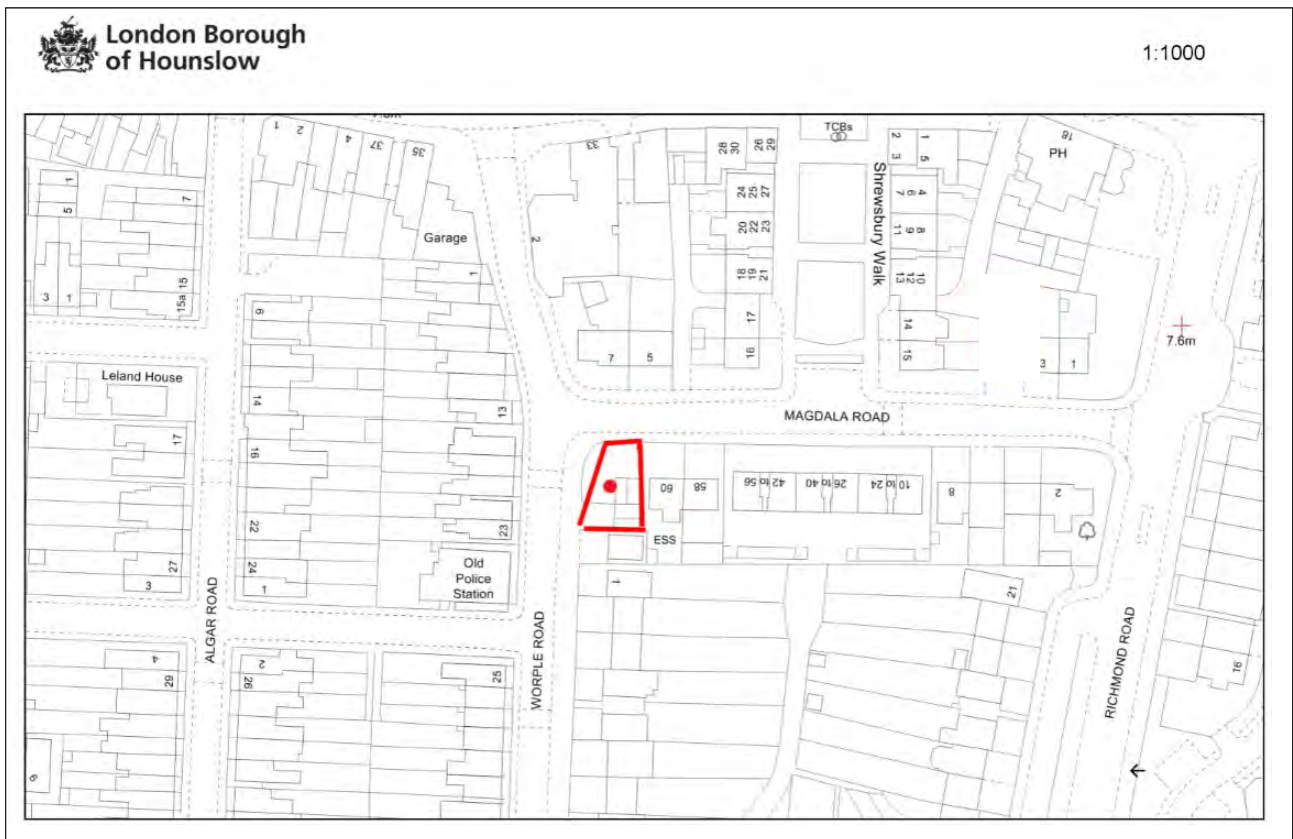


Figure 1: Site Location Plan provided by LBH

1.2 Sources of Information

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

- The on-line British Geological Survey (BGS) Geology of Britain Map Viewer (Ref. 1);
- Historical borehole records available through BGS website (above) (Ref.1);
- Historical Ordnance Survey maps obtained from Groundsure (included in Appendix A);
- Environmental Information from Groundsure (Appendix B);
- Current publicly available aerial images and maps from Google maps (Ref. 2);
- Zetica Regional Unexploded Ordnance Map & Pre-Desk Study Assessment report (contained within the Arcadis UXO Assessment report for this site, 10030793-ARC-XX-XX-RP-YY-0153-01-UXO Report);
- Department for Environment, Food and Rural Affairs "Magic" website (Ref.7); and
- Zetica Bomb map (Ref.9.).

1.3 Limitations and Expectations

This report has been prepared for the Client in accordance with the terms and conditions of appointment. Arcadis cannot accept any responsibility for any use of or reliance on the contents of this report by any third party. The copyright of this document, including the electronic format shall remain the property of Arcadis.

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

2 SITE SETTING AND HISTORY

2.1 Site Location

Table 2.1: Details relating to Site Location

Site Location / Address	Magdala Road, Isleworth, TW7 7DD
National Grid Reference	516378, 175645
Approximate Site Area	The Site is roughly rectangular in shape and covers an area of approximately 0.0192 Ha (hectares).
Description of Site	<p>The site is currently occupied by 4no vehicle parking garages and parking areas and an area of grass. The garages are arranged in two sets, one set facing north towards Magdala Road and other set facing west towards Worple Road.</p> <p>The boundaries comprise a low brick wall/kerb to the west and south. The grassed area occupies approximately 25% of the site. Pathways and roads border the northern and western boundaries. A small building is located on the southern boundary and may house an electrical substation. A residential property with a large tree is located on the eastern boundary.</p> <p>The garage driveways are surfaced in concrete and appear to be in fair condition and with evidence of oil stains. The garage composite construction materials are not known.</p> <p>Site photographs taken during the walkover are included in Appendix C.</p>
Topography	The site topography is flat and sits at an elevation of approximately 7m Above Ordnance Datum (AOD). The immediate surrounding area is level, the regional topography slopes down gently toward the River Thames approximately 300m in the east.
Surrounding Area	The site lies within a predominantly residential / commercial area buildings. The area becomes more industrial approximately 500m southwest with the existence of warehouse units and a large water treatment works. The River Thames lies approximately 300m to the east and is oriented on a north-south tangent.

2.2 Site History

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

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

Table 2.2 History of Site and Surrounding Area

Map Dates	Historical Detail
1865 - 1894	<p>Site is undeveloped parkland with residential properties and gardens located immediately to the north and a public house approx. 40m northwest.</p> <p>The wider area to the south of the site is dominated by parkland and sporadic housing.</p>

Map Dates	Historical Detail
1894 - 1959	<p>The Site is occupied by terraced housing, and the surrounding area has become more developed with additional buildings and a reduction in parkland area.</p> <p>A smithy is approximately 60m northwest from the site and a fire station approximately 200m north. A brewery is located approximately 80m northeast. A mill is located 200m northeast on the bank of the Duke of Northumberland's River.</p> <p>A foundry is present ~250 northwest in 1915. Industrial development continued through the period with the development of an electrical factory (wireless sets) 200m southwest, a laundry ~150m northwest, concrete pipeworks ~150m northwest.</p>
1959 - 1966	<p>The terraced properties were demolished by 1959 (1:2500) (although the date differs from the 1:10,000/10,560 series) and the site configuration changed to a single building on the southern boundary.</p> <p>The smithy located northwest is now a garage. Several 'unspecified works' are present and located 200m southwest / west / northwest. Two 'unspecified works' and builders' yards are ~150m northeast. A warehouse is located ~80m northeast and a further three ~250m northeast.</p>
1974 - 1991	<p>The garages appear to have been constructed between 1966 and 1974 and the electricity substation is labelled immediately adjacent the southern boundary. By 1991 large scale development of residential and commercial properties in the surrounding area had occurred and the majority of previous industrial works had been demolished or converted. Electricity substations are present approximately 120m north and 200m northwest.</p>
1991 - Present	<p>No significant changes to the site. Continued development of residential and commercial properties surrounding the site. A large multi storey car park has been built ~100m northeast of site.</p>

2.2.1 Summary of Site History

The site is mapped as parkland from 1865 until 1894 when terraced residential properties were built on site. These were demolished by 1959. By 1974 the present-day configuration of the site comprising 4 number of vehicle parking garages had been established. The historical on-site sources of potential contamination are therefore:

- Buried Made Ground from demolition of the residences
- Vehicle parking garages
- Electricity substation building adjacent south

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

- Unspecified works approximately 200m west

Other surrounding land use and potential sources of contamination are either too far to have significant impact on the site or are in an area whereby they are located down hydraulic gradient from the site.

2.3 Unexploded Ordnance

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

An Unexploded Ordnance (UXO) assessment has been undertaken for the Site, the findings of which are detailed in 10030793-ARC-XX-XX-RP-YY-0153-01-UXO Report, September 2019.

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

3 PHYSICAL AND ENVIRONMENTAL SETTING

3.1 Published Geology, Hydrogeology and Hydrology

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

Table 3.1 Information Regarding Geology, Hydrogeology and Hydrology

Geology / Aquifer Status	<p>Superficial Deposits: Kempton Park Gravel Member - Sand and Gravel which is designated as a Principal Aquifer.</p> <p>Solid Geology: London Clay Formation - Clay and Silt which is designated as Unproductive Strata.</p> <p>Made Ground is also anticipated onsite associated with the historical onsite development.</p>
BGS Boreholes (within 100m of the site)	<p>The closest borehole to site (TQ17NE30) and located above a similar geological succession is 119m north and summarised below:</p> <ul style="list-style-type: none"> • Marl (clay): 0.00 – 1.00m bgl • Marl and Pebbles (gravelly clay): 1.00 – 2.00m bgl • Sandy Marl: 2.00 – 6.00m bgl • Ballast (gravel): 6.00 – 11.00m bgl • Sand: 11.00 – 13.00m bgl (depth of termination) • Groundwater was not encountered
Within a Source Protection Zone	<p>None recorded within 500m of the Site boundary.</p>
Licensed Groundwater Abstraction Points	<p>One licenced and active groundwater abstraction point is located within 1km of the Site, 988m east at Royal Mid Surrey Golf Club, Richmond – used as a source of water for spray irrigation.</p>
Surface Water Feature	<p>The River Thames is located 182m east of the site, flowing in north-south direction. The River Crane is located 310m southeast and The Duke of Northumberland's River 286m north; both of which flow into The River Thames from a westerly direction.</p>
Likely Groundwater Flow Direction	<p>The Superficial Deposits of sand and gravel are designated a Principal Aquifer which is considered permeable and likely to contain groundwater at shallow depths. Significant groundwater content and sub-surface flow is not expected within the underlying bedrock.</p> <p>Based on the local topography of site and surrounding area, any shallow groundwater would likely flow east towards the River Thames.</p>

3.2 Environmental Public Registers

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

Table 3.2. Environmental Data

Data type	Description	Distance (m) and Direction-
Radon	The site is in a lower probability radon area as less than 1% of properties are above the Action Level. No radon protection measures are considered necessary for new dwellings.	N/A
Licensed Discharge Consents	Three recorded. Two are active and described as: Tolsons court, Old Isleworth relates to miscellaneous effluent discharges at Tidal Thames. Status Revoked. Lion Wharf, Old Isleworth relates to miscellaneous effluent discharges at Tidal Thames. Status Revoked.	178m northeast – Downgradient 203m east - Downgradient
Mining Features	None identified within 250m of site	N/A
Pollution Incident to controlled waters	None identified within 250m of site	N/A
Landfill sites (current and historical)	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 st Dec 1946.	268m west - Upgradient
Potentially Infilled Land	Burial Grounds	40m east 75m southeast 129m southeast 199m south (All lie broadly downgradient)
	Unspecified Wharf	108m east – Downgradient
Local Authority pollution prevention and controls	None identified within 250m of site	N/A
Contemporary Trade Directory	Electricity substation	6m east – Adjacent 118m north – Downgradient 171m west - Upgradient 223m northeast – Downgradient
	Vehicle Repair, Testing and Servicing	50m northwest 199m northwest (All lie broadly downgradient)
	Industrial Products	67m northeast 180m northeast 212m northeast

Data type	Description	Distance (m) and Direction-
		(All lie broadly downgradient)
	Ventive Ltd-Construction Services	191m northeast - Downgradient
	Slipway- Moorings and Unloading Facilities of Water	210m northeast – Downgradient
	Unspecified Works or Factories	215m southwest – Downgradient
Fuel Station Entries	No records of petrol or fuel sites have been identified within 250m of site	N/A
Flooding information	<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>	N/A
Designated environmentally sensitive sites	<p>Royal Botanic Gardens, Kew Buffer Zone (World Heritage site England)</p> <p>Local Nature Reserve- Isleworth Ait</p>	<p>154m east</p> <p>244m east</p> <p>(All lie broadly downgradient)</p>
Tunnels	None within 500m of the site	N/A

3.2.1 Summary

In terms of the environmental public register information identified in Table 3.2, the most pertinent potentially contaminative activities which could have viably impacted Site are summarised as follows:

- Electricity substation adjacent south of site
- Landfill associated with Redlees Park 268m west of site
- Vehicle Repair and Servicing works in the west of site

All other features identified are considered either too far away from site or located in a direction whereby any potential contaminants are likely to be transported away from the site, and therefore, have not been considered further.

4 PRELIMINARY CONCEPTUAL MODEL

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

4.1 Potential Contaminant Sources

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

Table 4.1: Potential sources of contamination on site

Source	Potential Contaminants
On Site	
Made Ground is likely to be present on the site from previous development and demolition.	Asbestos, metals, Polycyclic Aromatic Hydrocarbons (PAH), hydrocarbons, ground gas
London Clay	Sulphates
Vehicle Parking/Garages use	Hydrocarbons, lubricants and solvents from potential spills/leaks from vehicle maintenance activities and asbestos.
Off Site	
Made Ground from offsite developments	Metals, Polycyclic Aromatic Hydrocarbons (PAH), hydrocarbons, ground gas
Electricity Substation	Polychlorinated Biphenyls (PCBs) and hydrocarbons from potential spills/ leaks.
Redlees Park Historical Landfill	Although the landfill was classed as inert, due to the age of the landfill, it is unknown to what extent this classification was adhered to during operation. There is therefore a chance that various contaminants, leachate and ground gas could be present within this Made Ground. Contaminants may include, but not be limited to; PAH, Total Petroleum Hydrocarbons (TPH), solvents and lubricants.

4.2 Potential Receptors

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

As a precautionary approach the potential human health receptor detailed below take into consideration the most conservative future land use as residential properties with private gardens and landscaped areas. It is considered possible that any potential contamination within the soils may be disturbed during the construction phase, or during gardening or landscaping undertaken by any future site users.

4.2.1 Human Health

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

Contamination risks to construction workers are not appraised by chronic (long term) exposure human health risk assessments. There are no appropriate published criteria applicable to the assessment of potential risks to construction workers. The potential risks should be addressed by a site-specific construction workers risk assessment and implementation of appropriate health and safety measures to adequately mitigate any potential risks. All works should be conducted in accordance with the CDM regulations 2015 (Ref. 5) or any other relevant guidance. Construction workers are not considered further as human health receptors.

4.2.2 Controlled Waters

- The Superficial Deposits beneath the site are classified as a Principal Aquifer and therefore considered a potential receptor at risk.
- The nearest surface water feature is the River Thames located 182m east of the site. Considering the significant distance from site it is considered unlikely for any potential pollutants to reach the river. Therefore, for the purposes of this report surface waters has not been considered as a potential receptor.

4.2.3 Buildings

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

4.3 Potential Pathways

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

Table 4.2: Potential Contaminative Pathways

Receptor	Description
Human health (future site users/residents' visitors, maintenance workers and contractors)	<p>Accidental ingestion of contaminants within soil, water and dust.</p> <p>Inhalation of dust, vapours and ground gases</p> <p>Dermal contact with contaminants within soil, water and dust.</p> <p>Ingestion of contaminated vegetables and soil attached to vegetables.</p>
Controlled Waters (Principal Aquifer)	<p>Leaching of potential contaminants in soil or Made Ground into groundwater.</p> <p>Vertical migration of contaminants through the unsaturated zone into groundwater beneath the site.</p>
Buildings and structures including water supply pipes	<p>Direct contact of building services or foundations with contaminants in the soil and Made Ground leading to degradation of concrete or tainting of water supply.</p> <p>Migration of ground gases into buildings and accumulation of gasses in confined and poorly ventilated spaces leading to explosive gases or vapour.</p>

4.4 Preliminary Qualitative Risk Assessment

Potential sources of contamination are considered present on site and pathways and receptors will be introduced during redevelopment and as such potential pollutant linkages exist. The main potential sources of contamination identified within this report are Made Ground from previous developments potential contamination from the adjacent electricity substation current use of PCBs. It is likely that some of the concrete paving and existing buildings may need to be demolished. Ground investigation and assessment is recommended.

5 WASTE MANAGEMENT AND POTENTIAL DEVELOPMENT CONSTRAINTS

5.1 Waste Management

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

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

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

5.2 Potential Development Constraints

Above and below ground services may likely be present.

It is likely that concrete hardstanding and existing garage buildings may need to be demolished. Asbestos may be present given the age of the garages and an asbestos survey should be considered prior to any demolition works.

Buried obstructions may be present given the historical development.

6 GEOTECHNICAL CONSIDERATIONS

6.1 General Comments

Whilst the historical borehole data (located 119m north of the site boundary) is considered too far to be to provide a true indication of ground conditions, the following is the closest available data to the site; site ground conditions may differ significantly;

- Marl (clay): 0.00 – 1.00m bgl
- Marl and Pebbles (gravelly clay): 1.00 – 2.00m bgl
- Sandy Marl: 2.00 – 6.00m bgl
- Ballast (gravel): 6.00 – 11.00m bgl
- Sand: 11.00 – 13.00m bgl (depth of termination)
- Groundwater was not encountered

Based on the lack of site-specific intrusive investigation the following potential geotechnical constraints and ground engineering abnormal should be considered which may influence future development. These are not conclusive and site-specific ground investigation should be carried out to confirm prevailing constraints:

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

and public utilities or where man entry is envisaged. The suitability of the Contractor's proposals for ground support will be particularly important in such areas.

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

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

6.2 Foundations

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

At this stage it is envisaged that where Made Ground is absent or shallow, the Kempton Park Gravel Member, if comprising competent sands and gravels, may be suitable for shallow foundations for light weight structures, however this will need to be confirmed via an appropriate ground investigation. The nearest borehole (114m) suggests that clays may overlie the sand and gravels, these clays may not be suitable for shallow foundations if they have low shear strength.

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

7 CONCLUSIONS AND RECOMMENDATIONS

7.1 Design Considerations

The Site is currently used as a car parking and garages. An intrusive site investigation has not been undertaken. The Site was previously a terraced housing and redeveloped to its current layout in the 1960s/1970s.

Potential sources of contamination have been identified, as shown in table 4.1 and potential pollutant linkages exist. Therefore, an appropriate ground investigation is recommended to determine ground conditions for foundation design and the chemical regime to assess the degree of risk to end users and controlled waters. This should include for chemical testing of soils, groundwater monitoring (if present) and gas monitoring in accordance with the recommendations in CIRIA C665 (Ref. 6) and LC:RM (Ref. 4) and consideration of shrinkage and swelling, compressible ground stability and sulphate attack to below ground concrete.

7.2 Construction Considerations

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

Construction / demolition workers should use appropriate PPE and follow the site-specific contractors risk assessment which should include risks to human health from potential contamination including soil borne gas. Due to the historic phases of development, demolition and redevelopment consideration should be given to the potential presence of asbestos within the Made Ground, soil contamination and the potential for impacted groundwaters.

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

A foundation works risk assessment may be required to assess the risk to the underlying Principal Aquifer if foundations or piling which penetrate the base of the Made Ground are proposed.

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]. <https://mapapps.bgs.ac.uk/geologyofbritain/home.html> Accessed September 2019.
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7. Department for Environment, Food and Rural Affairs "Magic" website. Available at (<http://magic.defra.gov.uk/MagicMap.aspx>) Accessed September 2019
8. Unexploded Ordnance Survey (Arcadis Ref: [10030793-ARC-XX-XX-RP-YY-0153-01-UXO Report](#))
9. Zetica unexploded bomb map accessed September 2019.

APPENDIX A

Historical Ordnance Survey Maps

Site Details:

GARAGE BLOCK ADJACENT 60,
MAGDALA ROAD, ISLEWORTH,
TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: County Series

Map date: 1865

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1865
Revised 1885
Edition N/A
Copyright N/A
Levelled N/A

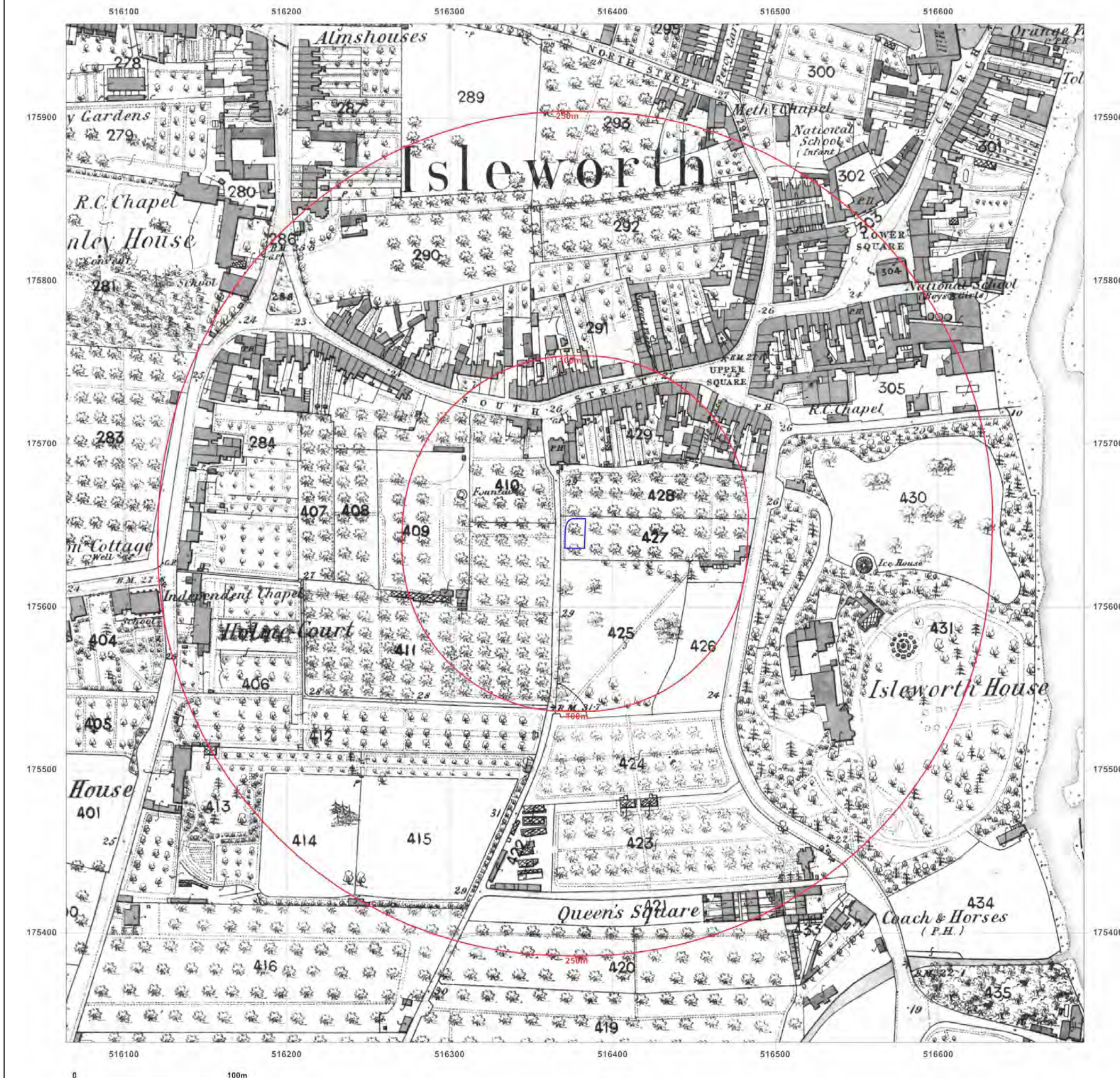


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Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf



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Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

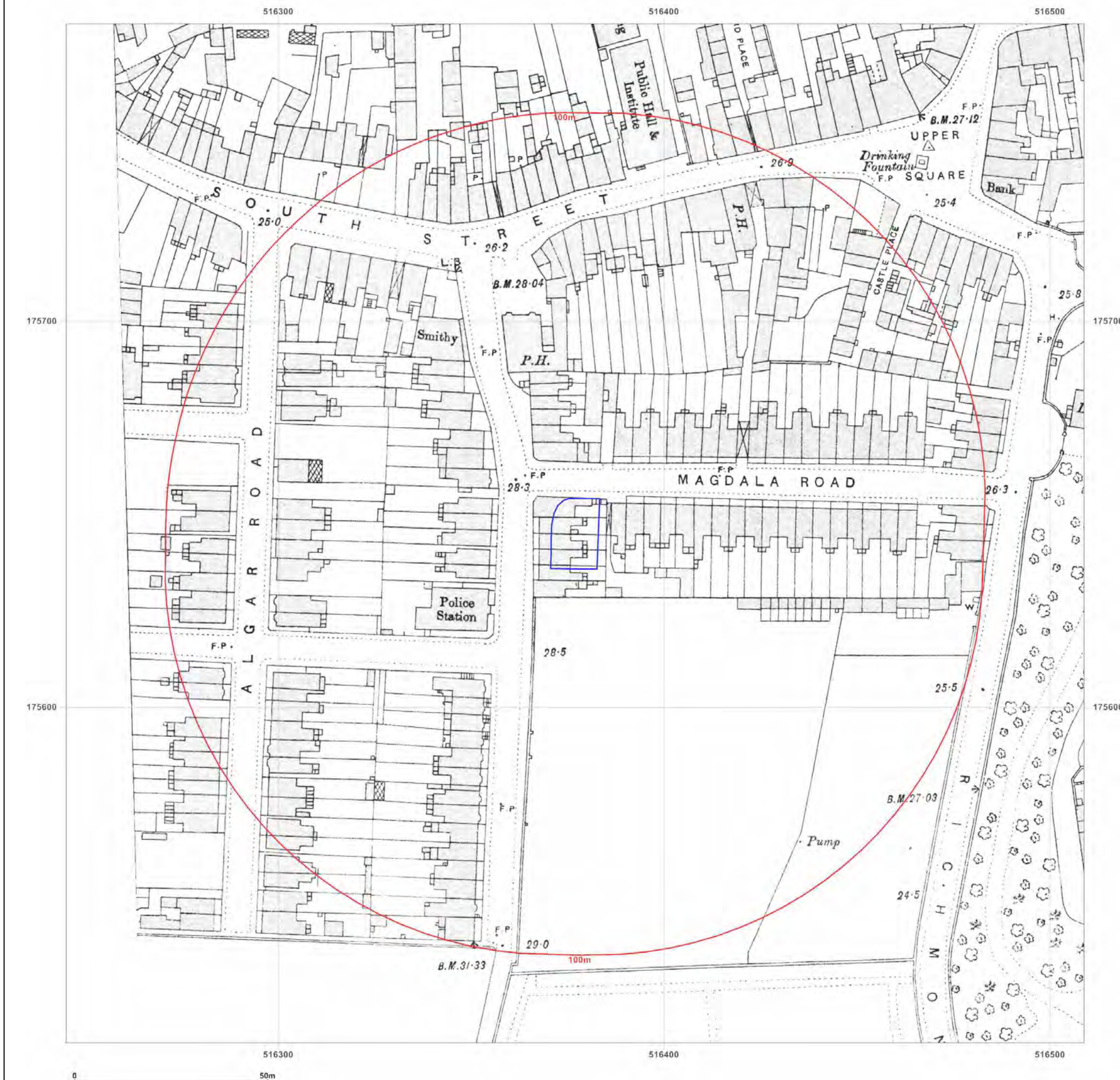


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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

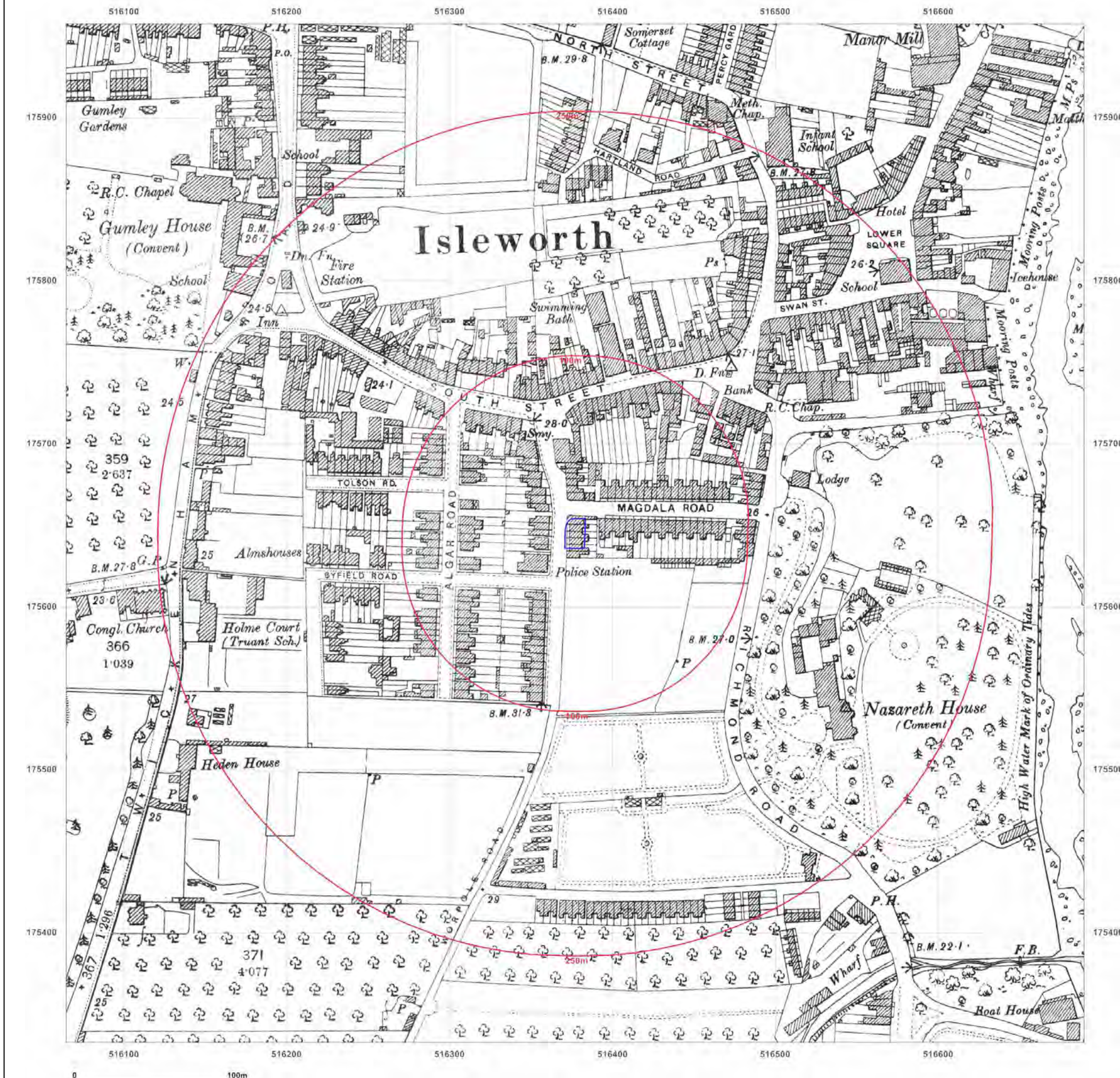


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Site Details:

GARAGE BLOCK ADJACENT 60,
MAGDALA ROAD, ISLEWORTH,
TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: County Series

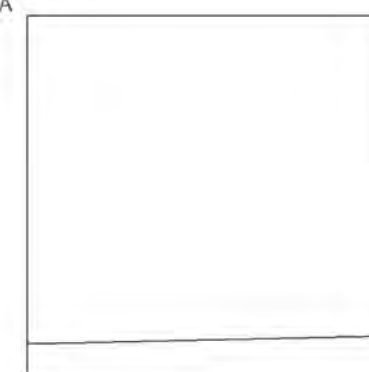
Map date: 1913

Scale: 1:2,500

Printed at: 1:2,500



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

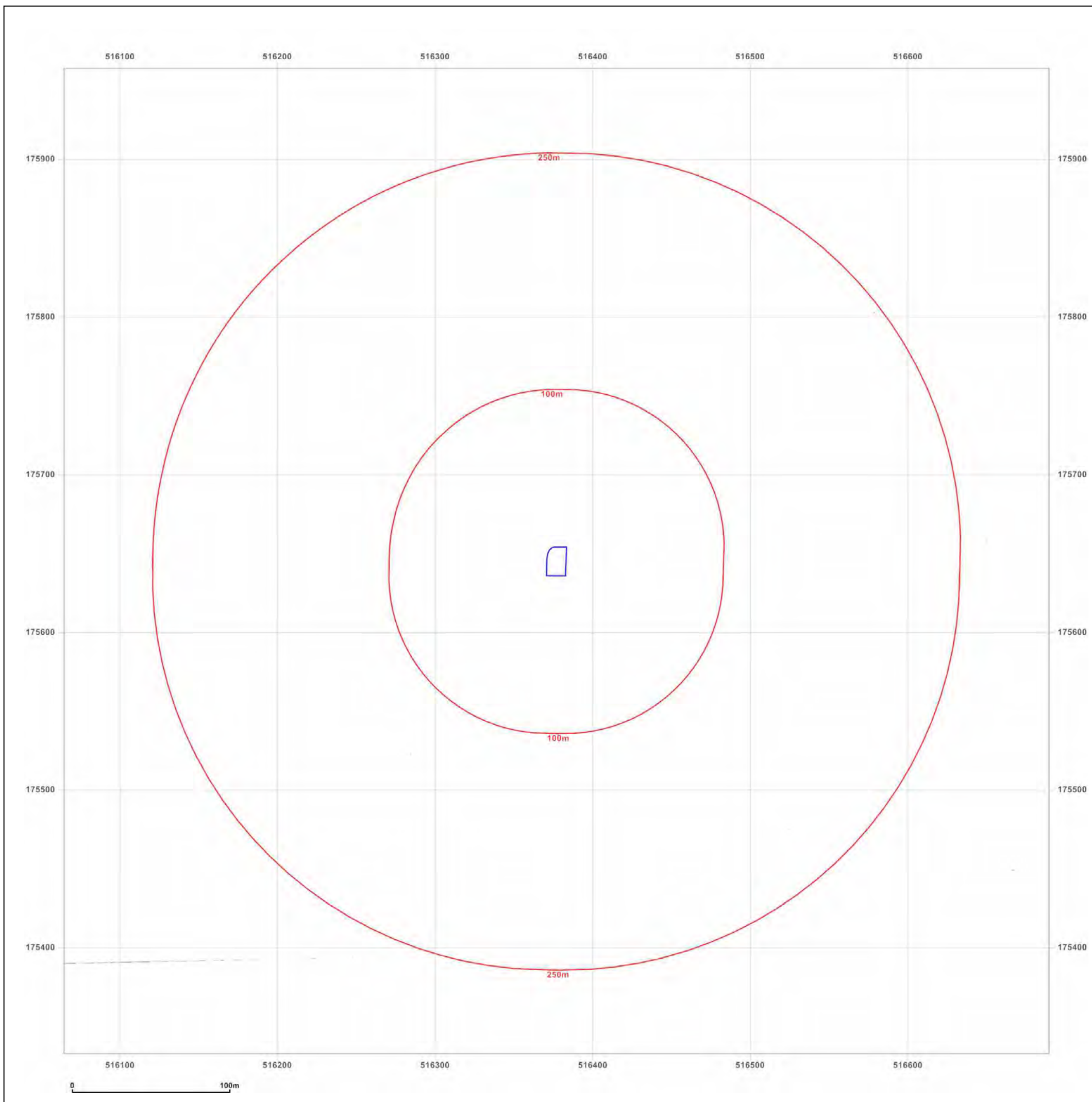


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Site Details:

GARAGE BLOCK ADJACENT 60,
MAGDALA ROAD, ISLEWORTH,
TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

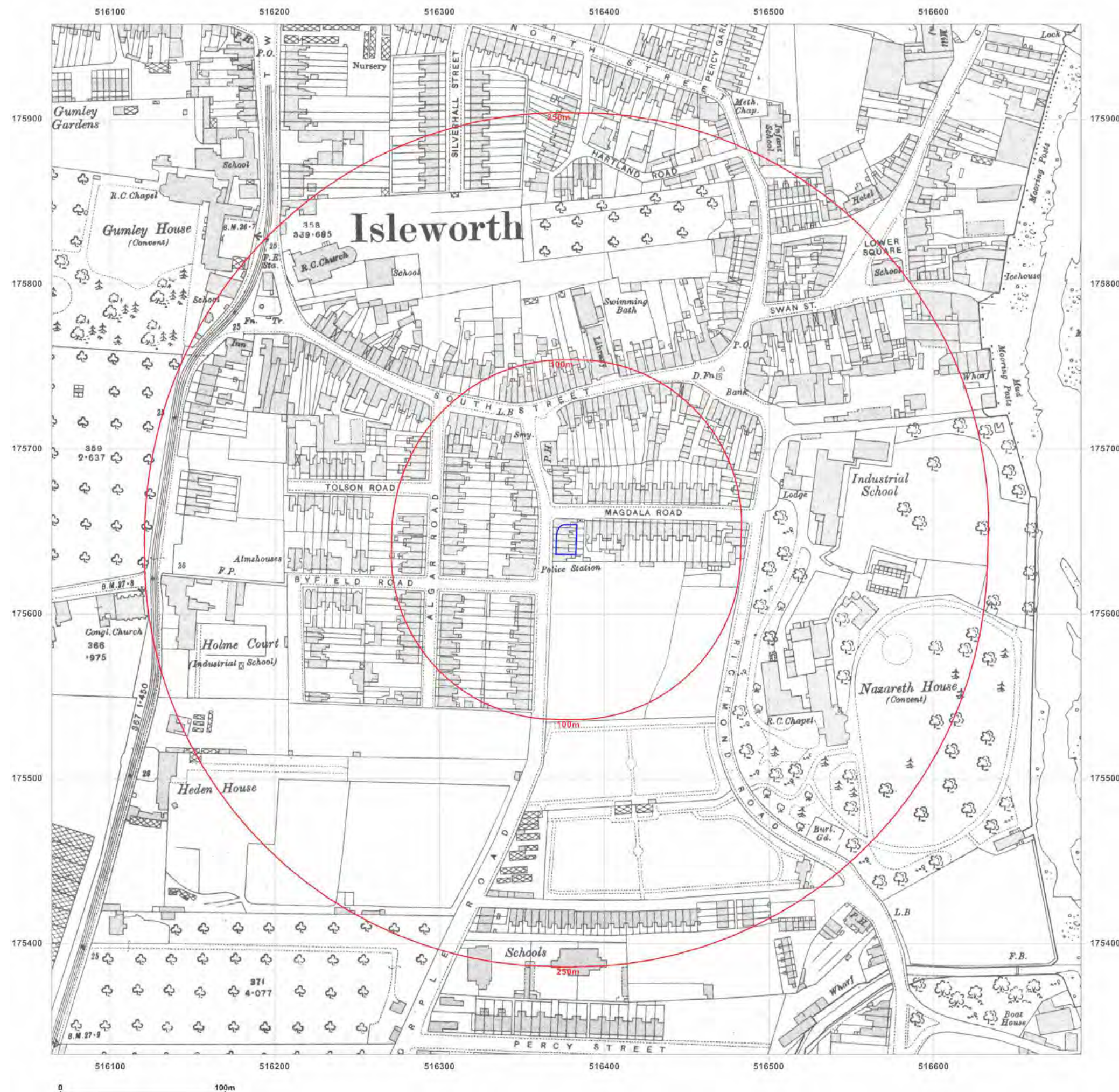


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Site Details:

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MAGDALA ROAD, ISLEWORTH,
TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

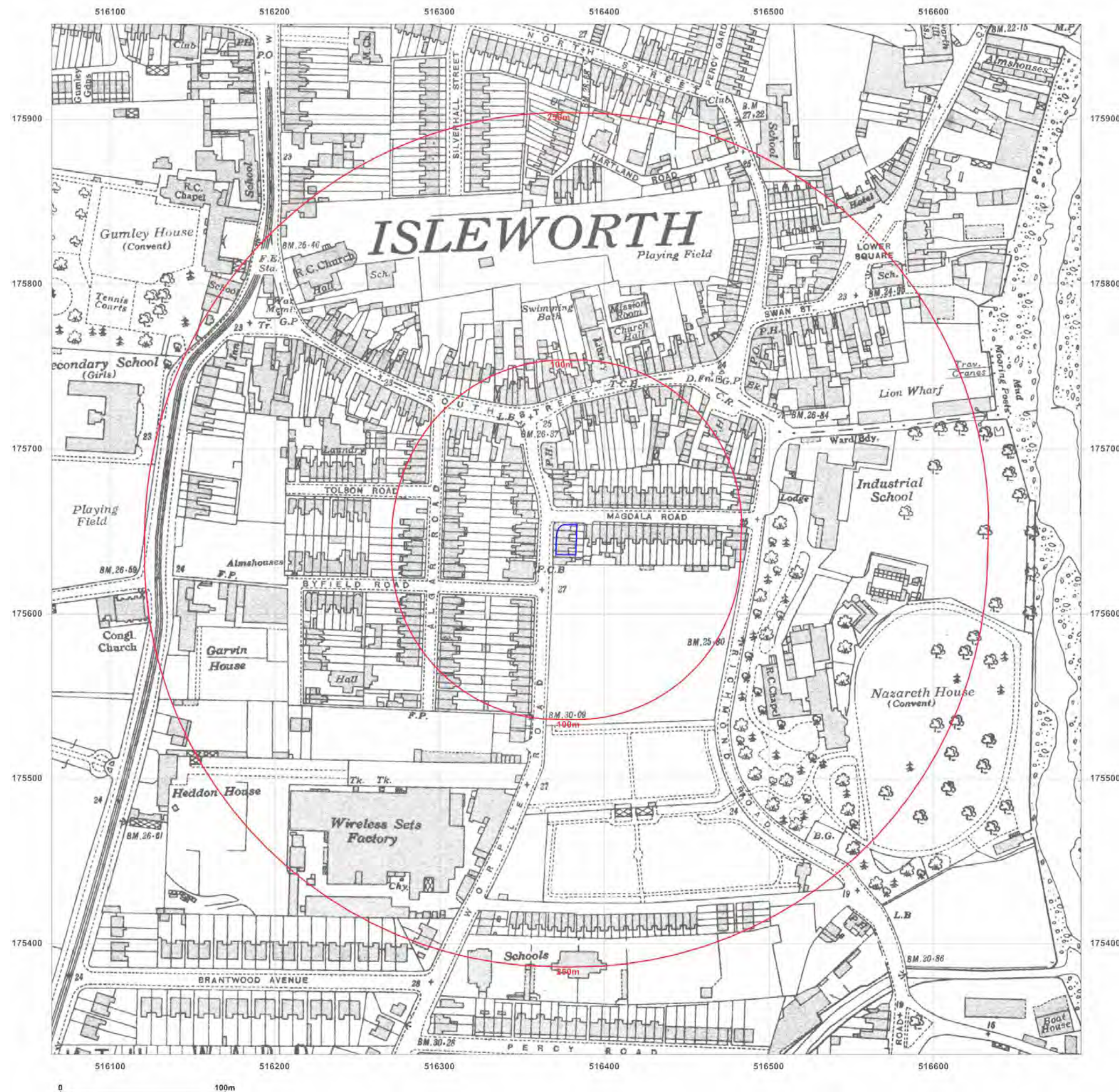


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Site Details:

GARAGE BLOCK ADJACENT 60,
MAGDALA ROAD, ISLEWORTH,
TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 1959

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1959
Revised 1959
Edition 1960
Copyright 1960
Levelled 1957

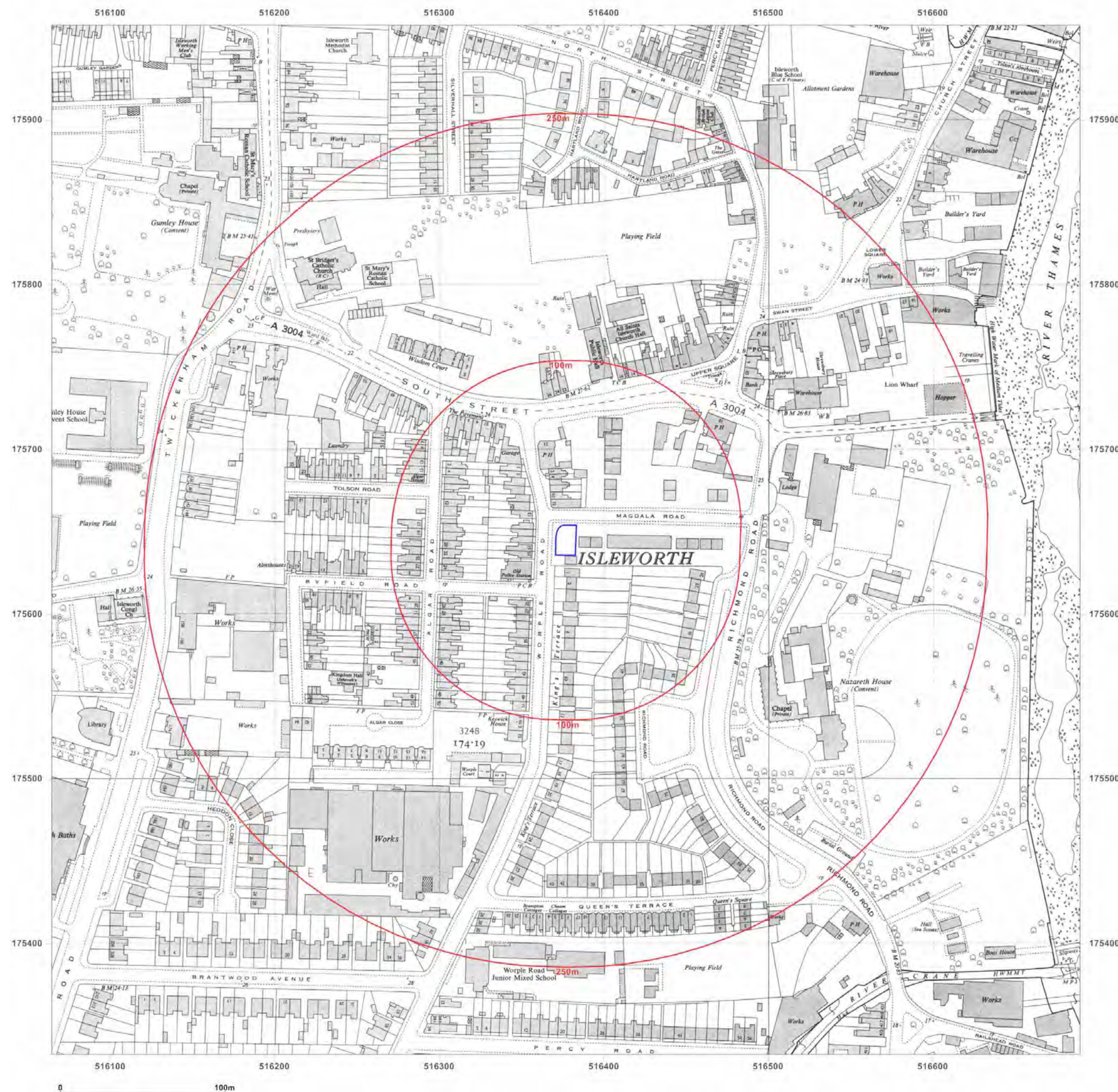


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Site Details:

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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 1959

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1959
Revised 1959
Edition 1960
Copyright 1960
Levelled 1957

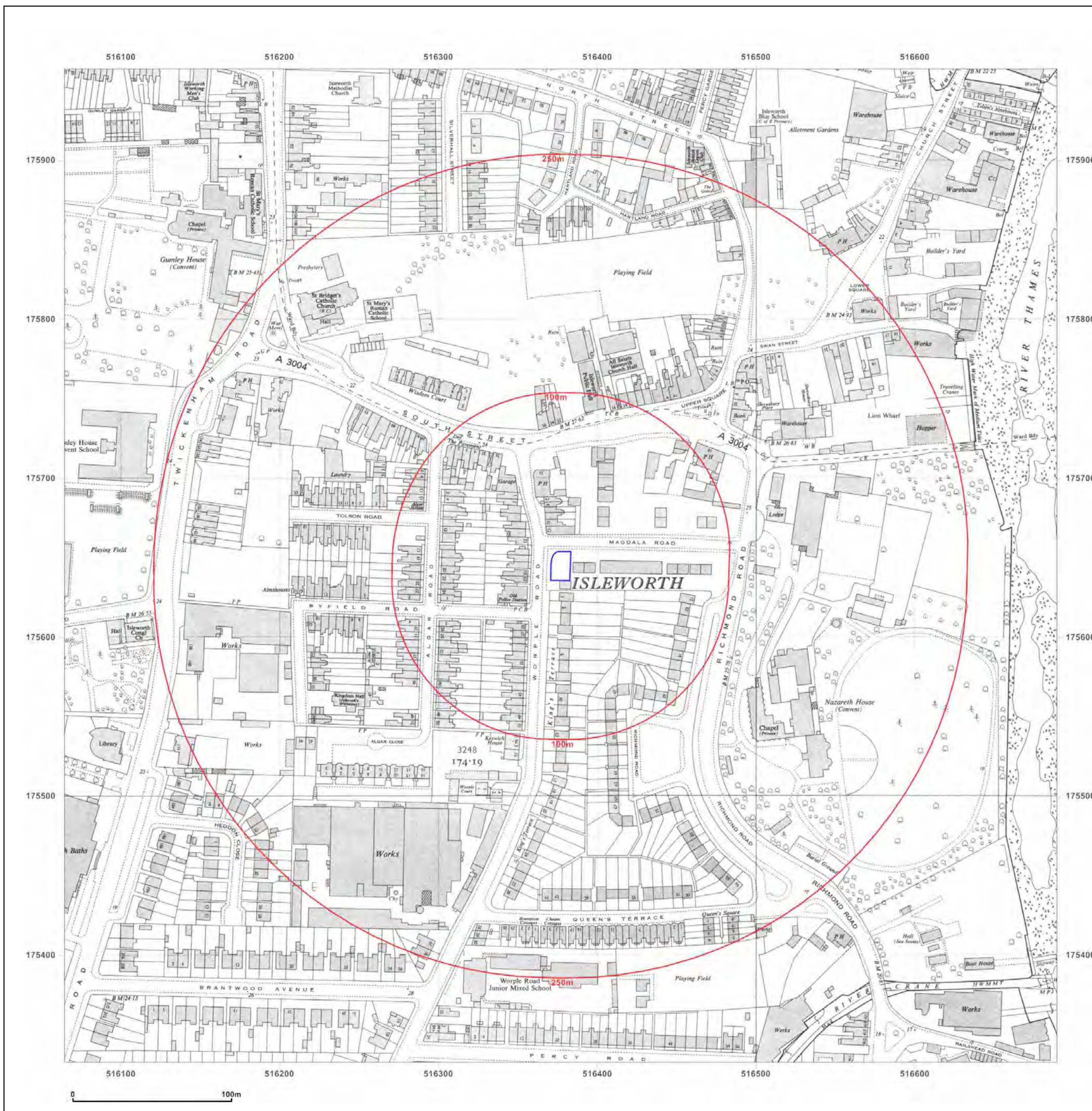


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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

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

Surveyed 1959
Revised 1959
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Site Details:

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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

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

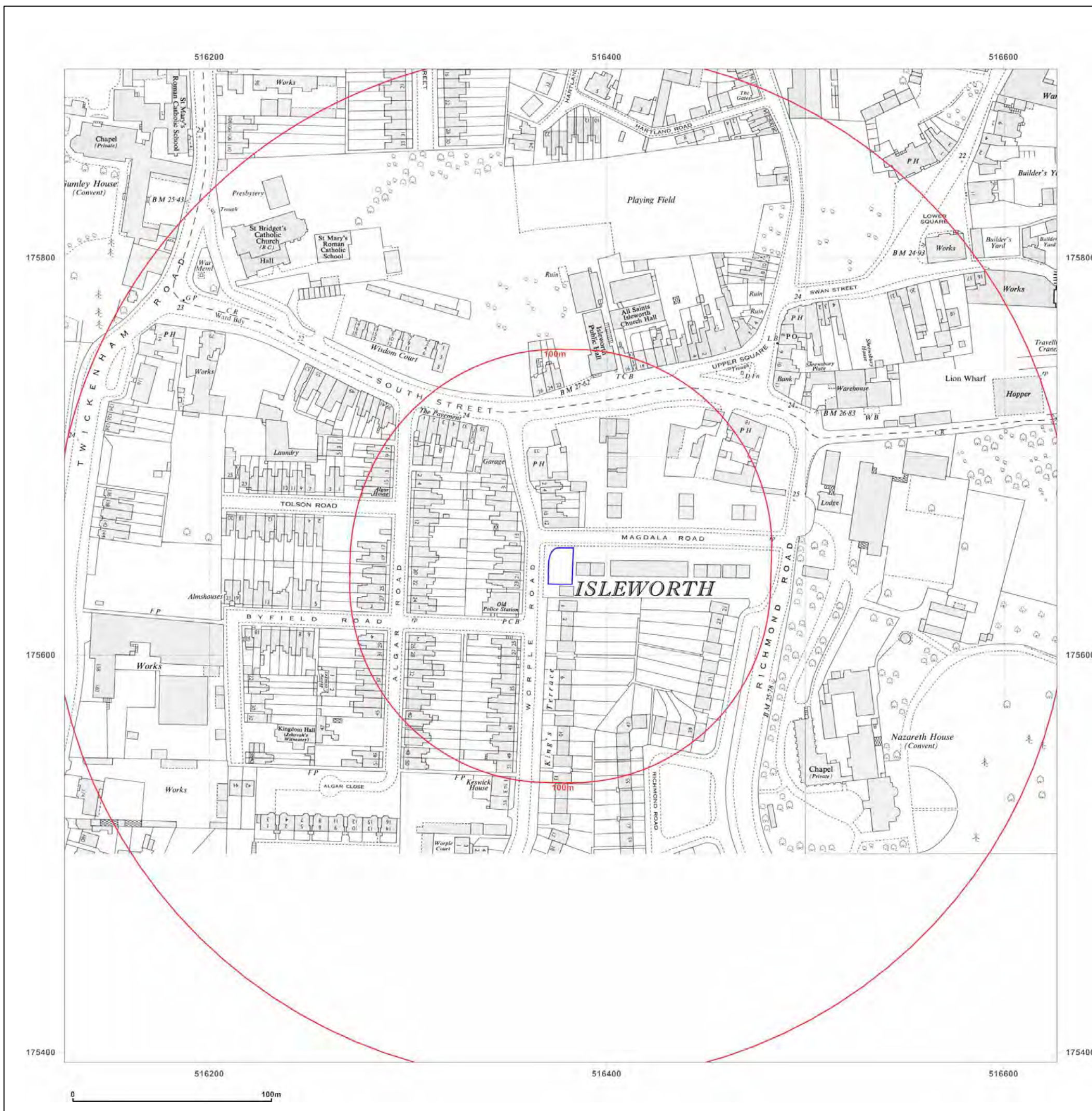


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Site Details:

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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 1970-1974

Scale: 1:1,250

Printed at: 1:2,000



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

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

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

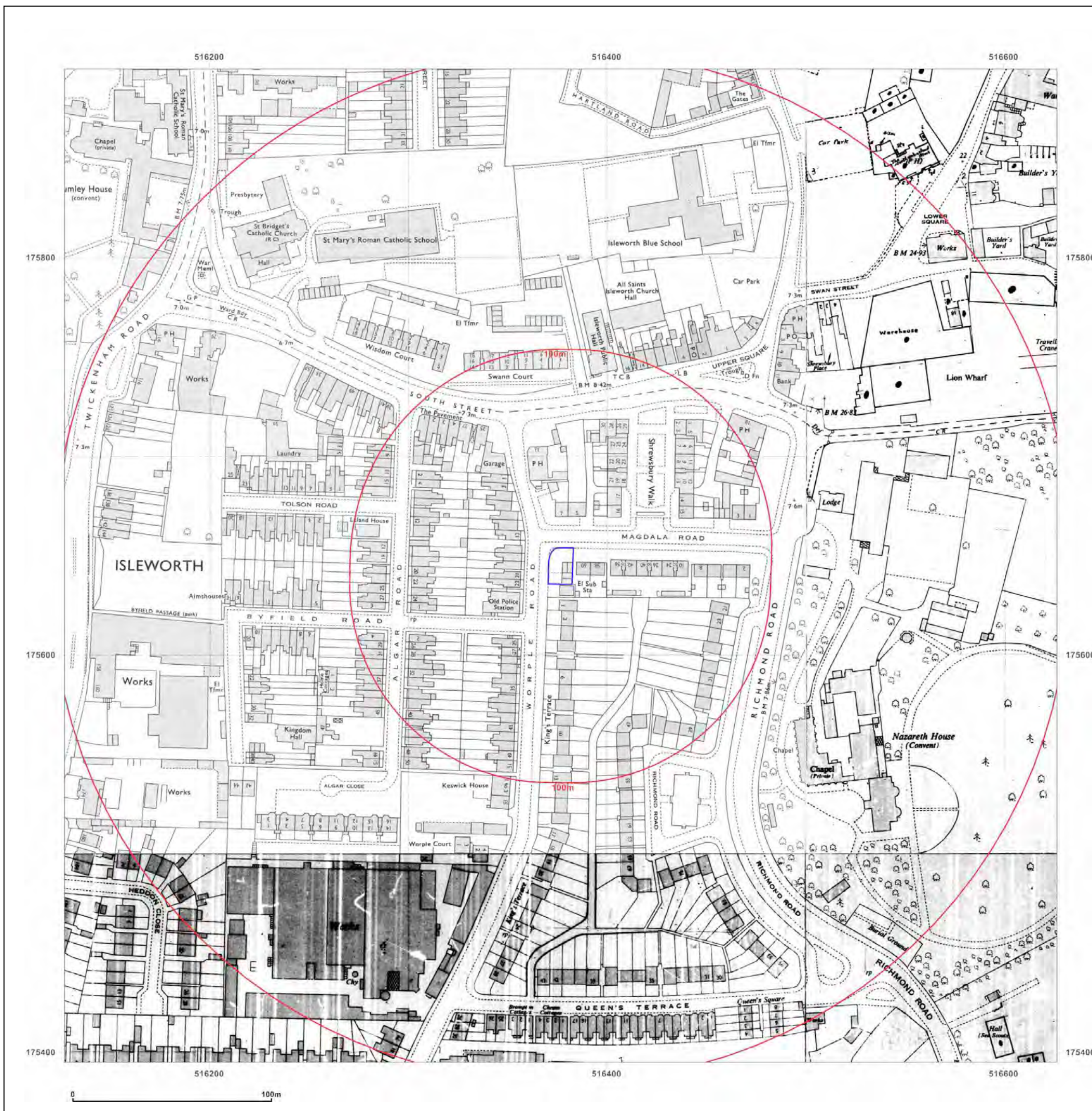


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Site Details:

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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

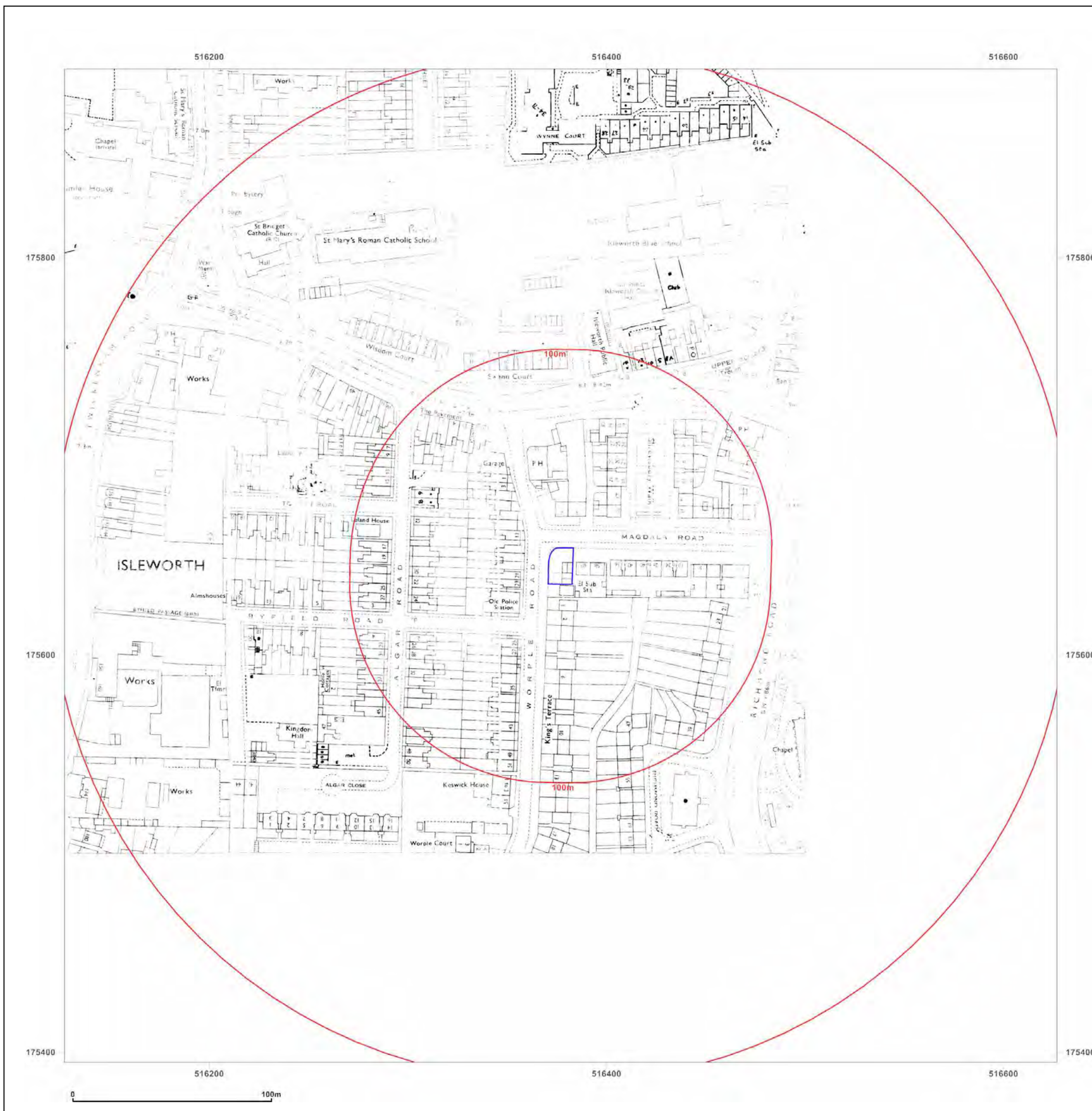


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Site Details:

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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 1974-1978

Scale: 1:1,250

Printed at: 1:2,000



<p>Surveyed N/A Revised N/A Edition N/A Copyright 1974 Levelled N/A</p>	<p>Surveyed N/A Revised N/A Edition N/A Copyright 1978 Levelled N/A</p>
	<p>Surveyed 1959 Revised 1974 Edition N/A Copyright 1974 Levelled 1957</p>

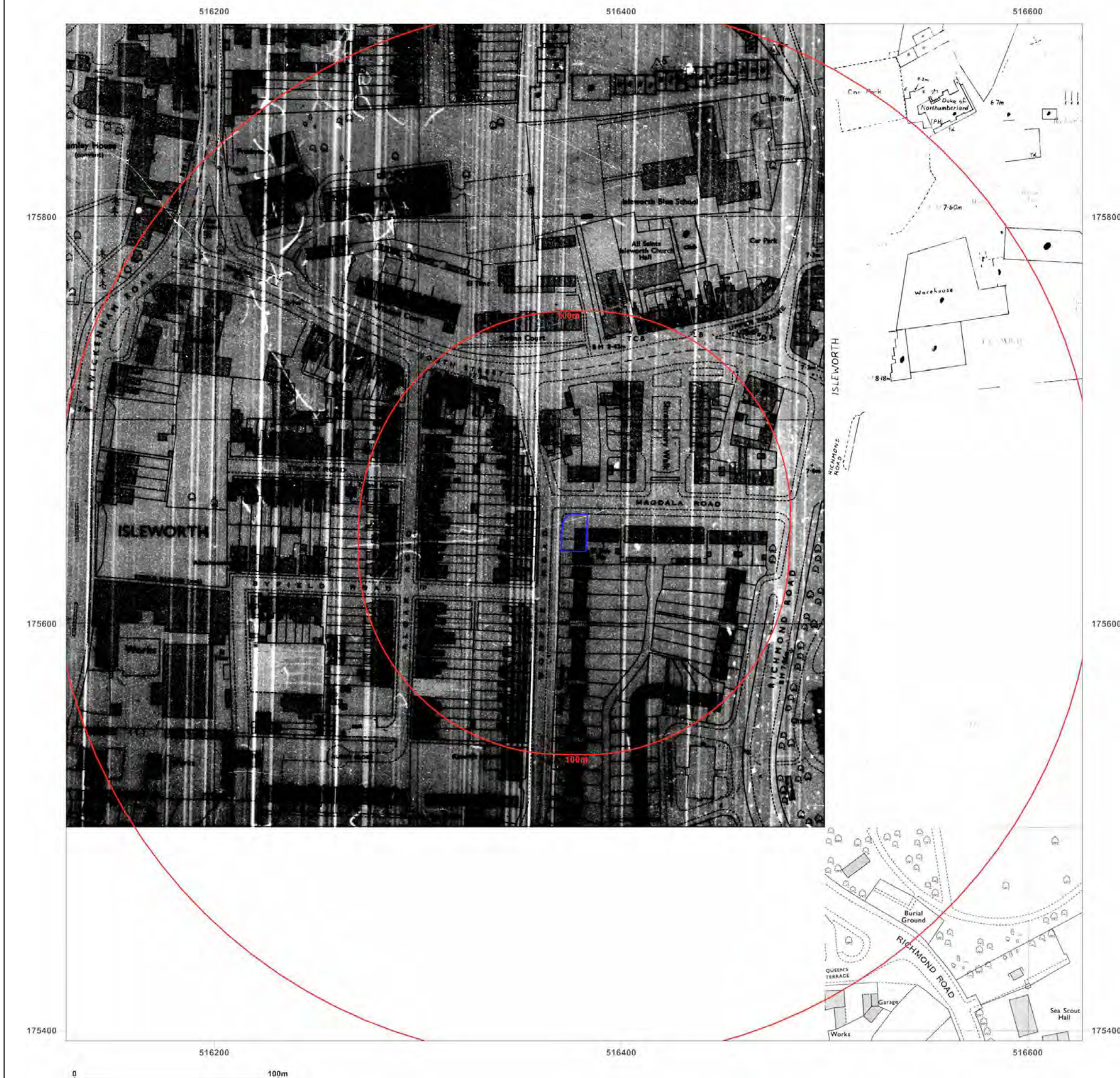


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Site Details:

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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 1987-1991

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1987
Levelled 1957

Surveyed N/A
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Site Details:

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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 1989-1994

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed 1959
Revised 1989
Edition N/A
Copyright 1989
Levelled N/A

Surveyed N/A
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Copyright 1994
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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 1991-1995

Scale: 1:1,250

Printed at: 1:2,000



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

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

Surveyed 1994
Revised 1994
Edition N/A
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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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Site Details:

GARAGE BLOCK ADJACENT 60,
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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

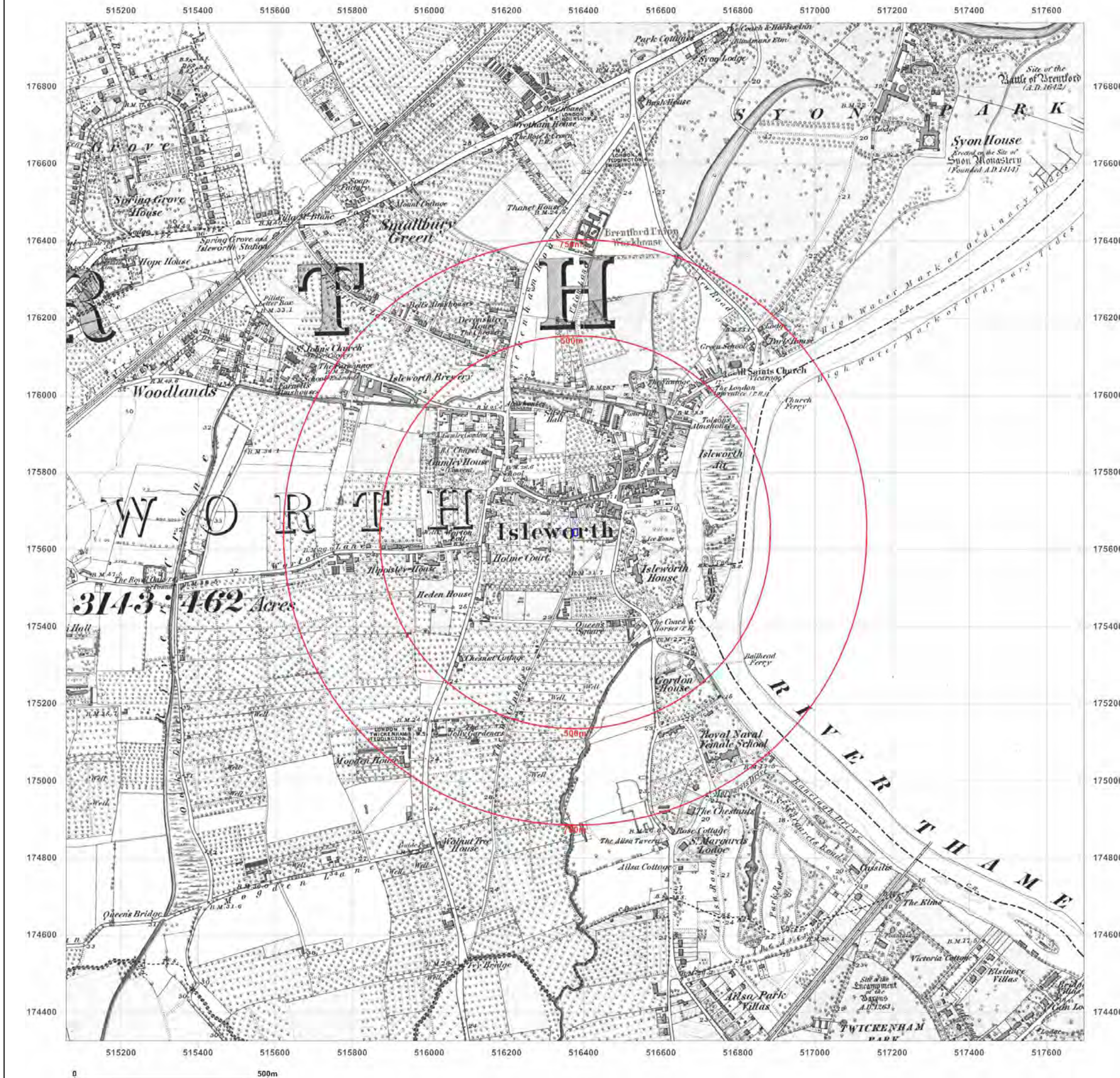


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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: County Series

Map date: 1894

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1885
Revised 1894
Edition N/A
Copyright N/A
Levelled N/A

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

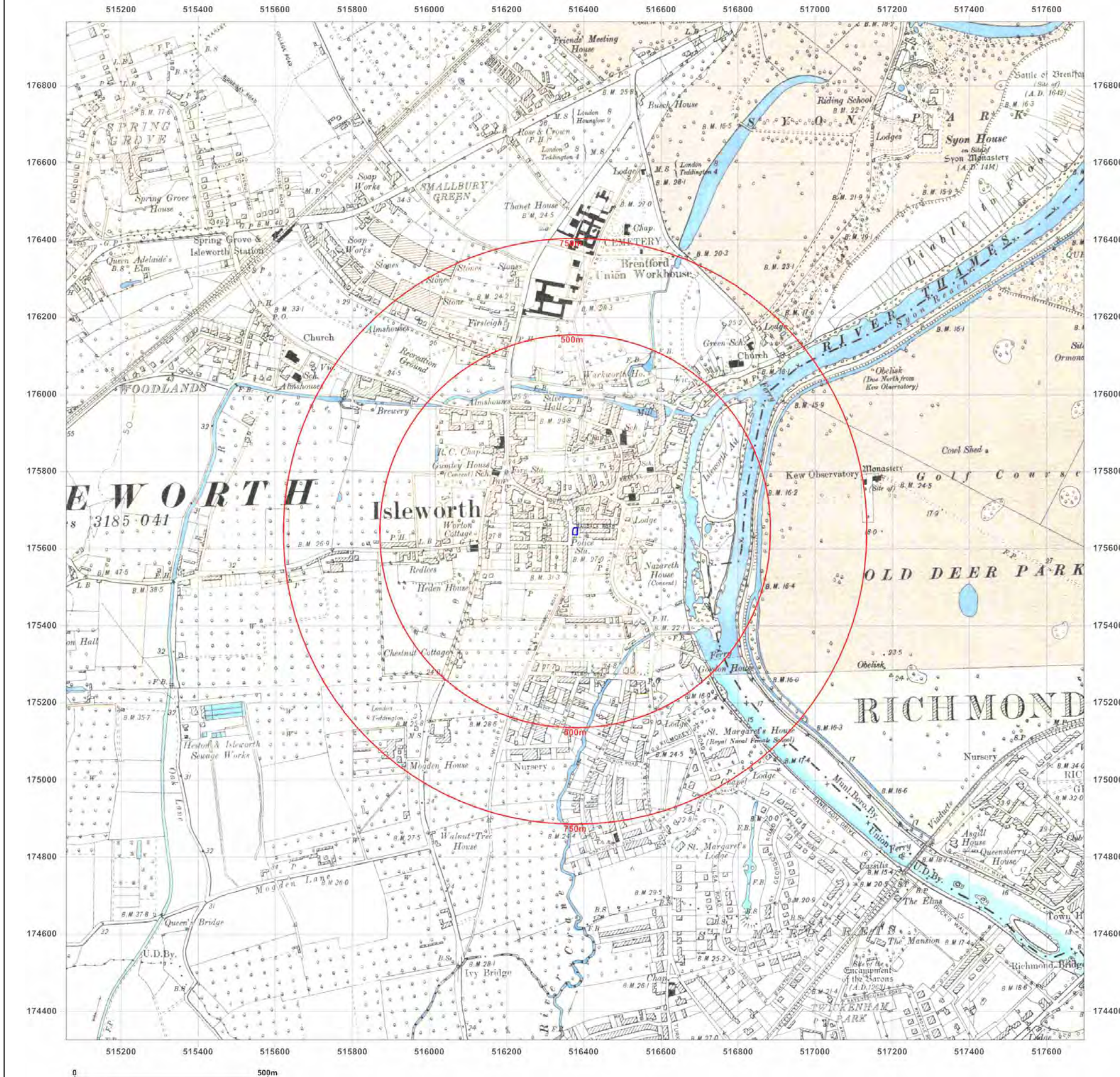


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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

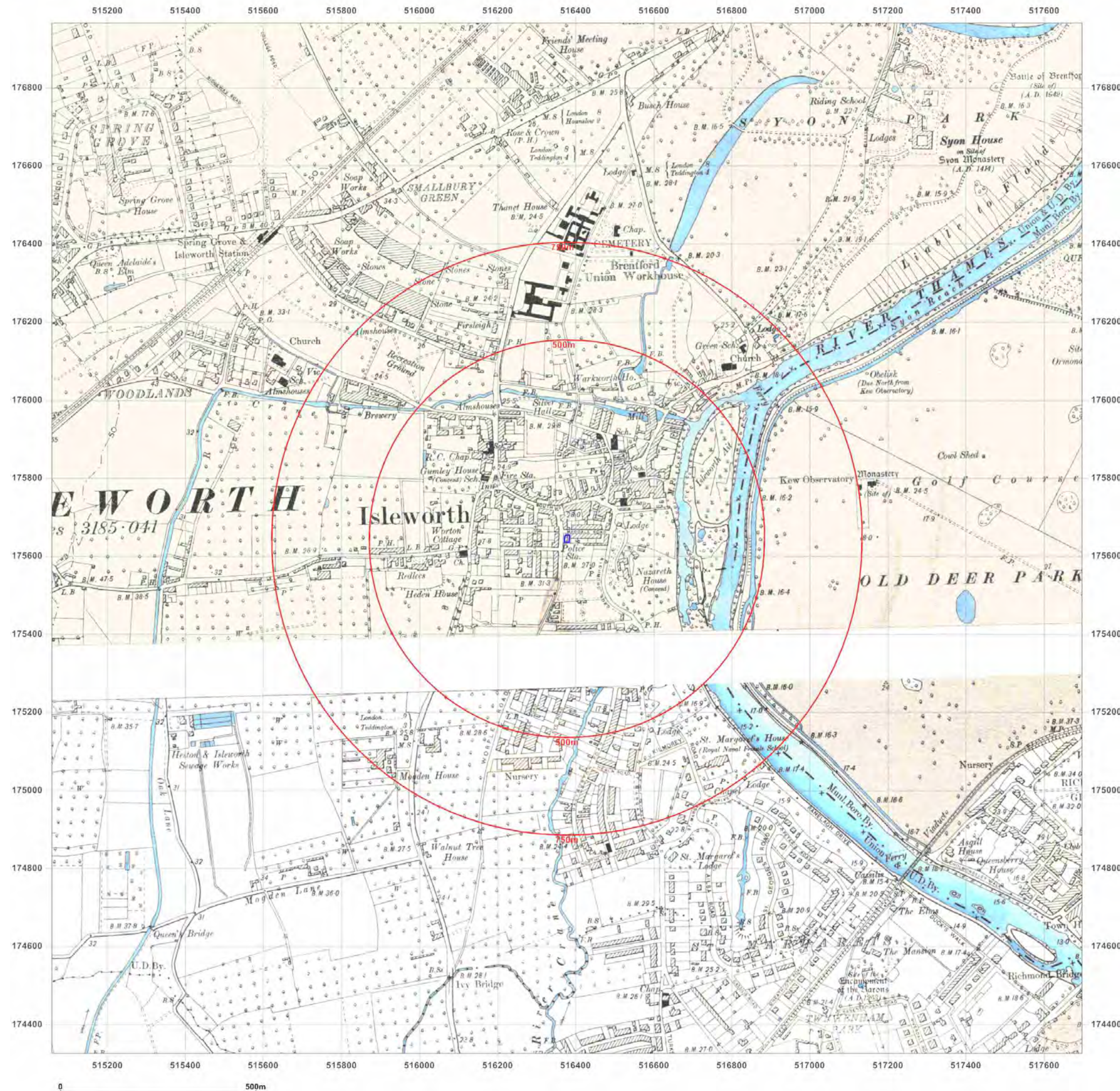


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Site Details:

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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

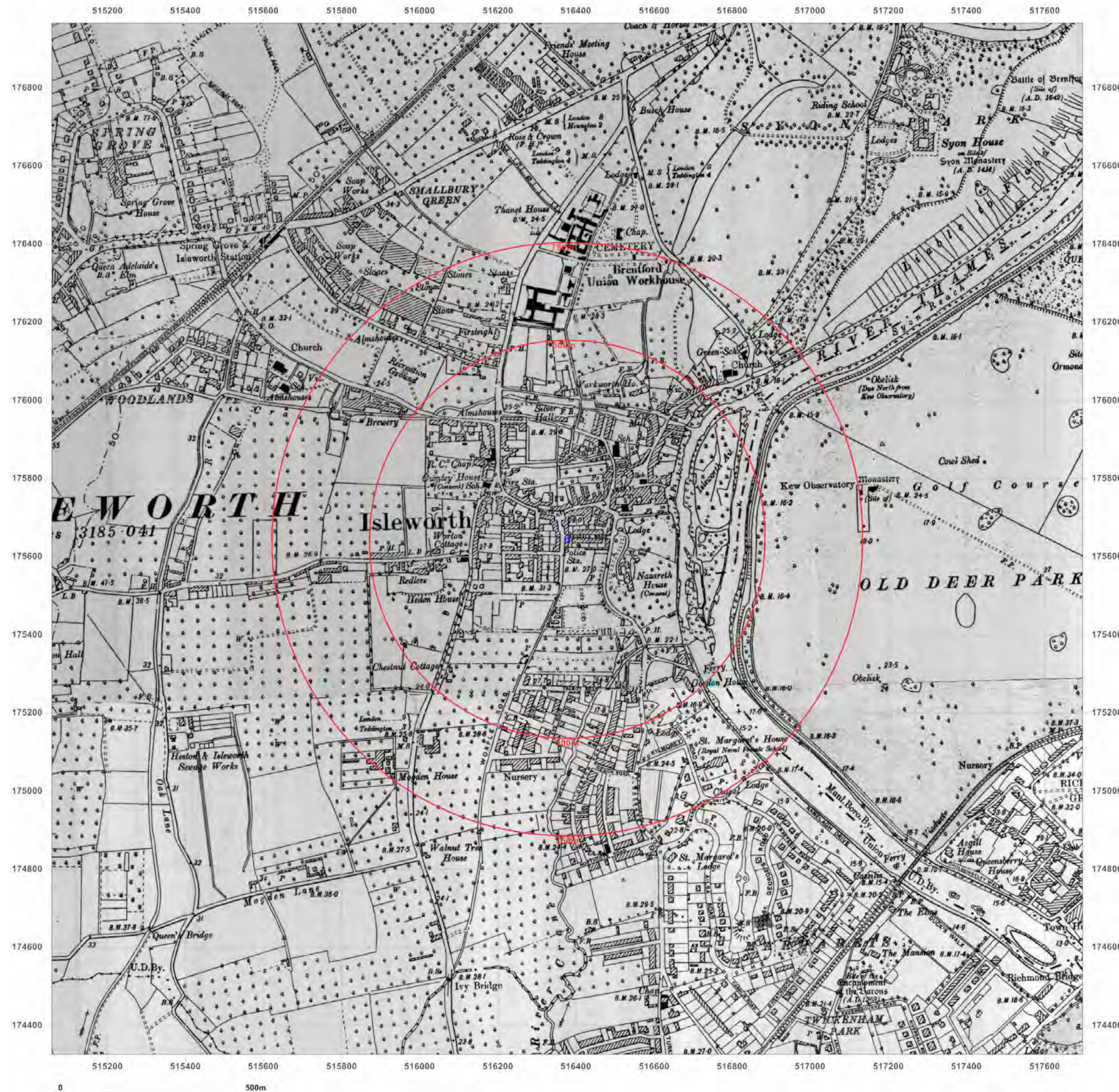


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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

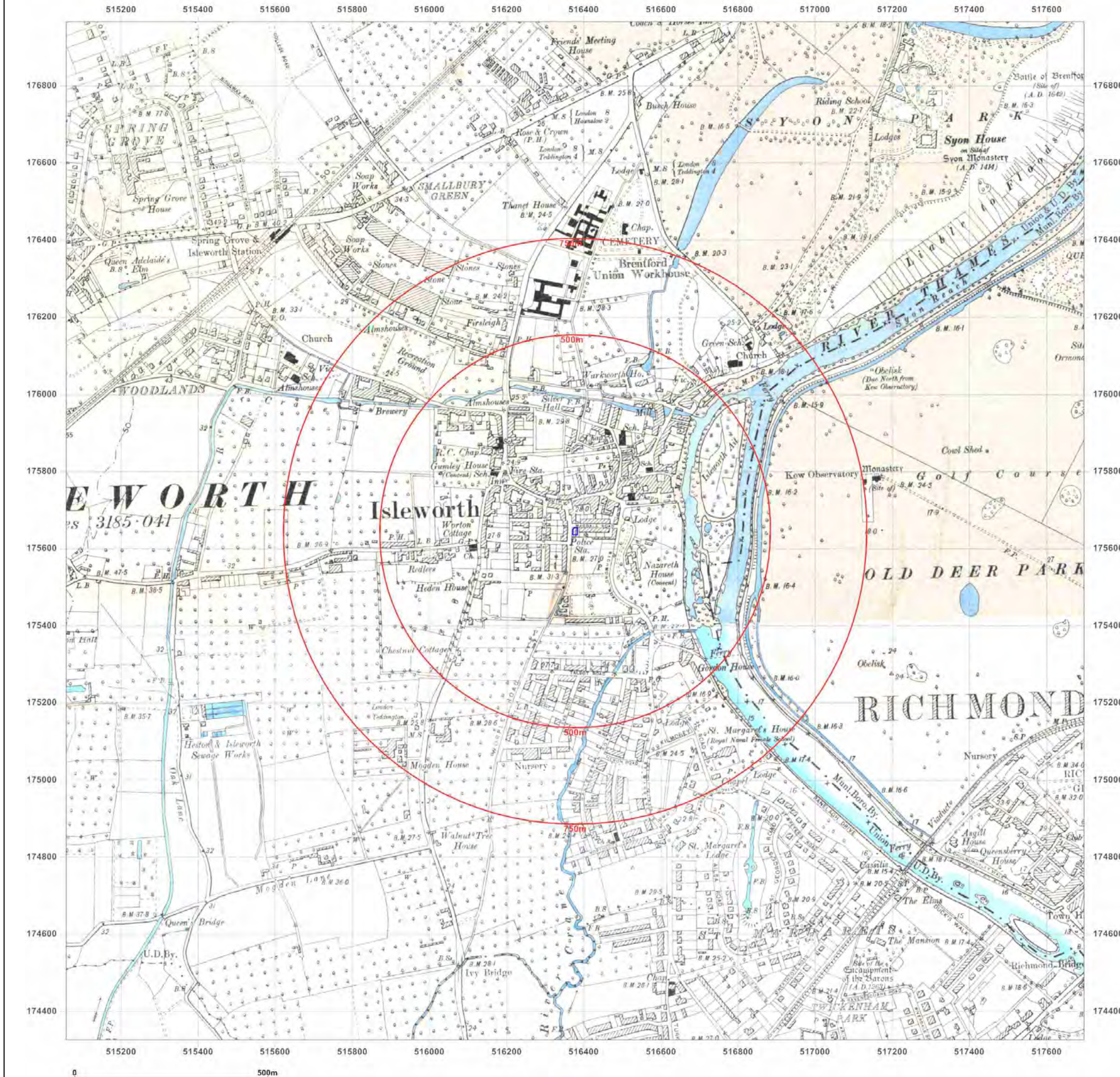


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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

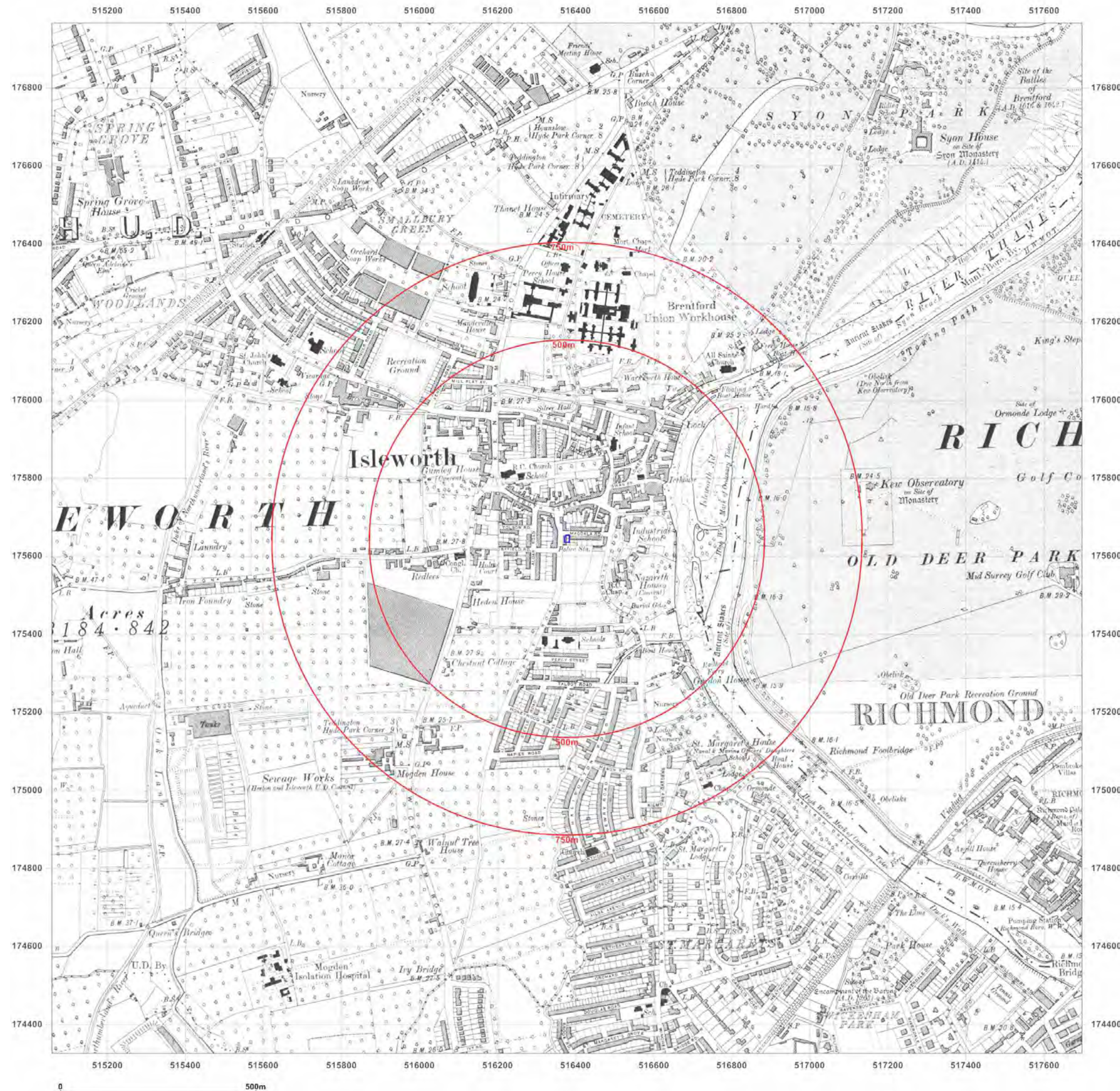


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Site Details:

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MAGDALA ROAD, ISLEWORTH,
TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: County Series

Map date: 1912

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1883
Revised 1912
Edition N/A
Copyright N/A
Levelled N/A

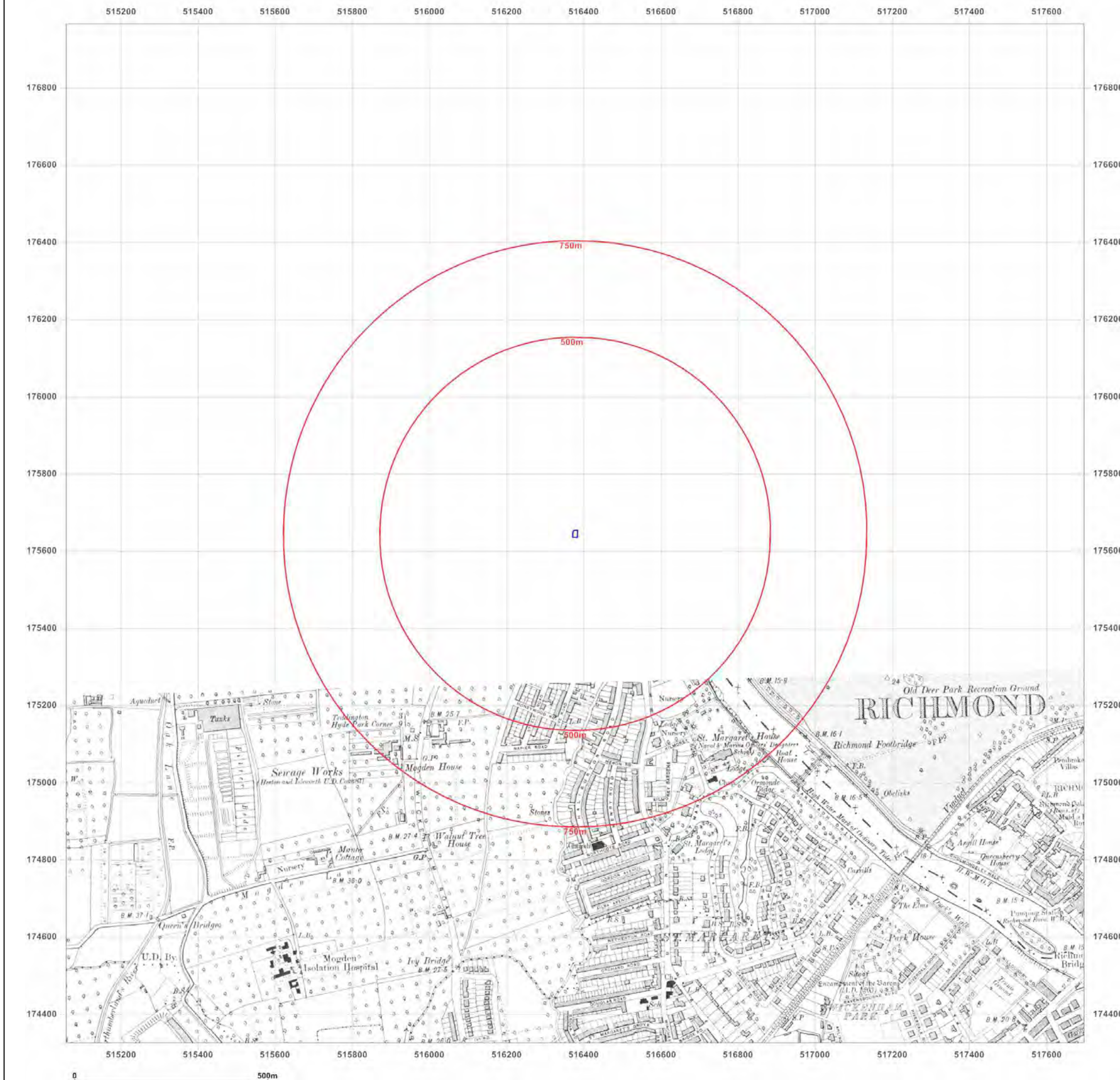


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MAGDALA ROAD, ISLEWORTH,
TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

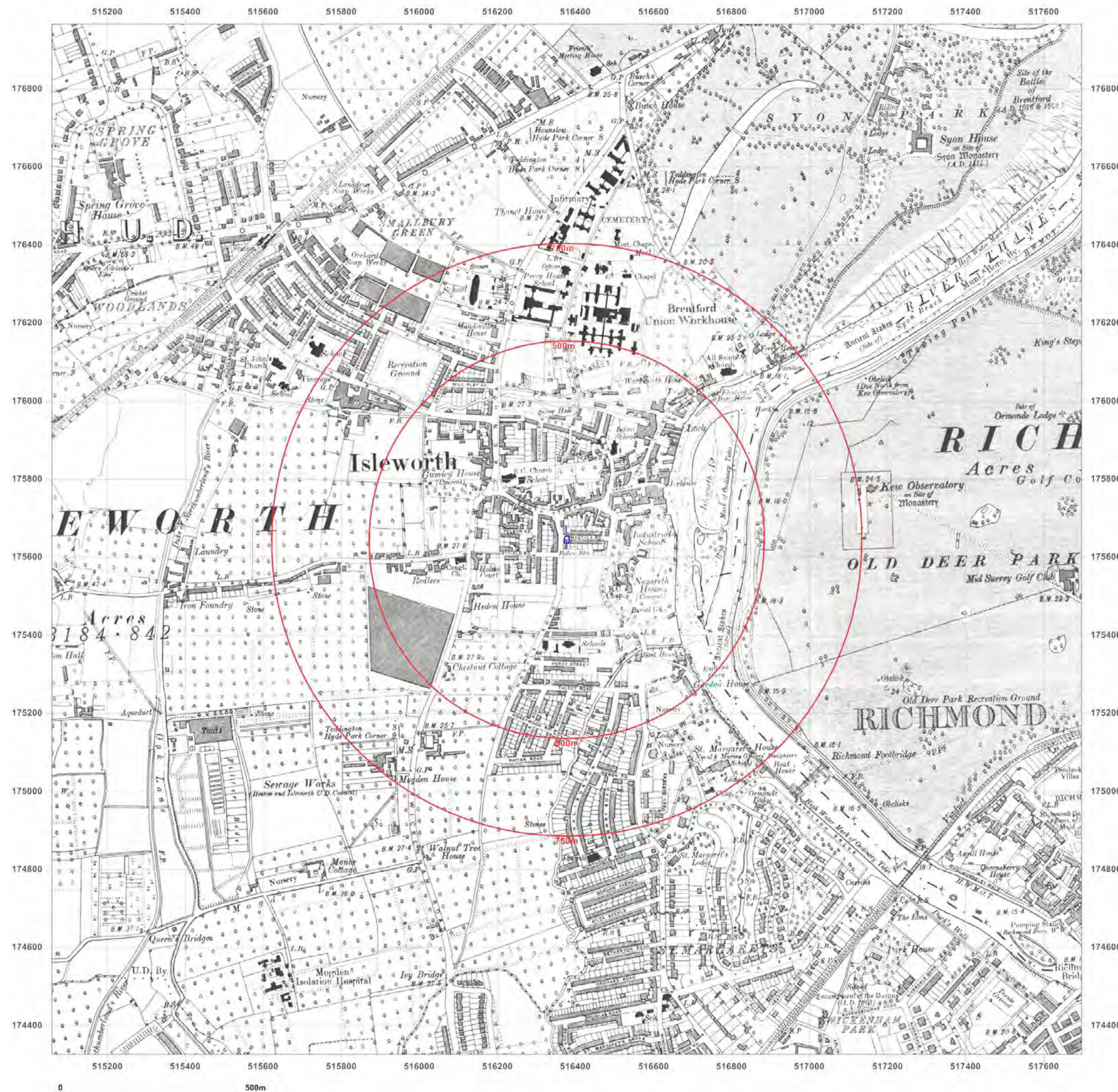


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Site Details:

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MAGDALA ROAD, ISLEWORTH,
TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: County Series

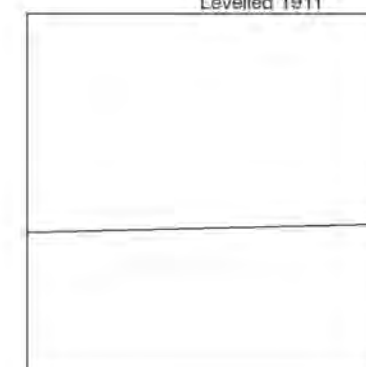
Map date: 1920

Scale: 1:10,560

Printed at: 1:10,560



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

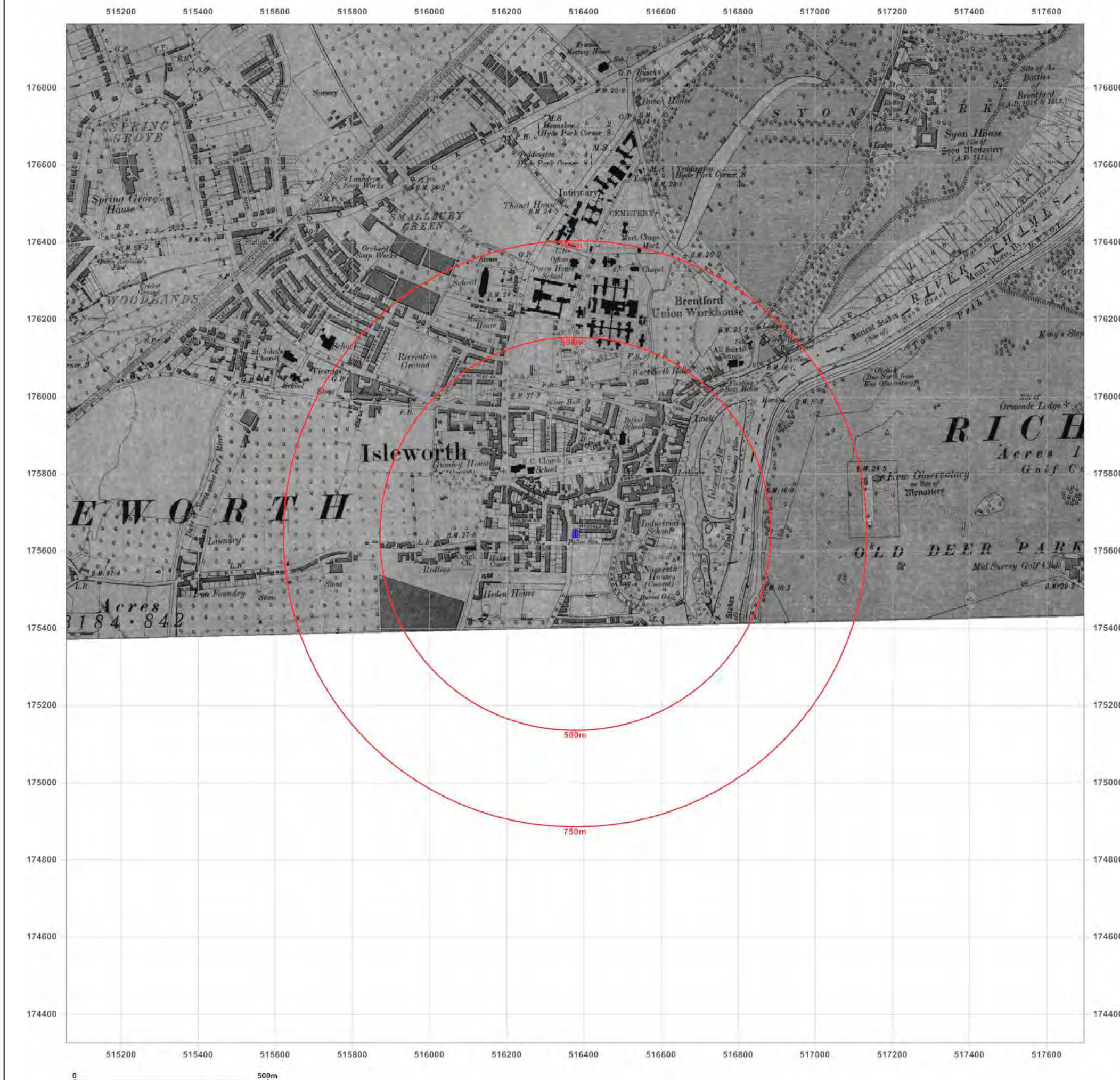


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Site Details:

GARAGE BLOCK ADJACENT 60,
MAGDALA ROAD, ISLEWORTH,
TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: County Series

Map date: 1933

Scale: 1:10,560

Printed at: 1:10,560



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

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

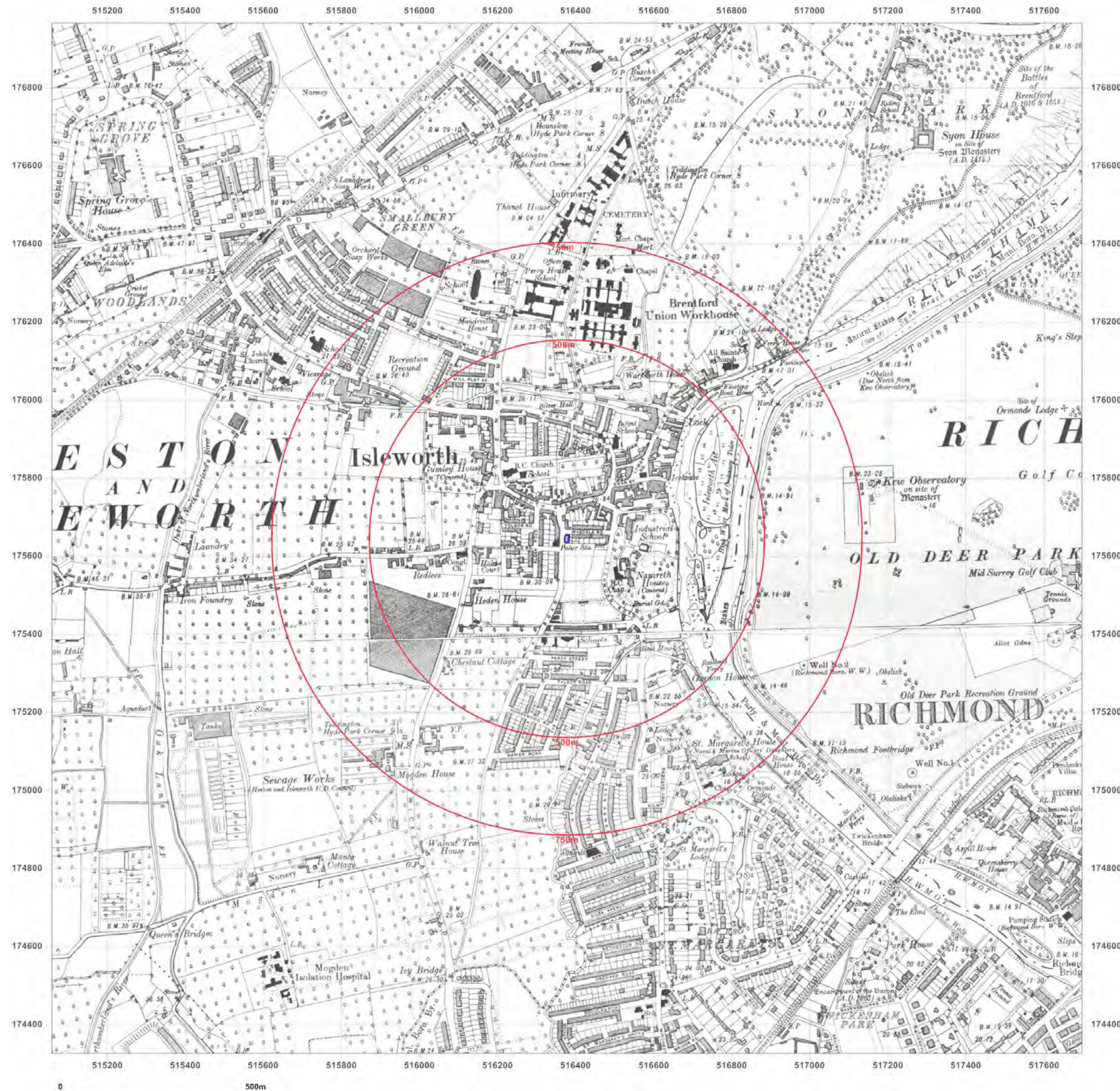


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Site Details:

GARAGE BLOCK ADJACENT 60,
MAGDALA ROAD, ISLEWORTH,
TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

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

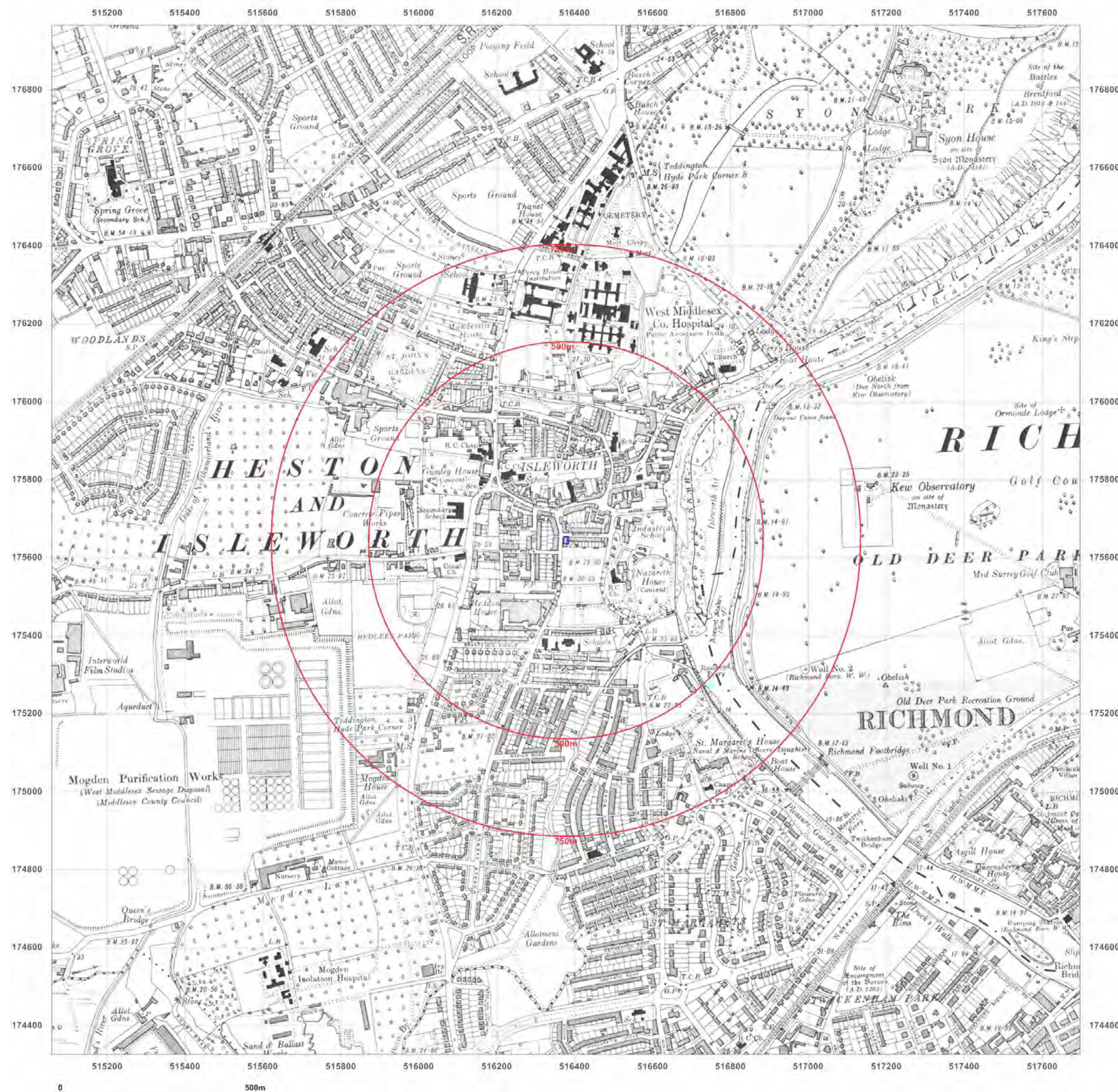


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TW7 7DD

Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: County Series

Map date: 1938

Scale: 1:10,560

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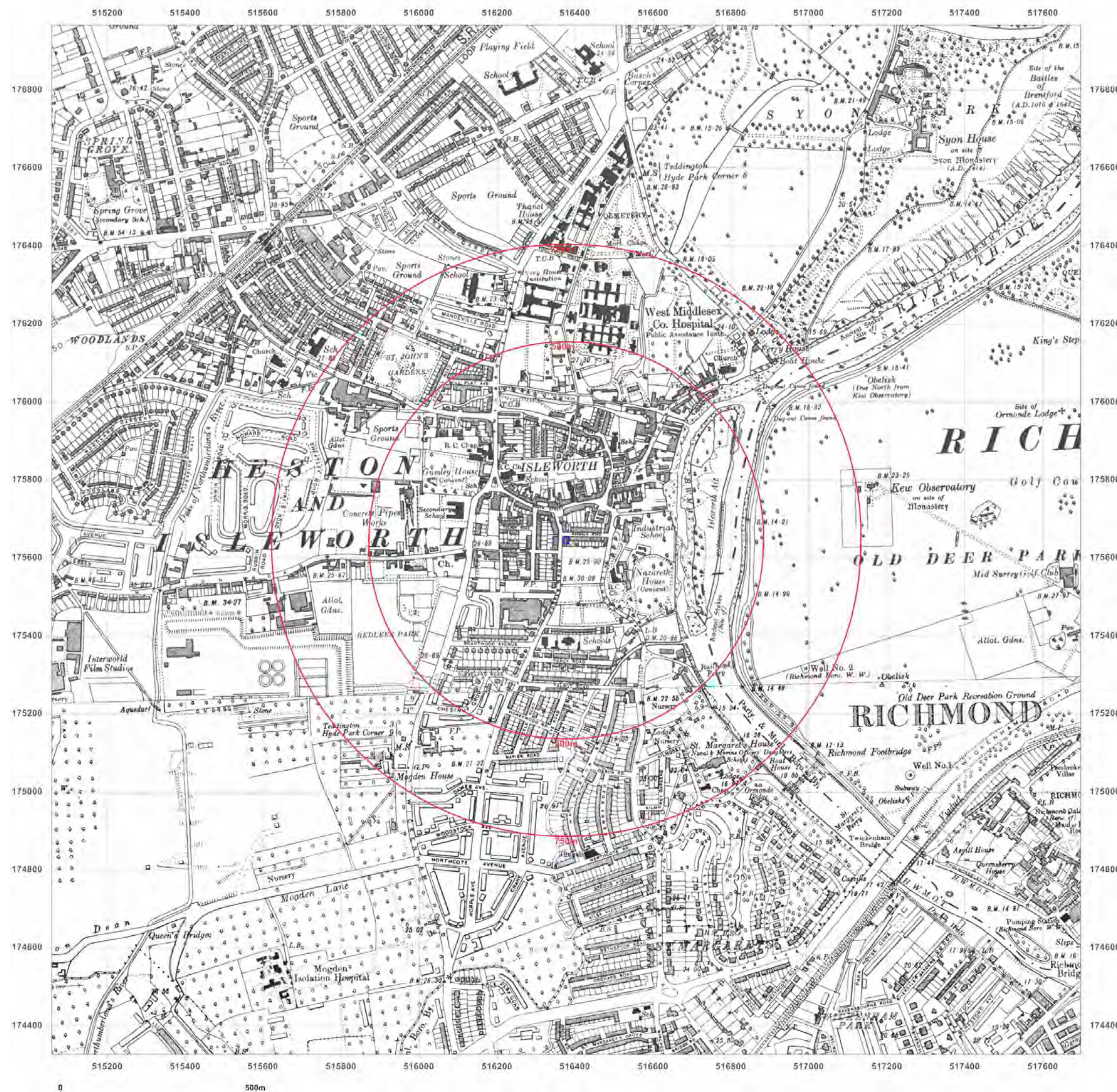


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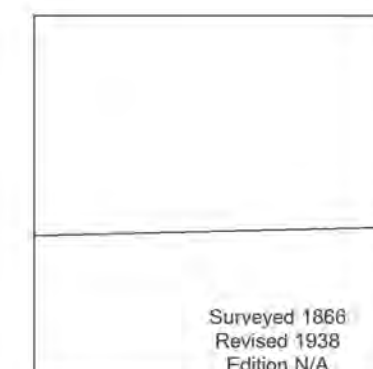
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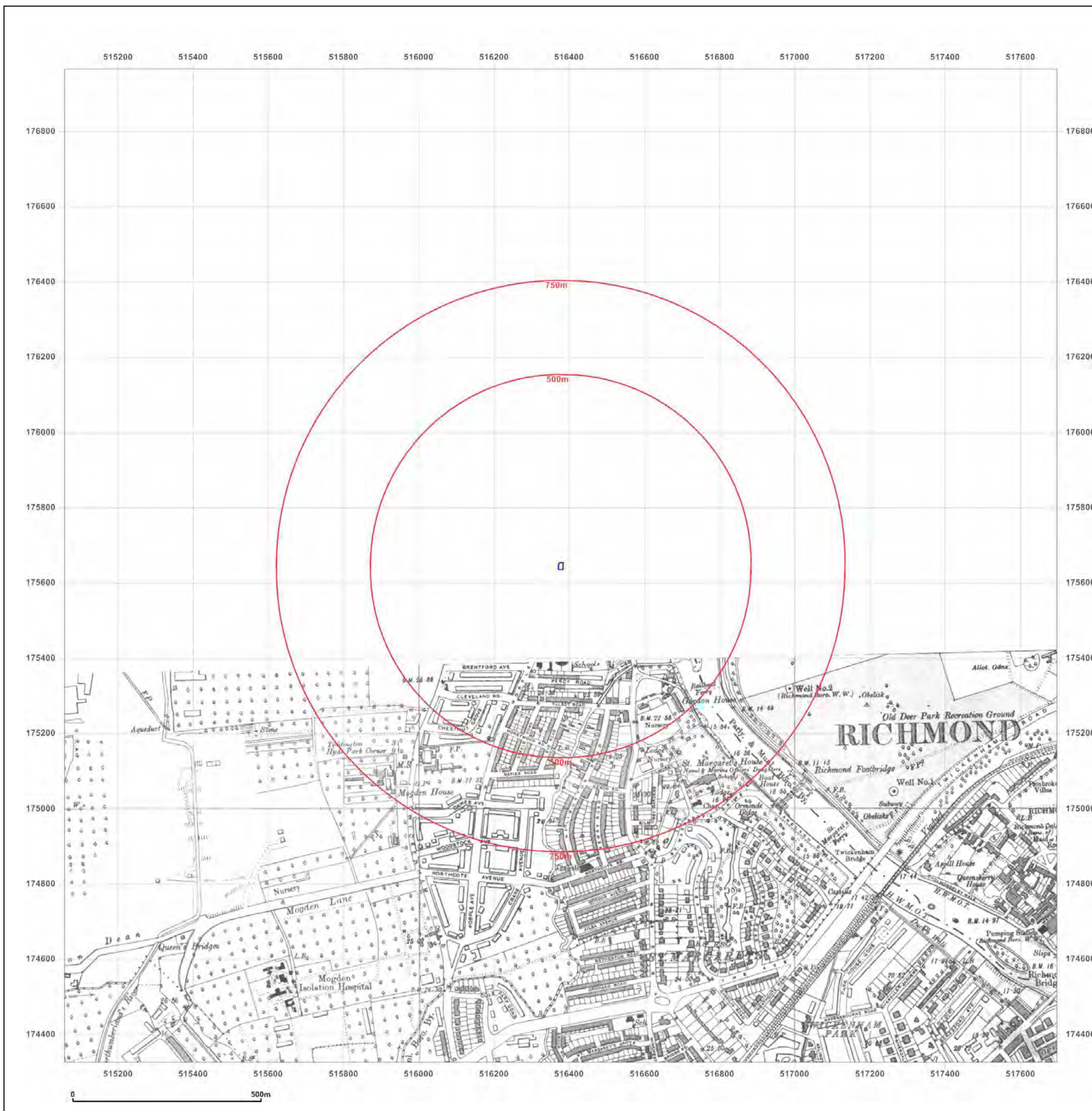


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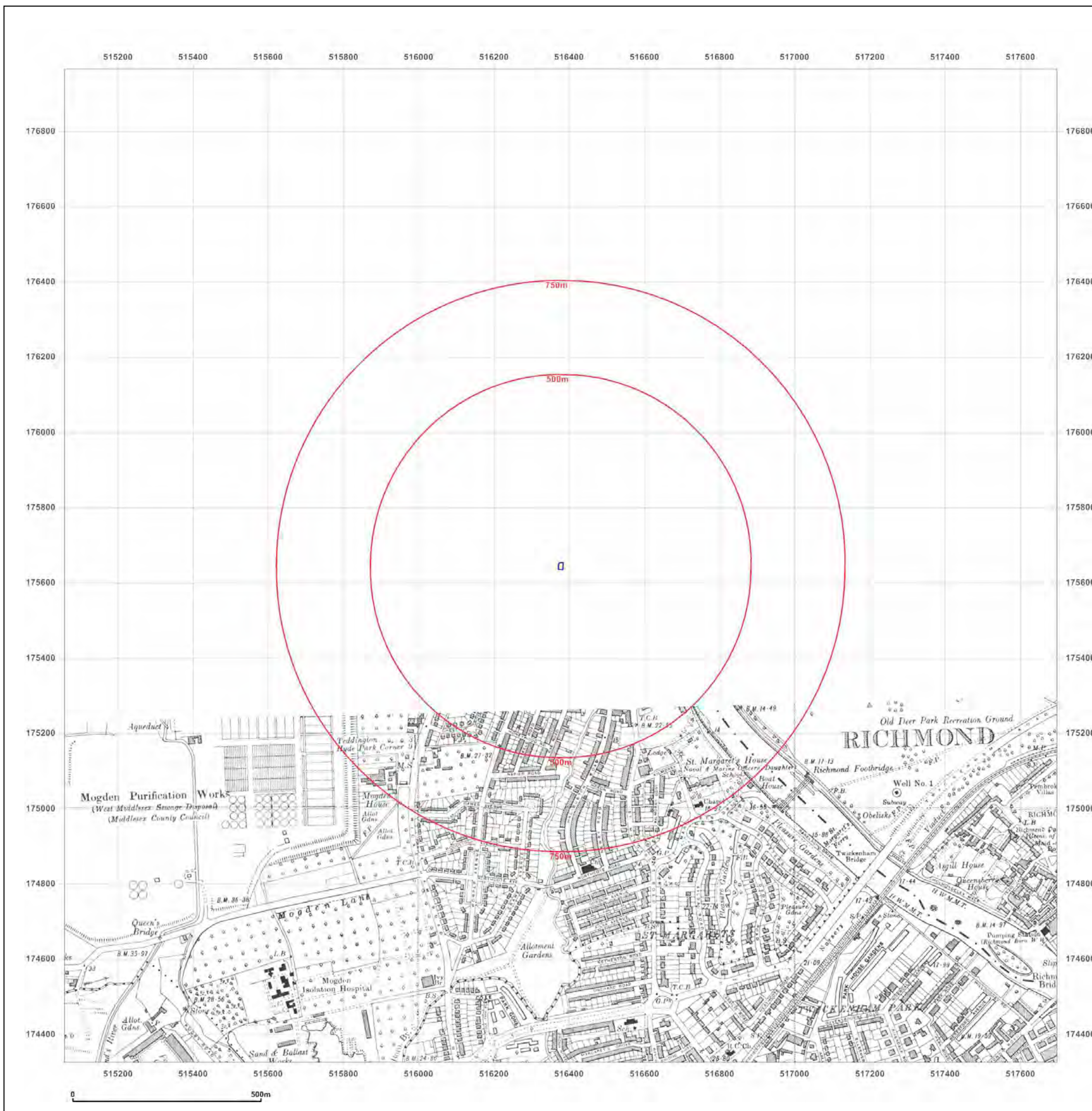


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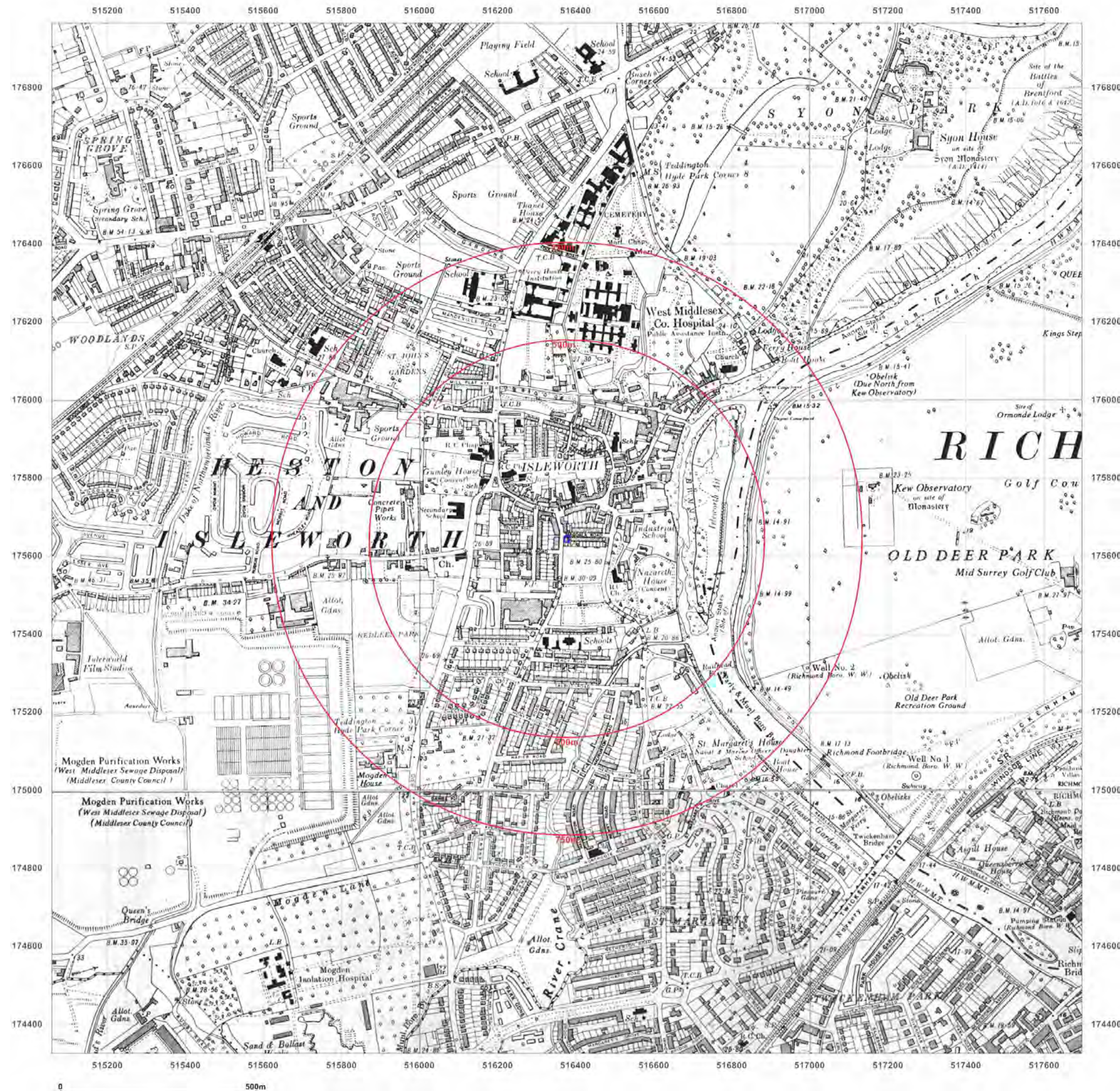


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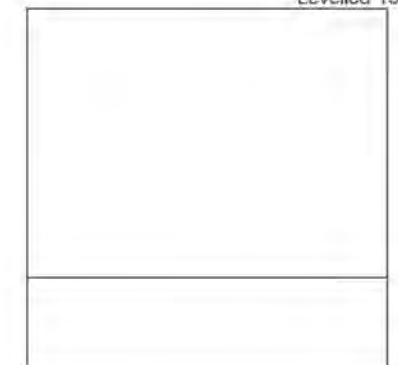
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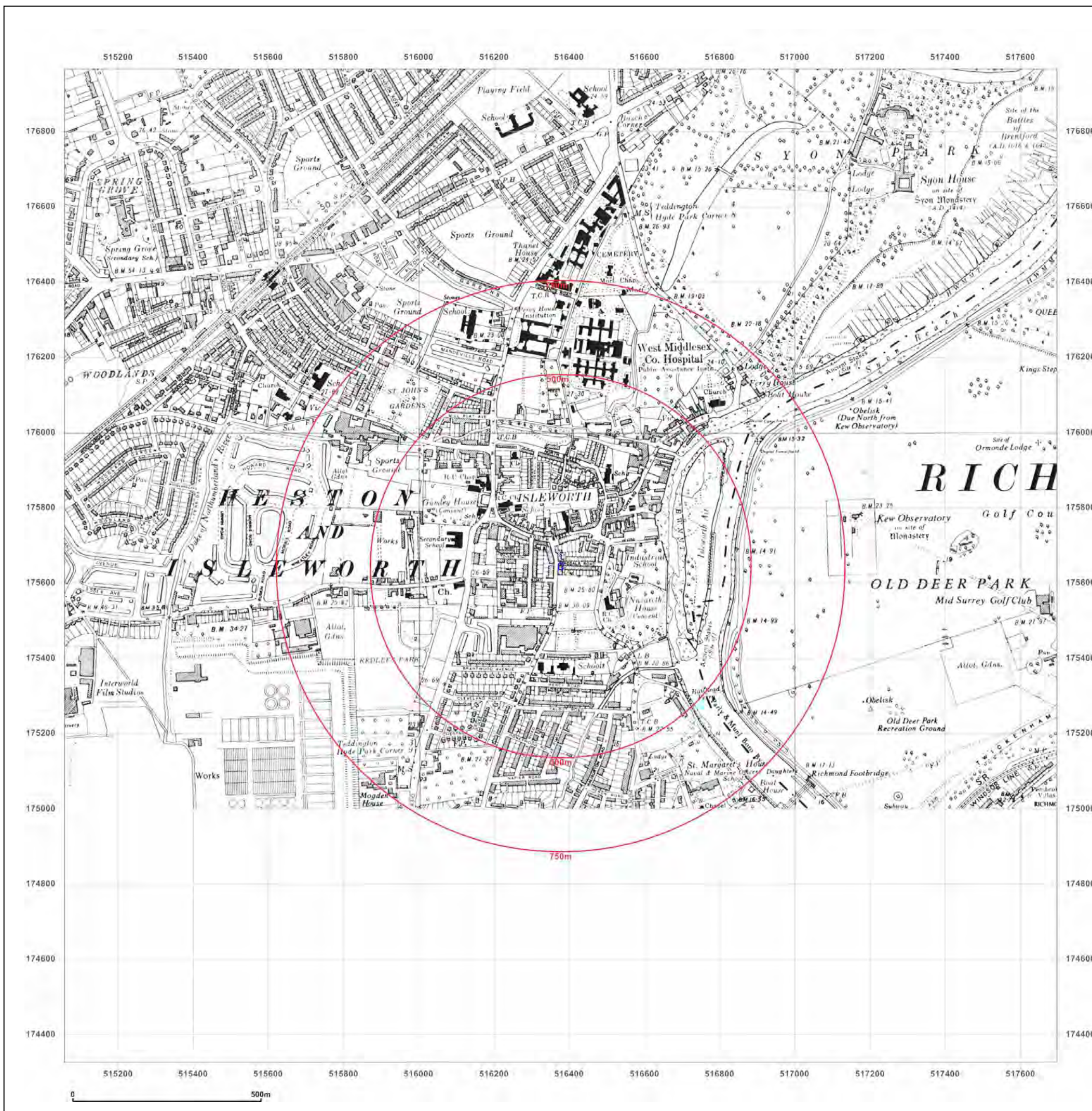


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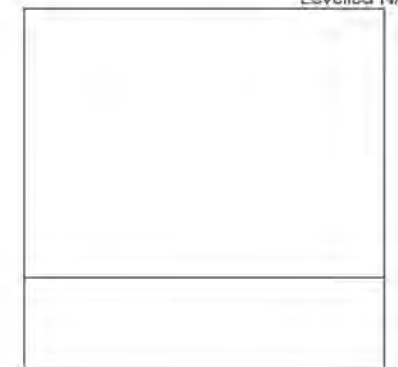
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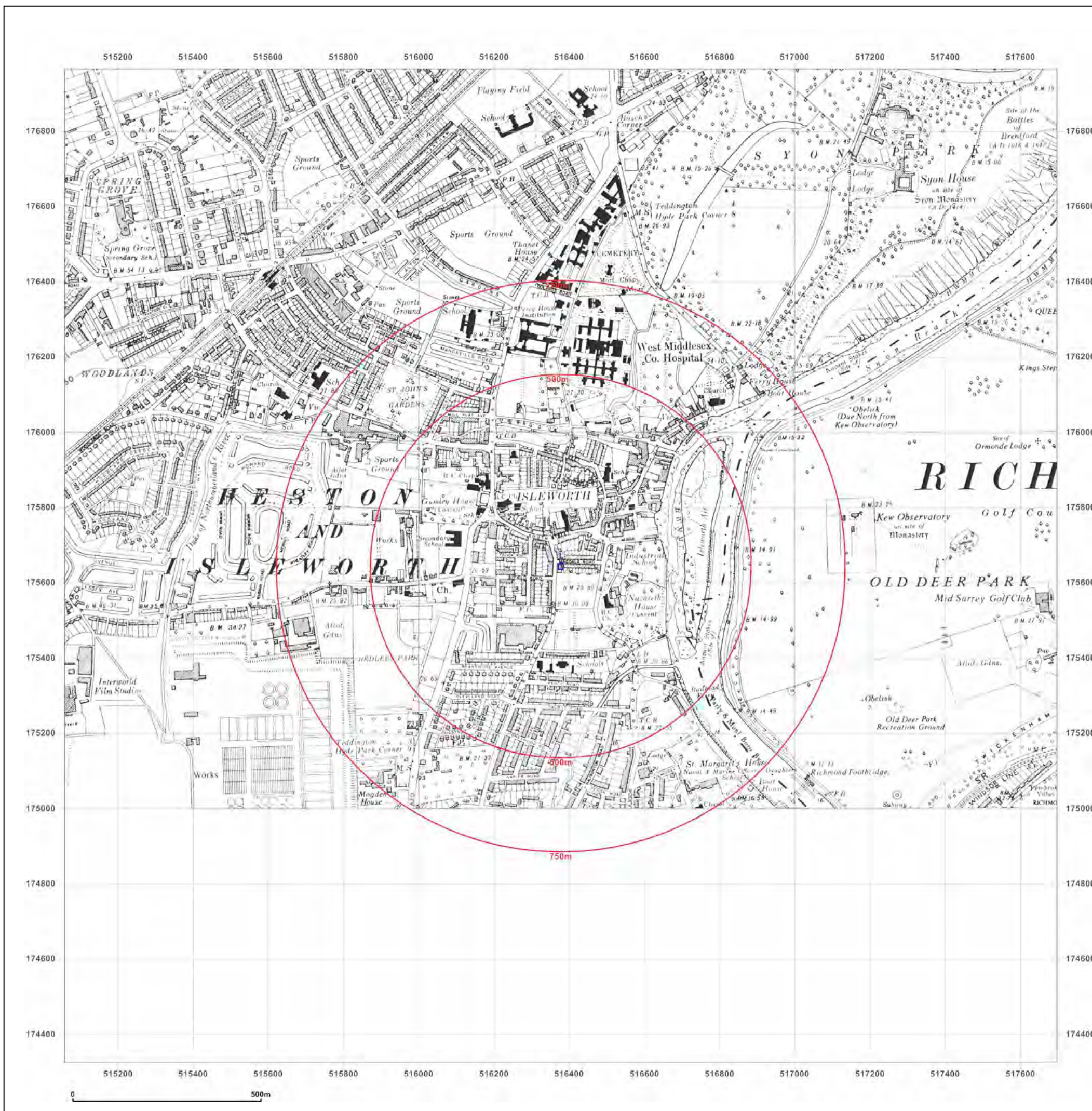


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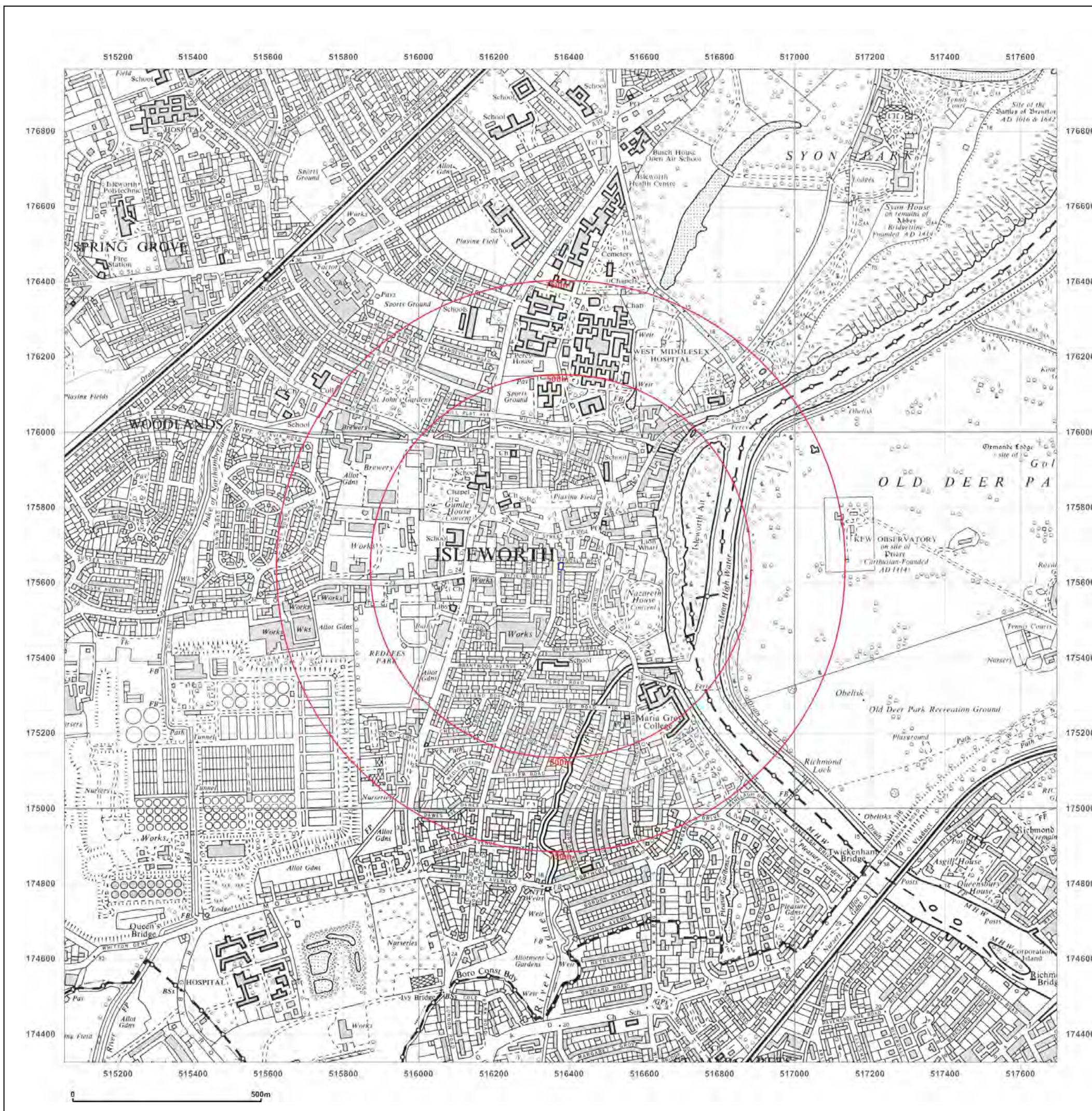


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Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 1973-1974

Scale: 1:10,000

Printed at: 1:10,000



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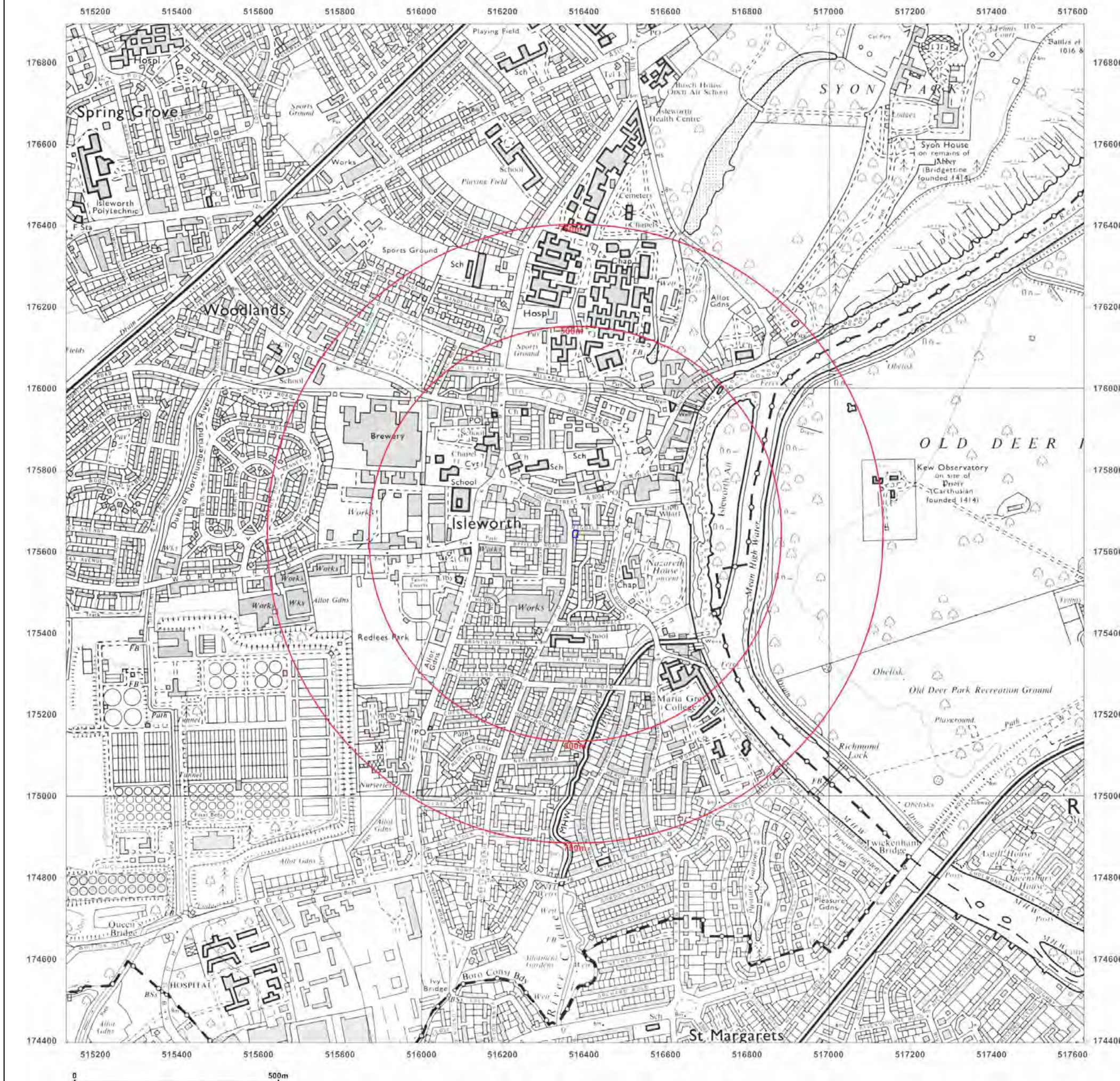


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Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 1987-1991

Scale: 1:10,000

Printed at: 1:10,000



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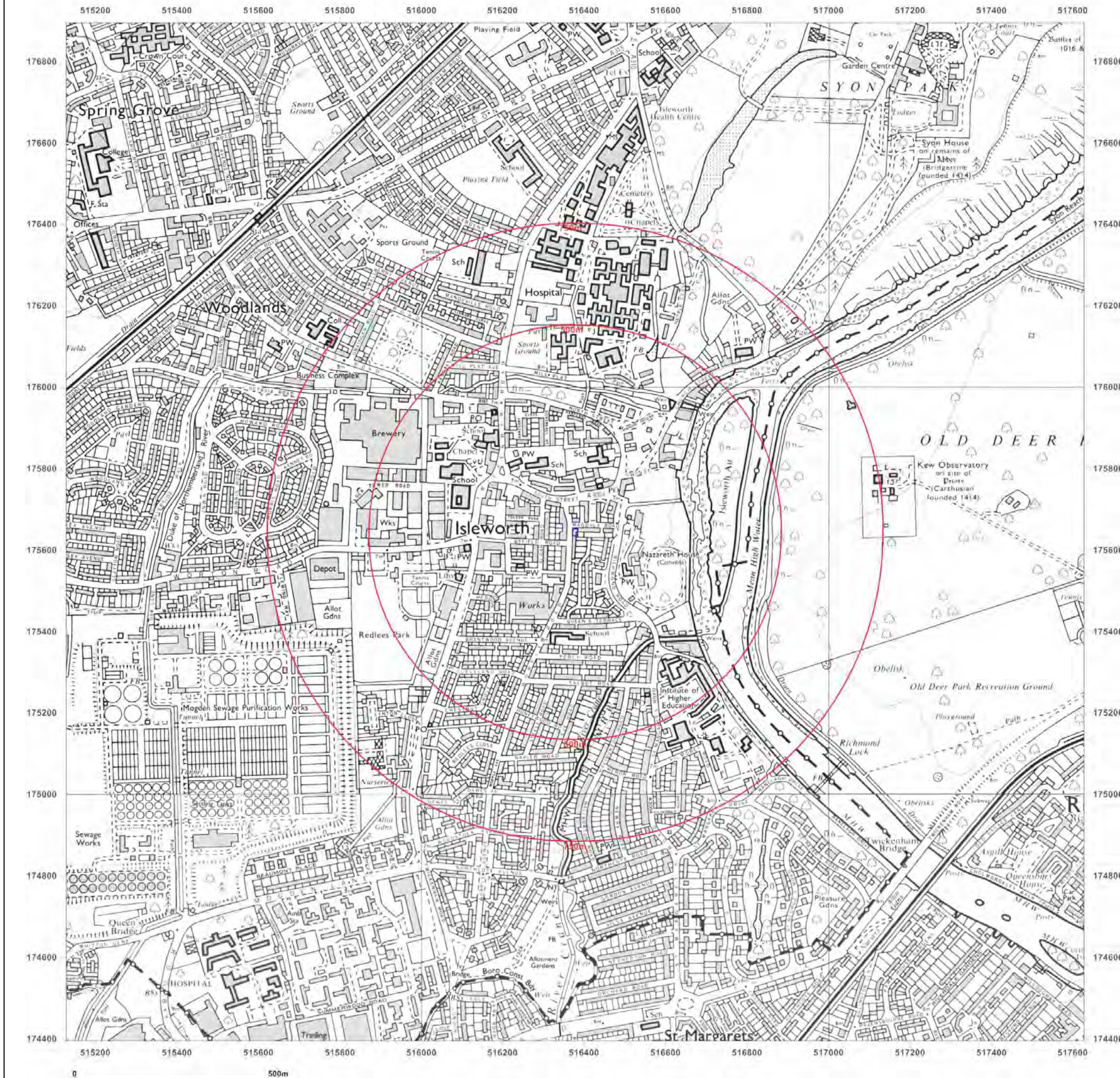


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Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

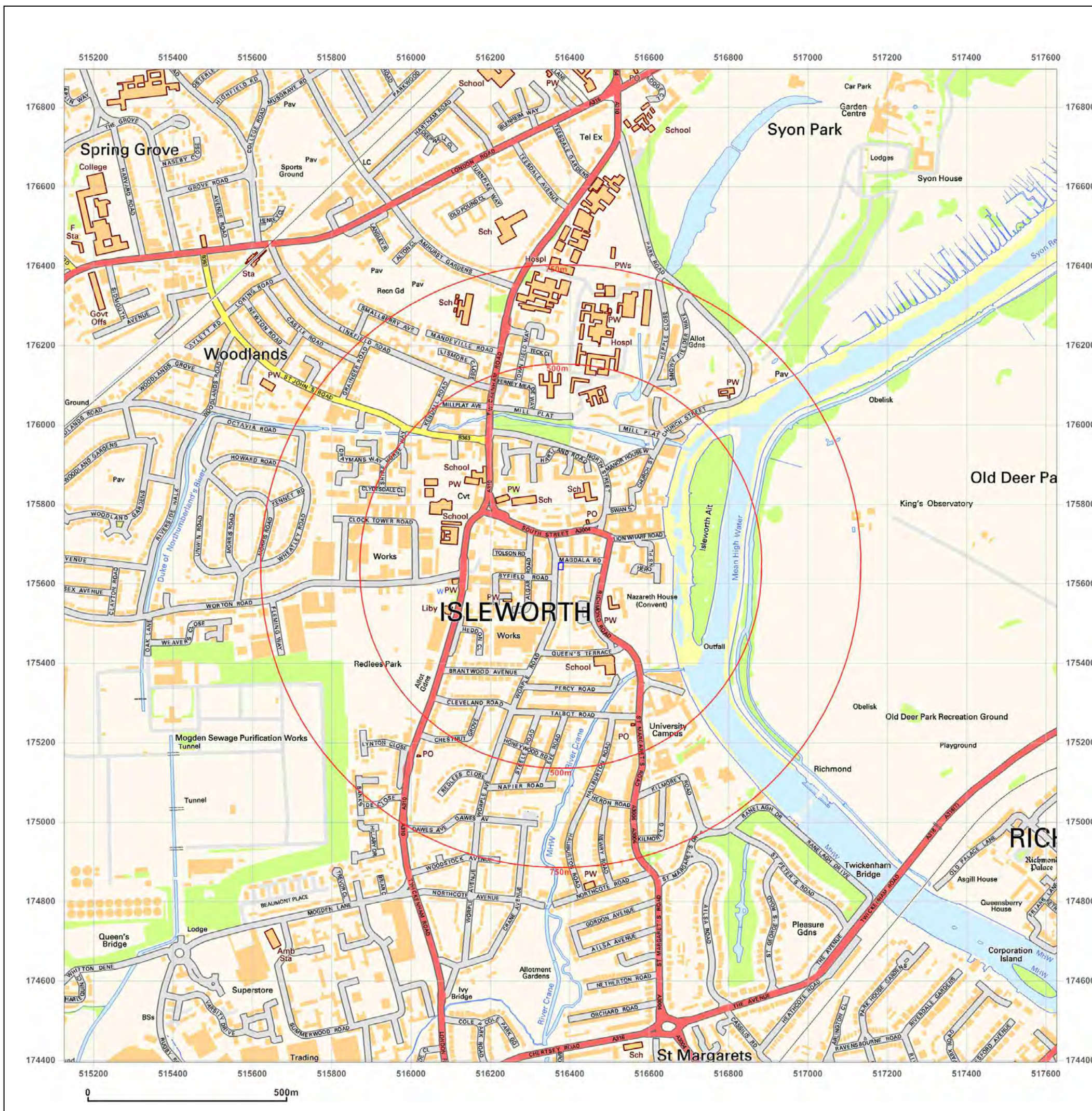


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Client Ref: 14029954
Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

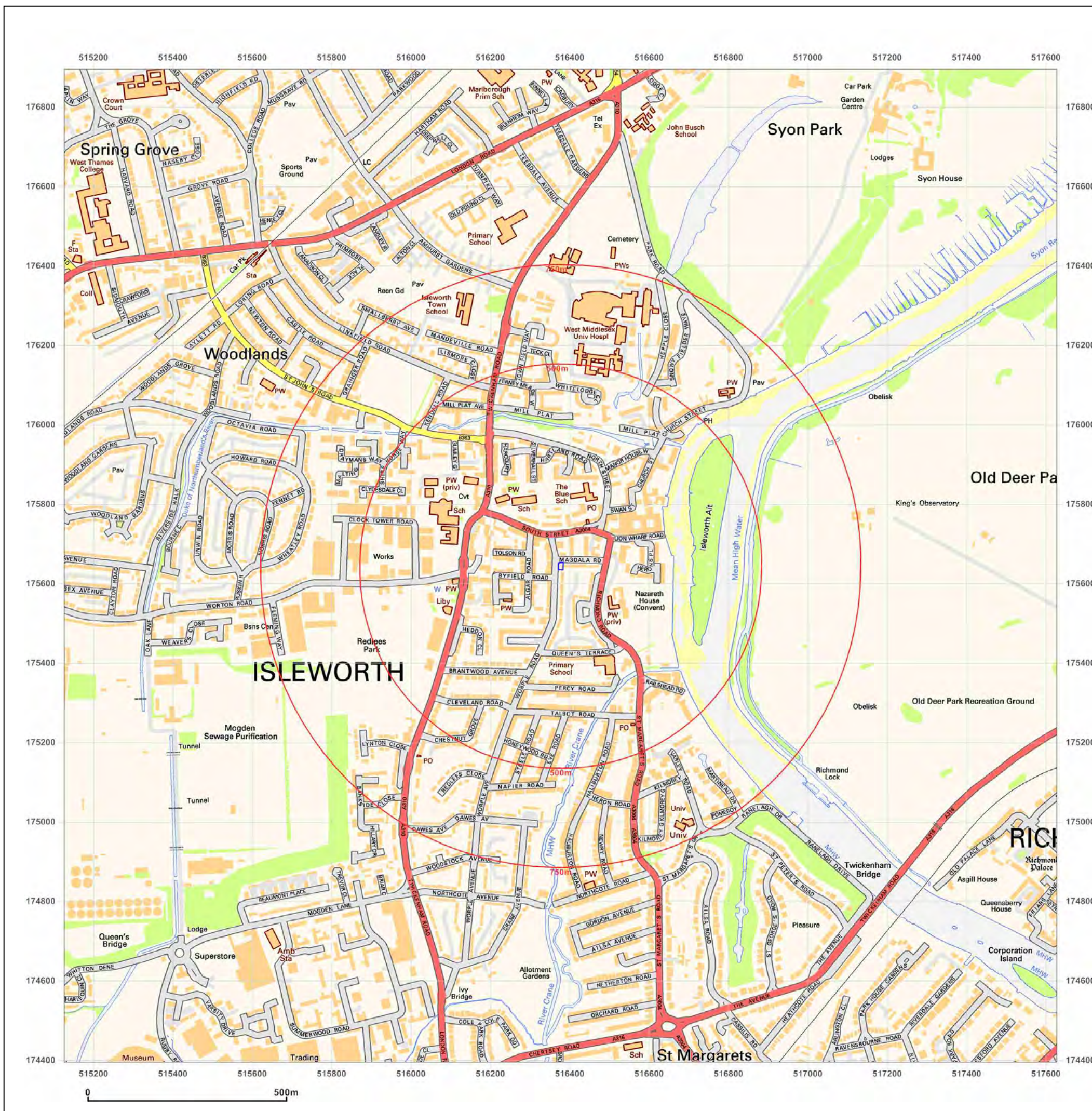


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Report Ref: GS-6367017
Grid Ref: 516377, 175645

Map Name: National Grid

Map date: 2019

Scale: 1:10,000

Printed at: 1:10,000

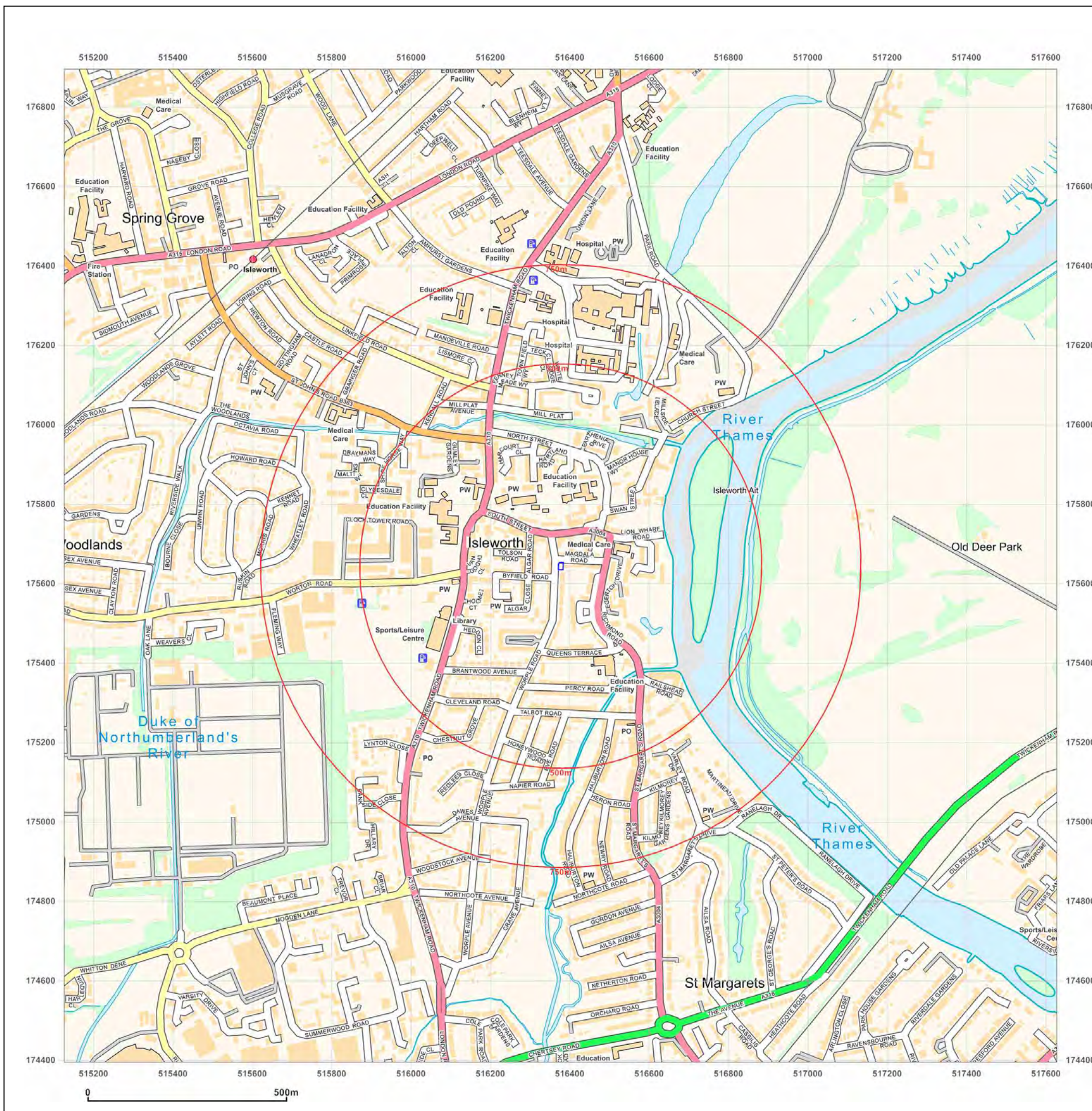


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APPENDIX B

Groundsure Data Sheets and Site Sensitivity Maps



Arcadis Consulting UK Ltd
PO Box, 307,
MANCHESTER, M60 3NT

Groundsure Reference: GS-6367015

Your Reference: 14029954

Report Date 1 Oct 2019

Report Delivery Method: Email - pdf

Enviro Insight

Address: GARAGE BLOCK ADJACENT 60, MAGDALA ROAD, ISLEWORTH, TW7 7DD

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Address: GARAGE BLOCK ADJACENT 60, MAGDALA ROAD, ISLEWORTH, TW7 7DD
Date: 1 Oct 2019
Reference: GS-6367015
Client: Arcadis Consulting UK Ltd

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 20-Apr-2015
Grid Reference: 516377,175645
Site Size: 0.0215ha

Report Reference: GS-6367015
Client Reference: 14029954

Contents Page

Contents Page	3
Overview of Findings	6
Using this report	10
1. Historical Land Use	11
1. Historical Industrial Sites	12
1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping	12
1.2 Additional Information – Historical Tank Database	14
1.3 Additional Information – Historical Energy Features Database	14
1.4 Additional Information – Historical Petrol and Fuel Site Database	15
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	16
1.6 Historical military sites	16
1.7 Potentially Infilled Land	17
2. Environmental Permits, Incidents and Registers Map	18
2. Environmental Permits, Incidents and Registers	19
2.1 Industrial Sites Holding Licences and/or Authorisations	19
2.1.1 Records of historic IPC Authorisations within 500m of the study site	19
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site	19
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site	19
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site	22
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site	22
2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site	22
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	22
2.1.8 Records of Licensed Discharge Consents within 500m of the study site	23
2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site	27
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	27
2.2 Dangerous or Hazardous Sites	27
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents	27
2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site	27
2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site	29
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	29
3. Landfill and Other Waste Sites Map	30
3. Landfill and Other Waste Sites	31
3.1 Landfill Sites	31
3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site	31
3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site	31
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site	32
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site	32
3.2 Other Waste Sites	32
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site	32
3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site	33
4. Current Land Use Map	35
4. Current Land Uses	36
4.1 Current Industrial Data	36
4.2 Petrol and Fuel Sites	36
4.3 National Grid High Voltage Underground Electricity Transmission Cables	37
4.4 National Grid High Pressure Gas Transmission Pipelines	37

5. Geology	38
5.1 Artificial Ground and Made Ground.....	38
5.2 Superficial Ground and Drift Geology	38
5.3 Bedrock and Solid Geology	38
6 Hydrogeology and Hydrology	39
6a. Aquifer Within Superficial Geology	39
6b. Aquifer Within Bedrock Geology and Abstraction Licences	40
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences	41
6d. Hydrogeology – Source Protection Zones within confined aquifer	42
6e. Hydrology – Watercourse Network and River Quality	43
6.Hydrogeology and Hydrology	44
6.1 Aquifer within Superficial Deposits.....	44
6.2 Aquifer within Bedrock Deposits.....	44
6.3 Groundwater Abstraction Licences.....	45
6.4 Surface Water Abstraction Licences.....	47
6.5 Potable Water Abstraction Licences.....	48
6.6 Source Protection Zones.....	48
6.7 Source Protection Zones within Confined Aquifer.....	48
6.8 Groundwater Vulnerability and Soil Leaching Potential.....	49
6.9 River Quality.....	49
6.9.1 Biological Quality:.....	49
6.9.2 Chemical Quality:.....	49
6.10 Ordnance Survey MasterMap Water Network.....	49
6.11 Surface Water Features.....	52
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)	53
7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS)	54
Map	54
7 Flooding	55
7.1 River and Coastal Zone 2 Flooding.....	55
7.2 River and Coastal Zone 3 Flooding.....	55
7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating.....	56
7.4 Flood Defences.....	56
7.5 Areas benefiting from Flood Defences.....	56
7.6 Areas benefiting from Flood Storage.....	56
7.7 Groundwater Flooding Susceptibility Areas.....	56
7.8 Groundwater Flooding Confidence Areas.....	57
8. Designated Environmentally Sensitive Sites Map	58
8. Designated Environmentally Sensitive Sites	59
8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:.....	59
8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:.....	59
8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:.....	59
8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:.....	59
8.5 Records of Ramsar sites within 2000m of the study site:.....	59
8.6 Records of Ancient Woodland within 2000m of the study site:	60
8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:.....	60
8.8 Records of World Heritage Sites within 2000m of the study site:.....	60
8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:	60
8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:	60
8.11 Records of National Parks (NP) within 2000m of the study site:	61
8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:.....	61
8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:.....	61

8.14 Records of Green Belt land within 2000m of the study site:.....	61
9. Natural Hazards Findings.....	62
9.1 Detailed BGS GeoSure Data.....	62
9.1.1 Shrink Swell.....	62
9.1.2 Landslides.....	62
9.1.3 Soluble Rocks.....	62
9.1.4 Compressible Ground.....	63
9.1.5 Collapsible Rocks.....	63
9.1.6 Running Sand.....	63
9.2 Radon.....	64
9.2.1 Radon Affected Areas.....	64
9.2.2 Radon Protection.....	64
10. Mining.....	65
10.1 Coal Mining.....	65
10.2 Non-Coal Mining.....	65
10.3 Brine Affected Areas	65
Contact Details.....	66
Standard Terms and Conditions.....	68

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	4	2	28	51
1.2 Additional Information – Historical Tank Database	0	0	7	4
1.3 Additional Information – Historical Energy Features Database	0	3	7	26
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	7	0	14
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	6	15
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	18
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	3
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	1	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	37
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	0	22
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	1	2	4
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	6	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	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	2	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	32	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	No	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Environment Agency Zone 2 floodplains within 250m of the study site	Identified					
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified					
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low					
7.4 Flood Defences within 250m of the study site	Identified					
7.5 Areas benefiting from Flood Defences within 250m of the study site	Identified					
7.6 Areas used for Flood Storage within 250m of the study site	None identified					
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Potential below Surface					
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	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	1	0	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.

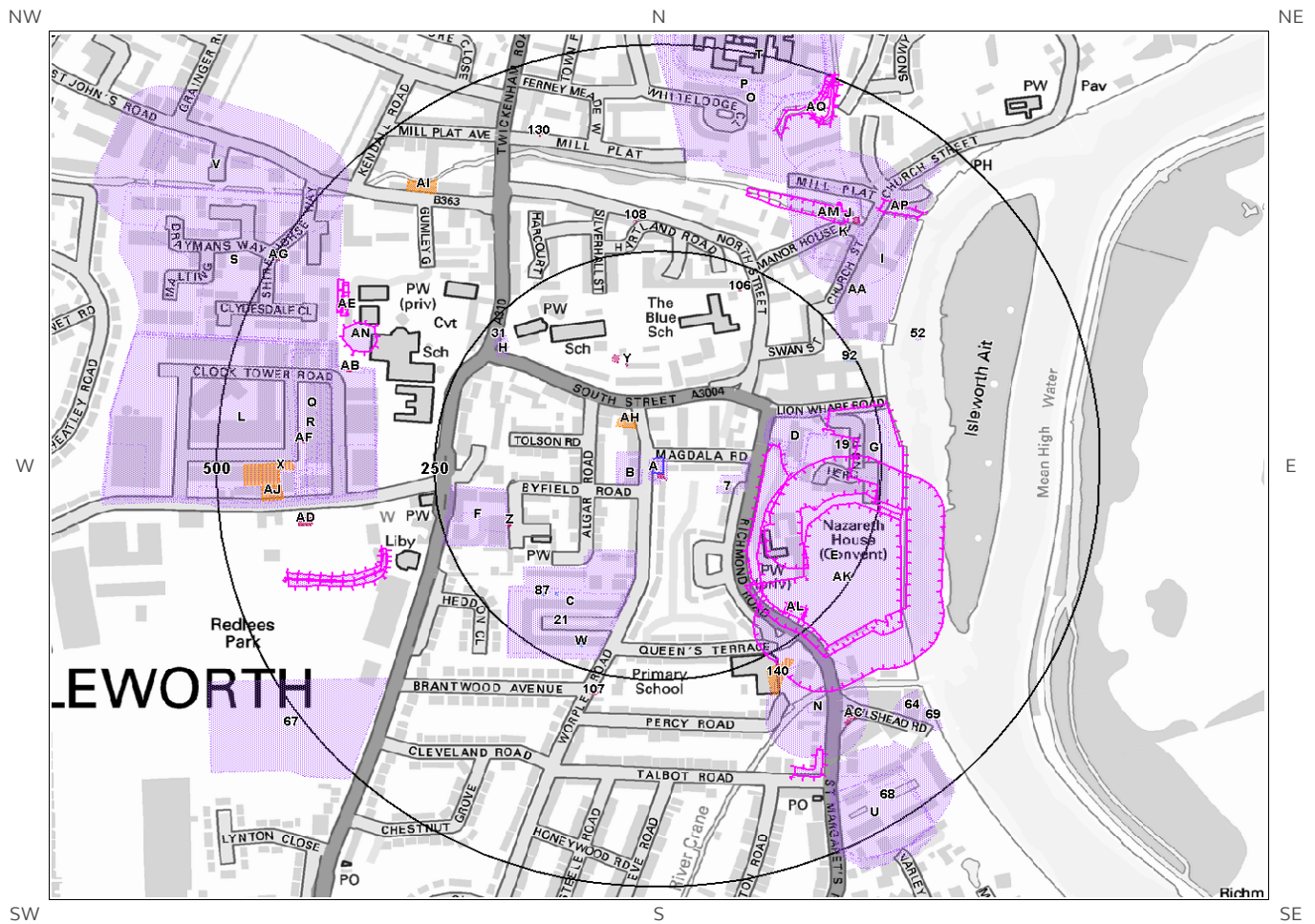
Note: Maps

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).

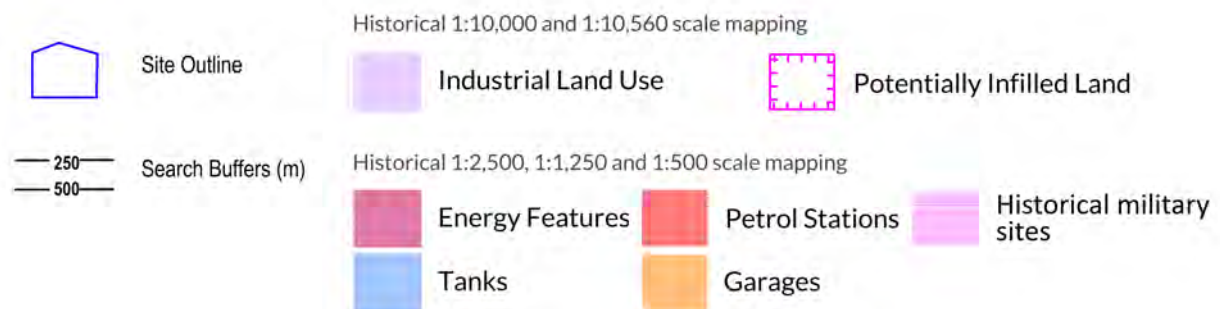
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

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: 85

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Police Station	1912
2A	0	On Site	Police Station	1896
3A	0	On Site	Police Station	1894
4A	0	On Site	Police Station	1898
5B	12	W	Police Station	1933
6B	14	W	Police Station	1894
7	63	E	Police Station	1912
8	66	E	Police Station	1913
9C	95	S	Unspecified Works	1987
10C	103	S	Unspecified Works	1974
11C	103	S	Unspecified Works	1966
12E	112	E	Burial Ground	1933
13D	117	E	Industrial School	1948
14D	117	E	Industrial School	1948
15D	118	E	Industrial School	1961
16D	119	E	Industrial School	1935
17D	120	E	Industrial School	1938
18D	120	E	Industrial School	1912
19	125	E	Industrial School	1933
20E	126	E	Burial Ground	1912
21	149	S	Unspecified Commercial/Industrial	1961
22AK	166	SE	Burial Ground	1912
23F	168	W	Unspecified Works	1974
24F	170	W	Unspecified Works	1966
25G	190	E	Unspecified Wharf	1974
26G	190	E	Unspecified Wharf	1966
27H	208	NW	Fire Station	1896
28AL	212	SE	Burial Ground	1913
29H	215	NW	Fire Station	1894
30H	217	NW	Fire Station	1898
31	226	NW	Fire Station	1894
32I	246	NE	Unspecified Commercial/Industrial	1987
33I	246	NE	Unspecified	1974

			Commercial/Industrial	
34I	246	NE	Unspecified Commercial/Industrial	1966
35N	278	SE	Boat House	1912
36J	281	NE	Flour Mill	1865
37K	292	NE	Unspecified Mill	1896
38J	294	NE	Unspecified Mill	1898
39K	296	NE	Unspecified Mill	1894
40AM	303	NE	Unspecified Mill	1894
41L	316	W	Concrete Pipes Works	1938
42L	316	W	Unspecified Works	1987
43L	316	W	Unspecified Works	1974
44L	316	W	Unspecified Works	1966
45L	316	W	Unspecified Works	1961
46L	318	W	Concrete Pipes Works	1935
47L	318	W	Works	1948
48L	318	W	Concrete Pipes Works	1948
49M	318	W	Unspecified Ground Workings	1898
50M	320	W	Unspecified Ground Workings	1896
51N	322	SE	Boat House	1912
52	322	NE	Ice House	1913
53AN	349	NW	Unspecified Heap	1966
54O	354	N	Hospital	1948
55O	354	N	Hospital	1948
56P	361	N	Hospital	1974
57P	361	N	Hospital	1987
58Q	367	W	Railway Sidings	1938
59Q	369	W	Railway Sidings	1935
60Q	370	W	Railway Sidings	1961
61R	372	W	Railway Sidings	1948
62R	372	W	Railway Sidings	1948
63AO	378	SE	Unspecified Ground Workings	1898
64	386	SE	Boat House	1933
65S	390	W	Brewery	1974
66S	390	W	Brewery	1987
67	392	SW	Unspecified Commercial/Industrial	1933
68	400	SE	Nursery	1938
69	411	SE	Boat House	1912
70U	414	SE	Nursery	1912
71T	423	N	Union Workhouse	1913
72T	424	N	Unspecified Workhouse	1933
73T	428	N	Hospital	1935
74U	433	SE	Nursery	1933

75U	434	SE	Nursery	1912
76T	440	N	Hospital	1938
77T	440	N	Unspecified Workhouse	1912
78T	444	N	Unspecified Workhouse	1912
79U	446	SE	Nursery	1912
80S	454	W	Brewery	1966
81T	456	N	Hospital	1966
82T	456	N	Hospital	1961
83V	471	NW	Brewery	1865
84V	494	NW	Brewery	1896
85V	500	NW	Brewery	1894

1.2 Additional Information – Historical Tank Database

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

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

11

ID	Distance (m)	Direction	Use	Date
86C	181	SW	Unspecified Tank	1935
87	191	SW	Unspecified Tank	1935
88W	221	S	Unspecified Tank	1960
89W	221	S	Unspecified Tank	1959
90W	221	S	Unspecified Tank	1959
91W	222	S	Unspecified Tank	1994
92	238	NE	Tanks	1865
93X	426	W	Unspecified Tank	1986
94X	426	W	Unspecified Tank	1986
95X	426	W	Unspecified Tank	1997
96X	426	W	Unspecified Tank	1995

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:

36

ID	Distance (m)	Direction	Use	Date
97A	1	S	Electricity Substation	1970
98A	5	S	Electricity Substation	1994

99A	5	S	Electricity Substation	1997
100Y	116	N	Electricity Substation	1994
101Y	116	N	Electricity Substation	1997
102Y	123	N	Electricity Transformer	1970
103Z	173	W	Electricity Transformer	1970
104Z	173	W	Electricity Substation	1997
105Z	173	W	Electricity Substation	1994
106	219	NE	Electricity Transformer	1970
107	272	S	Electricity Substation	1994
108	287	N	Electricity Substation	1994
109AA	295	NE	Electricity Substation	1991
110AA	295	NE	Electricity Substation	1989
111J	358	NE	Electricity Substation	1991
112J	358	NE	Electricity Substation	1989
113AC	362	SE	Electricity Substation	1974
114AB	363	W	Electricity Substation	1994
115AB	363	W	Electricity Substation	1997
116AB	363	W	Electricity Transformer	1970
117AC	365	SE	Electricity Substation	1995
118AD	394	W	Electricity Substation	1995
119AD	394	W	Electricity Substation	1997
120AD	395	W	Electricity Substation	1986
121AD	395	W	Electricity Substation	1986
122AD	395	W	Electricity Substation	1977
123AE	396	NW	Electricity Substation	1994
124AE	396	NW	Electricity Substation	1997
125R	399	W	Electricity Substation	1977
126AF	399	W	Electricity Substation	1995
127AF	399	W	Electricity Substation	1997
128AF	399	W	Electricity Substation	1986
129AF	399	W	Electricity Substation	1986
130	412	N	Electricity Substation	1997
131AG	493	NW	Electricity Substation	1995
132AG	493	NW	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: 21

ID	Distance (m)	Direction	Use	Date
133AH	43	NW	Garage	1960
134AH	43	NW	Garage	1970
135AH	43	NW	Garage	1960
136AH	43	NW	Garage	1997
137AH	43	NW	Garage	1994
138AH	44	NW	Garage	1959
139AH	44	NW	Garage	1959
140	264	SE	Garage	1974
141AI	408	NW	Garage	1970
142X	411	W	Garage	1977
143AI	421	NW	Garage	1960
144AI	421	NW	Garage	1960
145AJ	425	W	Garage	1962
146AJ	425	W	Garage	1962
147AJ	425	W	Garage	1962
148AJ	425	W	Garage	1997
149AJ	425	W	Garage	1995
150AI	426	NW	Garage	1959
151AI	426	NW	Garage	1959
152X	426	W	Garage	1986
153X	426	W	Garage	1986

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

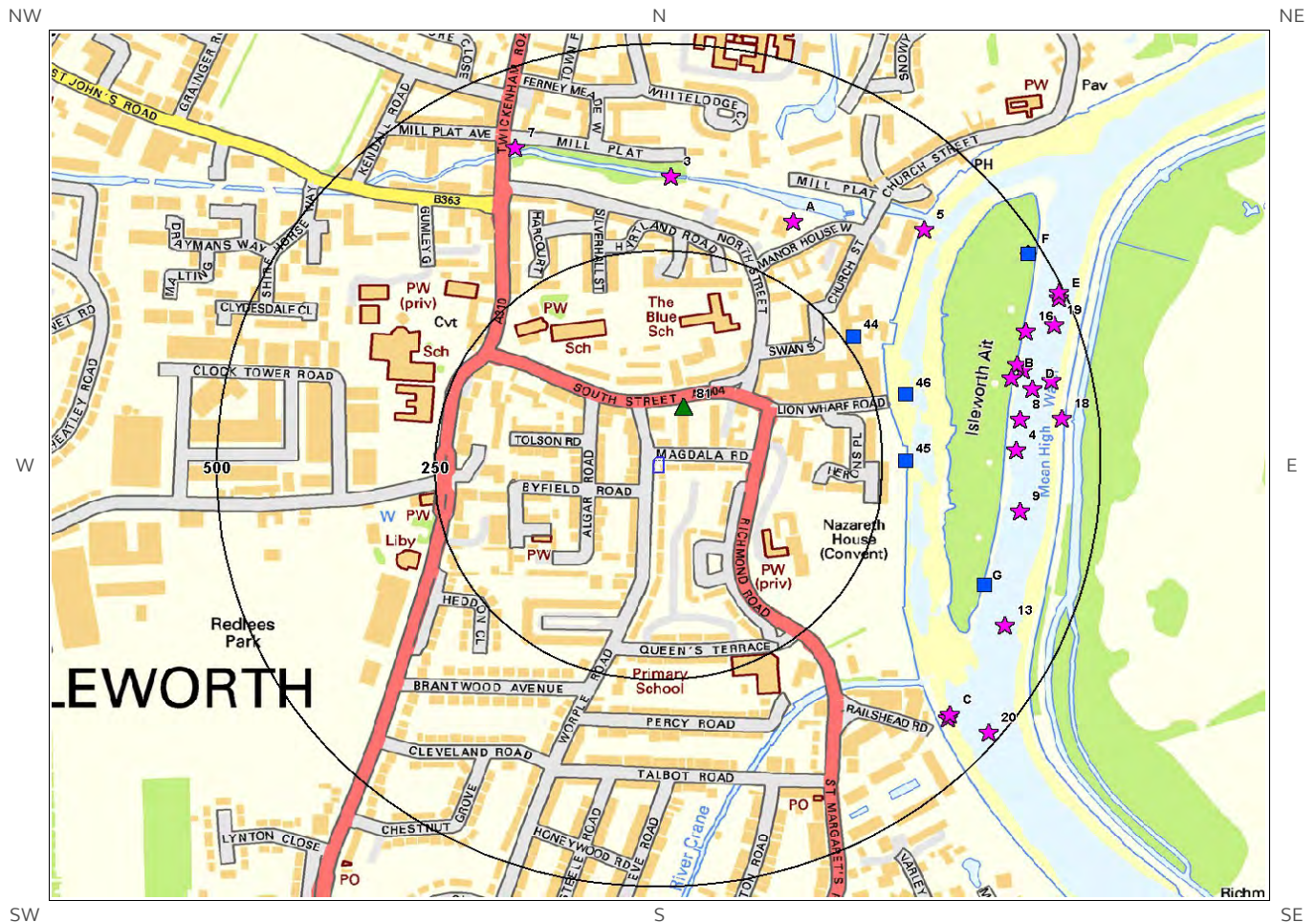
Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site:

21















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

ID	Distance(m)	Direction	Use	Date
154E	112	E	Burial Ground	1933
155E	126	E	Burial Ground	1912
156AK	166	SE	Burial Ground	1912
157G	190	E	Unspecified Wharf	1966
158G	190	E	Unspecified Wharf	1974
159AL	212	SE	Burial Ground	1913
160M	318	W	Unspecified Ground Workings	1898
161M	320	W	Unspecified Ground Workings	1896
162AM	330	N	Pond	1865
163AN	349	NW	Unspecified Heap	1966
164AO	378	SE	Unspecified Ground Workings	1898
165AP	388	NE	Pond	1894
166AP	388	NE	Pond	1933
167AE	392	NW	Pond	1894
168AE	399	NW	Pond	1933
169AE	399	NW	Pond	1894
170AQ	413	N	Pond	1894
171AQ	444	NE	Pond	1933
172AQ	444	NE	Pond	1894
173AQ	448	NE	Pond	1987
174AQ	448	NE	Pond	1974

2. Environmental Permits, Incidents and Registers Map



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

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:

18

The following Red List Discharge Consent records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
26G	392	E	516750 175500	<p>Address: THAMES WATER UTILITIES LIMITED., MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP</p> <p>Permit Number: CNTD.0085 Permit Version: 6</p> <p>Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)</p> <p>Discharge Type: Sewage Disposal Works - water company Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 01-Apr-2010</p>
27G	392	E	516750 175500	<p>Address: THAMES WATER UTILITIES LIMITED., MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, ISLEWORTH, MIDDX</p> <p>Permit Number: CNTD.0085 Permit Version: 4</p> <p>Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)</p> <p>Discharge Type: Sewage Disposal Works - water company Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 31-Mar-2005</p>
28G	392	E	516750 175500	<p>Address: THAMES WATER UTILITIES LIMITED, MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, ISLEWORTH,</p> <p>Discharge Type: Sewage Disposal Works - water company Effluent Type: SEWAGE DISCHARGES -</p>

ID	Distance (m)	Direction	NGR	Details	
				MIDDX, Permit Number: CNTD.0085 Permit Version: 4 Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)	FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 31-Mar-2005
29G	392	E	516750 175500	Address: THAMES WATER UTILITIES LIMITED., MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, ISLEWORTH, MIDDX Permit Number: CNTD.0085 Permit Version: 8 Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)	Discharge Type: Sewage Disposal Works - water company Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 01-Apr-2009
30G	392	E	516750 175500	Address: THAMES WATER UTILITIES LIMITED., MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, ISLEWORTH, MIDDX Permit Number: CNTD.0085 Permit Version: 5 Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)	Discharge Type: Sewage Disposal Works - water company Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 31-Jan-2007
31G	392	E	516750 175500	Address: THAMES WATER UTILITIES LIMITED., MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 7 Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 31-Mar-2013
32G	392	E	516750 175500	Address: THAMES WATER UTILITIES LIMITED., MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 7 Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 31-Mar-2013
33G	392	E	516750 175500	Address: THAMES WATER UTILITIES LIMITED., MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 7 Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 31-Mar-2013
34G	392	E	516750 175500	Address: THAMES WATER UTILITIES LIMITED., MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 7 Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 31-Mar-2013
35G	392	E	516750 175500	Address: THAMES WATER UTILITIES LIMITED., MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 7 Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 31-Mar-2013

ID	Distance (m)	Direction	NGR	Details	
- AS AMENDED BY ENV ACT 1995)					
36G	392	E	516750 175500	Address: THAMES WATER UTILITIES LIMITED., MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 7 Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 31-Mar-2013
37G	392	E	516750 175500	Address: THAMES WATER UTILITIES LTD, MOGDEN WWTW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 10 Status: VARIED UNDER EPR 2010	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 30-Jan-2019
38G	392	E	516750 175500	Address: THAMES WATER UTILITIES LTD, MOGDEN WWTW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 10 Status: VARIED UNDER EPR 2010	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 30-Jan-2019
39G	392	E	516750 175500	Address: THAMES WATER UTILITIES LTD, MOGDEN WWTW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 10 Status: VARIED UNDER EPR 2010	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 30-Jan-2019
40G	392	E	516750 175500	Address: THAMES WATER UTILITIES LTD, MOGDEN WWTW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 10 Status: VARIED UNDER EPR 2010	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 30-Jan-2019
41G	392	E	516750 175500	Address: THAMES WATER UTILITIES LTD, MOGDEN WWTW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 10 Status: VARIED UNDER EPR 2010	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 30-Jan-2019
42G	392	E	516750 175500	Address: THAMES WATER UTILITIES LTD, MOGDEN WWTW, MOGDEN LANE, ISLEWORTH, MIDDLESEX, TW7 7LP Permit Number: CNTD.0085 Permit Version: 10 Status: VARIED UNDER EPR 2010	Discharge Type: WwTW/Sewage Treatment Works (water company) Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 30-Jan-2019
43F	484	NE	516800 175900	Address: THAMES WATER UTILITIES LIMITED., MOGDEN STW, ISLEWORTH, MIDDX, MOGDEN STW, ISLEWORTH, MIDDX Permit Number: CNTD.0085 Permit Version: 3 Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995)	Discharge Type: Sewage Disposal Works - water company Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Catchment: - Approval Date: 01-Aug-2001

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

3

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
23F	484	NE	516800 175900	Name: Watkins Cloud Ltd Hillingdon Middx Status: Not Active Receiving Water: - Authorised Substances: -
24F	484	NE	516800 175900	Name: Watkins Cloud Ltd Hillingdon Middx Status: Not Active Receiving Water: Thames Estuary Authorised Substances: Mercury (other), Cadmium
25F	484	NE	516800 175900	Name: Watkins Cloud Ltd Hillingdon Middx Status: Not Active Receiving Water: - Authorised Substances: -

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

0

Database searched and no data found.

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

1

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
81	63	N	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

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:

37

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

ID	Distance (m)	Direction	NGR	Details
44	261	NE	516600 175800	<p>Address: TOLSONS COURT, OLD ISLEWORTH, MIDDLE, TOLSONS COURT, OLD ISLEWORTH, MI, DDLESEX 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>
45	277	E	516660 175650	<p>Address: NAZARETH HOUSE, OLD ISLEWORTH, MIDDLE, NAZARETH HOUSE, OLD ISLEWORTH, M, DDLESEX 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>
46	287	E	516660 175730	<p>Address: LION WHARF, OLD ISLEWORTH, MIDDLESE, LION WHARF, OLD ISLEWORTH, MIDDLE, ESEX 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>
47G	392	E	516750 175500	<p>Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 7</p> <p>Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2010 Effective Date: 31-Mar-2013 Revocation Date: 11/12/2018</p>
48G	392	E	516750 175500	<p>Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 5</p> <p>Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/01/2007 Effective Date: 31-Jan-2007 Revocation Date: 31/03/2009</p>
49G	392	E	516750 175500	<p>Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 8</p> <p>Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 28/01/2009 Effective Date: 01-Apr-2009 Revocation Date: 31/03/2010</p>
50G	392	E	516750 175500	<p>Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 8</p> <p>Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 28/01/2009 Effective Date: 01-Apr-2009 Revocation Date: 31/03/2010</p>
51G	392	E	516750 175500	<p>Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: CNTD.0085</p> <p>Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2010 Effective Date: 31-Mar-2013 Revocation Date: 11/12/2018</p>

ID	Distance (m)	Direction	NGR	Details	
Permit Version: 7					
52G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 4	Receiving Water: RIVER THAMES Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2005 Effective Date: 31-Mar-2005 Revocation Date: 30/01/2007
53G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 7	Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2010 Effective Date: 31-Mar-2013 Revocation Date: 11/12/2018
54G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 7	Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2010 Effective Date: 31-Mar-2013 Revocation Date: 11/12/2018
55G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 6	Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2005 Effective Date: 01-Apr-2010 Revocation Date: 30/03/2013
56G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 7	Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2010 Effective Date: 31-Mar-2013 Revocation Date: 11/12/2018
57G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 6	Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2005 Effective Date: 01-Apr-2010 Revocation Date: 30/03/2013
58G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 7	Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2010 Effective Date: 31-Mar-2013 Revocation Date: 11/12/2018
59G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 7	Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2010 Effective Date: 31-Mar-2013 Revocation Date: 11/12/2018
60G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 5	Receiving Water: RIVER THAMES TIDAL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/01/2007 Effective Date: 31-Jan-2007 Revocation Date: 31/03/2009

ID	Distance (m)	Direction	NGR	Details	
61G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 4	Receiving Water: RIVER THAMES Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 31/03/2005 Effective Date: 31-Mar-2005 Revocation Date: 30/01/2007
62G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 9	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 12/12/2018 Effective Date: 12-Dec-2018 Revocation Date: 29/01/2019
63G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 9	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 12/12/2018 Effective Date: 12-Dec-2018 Revocation Date: 29/01/2019
64G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 9	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 12/12/2018 Effective Date: 12-Dec-2018 Revocation Date: 29/01/2019
65G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 10	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 30/01/2019 Effective Date: 30-Jan-2019 Revocation Date:
66G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 10	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 30/01/2019 Effective Date: 30-Jan-2019 Revocation Date:
67G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 10	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 30/01/2019 Effective Date: 30-Jan-2019 Revocation Date:
68G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 9	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 12/12/2018 Effective Date: 12-Dec-2018 Revocation Date: 29/01/2019
69G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 9	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 12/12/2018 Effective Date: 12-Dec-2018 Revocation Date: 29/01/2019
70G	392	E	516750	Address: MOGDEN WWTW, MOGDEN LANE,	Receiving Water: RIVER THAMES TIDAL

ID	Distance (m)	Direction	NGR	Details	
			175500	ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 10	Status: VARIED UNDER EPR 2010 Issue date: 30/01/2019 Effective Date: 30-Jan-2019 Revocation Date:
71G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 10	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 30/01/2019 Effective Date: 30-Jan-2019 Revocation Date:
72G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 9	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 12/12/2018 Effective Date: 12-Dec-2018 Revocation Date: 29/01/2019
73G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 9	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 12/12/2018 Effective Date: 12-Dec-2018 Revocation Date: 29/01/2019
74G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 10	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 30/01/2019 Effective Date: 30-Jan-2019 Revocation Date:
75G	392	E	516750 175500	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 10	Receiving Water: RIVER THAMES TIDAL Status: VARIED UNDER EPR 2010 Issue date: 30/01/2019 Effective Date: 30-Jan-2019 Revocation Date:
76F	484	NE	516800 175900	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 3	Receiving Water: RIVER THAMES Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 01/08/2001 Effective Date: 01-Aug-2001 Revocation Date: 30/03/2005
77F	484	NE	516800 175900	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 2	Receiving Water: RIVER THAMES Status: VARIED BY APPLICATION - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 15/12/1989 Effective Date: 01-Apr-1992 Revocation Date: 31/07/2001
78F	484	NE	516800 175900	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CSAD.1778 Permit Version: 1	Receiving Water: RIVER THAMES Status: REVOKED - UNSPECIFIED Issue date: 05/10/1989 Effective Date: 05-Oct-1989 Revocation Date: 15/12/1989
79F	484	NE	516800 175900	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH	Receiving Water: THAMES Status: REVOKED - UNSPECIFIED

ID	Distance (m)	Direction	NGR	Details
				Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CSSA.0363 Permit Version: 1 Issue date: 22/03/1978 Effective Date: 31-Jan-1985 Revocation Date: 15/12/1989
80F	484	NE	516800 175900	Address: MOGDEN WWTW, MOGDEN LANE, ISLEWORTH Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: CNTD.0085 Permit Version: 1 Receiving Water: RIVER THAMES Status: BY DIRECT. OF SEC OF STATE, (WATER ACT 1989 SCHED 26 & 25(4)(5)) Issue date: 15/12/1989 Effective Date: 15-Dec-1989 Revocation Date: 31/03/1992

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

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

0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

22

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

ID	Distance (m)	Direction	NGR	Details
1A	321	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)

ID	Distance (m)	Direction	NGR	Details	
2A	321	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)
3	340	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)
4	403	E	516786.0 175663.0	Incident Date: 25-Jun-2005 Incident Identification: 324165.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
5	405	NE	516680.0 175930.0	Incident Date: 23-Jun-2003 Incident Identification: 168109.0 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)
6B	408	E	516780.0 175750.0	Incident Date: 06-Jul-2002 Incident Identification: 89644.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
7	409	NW	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)
8	409	E	516790.0 175700.0	Incident Date: 04-Jul-2002 Incident Identification: 89168.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
9	410	E	516790.0 175590.0	Incident Date: 12-Feb-2002 Incident Identification: 57903.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
10B	419	E	516787.0 175767.0	Incident Date: 04-Jun-2005 Incident Identification: 317681.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
11B	423	E	516793.0 175760.0	Incident Date: 03-Jul-2002 Incident Identification: 88954.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
12D	429	E	516804.0 175737.0	Incident Date: 09-Sep-2005 Incident Identification: 345223.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
13	432	SE	516773.0 175451.0	Incident Date: 06-Oct-2009 Incident Identification: 722441.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
14C	438	SE	516709.0 175344.0	Incident Date: 15-May-2003 Incident Identification: 158617.0 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
15C	440	SE	516707.0 175339.0	Incident Date: 14-May-2002 Incident Identification: 78690.0 Pollutant: Contaminated Water Pollutant Description: Suspended Solids	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
16	440	E	516796.0 175807.0	Incident Date: 07-Jul-2009 Incident Identification: 696005.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 1 (Major) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Distance (m)	Direction	NGR	Details	
17D	452	E	516826.0 175747.0	Incident Date: 03-Jul-2009 Incident Identification: 694307.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 1 (Major) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
18	457	E	516838.0 175702.0	Incident Date: 27-Jul-2006 Incident Identification: 422012.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
19	474	E	516829.0 175815.0	Incident Date: 19-Oct-2005 Incident Identification: 354709.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
20	486	SE	516754.0 175322.0	Incident Date: 27-Jun-2003 Incident Identification: 169426.0 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)
21E	490	NE	516834.0 175847.0	Incident Date: 06-Sep-2003 Incident Identification: 188058.0 Pollutant: Sewage Materials Pollutant Description: Final Effluent	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
22E	494	NE	516835.0 175854.0	Incident Date: 29-Jun-2005 Incident Identification: 325060.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage	Water Impact: Category 1 (Major) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

0

Database searched and no data found.

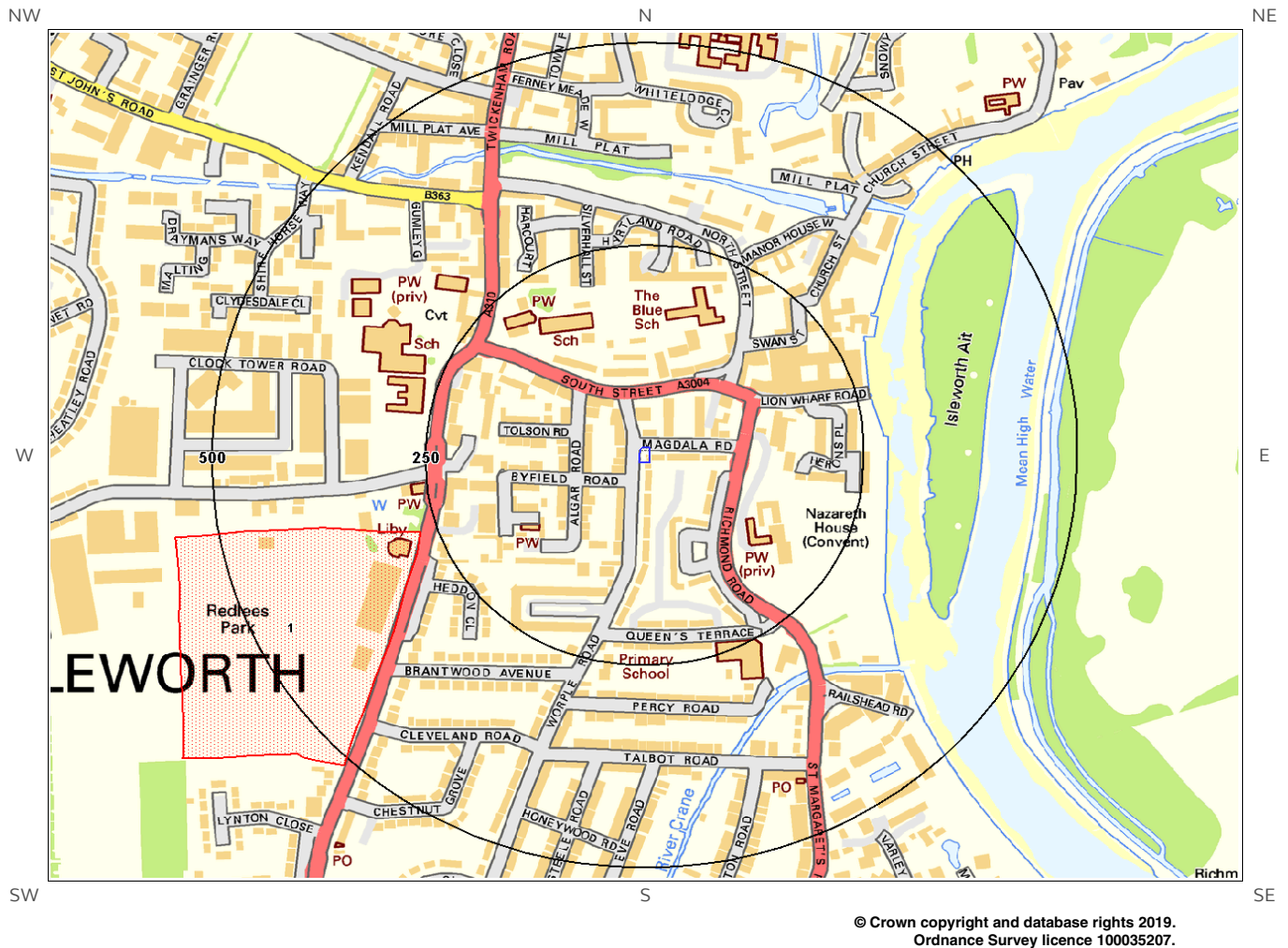
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

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

0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



- Site Outline
- EA/NRW Active Landfill
- EA/NRW Historic Landfill
- BGS / DoE Survey Landfill
- Historic and Planned Waste Sites
- EA/NRW Licensed Waste Site
- Local Authority/Historical Mapping Landfill Records
- Search Buffers (m)
— 250 —
— 500 —

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	270	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	850	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	910	SW		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	1073	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	1163	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	1246	SW		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	1498	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	1166	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:

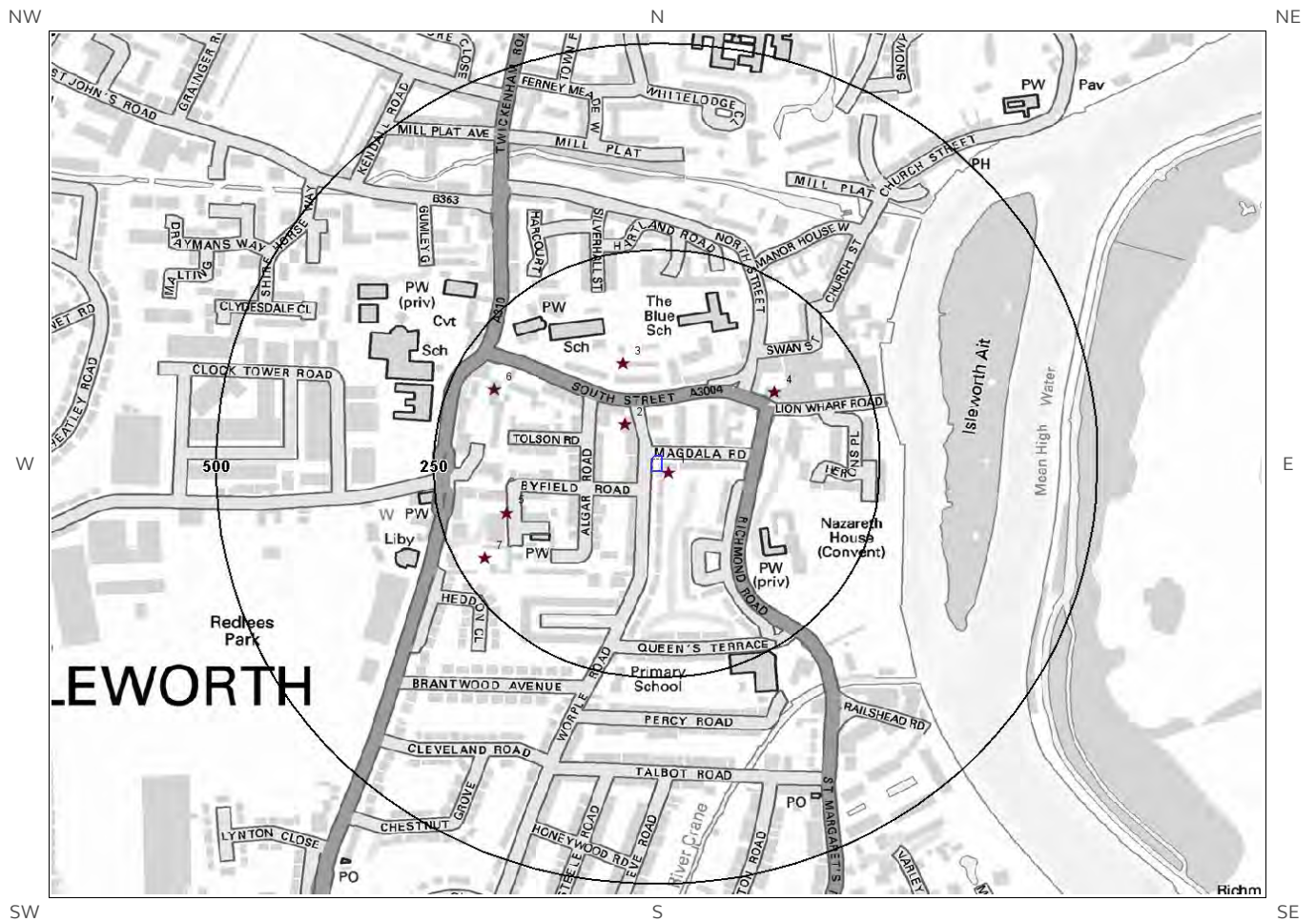
5

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

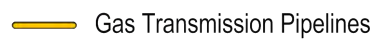
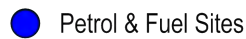
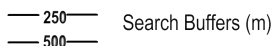
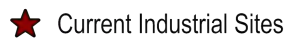
ID	Distance (m)	Direction	NGR	Details
Not shown	576	N	516558 176203	<p>Site Address: West Middlesex University Hospital, Twickenham Road, Isleworth, Middlesex, TW7 6AF</p> <p>Type: Physical Treatment Facility</p> <p>Size: < 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: MAR005</p> <p>EPR reference: EA/EPR/GB3905XH/A001</p> <p>Operator: Mariana W M Limited</p> <p>Waste Management licence No: 405865</p> <p>Annual Tonnage: 5120.0</p> <p>Issue Date: 11/04/2019</p> <p>Effective Date: -</p> <p>Modified: -</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Issued</p> <p>Site Name: W M U H Clinical Waste Treatment Facility</p> <p>Correspondence Address: -</p>
Not shown	1125	SW	515401 175066	<p>Site Address: Land / Premises At, Mogden Lane, Isleworth, Middlesex, TW7 7LP</p> <p>Type: Sewage sludge treatment</p> <p>Size: >= 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: TWU014</p> <p>EPR reference: EA/EPR/CP3999LE/A001</p> <p>Operator: Thames Water Utilities Ltd</p> <p>Waste Management licence No: 100679</p> <p>Annual Tonnage: 74999.0</p> <p>Issue Date: 15/01/2009</p> <p>Effective Date: -</p> <p>Modified: -</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Issued</p> <p>Site Name: Mogden Sewage Treatment Works</p> <p>Correspondence Address: -</p>
Not shown	1370	SE	516986 174406	<p>Site Address: Sharpe Refinery Service (Hydocarbons) Lt, Arlington Works, 21, Arlington Road, Twickenham, Middx, TW1 2BB</p> <p>Type: Special Waste Transfer Station</p> <p>Size: >= 25000 tonnes < 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: SHA002</p> <p>EPR reference: -</p> <p>Operator: Sharpe Refinery Service (Hydocarbons) Ltd</p> <p>Waste Management licence No: 83207</p> <p>Annual Tonnage: 60667.0</p> <p>Issue Date: 28/02/1995</p> <p>Effective Date: -</p> <p>Modified: 04/02/1999</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Modified</p> <p>Site Name: Sharpes, Refinery, Twickenham, Tw1</p> <p>Correspondence Address: Sharpe Refinery Service (Hydocarbons) Lt, Arlington Works, 21, Arlington Road, Twickenham, Middx, TW1 2BB</p>
Not shown	1378	SE	516962 174386	<p>Site Address: Sharpe Refinery Service (Hydocarbons) Lt, Arlington Works, Arlington Road, Twickenham, Middlesex, TW1 2BB</p> <p>Type: Special Waste Transfer Station</p> <p>Size: >= 25000 tonnes < 75000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: SHA002</p> <p>EPR reference: EA/EPR/BP3590EU/V003</p> <p>Operator: Sharpe Refinery Service (Hydro Carbons) Ltd</p> <p>Waste Management licence No: 83207</p> <p>Annual Tonnage: 60667.0</p> <p>Issue Date: 28/02/1995</p> <p>Effective Date: -</p> <p>Modified: 04/02/1999</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: To PPC</p> <p>Site Name: Arlington Works</p> <p>Correspondence Address: -</p>
Not shown	1378	SW	515281 174792	<p>Site Address: Mogden Sewage Treatment Works, Mogden Lane, Isleworth, Middlesex, TW7 7LP</p> <p>Type: Landfill Gas Engine (<3 mW)</p> <p>Size: < 25000 tonnes</p> <p>Environmental Permitting Regulations (Waste) Licence Number: TWA608</p> <p>EPR reference: EA/EPR/WP3533LT/V003</p> <p>Operator: Thames Water Utilities Limited</p> <p>Issue Date: 08/04/2013</p> <p>Effective Date: -</p> <p>Modified: 17/03/2016</p> <p>Surrendered Date: -</p> <p>Expiry Date: -</p> <p>Cancelled Date: -</p> <p>Status: Modified</p> <p>Site Name: Mogden Combined Heat And Power Plant</p>

ID	Distance (m)	Direction	NGR	Details
				Waste Management licence No: 400056 Annual Tonnage: 0.0
				Correspondence Address: -

4. Current Land Use Map



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4. Current Land Uses

4.1 Current Industrial Data

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

7

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	8	E	Electricity Sub Station	516390 175635	Greater London, TW7	Electrical Features	Infrastructure and Facilities
2	52	NW	Jubilee Service Centre	516340 175693	South Street, Isleworth, Greater London, TW7 7AL	Vehicle Repair, Testing and Servicing	Repair and Servicing
3	119	N	Electricity Sub Station	516338 175767	Greater London, TW7	Electrical Features	Infrastructure and Facilities
4	151	NE	B J Wood & Son	516512 175732	Lion Wharf Road, Isleworth, Greater London, TW7 7BW	Marine Equipment Including Boats and Ships	Industrial Products
5	174	W	Electricity Sub Station	516204 175586	Greater London, TW7	Electrical Features	Infrastructure and Facilities
6	201	NW	Foundry Cars	516189 175735	79, South Street, Isleworth, Greater London, TW7 7AA	Vehicle Repair, Testing and Servicing	Repair and Servicing
7	218	SW	Works	516179 175531	Greater London, TW7	Unspecified Works Or Factories	Industrial Features

4.2 Petrol and Fuel Sites

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

0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

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

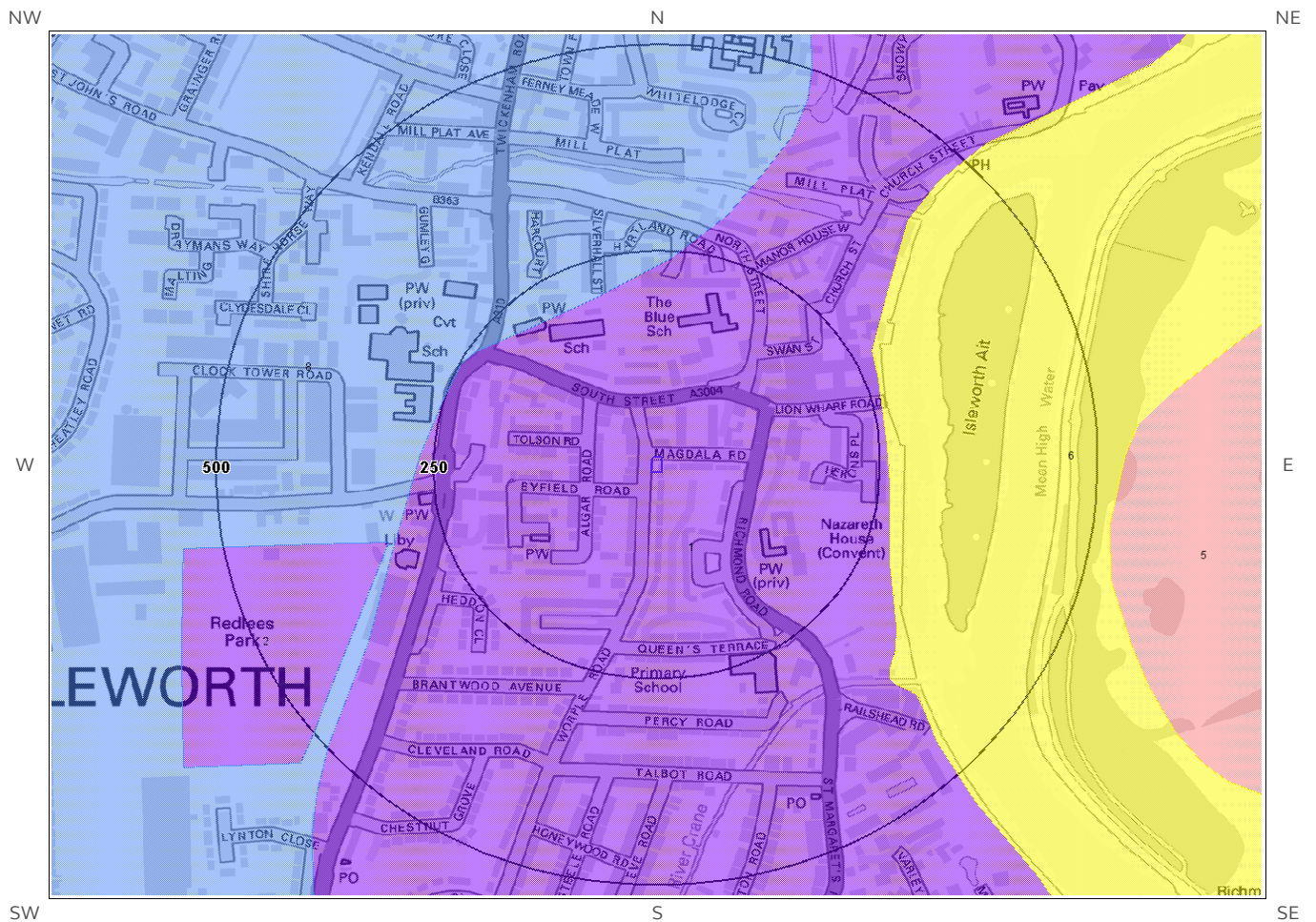
The database has been searched on site, including a 50m buffer.

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

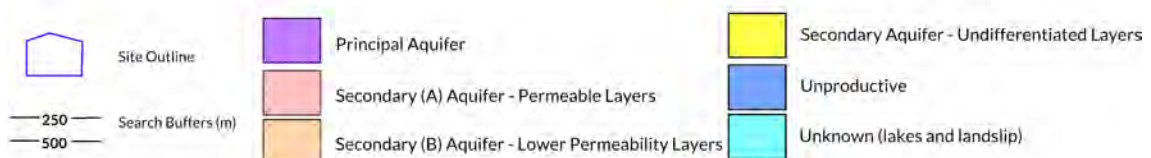
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

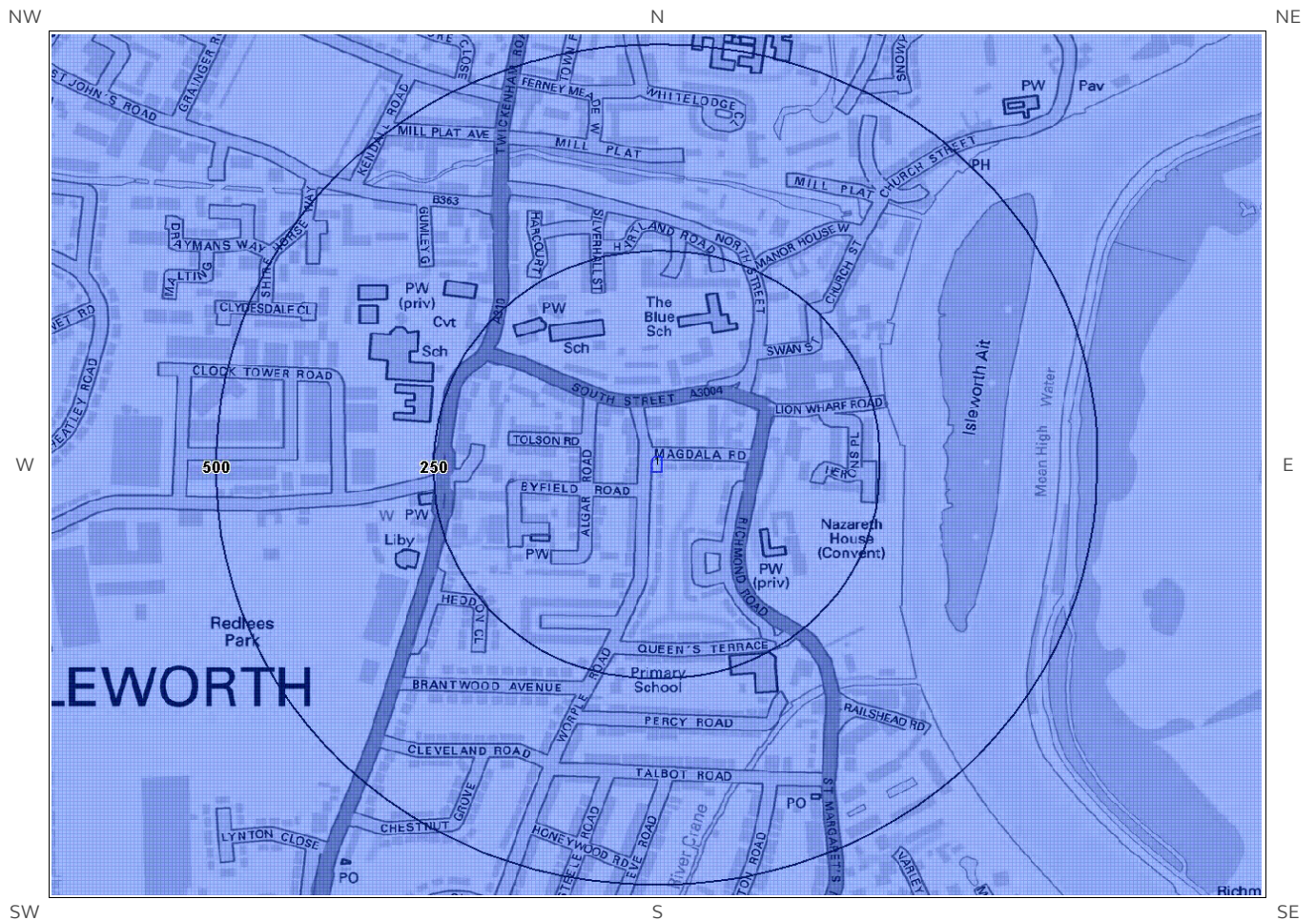
6a. Aquifer Within Superficial Geology



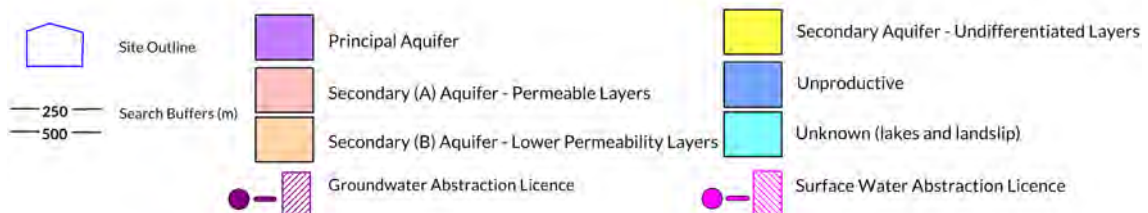
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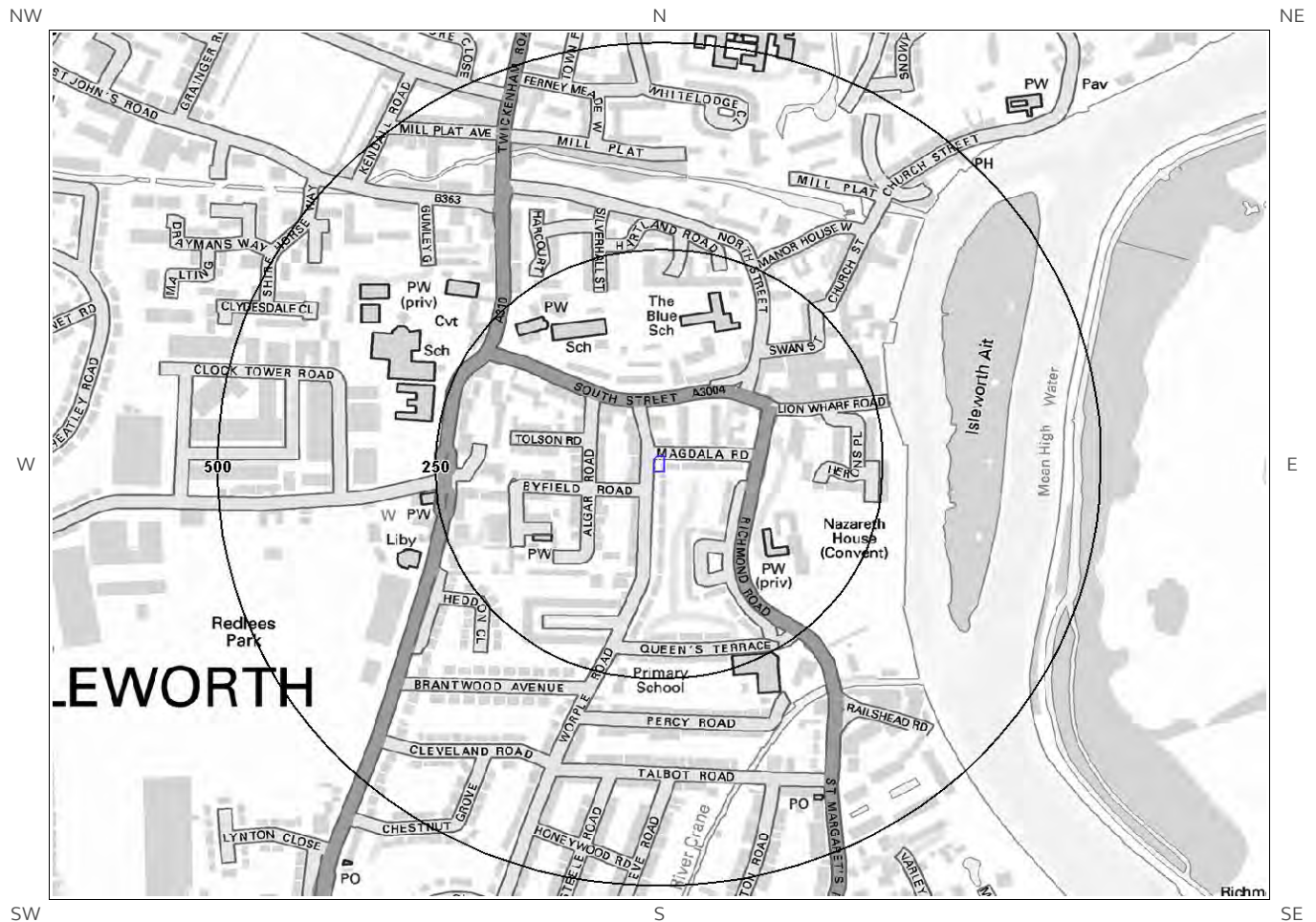
6b. Aquifer Within Bedrock Geology and Abstraction Licences



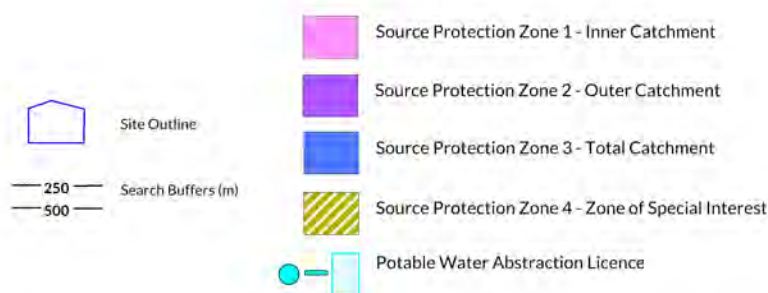
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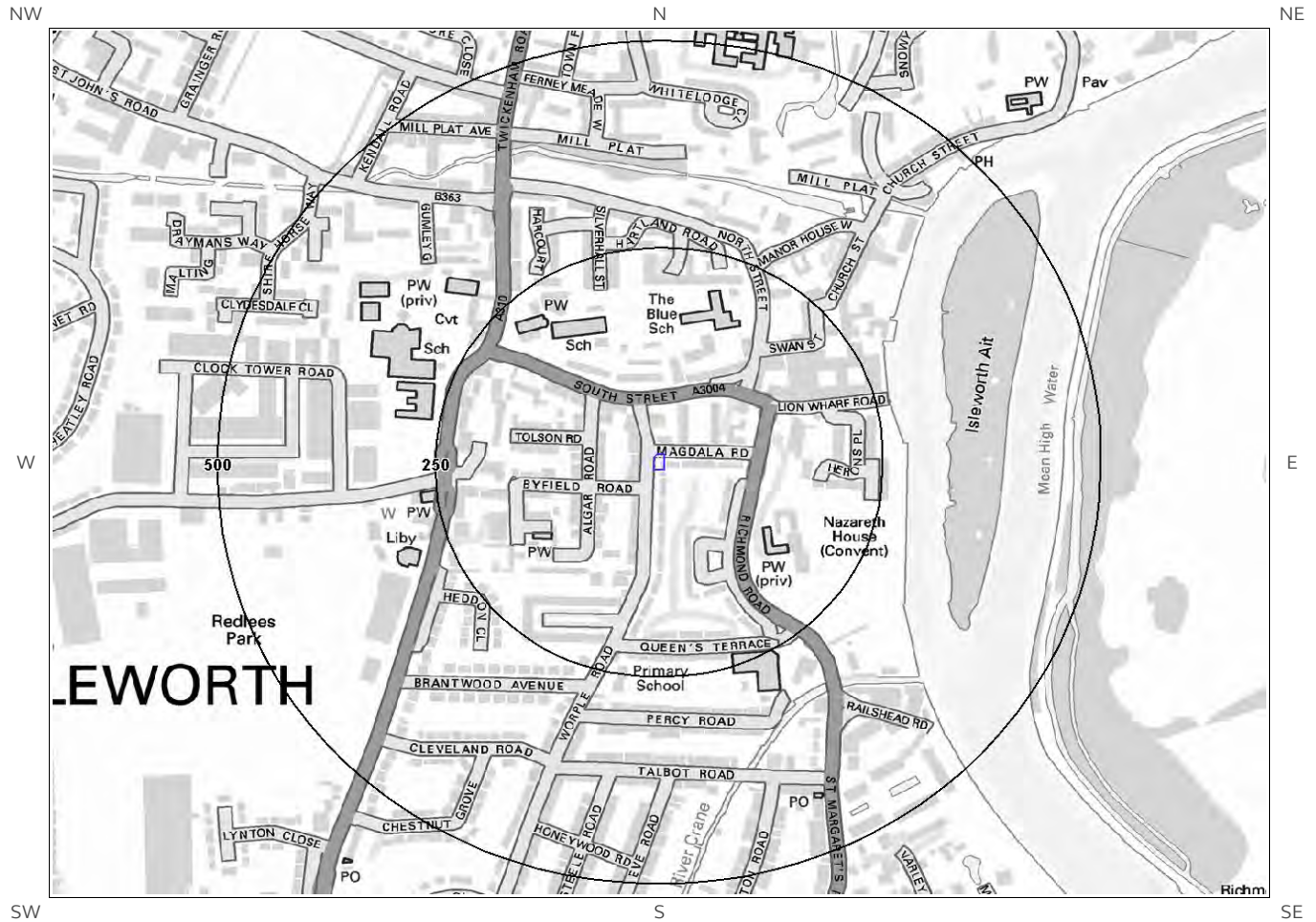
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



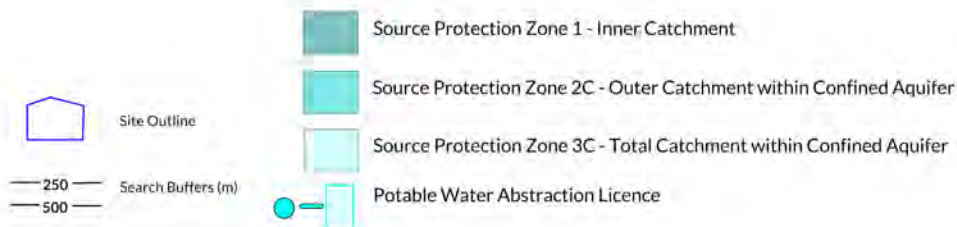
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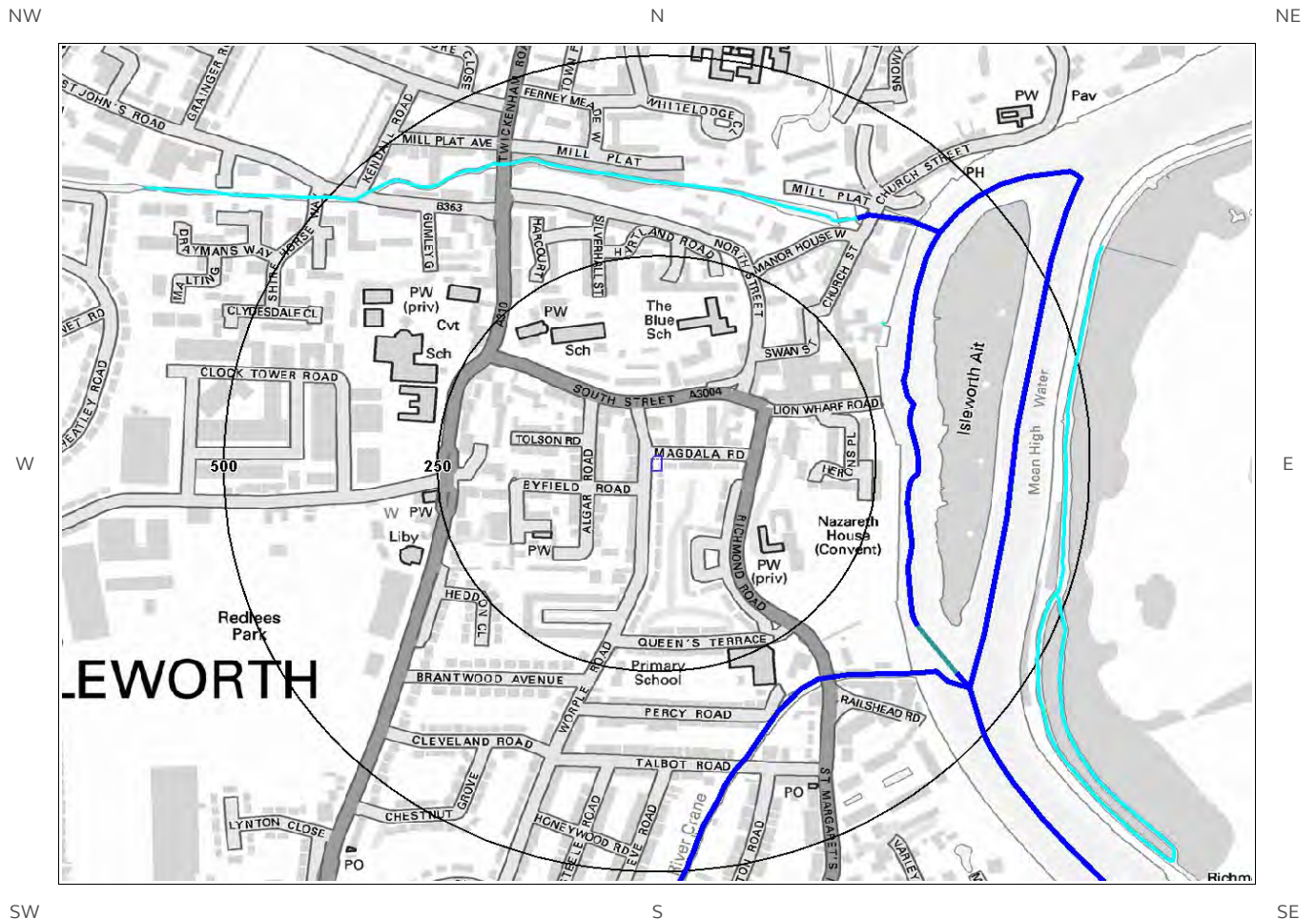
6d. Hydrogeology – Source Protection Zones within confined aquifer



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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
8	204	NW	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow
6	258	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
2	313	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

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	1068	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	1068	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	1081	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	1117	S	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	1268	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	1268	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	1417	E	517800 175650	<p>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</p> <p>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:</p>
Not shown	1481	NE	517000 177000	<p>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</p> <p>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:</p>
Not shown	1481	NE	517000 177000	<p>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</p> <p>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:</p>
Not shown	1670	SE	517448 174350	<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 A 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>
Not shown	1672	SE	517490 174383	<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 B 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>
Not shown	1690	W	514740 176090	<p>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</p> <p>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:</p>
Not shown	1720	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>

ID	Distance (m)	Direction	NGR	Details
Not shown	1723	SE	517480 174308	<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 D 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	1235	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	1235	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	1235	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	1239	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	1239	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
Not shown	1239	SW	515406 174858	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:
				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.
318	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.
445	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	290 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
7	290 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
2	305 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
8	305 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
3	306 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
9	306 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
4	317 SE	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
10	317 SE	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
5	339 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
Not shown	339 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
6	357 SE	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
12	357 SE	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)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
7	366 NE	Duke of Northumberland's River	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	366 NE	Duke of Northumberland's River	Inland river not influenced by normal tidal action.	Catchment Area: Thames Relationship to Ground Level: Underground Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	374 NE	Duke of Northumberland's River	Tidal river or stream.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	374 NE	Duke of Northumberland's River	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
9	408 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
Not shown	408 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
10	427 SE	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
16	427 SE	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
11	428 NE	River Thames	Tidal river or stream.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	428 NE	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
12	443 SE	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
Not shown	443 SE	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

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
13	451 SE	River Thames	Tidal river or stream.	Catchment Area: Thames Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	451 SE	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
14	472 E	-	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): 7.8
Not shown	472 E	-	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): 7.8
15	483 E	-	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): 7.8
Not shown	483 E	-	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): 7.8
16	486 E	-	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): 5.2
Not shown	486 E	-	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): 5.2

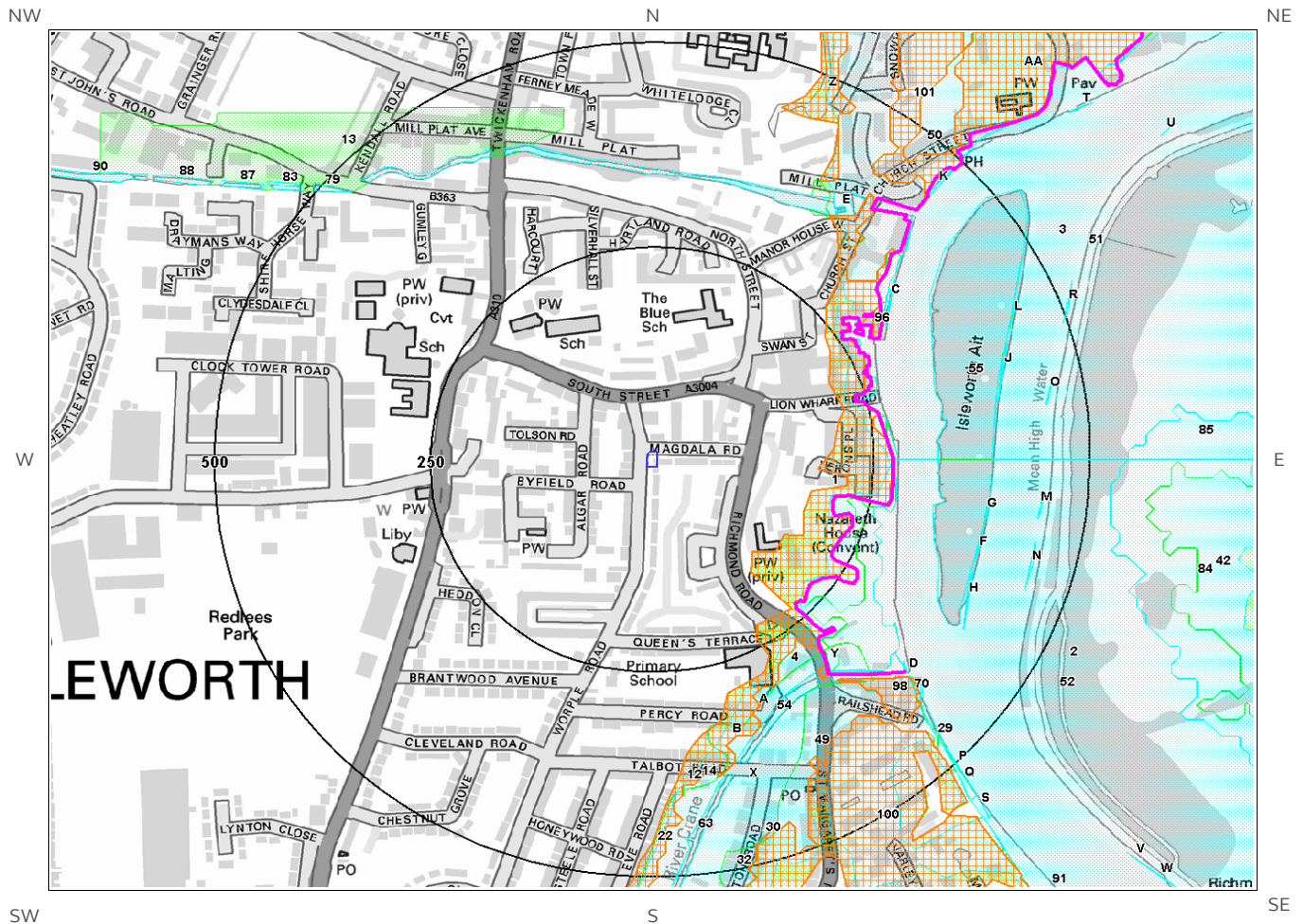
6.11 Surface Water Features

Surface water features within 250m of the study site

None identified

Database searched and no data found.

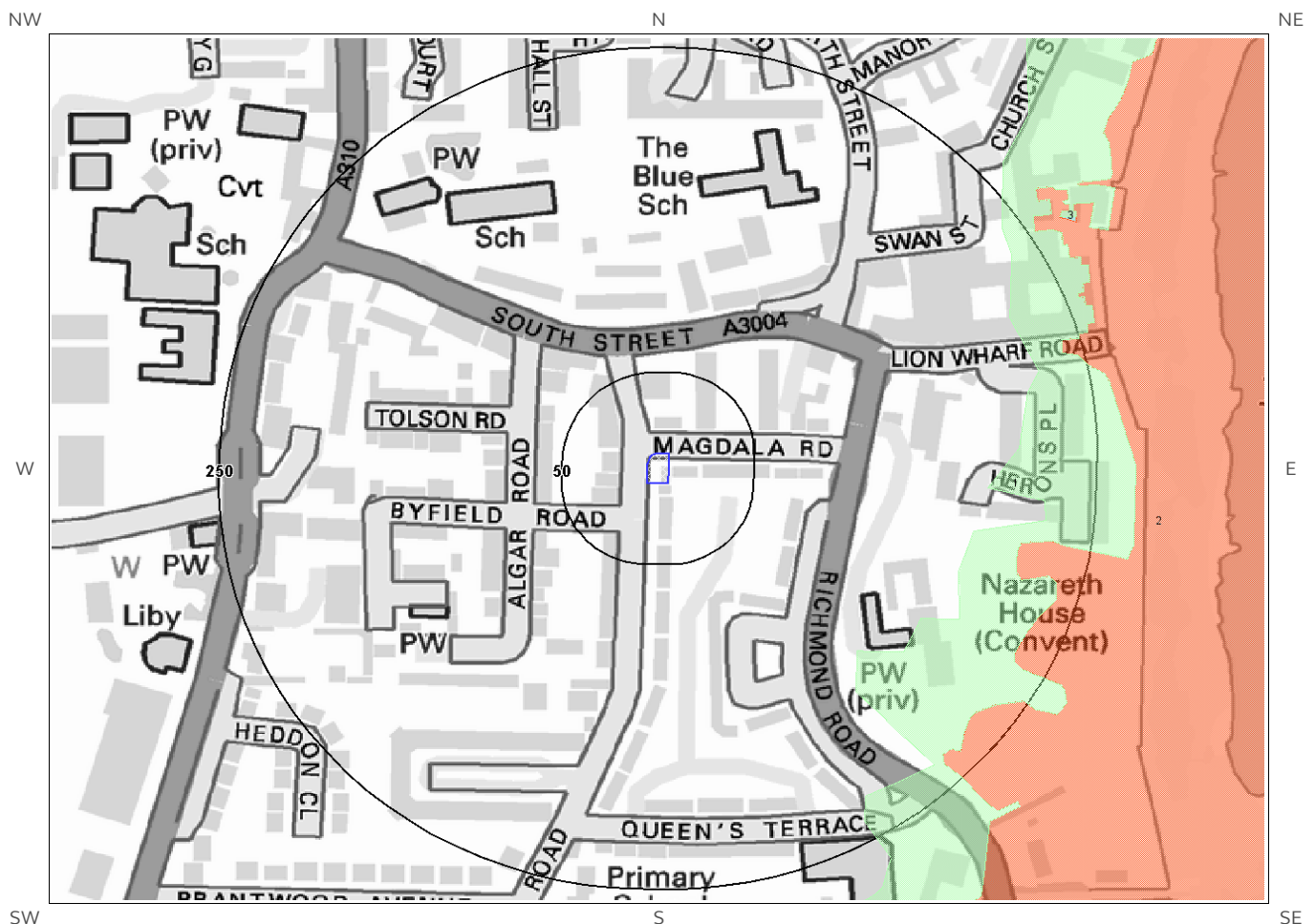
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



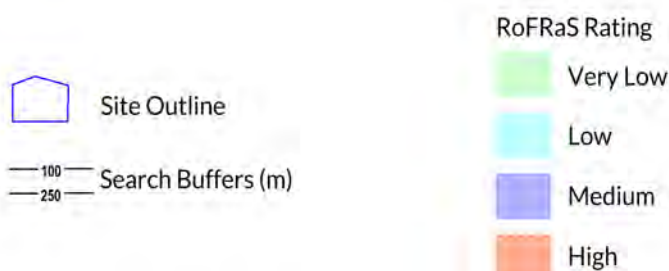
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

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

Identified

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

ID	Distance (m)	Direction	Update	Type
1	151	SE	09-Sep-2019	Zone 2 - (Fluvial /Tidal Models)
2	224	E	09-Sep-2019	Zone 2 - (Fluvial /Tidal Models)
3	246	E	09-Sep-2019	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

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

Identified

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

ID	Distance (m)	Direction	Update	Type
1	204	E	09-Sep-2019	Zone 3 - (Fluvial Models)
2	223	E	09-Sep-2019	Zone 3 - (Fluvial Models)
3	246	E	09-Sep-2019	Zone 3 - (Fluvial Models)

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

Highest risk of flooding onsite

Very Low

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

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

7.4 Flood Defences

Flood Defences within 250m of the study site

Identified

The following flood defence records are represented as lines on the Flood Map:

ID	Distance (m)	Direction	Update
103	208	E	30-Aug-2019

7.5 Areas benefiting from Flood Defences

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

Identified

7.6 Areas benefiting from Flood Storage

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

None identified

7.7 Groundwater Flooding Susceptibility Areas

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

Identified

Clearwater Flooding or Superficial Deposits Flooding

Superficial Deposits Flooding

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

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

Potential below Surface

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

7.8 Groundwater Flooding Confidence Areas

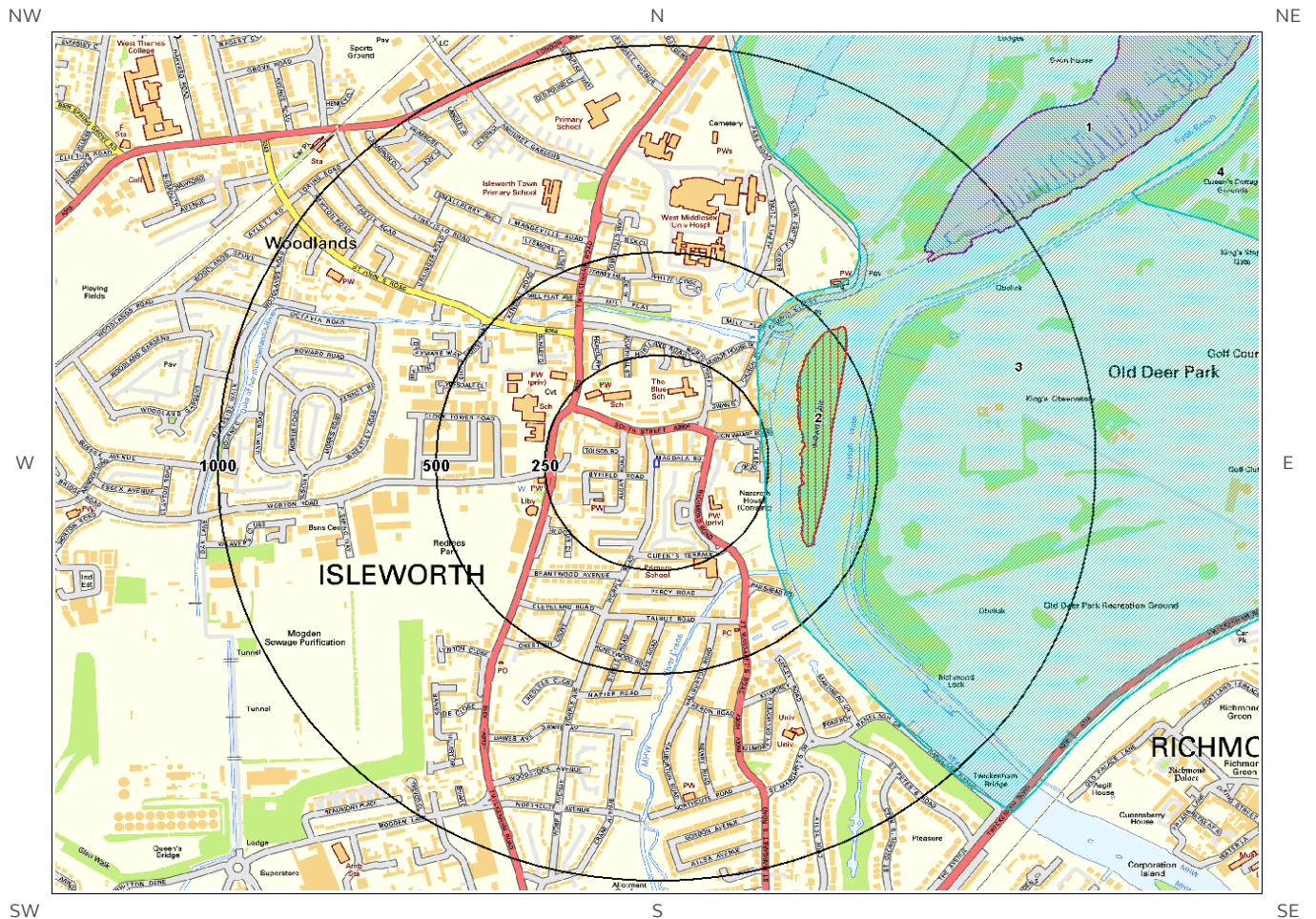
British Geological Survey confidence rating in this result

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	781	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	323	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	237	E	Royal Botanic Gardens, Kew Buffer Zone	Historic England
4	1261	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

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

Environment Agency

National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506

Web: www.environment-agency.gov.uk

Email: enquiries@environment-agency.gov.uk

Public Health England

Public information access office
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133-155 Waterloo Road, London, SE1 8UG
www.gov.uk/phe

Email: enquiries@phe.gov.uk
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www.coal.gov.uk

Ordnance Survey

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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

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



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

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

Arcadis Consulting UK Ltd
PO Box, 307,
MANCHESTER, M60 3NT

Groundsure Reference: GS-6367016

Your Reference: 14029954

Report Date 1 Oct 2019

Report Delivery Method: Email - pdf

Geo Insight

Address: GARAGE BLOCK ADJACENT 60, MAGDALA ROAD, ISLEWORTH, TW7 7DD

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: GARAGE BLOCK ADJACENT 60, MAGDALA ROAD, ISLEWORTH, TW7 7DD

Date: 1 Oct 2019

Reference: GS-6367016

Client: Arcadis Consulting UK Ltd

NW N NE

W E



SW S SE

Aerial Photograph Capture date: 20-Apr-2015
Grid Reference: 516377,175645
Site Size: 0.0215ha

Contents Page

Contents Page.....	3
Overview of Findings.....	5
1:10,000 Scale Availability.....	8
Availability of 1:10,000 Scale Geology Mapping.....	9
1 Geology (1:10,000 scale).....	10
1.1 Artificial Ground map (1:10,000 scale).....	10
1. Geology 1:10,000 scale.....	11
1.1 Artificial Ground.....	11
1.2 Superficial Deposits and Landslips map (1:10,000 scale).....	12
1.2 Superficial Deposits and Landslips.....	13
1.2.1 Superficial Deposits/ Drift Geology.....	13
1.2.2 Landslip.....	13
1.3 Bedrock and linear features map (1:10,000 scale).....	14
1.3 Bedrock and linear features.....	15
1.3.1 Bedrock/ Solid Geology.....	15
1.3.2 Linear features.....	15
2 Geology 1:50,000 Scale.....	16
2.1 Artificial Ground map.....	16
2. Geology 1:50,000 scale.....	17
2.1 Artificial Ground.....	17
2.1.1 Artificial/ Made Ground	17
2.1.2 Permeability of Artificial Ground.....	17
2.2 Superficial Deposits and Landslips map (1:50,000 scale).....	18
2.2 Superficial Deposits and Landslips.....	19
2.2.1 Superficial Deposits/ Drift Geology.....	19
2.2.2 Permeability of Superficial Ground	19
2.2.3 Landslip.....	19
2.2.4 Landslip Permeability.....	19
2.3 Bedrock and linear features map (1:50,000 scale).....	20
2.3 Bedrock, Solid Geology & linear features.....	21
2.3.1 Bedrock/Solid Geology.....	21
2.3.2 Permeability of Bedrock Ground.....	21
2.3.3 Linear features.....	21
3 Radon Data.....	22
3.1 Radon Affected Areas.....	22
3.2 Radon Protection.....	22
4 Ground Workings map.....	23
4 Ground Workings.....	24
4.1 Historical Surface Ground Working Features derived from Historical Mapping.....	24
4.2 Historical Underground Working Features derived from Historical Mapping.....	24
4.3 Current Ground Workings.....	25
5 Mining, Extraction & Natural Cavities.....	27
5.1 Historical Mining.....	27
5.2 Coal Mining.....	27
5.3 Johnson Poole and Bloomer.....	27
5.4 Non-Coal Mining.....	27
5.5 Non-Coal Mining Cavities.....	28
5.6 Natural Cavities.....	28
5.7 Brine Extraction.....	28
5.8 Gypsum Extraction.....	28
5.9 Cornwall and Devon Metalliferous Mining.....	28
5.10 Clay Mining.....	29
6 Natural Ground Subsidence.....	30
6.1 Shrink-Swell Clay map.....	30
6.2 Landslides map.....	31
6.3 Ground Dissolution of Soluble Rocks map.....	32
6.4 Compressible Deposits map.....	33
6.5 Collapsible Deposits map.....	34
6.6 Running Sand map.....	35

6 Natural Ground Subsidence.....	36
6.1 Shrink-Swell Clays.....	36
6.2 Landslides.....	36
6.3 Ground Dissolution of Soluble Rocks.....	36
6.4 Compressible Deposits.....	37
6.5 Collapsible Deposits.....	37
6.6 Running Sands.....	37
7 Borehole Records.....	39
8 Estimated Background Soil Chemistry.....	40
9 Railways and Tunnels map.....	41
9 Railways and Tunnels.....	42
9.1 Tunnels	42
9.2 Historical Railway and Tunnel Features	42
9.3 Historical Railways.....	43
9.4 Active Railways.....	43
9.5 Railway Projects.....	43

Overview of Findings

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

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

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

Section 1: Geology 1:10,000 Scale

1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslide within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	No

Section 2: Geology 1:50,000 Scale

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

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features

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

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

Yes

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

No

Section 3: Radon

3. Radon

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

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

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	6	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	3
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

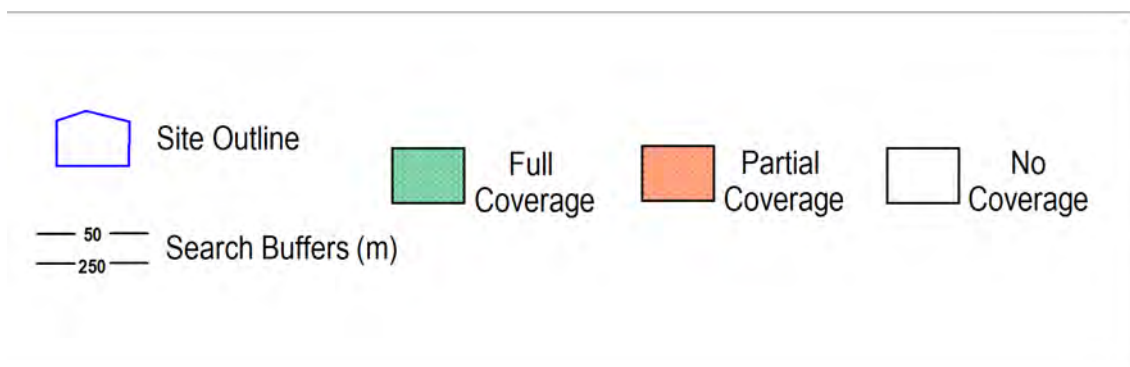
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Cornwall and Devon Metalliferous Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	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	6		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	1	0	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	0	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	0	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	636.0	Some deposits are mapped	Full	Full	Some deposits are mapped
3	1370.0	Some deposits are mapped	Full	Full	No coverage
4	1511.0	Some deposits are mapped	Full	Full	No coverage

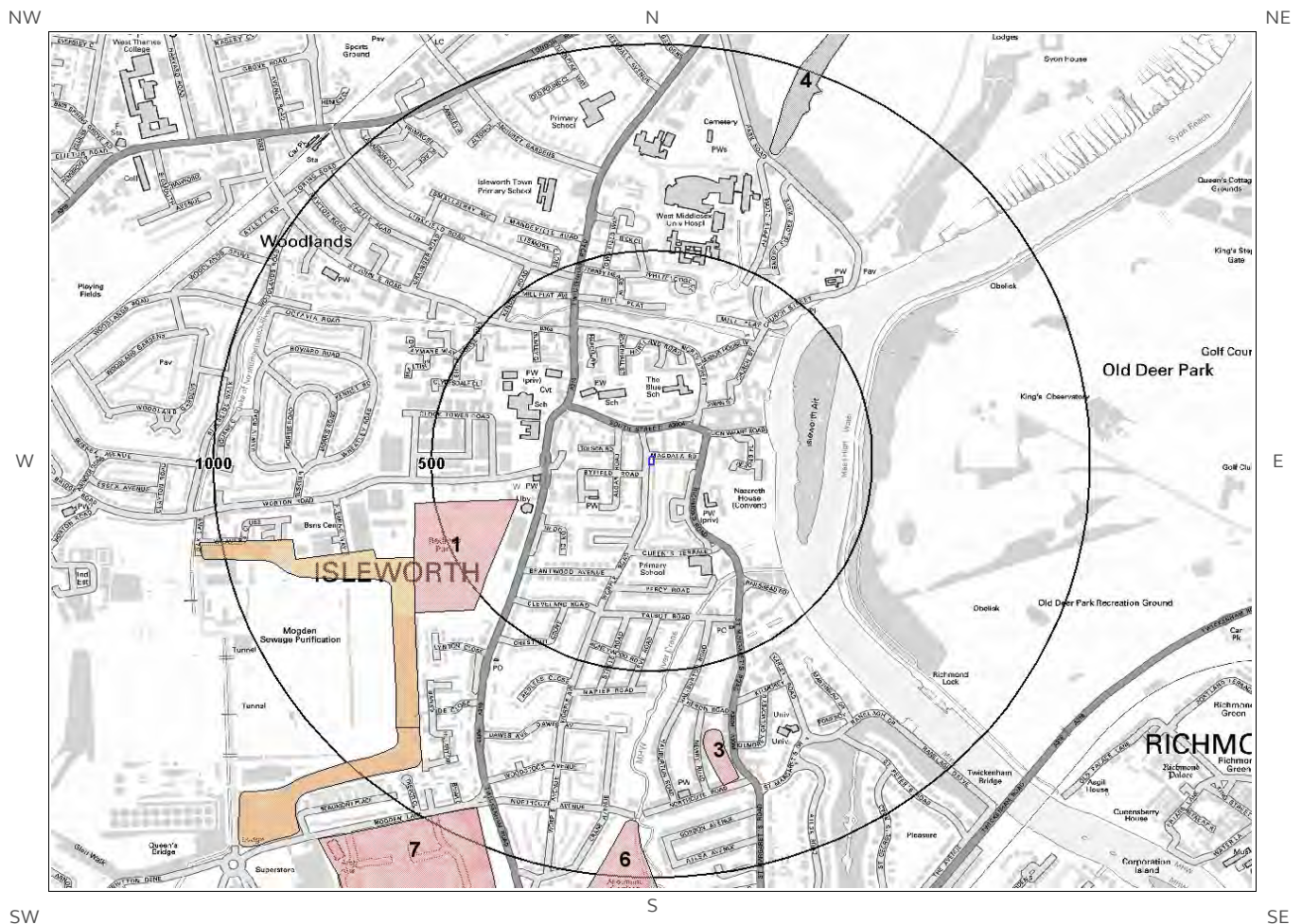
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not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

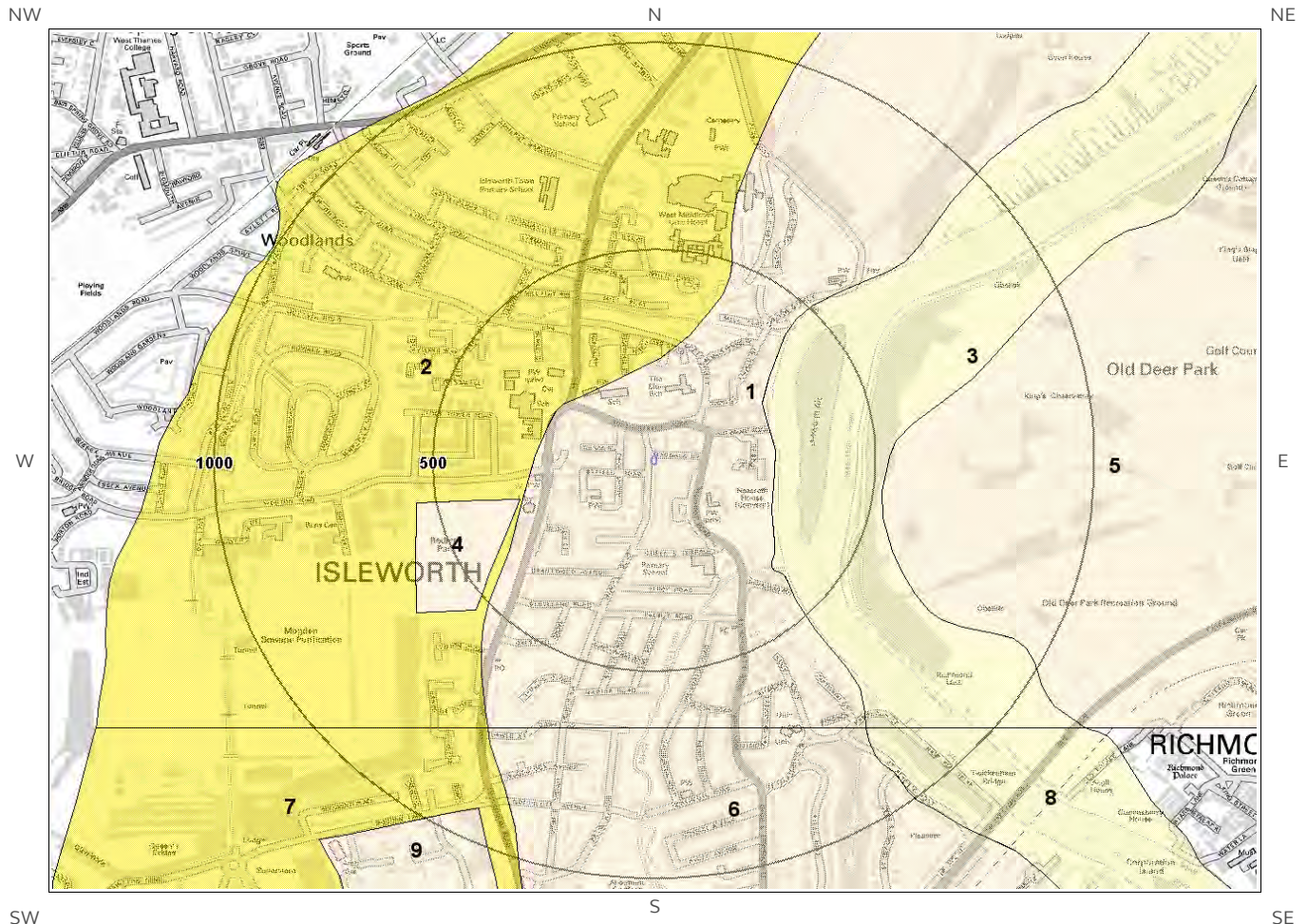
1.1 Artificial Ground

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

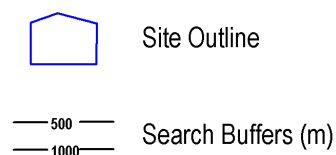
ID	Distance	Direction	LEX Code	Description	Rock Description
1	313.0	W	WMGR- UNKNOWN	Infilled Ground	Unknown/unclassified Entry

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	204.0	NW	LASI-Z	Langley Silt Member - Silt (unlithified Deposits Coding Scheme)	Silt
3	265.0	E	ALV-Z	Alluvium - Silt (unlithified Deposits Coding Scheme)	Silt
4	313.0	W	KPGR-XSV	Kempton Park Gravel Formation - Sand And Gravel	Sand And Gravel

1.2.2 Landslip

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

No

Database searched and no data found.

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

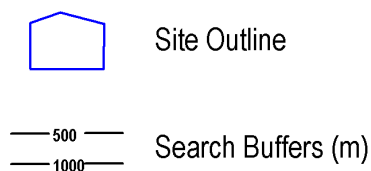
This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

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



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

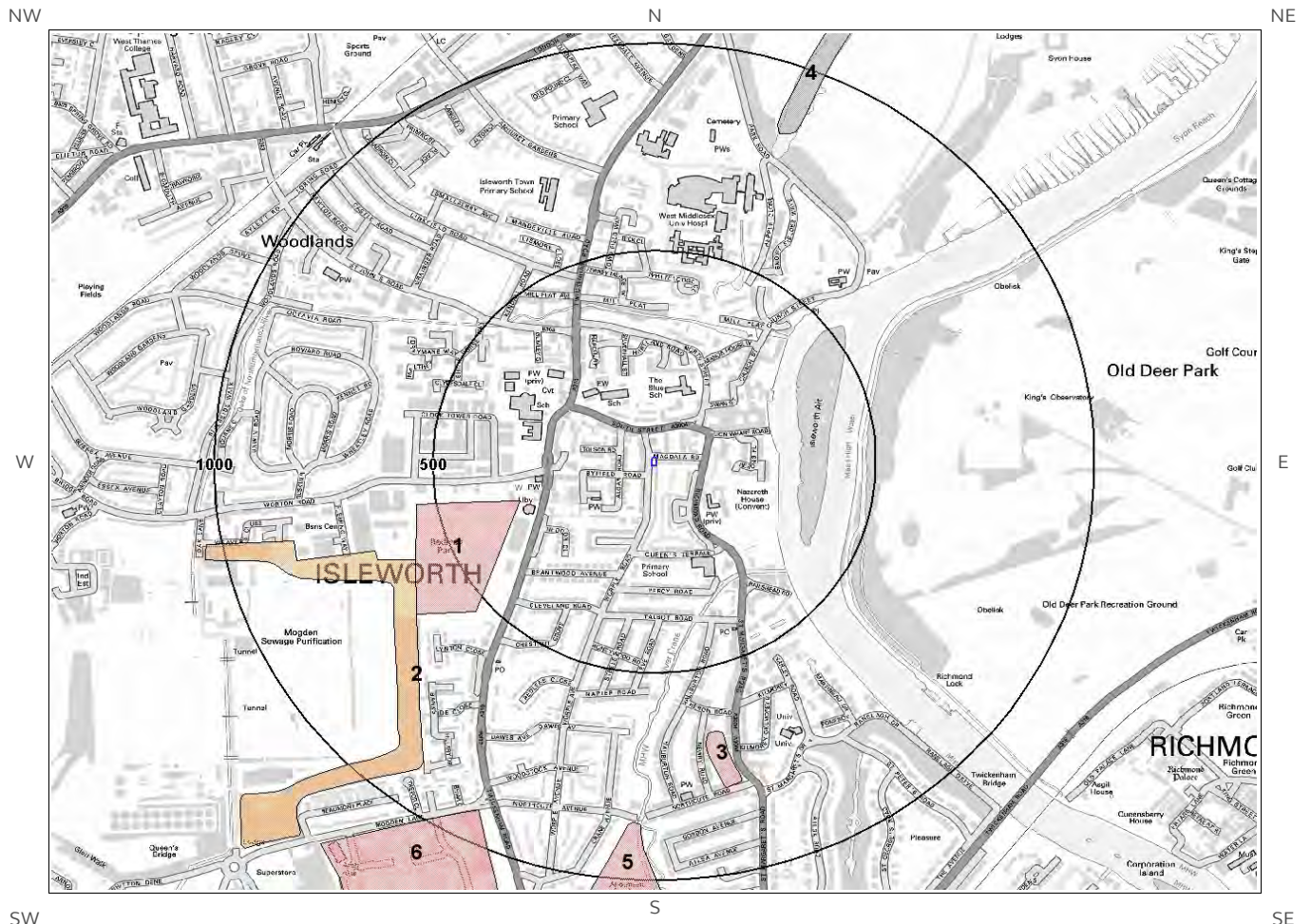
Database searched and no data found at this scale.

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

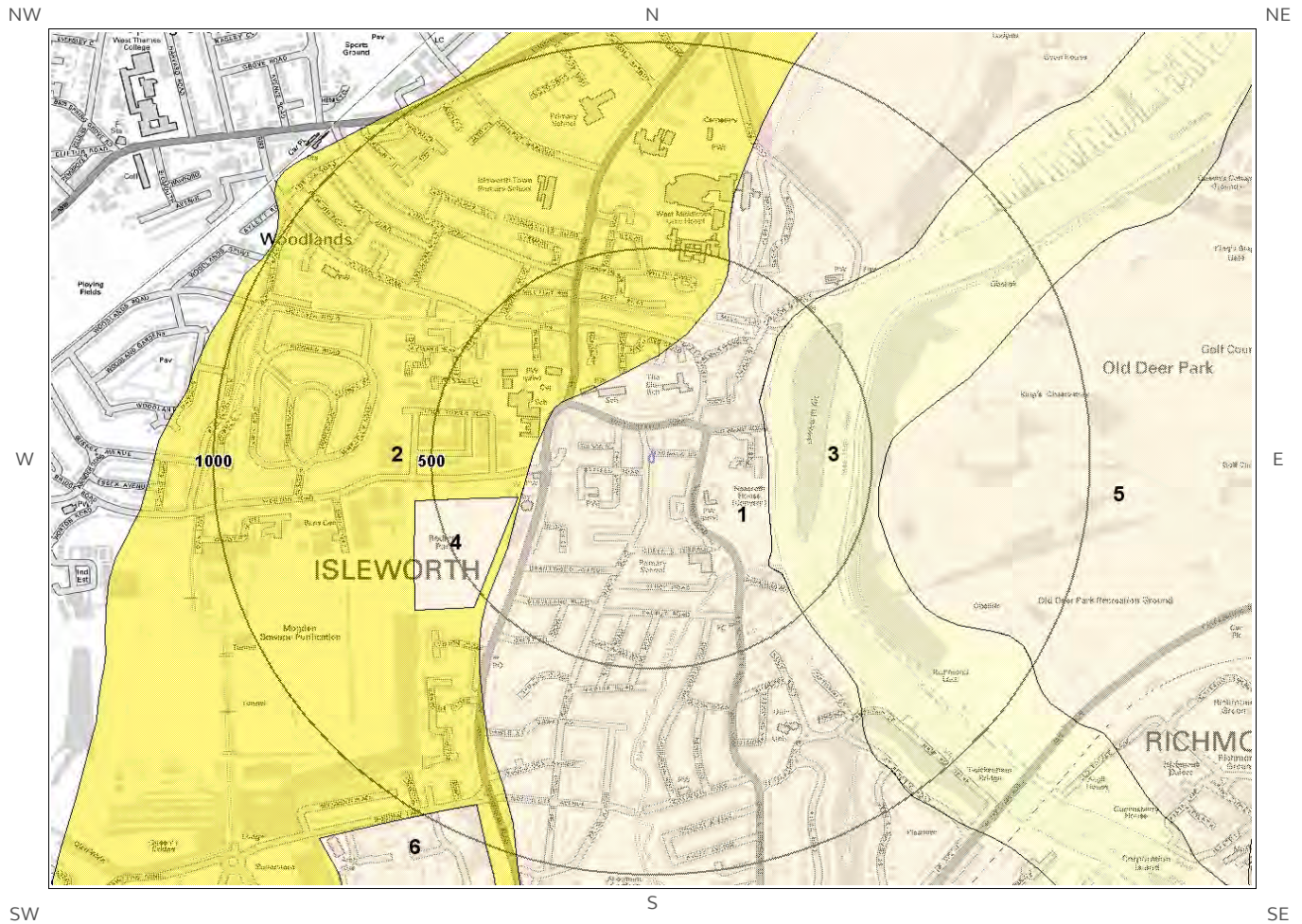
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	313.0	W	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT

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.

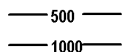
2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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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	204.0	NW	LASI-XCZ	LANGLEY SILT MEMBER	CLAY AND SILT
3	258.0	E	ALV-XCZSP	ALLUVIUM	CLAY, SILT, SAND AND PEAT
4	313.0	W	KPGR-XSV	KEMPTON PARK GRAVEL MEMBER	SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

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

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

2.2.3 Landslip

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

Database searched and no data found.

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

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

2.2.4 Landslip Permeability

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

Database searched and no data found.

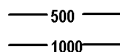
2.3 Bedrock and linear features map (1:50,000 scale)



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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

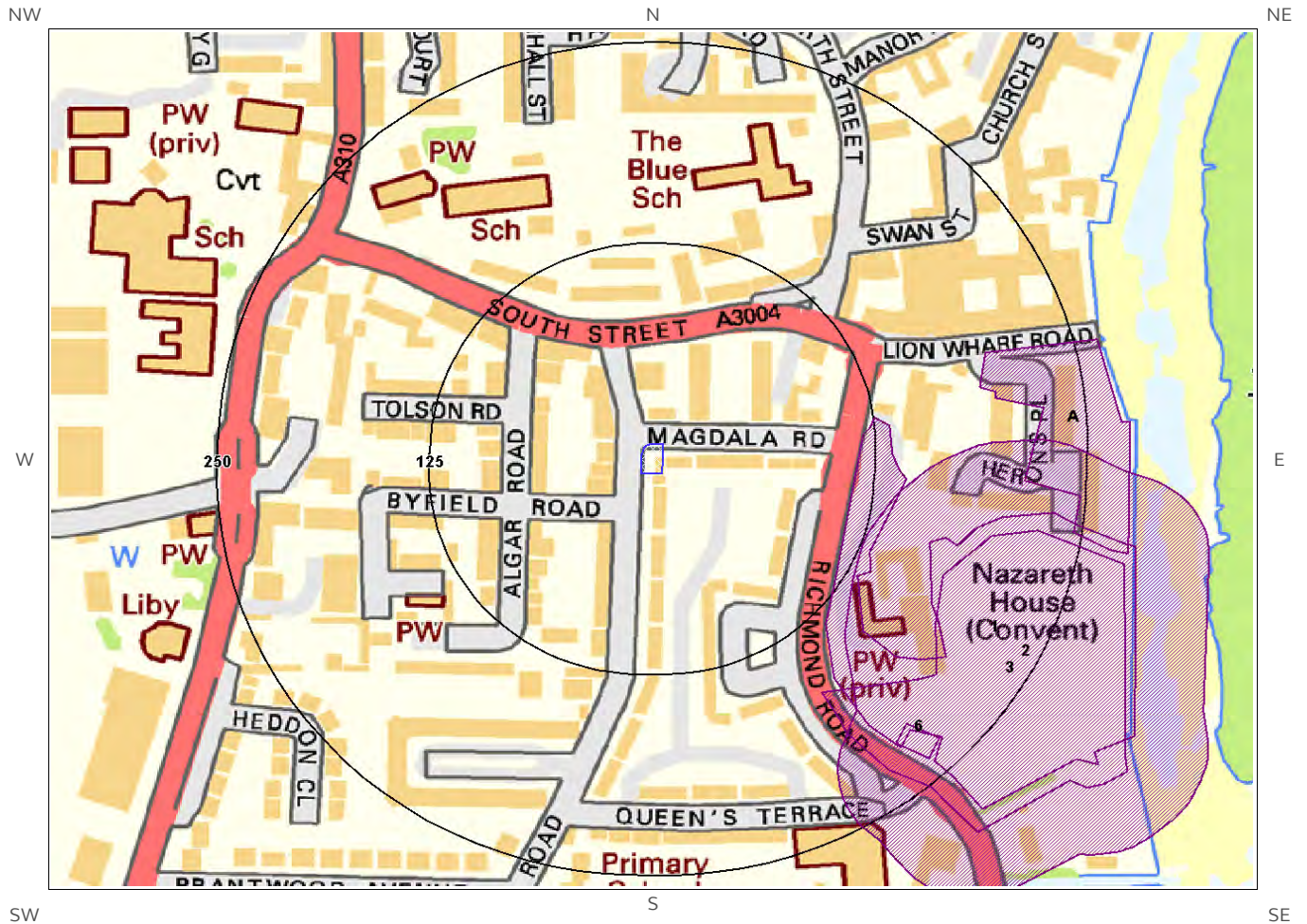
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

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



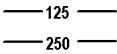


Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

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
1	112.0	E	516570 175549	Burial Ground	1933
2	126.0	E	516596 175514	Burial Ground	1912
3	166.0	SE	516567 175507	Burial Ground	1912
4A	190.0	E	516645 175595	Unspecified Wharf	1966
5A	190.0	E	516645 175595	Unspecified Wharf	1974
6	212.0	SE	516533 175469	Burial Ground	1913

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	918.0	SW	515454 175039	Tunnel	1987
Not shown	918.0	SW	515454 175039	Tunnel	1974
Not shown	918.0	SW	515454 175039	Tunnel	1966

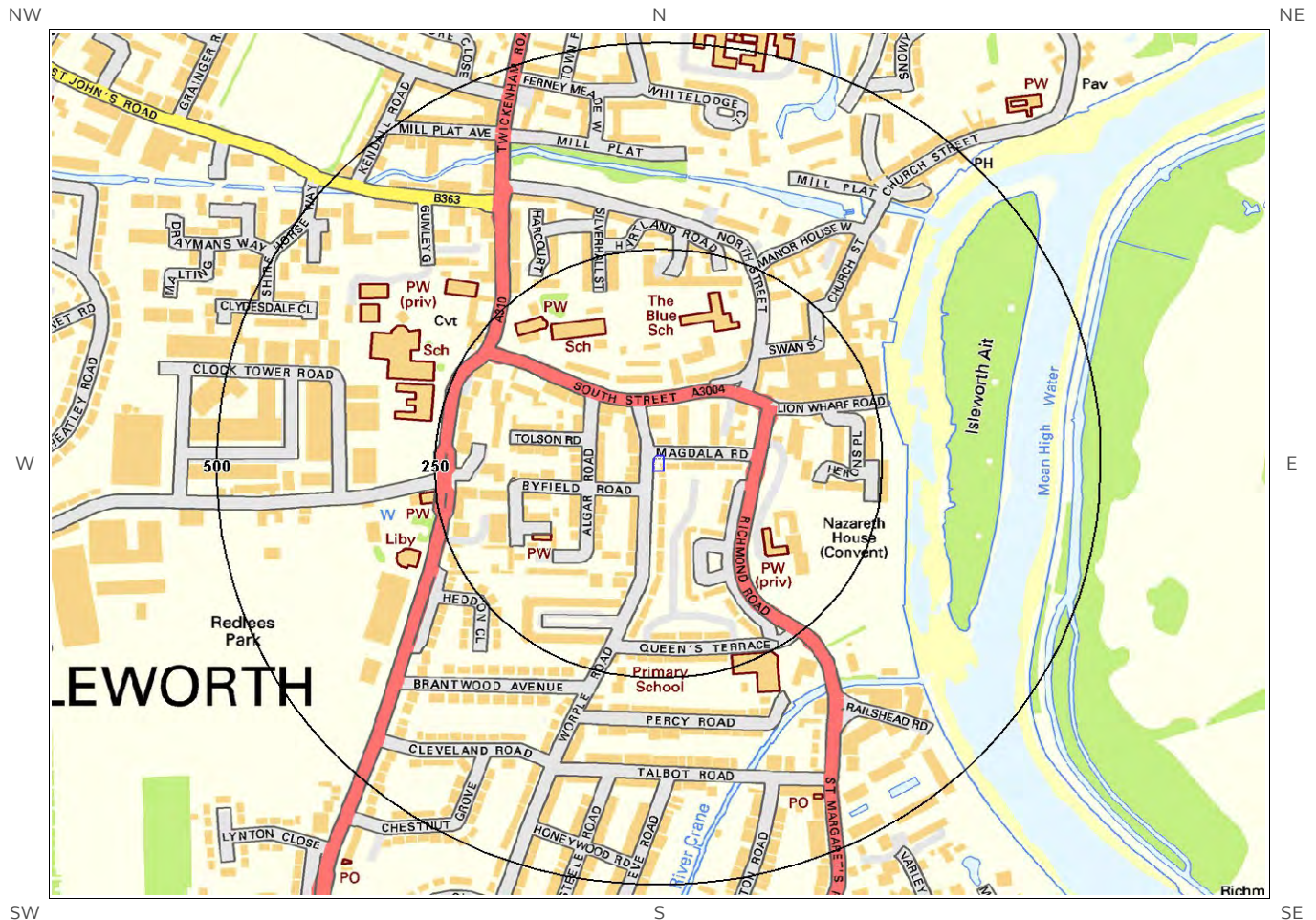
4.3 Current Ground Workings

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

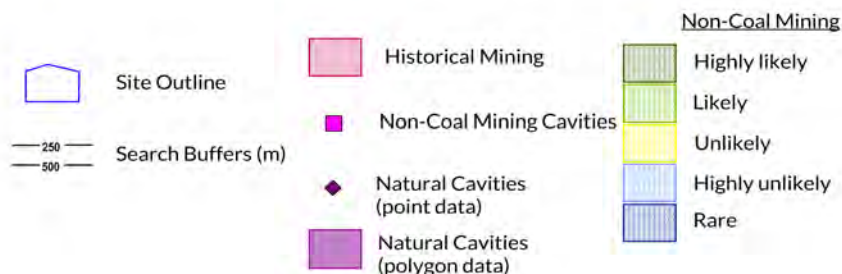
Database searched and no data found.

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.

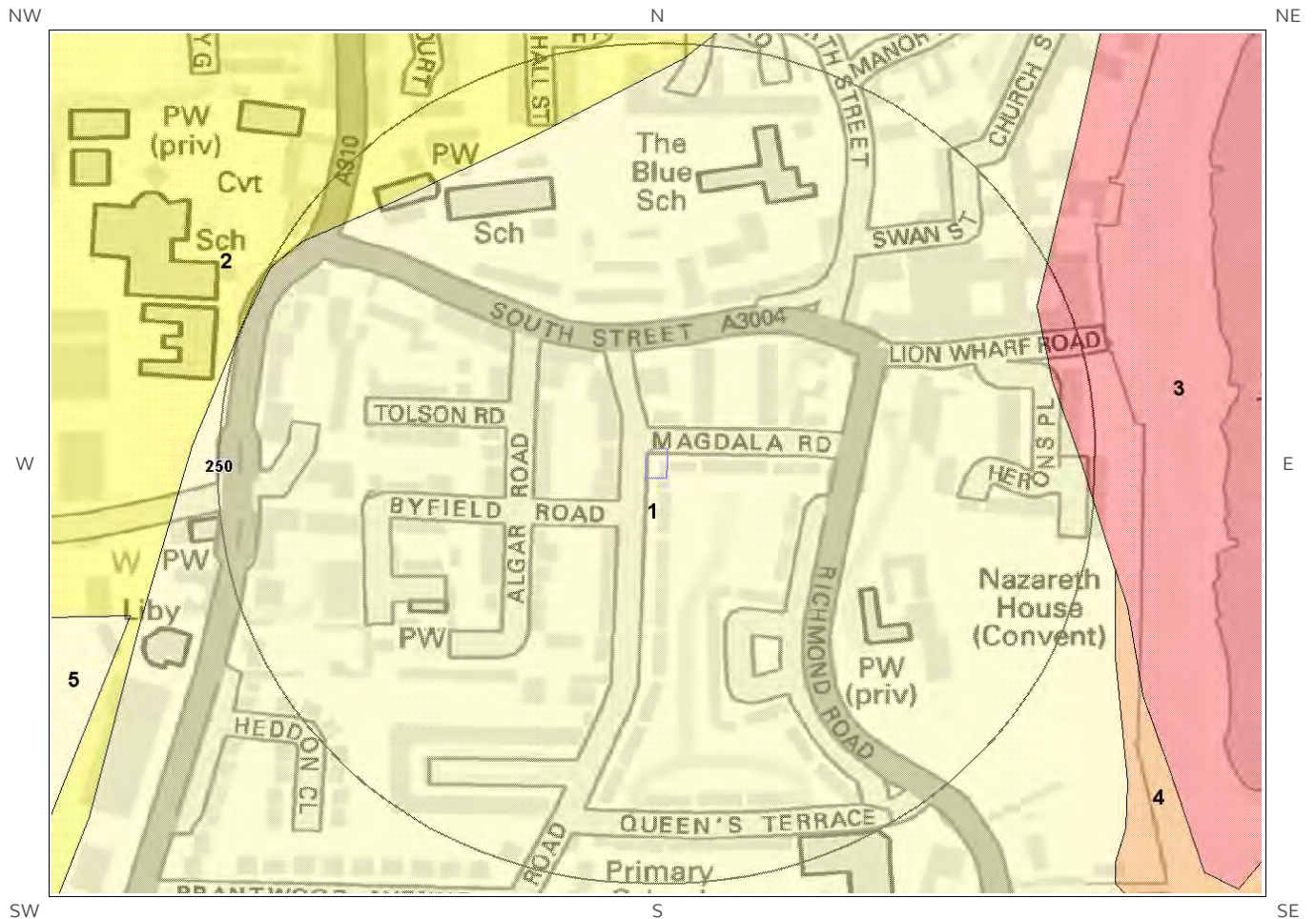
Are there any Clay Mining areas within 1000m of the study site boundary?

No

Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map

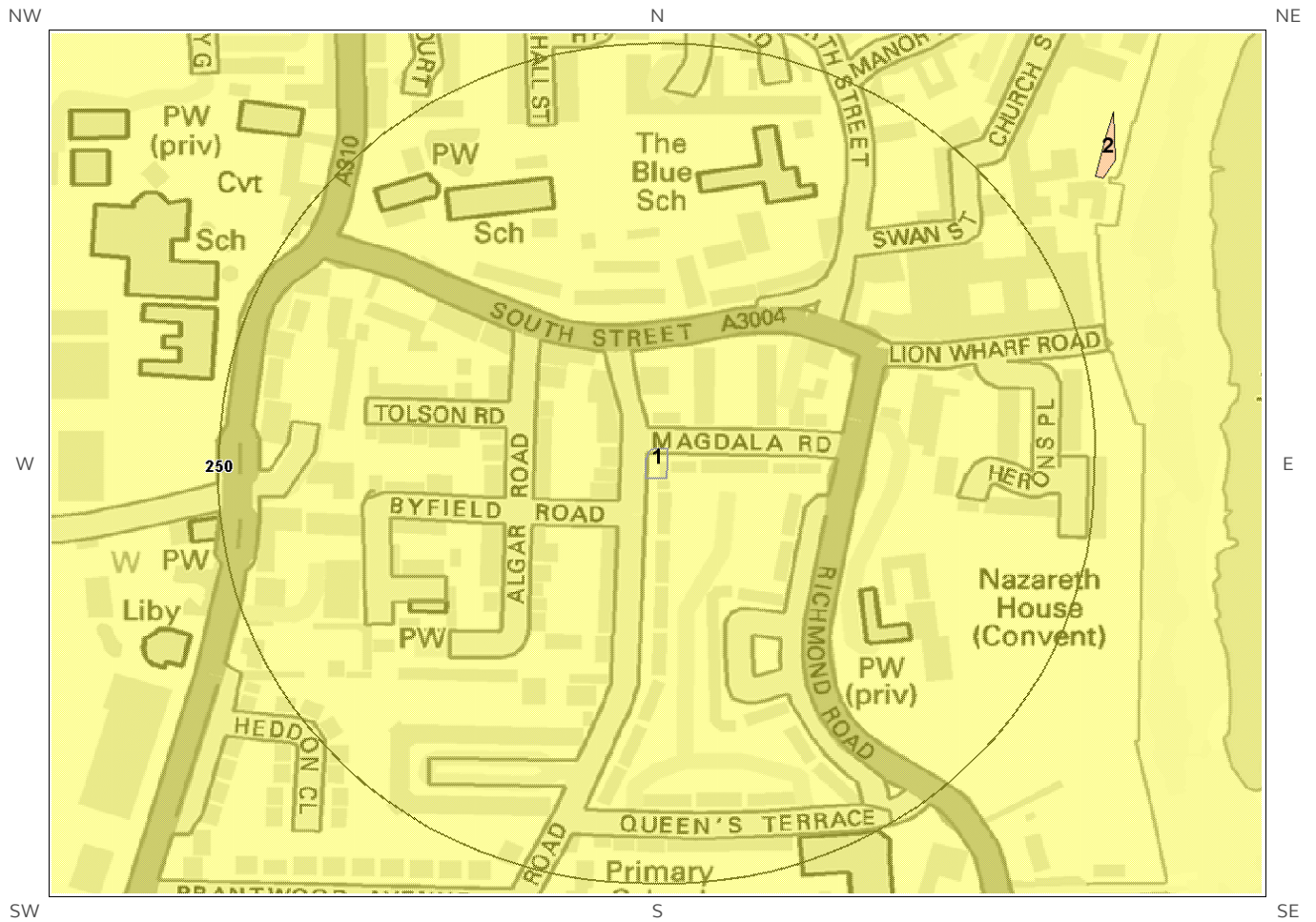


Shrink Swell Clay Legend

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6.2 Landslides map

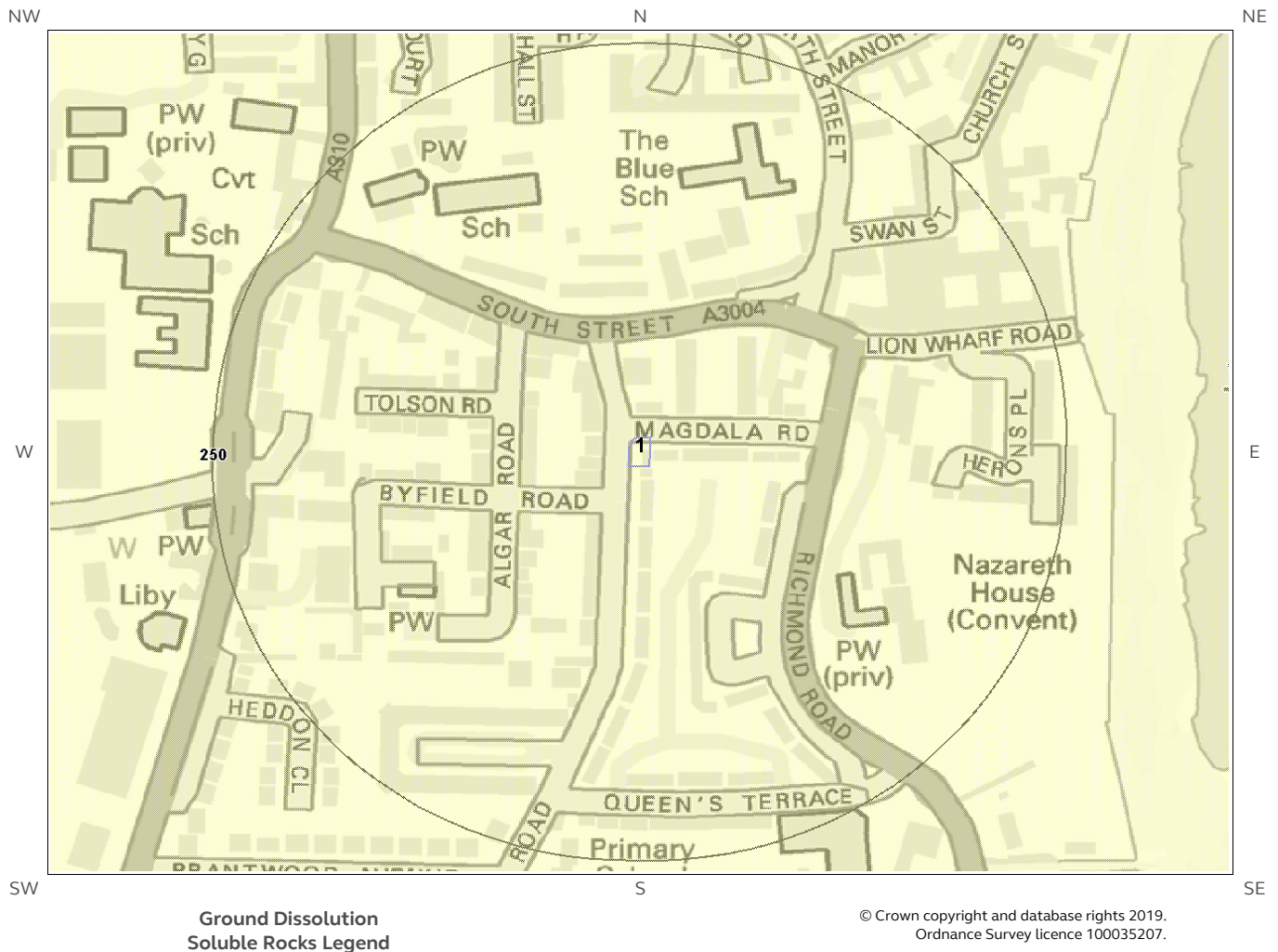


Landslides Legend

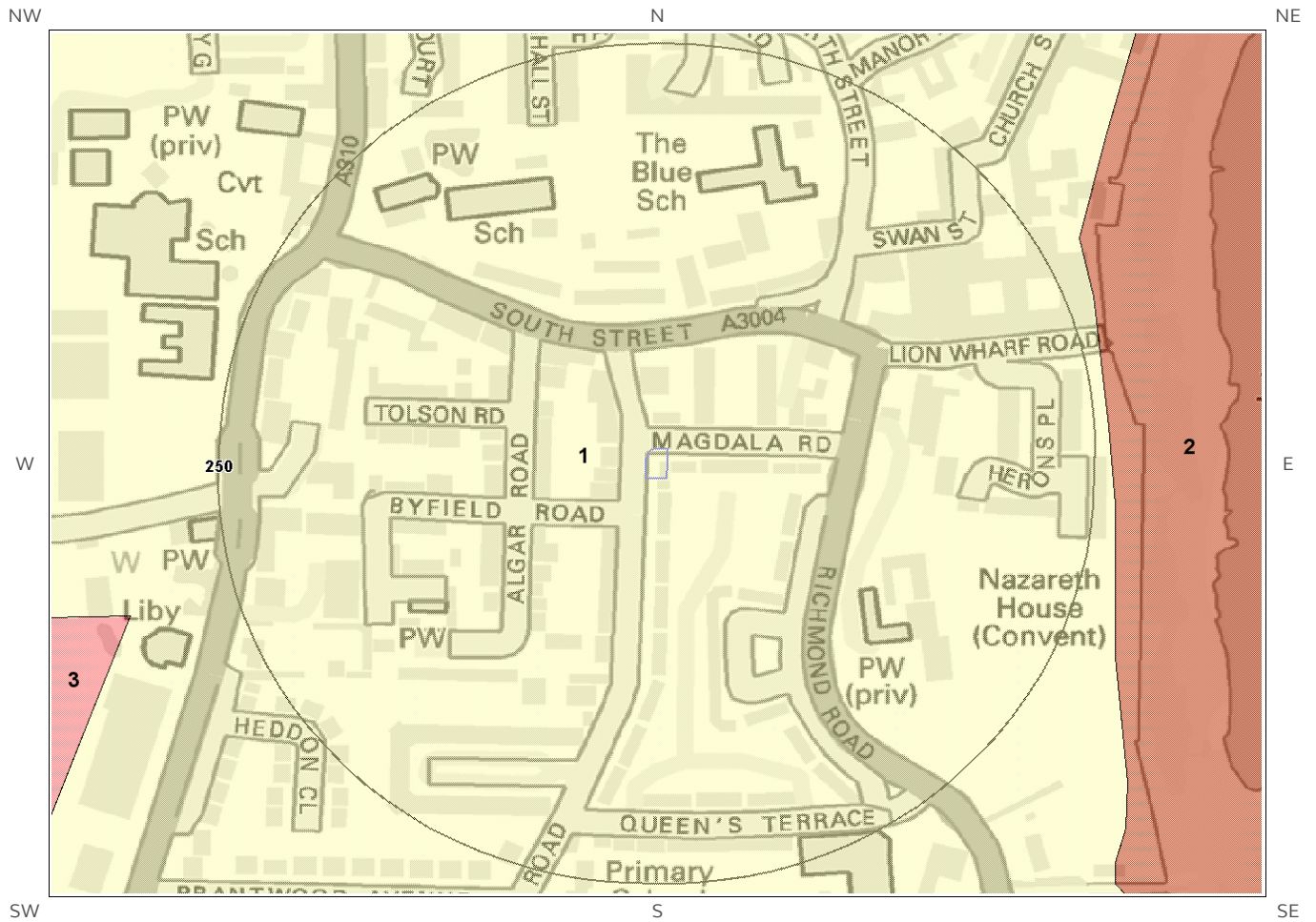
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6.3 Ground Dissolution of Soluble Rocks map



6.4 Compressible Deposits map



Compressible Deposits Legend

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6.5 Collapsible Deposits map

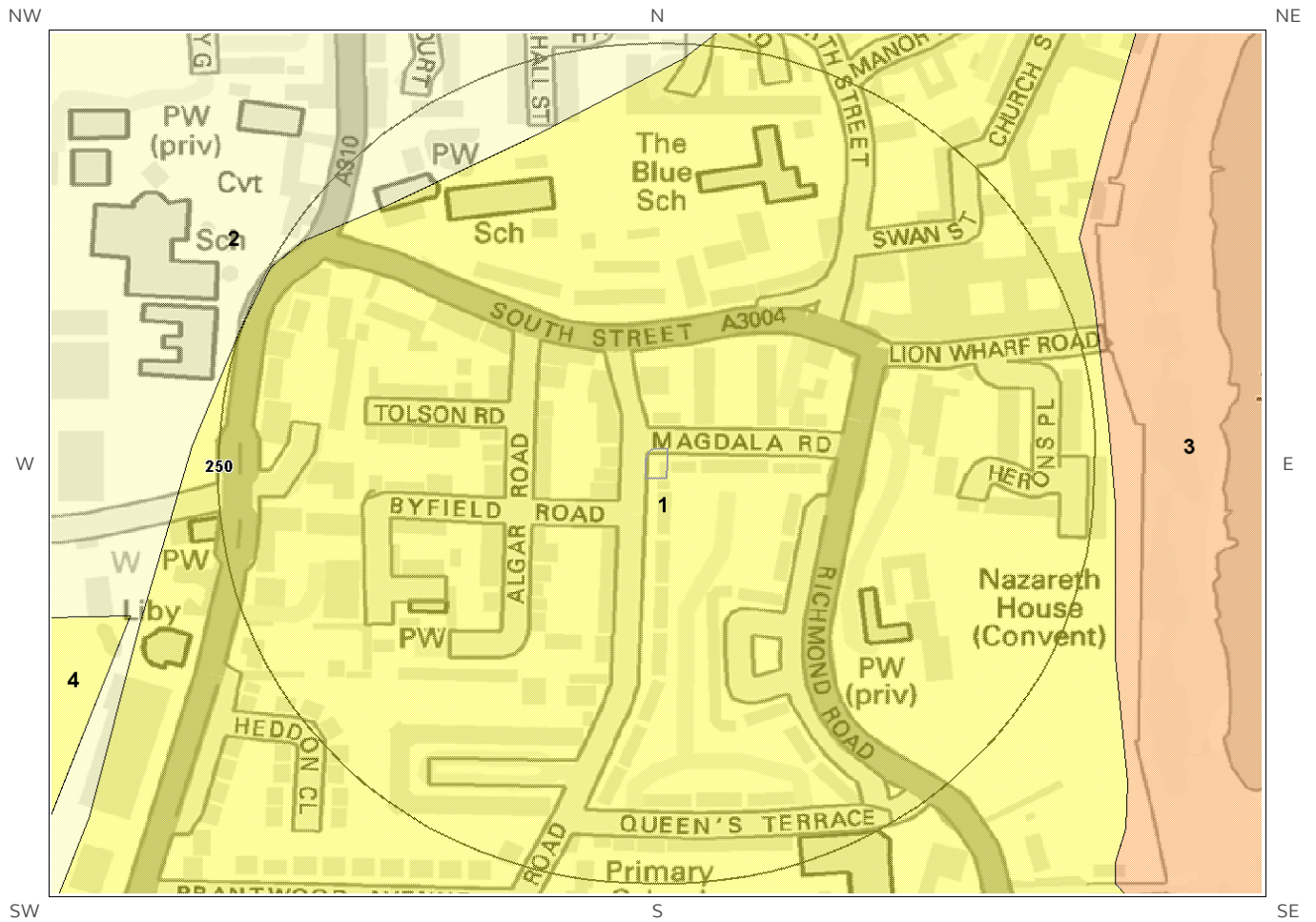


Collapsible Deposits Legend

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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:

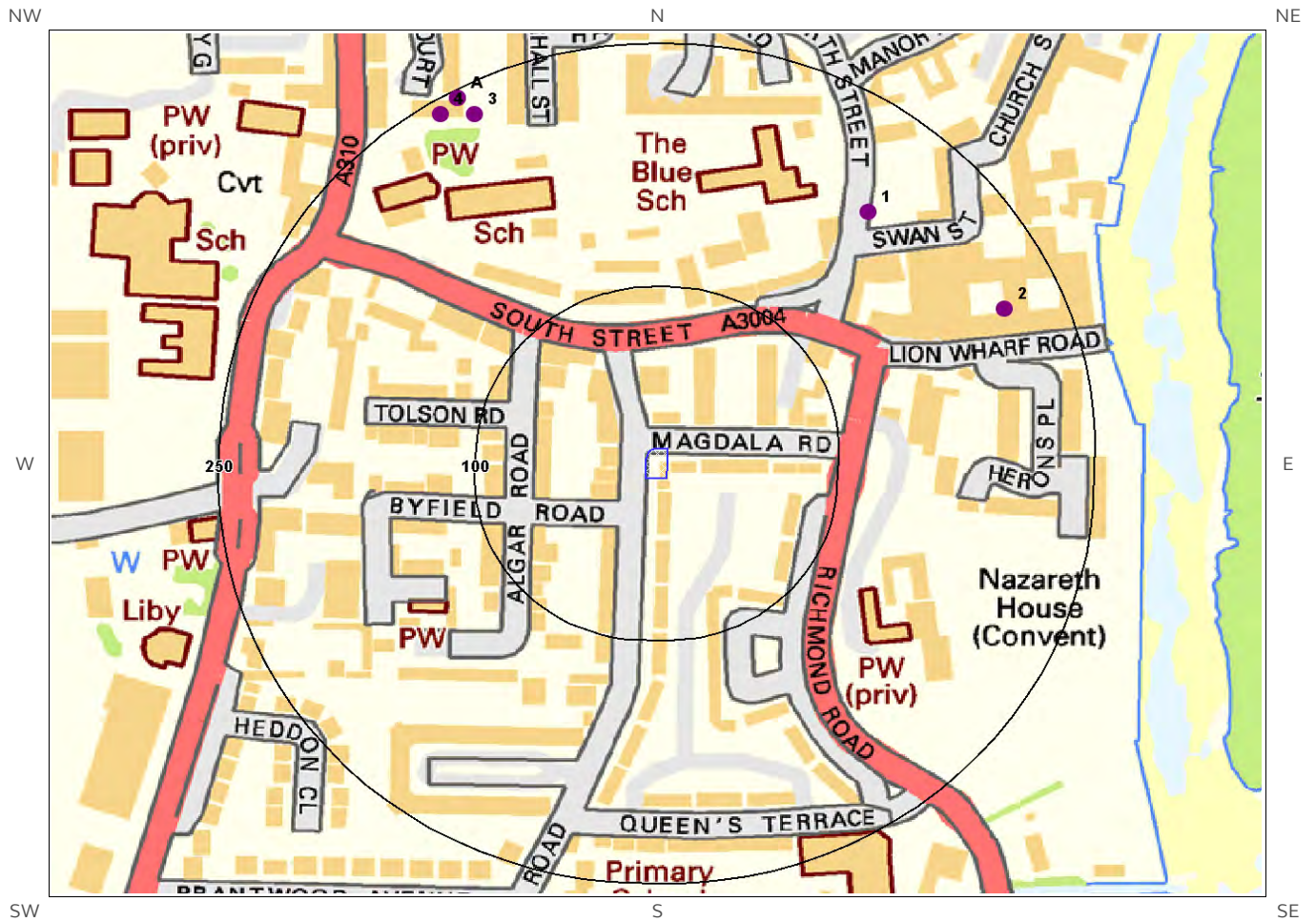
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible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

6.6 Running Sands

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

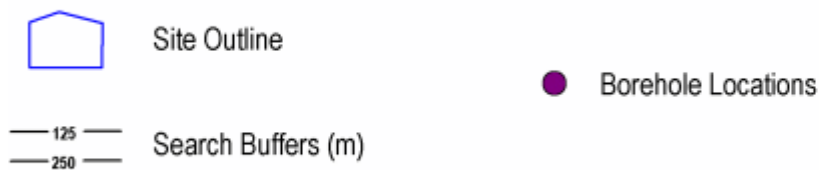
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased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

6

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	187.0	NE	516500 175800	TQ17NE30	3.96	THE SQUARE ISLEWORTH
2	215.0	NE	516580 175740	TQ17NE363	Not Available	OLD ISLEWORTH REDEVELOPMENT PHASE I 1/4
3	231.0	NW	516270 175860	TQ17NE405	3.2	NORTH STREET HOUNSLOW TP 18
4	241.0	NW	516250 175860	TQ17NE399	2.65	NORTH STREET HOUNSLOW TP 12
5A	244.0	NW	516260 175870	TQ17NE394	10	NORTH STREET HOUNSLOW 6
6A	244.0	NW	516260 175870	TQ17NE393	3	NORTH STREET HOUNSLOW 5

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/580637

#3: scans.bgs.ac.uk/sobi_scans/boreholes/17116536

#4: scans.bgs.ac.uk/sobi_scans/boreholes/17116529

#5A: scans.bgs.ac.uk/sobi_scans/boreholes/17116518

#6A: scans.bgs.ac.uk/sobi_scans/boreholes/17116517

8 Estimated Background Soil Chemistry

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

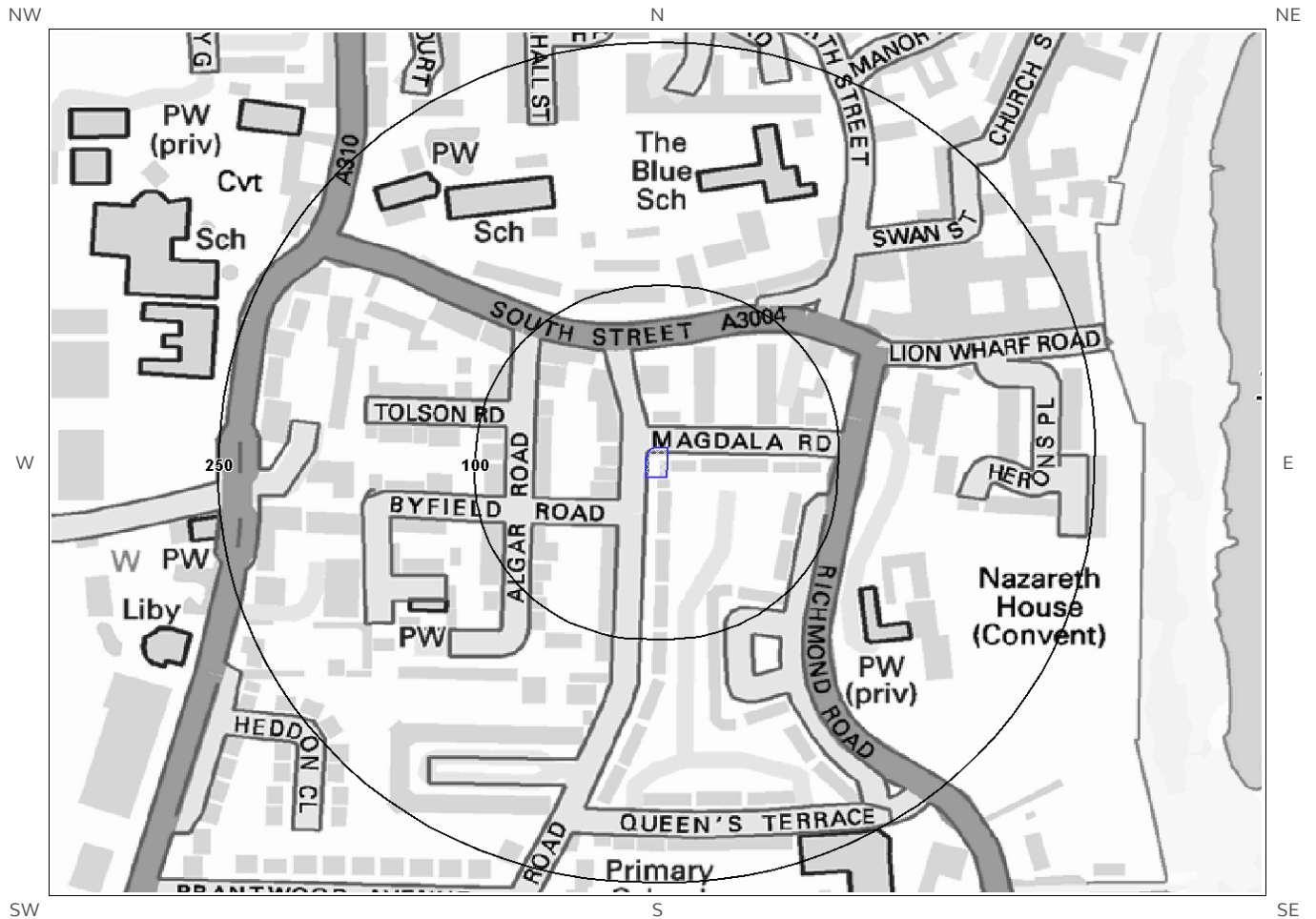
1

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

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

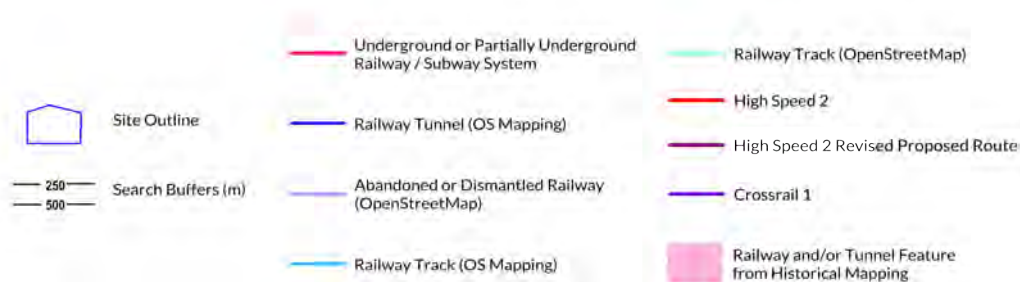
*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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9 Railways and Tunnels

9.1 Tunnels

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

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

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

Database searched and no data found.

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

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

Have any other railway tunnels been identified within the site boundary? No

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

Database searched and no data found.

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

9.2 Historical Railway and Tunnel Features

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

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

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

Database searched and no data found.

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

9.3 Historical Railways

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

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

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

Database searched and no data found.

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

9.4 Active Railways

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

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

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

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

APPENDIX C

Site Photographs


CLIENT:	London Borough of Hounslow	DATE:	11/09/2019	 ARCADIS	Design & Consultancy for natural and built assets
REFERENCE:	10030793	SITE NAME:	Magdala Road		
				2 Glass Wharf, Temple Quay, Bristol, BS2 0FR	T: 0161 245 8700 F: 0161 245 8701

Plate 1 – View from the junction of Magdala Road and Worple Road to the northwest corner of site.



Plate 2 – View of garage adjacent to electricity substation with minor visible crack.




CLIENT:	London Borough of Hounslow	DATE:	11/09/2019	 ARCADIS	Design & Consultancy for natural and built assets
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				2 Glass Wharf, Temple Quay, Bristol, BS2 0FR	T: 0161 245 8700 F: 0161 245 8701

Plate 3 – View of the two garages to the north.



Plate 4 – View of other two garages and adjacent electricity substation building from Worple Road.




CLIENT:	London Borough of Hounslow	DATE:	11/09/2019	 ARCADIS	Design & Consultancy for natural and built assets
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				2 Glass Wharf, Temple Quay, Bristol, BS2 0FR	T: 0161 245 8700 F: 0161 245 8701

Plate 5 – Electricity substation building door facing towards Worple road.



Plate 6 – Fuel stains on concrete hardstanding near the two garages to the north of the site.



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