

SMALL SITES



SMALL BUILDERS

AYLESBURY STREET

TECHNICAL INFORMATION

LAND AT AYLESBURY STREET, NEASDEN, NW10 0AP

Navigate this pack using the links below or the pdf bookmarks

Aerial and OS maps

Planning Statement

Site Investigation Summary Report

Topographical Survey

Arboricultural Survey

Ecology Survey

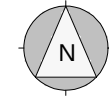
Geotechnical and Geo-Environmental Desk Study



Transport for London

TfL Operational Property
Commercial Development
Windsor House
42-50 Victoria Street
SW1H 0TL

Site Ref: 1804
Aylesbury Street (Trewin)



A3 Landscape

Date : Mar 2017
Initial : REM
File : PAR
Scale : 1/1250 at A3

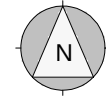




Transport for London

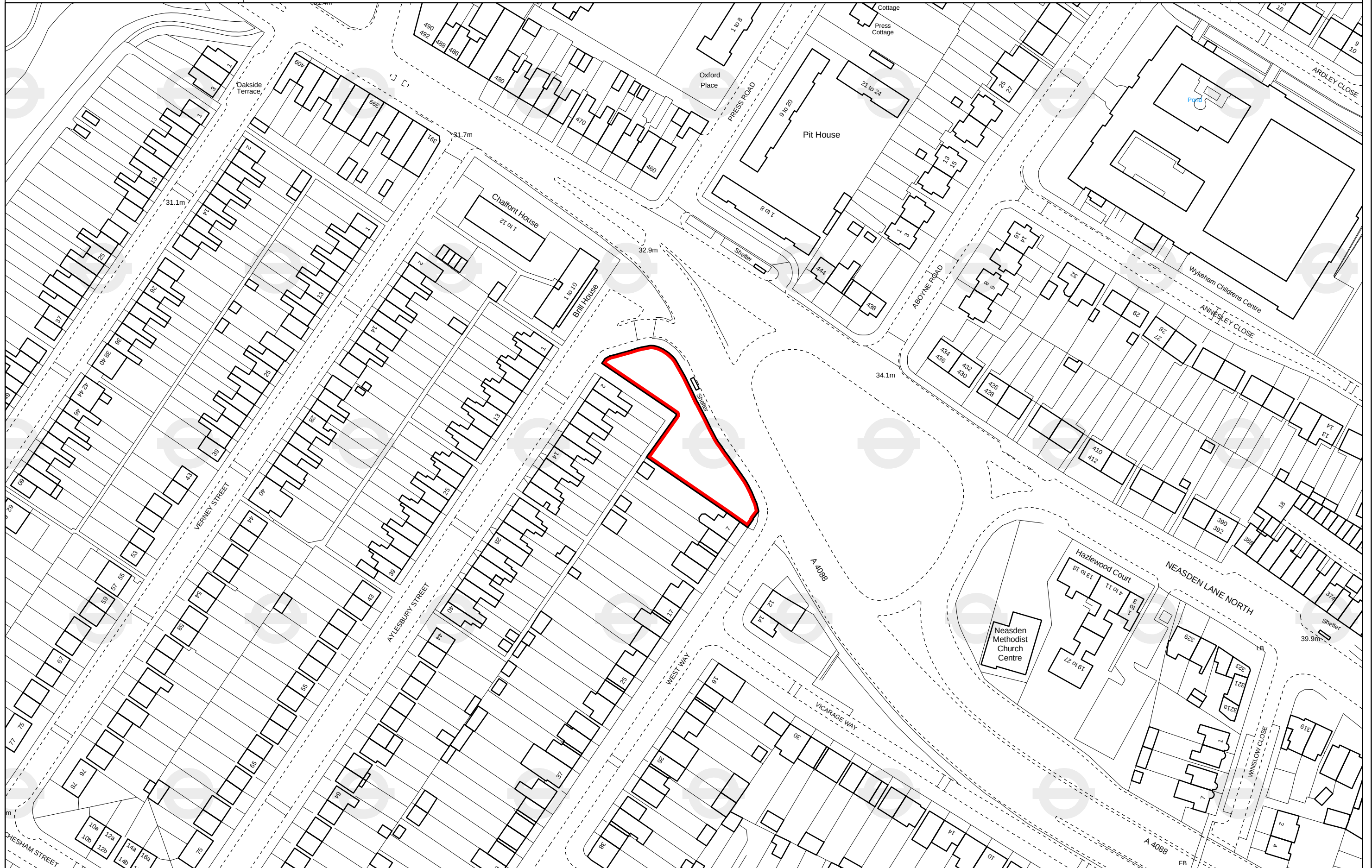
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Aylesbury Street (Trewin)



A3 Landscape

Date : Mar 2017
Initial : REM
File : PAR
Scale : 1/1250 at A3



1. PROPERTY DETAILS		
Site Name & Address	Aylesbury Street, Brent, NW10 0LU	
Unique Ref (PAR)	1804	
Borough	Brent	
Zone (TfL)	3	
Site Area (acres)	Approx. 0.3 acres (1205.63 sq. m)	
Location and Site Plan		
Existing Use	- Grass verge - The Site was previously developed for housing. Demolition occurred in the late 1960s / early 1970s	
2. TOWN PLANNING		
Planning Policy Documents	- Adopted: London Plan (consolidated 2016), Core Strategy (July 20120), Development Management Policies (November 2016), Site Specific Allocations (2011) - Emerging: A Call for Sites consultation was undertaken in 2017 to inform the emerging New Local Plan.	
Site Allocations	No site specific allocations	
Housing zone/OA	No	
Heritage Designations	The north west of the site is within the Neasden Conservation Area	
Flood Zone	The majority of the site does not fall within a Flood Zone. A small part of the north west of the site (fronting Aylesbury Street) falls within Flood Zone 2. A desktop Flood Risk Assessment may be required as	

	part of a planning application submission.															
Ecological Designations	- The trees on the site will require written consent from the Local Planning Authority prior to removal as they fall within a Conservation Area.															
PTAL	- 3															
Tall buildings permitted	- The site does not fall within an area considered suitable for tall buildings in line with Policy CP6. The surrounding context of the site within and adjacent to a Conservation Area and the adjacent building heights would not make tall buildings appropriate at this location.															
Car parking standards	- The maximum standards for parking a site of this PTAL are 4+ beds (2 spaces per unit) 3 bedrooms (1.5 spaces per unit) 1-2 beds (1 space per unit). In line with policy DMP 12 car free development would not be considered appropriate at this location due to the PTAL rating falling below 4.															
LPA affordable housing target	<table><tr><th>Threshold</th><th>Affordable Housing target (unit)</th><th>Affordable Housing Tenure Split</th><th>Provision Requirement</th></tr><tr><td>10 units of more or greater than 0.1 ha</td><td>50%</td><td>70% Social Rented and 30% Intermediate</td><td>On site preferred</td></tr><tr><td>9 units or less or 01 ha or less</td><td>n/a</td><td>n/a</td><td>No specific policy</td></tr></table>				Threshold	Affordable Housing target (unit)	Affordable Housing Tenure Split	Provision Requirement	10 units of more or greater than 0.1 ha	50%	70% Social Rented and 30% Intermediate	On site preferred	9 units or less or 01 ha or less	n/a	n/a	No specific policy
Threshold	Affordable Housing target (unit)	Affordable Housing Tenure Split	Provision Requirement													
10 units of more or greater than 0.1 ha	50%	70% Social Rented and 30% Intermediate	On site preferred													
9 units or less or 01 ha or less	n/a	n/a	No specific policy													
Other	- The site is immediately adjacent to the A4088. - Surrounding area is predominantly attractive 2 storey terraces. There is a slightly taller 4 storey flatted development to the north west of the site.															
Planning Policy Overview	- If development was to progress, it would need to be of a scale in keeping with the conservation area (DMP 7) - Policy CP 17 outlines the borough’s commitment to protecting and enhancing the suburban character of Barnet. Policy CP 17 notes that for corner plots with main road frontages development will be resisted. It is therefore recommended that the units do not front onto the A4088.															
Planning History	An online planning application search has been undertaken on the site which has returned no planning history.															
Local Planning Authority Feedback Meeting with Toby Huntingford and Chris Heather of London Borough of Brent on 02/06/2017	- Principle of development: The principal of housing at this location was considered acceptable, given the nature of the surrounding uses. - Transport and parking: Due to the site’s PTAL, it is likely that a development will need to provide parking in line with Brent’s parking standards. Access onto the A4088 is not recommended. - Other considerations: The likely monetary value of removing the trees on site is circa £25,000 in total. However, this will be considered more carefully at pre-app and application stage. A full arboriculture report will need to be provided. - Development on the north western part of the site will directly affect the setting of the Neasden Village Conservation Area and any development will need to be appropriately sympathetic to the established Victorian character along Aylesbury Street. - Air pollution was flagged as a key consideration in this location by the borough. It is recommended that air pollution mitigation measures are considered at all stages of development.															

TFL_PSF_9131 SITE INVESTIGATIONS: SMALL SITES INITIATIVE LAND AT AYLESBURY STREET, BRENT, NW10 0LU

Site Ref: 1804

Summary Report

JULY 2017

Incorporating

EC HARRIS
BUILT ASSET
CONSULTANCY


Hyder

LAND AT AYLESBURY STREET, BRENT, NW10 0LULU

Summary Report

Author Various

Checker Alison Pugh 

Approver Angela Mulgrew 

Report No 904-UA009686-UP32R-02

Date JULY 2017

VERSION CONTROL

Version	Date	Author	Changes
01	June 2017	Various	1 st Issue
02	July 2017		Final Issue

This report dated 12 July 2017 has been prepared for Transport for London (the "Client") in accordance with the terms and conditions of appointment dated 02 May 2017 (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.

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1 Introduction

Arcadis Consulting (UK) Limited (Arcadis) has been commissioned by Transport for London (TfL) to undertake a number of technical surveys for a site referred to as Land at Aylesbury Street, Brent, London ('the Site').

TfL is aiming to divest a number of small sites to enable prospective regeneration. The objective of the survey work is to provide robust and pragmatic advice associated with arboriculture, ecology and geotechnical and geo-environmental conditions. This report provides a summary of the technical surveys commissioned for the Site and reference should be made to the individual reports for further detailed information.

The Site lies in a predominantly residential area of Brent, West London (Grid Reference 520900, 186187). It currently comprises a highway verge covered in a mixture of turf, trees and shrubs which is irregular in shape and covers an area of approximately 0.12 hectares.

The A4088 road borders the north-eastern boundary of the Site. West Way is located to the south-east, there are residential properties to the south and south-west and Aylesbury Street is present to the west and north-west.

The surveys carried out for Aylesbury Street comprise the following;

- Topographical Survey (Ref 1);
- Arboricultural Survey (Ref 2);
- Ecology Survey (Ref 3); and
- Geotechnical and Geo-Environmental Desk Study (Ref 4).

A summary of the findings of these surveys are detailed in the following sections.

2 Topographical Survey

The topographical survey indicates that the Site slopes gently upwards from north west (32.46m OS) to south east (34.36m OS (corner)). There is an area of dense vegetation along the southern boundary with trees indicated across the Site.

3 Arboricultural Survey

An arboricultural survey was conducted in accordance with British Standard 5837: 2012 Trees in Relation to Design, Demolition and Construction – Recommendations. This arboricultural survey comprised:

- A Tree Schedule (listing trees on and within proximity of the Site);
- A Tree Constraints Plan identifying trees on and within proximity of the Site; and
- A Preliminary Arboricultural Method Statement (AMS) outlining general mitigation measures.

The majority of the Site comprises regularly managed amenity grass, scattered trees, dense tree cover and dense mature shrubs. The trees within the north-western corner and the adjacent properties within Aylesbury Street are part of the Neasden Conservation Area. There are no individual Tree Preservation Orders (TPOs) covering the Site.

A total of 27 arboricultural items were recorded during the survey as follows:

- 26 individual trees (23 within the Site and three adjacent to the Site); and
- One group of trees within the Site consisting of three tree stems.

There are 13 individual trees and one group of trees (containing three tree stems) that have been identified as Category C (trees of low quality) and 13 individual trees that have been identified as Category U (trees of poor quality unsuitable for retention). The trees within and adjoining the Site are of generally of poor form. The dominant tree species with the Site is wild cherry (*Prunus avium*) which were planted for visual amenity. There are symptoms of sudden ash dieback (*Hymenoscyphus fraxineus*) on a tree within the Site.

Given the current poor quality of the majority of the trees within the Site, they are not likely to prevent development. However, tree protection for trees to be retained and tree re-provisioning for any trees lost due to development are a material consideration for planning determination. If trees cannot be replaced on-Site due to development, off-Site options for tree re-provisioning to ensure no net loss should be considered. Individual LPAs may ask for additional re-provisioning for trees within a Conservation Area.

Should any future development proposal require the removal of trees or incursions into the Root Protection Areas (RPAs) of any trees, an Arboricultural Impact Assessment (AIA) is likely to be required in support of any planning application. All new tree planting should be in accordance with British Standard 8545:2014 Trees: From Nursery to Independence in the Landscape – Recommendations and all tree works must be carried out by a qualified contractor in accordance with BS3998:2010: Tree Work – Recommendations.

Although a Preliminary AMS is presented within the Arboricultural Survey Report (Ref. 2), a bespoke AMS may be required post planning and when the construction details are known by the LPA to protect the retained trees within and adjacent to the Site.

As part of the Site is within a Conservation Area any proposals submitted to the LPA might require the support of a Landscape Character Assessment and Landscape Strategy Plan. This is because any new development will introduce new built forms and massing within areas that historically have been informal open space.

4 Ecology Survey

The ecological assessment (Ref. 3) comprised a desk-based study using publicly available information and an ecological constraints survey to identify potential constraints present on Site and supplemented with an ecological survey undertaken in May 2017.

Ecology is not considered to present a significant constraint to the development of the Site.

No Statutory or non-statutory designated sites were identified within the vicinity of the Site and will not be significantly impacted by development on the Site. No ancient woodlands or woodlands listed on the Ancient Woodland Inventory (AWI) were present on or in the vicinity of the Site.

The Site supported a limited range of habitats and was dominated by areas of amenity grassland, dense scrub containing non-native introduced species and scattered trees. Although the habitats on Site were generally of poor quality due to the number of non-native invasive species, lack of positive management and fly tipping, these habitats are valuable in terms of general green Infrastructure, likely performing ecosystem services (such as water quality and volume attenuation, air quality attenuation etc.).

Within the Site, there was limited potential for protected or notable species. Nesting birds are likely to be utilising the trees and scrub on the Site, including potentially species listed on the London Biodiversity Action Plan (BAP) such as house sparrow. Removal of all scrub vegetation on the Site will need to be conducted outside of the bird nesting season (March – August inclusive) or under an ecological watching brief.

The trees in the Site were assessed for their potential to support roosting bats, with the cherry trees covered in dense ivy identified as having 'low' potential to support roosting bats. If these trees are to be removed, a precautionary approach should be taken whereby the ivy is stripped back prior to felling the tree (under ecological supervision). Alternatively the tree should be felled using a soft fell methodology whereby the felled trees are left in-situ after felling for 24 – 48 hours prior to removal from the Site. There is potential for bats to forage within the Site, however the Site is limited in area and larger areas of foraging habitat are present within the local area.

There is potential for grey squirrels to be breeding within the trees on Site. This species is non-native and of negligible ecological value, however squirrels are protected from inhumane injury or killing. If squirrel dreys are found on Site, these should be removed in a humane manner.

There will be some ecological benefit from the removal of non-native and invasive species listed on the London Invasive Species Initiative list which are present on the Site. There is no legal obligation to control or remove the species however it is good practice.

Trees should be re-provisioned on the Site within any development, these should be of a suitable species, preferably native species of local origin. In addition, biodiversity roofs, rain gardens and other green infrastructure should be considered in any future development. Bird boxes for sparrows would be a valuable enhancement, along with appropriately located bat roosting boxes.

5 Geotechnical and Geo-Environmental Desk Study

The Site was most recently occupied by gardens with residential properties previously recorded in the east and therefore Made Ground is anticipated to be present.

Potential risks to human health, controlled waters and the built environment have been identified from potential on site Made Ground and ground gas / vapours and there are possible risks to human health from the off-site sources (Made Ground). It is recommended that an intrusive site investigation should be undertaken prior to redevelopment to quantify these risks. This should include the contamination testing of soils and leachates, groundwater monitoring and gas monitoring in accordance with best practices and current guidance.

Potential founding solutions will be dependent on the thickness of Made Ground and the geotechnical properties of the natural deposits. At this stage, conventional shallow foundations may not be appropriate for the Site but this would depend on the thickness of the Made Ground and the underlying ground conditions. Deeper trench fill may be possible but in areas of deeper Made Ground, or where deeper soft / loose bands are recorded either piling or ground treatment e.g. vibro-stone columns should provide a suitable foundation solution (Ref. 4).

Based on the findings of this report, and assuming that the Site will be developed for residential use with gardens, it is anticipated that some remediation (off-site disposal, clean cover, gas membrane, basic asbestos monitoring and pipe upgrade but excluding foundation) may be required. Indicative costs are provided in the desk study report (Ref 4) which are based on the information known to date.

In terms of unexploded ordnance, the Site is reported as lying within an area denoted as 'low' bomb risk (Ref. 4).

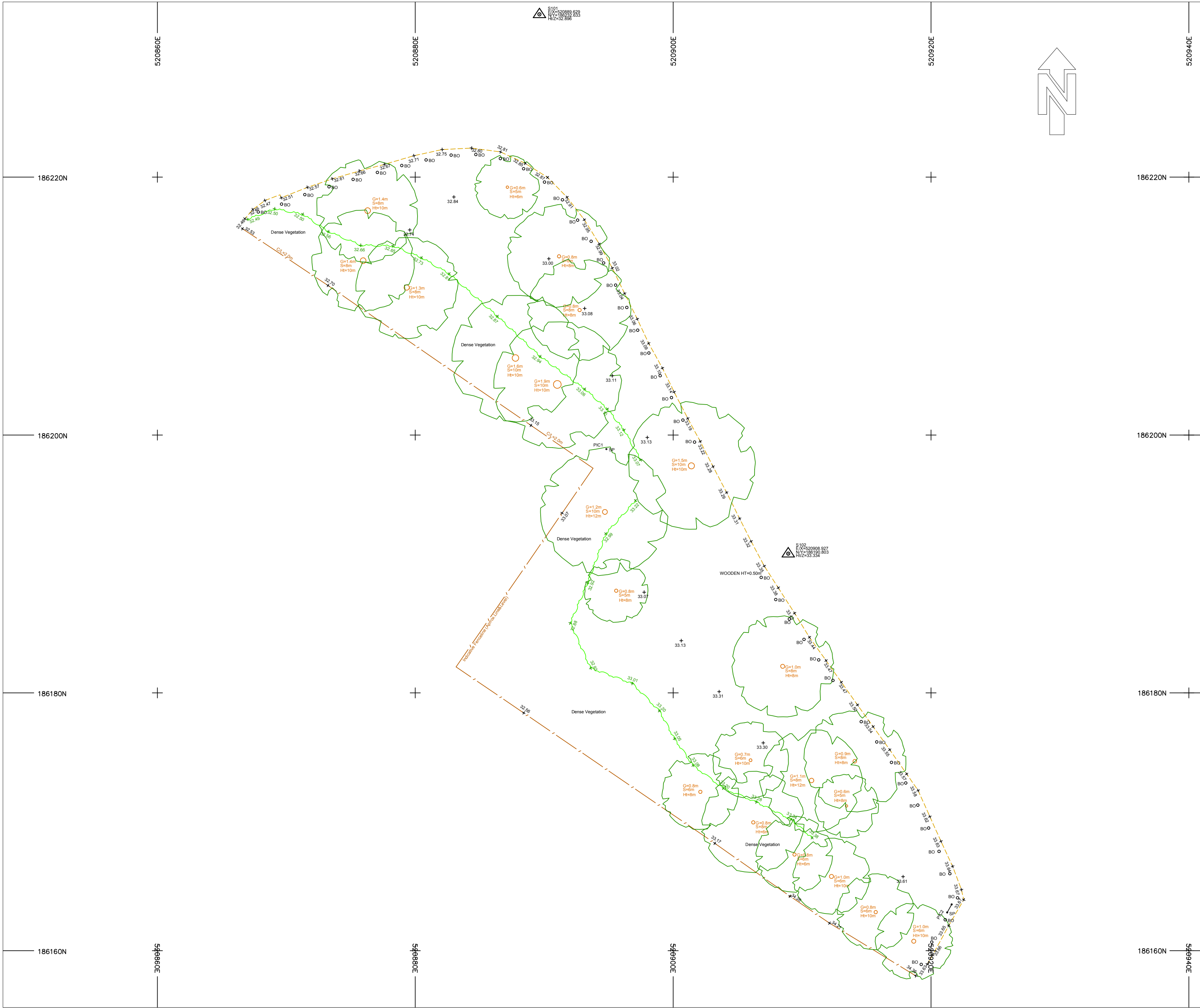
6 References

1. 40Seven (May 2017) Topographical Survey Land at Aylesbury Street Brent, NW10 0LU (Site Ref. 1804) (Drawing Number 1804 - Aylesbury Street)
2. Arcadis Consulting (UK) Limited (July 2017) Land at Aylesbury Street, Brent, NW10 0LU Preliminary BS5837 :2012 Tree Survey (Report 903-UA009686-UE21R-02)
3. Arcadis Consulting (UK) Limited (July 2017) Land at Aylesbury Street, Brent, NW10 0LU Ecology Survey (Report 902-UA009686-UE21R-02)
4. Arcadis Consulting (UK) Limited (July 2017) Land at Aylesbury Street, Brent, NW10 0LU Geotechnical and Geo Environmental Desk Study (Report Number 901-UA009686-UP32R-02)

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TOPOGRAPHICAL LEGEND

	Building		Structure Underground
	Building Canopy		Vegetation Extents
	Building Overhead		Drainage Channel
	Surface Edge		Scar
	Road Edge		Above Ground Pipe
	Road Kerb Channel		Overhead Pipe
	Banking		Overhead Electricity
	Fence		Overhead Telecom
	Wall		Railway Track
	Structure		Contour Line
	Structure Overhead		

ABBREVIATIONS

AC Asbestos Cement	FS Flag Staff	SI Spun Iron
ACU Air Conditioning Unit	G Gully	SL Soffit Level
AD Assumed Direction	GPRI Ground Penetrating Radar Inconclusive	SP Sign Post
AR Assumed Route	GV Gas Valve	S/R Steel Railings
AV Air Valve	HR Hand Rail	SS Structure Support
BB Bellisha Beacon	IC Inspection Cover	ST Stop Tap
BD Back Drop	IL Invert Level	Stn Survey Station
BdL Bed Level	IR Iron Rail Fence	SV Sluice Valve
BH Borehole	KO Kerb Outlet	SVP Soil Vent Pipe
Bk Brick	LB Letter Box	SW Stone Wall
BL Basement Light	LC Lighting Column	Tac Tactile Paving
BO Bollard	LH Lamp Hole	TBM Temporary Bench Mark
BR Brick	LOR Loss Of Reflection	TC Telecom Cover
BS Bus Stop	LOS Loss Of Signal	T/CB Telephone Call Box
BT British Telecom Box	MB Mooring Bollard	TCP Telephone Call Post
BTB British Telecom Box	M/C Multiple Cables	TFR Taken From Records
BW Brick Wall	MH Manhole Cover	TH Trial Hole / Pit
BW Barbed Wire Fence	Mkr Marker Post	THL Threshold Level
Cam Camera	MP Mile Post/Stone	Tk Tank
CAT Catenary Level	NFI No Further Information	TOW Top Of Wall
C/B Close Bordered Fence	NM Node Marker	TP Telegraph Pole
CC Control Cabinet	NP Name Plate	TS Traffic Signals
CH Charnage	NPV No Pipes Visible	US Upstream
ChL Channel Level	OSA Off Survey Area	UTGA Unable to Gain Access
CI Cast Iron	P Post	UTL Unable to Locate
CL Cover Level	PBM Permanent Bench Mark	UTS Unable to Survey
CL Chain Link Fence	PE Polyethylene	UTS Unable to Survey
Co Concrete	PGM Permanent Ground Marker	VC Verified Clay
CP Catch Pit	PL Plastic	VDP Vehicle Detector Pads
CpL Coping Level	P/L Palisade Fence	VP Vent Pipe
C/B Crash Barrier	PM Parking Meter	VR Vapour Recovery
CTV Cable TV	PR Post and Rail Fence	VTP Vertical Pipe
CUL Culvert	PJ Pump	W Water Cover
CW Concrete Wall	PVC Polyvinylchloride	WL Water Level
DI Dilapidated	P/W Post and Wire Fence	WM Water Meter
dl Dilapidated	PZ Piezometer	WM Wire Mesh Fence
dis Disused	RE Rodding Eye	WO Water Wash Out
D/S Downstream	RI Riser	WS Window Sample
DSW Dry Stone Wall	RL Rail Level	WV Wheel Valve
EB Electricity Box	RP Reflector Post	
EC Electric Cover	RS Road Sign	
E/F Electric Fence	RWP Rain Water Pipe	
EOT End of Trace	R/W Retaining Wall	
EP Electricity Pole	S Stump	
ER Earth Rod	SA Survey Abandoned	
FC Fuel Cover	S/A Soakaway	
FFL Finished Floor Level	SC Speed Camera	
FH Fire Hydrant	SF Safety Fence	
FO Fibre Optic Cover		

NOTES

REV.	DETAILS	BY	DATE
GRID	ORDNANCE SURVEY RELATED TO THE OS ACTIVE STATIONS BY GPS OBSERVATIONS		
DATUM	ORDNANCE SURVEY RELATED TO THE OS ACTIVE STATIONS BY GPS OBSERVATIONS		

40SEVEN

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PROJECT TITLE:

LAND AT

AYLESBURY STREET

BRENT NW10 0LU

DRAWING TITLE:

TOPOGRAPHICAL SURVEY

SITE REF: 1804

SURVEYED BY:	DRAWN BY:	APPROVED BY:
DS	VK	LP

SCALE:	SURVEY DATE:
1:100 @ A2	MAY 2017

DRAWING NUMBER:	SHEET NUMBER:	REV:
1804 - Aylesbury Street	1804 - Aylesbury Street - 01	

TFL_PSF_9131 SITE INVESTIGATIONS: SMALL SITES INITIATIVE LAND AT AYLESBURY STREET, BRENT, NW10 0LU

Site Ref: 1804

Preliminary BS5837:2012 Tree Survey Report

OCTOBER 2017

Incorporating

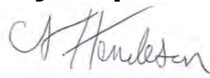
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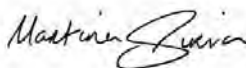
Author Callum Henderson



Checker Brandon Murray



Approver Martina Girvan



Report No 903-UA009686-UE21R-02

Date OCTOBER 2017

VERSION CONTROL

Version	Date	Author	Changes
01	July 2017	Callum Henderson	1 st Issue
02	October 2017	Aline Brodzinski	Final Issue

This report dated 02 October 2017 has been prepared for Transport for London (TfL) (the "Client") in accordance with the terms and conditions of appointment dated 02 May 2017 (the "Appointment") between the Client and **Arcadis (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

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APPENDICES

APPENDIX A

Explanation of Terms

APPENDIX B

Tree Schedules

APPENDIX C

Preliminary Arboricultural Method Statement

APPENDIX D

Photographs

1 Introduction

1.1 Overview

Arcadis Consulting (UK) Limited (Arcadis) has been commissioned by Transport for London (TfL) 'the Client' to undertake a number of technical surveys for a Site on Land at Aylesbury Street ('the Site').

TfL is aiming to divest a number of small Sites to enable prospective regeneration. The objective of the Small Sites Initiative is to provide robust and pragmatic advice that sensibly de-risks each of the sites such that unreasonable "abnormal" development costs are not included by developers.

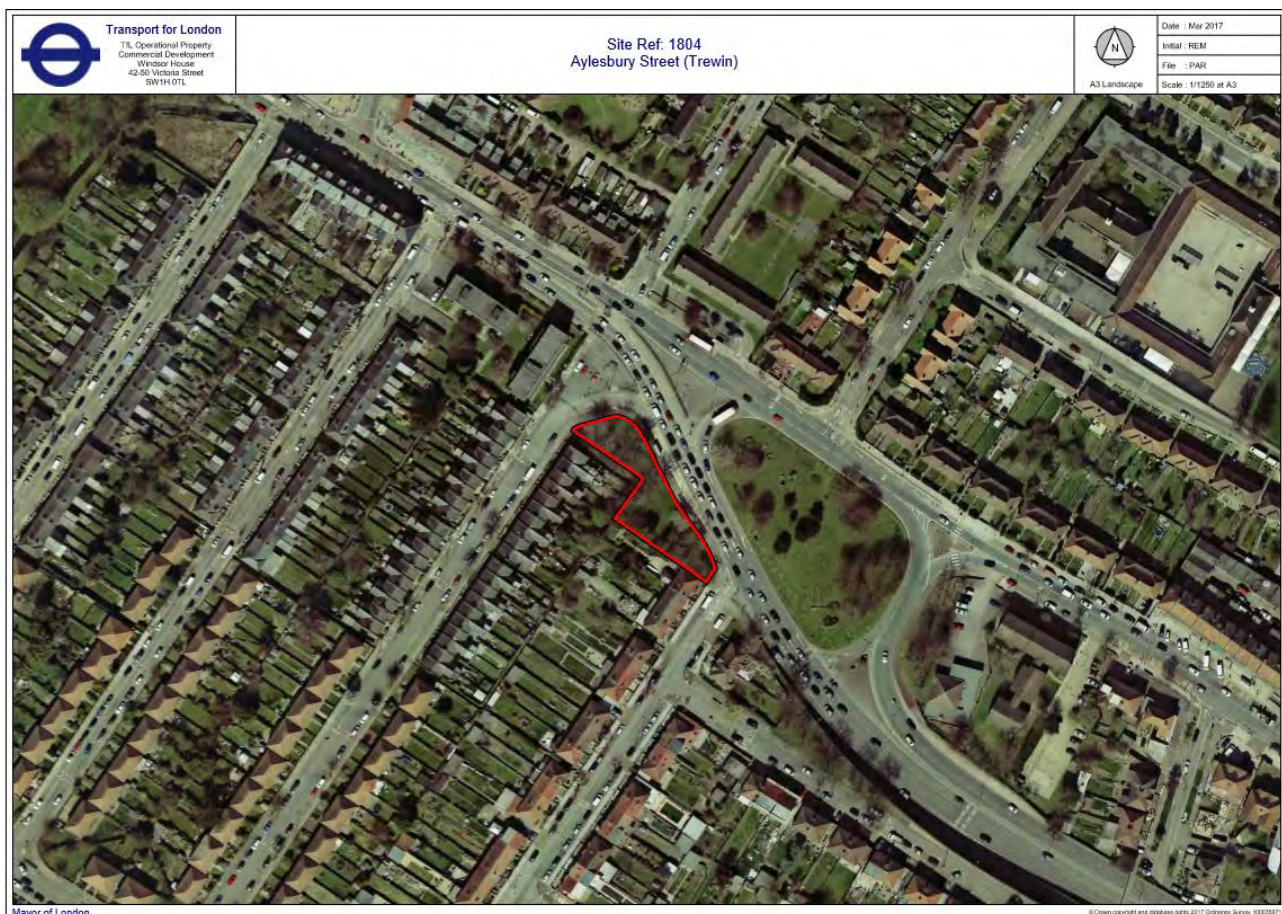
The objective of this assessment is to present the potential constraints and future requirements with regards to trees and any future development.

1.2 Site Location and Setting

The Site is located within the London Borough of Brent (Grid Reference 520910, 186176) between Neasden Lane and Aylesbury Street and to the west of West Way. The Site is centred around the postcode of NW10 0LU. The Site is approximately 0.12 hectares, the majority of it comprises of regularly managed amenity grass, scattered trees dense tree cover and dense mature shrubs.

An aerial screen shot illustrating the Site boundary is presented in Image 1-1. Photographs of the Site and trees can be found in Appendix D - Photographs.

Image 1-1 Site Location Plan



2 Methodology

2.1 Tree Survey Methodology

An Arboricultural Survey was undertaken by Callum Henderson BSc (For) M. ArborA (Principal Arboriculturist) on 6th June 2017 in accordance with BS 5837:2012.

Observations were conducted from ground level, utilising the “Visual Tree Assessment” (VTA) system as outlined in The Body Language of Trees, A Handbook for Failure Analysis Research for Amenity Trees No.4 (Department of the Environment, 1994) with the aid of binoculars.

The Site and its immediate surroundings were surveyed. This area is referred to as the study area

2.2 Individual Trees and General Data Capture

For reference, individual trees are identified with the letter T and associated number on the Tree Schedules and a Tree Constraints Plan. The stem diameter of the trees on Site was recorded using a rounded down diameter tape at 1.5m above ground level. Measurements were taken in millimetres. The height of the subject trees was estimated to the nearest metre using a digital clinometer.

Maximum crown spread of the subject tree was measured from the centre of the trunk to the tips of the live lateral branches taken at four compass points (N-E-S-W) using a ground tape. Crown spread measurements were taken in metres.

Tree age was estimated from visual indicators (such as tree size and appearance of bark) which was taken as a provisional guide. Age estimates often need to be modified based on further information such as historical records and local knowledge.

If direct access to the tree was not possible, estimations from appropriate vantage points were taken, any limitations or estimations are presented within the survey limitations section and noted in the associated schedules.

2.3 Groups of Trees

Groups of trees are identified with the letter G and number on the associated Tree Schedules and Tree Constraints Plan. Stem diameter of groups of trees was set as an average stem diameter of the trees within these individual groups and a maximum height of the tallest tree within the group.

2.4 Categorisation

In compliance with Table 1 of BS 5837: 2012 the trees surveyed have been categorised according to their arboricultural quality and value. A glossary of survey terms can be found in Appendix A - Explanation of Terms.

2.5 Root Protection Area

The Root Protection Areas (RPA) of the trees were calculated in accordance with Section 4.6.1 in BS: 5837:2012. This is calculated from the measurement of the stem diameter at 1.5m above ground level or at ground level if the tree is multi-stemmed. These are recorded in Table B2 in the appendix and form the initial Construction Exclusion Zone (CEZ) to protect the trees within and adjoining the Site. The RPA is represented by pink-shaded areas in the Tree Constraints Plan. The shape and size of RPAs can be amended in accordance with Section 4.6.3 in BS: 5837:2012.

Within Section 5.3.1 in BS: 5837:2012 it is stated the default position is that proposed development should not be within the RPA of retained trees. However, where there is an overriding need for construction and associated activity with the RPA of trees, arboricultural mitigation should take place to protect the trees.

2.6 Survey Limitations

Topographical base mapping was provided, however, some additional trees not picked up by the Topographical survey have been plotted by hand using local land based features as reference points. For the purposes of BS 5837: 2012, only trees with a stem diameter greater than 75mm, (measured at 1.5m

above ground level), have been included within the survey. However, it should be noted that a number of individual trees and shrubs with a stem diameter of less than 75mm were present within the study area.

Only trees within the study area as defined above were assessed. The RPAs are based on a given tree stem diameter taken at 1.5m above ground level with each RPA (see Appendix B - Tree Schedules) being calculated from the above ground portions of the tree. It should be recognised that the RPA may not entirely encompass all of the tree's rooting material.

Trees are living organisms and as such their health and condition are naturally subject to change over time. Unforeseen future circumstances such as neglect, wilful damage or severe/extreme weather conditions may affect the future health and condition of the trees included in this report.

2.7 Statutory Tree Protection

A search was undertaken of the Local Planning Authority (LPA) the London Borough of Brent website on 1st June 2017. According to the Brent Council website <https://www.brent.gov.uk/policies-map> the address 8 Aylesbury Street, London, NW10 0AS around a third of the western section of the Site is within the Neasden Village Conservation Area and Article 4 Area. There are no individual Tree Preservation Orders (TPO) and there are no Planning Application Conditions protecting the trees within the Site.

When tree maintenance works are undertaken by a Highway Authority within a Conservation Area it is considered an exception within the Town and Country Planning (Tree Preservation) (England) Regulations (2012). However, all non-routine tree works including works to enable development must have Conservation Area Consent or Full Planning Consent from the LPA before the tree works take place.

3 Tree Survey Results

3.1 Tree Assessment and Categorisation

A total of 27 arboricultural items were recorded within the study area. These were recorded as 26 individual trees (T) and one group of trees (G). The only off-Site trees were three individual trees (T24-T26). Full details of the survey data are presented within the Tree Schedules in Appendix B and Figure 1 Tree Constraints Plan.

Each arboricultural item was assigned to one of four categories, as listed below:

- Category A individual trees, groups of trees: No arboricultural items were graded as Category A (trees of high quality) as part of this survey;
- Category B individual trees, groups of trees: No arboricultural items were graded as Category B (trees of moderate quality) as part of this survey;
- Category C individual trees, groups of trees: 13 individual trees and one group of trees have been identified as Category C (trees of low quality) as part of this survey due to poor form or inappropriate past management;
- Category U individual trees, groups of trees: 13 individual trees have been identified as Category U (trees of poor quality unsuitable for retention) as part of this survey due to poor structural and physiological condition.

3.2 Tree Species Diversity

Six different tree species and cultivars were recorded during the survey and are represented throughout the study area. A summary of the species surveyed can be found within the Tree Schedule in Appendix B and also provided in Table 1 Table 1 Tree Species Recorded. The numbers below include species of individual trees and groups of trees.

Table 1 Tree Species Recorded

Tree Species	Number of Individual Tree Stems	Approximate Percentage
Ash (<i>Fraxinus excelsior</i>)	8	28%
False acacia (<i>Robinia pseudoacacia</i>)	1	3%
Horse chestnut (<i>Aesculus hippocastanum</i>)	2	7%
Swedish whitebeam (<i>Sorbus intermedia</i>)	3	10%
Wild cherry (<i>Prunus avium</i>)	15	52%
Totals	29	100%

3.3 Age Diversity

Analysis of the data identified that the majority of the trees within the study area were within the young age classification set by BS 5837: 2012 with an estimated useful life expectancy of over 20 years, as illustrated in Table 2.

Table 2 Age Diversity

Age Class	Number of Tree Stems	Approximate Percentage
Young	1	3%
Early-mature	2	7%
Semi-mature	0	N/A
Mature	13	45%
Over-mature	13	45%
Totals	29	100%

3.4 Root Protection Area

The RPAs are shown in Figure 1 Tree Constraints Plan.

4 Discussion and Conclusions

There are no individual TPOs covering the Site but part of the Site lies within Neasden Village Conservation Area. A total of 27 arboricultural items were recorded during the survey as follows:

- 26 individual trees (23 within the Site, three adjacent to the Site, T24 -T26);
- One group of trees (G1) within the Site consisting of three stems.

These arboricultural items have been categorised according to their arboricultural quality and value. There are 13 individual trees and one group of trees that have been identified as Category C (trees of low quality) and 13 individual trees that have been identified as Category U (trees of poor quality unsuitable for retention). Given the current poor quality of the majority of the trees within the Site, they are not likely to prevent development.

The dominant tree species within the Site is wild cherry (*Prunus avium*) which were planted for visual amenity. These trees are now within the mature and over-mature age classes due to their poor physiological health, structural condition and lack of vitality. However the trees within the Site form a dominant landscape feature in the streetscape of the local and surrounding area, including the Neasden Green Conservation Area. The trees collectively provide public visual amenity value and landscape character.

The ash tree T15 within the Site was displaying the symptoms of sudden ash die back (*Hymenoscyphus fraxineus*) and was holding dead wood. Given this, there are sound arboricultural reasons for the removal of this tree in order to achieve an acceptable level of tree risk management and to re-establish a healthy tree population within the Site.

While unlikely to prevent development, tree protection for trees to be retained and tree re-provisioning for any trees lost due to development are a material consideration for planning determination. If trees cannot be replaced on-Site due to development, off-Site options for tree re-provisioning to ensure no net loss should be considered. Individual LPAs may ask for additional re-provisioning for trees within a Conservation Area.

There is currently no proposed design layout and so it is difficult to state whether the trees would need to be removed and if there is space for any new trees to be re-provisioned on the Site. Once designs are developed then this could be determined.

The Site is partially within a Conservation Area and any proposals submitted to the LPA might require the support of a Landscape Character Assessment and Landscape Strategy Plan. This is because any new development will introduce new built forms and massing within areas that historically have been public green open space.

5 Further Work

Should any future proposed development require tree removals or RPA incursions within RPA's of the retained trees an Arboricultural Impact Assessment (AIA) will be required by the LPA in support of a planning application.

The AIA should include a tree schedule, although one is provided within this report, a review of any proposed development should be undertaken to ensure that there are no additional trees within the zone of influence of the development. For example, parking requirements often extend the zone of influence.

The AIA should state the trees to be removed due to the design and access requirements and any proposed tree facilitation pruning works. This should also be accompanied by an assessment of the likely impacts due to construction activity on the trees to be retained. Indicative arboricultural mitigation measures should be provided which would include recommendations for tree re-provisioning. The AIA should be accompanied by an updated Tree Constraints Plan and a Tree Impact and Protection Plan based on the proposed design.

The AIA should also include a Tree Replacement Strategy which should take into consideration the landscape character, local treescape and biodiversity features of the immediate and adjoining areas. The species, number, size, type of stock, location and planting aids for the compensating planting should be chosen for landscape, wildlife and arboriculture values. To ensure that appropriate and sustainable planting is achieved advice should be sought from an ecologist and arboriculturist. Furthermore, liaison with the LPA Tree Officer will be necessary during the planning process to agree an approved tree compensation and or landscape scheme plan.

The Site is partially within a Conservation Area any proposals submitted to the Local Planning Authority (LPA) might require the support of a Landscape Character Assessment and Landscape Strategy Plan. The proposed new scheme will introduce new built forms and massing within areas that historically have been public green open space.

All new tree planting should be in accordance with British Standard 8545: Trees: From Nursery to Independence in the Landscape – Recommendations, 2014 and all tree works must be carried out by a qualified contractor in accordance with BS3998:2010: Tree Work – Recommendations.

This document encloses a Preliminary Arboricultural Method Statement (AMS) (Appendix C) outlining tree protection measures. However, following planning determination and when full construction measures are known, a bespoke AMS may be required to ensure protection of the trees to be retained on and adjoining the Site.

6 References

British Standards Institution (2010) BS 3998:2010, Tree Work Recommendations.

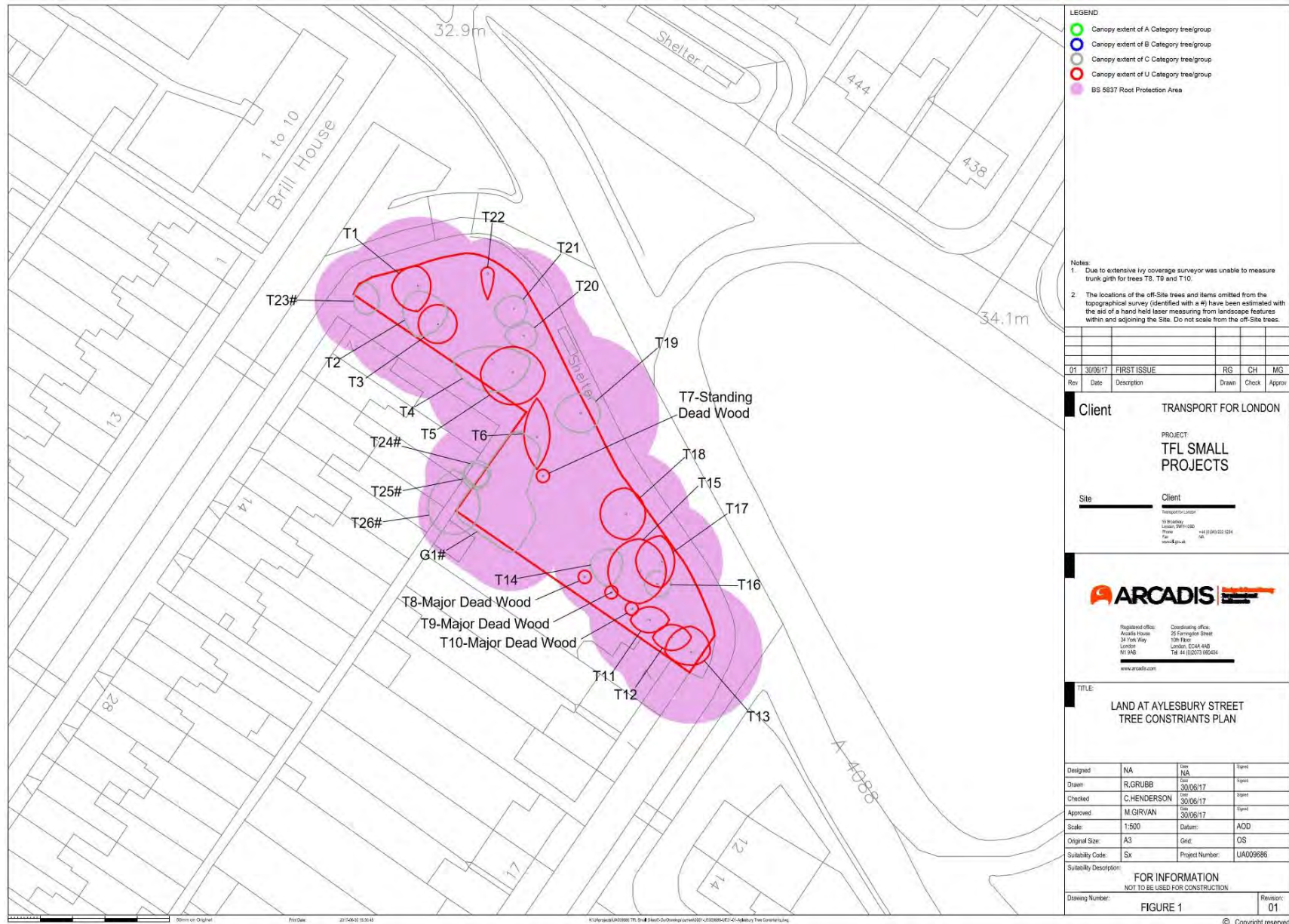
British Standards Institution (2012) BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations.

British Standards Institution (2014) BS 8545: Trees: From nursery to Independence in the Landscape – Recommendations.

Mattheck, C. and Broeler, H. DETR (1994) The Body Language of Trees: A Handbook for Failure Analysis Research for Amenity Trees No.4.

The Secretary of State for Communities and Local Government, Statutory Instruments (2012) No. 605, The Town and Country (Tree Preservation) (England) Regulations 2012.

FIGURE 1. Tree Constraints Plan



APPENDIX A

Explanation of Terms

Age Class

Young – Trees in the first fifth of full life expectancy

Semi-mature – Trees in the second fifth of full life expectancy

Early-mature – Trees in the third fifth of full life expectancy

Mature – Trees in the fourth fifth of full life expectancy

Over Mature – Trees having reached full life expectancy and trees in natural decline

Veteran – Trees of interest biologically, culturally and aesthetically because of their age

Stem Diameter

The diameter of the stem measured in millimetres (mm) at a height of 1.5m above ground level

Crown Spread

Average measured in metres using a ground tape where possible

Physiological Condition

Good – Healthy tree with no signs of ill health and signs of good extension growth for species

Fair – Trees with signs of disease, minor defects and decreased life expectancy due to physical damage

Poor – Trees with significant disease, significantly reduced life expectancy and/or under major physiological stress

Dead – Dead tree or trees with over 70% crown dieback

Structural Condition

Good – Trees with no significant defects

Fair – Trees with remedial defects which require minor tree surgery works

Poor – Trees with remedial defects which require significant tree surgery works or felling

Dead – Trees which require felling

BS 5837 Retention Category

Each tree, group of trees or hedge is assigned to a retention category where:

Table A1 Categorisation of trees

Category	Description
A	Trees of high quality and value, retention is highly desirable
B	Trees of moderate quality and value where retention is desirable
C	Trees of low quality and value, or young trees with a stem diameter <150mm. Category C trees may be retained, replaced or in the case of younger trees, relocated
U	Trees of poor quality and value, unsuitable for retention or trees which should be removed

In addition, each tree, group of trees or hedge is assigned to a retention sub-category where categorisation is for:

Table A2 Reasons for Categorisation

Sub-category	Reason for Categorisation
1	Mainly arboricultural qualities
2	Mainly landscape qualities
3	Mainly cultural values, including conservation

APPENDIX B

Tree Schedules

Client: **Transport for London (TfL)**
Survey date: **30th May 2017**

Project: **Land at Aylesbury Street, (Brent), NW10 0LU**
Surveyor: **Callum Henderson BSc (For) M. ArborA**

Table B1 Tree Schedule

Tree reference number	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Additional Information/Bat Roosting Potential	Estimated remaining contribution (years)	Category grading
				N	E	S	W							
T1	Wild cherry (<i>Prunus avium</i>)	10	350	3	2	4	4	2	Over-Mature	Fair	Dangerous	Negligible	<10	U
T2	Ash (<i>Fraxinus excelsior</i>)	18	420	3	5	4	2	4	Mature	Fair	Poor	Negligible	10-20	C1
T3	Wild cherry (<i>Prunus avium</i>)	14	400	3	3	3	3	1	Over-Mature	Fair	Dangerous	Negligible	<10	U
T4	Ash (<i>Fraxinus excelsior</i>)	18	370	2	6	5	6	8	Mature	Fair	Poor	Negligible	10-20	C1
T5	Horse chestnut (<i>Aesculus hippocastanum</i>)	16	580	4	5	5	5	1	Mature	Fair	Fair	Negligible	10-20	C1
T6	Ash (<i>Fraxinus excelsior</i>)	18	380	6	2	5	2	0	Mature	Fair	Fair	Negligible	10-20	C1
T7	Wild cherry (<i>Prunus avium</i>)	8	230	0	0	0	0	0	Over-Mature	Dead	Poor	Negligible	<10	U
T8	Wild cherry (<i>Prunus avium</i>)	6	IVY*	1	1	1	1	5	Over-Mature	Poor	Poor	Negligible	<10	U
T9	Wild cherry (<i>Prunus avium</i>)	6	IVY*	0	0	0	0	0	Over-Mature	Dead	Poor	Negligible	<10	U
T10	Wild cherry (<i>Prunus avium</i>)	6	IVY*	1	1	1	1	5	Over-Mature	Poor	Poor	Negligible	<10	U
T11	Wild cherry (<i>Prunus avium</i>)	7	270	2	3	2	3	5	Over-Mature	Fair	Poor	Negligible	<10	U
T12	Wild cherry (<i>Prunus avium</i>)	7	290	2	3	2	3	3	Over-Mature	Fair	Poor	Negligible	<10	U
T13	Wild cherry (<i>Prunus avium</i>)	8	380	4	3	2	4	2	Over-Mature	Fair	Poor	Negligible	<10	U
T14	Swedish whitebeam (<i>Sorbus intermedia</i>)	8	230	2	2	4	3	3	Over-Mature	Fair	Poor	Negligible	10-20	C1
T15	Ash (<i>Fraxinus excelsior</i>)	16	350	5	4	5	5	6	Mature	Fair	Fair	Negligible	10-20	U
T16	Swedish whitebeam (<i>Sorbus intermedia</i>)	6	220	2	2	2	2	2	Mature	Fair	Fair	Negligible	10-20	C1
T17	Wild cherry (<i>Prunus avium</i>)	8	280	4	2	4	4	2	Over-Mature	Poor	Dangerous	Negligible	<10	U

Tree reference number	Species	Height (m)	Stem diameter (mm)	Branch spread (m)				Height of crown clearance (m)	Age class	Physiological condition	Structural condition	Additional Information/Bat Roosting Potential	Estimated remaining contribution (years)	Category grading
				N	E	S	W							
T18	Wild cherry (<i>Prunus avium</i>)	8	300	4	3	4	4	3	Over-Mature	Poor	Poor	Negligible	<10	U
T19	Horse chestnut (<i>Aesculus hippocastanum</i>)	18	460	3	3	3	4	2	Mature	Fair	Poor	Negligible	10-20	C1
T20	Wild cherry (<i>Prunus avium</i>)	14	260	2	2	2	3	1	Mature	Fair	Fair	Negligible	10-20	C1
T21	Swedish whitebeam (<i>Sorbus intermedia</i>)	14	280	2	2	3	3	2	Mature	Fair	Fair	Negligible	10-20	C1
T22	False acacia (<i>Robinia pseudoacacia</i>)	10	220 & 180 & 140	1	1	4	1	0	Over-Mature	Fair	Poor	Negligible	<10	U
T23	Ash (<i>Fraxinus excelsior</i>)	8	200	3	2	2	2	4	Young	Fair	Poor	Negligible	10-20	C2
T24	Ash (<i>Fraxinus excelsior</i>)	14	190	2	2	2	2	8	Early-mature	Fair	Fair	Negligible	10-20	C2
T25	Ash (<i>Fraxinus excelsior</i>)	14	190	2	2	2	2	8	Early-mature	Fair	Fair	Negligible	10-20	C2
T26	Ash (<i>Fraxinus excelsior</i>)	16	260 & 220	6	4	4	4	2	Mature	Fair	Poor	Negligible	10-20	C1,2
G1	3x Wild cherry (<i>Prunus avium</i>)	12	200	2	2	2	2	3	Mature	Poor	fair	Negligible	10-20	C1,2

Preliminary BS5837:2012 Tree Survey Report

Table B2 Root Protection Area

Tree reference number	Species	Stem diameter (mm)	Radius of nominal circle (m)	RPA (m ²)
T1	Wild cherry (<i>Prunus avium</i>)	350	55.4	10.6
T2	Ash (<i>Fraxinus excelsior</i>)	420	79.8	11.6
T3	Wild cherry (<i>Prunus avium</i>)	400	72.4	11.3
T4	Ash (<i>Fraxinus excelsior</i>)	370	61.9	10.9
T5	Horse chestnut (<i>Aesculus hippocastanum</i>)	580	152.2	13.6
T6	Ash (<i>Fraxinus excelsior</i>)	380	65.3	11.0
T7	Wild cherry (<i>Prunus avium</i>)	230	23.9	8.6
T8	Wild cherry (<i>Prunus avium</i>)	IVY	N/A	N/A
T9	Wild cherry (<i>Prunus avium</i>)	IVY	N/A	N/A
T10	Wild cherry (<i>Prunus avium</i>)	IVY	N/A	N/A
T11	Wild cherry (<i>Prunus avium</i>)	270	33.0	9.3
T12	Wild cherry (<i>Prunus avium</i>)	290	38.1	9.6
T13	Wild cherry (<i>Prunus avium</i>)	380	65.3	11.0
T14	Swedish whitebeam (<i>Sorbus intermedia</i>)	230	23.9	8.6
T15	Ash (<i>Fraxinus excelsior</i>)	350	55.4	10.6

Preliminary BS5837:2012 Tree Survey Report

Tree reference number	Species	Stem diameter (mm)	Radius of nominal circle (m)	RPA (m ²)
T16	Swedish whitebeam (<i>Sorbus intermedia</i>)	220	21.9	8.4
T17	Wild cherry (<i>Prunus avium</i>)	280	35.5	9.4
T18	Wild cherry (<i>Prunus avium</i>)	300	40.7	9.8
T19	Horse chestnut (<i>Aesculus hippocastanum</i>)	460	95.7	12.1
T20	Wild cherry (<i>Prunus avium</i>)	260	30.6	9.1
T21	Swedish whitebeam (<i>Sorbus intermedia</i>)	280	35.5	9.4
T22	False acacia (<i>Robinia pseudoacacia</i>)	220 & 180 & 140	91.6	5.4
T23	Ash (<i>Fraxinus excelsior</i>)	200	18.1	8.0
T24	Ash (<i>Fraxinus excelsior</i>)	190	16.3	7.8
T25	Ash (<i>Fraxinus excelsior</i>)	190	16.3	7.8
T26	Ash (<i>Fraxinus excelsior</i>)	260 & 220	36.4	3.4
G1	3x Wild cherry (<i>Prunus avium</i>)	200	18.1	8.0

Table B3 Key to Categories

Tree Reference Number	Category
T/GXX	Category A
T/GXX	Category B
T/GXX	Category C
T/GXX	Category U

Table B4 Key to Bat Roost Potential*

Bat Roost Potential Category	Reason for Categorisation
Negligible	Saplings or semi-mature trees with a small girth. No ivy cover, loose bark, cracks or fissures
Low	Small or semi-mature trees. May have small amounts of ivy present, stems of small diameter. Trees may have some loose bark but no obvious cracks, fissures or holes.
High/medium	Trees with large crack, crevices or disused woodpecker holes that can provide refuge for bats. Trees may support dense ivy with multiple stems.
Known or confirmed roost	Tree with know or confirmed roosts from previous ecology survey.

*Bat Conservation Trust Bat Surveys for Professional Ecologists: Good Practice Guidelines, 2016

APPENDIX C

Preliminary Arboricultural Method Statement

Overview

This Preliminary Arboricultural Method Statement provides generic best practice measures to be adopted in order to protect retained trees during the development process. It has been prepared in order to inform the planning and the construction/ development process.

Protective Fencing

The purpose of this fencing is to provide protection to the RPA of retained trees/groups and to protect trees and hedgerows prior to their translocation. The type of fencing used shall be appropriate to the level of adjacent construction activity and shall be agreed with the Local Authority tree officer. Weather-proof notices shall be attached to any protective fencing located adjacent to retained trees displaying the words “Construction Exclusion Zone” and listing restrictions which apply. All personnel must be made aware of these restrictions.

It is anticipated that three specifications for fencing would be employed during construction.

Low-use areas

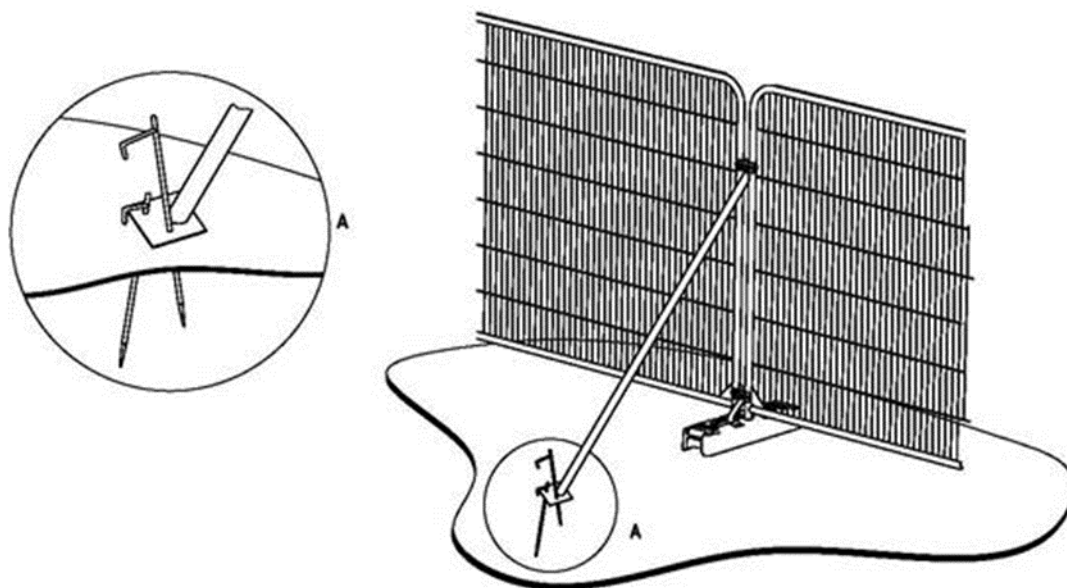
The system illustrated in Figure C1 is adequate to define areas of protected vegetation and exclude traffic, and comprises Cleft Chestnut Pale Fence in accordance with *BS 1722 Part 4: Specification for cleft chestnut pale fences (British Standards Institution, 1991)* supported by 150mm wooden stakes. Assembled with galvanized 14-gauge (2 mm) wire, four strands per row, peeled and pointed one end. Approximate spacing of pales 75 mm.



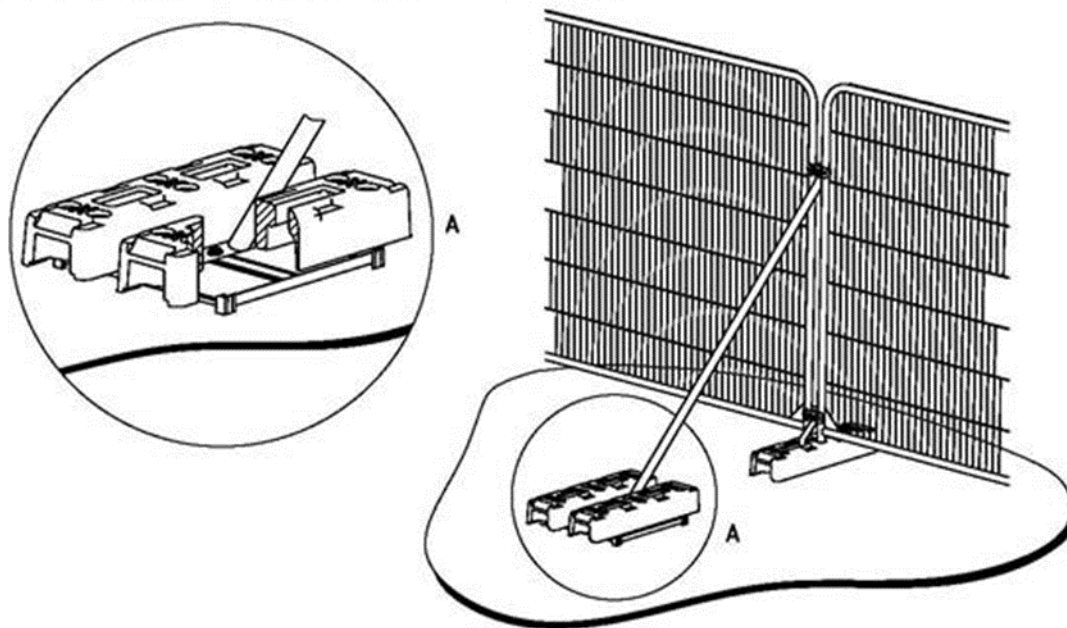
Figure C1 Tree Protection fencing example for low use areas

Medium-use areas

This system comprises anti-climb weldmesh panels connected by clamps and supported by rubber or concrete bases and bracing struts. The system is illustrated in Figure C2 and is based on *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations (British Standards Institution, 2012)* (Ref 1) guidelines. This kind of system is robust enough to withstand occasional knocks by plant machinery.



a) Stabilizer strut with base plate secured with ground pins

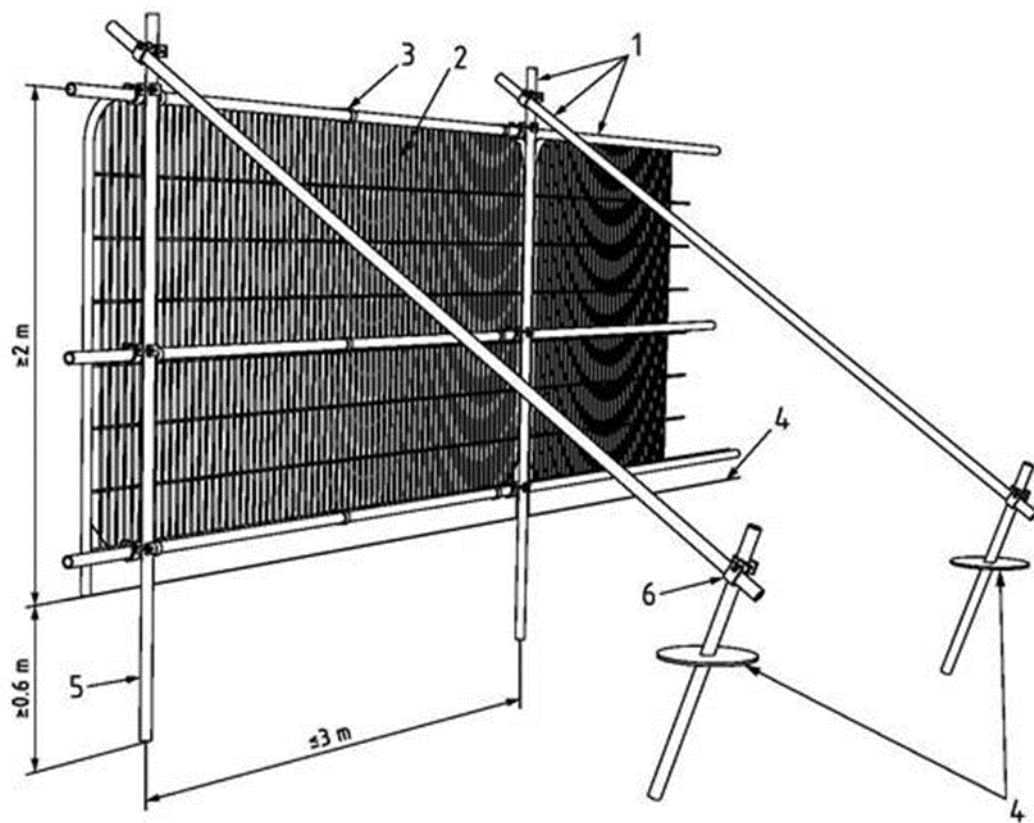


b) Stabilizer strut mounted on block tray

Figure C2 Tree Protection Fencing specification (extract from BS 5837)

High-use areas

This system involves driving scaffold poles into the ground, onto which are affixed horizontal scaffold poles and diagonal bracing struts. Anti-climb weldmesh panels are secured to this scaffold framework using standard scaffold clips or wire. The system is illustrated in diagram Figure. C3 and is based on *BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations* (British Standards Institution, 2012) (Ref 1) guidelines. This kind of system provides the highest level of security.



Key

- 1 Standard scaffold poles
- 2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
- 3 Panels secured to uprights and cross-members with wire ties
- 4 Ground level
- 5 Uprights driven into the ground until secure (minimum depth 0.6 m)
- 6 Standard scaffold clamps

Figure C3 Tree Protection Fencing specification (extract from BS5837)

Construction Exclusion Zone (CEZ)

The Construction Exclusion Zone (CEZ) is the area identified by an arboriculturist to be protected during development, including Site clearance and construction work, through the use of barriers and/or ground protection fit-for-purpose to ensure the successful long-term retention of a tree. The area within the construction exclusion zone is to be regarded as sacrosanct and the fencing shall not be taken down or relocated at any time.

All areas excluded by protective tree fencing shall be treated as CEZs, and the following restrictions shall apply:

- No construction activity whatsoever must occur within these areas.
- No tree works, without the written consent from the Local Authority.
- No alterations of ground levels or conditions.
- No chemicals or cement washings.
- No excavation.
- No temporary structures. *
- No storage of soil, rubble or other materials.
- No vehicles or machinery to be used or parked without appropriate ground protection measures as per BS5837 recommendations. This will require the use of a proprietary system of reinforced concrete slabs/steel road plates on a compressible layer, or side butting scaffold boards/ 18mm plywood sheets on a compressible layer. The type of ground protection used shall be appropriate for the likely loading applied.
- No fixtures (lighting, signs etc.) to be attached to trees.
- No fires within 10 metres of the canopies of any tree or hedgerow.

1

**Sales Cabins or Site huts, provided they are of the Jack Leg type, can be sited to act as ground protection for the duration of the construction.*

General construction activity

Since the canopies of retained trees may be in close proximity to areas of crane operation, the following restrictions will apply:

- All cranes will be sited outside the defined RPAs of retained trees / groups, and the appointed contractor will ensure all relevant personnel shall be made aware of the location of branches and the need to avoid causing damage to them.
- Prior to the implementation of lifting operations, a representative from the equipment supply company shall visit the Site and ensure all operations can be completed without causing damage to retained trees. A lifting plan will be prepared and submitted for approval prior to all lifting operations. The lifting plan will make provision for the potential for damage of retained trees.
- All lifting operations will be completed under the close direction of a qualified banksman, who will be briefed by the appointed contractor as to the need to avoid damage the stems and branches of retained trees.
- Should additional tree removal or pruning be required the Local Authority Tree Officer shall be contacted and the scope of works agreed in writing.
- All materials will be stored within designated areas and no materials shall be stored within any RPA.

Hazardous materials

Any mixing of cement-based materials is to take place outside the RPAs of all trees. Provision shall be made to ensure that the mixing area is contained so that no water runoff enters the RPAs of any trees. All mixers and barrows shall be cleaned within this dedicated mixing area.

All other chemicals hazardous to tree health, including petrol and diesel, are to be stored in suitable containers as specified by the Control of Substances Hazardous to Health (COSHH) Regulations (2002) (Ref 4), and kept away from the RPAs.

Example of Protective Fencing Signs



APPENDIX D

Photographs

Tree No.	Description	Photograph
T22	False acacia (<i>Robinia pseudoacacia</i>)	
T1, T2, T3	View from Aylesbury Road south towards the green	

Tree No.	Description	Photograph
T1	Wild cherry (<i>Prunus avium</i>) with Artist fungus (<i>Ganoderma applanatum</i>) bracket on eastern stem. Category U tree.	
T7, T6, T5 and T19	From the middle of the site viewing to the north. T7 dead wild cherry (<i>Prunus avium</i>) on the left. T19 Horse chestnut (<i>Aesculus hippocastanum</i>) on the right.	
T18, T19, T8 and G2	From the middle of the site viewing to the south. T18 dying wild cherry (<i>Prunus avium</i>) on the left and dead wild cherry on the right	

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TFL_PSF_9131 SITE INVESTIGATIONS: SMALL SITES INITIATIVE LAND AT LAND AT AYLESBURY STREET, BRENT, NW10 0LU

Site Ref: 1804

Ecological Assessment

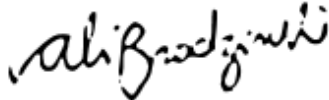
OCTOBER 2017

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EC HARRIS
BUILT ASSET
CONSULTANCY


Hyder

Land at Land At Aylesbury Street, Brent, NW10 0LU Ecological Assessment

Author	Brandon Murray	
Checker	Alline Brodzinski	
Approver	Martina Girvan	
Report No	902-UA009686-UE21R-02	
Date	OCTOBER 2017	

VERSION CONTROL

Version	Date	Author	Changes
01	July 2017	Brandon Murray	1 st Issue
02	October 2017	Brandon Murray	Final Issue

This report dated 02 October 2017 has been prepared for Transport for London (TfL) (the "Client") in accordance with the terms and conditions of appointment dated 02 May 2017 (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

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APPENDICES

APPENDIX A

Desk Study Results

APPENDIX B

Bat Habitat Suitability and London Population Status

APPENDIX C

Selected Legislation, Nature Conservation Status and Policy

1 INTRODUCTION

1.1 Background

Arcadis Consulting (UK) Limited (Arcadis) was commissioned by Transport for London (TfL) to undertake an ecological assessment to support the feasibility for potential development at Land at Aylesbury Street, Brent, NW10 0LU hereafter referred to as “the Site”.

TfL is aiming to divest a number of small sites to enable prospective regeneration. The objective of the Small Sites Initiative is to provide robust and pragmatic advice that sensibly de-risks each of the sites such that unreasonable “abnormal” development costs are not included by developers.

The objective of this report is to identify potential ecological development constraints due to current ecological conditions on Site as based on the findings of a desk study and ecological constraints survey. The report outlines the ecological constraints associated with the Site with regards to biodiversity legislation and policy and provides advice on mitigation and enhancement opportunities, including requirement for any further assessment or licensing, if necessary.

1.2 Site Location & Setting

The Site is located west of the A406 North Circular Road, adjacent to Neasden Lane and Aylesbury Street in the London Borough of Brent. The Site is centred at grid reference 520910, 186176 around the postcode of NW10 0LU.

It is approximately 0.12ha in area and is currently comprised of scattered trees, dense scrub containing predominantly introduced species and amenity grassland.

The immediate surrounding of the Site is predominantly residential, characterised by low rise housing.

The Site boundary used for this assessment is presented on Figure 2.

2 METHODOLOGY

2.1 Desk Study

Desk-based ecological information was collated from multiple sources.

The Multi-Agency Geographic Information for the Countryside (MAGIC) website¹ and other Natural England and Forestry Commission datasets were used to search for any statutory or non-statutory designated sites of nature conservation importance within a specific radius of the Site boundary, as follows:

- Special Protection Areas (SPAs) or Ramsar Sites designated for their bird interests (5km radius);
- Special Areas of Conservation (SACs) (5km radius);
- Sites of Special Scientific Interest (SSSIs) and all other statutory designated sites (2km radius);
- National Nature Reserves (NNR);
- Local Nature Reserves (LNR); and
- Woodlands registered on the Ancient Woodland Inventory (AWI).

Records of protected or otherwise notable species of conservation concern (that the Site has the potential to support) located 1km of the Site boundary were obtained from the following sources:

- Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) Species of Principle Importance in England²;
- National Biodiversity Network Atlas³;
- London Biodiversity Action Plan⁴; and
- Local Biodiversity Action Plan.

In addition, the Local Plan was reviewed for citations of any non-statutory designated sites located within a 1km radius of the Site, including Local Wildlife Sites (LWS) and the locations of Sites of Importance for Nature Conservation (SINCs) were also obtained from London Borough of Barnet. No citations for these sites were obtained other than where information was publically accessible.

SINCs fall into three sub designations:

- Sites of Metropolitan Importance for Nature Conservation (SMINCs);
- Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II; and
- Sites of Local Importance for Nature Conservation (SLINCs).

Waterbodies located within 250m of the Site identified from OS mapping were assessed with regards to their connectivity to the Site and their potential suitability for supporting a population of breeding great crested newts (*Triturus cristatus*).

2.2 Field Survey

This survey was conducted by Brandon Murray in May 2017 (MCIEEM). Habitats were classified according to their JNCC Phase 1 habitat categories (JNCC 2010)⁵ and plants named after Stace (1997)⁶ and are presented on Figure 2.

2.3 Limitations and Expectations

This report has been prepared for TfL 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

¹ MAGIC (2002). MAGIC Map Search. [online] Available at <http://magic.defra.gov.uk> [Accessed May 2017]

² NERC Act (2006) Section 41 Species <http://www.nhm.ac.uk/our-science/data/uk-species/checklists/NHMSYS0020515439/index.html>

³ National Biodiversity Network <https://nbn.org.uk/> [Accessed May 2017]

⁴ London BAP (Reviewed 2007) <http://www.gigl.org.uk/london-bap-priority-species/> [Accessed May 2017]

⁵ Joint Nature Conservation Committee (2010), *Handbook for Phase 1 habitat survey - a technique for environmental audit*

⁶ Stace, C. (1997). *New Flora of the British Isles Second Edition*. Cambridge University Press

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.

3 SURVEY RESULTS

3.1 Reporting Outline

The results of the desk study and ecological constraints survey are described below, with Sites or features of particular nature conservation interest detailed as appropriate.

Supporting information to be read in conjunction with the results and subsequent discussion are as follows:

- Figure 1: Designated Sites within 2km of the Site centre (at the end of the report);
- Figure 2: Extended Phase 1 Habitat Map (with dedicated survey results and target notes) (at the end of the report);
- Table 1: Ecological Constraints and Mitigation Summary Table; and
- Table 2: Site photographs (at the end of the report).

Only information potentially relevant to the development of the Sites is included within the report other information is appended as follows:

- Appendix A: Desk Study Results;
- Appendix B: Bat Habitat Suitability Assessment and London Bat Population Status; and
- Appendix C: Selected Legislation, Nature Conservation Status and Policy.

3.2 Desk Study Results

Only desk study results that are potentially relevant to the Site are presented within the report. Detailed status and protections conferred by the relevant designations below are presented in Appendix A and Figure 1. The relevant Site information is summarised below.

- There is unlikely to be potential for any significant impacts to designated sites from the development of this Site;
- There were records of Japanese knotweed (*Fallopia japonica*), giant hogweed (*Heracleum mantegazzianum*) and Indian (or Himalayan) balsam (*Impatiens glandulifera*) non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act (WCA)⁷ (1981, as amended), they are both also listed on the London Invasive Species Initiative (LISI)⁸ managed by the London Biodiversity Partnership;
- There were records of fox (*Vulpes vulpes*) and grey squirrel (*Sciurus carolinensis*) within 1km of the Site which although not protected for conservation value are protected from inhumane killing or injury by the Wild Mammal Act (1996)⁹; and
- Considering the habitat and location of the Site, there were no relevant records of protected or notable reptiles, amphibians or birds or of badger.

3.3 Site Overview

The Site supported a limited range of habitats and was dominated by areas of amenity grassland, dense scrub predominantly non-native introduced species and scattered trees. The habitats on Site were generally of poor quality due to the number of non-native invasive species, lack of positive management and fly tipping. However, these habitats are valuable in terms of general green infrastructure, likely performing important ecosystem services (such as water quality and volume attenuation, air quality attenuation etc.).

3.4 Habitats

Phase 1 habitat categories and descriptions of these habitats are presented below and the locations of these habitats are presented in Figure 2.

- **Amenity grassland:** The east of the Site, and the largest area of habitat was an area of mown amenity grassland. This supported a limited floral diversity, species present included: cleavers (*Galium aparine*); perennial rye grass (*Lolium perenne*); red fescue (*Festuca rubra*); dandelion (*Taraxacum officinale agg.*); daisy (*Bellis perennis*); ribwort plantain (*Plantago lanceolata*); broadleaf plantain (*Plantago major*);

⁷ Anon the Wildlife and Countryside Act (WCA), 1981 as amended. HMSO

⁸ London Invasive Species Plan (2012). Legislative and Information Exchange Framework. [online] Available at <http://www.londonisi.org.uk/tackling-inns/lisp/>. [accessed May 2017]

⁹ Anon The Wild Mammal Act (1996). HMSP

chickweed (*Stellaria media*); herb Robert (*Geranium robertianum*); meadow buttercup (*Ranunculus acris*); white clover (*Trifolium repens*) and wall barley (*Hordeum murinum*).

- **Dense scrub and introduced shrub:** The western side of the Site was predominantly dense scrub. The scrub was dominated by non-native introduced shrub species, with some native species present. Species present included: ornamental evergreen viburnum (*Viburnum* sp.) snowberry (*Symphoricarpos* sp.); cherry laurel (*Prunus laurocerasus*); (both snowberry and cherry laurel are on LISI) spirea (*Spiraea* sp.); false acacia (*Robinia pseudoacacia*) (also on LISI); blackthorn (*Prunus spinosa*); elder (*Sambucus nigra*); bramble (*Rubus fruticosus* agg.); hazel (*Corylus avellana*) and elm (*Ulmus* sp). The ground flora was predominantly ivy (*Hedera helix*) and nettle (*Urtica dioica*), with other species including meadow buttercup (*Ranunculus acris*); cleavers (*Galium aparine*); rose (*Rosa* sp.) and garlic mustard (*Alliaria petiolata*).
- **Individual scattered trees:** Scattered through the Site were broadleaved trees. The species on the Site were varied but were predominantly cherry (*Prunus* sp.). Other species present included Horse Chestnut (*Aesculus hippocastanum*); ash (*Fraxinus excelsior*); false acacia (*Robinia pseudoacacia*) and Swedish whitebeam (*Sorbus intermedia*). The scattered cherry trees to the west of the Site within the dense scrub were heavily covered in ivy and appeared to be in a poor state of health.

3.5 Protected and Notable Species

The following protected or notable species have the potential to be present on / adjacent to the Site:

- **Nesting Birds:** There is potential for nesting birds to be utilising the trees and scrub on the Site, including species listed on the London Biodiversity Action Plan (BAP) such as house sparrow (*Passer domesticus*). An old nest, likely to be a blackbird (*Turdus merula*) nest was observed on Site during the survey;
- **Bats:** All of the trees on Site were assessed for their potential to support roosting bats. Only the cherry trees with dense ivy covering were assessed as having potential to support roosting bats. The potential for these features to support roosting bats was assessed as 'low' (see Appendix B); and
- **Other mammals:** There is potential for grey squirrel to be breeding within the vegetation on Site.

The Site offered no suitable habitat for reptiles. No ponds were present within 500m of the Site with connectivity to the Site, so the presence of great crested newts is extremely unlikely. Overall, within the Site, there was limited potential for protected or notable species.

3.6 Invasive Species

On Site, no invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded during the survey. However, species listed on LISI were recorded on Site, including false acacia, snowberry and cherry laurel.

4 POTENTIAL ECOLOGICAL CONSTRAINTS

The potential ecological constraints and associated further works including mitigation is briefly presented below, further detail is presented in Table 1.

4.1 Habitats/ Invasive Species

The habitats on Site are likely to be considered as 'less than local' value according to the CIEEMs *Guidelines for Ecological Impact Assessment* (CIEEM 2016)¹⁰. However, these habitats have some limited value as green infrastructure, likely performing important ecosystem services (such as drainage, air quality etc.).

There will be some ecological benefit from the removal of non-native species listed on LISI. For any loss of trees, trees should be re-provisioned on the Site, of a suitable species, preferably native species of local origin appropriate to the sylvan culture of the area. An ecologist and arboriculturist should contribute to the evolution of the development and landscaping design to minimise biodiversity loss and to maximise the replacement green infrastructure with regards to biodiversity.

4.2 Protected and Notable Species

The following notable or protected species have the potential to be impacted by the works:

- **Nesting birds:** it is likely that nesting birds will utilise the Site, clearance of vegetation should be avoided during the nesting bird season (March to August inclusive) replacement nesting opportunities should be provided within any development; and
- **Bats:** All trees on Site were assessed for their potential to support roosting bats. Only the cherry trees with dense ivy covering were assessed as having any potential to support roosting bats. The potential for these features to support roosting bats was assessed as 'low' (see Appendix A). If these trees are to be removed, a precautionary approach should be taken whereby the ivy is stripped back prior to felling the tree (under ecological supervision) or the tree is felled using a soft fell methodology whereby the felled tree is left *in-situ* for 24 – 48 hours prior to removal from the Site.

While not protected or notable for their conservation status the following species may be present that are protected against inhumane injury under the Wild Mammal Act (1996)⁹.

- **Grey squirrel:** trees should be inspected from the ground for squirrel dreys before being excluded and humanely destroyed if present.

¹⁰ CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland Terrestrial, Freshwater and Coastal.

5 LEGISLATION AND KEY POLICY REQUIREMENTS

Potentially relevant Legislation and Policy are presented in Appendix C and further detail with regards to surveys and mitigation required are presented in Table 1.

5.1 Relevant Legislation

Development of the Site will require surveys and or mitigation to fulfil legislative requirements for the following protected species:

- WCA, as amended 1981, and the Conservation of Habitats and Species Regulations (2010, as amended)¹¹ for bats: when access is possible, and the potential impact on trees is known, trees should be assessed for their potential to support roosting bats;
- WCA, as amended 1981, for nesting birds: works will need to be timed to avoid the nesting bird season (March to August inclusive) or supervised to prevent impacts to nesting birds; and
- The Mammal Act (1996) for grey squirrel: works will need to ensure that there are no inhumane impacts to squirrel if present.

Full details of subsequent works required are included within section 6, Table 1 below.

5.2 Relevant Policy

Elements of national, London and local policies and plans have the potential to be applicable to any development of the Site, these relate to:

- The safeguarding and replacement of trees to be lost to development;
- Creation and enhancement of biodiversity where possible: and
- Material consideration of S41 species.
- Although no invasive species with legal obligations were recorded on the Site, there were plants recorded listed on LISI, while there is no legal requirement to remove or control these species (false acacia, snowberry and cherry laurel) it would be appropriate and beneficial to remove them as part of a future development.

An ecology report addressing the required design and construction mitigation for any proposed development will be required in support of planning.

5.3 Potential for Enhancement Within a Development

In addition to the recommended further works, enhancements should be considered within any development. For example, biodiversity roofs, rain gardens and other green infrastructure should be considered and the soft landscaping should be designed to maximise the biodiversity potential.

There are also opportunities for enhancements for London BAP species. Bird boxes for sparrows would be a valuable enhancement, along with bat roosting boxes.

¹¹ Anon. The Conservation of Habitats and Species Regulations (2010) as amended. HMSO.

6 SUMMARY OF ECOLOGICAL CONSTRAINTS AND MITIGATION REQUIRED

Table 1 Ecological Constraints and Mitigation Summary Table

Key Issues	Legislation/Policy	Assumption	Further Survey / input?	Seasonal Timing	Mitigation Required	Seasonal Timing	Programme Delay Risk	Survey/ Mitigation Cost Estimate	Risk Rating
Nesting Birds									
All green infrastructure listed below is suitable for nesting birds. These are likely to be removed for development. - Dense scrub; - Scattered trees.	WCA, 1981, as amended	Removed for development / site investigation.	No	N/A	Remove any remaining trees and scrub vegetation outside the core nesting bird season (March to August inclusive) or vegetation removal will need to be supervised by an ecological watching brief.	September to February remove trees and shrubs	If vegetation removal during the nesting bird season is required and nest are found by the ecological watching brief, a delay of 6 weeks until chicks have fledged is possible.	Mitigation £500 - £1000 per day for ecological supervision / nesting bird check.	Low
Green Infrastructure/ Trees									
A number of trees may need to be removed to facilitate any development. Large areas of scrub on Site which is likely to be removed prior to development or.	Potential TPOs although removal will be granted with planning permission national and local policy on no net loss	Trees and shrubs will be removed or damaged due to development	Yes: BS 3857 2012 Tree survey	Removal of trees affected by bird nesting season see above.	Protection of trees replacement of trees and green infrastructure	As above.	N/A	Survey: £1,900 Mitigation: £1,000 demarcation and Arboricultural Method Statement Replacement of green infrastructure	Low
Roosting Bats (Trees)									
A number of trees in the south west of the Site had dense ivy covering. These trees were assessed as having low potential to support roosting bats.	Schedule 5 of the of the WCA, 1981, as amended The Conservation of Habitats and Species Regulations 2010	Assumption is that the trees are to be felled for development.	No – precautionary approach once site clearance commences.	N/A	A precautionary approach is recommended once site clearance commences.	Tree should be left for 24 hours in warmer weather and 48 hours in colder weather.	N/A	Survey Up to £4,500 Mitigation: Up to £3,500 for an EPS licence and site supervision	Medium
Grey squirrel									
Trees on Site may contain squirrel drays, removal of trees and vegetation may cause potential harm to squirrels. Although these are a non native species care to ac=void suffering should be taken.	Wild Mammals Protection Act 1996, PR and reputational risk.	Trees and scrub to be removed for development	No	N/A	Dreys should be removed when juvenile squirrels are unlikely to be present Avoidance of the 2 main breeding seasons when young are in the drey (February to October inclusive) is recommended.	Fell the trees in winter (November to January inclusive)	None	Mitigation £500 site supervision during felling / vegetation removal.	Low
Invasive species									

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Key Issues	Legislation/Policy	Assumption	Further Survey / input?	Seasonal Timing	Mitigation Required	Seasonal Timing	Programme Delay Risk	Survey/ Mitigation Cost Estimate	Risk Rating
False acacia, snowberry and cherry laurel	London Invasive Species Index	Development could cause these species to spread	No	N/A	It would be good practice to remove these species during subsequent development and to implement mitigation to ensure they are not spread	N/A	N/A	N/A Can be undertaken with vegetation clearance for development.	Low

* Cost estimates only, actual costs would depend on the design and programme of any subsequent development and do not include costs for reports in support of planning application or any associated protected species licencing

7 CONCLUSIONS

There are no likely significant ecological constraints with regards to the development of this Site. No designated sites were identified within the vicinity of the Site which have the potential to be significantly impacted by development on the Site.

Constraints are listed below:

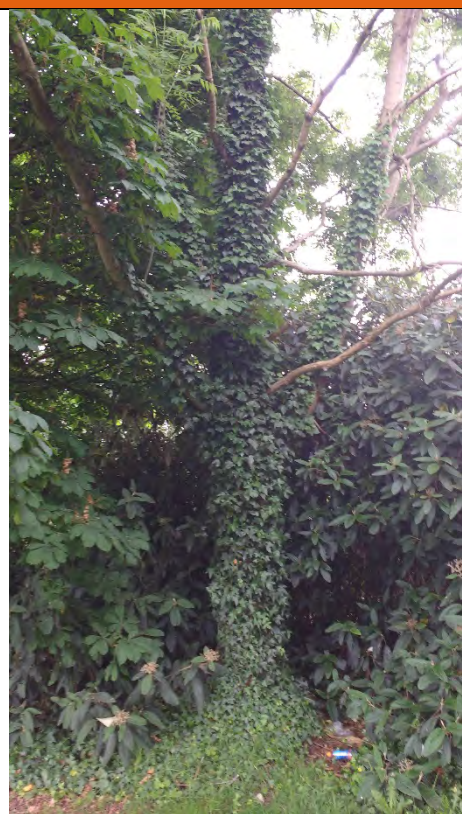
- The Site was dominated by amenity grassland, dense scrub (containing non-native species) and scattered trees.
- The habitats on Site were generally of poor quality and with limited potential for protected or notable species due to the number of non-native invasive species, lack of positive management and fly tipping. However, these habitats are valuable in terms of green infrastructure, likely performing important ecosystem services (such as water quality and volume attenuation and air quality attenuation etc.).
- There is potential for nesting birds to be utilising the trees and scrub on the Site, including species listed on the London BAP such as house sparrow. Removal of all trees and scrub vegetation on the Site will need to be conducted outside of the bird nesting season (March – August inclusive) or under an ecological watching brief.
- All of the trees on Site were inspected for roosting bat potential (access was limited due to the dense scrub present). Some of the cherry trees on Site were noted to have low bat potential. It is recommended that a precautionary approach is taken if these trees are to be removed to facilitate the development. This should involve the ivy being stripped back prior to felling the tree (under ecological supervision) or the tree is felled using a soft fell methodology whereby the felled tree is left in-situ after felling for 24 – 48 hours prior to removal from the Site. There is potential for bats to forage within the Site, however the Site is limited in area and larger areas of foraging habitat are present within the local area.
- There is potential for grey squirrel to be breeding within the trees. This species is non-native and of negligible ecological value, however squirrel are protected from cruelty. If squirrels are found on Site, these should be removed in a humane manner.
- There will be some ecological benefit from the removal of non-native and invasive species on LISI, which is likely to occur when the site is cleared for any construction. There is no legal obligation to control any of the LISI species recorded on the Site or to remove of them as controlled waste but it is good practice to remove them and to avoid their spread.
- Trees and other vegetation should be replaced within any proposed soft landscaping and these designs should be evolved in liaison with an ecologist and arboriculturist. In addition, rain gardens, biodiversity roofs and other green infrastructure should be considered within any development.
- There are also opportunities for enhancements for London BAP species. Bird boxes for sparrows would be a valuable enhancement, along with bat roosting boxes.

Site Photographs

Table 2: Land at Aylesbury Street Site photographs

Site 12: Land at Aylesbury Street	
	
Photograph 1: Fly tipping on Site	Photograph 2: Dense scrub, predominantly introduced species.
	
Photograph 3: The Site, viewed from the south.	Photograph 4: Dense scrub on Site.

Site 12: Land at Aylesbury Street



Photograph 5: Ivy covered tree on Site, no bat potential (ivy covering has negligible bat roosting potential on this tree).



Photograph 6: Ivy covering on a cherry tree. Low bat roosting potential.



Figure 2: Extended Phase 1 Habitat Map (with dedicated survey results and target notes)



APPENDIX A

Desk Study Results

Statutory Designated Sites

The desk study found no Natura 2000 sites (SPAs, SACs, Ramsar sites within 5km of the Site.

Within 2km of the Site are the following Statutory Designated Sites:

- Brent Reservoir / Welsh Harp LNR and SSSI, which is an area of open water primarily designated for the bird assemblage which it supports
- Fryent Country Park LNR which contains a variety of habitats including meadows, ponds, lakes, hedges and woodland.

It was assessed that there was negligible potential for significant impacts to these sites from any development on the Site.

Non-Statutory Designated Sites

The desk study found the following non-statutory designated sites within 1km of the Site:

Sites of Borough Importance for Nature Conservation Grade I and II:

- Harp Island;
- Quainton Street;
- Brent Reservoir / Welsh Harp;
- Grange Roundabout Nature Area;
- Old St Andrew's Churchyard;
- The Canal Feeder;
- Brent River Park;
- Wealdstone Brook Wembley Park Section; and
- Chiltern Line between River Brent and Sudbury Hill.

The closest of the SBINCs was over 180m from the Site. It was assessed that there was negligible potential for significant impacts to these sites from any development on the site.

There are also a 'green chains' and wildlife links running through the Borough of Brent within 2km of the Site. It was assessed that there was negligible potential for impacts to these ecological corridor sites from any development on the Site.

The northern half of the Site is within a Conservation Area DMP7 according to the London Borough of Brent Interactive Planning Map¹². This policy relates to the Boroughs Heritage Assets and has no impact upon the ecological assessment of the Site.

Woodlands registered on the Ancient Woodland Inventory (AWI)

No woodlands registered on the AWI were present within 2km of the Site.

¹² <https://www.brent.gov.uk/policies-map> accessed 30/05/2017

Statutory Designated Sites

Table A:1: Statutory Designated Sites

Site Name	Designation	Size (Ha)	Distance (m)	Direction	Description from citation
Brent Reservoir / Welsh Harp	LNR	97.31	450m	North	<i>Open water, marshes, trees and grassland. Reservoir with associated waterfowl. Surrounded by meadows, woodland and parks. Species include great crested grebe.</i>
Brent Reservoir	SSSI	69.37	450m	North	<i>The Brent Reservoir is of interest primarily for breeding wetland birds and in particular for significant numbers of nesting great crested grebe. The diversity of wintering waterfowl and the variety of plant species growing along the water margin are also of special note for Greater London. The reservoir, formed in 1835 by damming the valley of the River Brent below the confluence of its two constituent tributaries, is among the oldest of London's many large artificial lakes. It is unusual in being characterised by naturally sloping earth banks and a shallow depth, features which have encouraged the development of a rich mixture of wetland and waterside habitats. Along much of the shoreline there is a fringe of fenland plants and several of the species have a restricted distribution in Greater London, the more notable include common spotted orchid <i>Dactylorhiza fuchsii</i> and greater spearwort <i>Ranunculus lingua</i>. Toward the head of the northern and eastern areas where, respectively, the Silk Stream and Dollis Brook enter the reservoir, wetland plant communities are more extensive, in places covering large areas of inwashed silt deposits. Here there are varied gradations from open water, through swamp and mixed species fen to willow carr, with damp willow woodland occupying the higher ground. The juxtaposition and expanse of these habitats is of particular value in attracting a noteworthy variety of breeding wetland birds.</i>
Fryent Country Park	LNR	106.97	1500m	North-west	<i>The park consists of meadows, ponds, lakes, hedges and woodland, and is popular with ramblers and nature enthusiasts. The area is a designated nature reserve, and is used by conservation groups. Over 800 species of wildlife live here, amongst them 21 types of butterfly and 80 birds. The meadows are still cut for hay once a year in July, before being transported</i>

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Site Name	Designation	Size (Ha)	Distance (m)	Direction	Description from citation
					<i>to a farm. In the past, sheep and cattle would roam freely over the green space.</i>

Non-Statutory Designated Sites

Table A:2: Non-Statutory Designated Sites

Site Name	Designation	Size (Ha)	Distance (m)	Direction	Description from citation
Ancient Woodland					
No ancient woodlands within 2km					
<i>Site of Importance for Nature Conservation - SINC</i>					
Harp Island BII06	SBINC Grade II	Unknown	180m	North west	<i>This is a linear site following the courses of the River Brent and The Canal Feeder as they feed out of the Harp Reservoir. The River Brent initially runs westward as it leaves the reservoir and then south westard, whilst The Canal Feeder runs almost due south. The 'island' is the central peninsular lying between the two watercourses and is built out to residential and commercial use.</i>
Quainton Street	SBINC (Grade 1)	Unknown	190m	West	<i>The whole of Quainton Street Open Space is essentially semi-natural broad-leaved woodland flanking the river, dominated by Ash with Sycamore, Field Maple and wild Cherry, with Hawthorn, Elder and Holly in the understorey. The field layer is species-poor with Cow Parsley, Common Nettle, Cleavers, and Ivy on the ground and in some mature trees. Quainton Street Open Space sits between Harp Island and the Brent River Park within the wildlife corridor running from the Brent Reservoir to the Chiltern Line.</i>

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Site Name	Designation	Size (Ha)	Distance (m)	Direction	Description from citation
Brent Reservoir / Welsh Harp	SINC Grade I	As above	300m	North	As above
Grange Roundabout Nature Area BII09	SBINC Grade II	Unknown	600m	East	<i>Located on a busy roundabout this site is partially enclosed by a species rich hedge of Wild Privet, Blackthorn, Field Maple, Dogwood and Hawthorn which runs around the road side. The site opens onto the central part of the roundabout which is a car park. Most of the proposed SINC has densely planted trees over species poor neutral grassland. Herbaceous species in the sward are typical of neutral grassland; Ribwort Plantain, Lesser Trefoil, Common Cat's ear and others (TN1) form the basis of a generalised grassland sward with average biodiversity value. The sward was sparse in the heavy shade of the trees.</i>
Old St Andrew's Churchyard B104	SBINC Grade I	Unknown	680m	North-west	<i>Old St Andrew's Churchyard is dominated by dense woodland of native species. A few areas of lighter shade exist where the woodland field layer is still characterised by a complex mix of species. Wild Cherry, English Elm, Ash and Yew are the main tree species with the Yew occurring as clumps in several locations. The field layer is predominantly, and variously, Common Nettle, Cow Parsley, Bramble, Hogweed and Cleavers which cover the grave stones and prevent the less competitive species from succeeding in the sward.</i>
The Canal Feeder BII01	SBINC Grade II	Unknown	730m south	South	<i>The Canal Feeder forms an important wildlife corridor linking Stonebridge up with the Brent Reservoir. In the northern section between the Chiltern Line and the North Circular Road, and the following section to Bridge Road, the Canal Feeder lacks structural and species diversity. Grass to each side of the canal had recently been mown, and it is assumed that this is a regular management regime of the species poor semi improved grassland strip. The canal itself is dominated by Duckweed on the surface, and non native Pondweed (Elodea sp.) below. A small patch of Common Reed occurs on a bend in the canal within Bridge Road Allotments, but this had been cut, significantly reducing the cover provided for the breeding Moorhen observed. Water flow in this stretch was virtually stagnant. The adjacent allotments at this point provide a structurally diverse habitat that have the potential to support a range of</i>

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Site Name	Designation	Size (Ha)	Distance (m)	Direction	Description from citation
					<i>taxonomic groups, and provide a substantial addition to the resources in the wildlife corridor.</i>
Brent River Park BI05	SBINC Grade I	Unknown	800m	West	<i>The north and mid sections of the river flow in a natural channel through a steep sided gorge which is vegetated with continuous dense semi natural broadleaved woodland dominated by Ash in the northern sector but also with Lime and Sycamore. There are few understorey shrubs but Ash saplings provide the structural element that the shrubs would normally offer. The field layer is relatively rich on the woodland margins with Wood Avens, Ribwort Plantain, Bird's foot Trefoil, Common Mallow and Broadleaved Willowherb. Japanese Knotweed also occurs in various locations along the woodland edge and occasionally forms dense stands. Neutral grassland occur alongside the path; they are characterised by a number of species that are able to flower quickly between cuts and provide good nectar sources for a number of invertebrate species, such as Bird's foot trefoil, Ribwort Plantain, Red Clover and White Clover.</i>
Wealdstone Brook Wembley Park Section BII19	SBINC Grade II	Unknown	828m	West	<i>With its associated belt of woodland the site serves as an important wildlife corridor linking up sites and residential areas. Wealdstone Brook runs in an open concrete culvert and is heavily shaded for the whole length of this section. The dominant tree species are Ash and Sycamore, with Hawthorn and Holly. The woodland strip is narrow and it does not have a classical woodland structure of a shrub layer and field layer.</i>
Chiltern Line between R Brent and Sudbury Hill BI06F	SBINC Grade I	Unknown	970m	South-west	<i>The railway linesides in the Borough of Brent have an important function as wildlife corridors linking numerous small sites to each other and allowing the movement of species around the suburban environment. The linesides and occasionally tracks have their own intrinsic value as well for a number of taxonomic groups as they provide not only a diversity of habitat but also an undisturbed environment. The linesides are extremely similar in their habitat, with semi natural broadleaved or mixed woodland forming the main habitat, with areas of tall ruderal vegetation occurring intermittently along the embankments and cuts.</i>

Overview of Protected, Notable and Invasive Species in London

This section of this report outlines the status of protected and notable species in London. The status of these species on the Site is fully discussed in section 3. Relevant conservation status and legislation is presented in Appendix D and E.

Non-native invasive species in Greater London

London is an extremely urbanised area and is a major international port for both people and goods, this in addition to its climate and major levels of construction has encouraged the spread of a number of non-native invasive species that are becoming pests. Therefore, in addition to those species listed on Schedule 9 of the Wildlife and Countryside Act (WCA) **Error! Bookmark not defined.** (1981, as amended) there is a London Invasive Species Initiative (LISI) **Error! Bookmark not defined.** managed by the London Biodiversity Partnership, which lists non-native invasive species that should be controlled in London. Species potentially relevant to the Site include those presented in Table A3..

Table A:3: *Potential Schedule 9 (WCA 1981, as amended) or LISI species*

Common Name	English Name	Status
Japanese Knotweed	<i>Fallopia japonica</i>	Schedule 9 and LISI
Cotoneaster (numerous)	<i>Cotoneaster</i> spp.	Schedule 9 and LISI
Rhododendron	<i>Rhododendron ponticum</i>	Schedule 9 and LISI
Indian (or Himalayan balsam)	<i>Impatiens glandulifera</i>	Schedule 9 and LISI
Virginia creeper	<i>Parthenocissus quinquefolia</i>	Schedule 9
Montbretia	<i>Crocsmia x crocosmiiflora</i>	LISI
Cherry Laurel	<i>Prunus laurocerasus</i>	LISI
False acacia	<i>Robinia pseudoacacia</i>	LISI
Green alkanet	<i>Pentaglottis sempervirens</i>	LISI
Butterfly-bush	<i>Buddleia davidii</i>	LISI
Snowberry	<i>Symphoricarpos albus</i>	LISI
Tree of heaven	<i>Ailanthus altissima</i>	LISI
Holm oak	<i>Quercus ilex</i>	LISI
Passion flower	<i>Passiflora caerulea</i>	LISI
Spanish bluebell	<i>Hyacinthoides hispanica</i> & <i>H. x massartiana</i>	LISI
Holm oak	<i>Quercus ilex</i>	LISI

Bats in Greater London

From previous Arcadis work in London and from data from the London Bat Group the most likely bats species to be present are common and soprano pipistrelle (*Pipistrellus pipistrellus* and *P. pygmaeus*) which are by far the more frequent, followed by Daubenton's (*Myotis daubentonii* in the vicinity of open water) noctule (*Nyctalus noctula*) and brown long-eared (*Plecotus auritus*). These are all London BAP species and S41 species with the exception of Daubenton's and common pipistrelle. Full details of the conservation status of these species and the results from the London Bat Group Species Action Plan Audit are presented in Appendix B Table B2.

In general, every borough will have bats present, as even in the inner boroughs there are usually some areas of suitable habitat that can provide feeding habitat for small numbers of common and light tolerant bat species such as soprano and common pipistrelles. In general, the outer boroughs with larger areas of more suitable habitat should be expected to have higher numbers of bats and a greater diversity of species.

Birds in Greater London

There are a number of bird species that although relatively common are in decline and have been highlighted section 41 or London Priority BAP species and/or birds of conservation concern that have the potential to be present (Table A4).

TableA:4: Birds of conservation concern associated with London

Common Name	English Name	Status	Typical London habitats
Black redstart	<i>Phoenicurus ochrurus</i>	L	Traditionally found on brownfield sites around the built environment in proximity to standing or tidal Thames water
Dunnock	<i>Prunella modularis</i>	S41:L:	Associated with dense scrub and trees in private gardens and pocket parks
Grey heron	<i>Ardea cinerea</i>	L	associated with tidal Thames and standing water
House sparrow	<i>Passer domesticus</i>	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks traditionally a species associated with nesting in buildings
Peregrine	<i>Falco peregrinus</i>	L	Tidal Thames and the built environment using tall buildings for roosting and nesting and foraging on other birds particularly pigeons
Song thrush	<i>Turdus philomelos</i>	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks
Starling	<i>Sturnus vulgaris</i>	S41:L:R	Built environment
Tree sparrow	<i>Passer montanus</i>	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks

Section 41 = S41: London BAP = L: R = Birds of Conservation Concern Red List

Reptiles in Greater London

Records from SARG (Surrey Amphibian and Reptile Group) and the London Biodiversity Action Plan show that the presence of European Protected Species of reptile in the London area is generally very unlikely. Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are the most likely reptiles to be present followed by Grass snake (*Natrix natrix*) with Adder (*Vipera berus*) being unlikely to be present these are all Section 41 and London BAP species.

Badger in Greater London

Badger is a London BAP species and can be found using private gardens, woodlands and parklands across London.

Amphibians including Great Crested Newts (GCN) in Greater London

GCN are Section 41 and London BAP species, that while uncommon are found breeding in ponds associated with private gardens, from data available from Froglife (2012), 71 Sites across Greater London were surveyed where historical GCN records were identified, of none of these sites were located within the London Borough of Barnet¹³. Of the other amphibians that are London BAP species Common frog (*Rana temporaria*), palmate newt (*Triturus helveticus*) and Common toad (*Bufo bufo*), common toad is also a Section 41 species

Other Potentially Relevant S41 and London BAP species

There are a number of other species that have the potential to be relevant to the Site:

- Black poplar (*Populus nigra*);
- Mistletoe (*Viscum album*);
- Hedgehog (*Erinaceus europaeus*); and
- Stag beetle (*Lucanus cervus*), there was an NBN record within 500m of the Site.

Table A:5: Birds of conservation concern associated with London

Designation	Description
Special Areas of Conservation (SAC) Special Protected Areas (SPAs)	Sites designated under European law and are the most important sites for wildlife in the UK, along with Special Protected Areas (SPAs). SACs are designated under the European Habitats Directive (Council Directive 92/43/EEC). Both the Habitats and Birds Directives provide for the creation of a network of protected areas across the EU, to be known as 'Natura 2000'. The designations aim to conserve important or threatened species and habitats and provide them with increased protection and management
National Nature Reserve (NNR)	Statutory reserves established for the nation under the Wildlife and Countryside Act, 1981. NNRs may be owned by a relevant national body, e.g. Natural England, or by established agreement; a few are owned and managed by non-statutory bodies. NNRs cover a selection of the most important sites for nature conservation in the UK.
Sites of Special Scientific Interest (SSSI)	Are areas notified under the Wildlife and Countryside Act 1981 by Natural England as being of special interest for nature conservation. SSSI notification forms the statutory bedrock for site protection. Biological SSSIs form a national network of wildlife sites, with each site being of national significance for its nature conservation value. Consultation and some form of agreement with the national statutory conservation agency is mandatory before any listed, potentially damaging development or change in land use can be carried out
Local nature reserves (LNR)	These are land owned, leased or managed by Local Authorities and designated under the National Parks and Access to the Countryside Act. These are sites of some nature conservation value managed for educational objectives. In some cases it is managed by a non-statutory body (e.g. the London Wildlife Trust). Local Authorities have the power to pass bylaws controlling (e.g.) access, special protection measures.

¹³ Capital Great Crested Newts Revisited (2012). Project report – Public Web Edition

Designation	Description
Sites of Metropolitan Importance for Nature Conservation (SMINCs)	These are sites that contain the best examples of London's habitats. These sites are of strategic significance and are therefore of the highest priority against damage or loss
Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II	Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II are important in the context of the borough. The nature conservation quality of these sites varies and so these sites are graded as I or II in relation to their nature conservation potential.
Sites of Local Importance for Nature Conservation (SINCs)	These are sites of particular importance to people nearby (such as residents and schools). Local sites are particularly important in areas otherwise deficient in nearby wildlife sites.

APPENDIX B

Bat Habitat Suitability and London Population Status

Table B: 1 BCT (2016) – Habitat Suitability Criteria

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions^a and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Table B: 2 Bat species status in London from the London Bat Species Action Plan Audit

Common Name	Latin Name	UK Status	London Status	Notes
Greater horseshoe bat	<i>Rhinolophus ferrumequinum</i>	Endangered BAP Priority	Extinct	Last Greater London record from Oxleas Wood in 1953.
Lesser horseshoe bat	<i>Rhinolophus hipposideros</i>	Endangered BAP Priority	Extinct	Last Greater London record from Abbey Wood (Woolwich) in 1952-3.
Whiskered bat	<i>Myotis mystacinus</i>	Vulnerable	Rare	Due to difficulty in separation, these are considered together. Occur rarely and in low numbers in outer London Boroughs such as Hillingdon, Richmond, Bexley and Bromley. One current known (winter) roost only.
Brandt's bat	<i>Myotis brandtii</i>	Vulnerable	Rare	
Natterer's bat	<i>Myotis nattereri</i>	Vulnerable	Scarce	Still relatively few records in Greater London. Most central locations are Highgate Wood and Hampstead Heath, otherwise Richmond and Hounslow and occasionally other outer London Boroughs. 8 current known roosts (mostly winter).
Daubenton's bat	<i>Myotis daubentoni</i>	Not Threatened	Locally frequent but declining	Relatively widespread and strongly associated with ponds, lakes & rivers. Occasional summer roosts have been found in trees on Wimbledon Common and in Ruislip Woods. Contrary to the national trend, this species is apparently declining in London and its sensitivity to increasing ambient light levels is a possible reason. 4 current known winter roosts.
Serotine	<i>Eptesicus serotinus</i>	Vulnerable	Rare; has declined	Serotines are found in outer London Boroughs, especially Bromley, Havering, Sutton and Richmond. 2 current known summer roosts, in Bromley and Teddington.
Noctule	<i>Nyctalus noctula</i>	Vulnerable; declining BAP Priority	Widespread but declining	The status of this large, wide-ranging bat is difficult to assess, but the past two decades have seen a rapid decline in the species and this mirrors the national trend. An exclusively tree-roosting bat; current known roosts number <10 London-wide.
Leisler's bat	<i>Nyctalus leisleri</i>	Vulnerable	Scarce	Leisler's bat has been recorded infrequently in London area, yet sightings have doubled in the last three years. New foraging sites for the species include the Barnes area, Wandsworth Common and Brent Reservoir. 3 current known roosts (Haringey, Bromley and Bexley).

Ecological Assessment

Common Name	Latin Name	UK Status	London Status	Notes
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Not Threatened	Common	A widespread species, the common pipistrelle is believed to occur in all London boroughs. Roosts are still discovered relatively infrequently, however.
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	BAP Priority	Common	Also widespread and probably London's commonest bat. Apparently more associated with wetland habitats than its close relative, <i>P. pipistrellus</i> . Known roosts currently number 15-25?, but many more pass undetected.
Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>	Rare	Rare	Only recently confirmed as a UK breeding species. Detector records from an increasing list of sites include Lesnes Abbey Woods, Chislehurst Ponds and the Wetland Centre at Barnes. 1 known current roost site in bat boxes in Hounslow.
Brown long-eared bat	<i>Plecotus auritus</i>	Declining BAP Priority	Scarce	Brown long-eared bats are fairly secretive and may be under-recorded in Greater London, although reasons for the national decline are also likely to affect London's population. Roosts have been found in Bexley, Bromley, Hillingdon, Wandsworth, Kensington & Chelsea, Barnet, and Richmond.

NB: This audit is based on data from the London Bat Project collected in the mid-1980s, as well as that collected since by the London Bat Group and is therefore not systematic. This audit is the best possible understanding of the status of bats in London that can currently be realised by the London Bat Group.

APPENDIX C

Selected Legislation, Nature Conservation Status and Policy

Legislation

Table C: 1 Legislation Summary

Receptor	Legislation
Nesting Birds	The legislation relevant to the potential ecological constraints on Site associated with nesting birds. All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended)Error! Bookmark not defined.. Section 1 of the Act makes it an offence to: - intentionally kill, injure or take any wild bird; - intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; or - intentionally take or destroy an egg of any wild bird. It is also an offence to: - intentionally disturb any wild bird included in Schedule 1 of the Act while it is building a nest or is in, on or near a nest containing eggs or young; or - disturb dependent young of such a bird. - Species listed on Schedule 1 include the black redstart, barn owl (<i>Tyto alba</i>), Cetti's warbler (<i>Cettia cetti</i>) and kingfisher (<i>Alcedo atthis</i>). There is no potential for Schedule 1 birds to be nesting on Site, the legislation regarding common nesting birds will be complied with due to the precautionary mitigation previously stated.
Badgers	Badgers are protected from inhumane killing or injury under the Badgers Act (1992)¹⁴ this also protects their setts from damage and prohibits blocking access to their setts.
Bats	The legislation relevant to the constraint identified associated with bats. Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 (as amended).. Bats are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are subject to the provisions of Section 9 of the Act, which make it an offence to: - intentionally or recklessly disturb a wild animal listed on Schedule 5 whilst it is occupying a structure or place which it uses for shelter or protection; - intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a wild animal listed on Schedule 5; - sell, offer or expose for sale, or to possess or transport for sale alive or dead wild animal listed on Schedule 5 or any part of or anything derived from a wild animal listed on Schedule 5. Bats are also listed on Schedule 2 (European protected species of animals) of the Conservation of Habitats and Species Regulations 2010 (as amended) and are subject to the provisions of Regulation 41 which makes it an offence to: - deliberately capture, injure or kill any wild animal of a European protected species; - deliberately disturb wild animals of any such species (where disturbance is likely to impair their ability to survive, breed or reproduce, rear or nurture their young; or to hibernate or migrate; or to affect significantly the local distribution or abundance of the species); - damage or destroy a breeding site or resting place of such an animal; or

¹⁴ Protection of Badgers Act 1992 (as amended)

Receptor	Legislation
	be in possession of, control, transport, sell or exchange, or offer for sale or exchange any live or dead animal of such a species or any part of a wild animal or anything derived from an animal or any part of an animal of such a species.
Great Crested Newts	Great crested newts are a European Protected Species (EPS), listed on Annex II and IV of the EEC Directive on the Conservation of Natural Habitats and Wild Fauna and Flora, receiving protection under The Conservation of Habitats and Species Regulations 2010. This species is also afforded full protection under the Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (WCA 1981). Under such legislation it is an offence to: - Intentionally or recklessly kill, injure or take a great crested newt; - Possess or control any live or dead specimen or anything derived from a great crested newt; - Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt; and - Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.
Reptiles	The relevant legislation relevant to the constraint identified associated with reptiles All native British reptile species are protected under the Wildlife and Countryside Act 1981 (as amended). Reptiles are listed under Schedule 5 of the Act. The four more widespread species including common lizard, slow worm, adder and grass snake are subject to some of the provisions of Section 9 of the Act, which make it an offence to: * - intentionally kill or injure a reptile; or * sell, offer or expose for sale, or - to possess or transport for sale alive or dead reptile or any part of, or anything derived from, a reptile.
Other Mammals	Other mammals not protected by their own legislation are protected by the Mammal Act (1996). The Act makes provision for the protection of wild mammals from certain cruel acts. An offence is committed if any person mutilates, kicks, beats, nails, or otherwise impales, stabs, burns, stones, crushes, drowns, drags, or asphyxiates any wild mammal with intent to inflict unnecessary suffering.
Non Native Invasive Species	Numerous species are listed on Schedule 9 (of the Wildlife and Countryside Act 1981, as amended) whereby it is an offence to grow or to cause this species to grow in the wild. A species on Schedule 9 that commonly occurs in London is Japanese Knotweed (<i>Fallopia japonica</i>) which is also covered by the Environmental Protection Act (EPA) 1990 which designates this as a controlled waste.

Nature Conservation Status

• Birds of Conservation Concern (BOCC) (2015)

The UK's leading bird conservation organisations worked together to produce The Population Status of Birds in the UK: Birds of Conservation Concern Four (BoCC).

Commonly referred to as the UK Red List for birds, this is the fourth review of the status of birds in the UK, Channel Islands and Isle of Man, and updates the last assessment in 2009. Using standardised criteria, 244 species with breeding, passage or wintering populations in the UK were assessed by experts from a range of bird NGOs and assigned to the Red, Amber or Green lists of conservation concern.

Table C: 2 Bird Population Status Criteria for Birds of Conservation Concern in the UK

Criteria	Status
Red list criteria	Globally threatened Historical population decline in UK during 1800–1995 Rapid (> or =50%) decline in UK breeding population over last 25 years Rapid (> or =50%) contraction of UK breeding range over last 25 years
Amber list criteria	Historical population decline during 1800–1995, but recovering; population size has more than doubled over last 25 years Moderate (25–49%) decline in UK breeding population over last 25 years Moderate (25–49%) contraction of UK breeding range over last 25 years Moderate (25–49%) decline in UK non-breeding population over last 25 years Species with unfavourable conservation status in Europe, termed Species of European Conservation Concern (SPEC) Five-year mean of 1–300 breeding pairs in UK > or =50% of UK breeding population in 10 or fewer sites, but not rare breeders > or =50% of UK non-breeding population in 10 or fewer sites > or =20% of European breeding population in UK > or =20% of northwest European (wildfowl), East Atlantic Flyway (waders) or European (others) non-breeding populations in UK
Green list	No identified threat to the population's status

Relevant Policy

National

The Site survey, assessment and recommended mitigation ensure compliance with the following policies, any additional enhancement measures would further comply with these policies:

- **The National Planning Policy Framework (NPPF 2012)**¹⁵ sets out how the planning system should protect and enhance nature conservation interests. Section 11 is concerned with conserving and enhancing the natural environment Opportunities to enhance biodiversity are also encouraged.
- **The Natural Environment and Rural Communities (NERC) Act 2006**¹⁶ places a duty upon public bodies to consider Section 41 lists flora, fauna and habitats (previously UK BAP habitats and species) as a material consideration in planning and to consider enhancement of biodiversity.
- **Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services**¹⁷ includes a list of Habitats of Principal Importance in England (HPIEs) and Species of Principal Importance in England (SPIEs). These were previously included as Priority Habitats and Priority Species in the UK BAP.

London

- **London Invasive Species Initiative (LISI)**¹⁸: Managed by the London Biodiversity Partnership, LISI lists non-native invasive species that should be controlled in London. Species relevant to the Scheme include Japanese Knotweed and Butterfly-bush.
- **London Biodiversity Action Plan (BAP)**¹⁹: Managed by the London Biodiversity Partnership (2006), the London BAP sets out priority habitats and species for the city. London BAP habitats relevant to the Scheme include reed beds, standing water and wasteland.
- **The London Plan (2011) Strategic Policy 7.19 Biodiversity and Access to Nature and Policy 7.21 Trees and woodlands) (updated with the Minor Alterations to the London Plan 2016)**²⁰: Regional planning policy for London is presented in the London Plan: Spatial Development Strategy for Greater London. It contains various policies with regard to nature conservation in London, which include commitments to protect, enhance, create, promote, expand and manage the extent and quality of green infrastructure and biodiversity and to increase access to nature, the following elements of SP 7 are as follows:
 - **Strategic Policy 7.19 Biodiversity and Access to Nature and Policy:**
 - o A) The Mayor will work with all relevant partners to ensure a proactive approach to the protection, enhancement, creation, promotion and management of biodiversity in support of the Mayor's Biodiversity Strategy.
 - o B) Any proposals promoted or brought forward by the London Plan will not adversely affect the integrity of any European site of nature conservation importance.
 - o C) Development Proposals should:
 - a) wherever possible, make a positive contribution to the protection, enhancement, creation and management of biodiversity
 - b) prioritise assisting in achieving targets in biodiversity action plans (BAPs), set out in Table 7.3, and/or improving access to nature in areas deficient in accessible wildlife sites
 - c) not adversely affect the integrity of European sites and be resisted where they have significant adverse impact on European or nationally designated sites or on the population or conservation status of a protected species or a priority species or habitat identified in a UK, London or appropriate regional BAP or borough BAP.
 - o D) On Sites of Importance for Nature Conservation development proposals should:

¹⁵ Anon (2012) The National Planning Policy Framework HMSO, London

¹⁶ Anon (2006) The Natural Environment and Rural Communities Act HMSO, London

¹⁷ Department for Environment, Food and Rural Affairs (2011) *Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services*

¹⁸ London Invasive Species Plan (2012). Legislative and Information Exchange Framework. [online] Available at <http://www.londonisi.org.uk/tackling-inns/lisp/>. [Available June 2016]

¹⁹ City of London (2009). *London Biodiversity Action Plan 2010 – 2015*

²⁰ Greater London Authority (2011) *The London Plan Strategic Policy 7.19 Biodiversity and Access to Nature and Policy 7.21 Trees and woodlands) (updated with the Minor Alterations to the London Plan 2016)*

- a) give the highest protection to sites with existing or proposed international designations¹ (SACs, SPAs, Ramsar sites) and national designations² (SSSIs, NNRs) in line with the relevant EU and UK guidance and regulations
 - b) give strong protection to sites of metropolitan importance for nature conservation (SMIs). These are sites jointly identified by the Mayor and boroughs as having strategic nature conservation importance
 - c) give sites of borough and local importance for nature conservation the level of protection commensurate with their importance.
- o E) When considering proposals that would affect directly, indirectly or cumulatively a site of recognised nature conservation interest, the following hierarchy will apply:
 - 1 avoid adverse impact to the biodiversity interest
 - 2 minimize impact and seek mitigation
 - 3 only in exceptional cases where the benefits of the proposal clearly outweigh the biodiversity impacts, seek appropriate compensation.
- o F) In their LDFs, Boroughs should:
 - a use the procedures in the Mayor's Biodiversity Strategy to identify and secure the appropriate management of sites of borough and local importance for nature conservation in consultation with the London Wildlife Sites Board.
 - b identify areas deficient in accessible wildlife sites and seek opportunities to address them
 - c include policies and proposals for the protection of protected/priority species and habitats and the enhancement of their populations and their extent via appropriate BAP targets
 - d ensure sites of European or National Nature Conservation Importance are clearly identified
 - e identify and protect and enhance corridors of movement, such as green corridors, that are of strategic importance in enabling species to colonise, re-colonise and move between sites.
- **Strategic Policy 7.21 Trees and Woodlands:**
 - o A) Trees and woodlands should be protected, maintained and enhanced, following the guidance of the London Tree and Woodland Framework (or any successor strategy). In collaboration with the Forestry Commission the Mayor has produced supplementary guidance on Tree Strategies to guide each borough's production of a Tree Strategy covering the audit, protection, planting and management of trees and woodland. This should be linked to a green infrastructure strategy.
 - o B) Existing trees of value should be retained and any loss as the result of development should be replaced following the principle of 'right place, right tree. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species.
 - o C) Boroughs should follow the advice of paragraph 118 of the NPPF to protect 'veteran' trees and ancient woodland where these are not already part of a protected site.
 - o D) Boroughs should develop appropriate policies to implement their borough tree strategy.
- **The London Plan (2011) , Housing Supplementary Planning Guidance (March 2016)²¹:** With regards to housing, recently a dedicated supplementary planning guidance has been produced, the relevant elements of which are presented below
 - Standard 40 and Policy 7.19 "Biodiversity and access to nature promotes a proactive approach to the protection, promotion and management of biodiversity across the capital" and that "Proposals for development should give full consideration to their direct and indirect effects on ecology. Ecological improvements can be achieved as part of Sustainable Urban Drainage Systems and incorporated into green or brown roofs, green walls and soft landscaping."

²¹ Greater London Authority (2016) *London Plan 2016 Implementation Housing Supplementary Planning Guidance adopted in March 2016*

- Policies 7.19 and 7.21 “supporting biodiversity, protecting London’s trees, ‘green corridors and networks”.
- Development proposals should also enhance provision of green infrastructure in the public realm, helping to mitigate and adapt to climate change (Policy 5.10 Urban Greening), extend tree cover (Policy 7.21), improve biodiversity (Policy 7.19).
- Public, communal and private open spaces should be protected and enhanced, and where possible new open spaces should be created. This is supported by Policy 2.18 Green Infrastructure, Policy 7.18 Protecting open space, Policy 7.19 Biodiversity and Policy 7.21 Trees and Woodlands.
- **The Mayor’s Biodiversity Strategy (2002)**²²: Connecting with London’s Nature: The Mayor’s Biodiversity Strategy provides a statutory framework for the delivery of biodiversity policies in London. It seeks to ensure that there is no overall loss of wildlife habitats in London.
- **The London Plan (2011), Sustainable Design and Construction Supplementary Planning Guidance (April 2014)**²³:
 - Mayor’s Priority - Developments should contribute to the Mayor’s target to increase tree cover across London by 5% by 2025.
 - Mayor’s Priority - There is no net loss in the quality and quantity of biodiversity.
 - Mayor’s Priority - Developers make a contribution to biodiversity on their development site.
 - Mayor’s Priority - Any loss of a tree/s resulting from development should be replaced with an appropriate tree or group of trees for the location, with the aim of providing the same canopy cover as that provided by the original tree/s.

Local

- **London Borough of Brent Core Strategy**²⁴
 - CP 18: Protection and Enhancement of Open Space, Sports and Biodiversity Open space (including waterways) of local value will be protected from inappropriate development and will be preserved for the benefit, enjoyment, health and well being of Brent’s residents, visitors and wildlife. Support will be given to the enhancement and management of open space for recreational, sporting and amenity use and the improvement of both open space and the built environment for biodiversity and nature conservation. New or improved provision (including improved access) will be sought in areas of deficiency and where additional pressure on open space and outdoor play facilities would be created. This includes new parks in Church End and Wembley and improvements to existing open spaces in Alperton, South Kilburn and Burnt Oak/Colindale growth areas. Priorities for sports facilities improvements have been identified in the council’s Planning for Sports and Active Recreation Facilities Strategy. Initially, a site for a new third community swimming pool will be identified to serve the north of the borough. Contributions will be sought from development to help provide these facilities. The council will also seek a site for a fourth pool.
 - CP 19: Brent Strategic Climate Change Mitigation and Adaptation Measures All development should contribute towards achieving sustainable development, including climate change mitigation and adaptation. Major proposals (10 or more dwellings and 1,000m² or more floorspace) and proposals for sensitive uses (education, health and housing) in Air Quality Management Areas, should submit a Sustainability Statement demonstrating, at the design stage, how sustainable design and construction measures are used to mitigate and adapt to climate change over the intended lifetime of a development. This includes the application of the London Plan energy hierarchy and meeting or exceeding the London Plan targets. In all areas a minimum rating of Code Level 3 should be achieved. For non-residential, a rating of BREEAM ‘Excellent’ is expected, or the equivalent on any ‘Code for Sustainable Commercial Schemes’ (when forthcoming). Within the growth areas, major proposals are required to achieve a minimum rating of Code for Sustainable Homes level 4 rating, subject to scheme feasibility. Within the Wembley growth area, proposals will be expected (relative to their scale) to connect to, provide or contribute towards Combined Heat and Power plant, unless it can be demonstrated that such provision is not financially feasible.

²² Greater London Authority (2002), *Connecting with Nature: The Mayor’s Biodiversity Strategy adopted in 2002*

²³ Greater London Authority (2011), *The London Plan Sustainable Design and Construction Supplementary Planning Guidance adopted in April 2014*

²⁴ <https://www.brent.gov.uk/media/16404211/core-strategy-small.pdf>

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TFL_PSF_1804 SITE INVESTIGATIONS: SMALL SITES INITIATIVE LAND AT AYLESBURY STREET, BRENT, NW10 0LU

Site Ref. 1804

Geotechnical and Geo-Environmental Desk Study

OCTOBER 2017

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Land at Aylesbury Street, Brent, NW10 0LU

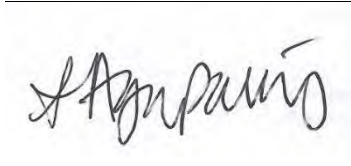
Geotechnical and Geo-Environmental Desk Study

Author Gemma Cauchi

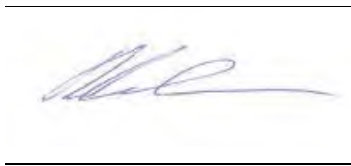


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Checker Tukhanh Agapakis



Approver Tony Windsor



Report No 901-UA009686-UP32R-02

Date OCTOBER 2017

VERSION CONTROL

Version	Date	Author	Changes
01	June 2017	GC	1 st issue
02	October 2017		Final Issue

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1 Introduction

1.1 Terms of Reference

Arcadis Consulting (UK) Limited (Arcadis) has been commissioned by Transport for London (TfL) 'the Client' to undertake a number of technical surveys for a site at Land at Aylesbury Street, Brent ('the Site') in West London.

TfL is aiming to divest a number of small sites to enable prospective regeneration. The objective of the Small Sites Initiative is to provide robust and pragmatic advice that sensibly de-risks each of the sites such that unreasonable "abnormal" development costs are not included by developers.

The objective of this review is to identify potential development constraints due to geotechnical and geo-environmental conditions on Site based on the findings of this desk study.

The objective 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 TfL (Ref. 1).

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) 1:50 000 scale geological map comprising the Site (Ref. 1);
- Historical borehole records available through BGS website and viewed (Ref. 1);
- Historical Ordnance Survey maps (included in Appendix A);
- Groundsure GeoInsight Report (GeoInsight and EnviroInsight) (Appendix B);
- The Environment Agency (EA) What's in Your Backyard Website (Ref. 2);
- Google maps (Ref. 3);
- Zetica Regional Unexploded Ordnance Map (Appendix C); and
- National Archives (www.bombsight.org – Ref. 4).

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 several 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	Aylesbury Street, Brent, NW10 0LU
National Grid Reference	520900, 186187
Approximate Site Area	The Site is irregular in shape covers an area of approximately 0.12 hectares.
Description of Site	The Site comprises a highway verge covered in a mixture of turf, trees and shrubs.
Topography	Slightly slopes down towards the south-east.
Surrounding Area	The Site lies in a predominantly residential area of Brent, West London. The A4088 road borders the north-eastern boundary of the Site. West Way is located to the south-east, there are residential properties to the south and south-west and Aylesbury Street is present to the west and north-west.

2.2 Site History

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

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

Table 2.2 History of Site and Surrounding Area

Date	Historical Development (Site and Surrounding Area)
1865 & 1875	The earliest historical maps show the Site is an undeveloped field, located approximately 40m south of a road (later shown as Neasden Lane). The Site is located approximately 500m west of Neasden and much of the surrounding area is formed of undeveloped land with occasional ponds noted. There is a watercourse (later identified as a canal feeder) and the River Brent approximately 200m and 300m north-west of the Site, respectively. They appear to flow into/out of the Brent Reservoir which is located (at its closest) approximately 500m north-east of the Site.
1895 & 1896	No significant changes are noted within the Site or immediate surrounding area which remains largely unchanged and undeveloped. A new development of terraced housing and a school was constructed in the area between the River Brent and within approximately 100m of the Site. A Gravel Pit Farm had developed approximately 200m north of the Site. Further away from the site, a gasometer, the Metropolitan Railway Works and railway line orientated east to west (approximately 500m to the south/south-west), a smithy (450m west) and a golf course (approximately 500m north-east) had developed.

Date	Historical Development (Site and Surrounding Area)
1914 & 1920	The map shows four gardens in the western half of the Site associated with houses constructed on Neasden Lane to the north. The eastern half of the Site remained undeveloped. A small pond is mapped approximately 20m south-east of the Site. The area of housing to the west had expanded to the western boundary of the Site where terraced housing had been constructed on Aylesbury Street. A shooting/rifle range had developed approximately 250m north-east of the Site, on the northern side of Neasden Lane. Further away, the gasometer had been redeveloped into a large industrial sized unit / works with a sewage works and reservoir (300-550m south-west) and approximately 400m south a carriage sheds had been added.
1938	The map shows a further two houses and gardens had developed in the eastern part of the Site although there were no changes in the west. The map shows the expansion of residential (mostly terraced) properties within a 250m radius of the Site. There is a new school approximately 200m north-east of the Site and potentially a second larger school / warehouse (with a chimney) approximately 200m north of the Site. The railway had also expanded with additional tracks.
1954-55	No significant changes are noted within the Site or immediate surrounding area which remains residential however, there are allotment gardens approximately 100m north of the Site, Braemar glass works (approximately 150m north), a large garage (approximately 200m north-west) and a large book warehouse (approximately 250m north) from the site. The school (now referred to as Wykeham Primary School 200m north-east) had expanded. Further away, immediately north of the garage are a coachbuilder, heating equipment works a further garage and an engineering works.
1966 & 1967	No significant changes are noted within the Site or immediate area. The Allotment gardens north of the site have been developed in to three blocks of flats and a second book warehouse had developed approximately 180m north. Further away, the carriage works and railway works (400-500m south) had been replaced by a larger Neasden depot and the sewage works (approximately 500m south-west) had also been replaced with a playing field.
1973 - 1984	The 1973-6 maps show the houses within the Site and adjacent the northern side of the Site had been demolished and a new road (A4088) constructed with a roundabout junction beyond. There is a footbridge over the A4088 and Neasden Lane approximately 20m north of the site. Much of the surrounding area remains unchanged however, the glass works is referred to as a works and the garages, works and engineering works remain however the garages closest to the Site appear to have been redeveloped (later identified as a fast food outlet). Further away, the railway works (adjacent to the former sewage works) approximately 450m south-west of the site was replaced with a school.
1991 & 1994	No significant changes are noted within the Site or immediate area. The garage and coachbuilders to the north-east appear to have been redeveloped (possibly into commercial / residential) however there is no further information provided on the plan.

2.3 Unexploded Ordnance

With reference to the Zetica Regional Unexploded Bomb Risk of West London (Appendix C), the Site is designated as lying within an area denoted as “low” bomb risk area. Based on the historical mapping the Site may have been affected by Second World War bombing.

Further reference has been made to the National Archives (www.bombsight.org – Ref. 4). This does not record bombs having been dropped within the Site, the nearest was recorded approximately 400m east of the Site near Chartley Avenue where a high explosive bomb is recorded as having been dropped.

3 Physical and Environmental Setting

3.1 Published Geology, Hydrogeology and Hydrology

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

Table 3.1 Information Regarding Geology, Hydrogeology and Hydrology

Geology / Aquifer Status	Superficial Deposit: None mapped within the Site Solid Geology: London Clay Formation which is classified as an Unproductive Strata. In addition, geological faults are not recorded within 500m of the Site
BGS Boreholes (within 100m of the site)	There are no BGS boreholes recorded within 250m of the Site
Within a Source Protection Zone	Not recorded within 500m of the Site boundary
Licensed Groundwater Abstraction Points	Not recorded within 500m of the Site boundary
Surface Water Feature	River Brent and a secondary river (canal feeder) approximately 170m and 270m west, respectively, both are culverted below the railway line. In addition, Brent Reservoir is located approximately 500m north of the Site.
Likely Groundwater Flow Direction	Inferred to flow westerly towards the River Brent.

3.2 Environmental Public Registers

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

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

Table 3.2. Environmental Data

Data type	Description	Distance (m) and Direction
Radon	The site is not in a radon affected area, as less than 1% of properties are above the Action Level.	N/A
Landfill sites	None identified within 250m of the site.	N/A
Current Industrial Data	10 entries are recorded within 250m of the site, relating to general commercial uses comprising foodstuffs, industrial products (signage and electrical suppliers), infrastructure (3 electricity substations) and facilities, transport, storage and delivery	114-242m north, east, south and west
Part A(2) and Part B Activities	Petrol station (Shell on the North Circular) Dry Cleaners	443m south-east 447m north-west

The site has been subject to redevelopment therefore it is considered likely that Made Ground is present within the Site. Made Ground associated with redevelopments adjacent to the Site are also anticipated. Off-site contaminative land uses are limited due to the largely residential area of the surrounding area. The petrol station and dry cleaners are not considered to be significant given their distance from the Site.

4 Preliminary Conceptual Site Model

Geo-environmental assessments are required in accordance with current regulatory guidance (CIRIA C552, Ref. 5) and CLR11 (Ref. 6) to consider the significance of potential contamination in terms of plausible contaminant source-pathway-receptor contaminant linkages. As part of this process, it is necessary to develop a conceptual model of these potential contaminant linkages by identifying the potential contamination sources, sensitive receptors and any potential exposure pathways. A risk assessment is then undertaken to determine the likelihood and significance of these potentially complete contaminant linkages.

4.1 Potential Contaminant Sources

Based on the information obtained from historical and environmental research, there are a few potential contaminative sources identified on and off site. These are detailed in Table 4.1 below.

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

Table 4.1: Potential Sources of Contamination on and off Site

Source	Potential Contaminants
On Site	
Made Ground from phases of demolition and redevelopment	Metals, polycyclic aromatic hydrocarbon (PAH) compounds, hydrocarbons, asbestos, ground gas and vapours
London Clay	Sulphates
Off Site	
Made Ground associated with demolition and redevelopment adjacent to the Site	Metals, PAHs, TPHs, asbestos, ground gas and vapours
Historical industrial activities including glass works, garages, coach and carriage works, gasometer, works, shooting/rifle range within 250m	Metals, PAHs, TPHs, asbestos, ground gas and vapours
Current commercial / industrial activities	

4.2 Potential Receptors

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

4.2.1 Human Health

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

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

4.2.2 Controlled Waters

- Surface water – River Brent and canal feeder

It is also noted that the underlying London Clay is classified as an unproductive strata, the Site is not within a Groundwater Source Protection Zone and there are no groundwater abstraction points within 500m.

4.2.3 Buildings

- Underground/structures/services (water pipes, concrete, foundations) including sulphate attack.
- 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 Contaminant Pathways

Receptor	Description
Human Health (residents, visitors and maintenance workers)	Accidental ingestion of contaminants within soil, water and dust. Inhalation of dust, vapours and ground gases. Dermal contact with contaminants within soil, water and dust. Ingestion of contaminated vegetables and soil attached to vegetables.
Controlled Waters – River Brent and canal feeder (170-270m west)	Surface run-off and lateral migration
Buildings	Direct contact of building services or foundations with contaminants in the soil and Made Ground. Gas and /or vapour accumulation in confined and poorly ventilated spaces.

4.4 Preliminary Qualitative Risk Assessment

Primary sources of on-site contamination are considered to be associated with Made Ground (from demolition / redevelopment). Similarly, off-site sources in the vicinity of the Site are likely to be limited to Made Ground associated with demolition and redevelopments given the largely residential area of the surrounding area. The historical review has also revealed that a glass works, garages, coachbuilders, shooting/rifle range and works were present between 150-250m north-west of the Site. The Site is directly underlain by London Clay which is likely to reduce the mobilisation of contaminants onto the Site however, there remains a risk that contamination associated with these uses may have migrated onto the Site unless it can be confirmed through a ground investigation that these are located downgradient to the Site or the absence of pollutant linkages.

Within the Site, the Made Ground is likely to be present which could be a source of contamination. Human exposure could occur in gardens or soft landscaped areas, especially if soils are disturbed by activities such as digging/gardening. Ground gas / vapours could be generated by the Made Ground which could accumulate in confined spaces and poses potential risk to future site users.

Based on the historic use of the Site and surrounding area, gross contamination capable of impacting the built environment is unlikely to be significant.

The London Clay is a source of naturally occurring sulphates which could impact buried concrete.

5 Waste Management and Potential Development Constraints

5.1 Waste Management

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

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

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

5.2 Potential Development Constraints

The historical review reveals that developments within the Site and surrounding area are generally limited to the largely residential setting of the Site. Within the Site, properties were constructed in the east and these together with adjacent properties were later demolished to facilitate the construction of the A4088 road and roundabout. Off-site sources have been recorded (such as a glass works, garages, engineering works) however these sources may potentially be located down-gradient of the site and given the presence of the underlying London Clay which is relatively impermeable, the potential for gross contamination at the Site is not considered likely (which would be confirmed during an investigation).

From experience, the potential need to remediation to be undertaken should be limited given the Site has not previously been used for industrial or commercial use.

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

It has been assumed that:

- Buried obstructions (foundations and services) associated with the former buildings may be present and may require removal prior to redevelopment. Buried services may require removal, protection, diversion or chasing and plugging at the boundary.
- Gross contamination is not anticipated however, provisions should be allowed for the potential for unforeseen contamination (this can be a planning requirement);
- Asbestos, if encountered, will require testing and further assessment.
- Gas resistant membrane and contaminant resistant water supply pipes may be required but this would depend on the findings of the ground investigation;
- Provision of clean cover system in garden areas and public open space may be required subject to the findings of an investigation. Where possible, the Topsoil should be retained and incorporated within the redevelopment;
- Design specific ground investigation and consultancy advice to support planning obligations will be required.
- Reference should be made to the Arcadis Flood Risk Survey relating to the requirements for flood risk assessment.

6 Geotechnical Considerations

Potential founding solutions will be dependent on the thickness of Made Ground the geotechnical properties of the natural deposits. The Made Ground is generally considered unsuitable for foundations due to its variable composition and its potential for high total and differential settlement. Below ground structures and services associated with previous structures may be present and will require removal prior to redevelopment. Ground disturbance caused by the removal of historical structures may increase the thickness of Made Ground already present beneath the site locally. At this stage, conventional shallow foundations may not be appropriate for the site but this would depend on the thickness of the Made Ground and the underlying ground conditions. Deeper trench fill may be possible although the maximum practical extent of this type of foundation is in the region of 2-2.5m. In areas of deeper Made Ground, or where deeper soft / loose bands are recorded either piling or ground treatment e.g. vibro-stone columns should provide a suitable foundation solution. The advice of a specialist ground improvement contractor should be sought to verify the suitability of the ground for treatment.

Consideration will need to be given to the presence of existing trees that are removed, retained or the planting of future trees when considering the depths of the foundations (Ref. 8). In addition, the risks associated with the London Clay include high plasticity clay which are subject to shrinkage and swelling, sulphate attack and the potential for relict shear slip surfaces should considered during the investigation / design.

7 Conclusions and Recommendations

The Site appears to be a vacant parcel of land covered in grass, trees and scrub vegetation. The A4088 road borders the north-eastern boundary of the Site. West Way is located to the south-east, there are residential properties to the south and south-west and Aylesbury Street is present to the west and north-west. The Site is located within a largely residential area of Brent, West London. The Site was most recently occupied by gardens with residential properties in the east.

An intrusive site investigation has not been undertaken at this stage, however Made Ground is anticipated to be present, based upon the historical review.

7.1 Design Considerations

Potential risks to human health, controlled waters and the built environment have been identified from potential on site Made Ground and ground gas / vapours and there are possible risks to human health from the off-site sources (Made Ground). It is recommended that an intrusive site investigation should be undertaken prior to redevelopment to quantify these risks. This should include for chemical testing of soils, groundwater monitoring and gas monitoring in accordance with the recommendations in CIRIA C665 (Ref. 6) and CLR 11 (Ref. 7) and consideration of shrinkage and swelling, sulphate attack and the potential for relict shear slip surfaces.

7.2 Construction Considerations

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

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

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

A foundation works risk assessment may be required to assess the risks to the underlying if foundations or piling which penetrate the base of Made Ground are proposed and contamination is identified.

The site is in an area where 'low' risk of encountering unexploded ordnance is present and further assessment is not considered necessary.

8 References

1. British Geological Survey (BGS) online
<http://mapapps.bgs.ac.uk/geologyofbritain/home.html?location=neasden&gobBtn=go>
- Accessed June 2017
2. Environmental Agency (EA) What's in my backyard? http://maps.environment-agency.gov.uk/wiyby/wiybyController?value=NW10+0LU&lang=_e&ep=map&topic=waste&layerGroups=default&scale=9&textonly=off&submit.x=0&submit.y=0 Accessed June 2017
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<https://www.google.co.uk/maps/place/West+Way,+London+NW10+0LU/@51.5738581,-0.3677284,21621m/data=!3m1!1e3!4m5!3m4!1s0x4876110b6a9925b3:0xe2fe5d530b6a591e!8m2!3d51.5608819!4d-0.2576943>
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6. DEFRA and the Environment Agency, 2004. Model Procedures for the Management of Land Contamination, Guidelines for Environmental Risk Assessment and Management, Contaminated Land Report 11 (CLR11).
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APPENDIX A

Historical Maps

Site Details:

Aylesbury Street (Trewin), Brent
, NW10 0LU

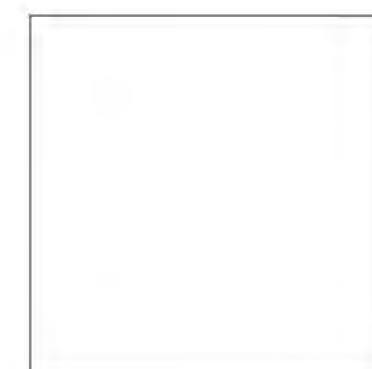
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Grid Ref: 520894, 186190

Map Name: County Series

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Scale: 1:2,500

Printed at: 1:2,500



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

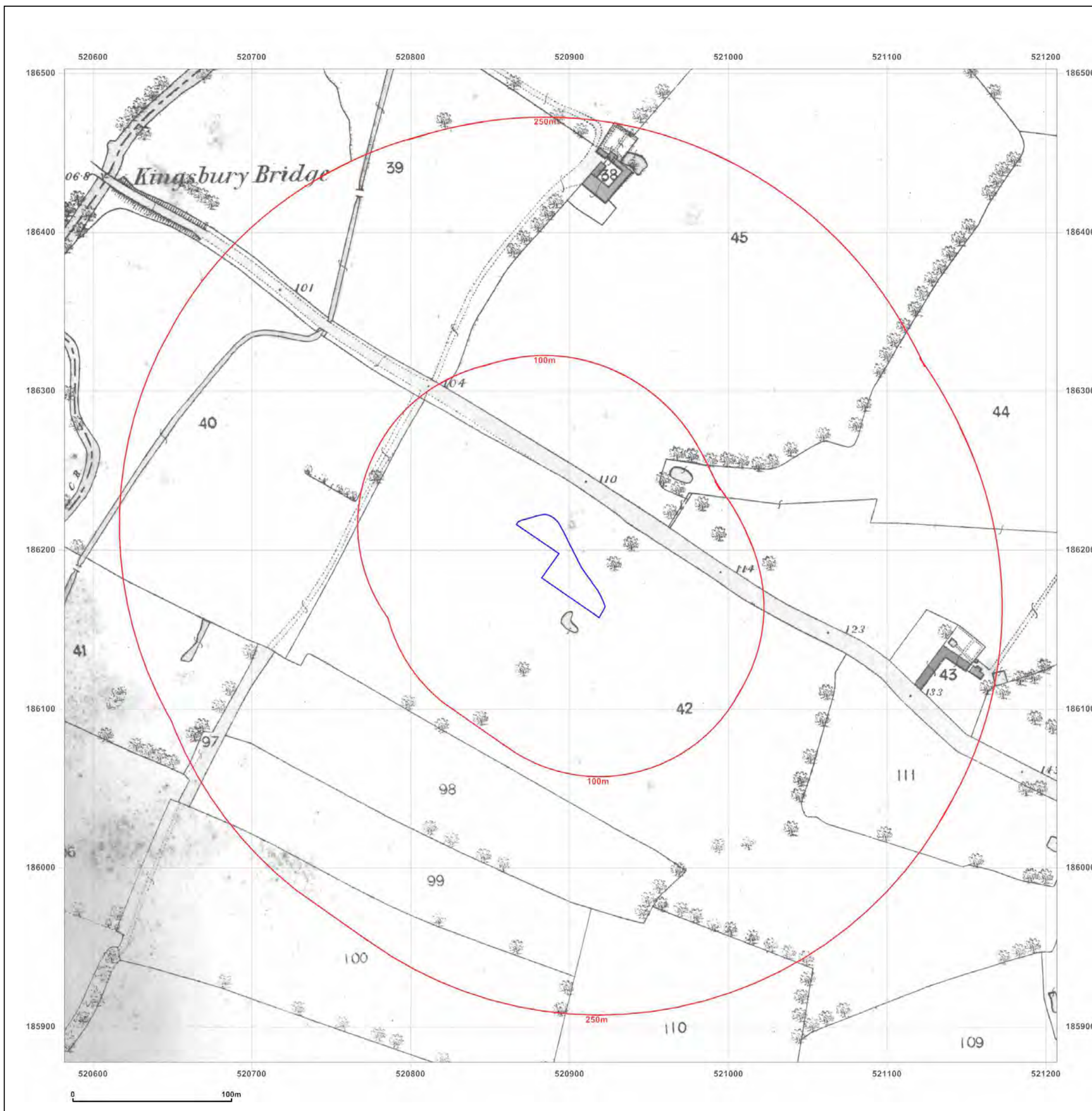


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Site Details:

Aylesbury Street (Trewin), Brent
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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: County Series

Map date: 1896

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1891
Revised 1894
Edition 1896
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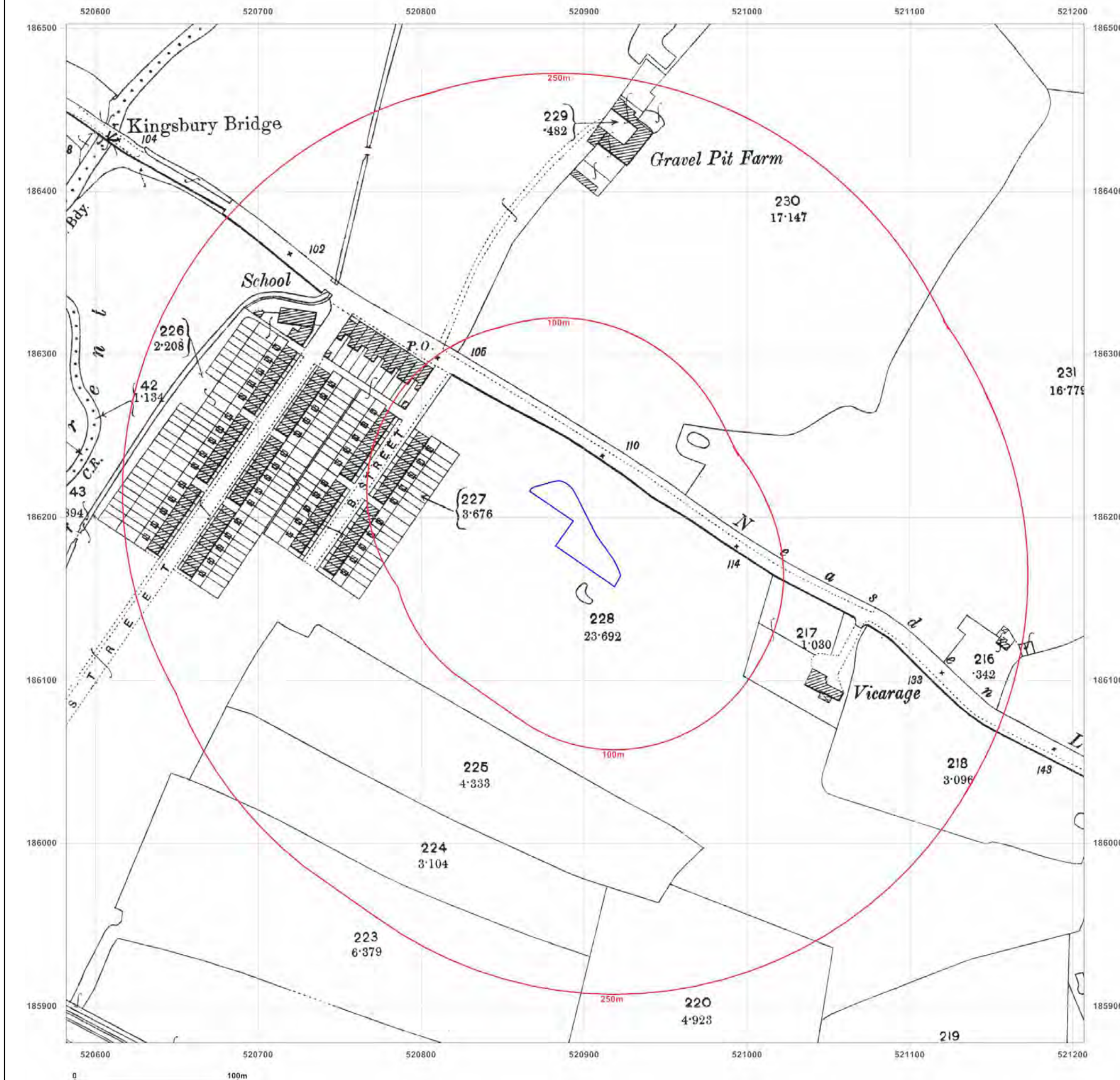


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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: County Series

Map date: 1914

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1884
Revised 1912
Edition 1914
Copyright N/A
Levelled 1912

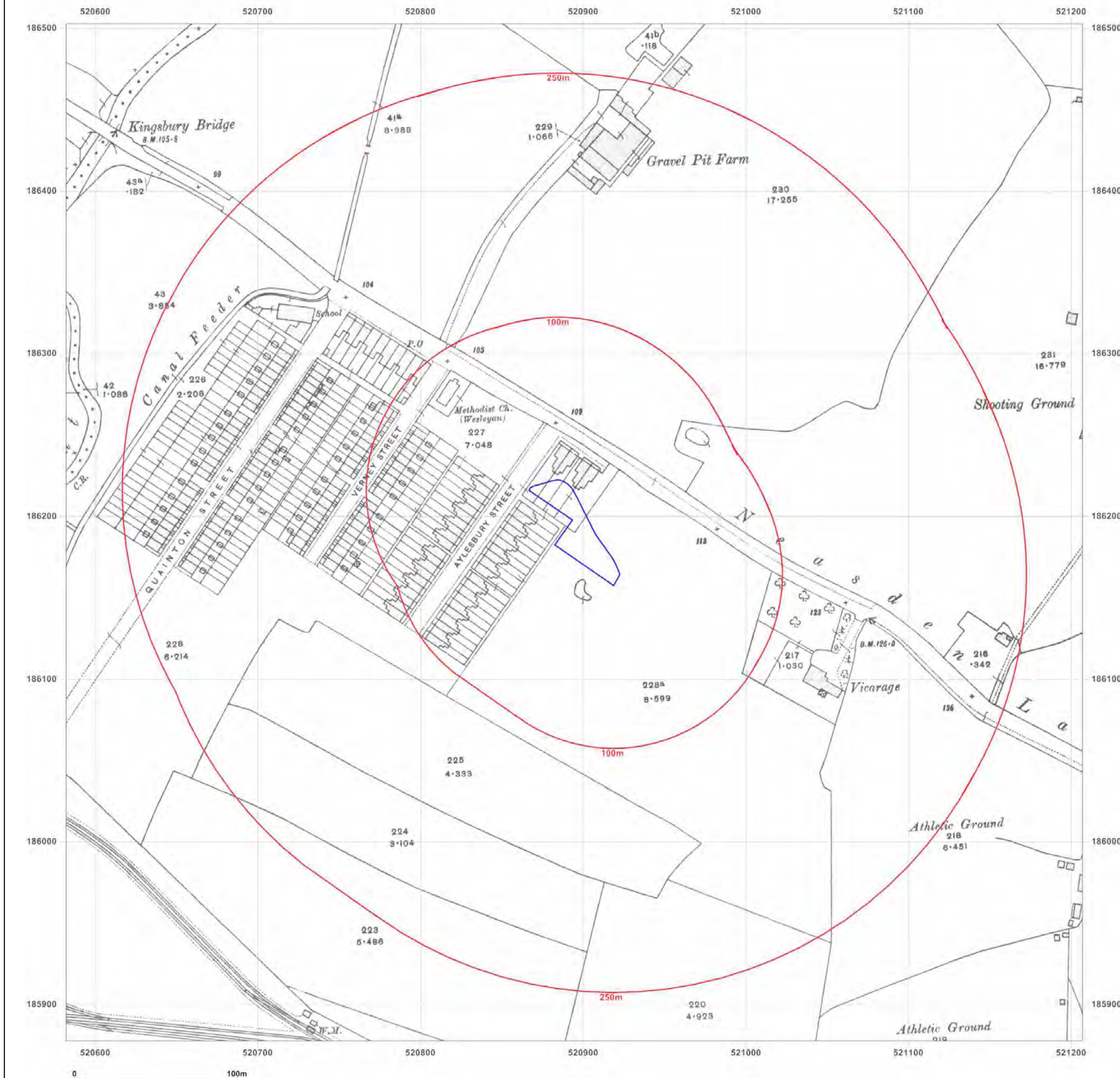


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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: County Series

Map date: 1938

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1864
Revised 1936
Edition 1938
Copyright 1938
Levelled 1932



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Site Details:

Aylesbury Street (Trewin), Brent
, NW10 0LU

Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1954-1955

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed 1955
Revised 1955
Edition N/A
Copyright N/A
Levelled 1953

Surveyed 1954
Revised 1954
Edition N/A
Copyright N/A
Levelled 1935

Surveyed 1954
Revised 1954
Edition N/A
Copyright N/A
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Site Details:

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, NW10 0LU

Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1954-1955

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1955
Revised 1955
Edition 1956
Copyright N/A
Levelled 1935

Surveyed 1955
Revised 1955
Edition 1956
Copyright N/A
Levelled 1953

Surveyed 1954
Revised 1954
Edition 1955
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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1954-1956

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed 1955
Revised 1955
Edition N/A
Copyright 1956
Levelled 1974

Surveyed 1954
Revised 1954
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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1955-1956

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1955	
Revised 1955	
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Copyright 1956	
Levelled 1971	
Surveyed N/A	
Revised N/A	
Edition N/A	
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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1966

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1966
Revised 1966
Edition N/A
Copyright 1969
Levelled 1956

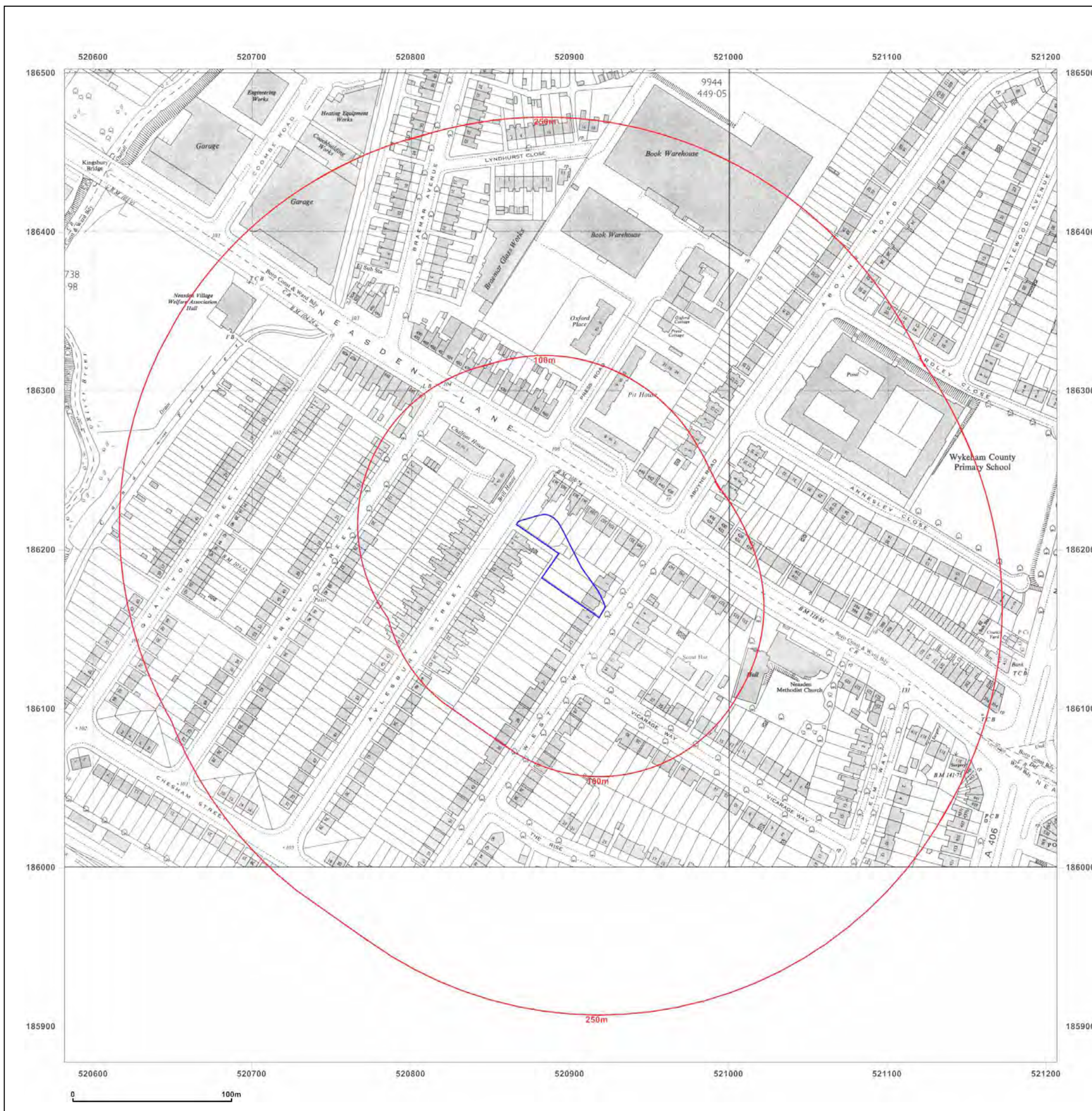


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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1967

Scale: 1:1,250

Printed at: 1:2,000



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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1969

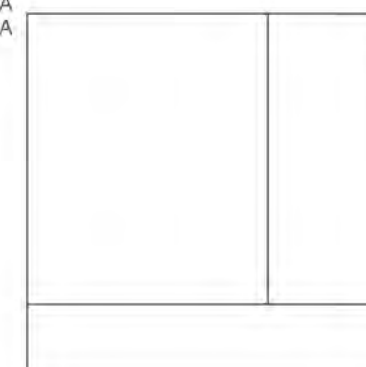
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Printed at: 1:2,500



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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1975-1976

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1955 Revised 1975 Edition 1976 Copyright 1956 Levelled 1974	
Surveyed N/A Revised N/A Edition N/A Copyright 1975 Levelled N/A	
	Surveyed N/A Revised N/A Edition N/A Copyright 1975 Levelled N/A



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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1983

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1986-1987

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1986
Levelled 1956

Surveyed 1975
Revised 1986
Edition N/A
Copyright 1986
Levelled 1975

Surveyed 1975
Revised 1986
Edition N/A
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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1991

Scale: 1:1,250

Printed at: 1:2,000



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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1991

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Revised N/A
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Revised N/A
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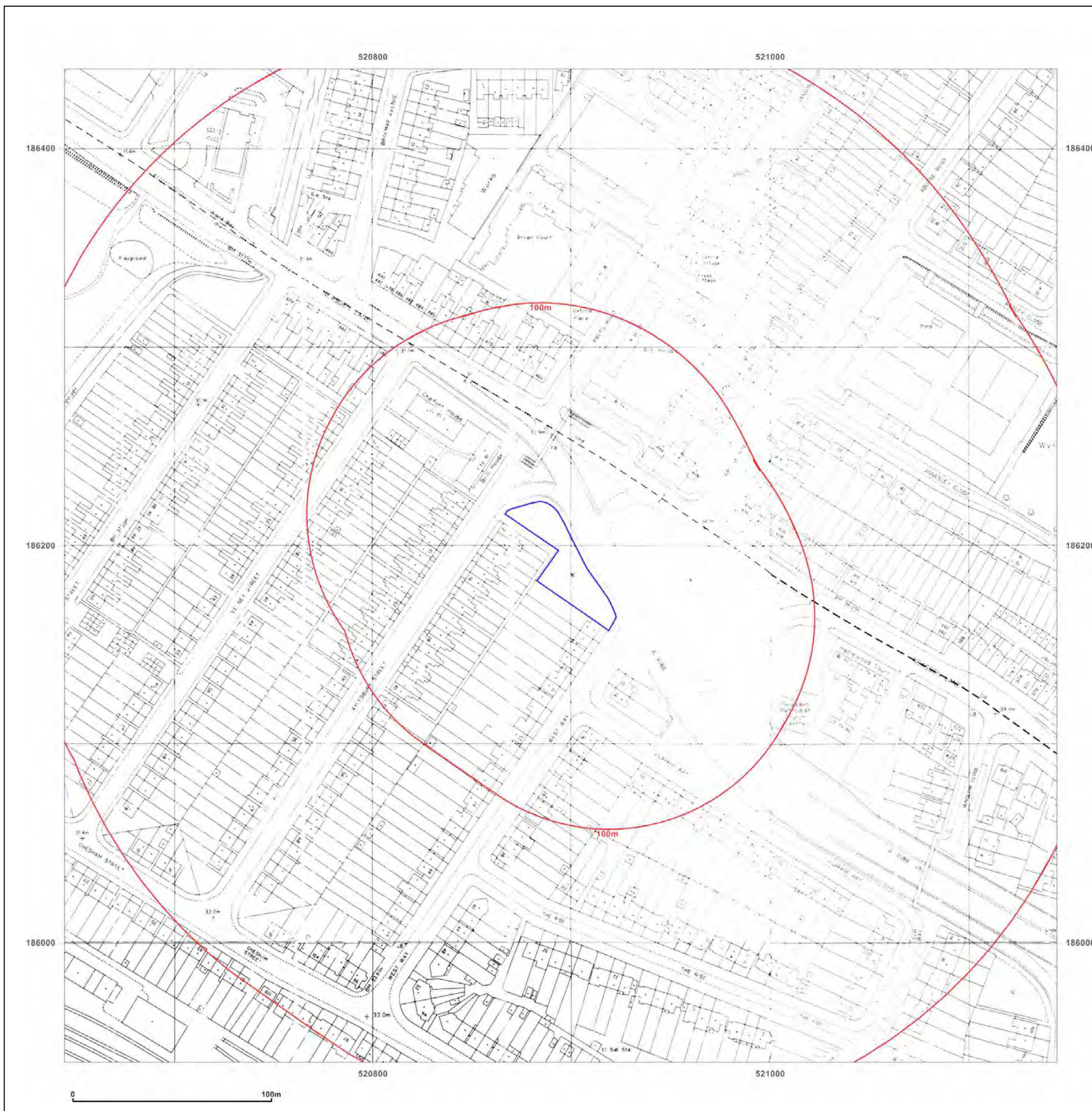


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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1991

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
Copyright 1991
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Revised 1991
Edition N/A
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Revised N/A
Edition N/A
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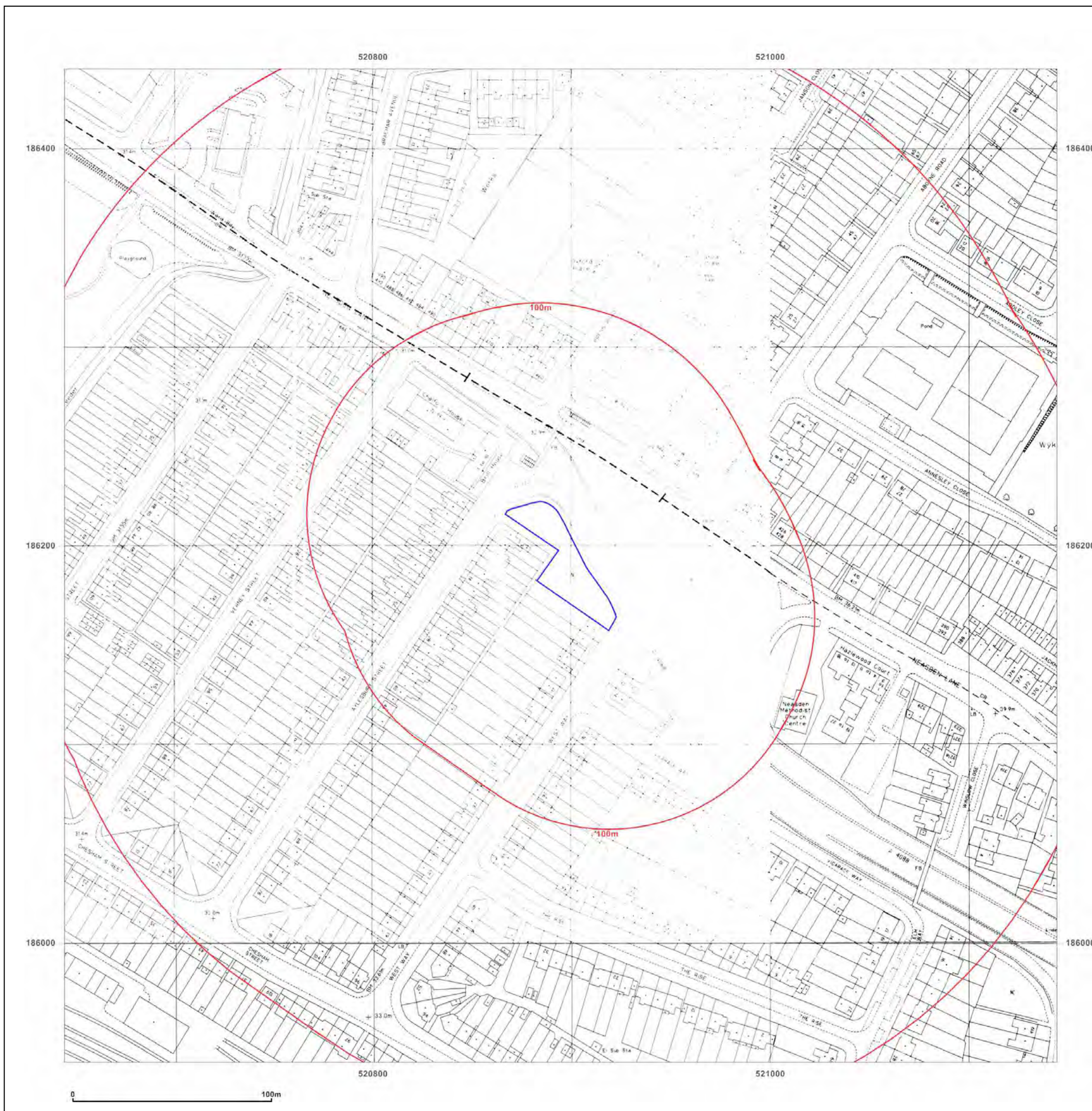


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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1991

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Levelled N/A

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Revised 1991
Edition N/A
Copyright 1991
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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1992

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1992

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 1994

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1994
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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: County Series

Map date: 1873-1874

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1865
Revised N/A
Edition 1873
Copyright N/A
Levelled N/A

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

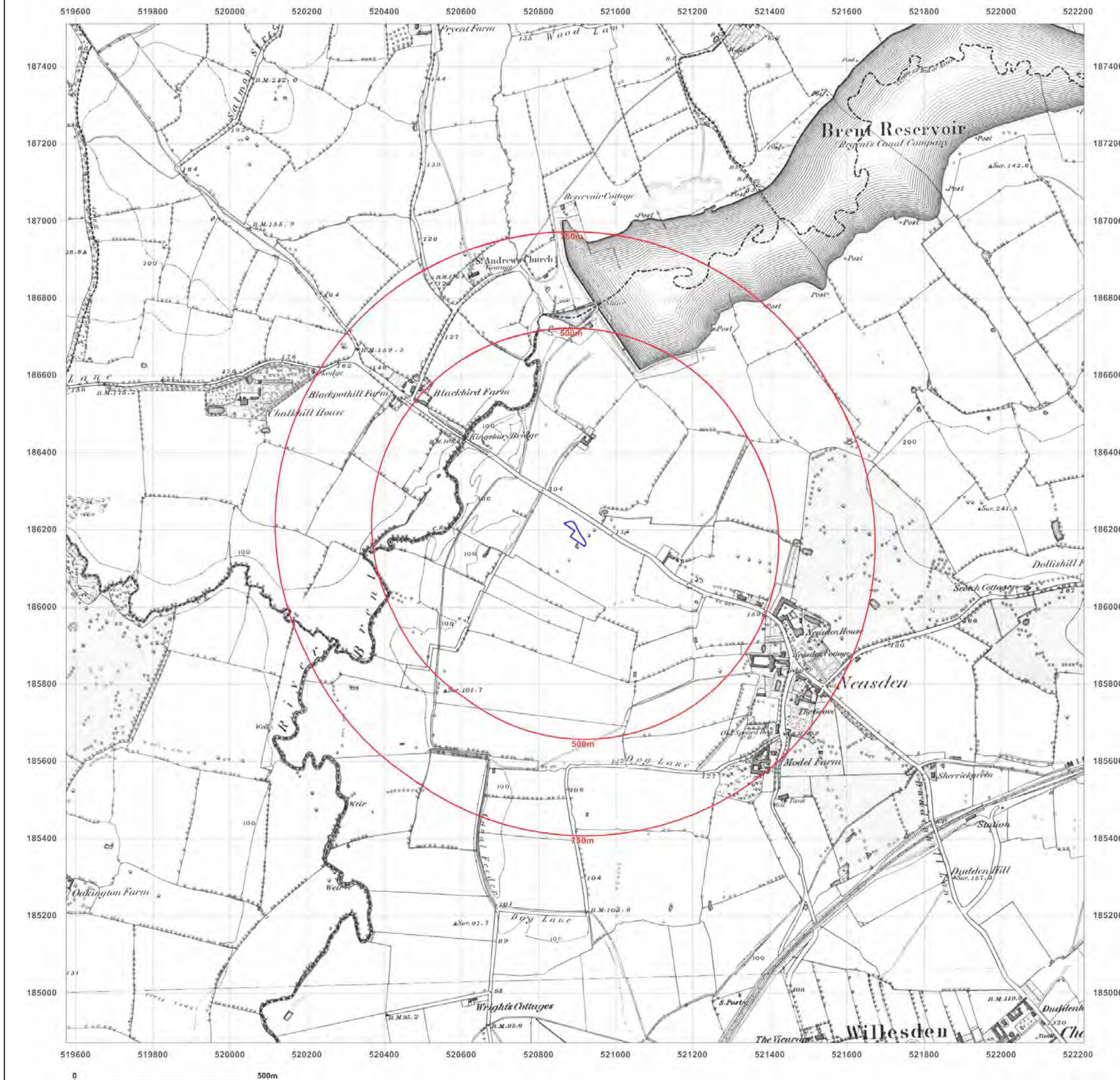


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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: County Series

Map date: 1895

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1865
Revised 1895
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1868
Revised 1895
Edition N/A
Copyright N/A
Levelled N/A

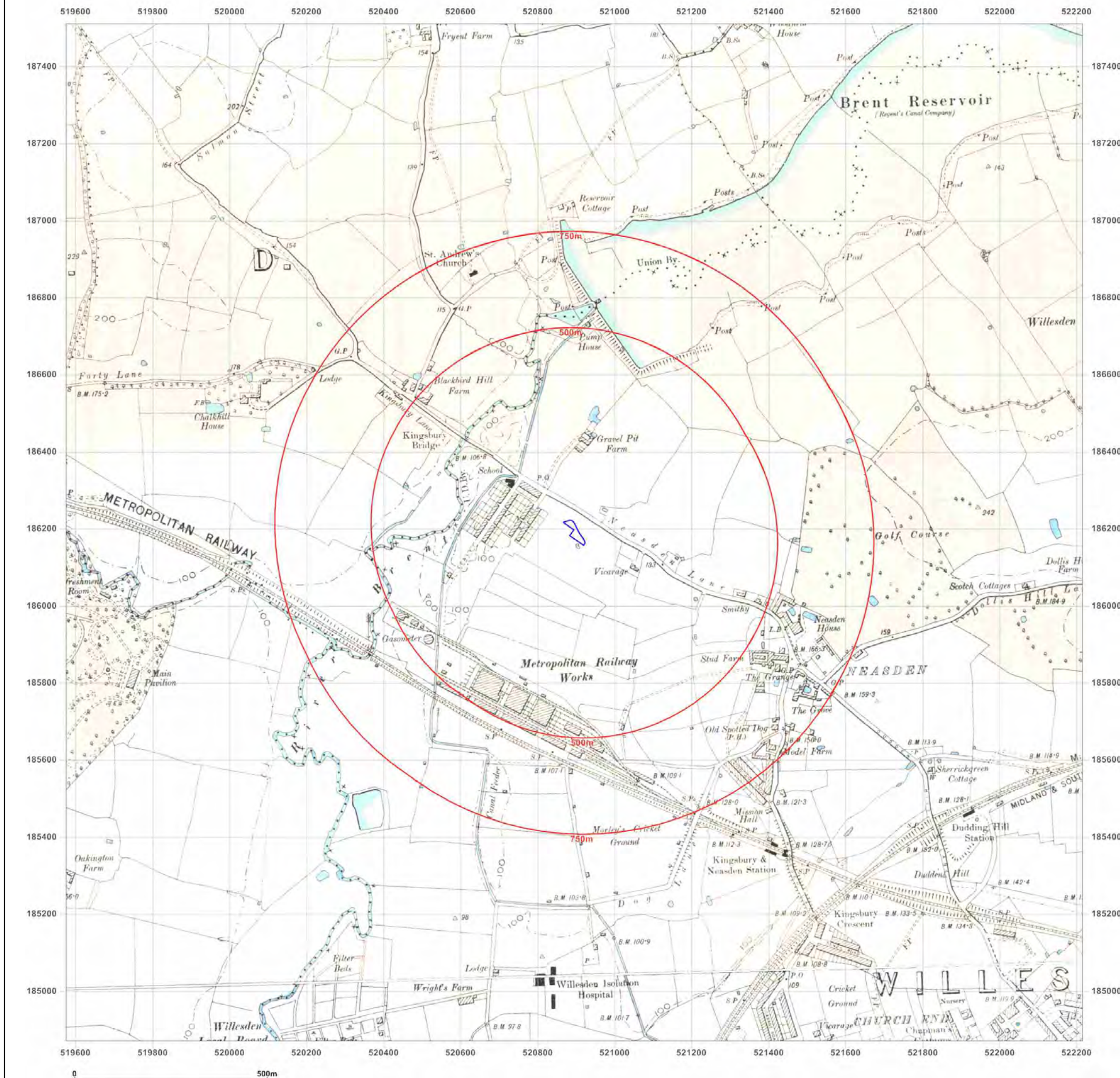


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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: County Series

Map date: 1896

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1864
Revised 1895
Edition 1896
Copyright N/A
Levelled N/A

Surveyed 1864
Revised 1895
Edition 1896
Copyright N/A
Levelled N/A

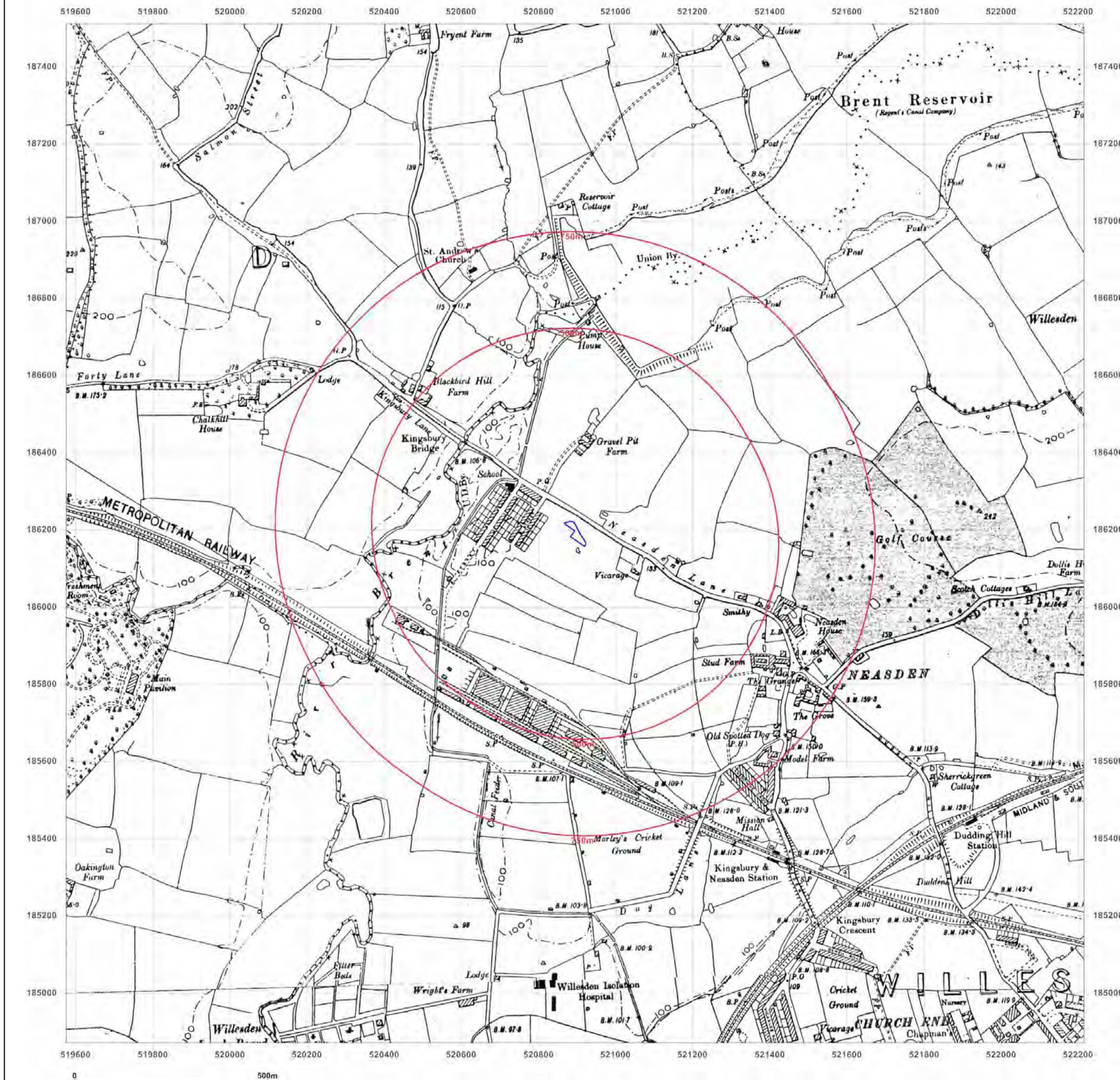


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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: County Series

Map date: 1920

Scale: 1:10,560

Printed at: 1:10,560



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

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

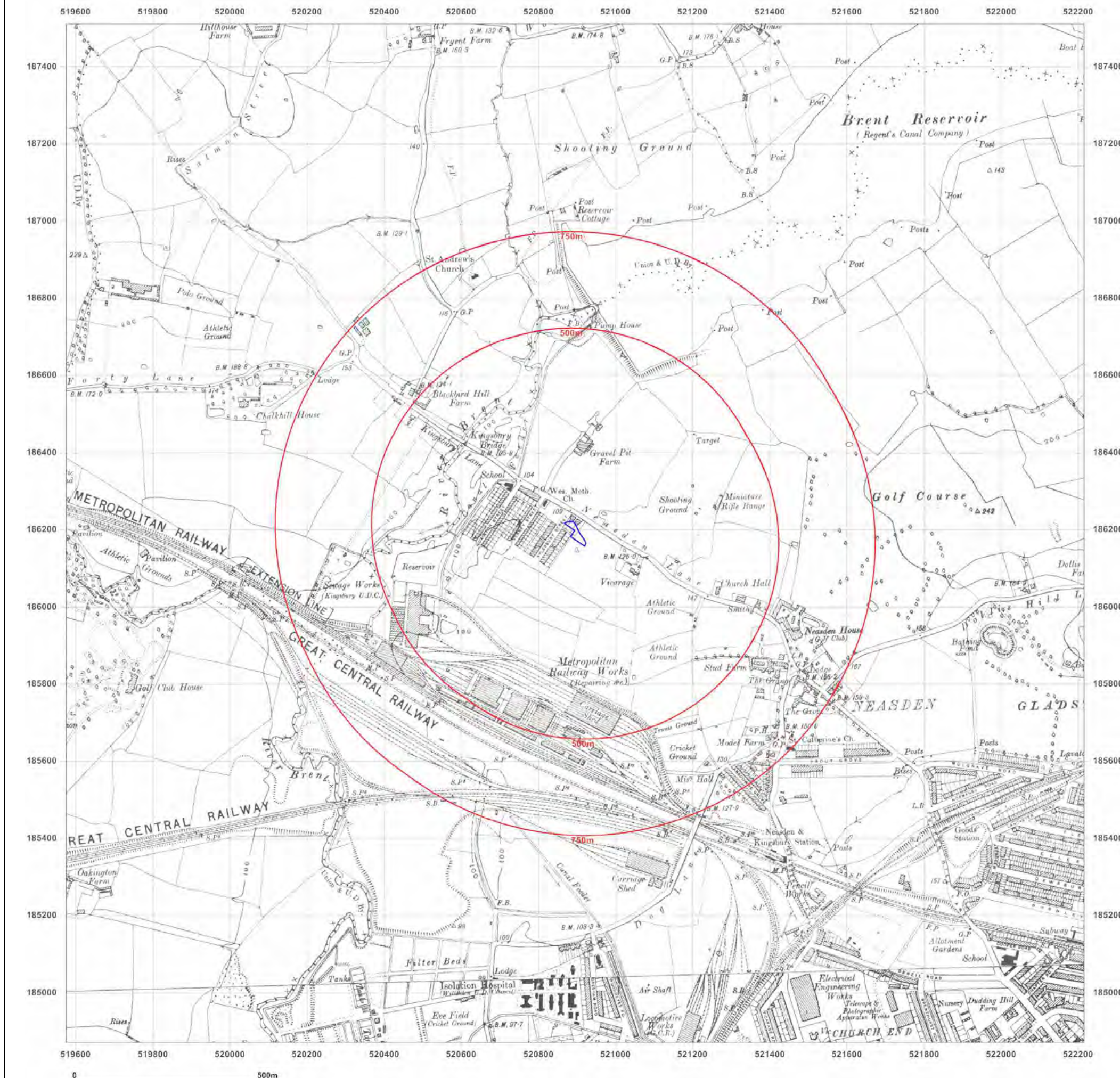


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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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

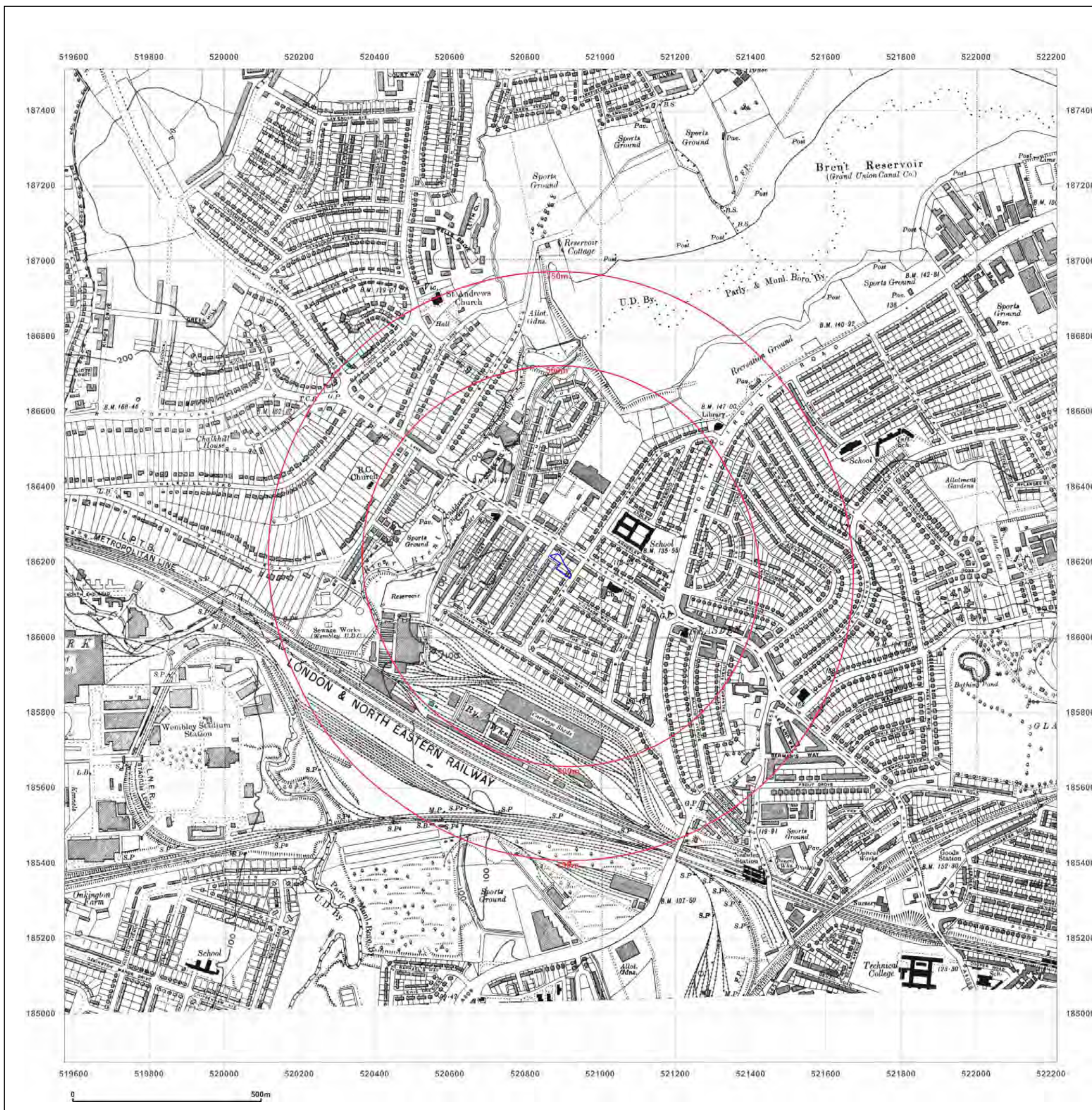


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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1864
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

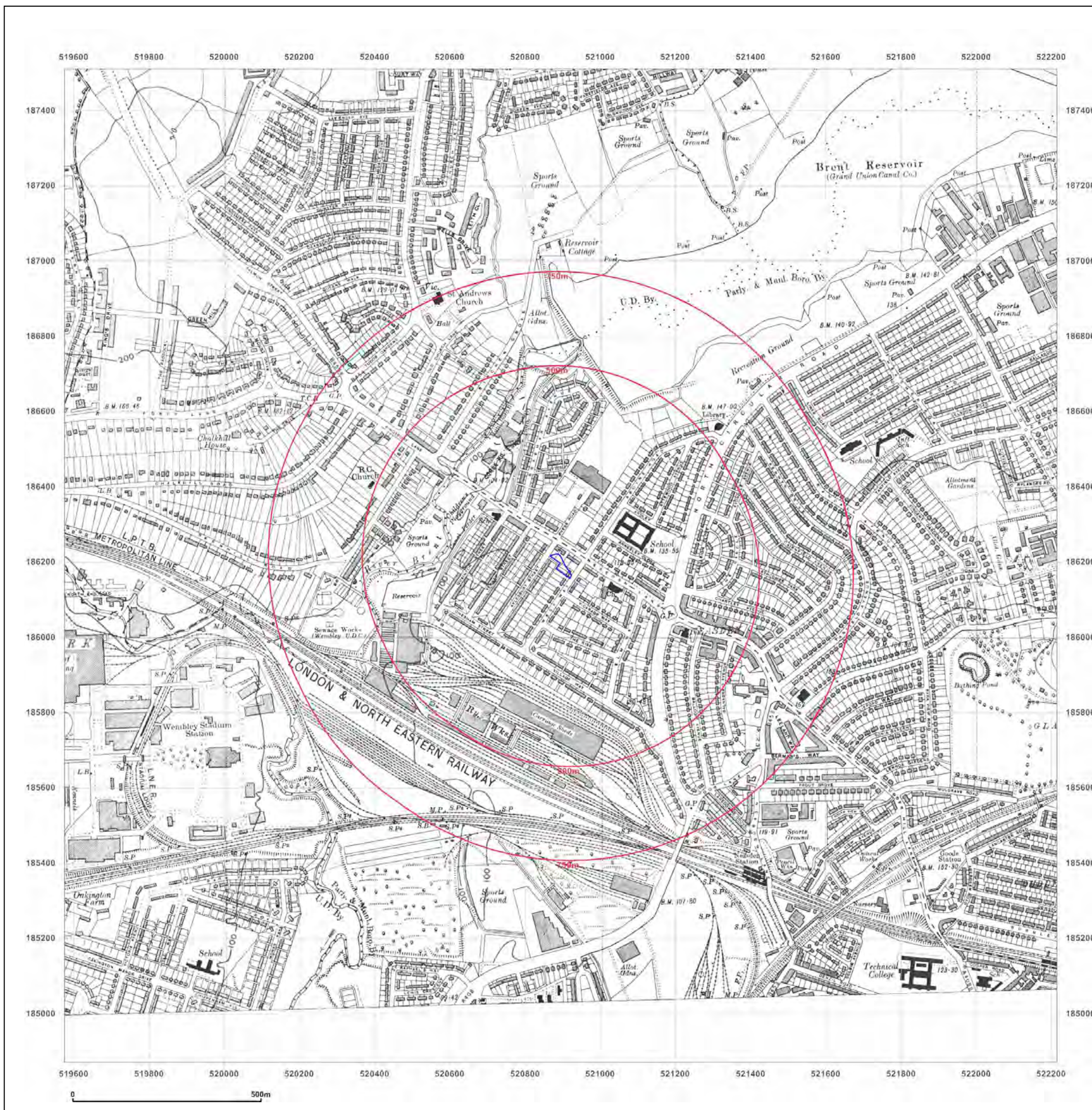


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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: Provisional

Map date: 1950-1951

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised 1949
Edition N/A
Copyright 1951
Levelled 1935

Surveyed 1940
Revised 1949
Edition N/A
Copyright 1951
Levelled 1935

Surveyed 1940
Revised 1948
Edition 1950
Copyright N/A
Levelled 1938

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

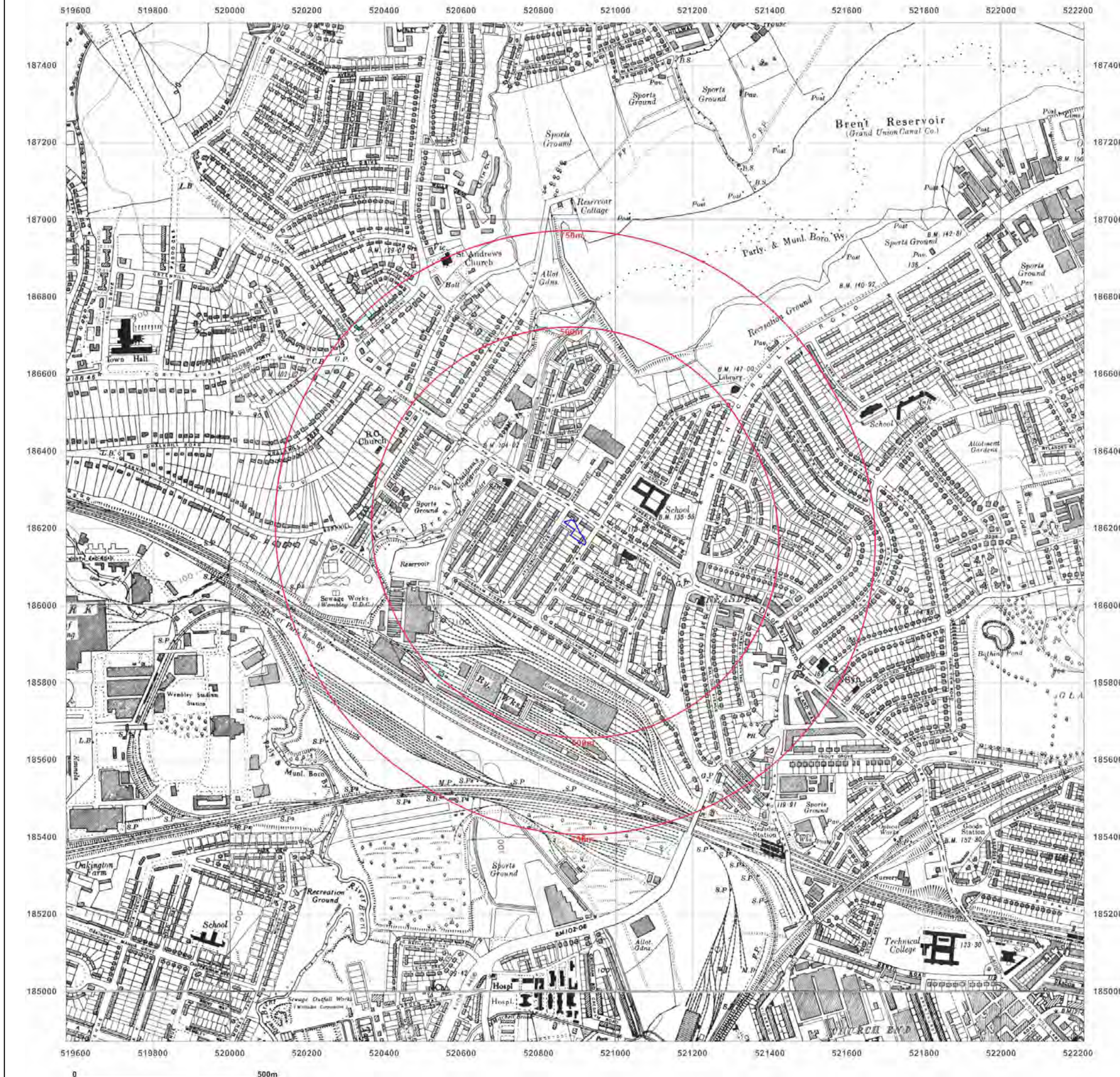


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Site Details:

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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: Provisional

Map date: 1966-1967

Scale: 1:10,560

Printed at: 1:10,560



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

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

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

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

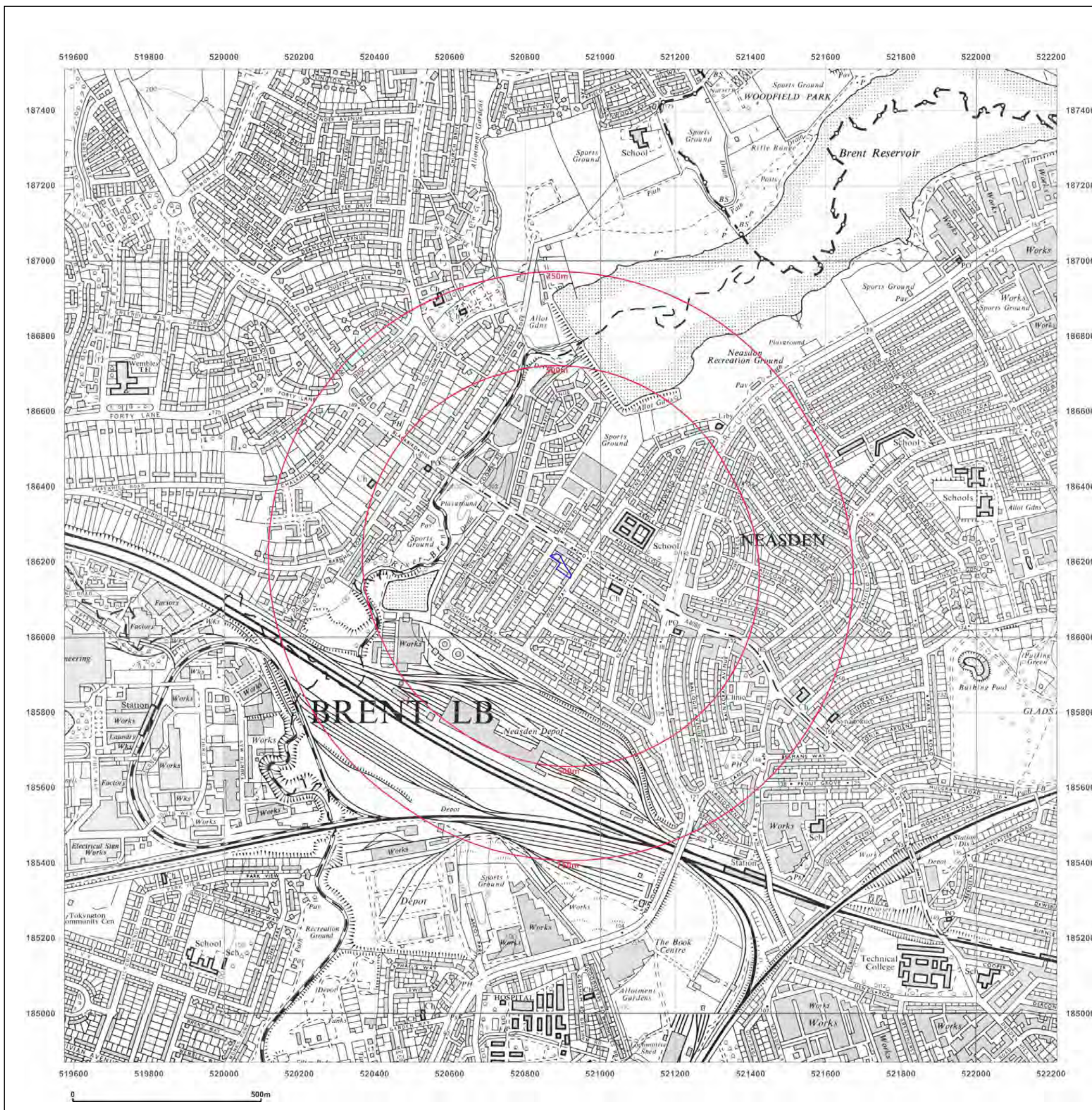


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Site Details:

Aylesbury Street (Trewin), Brent
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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

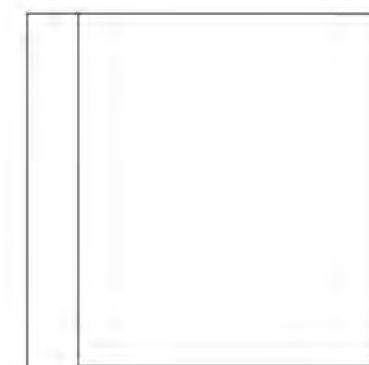
Map date: 1993

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1975
Revised 1993
Edition N/A
Copyright N/A
Levelled N/A

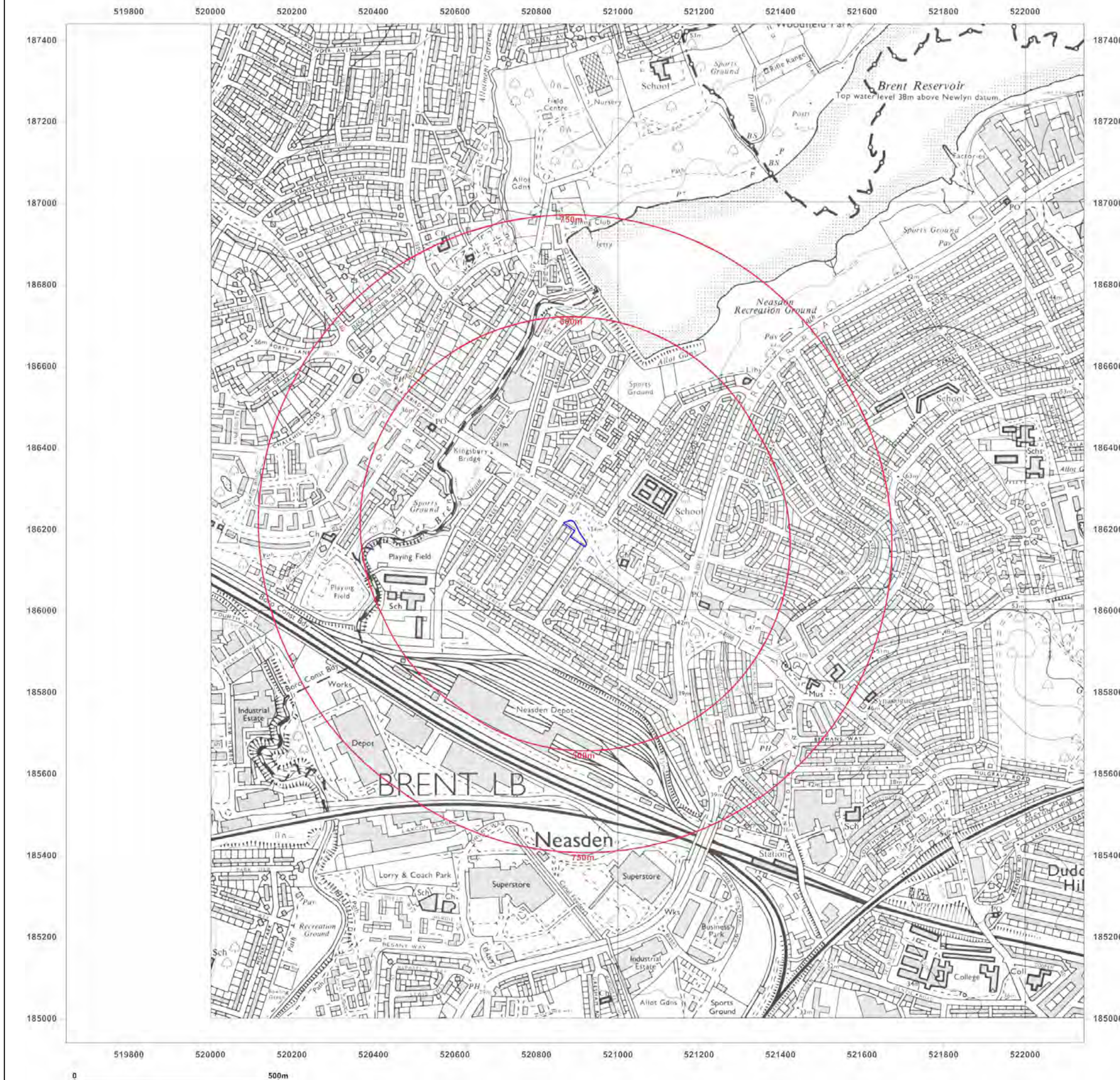


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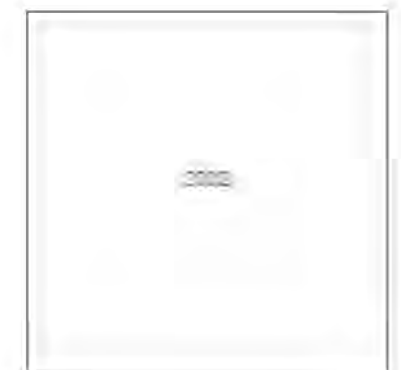
Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000



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Client Ref: PO0067007-1
Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

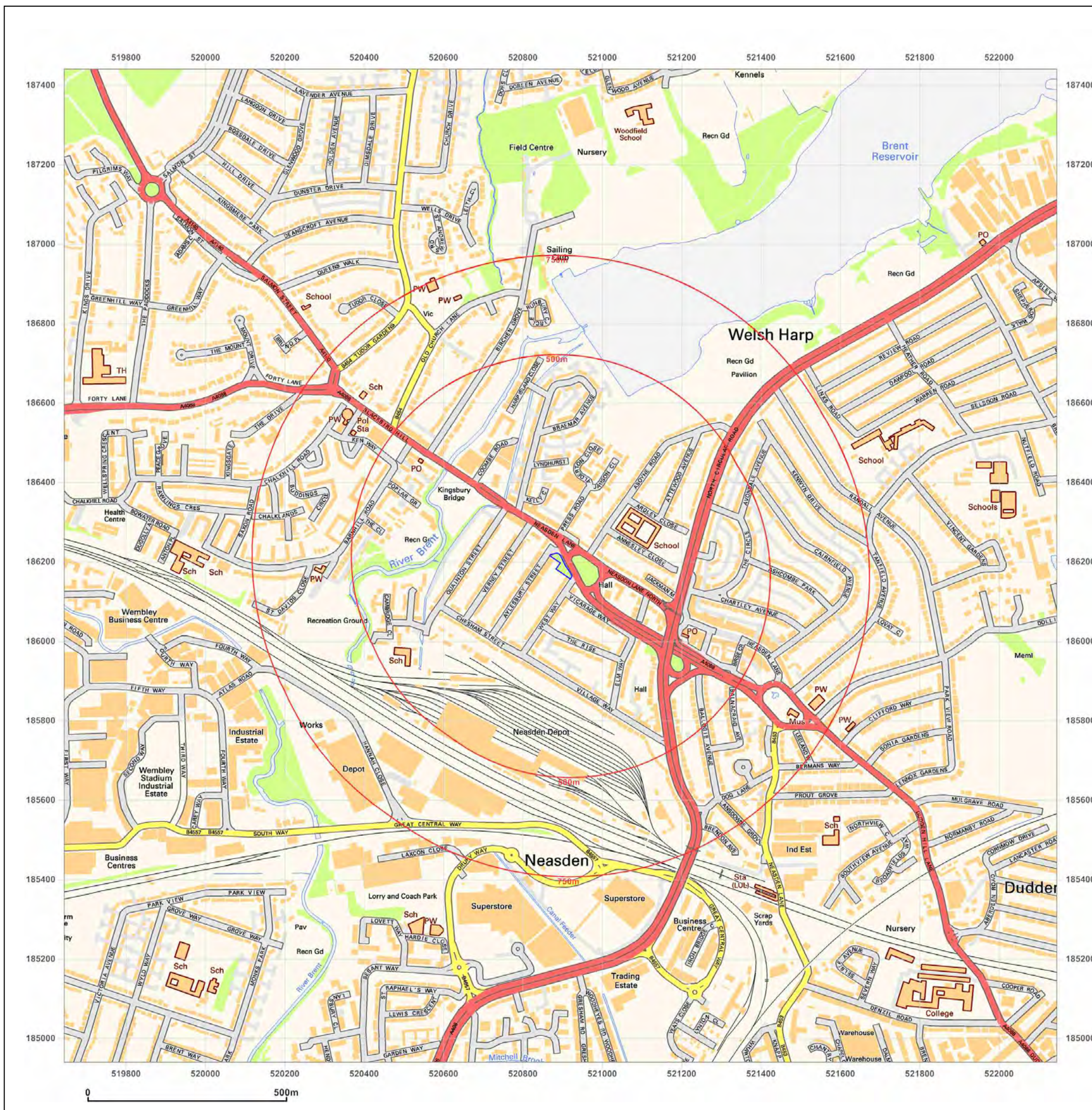


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Report Ref: GS-3885854
Grid Ref: 520894, 186190

Map Name: National Grid

Map date: 2014

Scale: 1:10,000

Printed at: 1:10,000

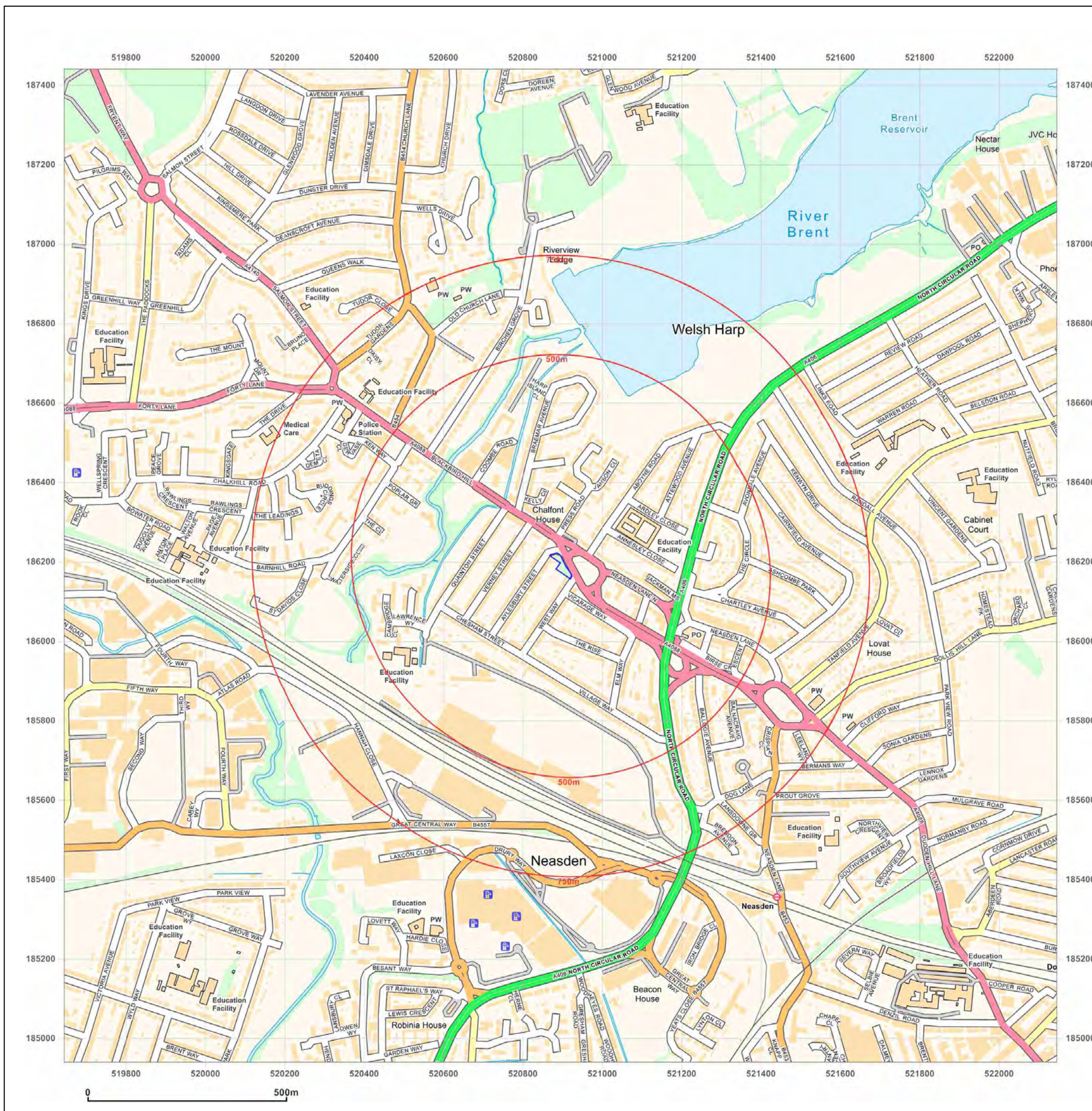


Produced by
Groundsure Insights
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W: www.groundsure.com

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Production date: 16 May 2017

To view map legend click here [Legend](#)



APPENDIX B

Groundsure Data Sheets



Arcadis

Arcadis, 10, MEDAWAR ROAD,
GUILDFORD, GU2 7AR

Groundsure
Reference:

GS-3885852

Your Reference: PO0067007-1

Report Date

16 May 2017

Report Delivery Method: Email - pdf

Groundsure Enviro Insight

Address: Aylesbury Street Trewin, Brent , NW10 0LU

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Yours faithfully,

Managing Director
Groundsure Limited

Enc.
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Address: Aylesbury Street Trewin, Brent , NW10 0LU
Date: 16 May 2017
Reference: GS-3885852
Client: Arcadis

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 07-Jun-2015
Grid Reference: 520910,186176
Site Size: 0.12ha

Report Reference: GS-3885852
Client Reference: PO0067007-1

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Overview of Findings

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

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	0	2	43
1.2 Additional Information – Historical Tank Database	0	0	3	39
1.3 Additional Information – Historical Energy Features Database	0	0	23	25
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	10	27
1.6 Potentially Infilled Land	0	0	2	24
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	2
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	0	1
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 NIHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	1	10
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	0	0
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	1	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	9	24

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	0	10	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	1
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	None
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 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?				Yes		
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?				Yes		
	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	0
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	0	0	1	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	No	Yes	No	No
6.10 Detailed River Network entries within 500m of the site	0	0	1	4	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding						
7.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	Yes					
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Yes					
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Low					
7.4 Are there any Flood Defences within 250m of the study site?	No					
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No					
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No					
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Not Prone					
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Not Applicable					

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	1	1	2
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	2
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards	
9.1 What is the maximum risk of natural ground subsidence?	Moderate
9.1.1 What is the maximum Shrink-Swell hazard rating identified on the study site?	Moderate
9.1.2 What is the maximum Landslides hazard rating identified on the study site?	Very Low
9.1.3 What is the maximum Soluble Rocks hazard rating identified on the study site?	Negligible
9.1.4 What is the maximum Compressible Ground hazard rating identified on the study site?	Negligible
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Very Low
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Negligible
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 property 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 Are there any coal mining areas within 75m of the study site?	No
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	No
10.3 Are there any brine affected areas within 75m of the study site?	No

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 licenses, 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.

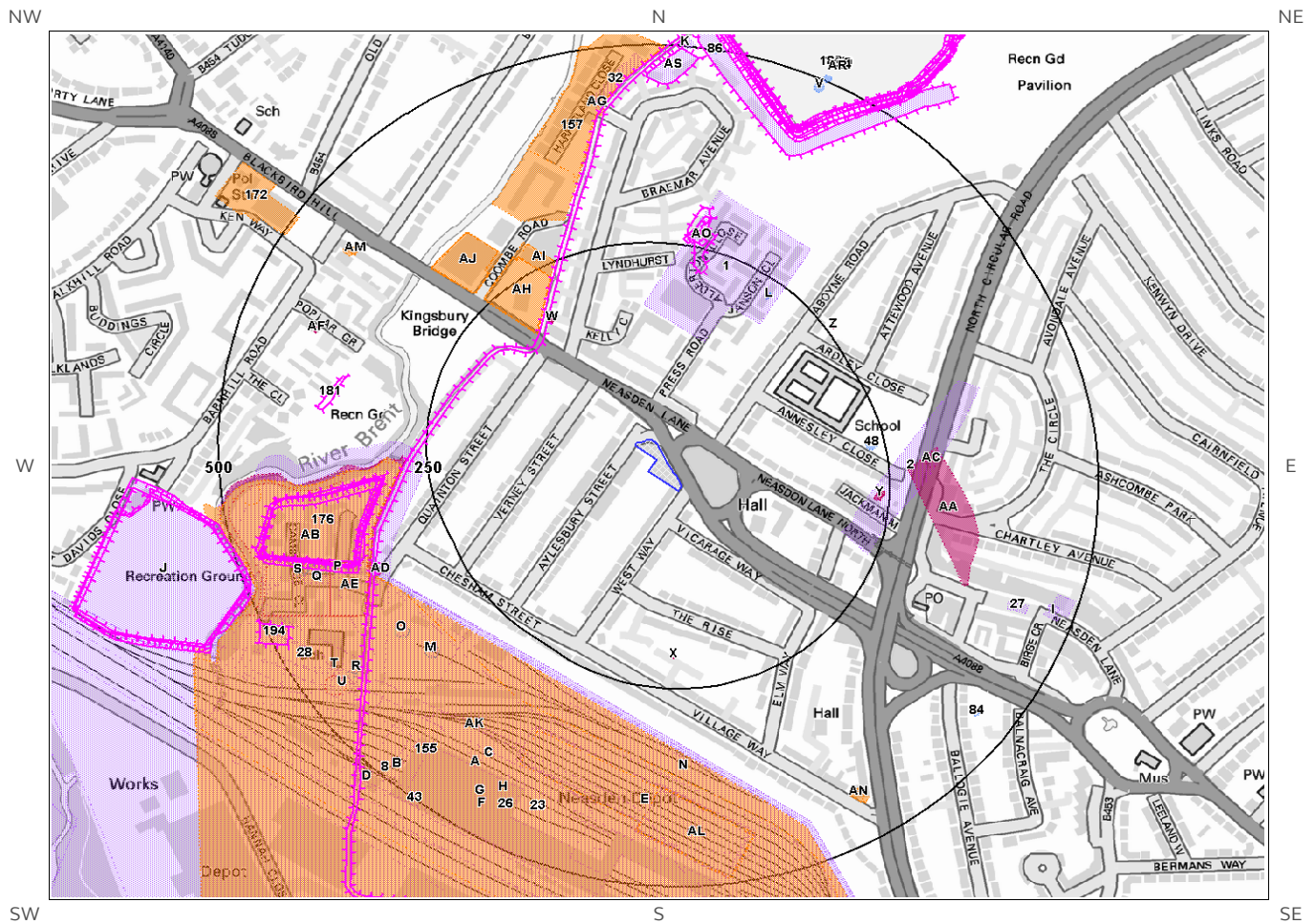
Note: Maps

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: 45

ID	Distance [m]	Direction	Use	Date
1	140	NE	Unspecified Warehouse	1976
2	200	E	Miniature Rifle Range	1920
3Q	254	W	Unspecified Works	1966
4A	271	SW	Railway Sidings	1976
5A	271	SW	Railway Sidings	1993
6B	271	SW	Railway Sidings	1966
7C	275	SW	Railway Works	1938
8	275	SW	Railway Sidings	1938
9AK	278	SW	Railway Works	1938
10B	279	SW	Railway Sidings	1949
11C	288	SW	Railway Sidings	1938
12T	293	SW	Unspecified Commercial/Industrial	1949
13D	319	SW	Railway Sidings	1920
14D	319	SW	Repairing Works	1920
15M	339	SW	Unspecified Tank	1966
16E	341	SW	Carriage Sheds	1938
17E	342	SW	Carriage Sheds	1938
18E	344	SW	Carriage Sheds	1949
19O	351	SW	Unspecified Tank	1966
20F	373	SW	Railway Works	1949
21AL	378	S	Carriage Shed	1920
22H	379	SW	Railway Sidings	1895
23	379	SW	Railway Works	1895
24AP	396	NE	Unspecified Ground Workings	1911
25G	397	SW	Unspecified Commercial/Industrial	1911
26	408	SW	Railway Sidings	1911
27	419	E	Smithy	1911
28	421	SW	Unspecified Commercial/Industrial	1895
29F	421	SW	Unspecified Depot	1966
30G	421	SW	Unspecified Depot	1976
31G	421	SW	Unspecified Depot	1993
32	422	N	Unspecified Depot	1966

33H	424	S	Railway Building	1949
34S	431	W	Unspecified Tank	1949
35U	444	SW	Gasometer	1895
36AS	450	N	Unspecified Pit	1920
37I	464	E	Smithy	1920
38I	466	E	Smithy	1895
39J	492	W	Sewage Works	1938
40K	493	N	Pump House	1911
41J	496	W	Sewage Works	1920
42J	497	W	Sewage Works	1949
43	497	SW	Unspecified Tank	1895
44J	497	W	Sewage Works	1938
45K	498	N	Pump House	1920

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:

42

ID	Distance (m)	Direction	Use	Date
46L	224	NE	Unspecified Tank	1956
47L	224	NE	Unspecified Tank	1956
48	227	E	Unspecified Tank	1936
49Z	256	NE	Gasometer	1864
50AA	272	E	Gas Works	1864
51AC	294	E	Gasometer	1864
52M	336	SW	Unspecified Tank	1954
53M	336	SW	Unspecified Tank	1954
54M	337	SW	Unspecified Tank	1954
55N	349	S	Unspecified Tank	1991
56N	349	S	Unspecified Tank	1987
57N	349	S	Unspecified Tank	1954
58O	349	SW	Unspecified Tank	1954
59O	349	SW	Unspecified Tank	1954
60N	349	S	Unspecified Tank	1954
61N	349	S	Unspecified Tank	1954
62O	349	SW	Unspecified Tank	1954
63P	377	SW	Tanks	1955
64P	377	SW	Tanks	1955
65P	377	SW	Tanks	1966
66P	377	SW	Tanks	1967
67P	377	SW	Tanks	1955

68Q	397	SW	Unspecified Tank	1955
69Q	397	SW	Unspecified Tank	1967
70Q	397	SW	Unspecified Tank	1955
71Q	403	W	Unspecified Tank	1966
72Q	423	W	Unspecified Tank	1955
73Q	423	W	Unspecified Tank	1955
74Q	423	W	Unspecified Tank	1966
75Q	424	W	Unspecified Tank	1955
76Q	424	W	Unspecified Tank	1967
77Q	424	W	Unspecified Tank	1955
78R	426	SW	Settling Tank	1954
79R	426	SW	Settling Tank	1954
80R	426	SW	Settling Tank	1954
81S	430	W	Unspecified Tank	1936
82T	434	SW	Unspecified Tank	1936
83U	450	SW	Gasometer	1896
84	452	SE	Unspecified Tank	1864
85V	484	NE	Unspecified Tank	1914
86	495	N	Unspecified Tank	1914
87V	499	NE	Unspecified Tank	1914

1.3 Additional Information – Historical Energy Features Database

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

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

48

ID	Distance (m)	Direction	Use	Date
88W	182	NW	Electricity Substation	1986
89W	182	NW	Electricity Substation	1991
90W	182	NW	Electricity Substation	1991
91W	182	NW	Electricity Substation	1983
92W	183	NW	Electricity Substation	1955
93W	183	NW	Electricity Substation	1955
94W	183	NW	Electricity Substation	1967
95W	183	NW	Electricity Substation	1966
96W	184	NW	Electricity Substation	1992
97W	184	NW	Electricity Substation	1994
98W	184	NW	Electricity Substation	1991
99X	207	S	Electricity Substation	1991
100X	207	S	Electricity Substation	1987
101Y	231	E	Electricity Substation	1956
102Y	231	E	Electricity Substation	1956

103Y	231	E	Electricity Substation	1955
104Y	231	E	Electricity Substation	1966
105Y	231	E	Electricity Substation	1955
106Y	231	E	Electricity Substation	1991
107Y	231	E	Electricity Substation	1991
108Y	232	E	Electricity Substation	1991
109Y	232	E	Electricity Substation	1991
110Y	232	E	Electricity Substation	1986
111Z	256	NE	Gasometer	1864
112AA	272	E	Gas Works	1864
113AB	274	W	Generating Station	1955
114AB	274	W	Power Station	1966
115AB	274	W	Power Station	1966
116AB	274	W	Generating Station	1955
117AC	294	E	Gasometer	1864
118AD	343	SW	Electricity Substation	1991
119AD	343	SW	Electricity Substation	1991
120AD	344	SW	Electricity Substation	1992
121AD	344	SW	Electricity Substation	1994
122AE	348	SW	Power Station	1967
123AE	351	SW	Generating Station	1955
124Q	395	W	Power Station	1967
125Q	395	W	Generating Station	1955
126Q	395	W	Generating Station	1955
127AF	406	W	Electricity Substation	1991
128AF	406	W	Electricity Substation	1996
129AF	406	W	Electricity Substation	1994
130AF	407	W	Electricity Substation	1971
131AF	407	W	Electricity Substation	1991
132AF	407	W	Electricity Substation	1983
133AG	425	N	Electricity Substation	1971
134AG	426	N	Electricity Substation	1979
135U	450	SW	Gasometer	1896

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: 37

ID	Distance (m)	Direction	Use	Date
136AH	182	NW	Garage	1983
137AH	183	NW	Garage	1955
138AH	183	NW	Garage	1966
139AH	183	NW	Garage	1955
140AH	183	NW	Garage	1967
141AH	183	NW	Garage	1955
142AI	234	NW	Coach Building Works	1967
143AI	234	NW	Coach Building Works	1955
144AI	234	NW	Coach Building Works	1966
145AI	234	NW	Coach Building Works	1955
146AJ	270	NW	Garage	1991
147AJ	270	NW	Garage	1991
148AJ	270	NW	Garage	1983
149AJ	270	NW	Garage	1986
150AJ	271	NW	Garage	1992
151AJ	271	NW	Garage	1994
152AJ	271	NW	Garage	1991
153AJ	271	NW	Garage	1967
154AJ	271	NW	Garage	1966
155	278	W	Railway Repairing etc. Works	1914
156AK	281	SW	Repairing etc. Railway Works	1936
157	295	N	Transport Servicing Depot	1979
158AG	337	N	Transport Servicing Depot	1971
159E	345	SW	Carriage Sheds	1936
160AL	373	S	Carriage Shed	1914
161AM	413	NW	Garage	1955
162AM	413	NW	Garage	1967
163AM	413	NW	Garage	1955
164AM	413	NW	Garage	1983
165AM	414	NW	Garage	1955
166AM	414	NW	Garage	1966
167AN	431	SE	Garage	1986
168AN	431	SE	Garage	1976
169AN	431	SE	Garage	1954
170AN	431	SE	Garage	1976
171AN	432	SE	Garage	1954

172	495	NW	Garage	1966
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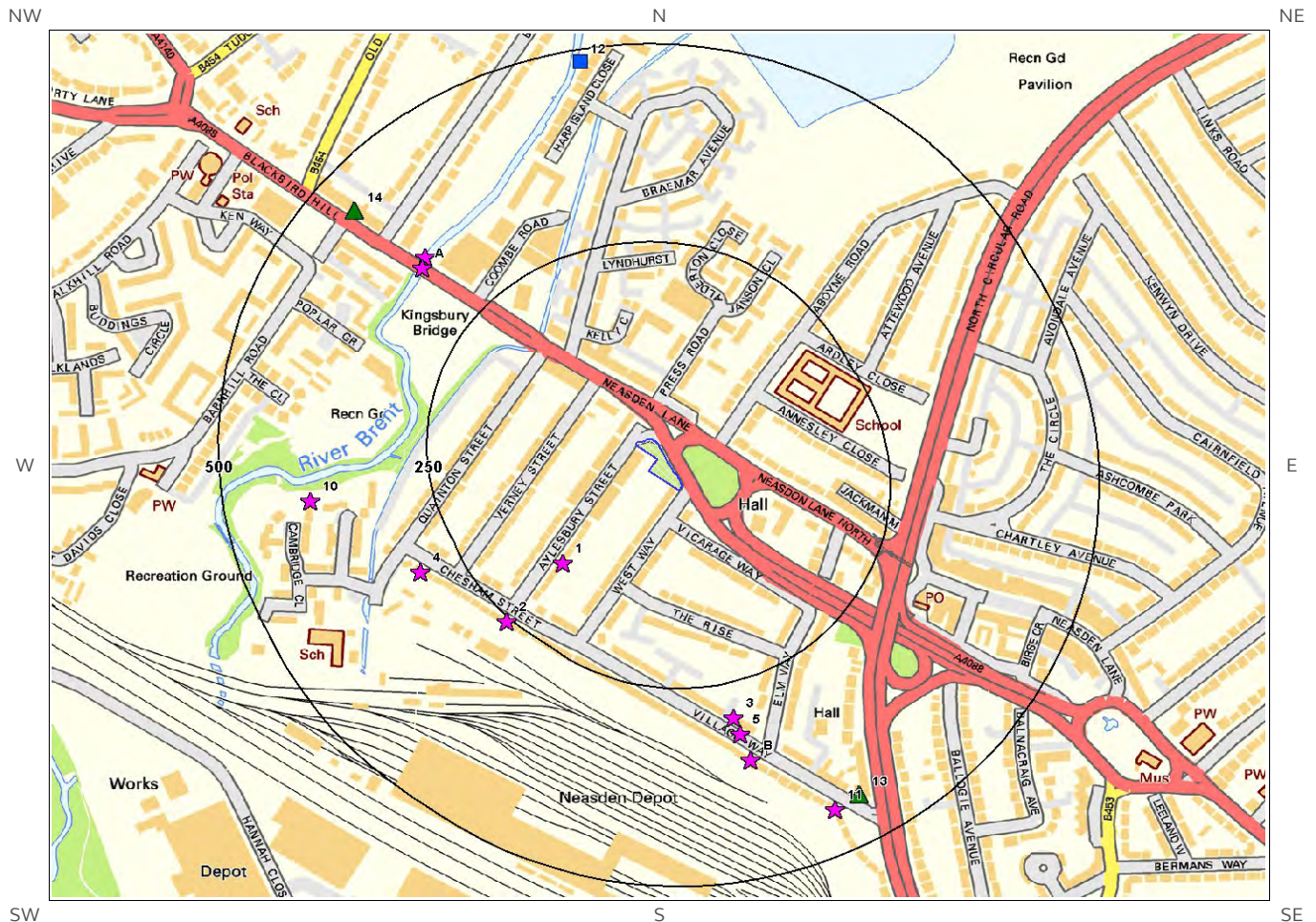
1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 26

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

ID	Distance(m)	Direction	Use	Date
173	168	NW	Canal Feeder	1895
174AO	219	N	Ponds	1895
175AO	253	N	Pond	1920
176	302	W	Pond	1966
177AB	303	W	Reservoir	1938
178AB	307	W	Reservoir	1949
179AB	308	W	Reservoir	1920
180AB	310	W	Reservoir	1938
181	357	W	Pond	1873
182AP	396	NE	Unspecified Ground Workings	1911
183AR	421	NE	Reservoir	1911
184	422	NE	Reservoir	1920
185AQ	426	NE	Reservoir	1993
186AQ	426	NE	Reservoir	1976
187AQ	426	NE	Reservoir	1966
188	428	N	Reservoir	1938
189	429	NE	Reservoir	1873
190	430	NE	Reservoir	1949
191	431	NE	Reservoir	1895
192AR	431	NE	Reservoir	1938
193AS	450	N	Unspecified Pit	1920
194	473	SW	Pond	1966
195J	492	W	Sewage Works	1938
196J	496	W	Sewage Works	1920
197J	497	W	Sewage Works	1949
198J	497	W	Sewage Works	1938

2. Environmental Permits, Incidents and Registers Map



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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

2

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
13	443	SE	521134 185771	Address: Shell Neasden, 369 North Circular Road, Neasdon, London, NW10 0HS Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
14	447	NW	520529 186510	Address: Clean Express Dry Cleaners, 41 Blackbird Hill, London, NW9 8RS 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:

1

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

ID	Distance (m)	Direction	NGR	Details
12	485	N	520800 186700	Address: BRAEMAR AVENUE, NEASDEN, LONDON BOR, BRAEMAR AVENUE, NEASDEN, LONDON, BOROUGH OF BRENT, - Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0685 Permit Version: 1 Receiving Water: RIVER BRENT Status: REVOKED - UNSPECIFIED Issue date: 26/02/1986 Effective Date: 26-Feb-1986 Revocation Date: 18/08/1994

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:

11

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

ID	Distance (m)	Direction	NGR	Details
1	156	SW	520778 186066	Incident Date: 02-Aug-2012 Incident Identification: 1021033 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
2	256	SW	520711 185992	Incident Date: 13-Aug-2012 Incident Identification: 1025327 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
3	295	S	520983 185870	Incident Date: 07-Aug-2012 Incident Identification: 1022851 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
4	303	SW	520608 186055	Incident Date: 13-Aug-2012 Incident Identification: 1025586 Pollutant: Other Pollutant Pollutant Description: Other Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
5	316	S	520991 185850	Incident Date: 03-Aug-2012 Incident Identification: 1021507 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
6A	339	NW	520610 186439	Incident Date: 13-Aug-2003 Incident Identification: 181773 Pollutant: Sewage Materials Pollutant Description: Other Sewage Material Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Distance (m)	Direction	NGR	Details	
7A	346	NW	520613 186453	Incident Date: 31-Mar-2003 Incident Identification: 155809 Pollutant: Sewage Materials Pollutant Description: Grey Water	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
8B	351	S	521003 185817	Incident Date: 31-Jul-2012 Incident Identification: 1020358 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
9B	351	S	521003 185817	Incident Date: 30-Jul-2012 Incident Identification: 1020094 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Atmospheric Pollutant or Effect	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
10	397	W	520476 186145	Incident Date: 05-Aug-2012 Incident Identification: 1022152 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)
11	444	SE	521105 185755	Incident Date: 06-Aug-2012 Incident Identification: 1022400 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Other Odour	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 2 (Significant)

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

0

Database searched and no data found.

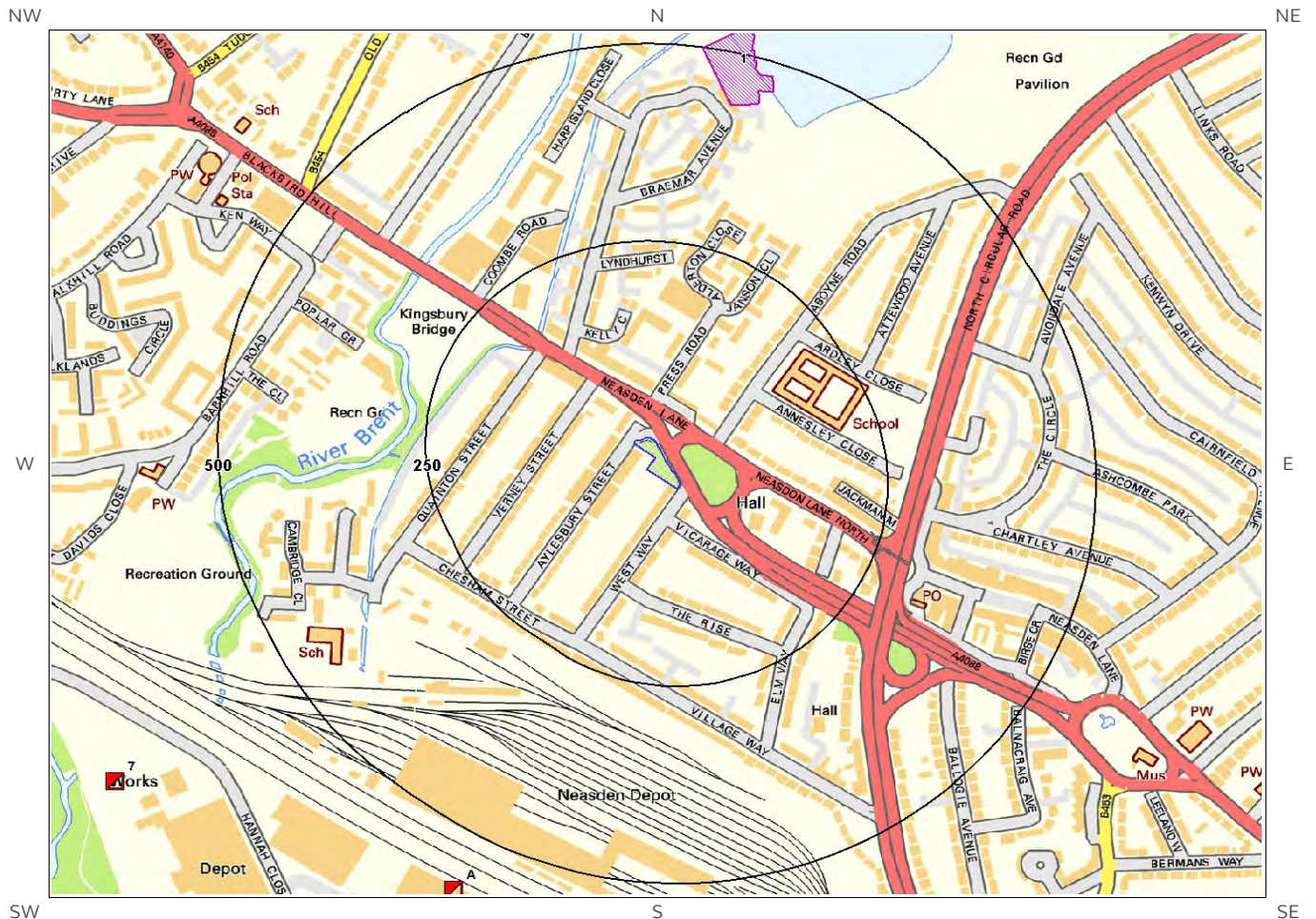
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

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

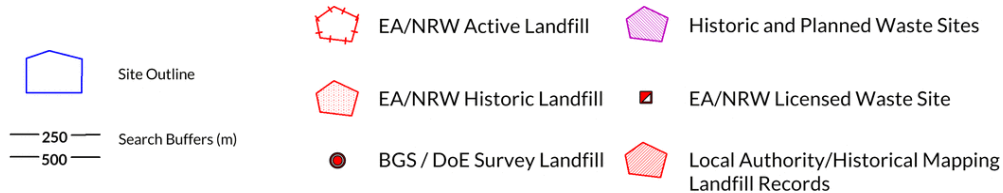
0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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3. Landfill and Other Waste Sites

3.1 Landfill Sites

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

3.2 Other Waste Sites

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

1

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

ID	Distance (m)	Direction	NGR	Details		
1	433	N	520991 186695	Type of Site: Refuse Destructor Site Address: N/A	Planning Application Reference: N/A Date: 1914	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

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

33

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		
2A	574	SW	520650 185650	Site Address: Unit 2, Hannah Close, Great Central Way, Neasden, London, NW10 0UX Type: 75kte HCI Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CAR259 EPR reference: EA/EPR/GP3091SV/S003 Operator: P J Carey (Contractors) Ltd Waste Management licence No: 101440 Annual Tonnage: 0.0	Issue Date: 02/11/2010 Effective Date: - Modified: - Surrendered Date: 28/02/2013 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Unit 2, Hannah Close Correspondence Address: -	
3A	574	SW	520650 185650	Site Address: Unit 2, Hannah Close, Great Central Way, Neasden, London, NW10 0UX Type: 75kte HCI Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TES038 EPR reference: EA/EPR/LP3296EY/S002 Operator: T E Scudder Ltd Waste Management licence No: 101876 Annual Tonnage: 0.0	Issue Date: 18/10/2010 Effective Date: - Modified: - Surrendered Date: 28/02/2013 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Unit 2, Hannah Close Correspondence Address: -	
Not shown	609	SW	520650 185611	Site Address: Unit 2 Hannah Close, Great Central Way, Neasden, London, NW10 0UX Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SEN024 EPR reference: EA/EPR/PP3496EU/V006 Operator: Seneca Environmental Solutions Ltd Waste Management licence No: 102114 Annual Tonnage: 250000.0	Issue Date: 11/11/2010 Effective Date: - Modified: 29/02/2016 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Seneca Environmental Solutions Ltd Correspondence Address: -	

ID	Distance (m)	Direction	NGR	Details
Not shown	737	SE	521400 185600	Site Address: L & B Haulage, Hannah Close, Great Central Way, Neasden, Middx, NW10 0UX Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LBH001 EPR reference: - Operator: L & B Haulage & Civil Eng.Contractors Waste Management licence No: 80361 Annual Tonnage: 0.0 Issue Date: 11/12/1998 Effective Date: - Modified: 21/09/2001 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: "L & B Haulage, Neasden" Correspondence Address: L & B Haulage & Civil Eng.Contractors, 10b, Colin Parade, Sheaves Hill Avenue, Collindale, London, NW9 6SG
Not shown	737	SE	521400 185600	Site Address: L & B Haulage, Hannah Close, Great Central Way, Neasden, Middx, NW10 0UX Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LBH001 EPR reference: - Operator: L & B Haulage & Civil Engineering.contractors Ltd Waste Management licence No: 80361 Annual Tonnage: 0.0 Issue Date: 11/12/1998 Effective Date: - Modified: 21/09/2001 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: L & B Haulage, Neasden Correspondence Address: 10b, Colin Parade, Sheaves Hill Avenue, Collindale, London, NW9 6SG
7	751	SW	520243 185788	Site Address: L & B Haulage, Hannah Close, Great Central Way, Neasden, Middlesex, NW10 0UX Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LBH001 EPR reference: EA/EPR/DP3791NJ/V003 Operator: L & B Haulage & Civil Engineering Contractors Ltd Waste Management licence No: 80361 Annual Tonnage: 155389.0 Issue Date: 11/12/1998 Effective Date: - Modified: 27/11/2006 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: L & B Haulage, Neasden Correspondence Address: -
Not shown	927	W	519979 185948	Site Address: Brent Oil Contractors Ltd, Wembey Stadium Ind.Estate, Fourth Way, Wembley, Middlesex, HA9 0EP Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRE001 EPR reference: EA/EPR/RP3796NJ/V003 Operator: Brent Oil Contractors Ltd Waste Management licence No: 80081 Annual Tonnage: 25000.0 Issue Date: 02/05/1995 Effective Date: - Modified: 27/05/2011 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: To PPC Site Name: Fourth Way, Wembley Correspondence Address: -
Not shown	937	SE	521372 185337	Site Address: Robert Wallace, Alloyde 2, Neasden Goods Yard, Neasden Lane, London, NW10 2UG Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LLO001 EPR reference: EA/EPR/VP3396NA/A001 Operator: Lloyd Anthony Christopher Waste Management licence No: 80040 Annual Tonnage: 75000.0 Issue Date: 26/02/1996 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked Site Name: Alloyde 2, Neasden Lane Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details
Not shown	964	SE	521406 185326	Site Address: Neasden Goods Yard, Neasden Lane, Wembley, London, NW10 2UG Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ACE008 EPR reference: EA/EPR/YP3095EM/V002 Operator: Ace Waste Haulage Ltd Waste Management licence No: 100180 Annual Tonnage: 80000.0 Issue Date: 25/03/2008 Effective Date: - Modified: 25/08/2011 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Ace Waste - Neasden Goods Yard Correspondence Address: -
Not shown	1038	SE	521420 185249	Site Address: Neasden Goods Yard, Neasden Lane, Neasden, London, NW10 2UG Type: Metal Recycling Site (Vehicle Dismantler) Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MET092 EPR reference: EA/EPR/HB3330RH/V002 Operator: Metal And Waste Recycling Limited Waste Management licence No: 80743 Annual Tonnage: 70500.0 Issue Date: 06/04/2006 Effective Date: 16/06/2012 Modified: 08/04/2013 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Mitre Works Correspondence Address: -
Not shown	1053	SE	521454 185251	Site Address: Powerday plc, Transfer Station, Neasden Goods Yard, Neasden Lane, London, NW10 2UG Type: Household, Commercial & Industrial Waste T Stn Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: POW001 EPR reference: - Operator: Powerday Plc Waste Management licence No: 80018 Annual Tonnage: 206225.0 Issue Date: 26/02/1996 Effective Date: - Modified: 11/12/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Neasden Lane, London Correspondence Address: Powerday plc, Crossan House, 28-31, Hythe Road, London, NW10 6RS
Not shown	1053	SE	521454 185251	Site Address: Powerday plc, Neasden Goods Yard, Neasden Lane, London, NW10 2UG Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: POW001 EPR reference: - Operator: Powerday P L C Waste Management licence No: 80018 Annual Tonnage: 0.0 Issue Date: 26/02/1996 Effective Date: - Modified: 11/12/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Neasden Lane, London Correspondence Address: Powerday plc, Crossan House, 28-31, Hythe Road, London, NW10 6RS
Not shown	1053	SE	521454 185251	Site Address: Powerday plc, Neasden Goods Yard, Neasden Lane, London, NW10 2UG Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: POW001 EPR reference: EA/EPR/NP3396NH/V007 Operator: Powerday Plc Waste Management licence No: 80018 Annual Tonnage: 206225.0 Issue Date: 26/02/1996 Effective Date: - Modified: 25/08/2011 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Neasden Lane Transfer Station Correspondence Address: -

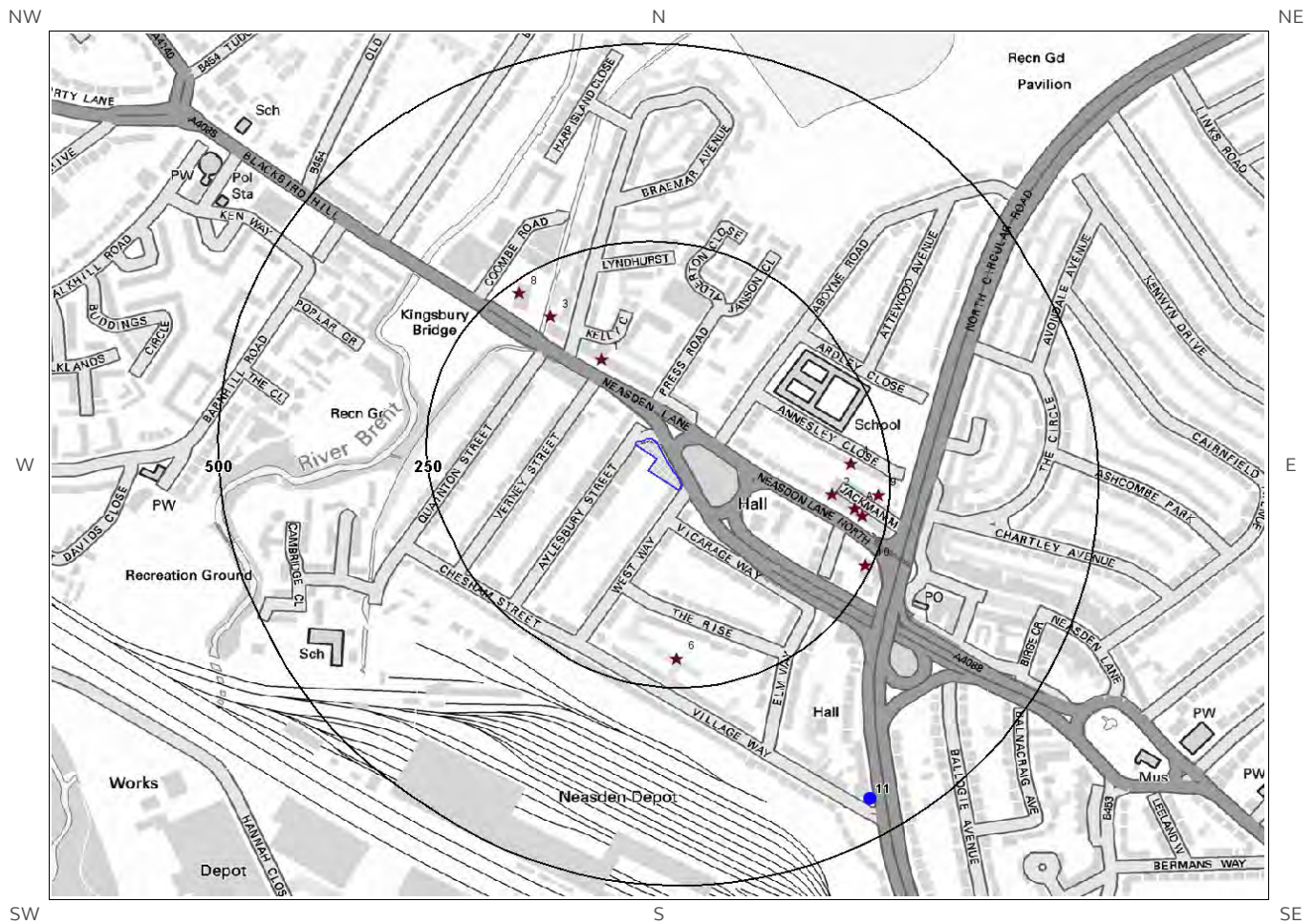
ID	Distance (m)	Direction	NGR	Details
Not shown	1053	SE	521454 185251	Site Address: - Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MET090 EPR reference: EA/EPR/EB3633AS/T001 Operator: Metal & Waste Recycling Ltd Waste Management licence No: 80018 Annual Tonnage: 206225.0 Issue Date: 26/02/1996 Effective Date: 26/03/2012 Modified: 25/08/2011 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Neasden Goods Yard Correspondence Address: -
Not shown	1065	W	519870 185840	Site Address: Unit 4, Second Way, Wembley, Middlesex, HA9 0YJ Type: 75kte HCI Waste TS + treatment Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RUB010 EPR reference: EA/EPR/CP3591LE/A001 Operator: Rubbish Express Ltd Waste Management licence No: 100661 Annual Tonnage: 74999.0 Issue Date: 25/11/2008 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked Site Name: Rubbish Express Ltd Correspondence Address: -
Not shown	1084	W	519838 185872	Site Address: Generay Ltd, Fifth Way, Wembley, Middlesex, HA9 0DJ Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GEN001 EPR reference: - Operator: Generay Ltd. Waste Management licence No: 80034 Annual Tonnage: 0.0 Issue Date: 16/02/1993 Effective Date: - Modified: 07/02/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: "Fifth Way, Wembley (2)" Correspondence Address: Generay Ltd, Willowbank House, 97, Oxford Road, Uxbridge, UB8 1LU
Not shown	1084	W	519838 185872	Site Address: Generay Ltd, Fifth Way, Wembley, Middlesex, HA9 0DE Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GEN001 EPR reference: - Operator: Generay Ltd Waste Management licence No: 80034 Annual Tonnage: 40000.0 Issue Date: 16/02/1993 Effective Date: - Modified: 07/02/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Fifth Way, Wembley (2) Correspondence Address: Generay Ltd, Fifth Way, Wembley, Middlesex, HA9 0DE
Not shown	1084	W	519838 185872	Site Address: Generay Ltd, Fifth Way, Wembley, Middlesex, HA9 0DE Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GEN001 EPR reference: - Operator: Generay Ltd Waste Management licence No: 80034 Annual Tonnage: 0.0 Issue Date: 16/02/1993 Effective Date: - Modified: 07/02/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Fifth Way, Wembley (2) Correspondence Address: Generay Ltd, Fifth Way, Wembley, Middlesex, HA9 0DE
Not shown	1087	W	519837 185866	Site Address: Generay Ltd, Generay Ltd, Fifth Way, Wembley, Middlesex, HA9 0JD Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GEN002 EPR reference: EA/EPR/BP3292LH/V004 Operator: Generay Ltd Waste Management licence No: 80035 Annual Tonnage: 352650.0 Issue Date: 02/05/1995 Effective Date: - Modified: 19/04/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Generay Ltd Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details
Not shown	1088	SW	520060 185470	Site Address: Mobile Plant Type: Mobile Plant for remediation of land Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SEN025 EPR reference: EA/EPR/UP3698VF/A001 Operator: Seneca Environmental Solutions Ltd Waste Management licence No: 102513 Annual Tonnage: 0.0 Issue Date: 22/03/2011 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Mobile Plant Correspondence Address: -
Not shown	1116	SE	521453 185178	Site Address: Unit 6 Neasden Goods Yard, Neasden Lane, London, NW10 2UG Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: XBE002 EPR reference: EA/EPR/ZP3497NS/V002 Operator: X - Bert Haulage Limited Waste Management licence No: 80588 Annual Tonnage: 382500.0 Issue Date: 12/08/2003 Effective Date: 16/02/2006 Modified: 25/08/2011 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: X - Bert Haulage Correspondence Address: -
Not shown	1121	SE	521450 185170	Site Address: Neasden Goods Yard, Neasden Lane, London, NW10 2UG Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TUM001 EPR reference: EA/EPR/TP3897NM/A001 Operator: Tumbledown Recycling Ltd Waste Management licence No: 80532 Annual Tonnage: 300000.0 Issue Date: 18/06/2001 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Neasden Goods Yard Correspondence Address: -
Not shown	1121	SE	521450 185170	Site Address: Neasden Goods Yard, Neasden Lane, London, NW10 2UG Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TUM001 EPR reference: - Operator: Tumbledown Recycling Limited Waste Management licence No: 80532 Annual Tonnage: 300000.0 Issue Date: 18/06/2001 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Neasden Goods Yard Correspondence Address: Neasden Goods Yard, Neasden Lane, London, NW10 2UG
Not shown	1149	W	519746 186470	Site Address: Brent London Borough Council, Chalkhill Municipal Incinerator, The Boiler House, Cofers Circle, Wembley, Middlesex Type: Incinerator Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BRE002 EPR reference: EA/EPR/DP3396NP/S003 Operator: Brent London Borough Council Waste Management licence No: 80082 Annual Tonnage: 100.0 Issue Date: 18/05/1994 Effective Date: - Modified: 19/01/1995 Surrendered Date: 12/04/2001 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Chalkhill Incinerator, Wembley Correspondence Address: -
Not shown	1154	W	519797 185782	Site Address: Generay Ltd, Glyn Skips, Fifth Way, Wembley, Middlesex, HA9 0YJ Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: XBE001 EPR reference: EA/EPR/MB3431AS/T001 Operator: X- Bert Haulage Ltd Waste Management licence No: 80035 Annual Tonnage: 352650.0 Issue Date: 02/05/1995 Effective Date: 18/02/2013 Modified: 19/04/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Glynn Skips Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details
Not shown	1162	SE	521400 185100	Site Address: Neasden Goods Depot, Neasden Lane, Neasden, London, NW10 2UG Type: Metal Recycling Site (Vehicle Dismantler) Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WIL008 EPR reference: EA/EPR/SP3393EP/A001 Operator: William Fry & Company Ltd Waste Management licence No: 80743 Annual Tonnage: 70500.0 Issue Date: 06/04/2006 Effective Date: - Modified: 25/08/2011 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: William Fry & Co Ltd Correspondence Address: -
Not shown	1162	SE	521400 185100	Site Address: Mitre Works, Neasden Goods Depot, Neasden Lane, London, NW10 2UG Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WIL005 EPR reference: EA/EPR/VP3197NV/A001 Operator: William Fry & Company Ltd Waste Management licence No: 80627 Annual Tonnage: 4999.0 Issue Date: 25/04/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: William Fry Mitre Works Correspondence Address: -
Not shown	1162	SE	521400 185100	Site Address: Neasdon Goods Yard, Neasden Lane, London, NW10 2UG Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MET091 EPR reference: EA/EPR/HB3330DD/T001 Operator: Metal & Waste Recycling Limited Waste Management licence No: 80627 Annual Tonnage: 4999.0 Issue Date: 25/04/2005 Effective Date: 30/05/2012 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Mitre Works Correspondence Address: -
Not shown	1162	SE	521400 185100	Site Address: Mitre Works, Neasden Lane, Neasden, London, NW10 2UG Type: Metal Recycling Site (Vehicle Dismantler) Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: WIL008 EPR reference: - Operator: William Fry & Company Limited Waste Management licence No: 80743 Annual Tonnage: 0.0 Issue Date: 06/04/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: William Fry Neasden Correspondence Address: Albert Works, Kenninghall Road, Edmonton, London, N18 2PD
Not shown	1170	SW	519803 185729	Site Address: Unit 4, Second Way, Wembley, HA9 0YJ Type: 75kte HCl Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: HAW049 EPR reference: EA/EPR/DB3005CV/A001 Operator: H A W K Rubbish Clearance Limited Waste Management licence No: 402465 Annual Tonnage: 74999.0 Issue Date: 24/06/2015 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Unit 4 Second Way Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details	
Not shown	1226	SW	519758 185691	Site Address: Generay Ltd, Fifth Way, Wembley, Middlesex, HA9 0JD Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GEN002 EPR reference: - Operator: Generay Ltd. Waste Management licence No: 80035 Annual Tonnage: 0.0	Issue Date: 02/05/1995 Effective Date: - Modified: 07/02/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: "Fifth Way, Wembley (1)" Correspondence Address: Generay Ltd, Willowbank House, 97, Oxford Road, Uxbridge, UB8 1LU
Not shown	1226	SW	519758 185691	Site Address: Generay Ltd, Fifth Way, Wembley, Middlesex, HA9 0DE Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GEN002 EPR reference: - Operator: Generay Ltd Waste Management licence No: 80035 Annual Tonnage: 201500.0	Issue Date: 02/05/1995 Effective Date: - Modified: 28/07/2006 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Fifth Way, Wembley (1) Correspondence Address: Generay Ltd, Fifth Way, Wembley, Middlesex, HA9 0JD
Not shown	1226	SW	519758 185691	Site Address: Generay Ltd, Fifth Way, Wembley, Middlesex, HA9 0DE Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GEN002 EPR reference: - Operator: Generay Ltd Waste Management licence No: 80035 Annual Tonnage: 0.0	Issue Date: 02/05/1995 Effective Date: - Modified: 07/02/2002 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Fifth Way, Wembley (1) Correspondence Address: Generay Ltd, Fifth Way, Wembley, Middlesex, HA9 0JD

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:

10

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	114	N	Minerale Water Co	520826 186324	Minerale Water Co, 482, Neasden Lane North, London, NW10 0DG	Non Alcoholic Drinks	Foodstuffs
2	180	E	1st Signs & Satellites	521102 186152	1st Signs & Satellites, 386, Neasden Lane North, London, NW10 0BT	Signs	Industrial Products
3	190	NW	Electricity Sub Station	520765 186378	Electricity Sub Station, NW10	Electrical Features	Infrastructure and Facilities
4	205	E	Instacodes	521125 186192	Instacodes, 14, Annesley Close, London, NW10 0ES	Electrical Components	Industrial Products
5A	210	E	Video Prince	521129 186134	Video Prince, 374, Neasden Lane North, London, NW10 0BT	Electronic Equipment	Industrial Products
6	213	S	Electricity Sub Station	520916 185945	Electricity Sub Station, NW10	Electrical Features	Infrastructure and Facilities
7A	220	E	Dairy Product Specialist	521139 186126	Dairy Product Specialist, 368, Neasden Lane North, London, NW10 0BT	Dairy Products	Foodstuffs
8	236	NW	Shurgard Self Storage	520726 186407	Shurgard Self Storage, Shurgard House 510, Neasden Lane North, London, NW10 0EA	Container and Storage	Transport, Storage and Delivery
9	236	E	Electricity Sub Station	521158 186152	Electricity Sub Station, NW2	Electrical Features	Infrastructure and Facilities
10	242	SE	Simply Signs	521142 186063	Simply Signs, 311, Neasden Lane North, London, NW10 0AG	Signs	Industrial Products

4.2 Petrol and Fuel Sites

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

1

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

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
11	452	SE	521148 185768	Shell	Shell Neasden, 369, North Circular Road, North Circular Road, Village Way, Neasden, London, Outer London, NW10 0SH	No	Open

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

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

5.3 Bedrock and Solid Geology

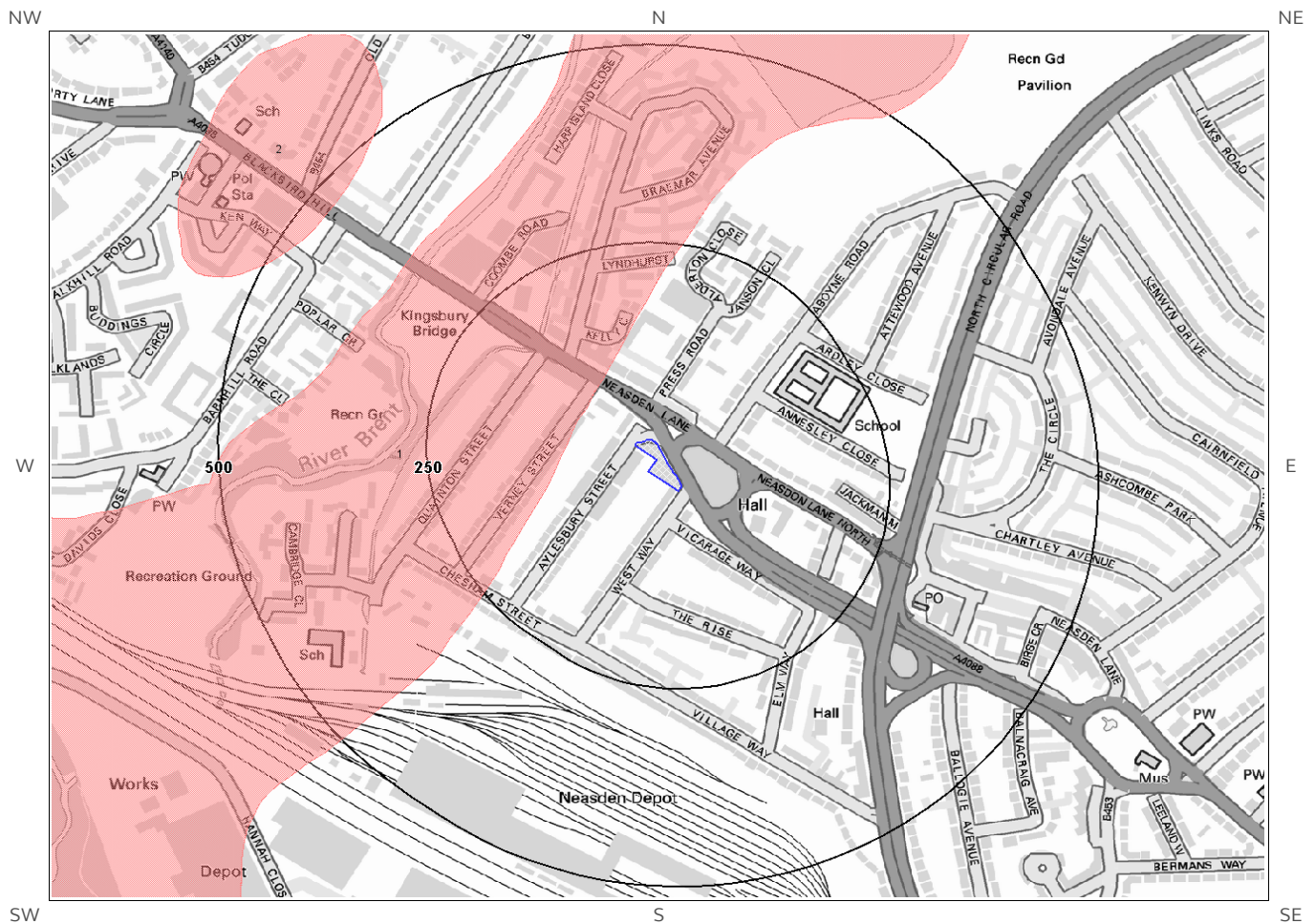
The database has been searched on site, including a 50m buffer.

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

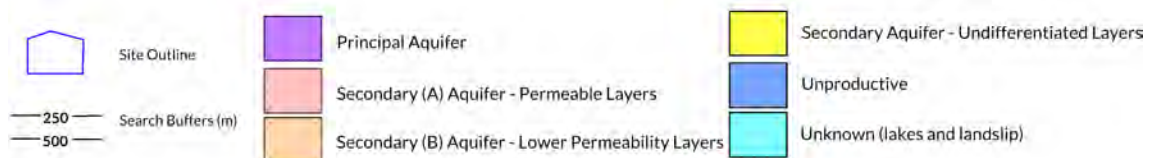
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

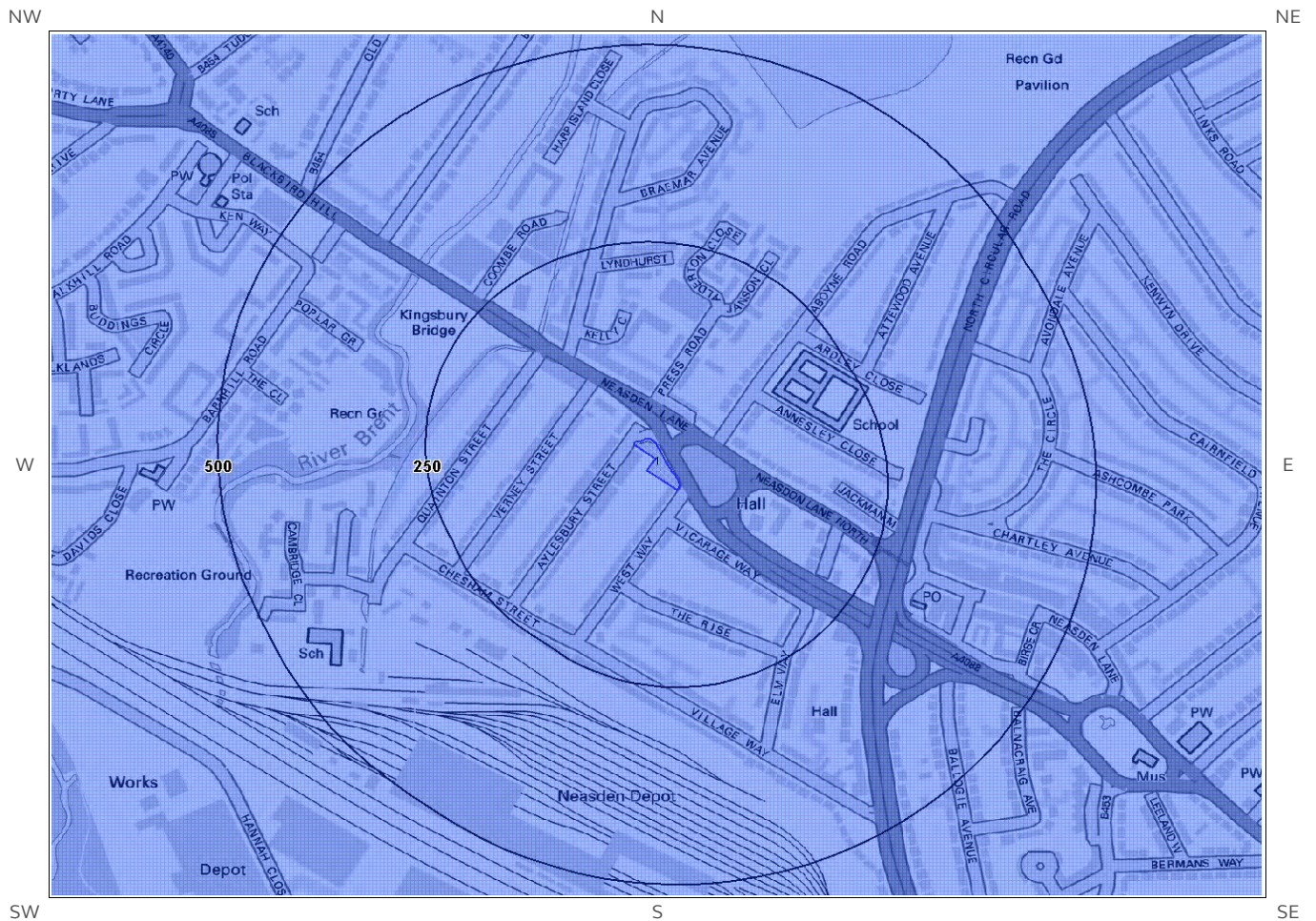
6a. Aquifer Within Superficial Geology



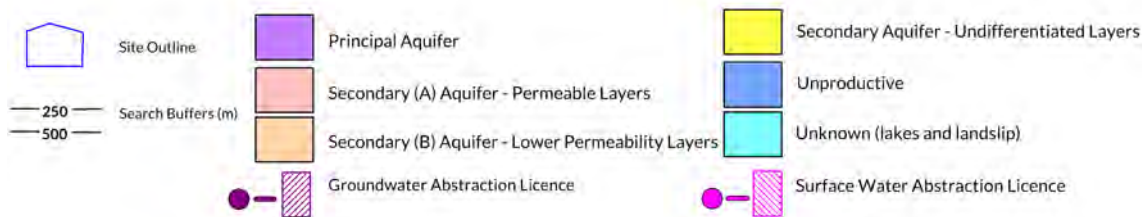
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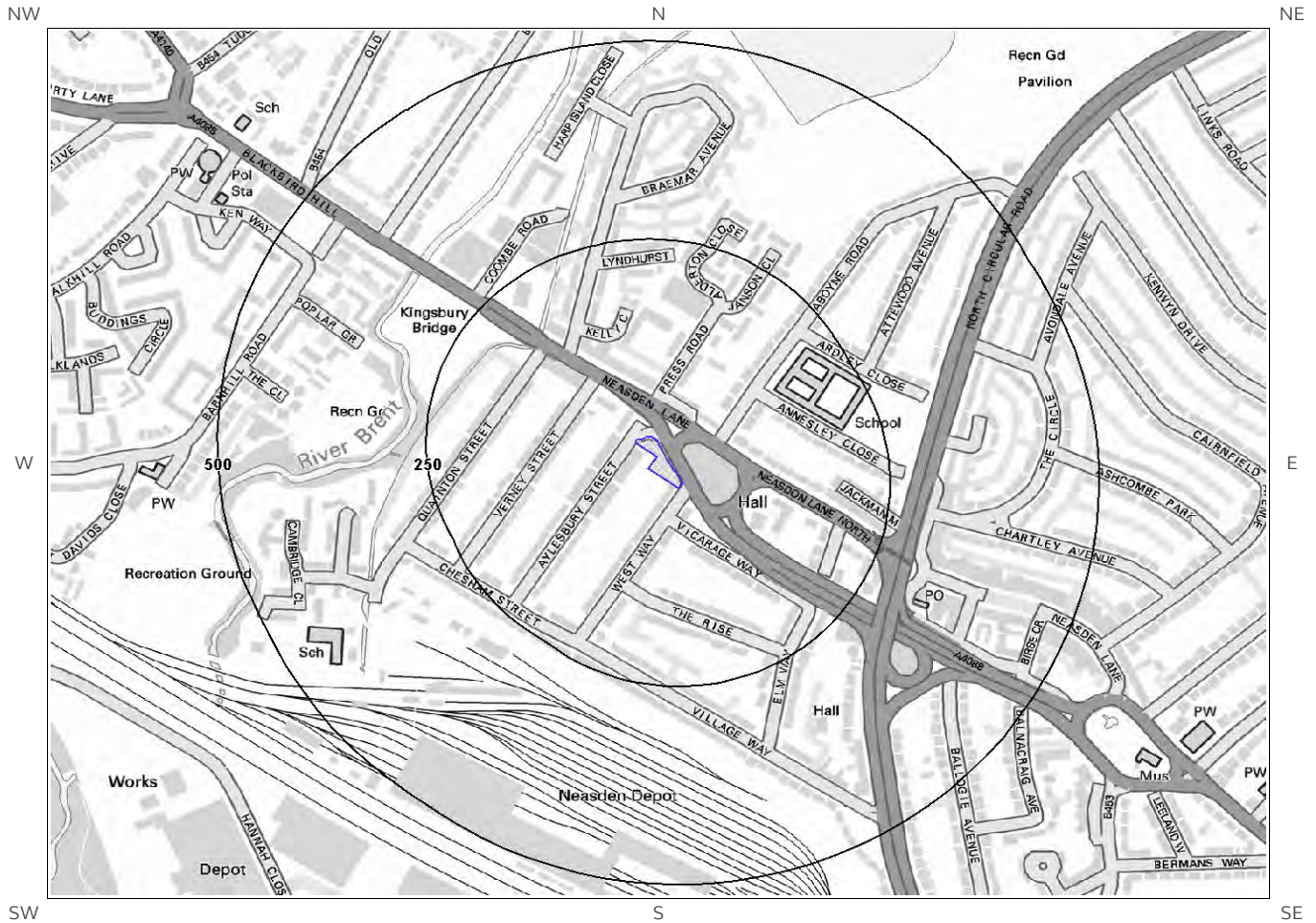
6b. Aquifer Within Bedrock Geology and Abstraction Licenses



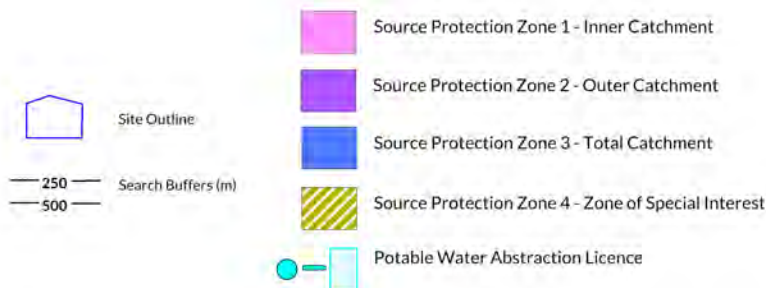
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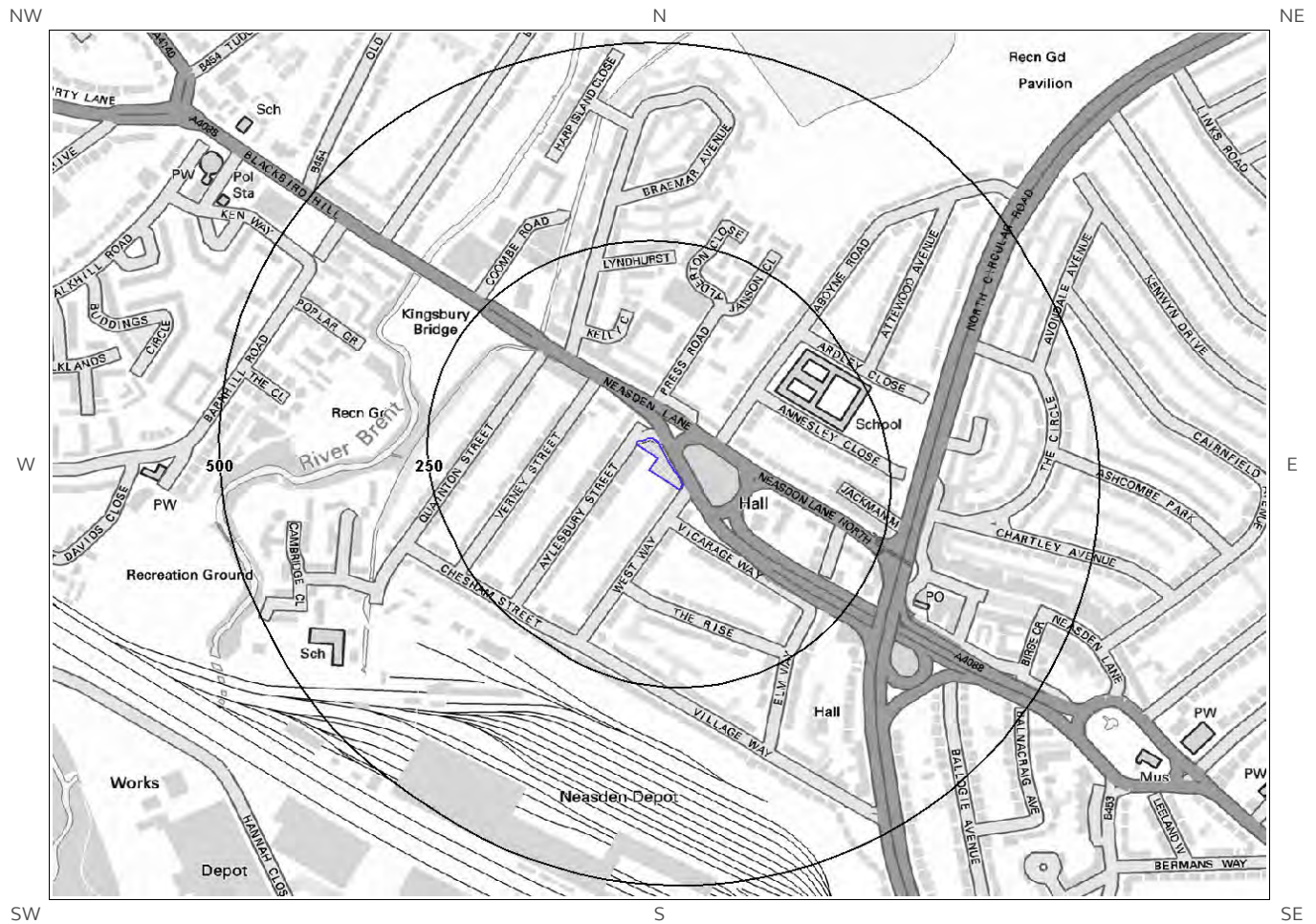
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



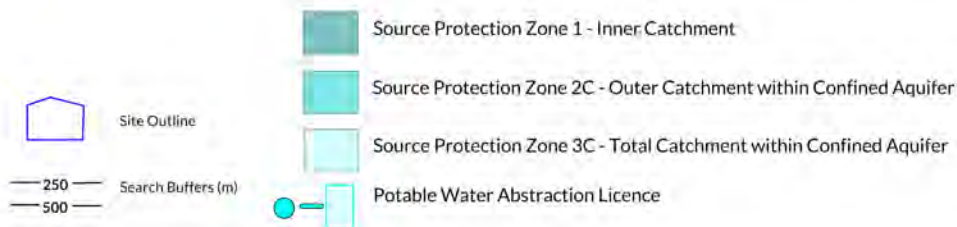
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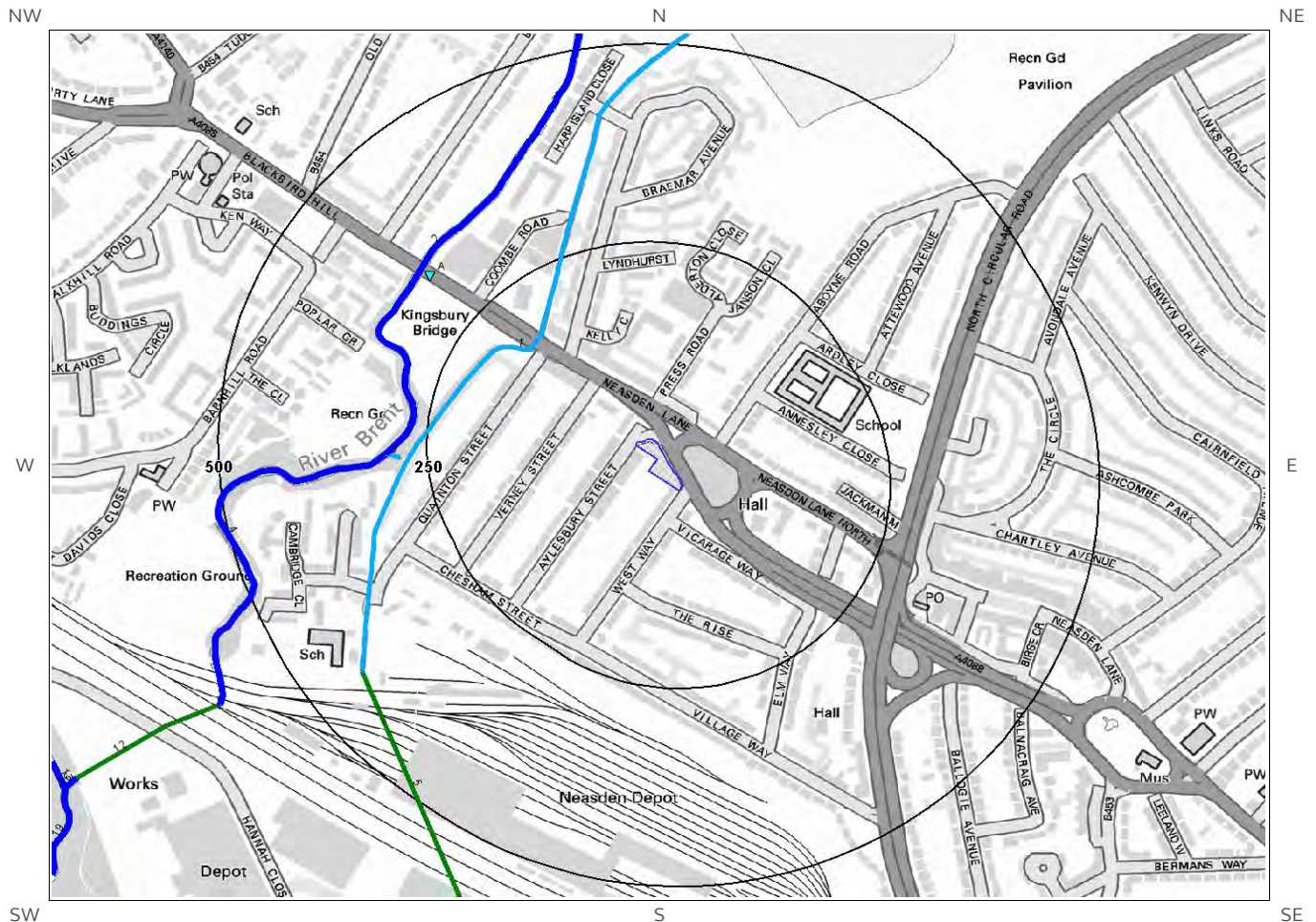
6d. Hydrogeology – Source Protection Zones within confined aquifer



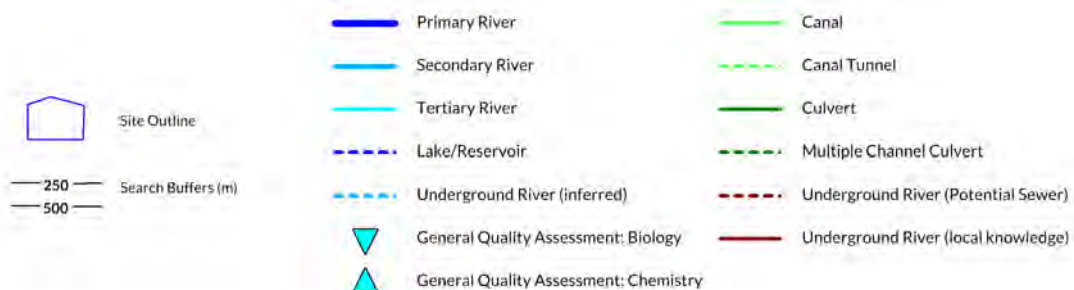
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6e. Hydrology – Detailed River Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Are there 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	74	NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	471	NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.2 Aquifer within Bedrock Deposits

Are there 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

Are there any Groundwater Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? No

Database searched and no data found.

6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site? No

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site? No

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

Is there any Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site? Yes

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

6.9 River Quality

Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site? Yes

6.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

The following Biological Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
27A	326	NW	520620 186430	River Name: Brent Reach: Neasden Lane Swo - Wembley Brook End/Start of Stretch: Start of Stretch NGR	D	D	D	D	D
28A	326	NW	520620 186430	River Name: Brent Reach: Conf Dollis/mutton Bk - Neasden Lane Swo End/Start of Stretch: End of Stretch NGR	D	D	D	D	D

6.9.2 Chemical Quality:

Database searched and no data found.

6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site? Yes

The following Detailed River Network records are represented on the Hydrology Map (6e):

ID	Distance (m)	Direction	Details	
1	174	NW	River Name: Canal Feeder Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
2	268	W	River Name: River Brent Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
3	282	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
4	299	W	River Name: River Brent Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
5	427	SW	River Name: Canal Feeder Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined

6.11 Surface Water Features

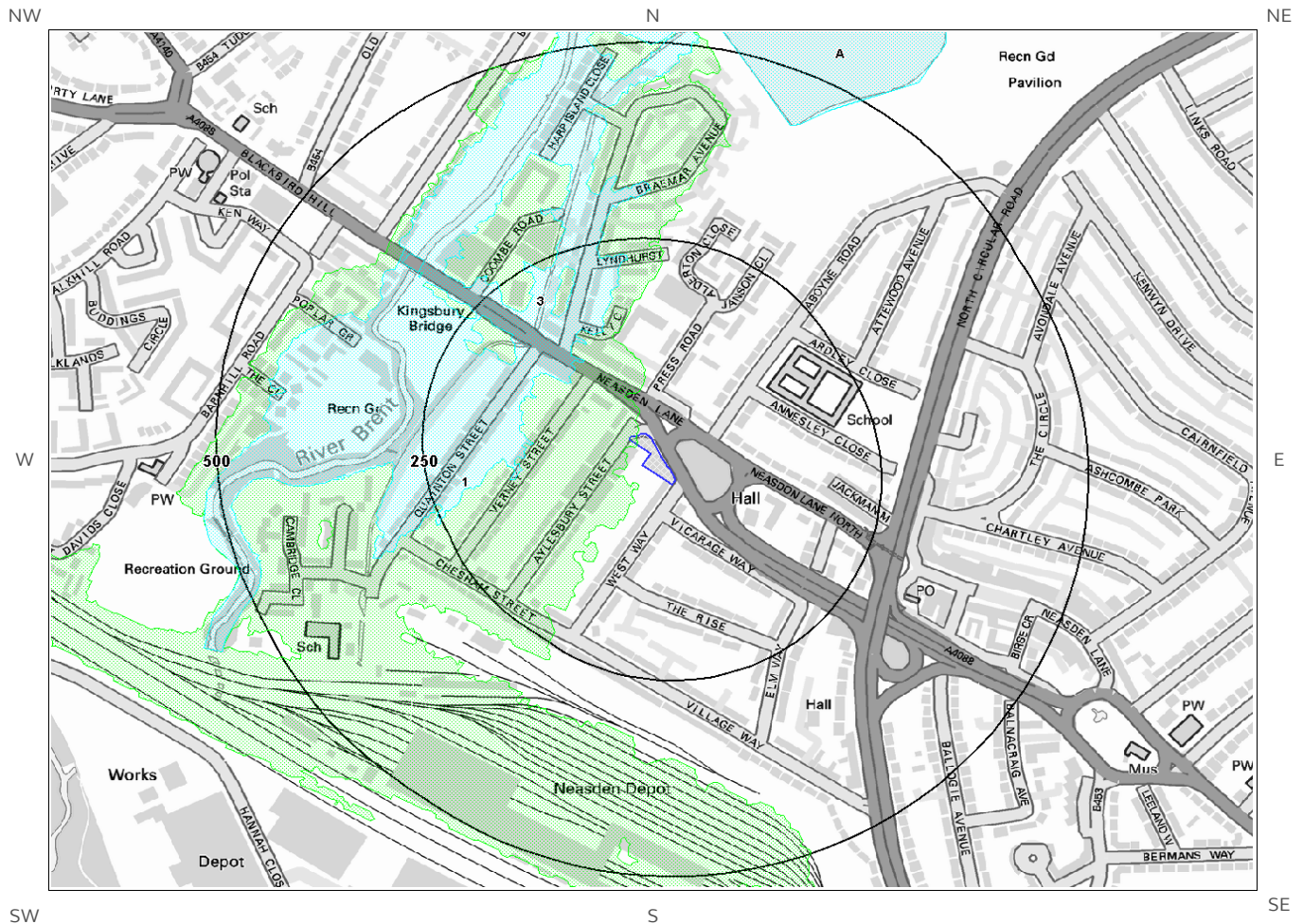
Are there any surface water features within 250m of the study site?

Yes

The following surface water records are not represented on mapping:

Distance (m)	Direction
172	NW
176	NW

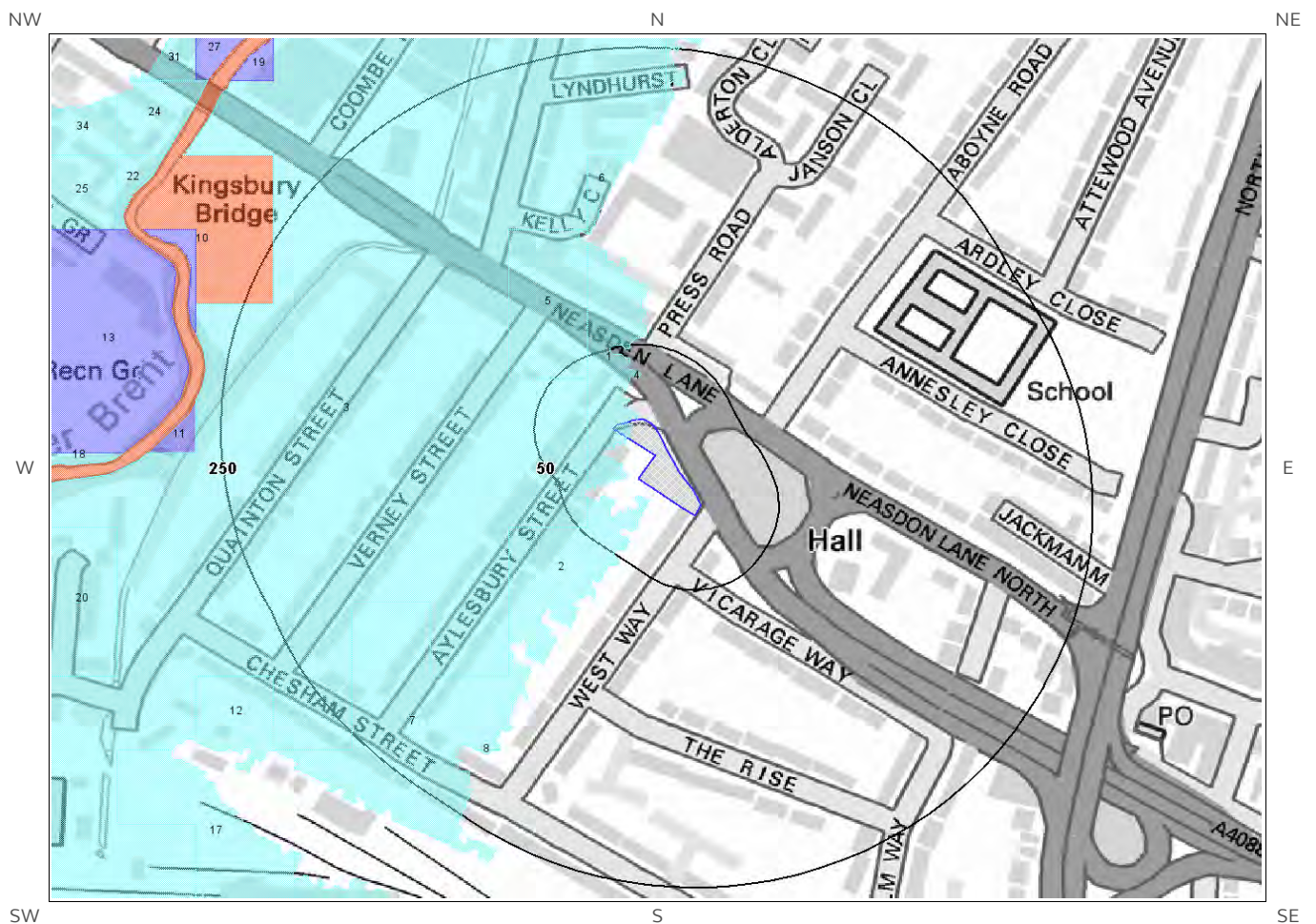
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



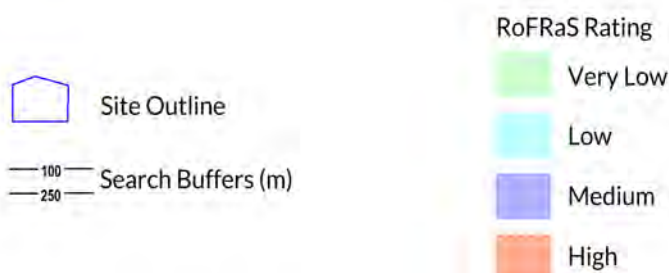
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? Yes

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

ID	Distance (m)	Direction	Update	Type
1	0	On Site	01-Feb-2017	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? Yes

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	100	NW	01-Feb-2017	Zone 3 - (Fluvial Models)

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

What is the highest risk of flooding onsite? 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 Low (greater than 1 in 1000 but less than 1 in 100) chance of flooding in any given year.

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

ID	Distance (m)	Direction	RoFRaS flood Risk
1	0.0	On Site	Low
2	8.0	SW	Low

3	16.0	W	Low
4	27.0	N	Low
5	37.0	NW	Low

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No
Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site? No

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? No

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 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Not Prone

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

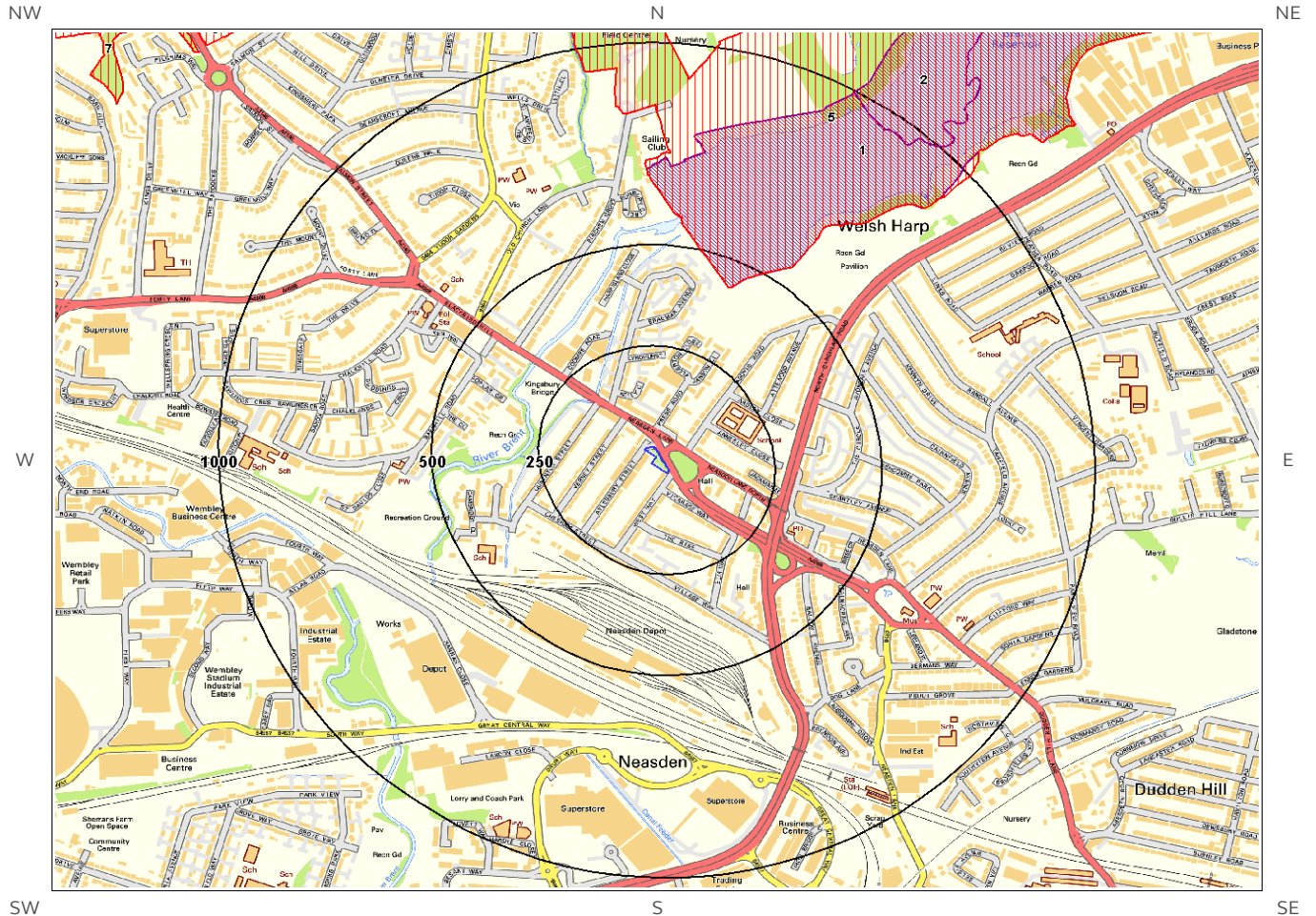
7.8 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result? Not Applicable

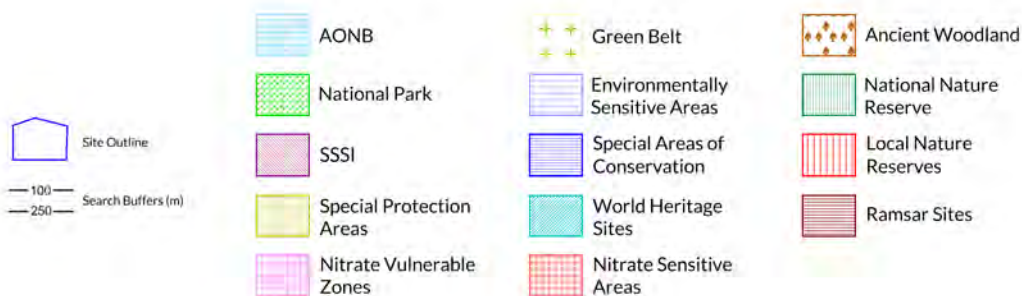
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? Yes

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

4

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	433	NE	Brent Reservoir	Natural England
2	954	NE	Brent Reservoir	Natural England
Not shown	1697	NE	Brent Reservoir	Natural England
Not shown	1854	NE	Brent Reservoir	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:

3

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

ID	Distance (m)	Direction	LNR Name	Data Source
5	433	NE	Brent Reservoir / Welsh Harp	Natural England
6	1408	NW	Fryent Country Park	Natural England
7	1435	NW	Fryent Country Park	Natural England

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

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

9.1.1 Shrink Swell

What is the maximum Shrink-Swell* hazard rating identified on the study site? Moderate

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

Hazard
Ground conditions predominantly high plasticity. Do not plant or remove trees or shrubs near to buildings without expert advice about their effect and management. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a probable increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a probable increase in insurance risk during droughts or where vegetation with high moisture demands is present.

9.1.2 Landslides

What is the 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

What is the 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

What is the 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

What is the 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

What is the maximum Running Sand** 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 running sand identified. 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.

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

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

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

Are there any coal mining areas within 75m of the study site? No

Database searched and no data found.

10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary? No

Database searched and no data found.

10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site? No

Guidance: No Guidance Required.

Contact Details

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

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Tel: 0115 936 3143.
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BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

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DX 716176 Mansfield 5
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<https://www.groundsure.com/terms-and-conditions-sept-2016>

Arcadis

Arcadis, 10, MEDAWAR ROAD,
GUILDFORD, GU2 7AR

Groundsure
Reference:

GS-3885853

Your Reference: PO0067007-1

Report Date 16 May 2017

Report Delivery Method: Email - pdf

Groundsure Geo Insight

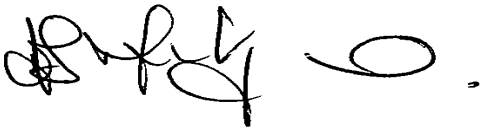
Address: Aylesbury Street Trewin, Brent , NW10 0LU

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

Groundsure Geo Insight

Address: Aylesbury Street Trewin, Brent , NW10 0LU
Date: 16 May 2017
Reference: GS-3885853
Client: Arcadis



Aerial Photograph Capture date: 07-Jun-2015
Grid Reference: 520910,186176
Site Size: 0.12ha

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Overview of Findings

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

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

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

Section 1: Geology 1:10,000 Scale

1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	No
	1.2.2 Are there any records of landslide within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and Faults	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 faults within 500m of the study site boundary at 1:10,000 scale?	No

Section 2: Geology 1:50,000 Scale

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

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and Faults

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 faults within 500m of the study site boundary?

No

Section 3: Radon

3. Radon

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

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

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	2	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	2

Section 5: Mining, Extraction & Natural Cavities

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

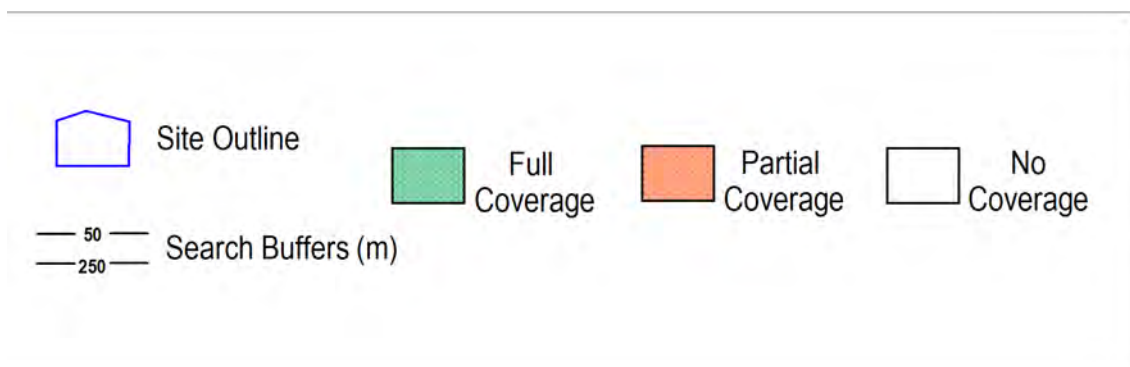
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Moderate				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Negligible				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Negligible				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	0	0	0		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	1	0	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	1	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	866.0	Some deposits are mapped	Full	Full	No coverage
N3	1158.0	Some deposits are mapped	Full	Full	No coverage
N4	1475.0	Some deposits are mapped	Full	Full	No coverage

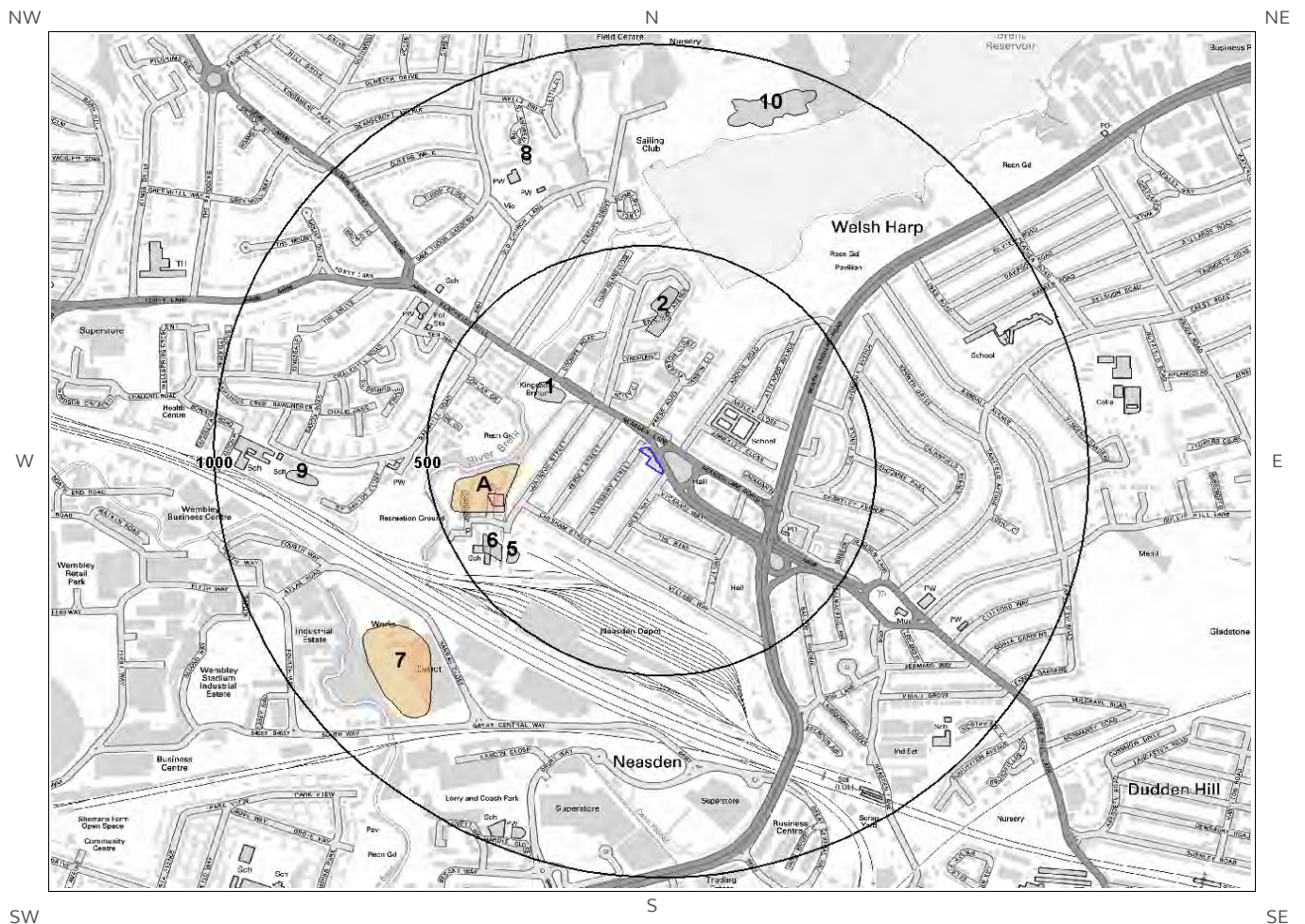
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not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

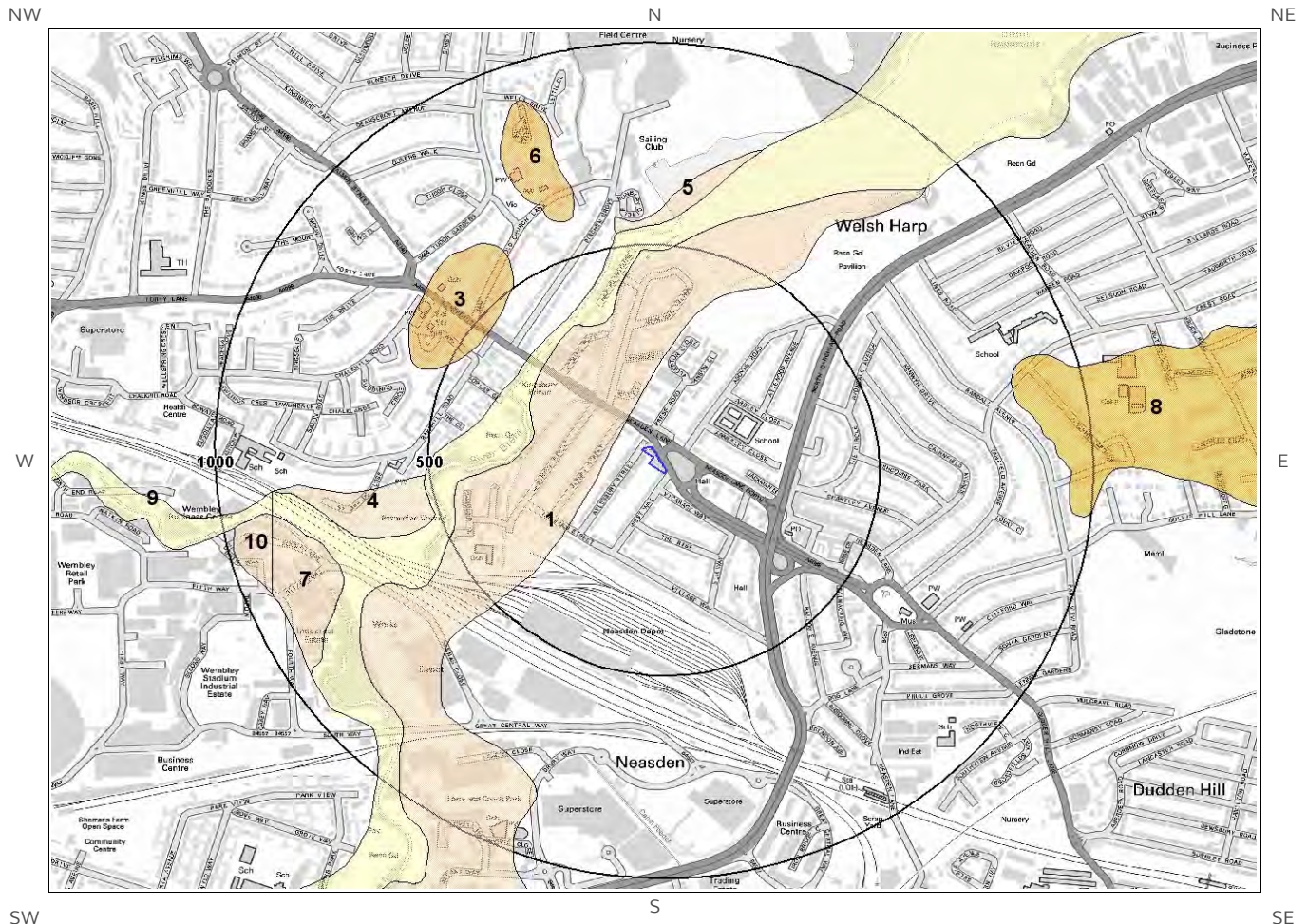
1.1 Artificial Ground

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

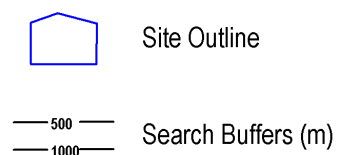
ID	Distance	Direction	LEX Code	Description	Rock Description
1	219.0	NW	WGR-UNKNOWN	Worked Ground (Undivided)	Unknown/unclassified Entry
2	276.0	N	WGR-UNKNOWN	Worked Ground (Undivided)	Unknown/unclassified Entry
3A	285.0	W	MGR-UNKNOWN	Made Ground (Undivided)	Unknown/unclassified Entry
4A	338.0	W	WMGR-UNKNOWN	Infilled Ground	Unknown/unclassified Entry
5	373.0	SW	WGR-UNKNOWN	Worked Ground (Undivided)	Unknown/unclassified Entry
6	395.0	SW	WGR-UNKNOWN	Worked Ground (Undivided)	Unknown/unclassified Entry

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



Artificial Ground Legend

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1.2 Superficial Deposits and Landslips

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

1.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	66.0	NW	TPGR-XSV	Taplow Gravel Formation - Sand And Gravel	Sand And Gravel
2	256.0	W	ALV-C	Alluvium - Clay (unlithified Deposits Coding Scheme)	Clay
3	463.0	NW	LHGR-XSV	Lynch Hill Gravel Member - Sand And Gravel	Sand And Gravel

1.2.2 Landslip

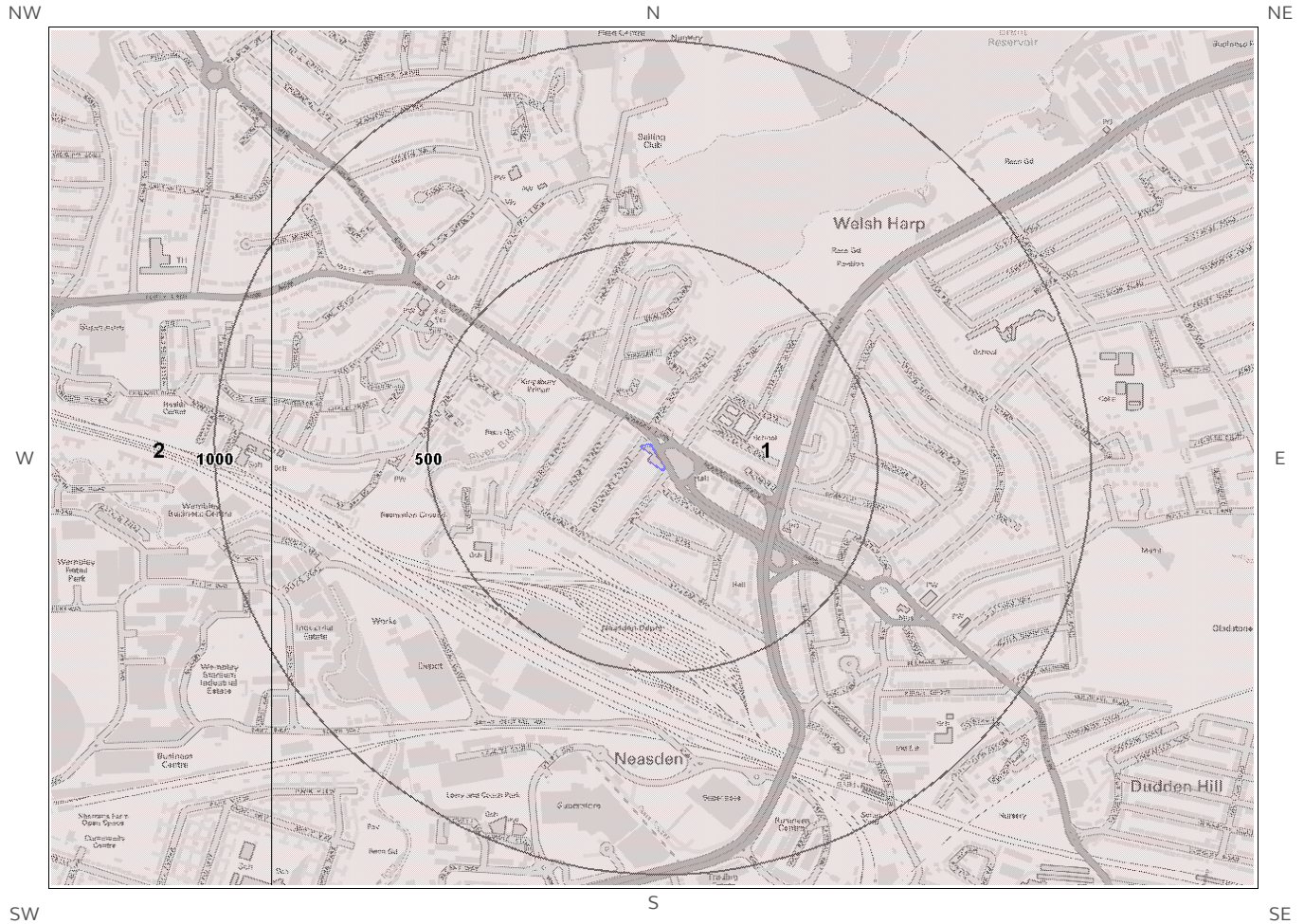
Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale? No

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 Faults Map (1:10,000 scale)

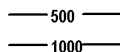


Bedrock and Faults Legend

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Site Outline



Search Buffers (m)

1.3 Bedrock and Faults

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 Faults

Are there any records of Faults 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.

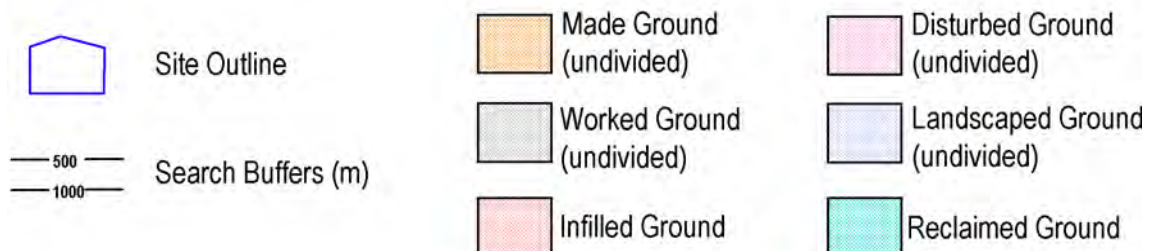
2 Geology 1:50,000 Scale

2.1 Artificial Ground Map



Ground Workings Legend

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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 256

2.1.1 Artificial/ Made Ground

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

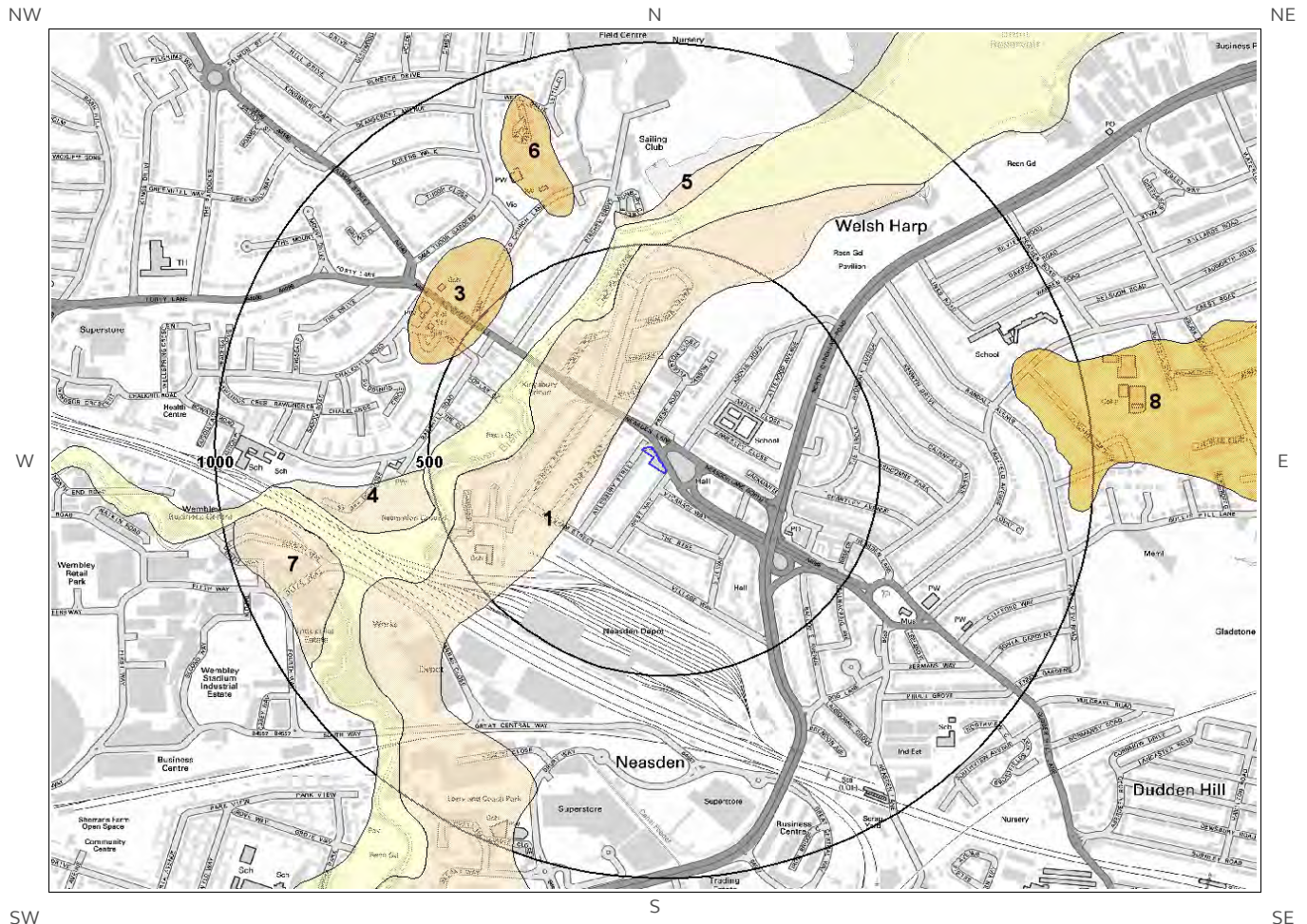
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	285.0	W	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

2.1.2 Permeability of Artificial Ground

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

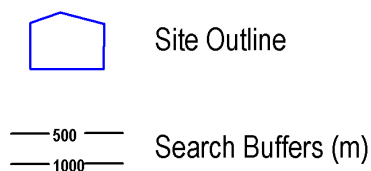
Database searched and no data found.

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



Ground Workings Legend

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2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance	Direction	LEX Code	Description	Rock Description
1	74.0	NW	TPGR-XSV	TAPLOW GRAVEL MEMBER	SAND AND GRAVEL
2	259.0	W	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	471.0	NW	LHGR-XSV	LYNCH HILL 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? No

Database searched and no data found.

2.2.3 Landslip

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

Database searched and no data found.

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

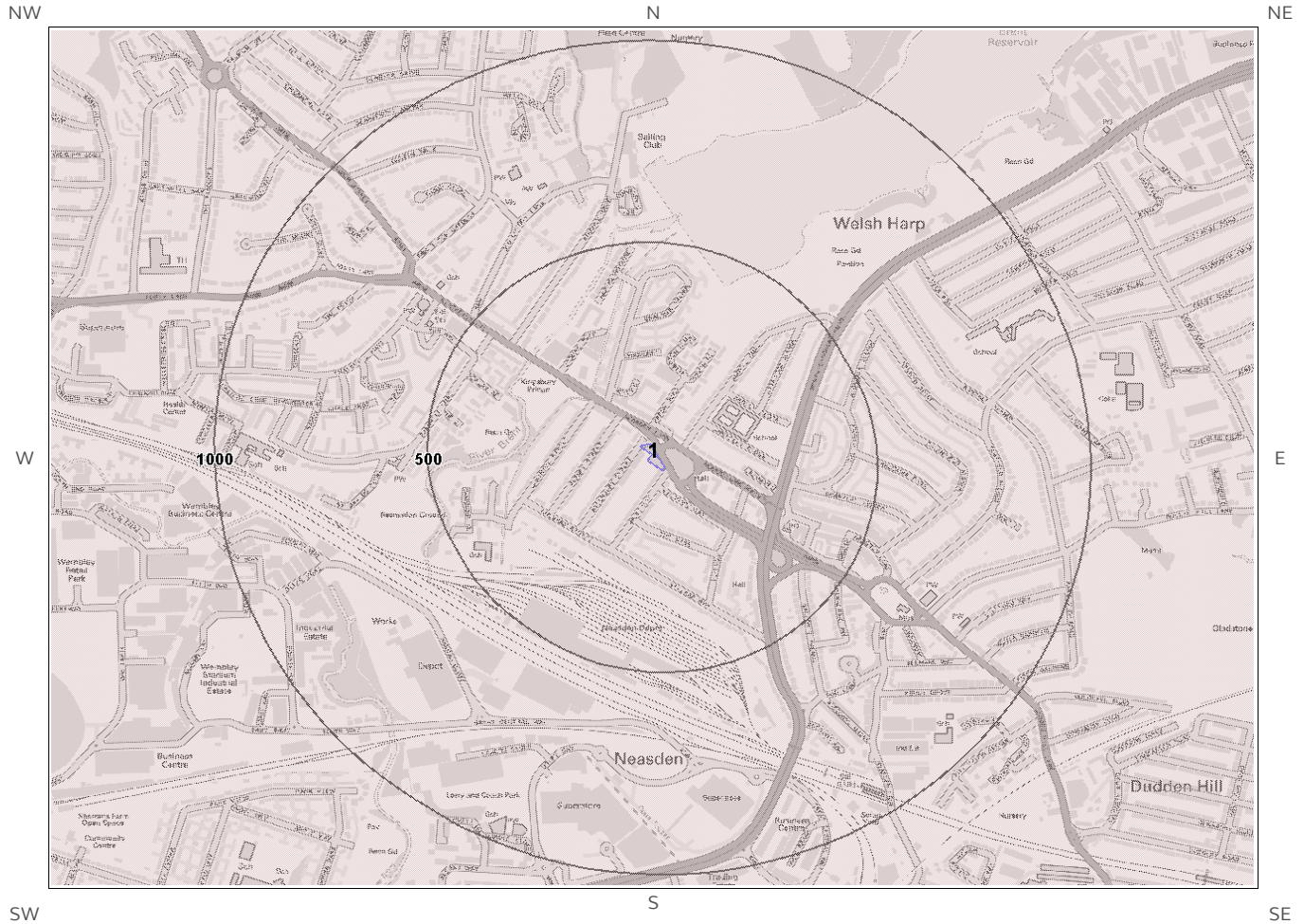
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

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

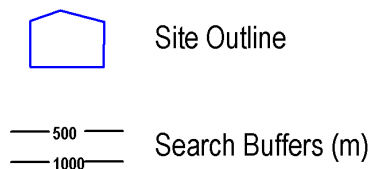
Database searched and no data found.

2.3 Bedrock and Faults Map (1:50,000 scale)



Ground Workings Legend

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2.3 Bedrock, Solid Geology & Faults

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 256

2.3.1 Bedrock/Solid Geology

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

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

2.3.2 Permeability of Bedrock Ground

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

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

2.3.3 Faults

Are there any records of Faults 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

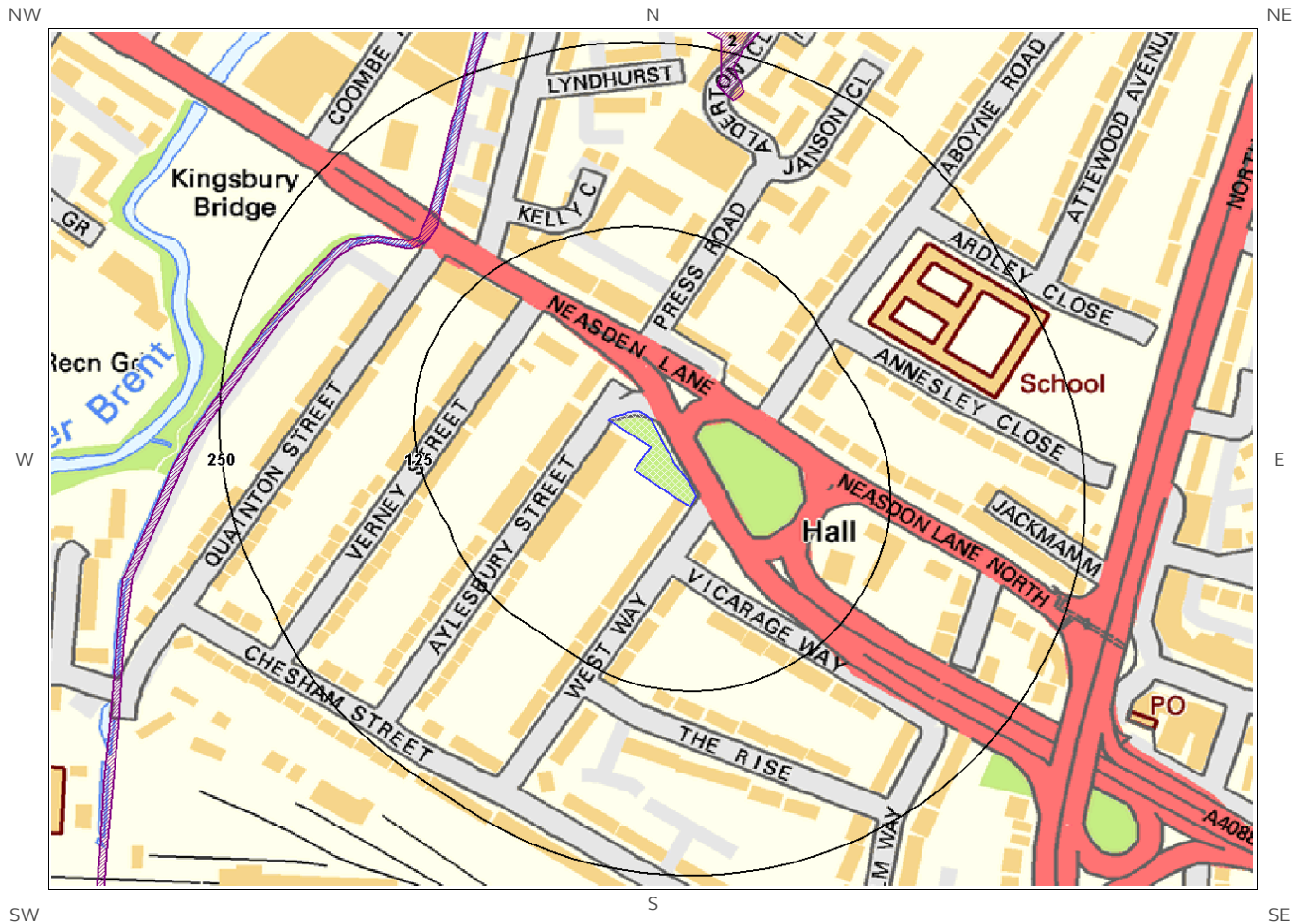
3.1 Radon Affected Areas

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.

3.2 Radon Protection

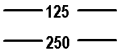
Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

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	168.0	NW	520540 185898	Canal Feeder	1895
2	219.0	N	520946 186475	Ponds	1895

4.2 Historical Underground Working Features derived from Historical Mapping

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

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

Database searched and no data found.

4.3 Current Ground Workings

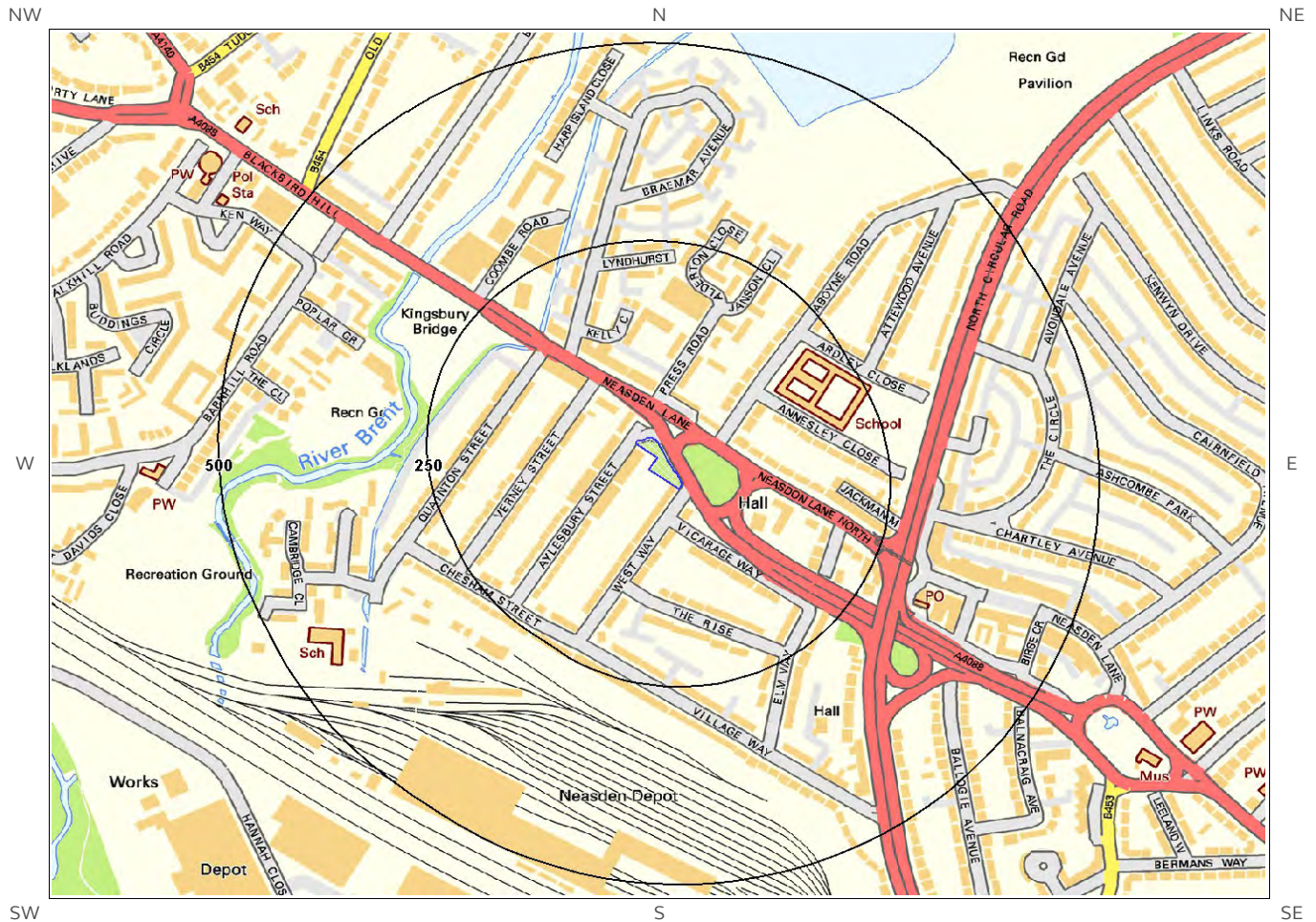
This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

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

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

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	507.0	SW	520700 185700	Crushed Rock	Wembley Rail Depot	A site where mineral commodities are unloaded from rail trucks and stored	Active
Not shown	507.0	SW	520700 185700	Sand & Gravel	Wembley Rail Depot	A site where mineral commodities are unloaded from rail trucks and stored	Active

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 Peter Brett Associates natural cavities database.

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 Coal Authority issued on behalf of 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 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin 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.

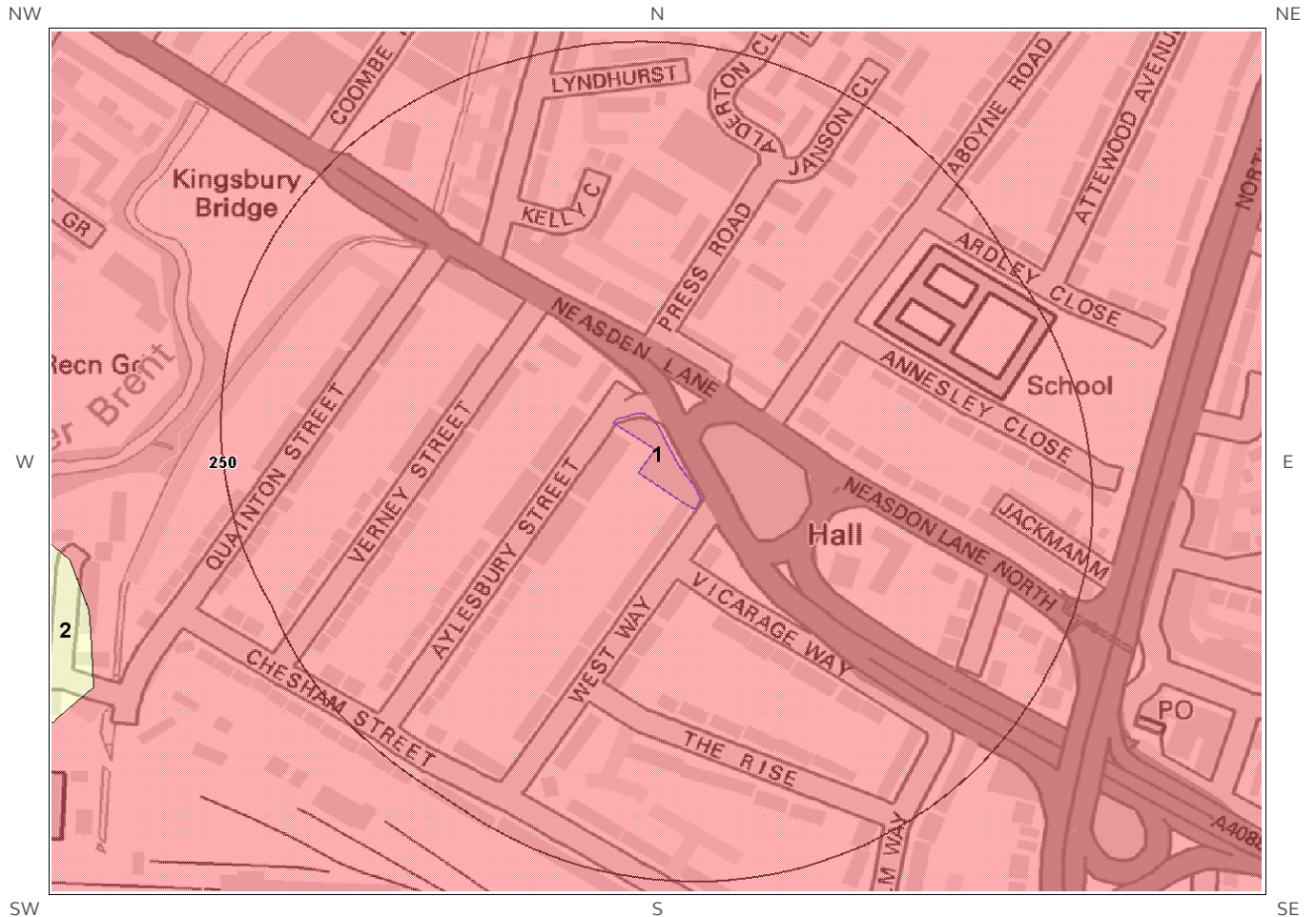
Are there any Clay Mining areas within 1000m of the study site boundary?

No

Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay Map

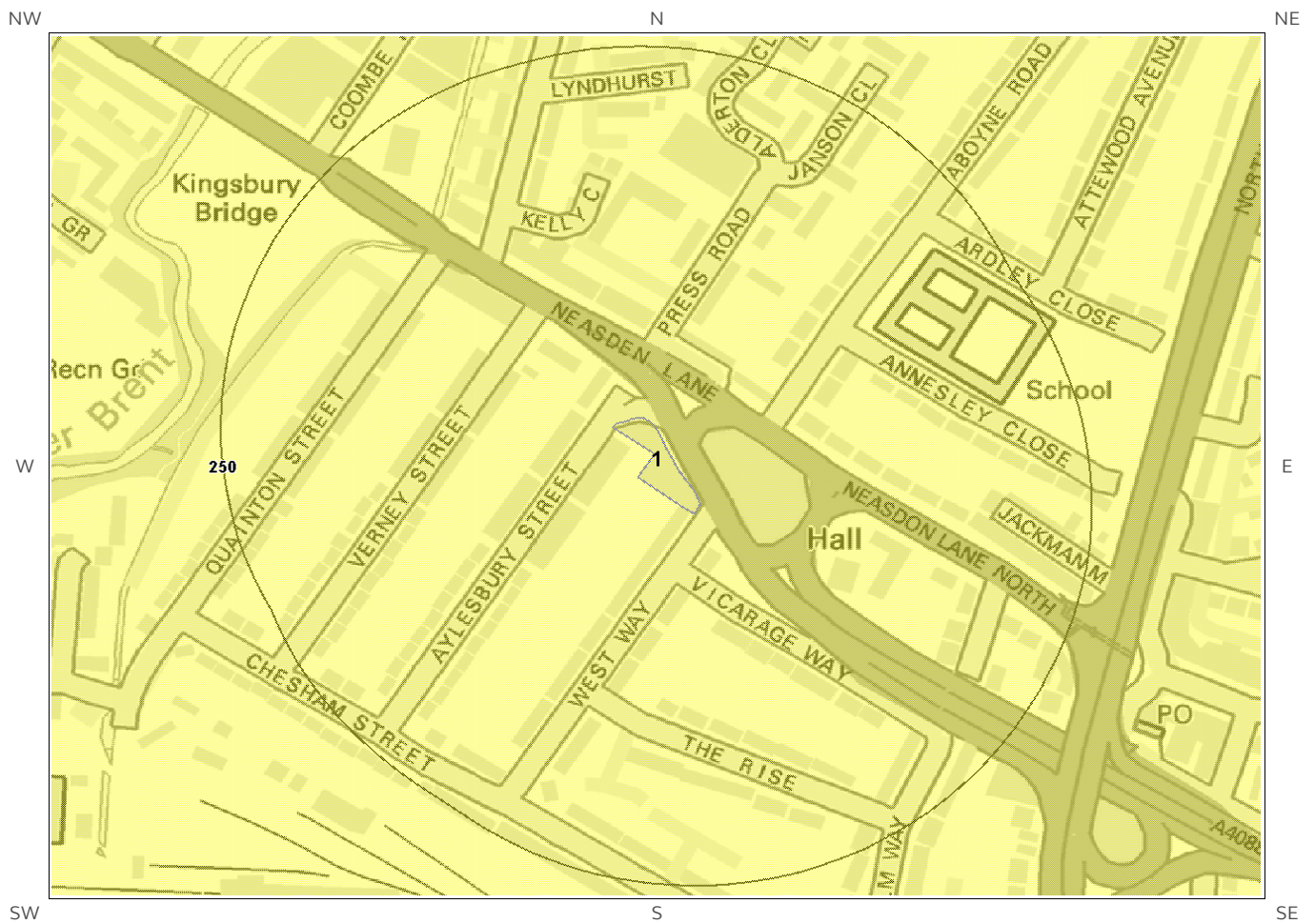


Shrink Swell Clay Legend

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6.2 Landslides Map

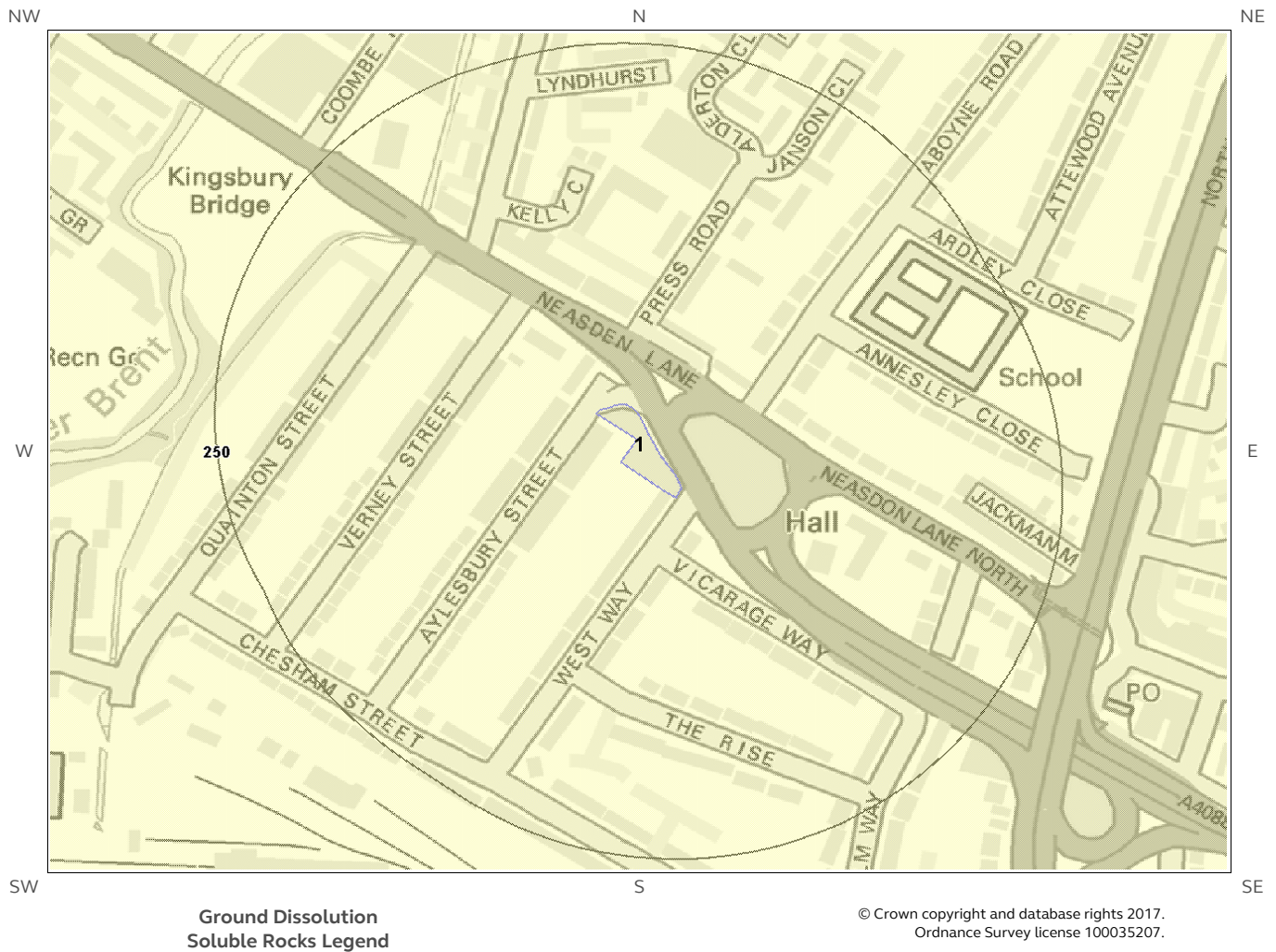


Landslides Legend

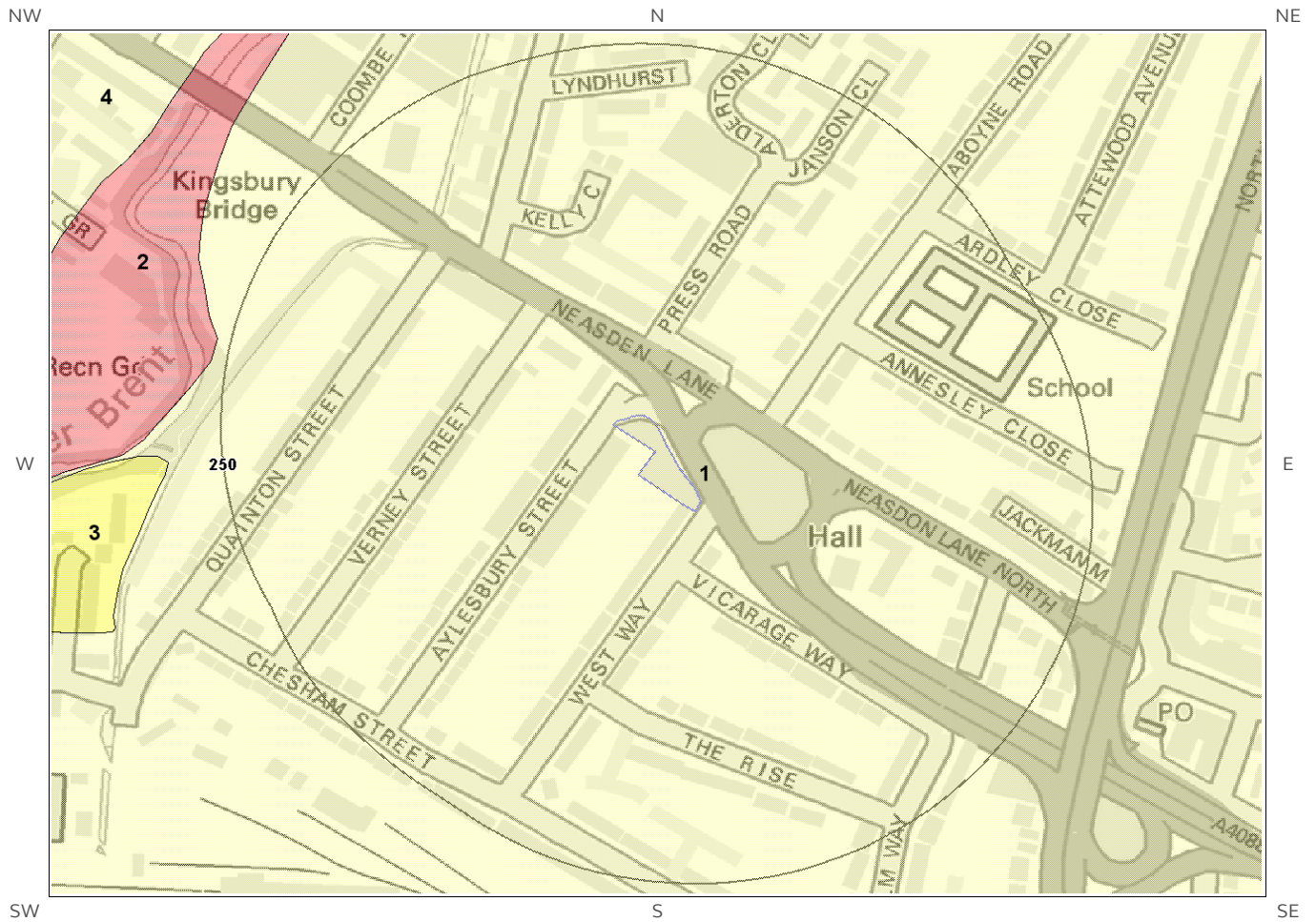
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6.3 Ground Dissolution of Soluble Rocks Map



6.4 Compressible Deposits Map

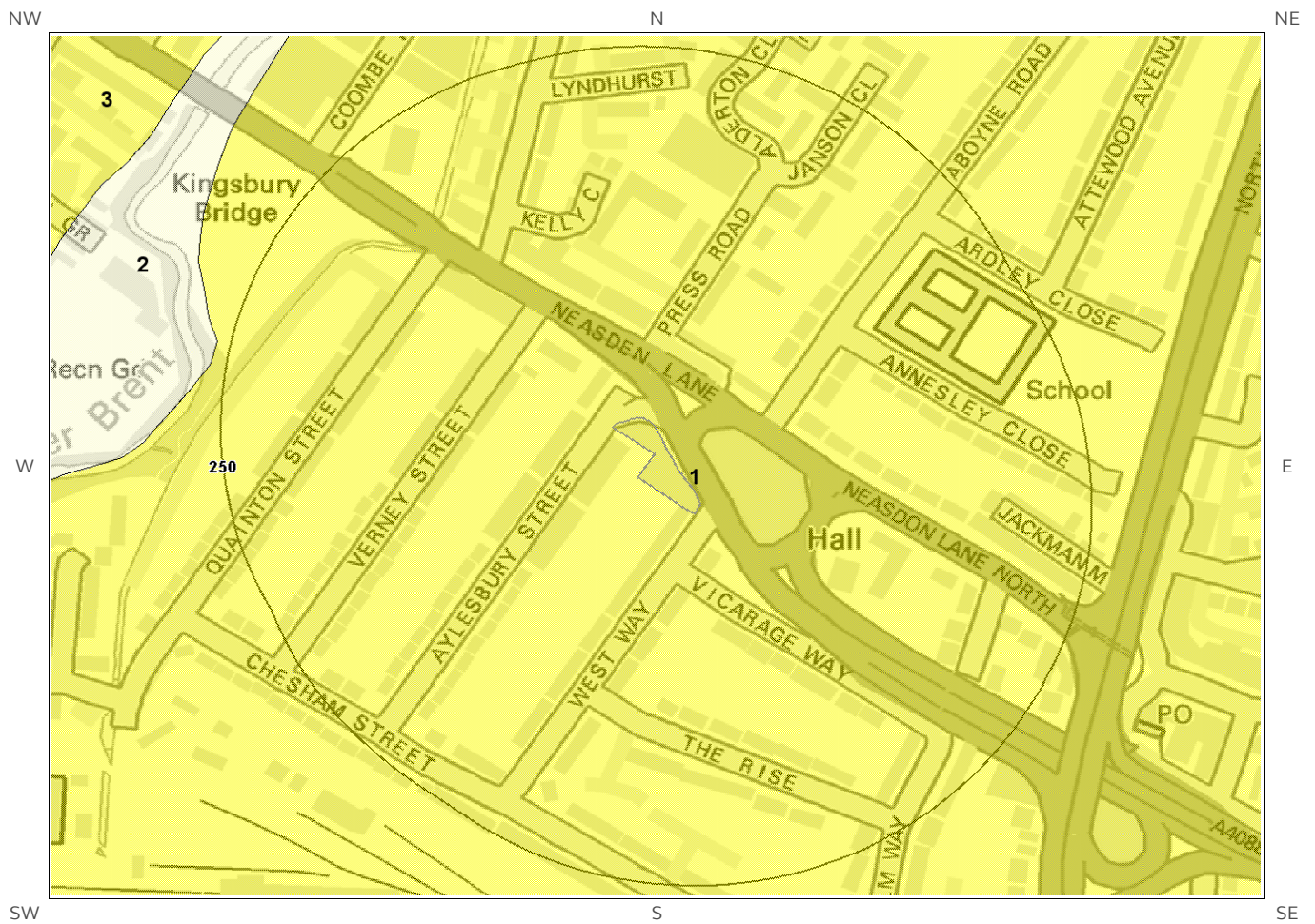


Compressible Deposits Legend

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6.5 Collapsible Deposits Map

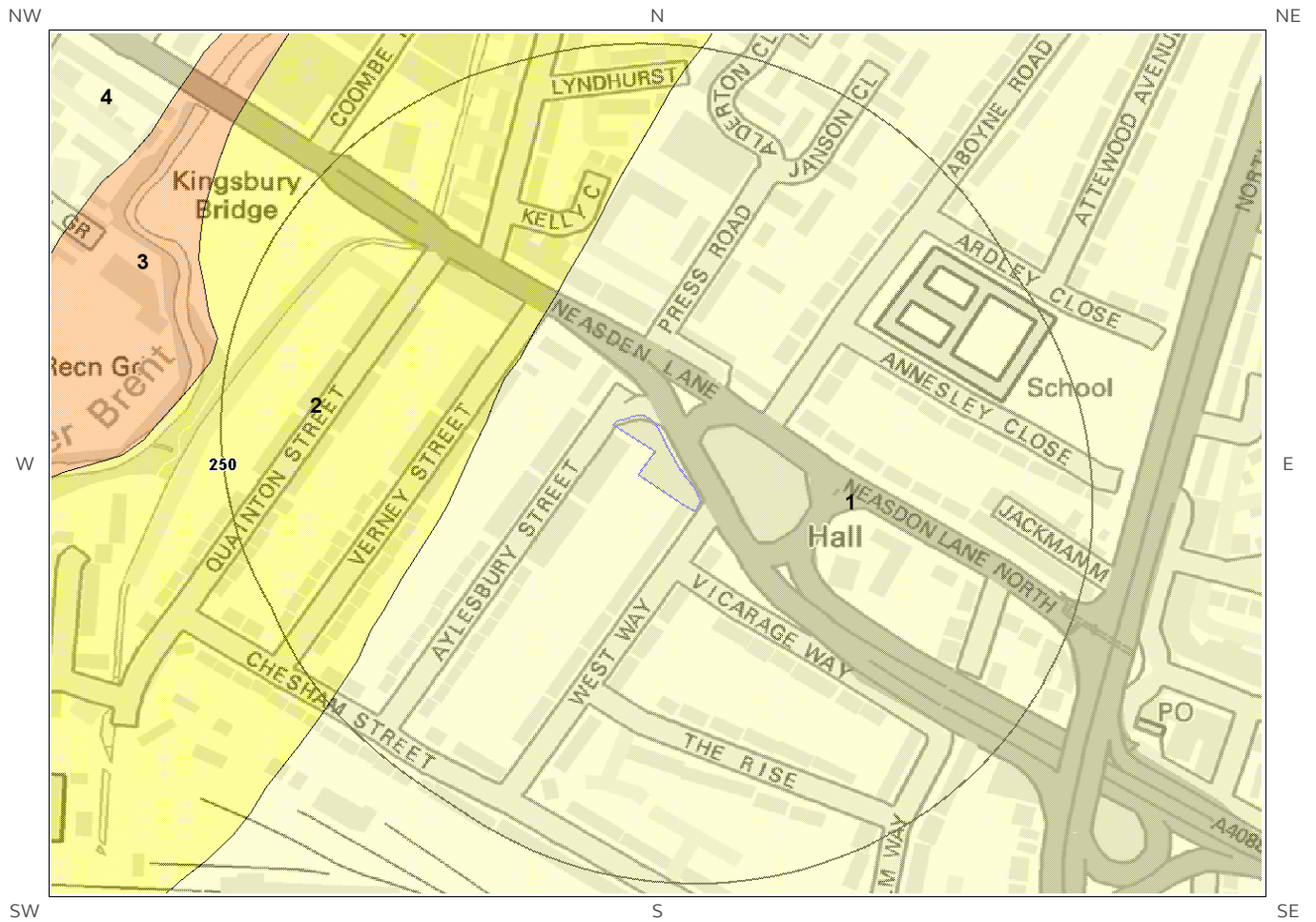


Collapsible Deposits Legend

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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? Moderate

6.1 Shrink-Swell Clays

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

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

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

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

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

6.3 Ground Dissolution of Soluble Rocks

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

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

6.4 Compressible Deposits

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

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

6.5 Collapsible Deposits

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

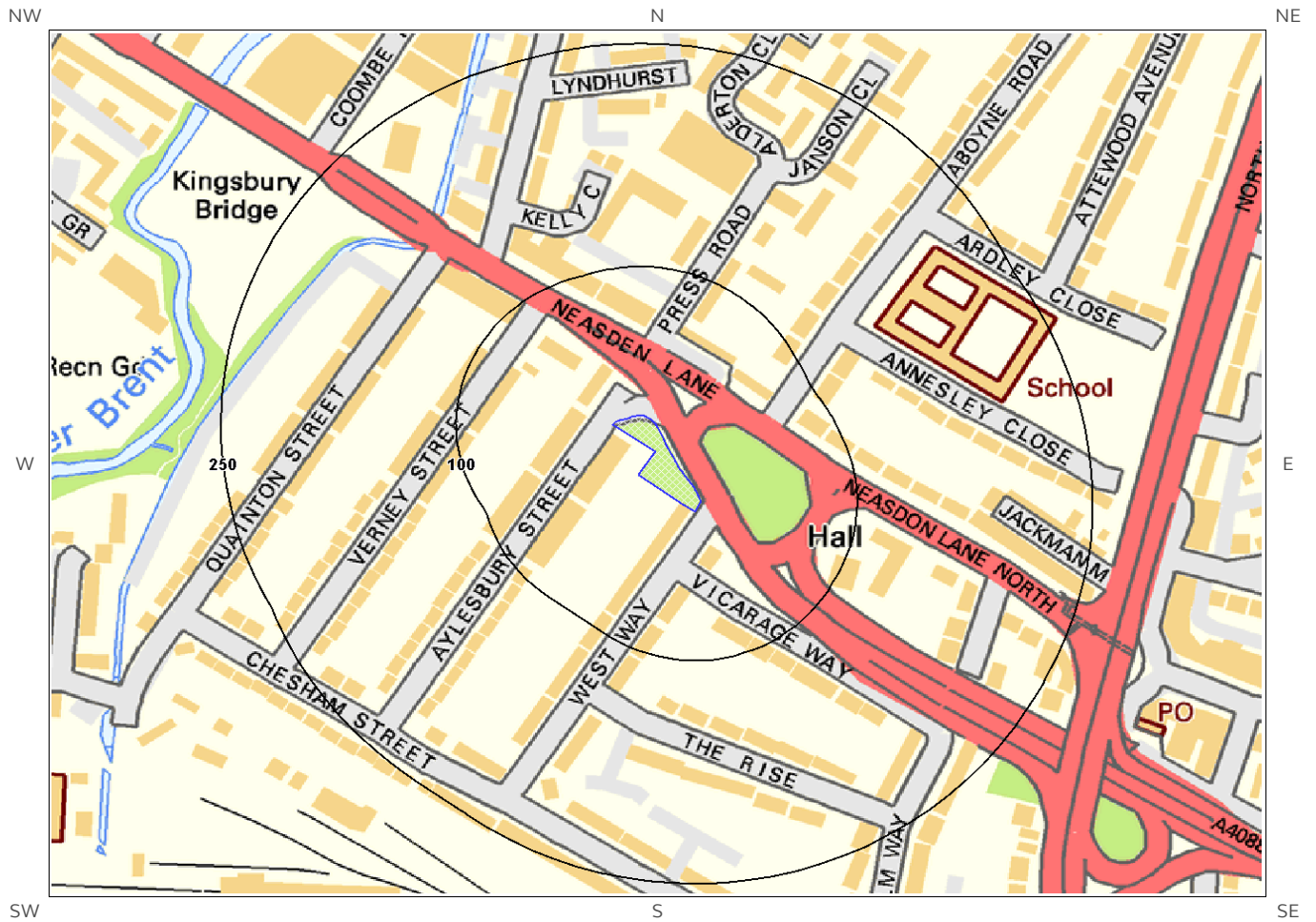
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible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

6.6 Running Sands

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

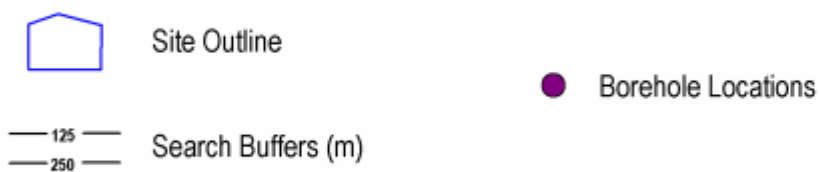
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due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

7 Borehole Records Map



Borehole Records Legend

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7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary:

0

Database searched and no data found.

8 Estimated Background Soil Chemistry

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

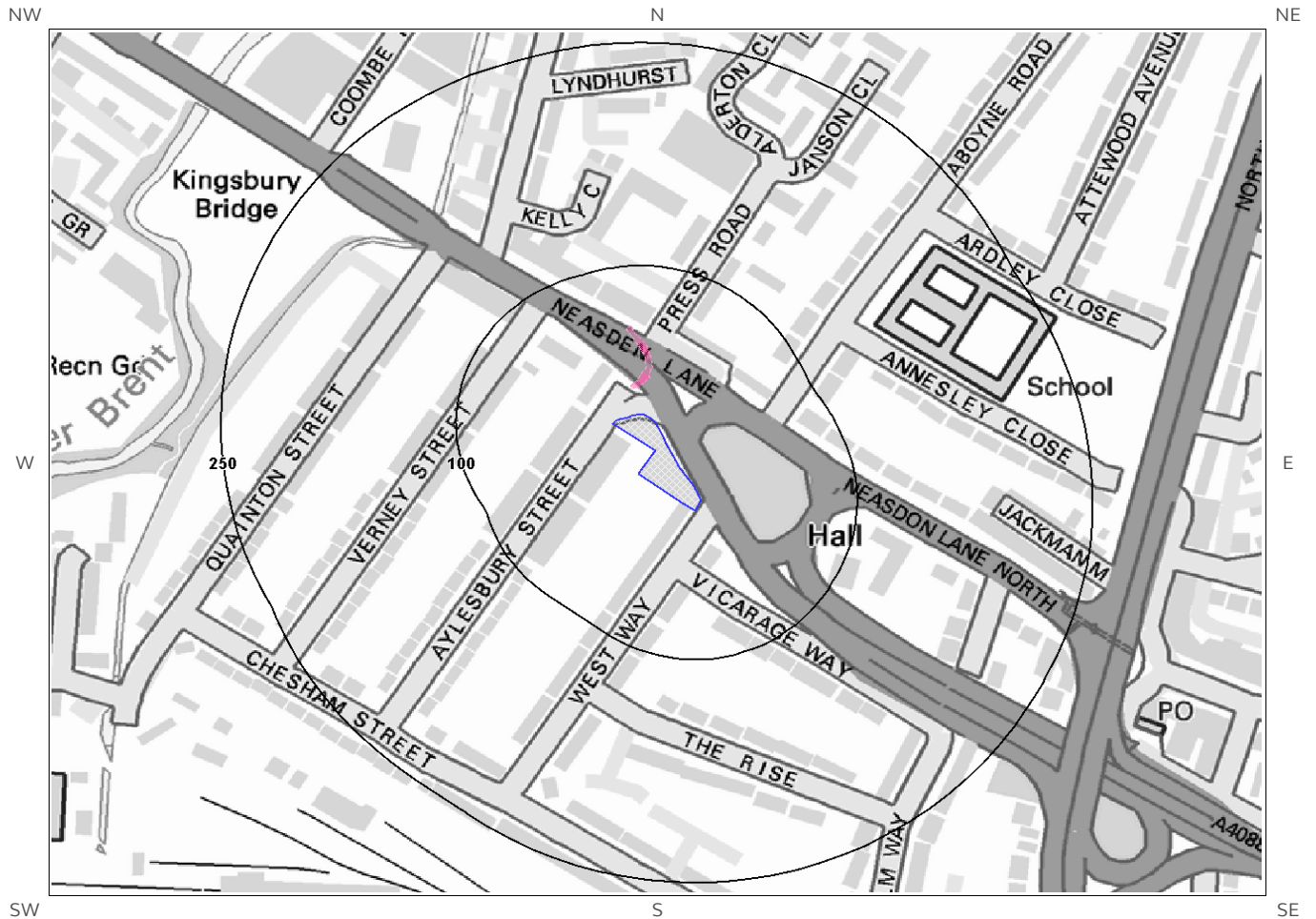
1

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

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

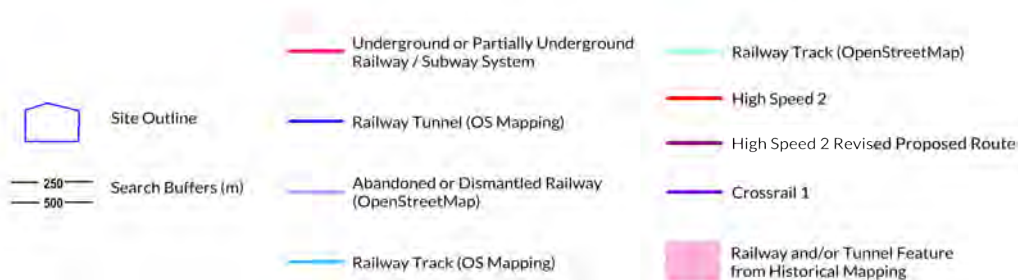
*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels Map



Railways and Tunnels Legend

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9 Railways and Tunnels

9.1 Tunnels

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

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

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

Database searched and no data found.

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

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

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

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

Database searched and no data found.

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

9.2 Historical Railway and Tunnel Features

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

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

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

ID	Distance (m)	Direction	NGR	Details	Date
1	18	N	520889 186261	Railway Sidings	1936

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

9.3 Historical Railways

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

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

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

Database searched and no data found.

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

9.4 Active Railways

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

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

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

Database searched and no data found.

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

9.5 Railway Projects

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

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

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

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

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

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

Contact Details

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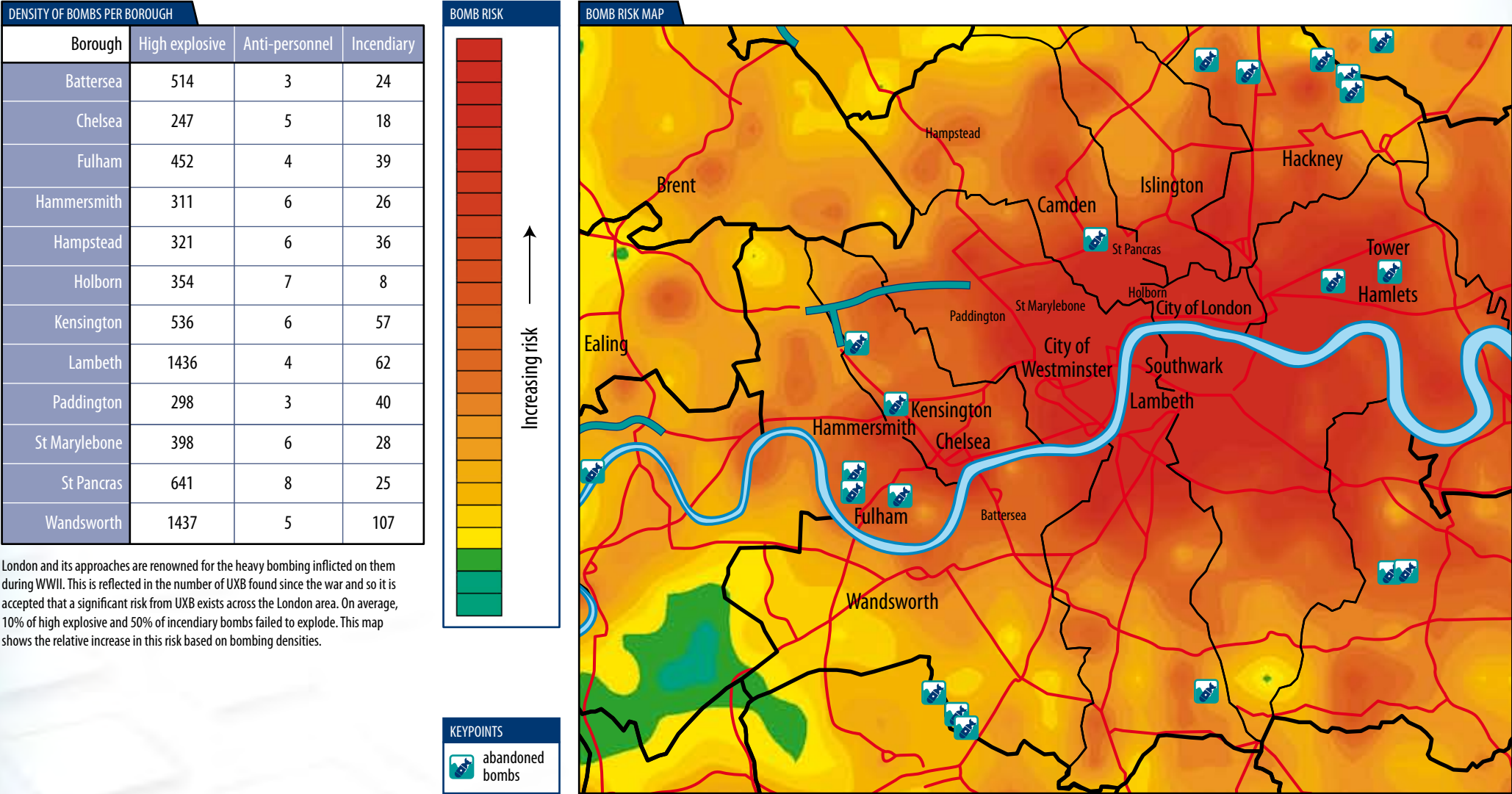
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<https://www.groundsure.com/terms-and-conditions-sept-2016/>

APPENDIX C

Zetica UXO Maps

REGIONAL UNEXPLODED BOMB RISK

LONDON - West Central



The information in this regional UXB risk map is derived from a number of sources and should be read in conjunction with the "Users' Guide" (printed overleaf). Zetica cannot guarantee the accuracy or completeness of the information or data.

This map covers regions of coast with beaches, estuaries and alike. Further consideration of the bomb risk is required in these areas. The often inaccessible nature and changing ground conditions (e.g. movement of silt that may contain ordnance) means that historical bombing records for these areas are often poor or inaccurate and further assessment of the bomb risk may be required as part of a site specific study.

A FOUR-STEP PROCESS



Risk assessment and method statement from a qualified explosive ordnance clearance (EOC) operative.



Surface geophysical survey to allow shallow groundwork.



MAGCONE detects UXBs and obstructions on piling layout to the no-risk depth.



Detected UXBs can be dealt with by our EOC engineers and a Clearance Certificate issued for the site.



For more details on this and related services, telephone: +44 (0) 1993 886682 or visit our website: www.zetica.com

BOMB MAP USERS' GUIDE

Sources of information and explanation of bomb risk

Why?

Unexploded bombs (UXB) still present a risk to construction projects long after the end of the Second World War (WWII). UXBs often entered the ground unnoticed at high velocity and penetrated to a depth of several metres. Here they remain – vulnerable to disturbances from construction work. Beyond the depth of shallow excavation work, the greatest risk is to piling, drilling and probing crews. A piling rig could repeatedly hit a UXBs with considerable force before the crew realises an obstruction has been impacted. It could then be up to 72 hours before the detonator activates.

Who?

The responsibility for avoiding UXB risk usually lies with construction companies or house builders particularly those who are redeveloping urban sites. In addition, project engineering or environmental consultants are expected to advise their clients of a site's history. Other interested parties include those organisations whose employees are physically at most risk from intrusive works, normally piling companies, drillers or probing operators.

How?

UXB risk should be assessed for every site, but especially those in known heavily bombed areas or those situated near war-time strategic installations that were priority targets for enemy aircraft, for example, airfields. Zetica's regional bomb risk map is therefore a first point of reference from which the relative, potential abundance of UXBs can be judged. Consultants then advise their clients that an ordnance-risk desk study is required, which they may obtain from external sources. Construction companies or house builders who assess their own risk could choose to come direct to Zetica.

When?

Do not wait for the piling or drilling company to be on site before thinking about UXB risk – it will inevitably cause delays and higher costs. Request the regional bomb risk map from Zetica as soon as a site is being considered, and then use it to help you or your clients to decide if an ordnance-risk desk study is required.

Where?

Maps can be obtained for any county in England, Scotland, Wales or Northern Ireland – or for any London borough. They can help determine the areas that were most heavily bombed – but no part of the country should be considered 100% safe from UXB risk. Even remote rural areas can have a high risk if, for example, they were locations for decoy airfields or beacons that were lit to fool enemy pilots into thinking they had located a burning city that had been successfully hit by others in the raid.

How to use this regional map

This map is designed to give you an indication of the potential risk from UXBs in your area. If you are conducting work that involves excavation, piling or other disturbance of the ground, then you should use the map to identify the category of risk for your site.

The risk boundaries are a guide, compiled from data based on the political areas for which records are held; being just outside a high-risk area does not mean there is no UXB risk. You should use the map to assist in your decision of whether to investigate the UXB risk further.

Information on the regional risk remaining from UXBs in the UK

Zetica has built the largest UXB database of its kind in the UK. It includes a unique digital library of bomb census data, and maps showing key strategic points and bombing densities from the First and Second World Wars. The main sources of information include records from central government (Public Records Office), the Ministry of Defence, and the German Luftwaffe.

Using information from this database, Zetica has published maps of UXB risk on a regional, county and borough scale. The maps indicate relative degrees of UXB risk based on available records for bombing densities and known targeted areas for regions within the UK. The risk is broken down into individual boroughs, towns or cities. The data are based on the historical boroughs and are then overlaid onto the modern map. It is important to note that more-detailed research may be required for individual sites, particularly where proximity to a potential WWII target means the local risk may be higher.

High risk

Areas designated as high risk are those that show a high density of bombing hits (50+ bombs per 1000 acres) and abundant potential WWII targets. In high-risk regions, further action to mitigate UXB risk is considered essential.

Moderate risk

Moderate-risk regions are those that show a bomb density of between 11 and 50 bombs per 1000 acres and that may contain potential WWII targets. Action to mitigate the risk is considered essential, albeit more likely that a reduced scope of work is required compared with that needed for high-risk regions.

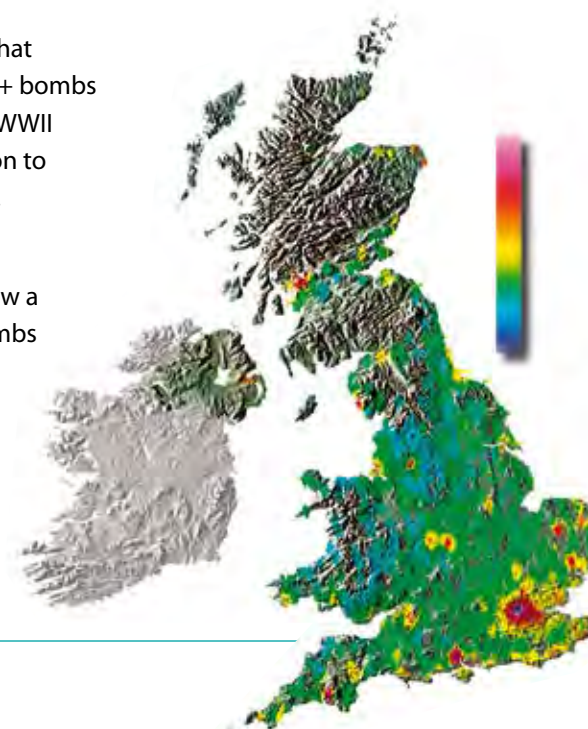
Low risk

Low-risk regions are those with a bombing density of up to 10 bombs per 1000 acres. These areas are considered to have a significant but low UXB risk. In general, further action to mitigate the risk is considered prudent, although not essential. Care is required when assessing the risk for specific sites where the risk may be higher because of local wartime activity.

Other WWII targets

Other regions with the risk of UXBs are key strategic points as defined by the government during WWII as representing potential enemy targets. Where these exist outside areas mapped as high, moderate or low risk, a site-specific assessment of the UXB risk may be required.

Relative UXB risk across UK



What to do if...

...you have a site that has a potential UXB risk

In the absence of current legislation requiring you to address the risk from UXBs, your responsibilities under health and safety legislation and regulations such as construction design and management require that you address all identified risks. The first stage is to request further advice from a professional adviser such as Zetica, or to gain more site-specific information by commissioning an ordnance-risk desk study. Then a strategy to deal with the risk can be established that is tailored to your proposed work.

...you find a suspect item or require advice

If during site works you find a suspect (ordnance-related) item, it is very important that you do not touch or move it (even if it has already been moved by an excavator). If it is clearly ordnance related, then dial 999 and ask for the police. Ensure that the area around the item is kept as clear as possible without placing yourself at risk. If you are unsure and do not wish to cause undue alarm, or you just require some advice, then you can call Zetica. We have experienced qualified UXB specialists on hand who can offer support and advice during any site works.

More-detailed procedures should be established in advance if you are in an area where the risk of finding a UXB is shown to be significant (moderate to high).

Site-specific desktop studies

Zetica is able to provide high-quality, site-specific UXB risk information for any residential, industrial or commercial property in the UK. These desktop studies provide details of the bombing density within an area and for the site itself, in order to indicate the risks of UXBs still being present. A risk assessment is provided to facilitate informed decision making on whether any further risk mitigation measures are required.

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