



Phase I Geo-Environmental Desk Study

Cinnamond House

Baldwins Lane
Croxley Green
Rickmansworth
England
WD3 3RT

Prepared for:

Car Planet

Cinnamond House
Baldwins Lane
Croxley Green
Rickmansworth
England
WD3 3RT

EPS Project Reference: UK23.6611

Date Issued: 29th August 2023

Report Status: Issue 1



CINNAMOND HOUSE, RICKMANSWORTH

NON-TECHNICAL CLIENT SUMMARY

This report presents the findings of a Phase I Geo-Environmental Desk Study which was carried out to identify potential contamination from previous or current uses of the site and surrounding area and to provide an initial assessment of geological and geotechnical aspects of the site and how the proposed development or surrounding environment might be affected.

The site is currently a mixed commercial use car sales and office building, with associated parking spaces for customers and storage of cars on forecourt, located in the west of Watford. Retrospective planning permission is being sought for the current usage.

The site is reported to be underlain by superficial deposits of alluvium (clay, silt sands and gravels). The bedrock consists of the Seaford Chalk and Newhaven Chalk Formations which is a principal aquifer located in a Zone II (outer) source protection zone.

Historically there were two ponds or small pits located on the site that were probably filled in prior to the development of the builder's yard and the further development to the current building on the site.

For the current and ongoing low-sensitivity commercial usage, it's unlikely that any significant or unacceptable risks to site users exist so no further works have been recommended. Although plausible risks to the water environment have been identified from any underlying residual contamination, it's unlikely that they represent significant risks to underlying groundwater or the nearby watercourses. In addition, given the relatively minor changes to the site as covered by this retrospective application, it's unlikely that any meaningful remediation to reduce risks to controlled waters would be proportionate to the scheme overall so no further action is recommended.

Good housekeeping practises are recommended in regard to management of waste oils, and if the site were to be redeveloped for housing in the future, then a full Phase II Site Investigation would be warranted.

By their very nature, the above bullet points represent a simplified summary of our work and **must not** be relied upon to form the basis for key decisions for the proposed development. A full picture is provided in the following report, or alternatively give us a call and we'll talk you through it.



Project Reference:	UK22.6611	
Title:	Phase I Geo-Environmental Desk Study - Cinnamond House, Rickmansworth	
Client:	Car Planet	
Date:	29 th August 2023	
EPS Contact Details:	7B Caxton House Broad Street Cambourne Cambridge CB23 6JN	T: 01954 710666 F: 01954 710677 E: info@epstrategies.co.uk W: www.epstrategies.co.uk
Status:	Issue 1	

Author:	Reviewed:	Authorised:
[Redacted Signature Area]		
Tom Watkins	Marcus Bell	Marcus Bell
Consultant	Associate Director	Associate Director

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The report has been written, reviewed and authorised by the persons listed above. It has also undergone EPS' in house quality management inspection. Should you require any further assistance regarding the information provided within the report, please do not hesitate to contact us.

The National Planning Policy Framework requires a competent person to prepare site investigation information, which is defined as a person with a recognised relevant qualification, sufficient experience in dealing with the type(s) of pollution or land instability, and membership of a relevant professional organisation. EPS considers that it fulfils these criteria and would welcome any request for staff CVs or case studies to demonstrate it.

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1 INTRODUCTION

In July 2023, Environmental Protection Strategies Ltd (EPS) was commissioned by TNK Lettings Limited to complete a Phase I Geo-Environmental Desk Study on Cinnamond House, Baldwins Lane, Croxley Green, Rickmansworth WD3 3RT ('the site'); see Figure 1.

The development is understood to relate to the retrospective change of use of the above site from an office (Class E) to a mixed use of office (Class E) and car sales (Sui Generis). This report is required to address the potential risks posed by contaminated land.

This report presents the findings, conclusions, and recommendations of the Phase I Desk Study undertaken for the site as instructed.

1.1 Objectives

The purpose of this desk study is to evaluate the potential contaminant linkages which may be active at the site in its current condition, or could become active in future, and to determine if any action is required to investigate them further or to break them.

This is achieved by carrying out the following activities:

- a) Examining the site history - late 1800s to present day, through collection of historical maps of the area, site records, records held by relevant local authorities, the Environment Agency and review of other information databases.
- b) Characterising the site's environmental and geological sensitivity through examination of existing geological, hydrogeological, topographical, and historical maps and aerial photographs of the area.
- c) Identifying Potential Areas of Concern (PAOCs) through a combination of historical map and data review.
- d) Consideration of any future plans for the site and the effects any proposed changes may have on contaminant linkages over time.
- e) Development of a Conceptual Site Model through a Preliminary Risk Assessment to evaluate the potential risks posed by the site and make recommendations for any further work that may be required to ensure suitability for use and safe development. In accordance with the Environment Agency's *Land Contamination: Risk Management (2023)* and the *National Planning Policy Framework*.

1.2 Project Limitations and Constraints

The purpose of this report is to present the findings of a Phase I Geo-Environmental Desk Study conducted at the location(s) specified. When examining the data collected from the investigations made during the assessment, EPS makes the following statements:

This report does not include specific investigation for the presence of either Potential Asbestos Containing Material (PACM) or Japanese Knotweed at the subject site however, if obvious evidence of either is observed during EPS site walkover, details will be provided in this report. Specialist contractors should be commissioned to make detailed assessments and recommendations if these materials are suspected.

2 GEO-ENVIRONMENTAL SETTING

The following section provides a summary of the information collected in relation to the site location and history.

2.1 Site Location and Description

Detail	Description
Location	The site lies on the northern side of the roundabout on the A412 w Gade 120m to the east.
Grid Reference	508720, 195970
Topographic Elevation	It appears to be mostly flat and lie at around 52m AOD.
Description of Site	It is currently an L shaped detached office building with a mecha to the western end of the building, with a forecourt of cars parked up in rows across the entire hardstanding. A small valeting outbuilding is erected to the western corner of the site and an area of soft landscaping begins from the building to the eastern border. Entering from the site from the Watford Road roundabout there is another smaller structure used for storing/inspecting cars. Trees border on the southern northern and western boundaries with residential properties and the river to the east. The building itself comprises of offices on both stories with the mechanic workshop on the ground floor to the western edge of the building. Inside the workshop is an inspection pit, and storage of 205l oil drums (open) outside, along the site boundaries.
Surrounding Land Use	The surrounding land consists of a mixture of residential buildings to the east and west with commercial buildings to the south. To the north is a railway running SW-NE beyond a strip of vegetation. A roundabout between Baldwin's Lane and the A412 is located to the south, with the Harvester beyond.

A plan showing the site location is provided as Figure 1, the current site layout is detailed on Figure 2 and an aerial photograph is included as Figure 3.

2.2 Environmental Setting

Detail	Description
Geology	Geological maps of the area show the superficial deposits to be alluvium (Clay, silt sands and gravels). The bedrock consists of the Seaford Chalk and Newhaven Chalk Formations. Made ground is recorded just to the north along the railway. Information on the site's geological context is included as Appendix C.
British Geological Survey (BGS)	A number of BGS boreholes have been recorded on the site, however they have restricted access and are unable to view, further boreholes have been recorded to the north of the site for the railway station recording made ground in all boreholes to around 15m bgl (below ground level), with a sandy gravel underlying this interpreted to be the alluvium. BGS ref. TQ09NE515. A copy of this has been included within Appendix C

Detail	Description	
Geological Hazards	Hazard	On Site Risk
	Mining (non coal)	None
	Collapsible Ground	Very Low
	Compressible Ground	Moderate
	Ground Dissolution	Very Low Moderate @187m (SW)
	Several chalk solution pipes are recorded within the area, the nearest being 23 solution pipes 248m SW.	
	Running Sand	Low
	Landslide	No Hazard Very Low @52m (W)
	Shrinking/ Swelling Clay	Very Low
Radon	The Envirocheck indicates the site to lie in a location where the percentage of homes above the radon action level is between 1% - 3%, an Intermediate Probability Radon area. It further reports that the site will not require radon protection measures in the construction of new buildings.	
Hydrogeology	<p>Groundwater vulnerability maps for the area show that the underlying superficial deposit is classified as a High Vulnerability, Secondary aquifer and the bedrock that underlies the western half of the property is classified as a High Vulnerability, Principal aquifer. The site lies within Outer (Zone 2) source protection zone for groundwater abstraction.</p> <p>There are five groundwater abstractions listed within 1000m of the site, the closest of which is 419m northeast for general agriculture. Groundwater vulnerability maps are included as Appendix D.</p>	
Hydrology	<p>The nearest water feature is located 70m NE which is an inland river just west of the Grand Union Canal/River Gade.</p> <p>The Envirocheck report lists 8 discharge consents within 1000m, the closest of which being 348m SE operated by Thames Water Utilities Limited with discharge being received by a tributary of the River Gade.</p> <p>There is a surface water abstraction listed 419m NE.</p> <p>Review of the Flood Zone Map for the area indicates that the site lies within Flood Zone 1, which is defined as the area with a low probability of flooding.</p> <p>It should be noted that the EA maps do not take into account the presence of flood defences or flooding from poor drainage, or groundwater. A copy of the flood map for the site and surrounding area is also included within Appendix D.</p>	
Landfill & Waste	<p>The Envirocheck report shows 5 registered historical landfill sites, the closest of which was licenced by HG Sanson & Sons 193m NE disposing of Inert and Special Waste.</p> <p>There are also 8 areas of potentially infilled land within 1000m, the closest being 424m N being an unknown filled area of either a pit or quarry.</p>	



Detail	Description		
Industrial Land Use	The Envirocheck report lists several industrial land uses within 1000m the most pertinent of which have been included below.		
	Land Use	Distance (Direction)	Status
	Car Breakdown & Recovery	0m	Active
	Garage Services	116m (SW)	Inactive
	Factory	125m (W)	Unknown
	Wrought Iron Fabrications	128m (SW)	Unknown
	Pest & Vermin Control	254m (W)	Inactive
	Waste Disposal Services	340m (SE)	Inactive
	Petrol Filling Station	386m (SW)	Active
Licensed Industrial Activity	Eleven licensed industrial activities have been reported within 1000m. The closest of which is a local authority pollution prevention control for a Shell petrol station located 387m SW of the site.		
Fuel Station Entries	The Envirocheck report shows four fuel station entries however only one is still active, with the others being listed as obsolete. This active entry is located 387m SW for a shell garage.		
Pollution Incidents	There have been 38 pollution incidents to controlled waters within 1000m. Six of these incidents were recorded to be category 2 (significant incidents), the closest of which being 375m NE with the pollutant being oils. All the remaining incidents were category 3 (minor incidents), the closest being unknown sewage on 9 th January 1994 located 108m E.		
Sensitive Land Use	The site lies within a Nitrate Vulnerable Zone where surface and ground water is identified as being at risk. There is a Site of Special Scientific Interest (SSSI) located 759m SW. As well as two local nature reserves located 434m N and 759m SW.		

2.3 Site History

A summary of historical map data from 1886 to 2023 is summarised below. Key points are highlighted and copies of relevant historic maps and any others examined during the investigation are included in this report as Appendix E



Earliest mapping from 1873 shows the site to be situated over the boundary of two fields with a road running through it to the north northwest up to the Cassiobridge Farm. A number of current and historical gravel pits have been noted in the surrounding area.

In 1898 two possible ponds or small pits are marked within the site boundary and remain until 1932, with a house being built around 50m to the south roughly where the Harvester is situated in the present day.

In 1914 a railway line and station was constructed around 100m to the south with the Hoxley bridge station along with a timber yard being noted around 400m to the north east.

By 1932 the Metropolitan & LNER line was constructed directly north of the site boundary and the pits on site are no longer marked on but the site itself remains undeveloped.



A builders yard was developed on the site around 1960, shown as a works in the 1980s which was later split with offices to the east of the site and remained until the new office building was built in 2003.

3 PRELIMINARY RISK ASSESSMENT & CONCEPTUAL SITE MODEL

In accordance with the Environment Agency's Land Contamination: Risk Management, there are three stages to managing contaminated land (Risk Assessment/Remedial Options Appraisal/Remediation and Verification). This section outlines the first tier of Stage 1, the Preliminary Risk Assessment.

The following section provides a review of the contaminant linkages that may be active at the site, whereby EPS have examined the potential sources that may be present as a result of historic and / or current site activities and where potential interaction between these sources and the identified human / environmental receptors may occur.

3.1 Background

A Desk Study comprises the first stage of any geo-environmental assessment, the purpose of which is to determine what potentially contaminative activities may have occurred at the property or the surrounding area which may pose an environmental or geological risk to site users, the surrounding environment or proposed development, either at present or in the future.

The method used in this investigation to assess the environmental risk posed is based on the concept of 'contaminant linkage', which considers the following three factors:

Source	The location from which an environmentally hazardous / contaminative substance is, (or was,) derived.
Pathway	A route or mechanism via which a source could come into contact with a receptor to cause significant harm.
Receptor	An environmentally sensitive object or condition e.g. person, property, controlled water, or ecological system, which may be present now or in future.

If all three factors are identified, there is the potential for a 'contaminant linkage' to be active, which could result in significant harm being caused to the environment or human health.

3.2 Source Characterisation

The following potential contaminant sources have been identified at the site and in the surrounding area:

Potential Source	Source Description	Principal Contaminants of Concern
Current Site Use	In-fill material of unknown origin (Made Ground) used to level areas beneath the existing hardstanding.	PAH, Metals, ACM
	Storage of 205l oil drums (open) on site.	TPH

Potential Source	Source Description	Principal Contaminants of Concern
Historical Site Use	Historically in-filled pond or pits within the site boundary.	Ground Gas (CH ₄ , CO ₂) PAH, Metals
	Use of the site as a builder's yard, with storage of materials and servicing vehicles.	TPH, PAH, Metals, ACM
Current & Historical Site Use	Use of site as a vehicle repair garage with inspection pit.	TPH, PAH
Current and Historical Surrounding Land Use	Metropolitan and LNER railway line directly to the north of the site boundary	TPH, PAH
	Presence of deep made ground recorded off-site to the north	Ground Gas (CH ₄ , CO ₂)

Notes: PAH Polycyclic Aromatic Hydrocarbons ACM Asbestos Containing Materials
 CH₄ Methane CO₂ Carbon Dioxide
 TPH Total Petroleum Hydrocarbons

3.3 Potential Receptors

A framework for the assessment of risks arising from the presence of contamination in soils has been produced by the Environment Agency and the Department for the Environment, Food and Rural Affairs (DEFRA) and is presented with the report: '*Using Science to Create A Better Place: Updated Technical Background to the CLEA Model – Science Report SC050021/SR3*'. This guidance document defines a series of standard land-uses which have been further developed into six generic landuses in the Category 4 Screening Levels project for Land Affected by Contamination (DEFRA/Contaminated Land: Applications in Real Environments (CL:AIRE) Project Report SP1010, 2014) which form a basis for the development of the Conceptual Site Model.

Risks posed to controlled waters have been considered in line with the Environment Agency's *approach to groundwater protection* (v1.2, 2018) and associated position statements.

The proposed development is understood to comprise retrospective change of use of the above site from an office (Class E) to a mixed use of office (Class E) and car sales (Sui Generis). This proposed land use has been considered as:

Commercial

In view of the environmental setting, current and potential future land use of the site and surrounding sites, the potential receptors for any contaminant impact are discussed below:

Receptor	Site Specific Description
Human	Site users have the potential to be at risk from exposure to contaminants of concern (CoCs).
Groundwater	The site is reported to be underlain by the superficial deposit which is classified by the EA as a secondary aquifer, and the historical borehole log does not indicate that there will be shallow groundwater. The site lies within an outer total catchment SPZ for nearby groundwater abstraction and on this basis, groundwater should be considered as a potential receptor site derived contaminants. The thickness of the alluvium overlying the chalk is not known.
Surface Water	The nearest surface watercourse is an inland river which is located around 70m north-east. The primary concern for this site should be considered as the groundwater within the underlying high vulnerability aquifer however, if significant impacts to groundwater were to be encountered then further consideration should be given to the associated risk posed to nearby surface waters via lateral migration of contaminants in the subsurface.
Flora and Fauna	The current development includes the provision of an area of soft landscaping to the east of the office building. Some of the identified contaminants of concern are known to be phytotoxic and as such the potential for the impact should be considered, however following the site visit the soft landscaping is away from the building and not in use only maintained.
Buildings & Infrastructure	Subsurface structures are likely to be present at the site which may be adversely affected by the potential presence of the identified contaminants of concern. These include concrete used in building foundations, buried potable water supply pipes and other service lines and pipes.
Adjacent Land	Given the limited mobility of the site-derived contaminants of concern, adjacent properties including commercial and private residential dwellings are not considered to be at risk from potential contaminants.

3.4 Potential Pathways

Where contaminants may be present in soil, there are a number of potential pathways that enable human receptors to come into contact with or be exposed to them. The most direct pathways, considered under current UK legislation, can be summarised as follows:

- | | |
|--|---------------------------------------|
| Direct ingestion of contaminated soil | Dermal contact with household dust |
| Ingestion of household dust | Inhalation of fugitive soil dust |
| Ingestion of contaminated vegetables | Inhalation of fugitive household dust |
| Ingestion of soil attached to vegetables | Inhalation of vapours outdoors |
| Dermal contact with contaminated soil | Inhalation of vapours indoors |

Clearly, not all of these potential pathways apply for every standard land-use. For example, ingestion of contaminated vegetables will not apply to land uses other than residential with plant uptake and allotments.

However, in addition to direct exposure pathways, a number of physical transport mechanisms / pathways may also exist at a site that allow remote or less accessible contaminants in soil or groundwater to reach human or environmental receptors both at a site and beyond the site boundary. These include the following:

Downward and lateral movement of contaminants in soil either by gravity or through being 'leached' by percolating rainwater.

Lateral migration of contaminants dissolved in groundwater.

Direct seepage or leaching of contaminants from soil into subsurface drains or supply pipework.

Volatilisation of contaminants from groundwater or unsaturated soils into buildings or outdoor air.

Through examination of the standard land use and environmental setting at each site, the presence of pathways and transport mechanisms described above must be considered when assessing whether a contaminant linkage may plausibly be active, and therefore be included in the conceptual site model.

3.5 Summary of Contaminant Linkages

Considering the proposal for the site to continued being used for commercial activities with the change of use from Class E offices to office and car sales, the following plausible contamination linkages that require further investigation are summarised in the following table:

Source	Pathway	Receptor
Contaminated Soil	Leaching of contaminants vertically through unsaturated soils	Groundwater
Contaminated Soil/ Groundwater	Lateral migration of contaminants through soils and groundwater	Surface waters

The following comments are made with respect to contaminant linkages which have been considered through the development of the conceptual model, but have not been included as 'plausible' –i.e. through which a significant possibility of significant harm could occur to an identified receptor:

Historic mapping indicated that the site has been previously used as a builder's yard and a vehicle repair garage, which can lead to potential ground impacts including TPH, PAHs and Metals. However, given the continued commercial use of the site these potential contaminants are not considered to pose significant risks to site users. There was no significant evidence of volatile contamination, such as the storage of petroleum which may suggest a risk of vapour ingress exists.

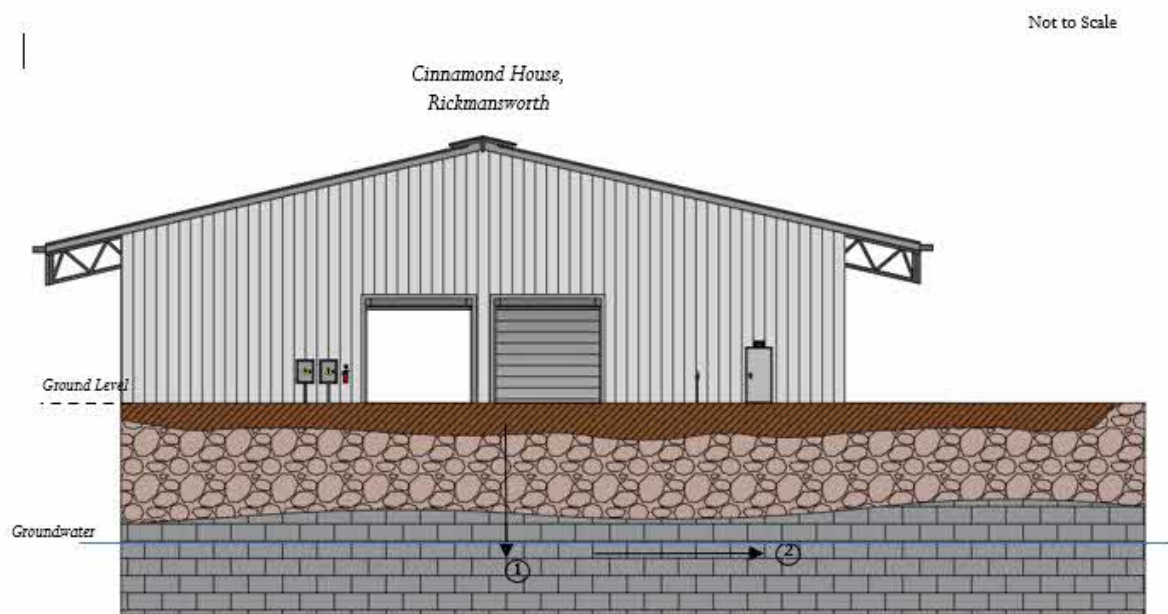
Contaminants of concern may be associated with the nearby railway line, located directly to the north of the site. However, given the lack of goods/storage yards or sidings being

present close to the site, a plausible contaminant linkage has not been identified with this source.

The made ground to the north and old ponds or small pits which existed on the site and were infilled by around the early 20th Century are plausible ground gas risks, if they have been infilled with organic wastes. However, given their small size and the time elapsed since their infilling, coupled with the presence of overlying buildings (or the railway) ever since, the risks from ground gases are not deemed significant.

The following diagram provides an illustration of the plausible contaminant linkages that may be active at the site and which may need further investigation or control to ensure safe development:

Cinnamond House – Illustrative Conceptual Site Model



Potential Pathways:

1. Vertical Migration in contaminated soils/groundwater
2. Lateral Migration in contaminated soils/groundwater

4 CONCLUSIONS & RECOMMENDATIONS

This Phase I Desk Study has identified that although there is the potential for some contamination to reside in the soils under the site due to the past industrial usage, the risks posed to the current commercial users are not considered significant.

Although plausible risks to controlled waters have been identified in the CSM, it's unlikely that they represent significant risks to underlying groundwater or the nearby water courses. In addition, given the relatively minor changes to the site as covered by this retrospective application, it's unlikely that any meaningful remediation to reduce risks to controlled waters would be proportionate to the scheme.

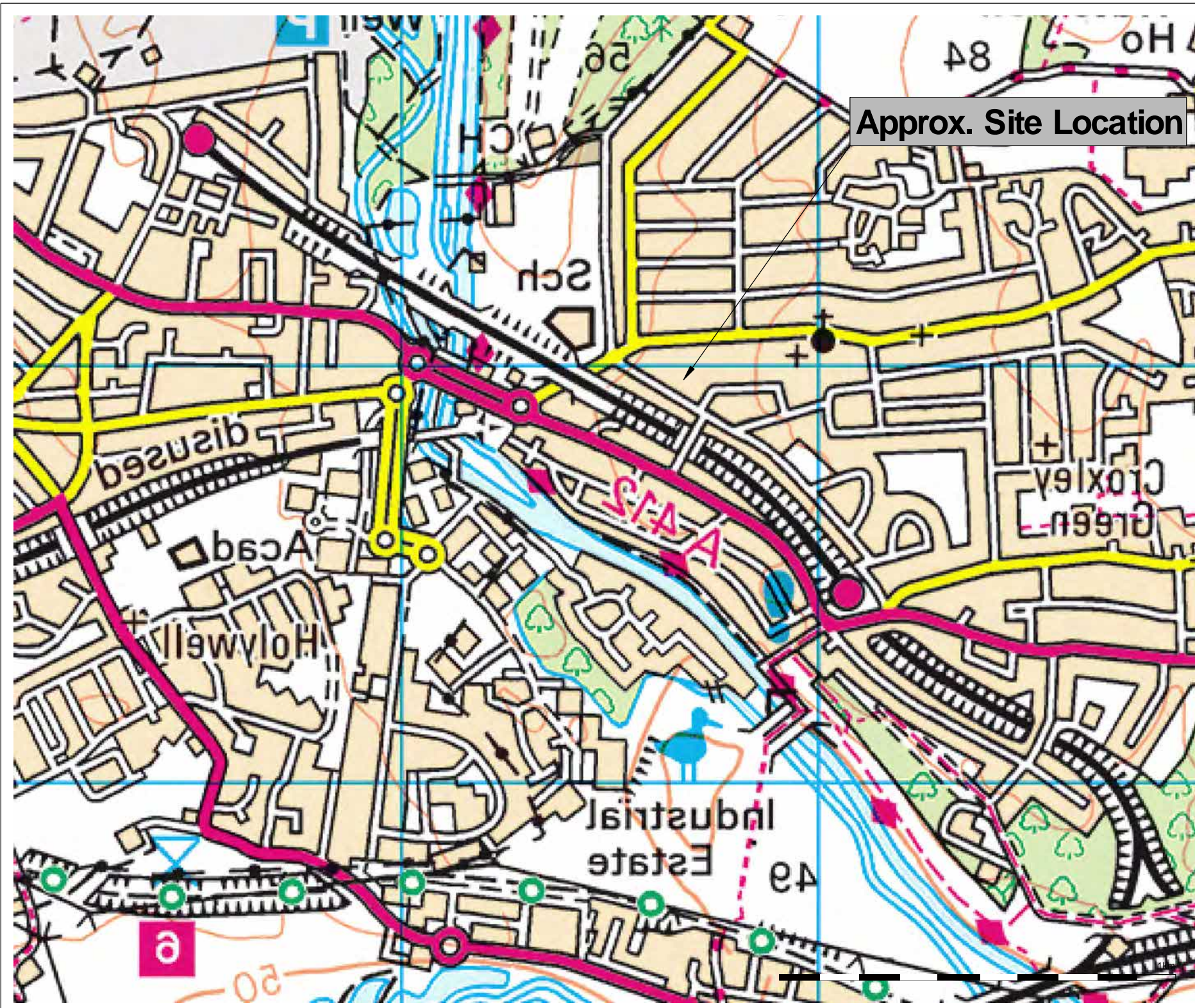
If a more sensitive enduse, such as residential, were proposed in future then it's likely that a Phase II Site Investigation would be needed to fulfil planning requirements related to contaminated land. The findings of that investigation may also lead to some remediation to ensure safe redevelopment. For the current and ongoing low-sensitivity commercial usage, it's unlikely that any significant or unacceptable risks to site users exist, in the context the Environment Agency's *Land Contamination: Risk Management* (2023).

In terms of general housekeeping, open oil storage drums likely associated with vehicle servicing were noted and any use of oils in the area of the inspection pit are potential sources of contamination and should be stored, managed and disposed of in accordance with current best practise.

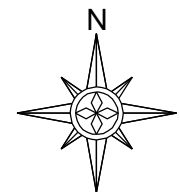
A copy of this report should be provided to the Environmental Health department of Three Rivers District Council.



FIGURES



Approx. Site Location



Rev	Date	Drawn	Description	Chkd



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Site
Cinnamond House, Baldwins Lane,
Croxley Green, Rickmansworth WD3 3RT

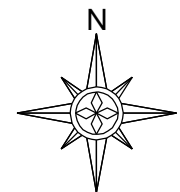
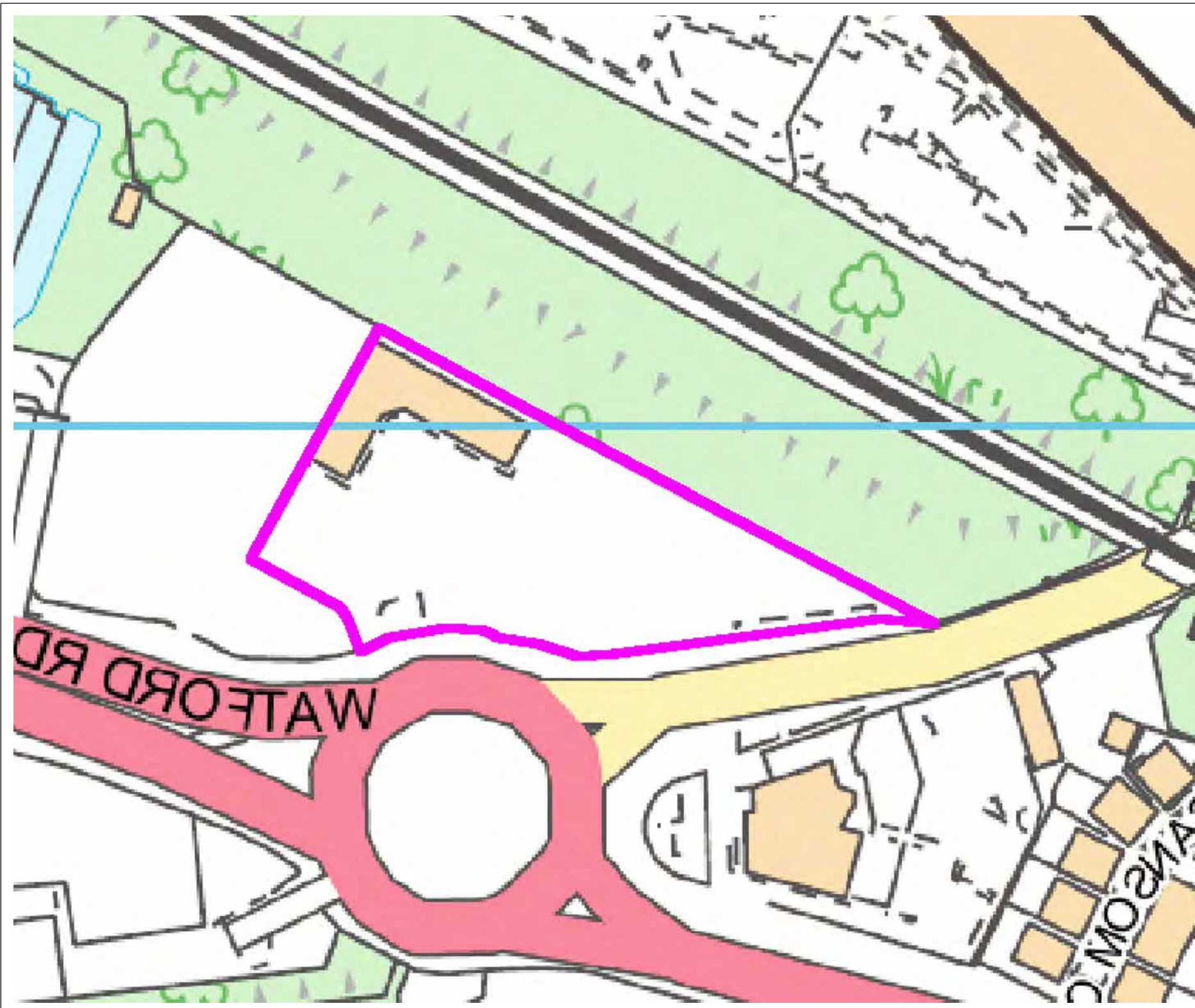
Client
Car Planet

Title
Figure 1 - Site Location Plan

Surveyed by:	XX	Drawn by:	TW
Checked by:	MJ	Date:	AUGUST 2023

Scale	1:50,000	Drawing Reference	UK23.6611_01
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Job No	UK23.6611	Rev	01
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KEY:
— SITE BOUNDARY

Rev	Date	Drawn	Description	Chkd



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Site
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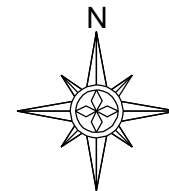
Client
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Title
 Figure 2 - Current Site Layout

Surveyed by:	XX	Drawn by:	TW
Checked by:	MJ	Date:	AUGUST 2023

Scale: Not to Scale
 Drawing Reference: UK23.6611_02

Job No:	UK23.6611	Rev:	01
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KEY:
— SITE BOUNDARY

Rev	Date	Drawn	Description	Chkd



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Site
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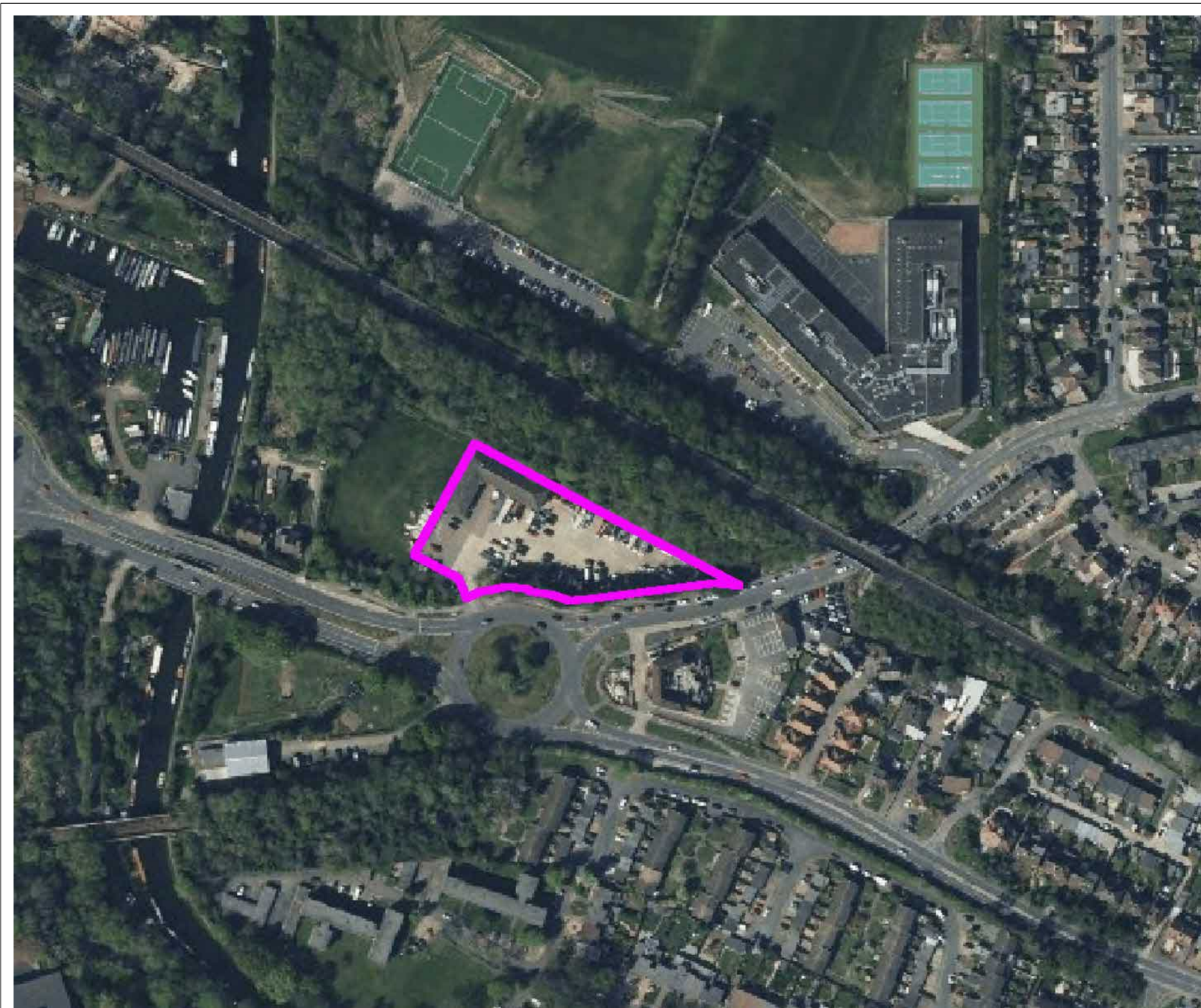
Client
 Car Planet

Title
 Figure 3 - Aerial Photograph

Surveyed:	TW	Drawn by:	TW
Checked by:	MB	Date:	AUGUST 2023

Scale	(A4 Sheet) Drawing Reference
Not to Scale	UK23.6611_03

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UK23.6611	01



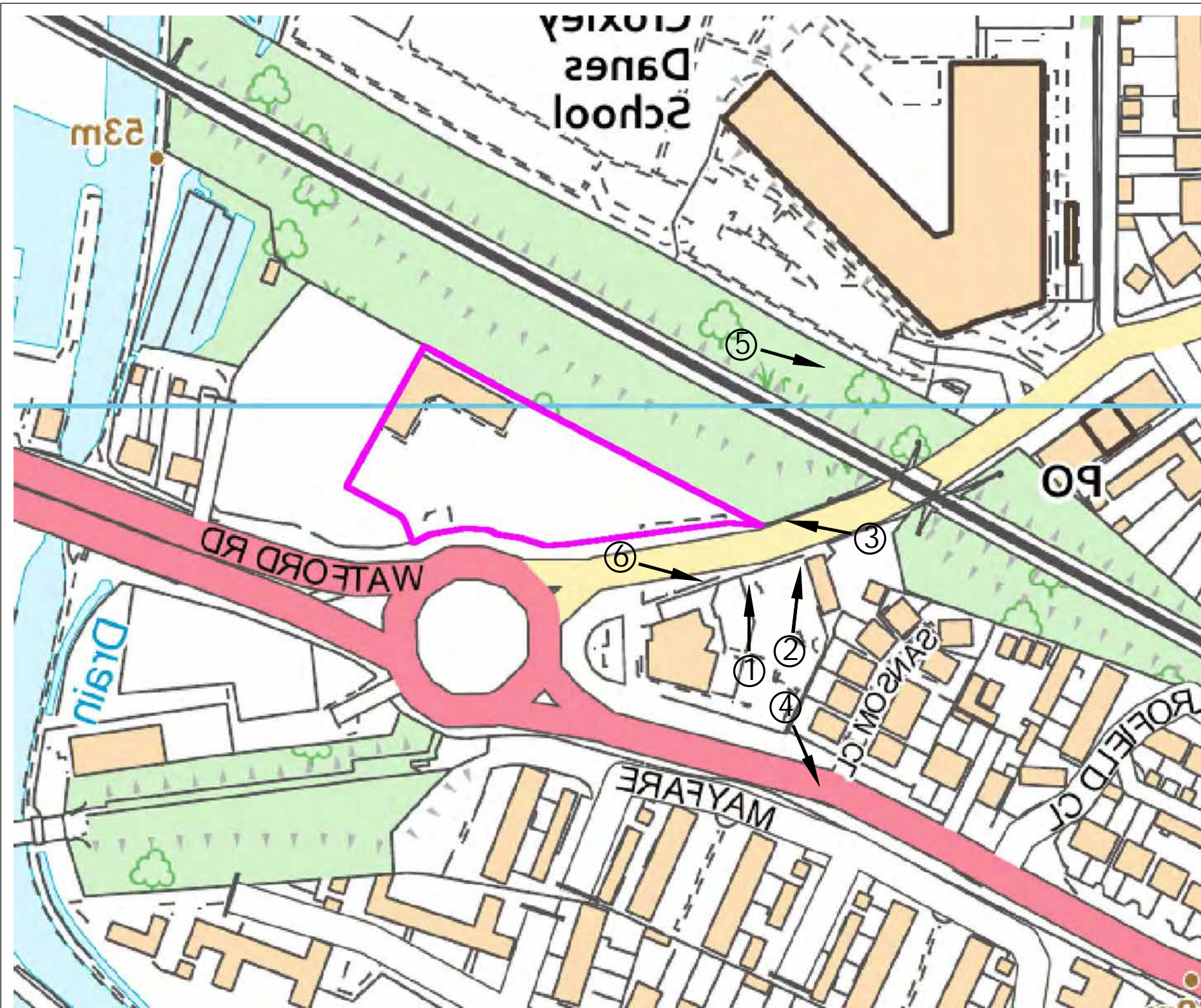
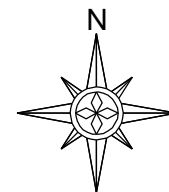


APPENDICES



APPENDIX A

Selected Site Photographs & Walkover Notes



- KEY:
- SITE BOUNDARY
 - DIRECTION OF SITE PHOTOGRAPH
 - SITE PHOTOGRAPH NUMBER

Rev	Date	Drawn	Description	Chkd



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Site Cinnamond House, Baldwins Lane,
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Client Car Planet

Title Appendix A - Site Photographs

Surveyed by:	TW	Drawn by:	TW
Checked by:	MB	Date:	24/8/23

Scale Not to Scale Drawing Reference UK23.6611_05

Job No	UK23.6611	Rev	01
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Job No.	UK23.6611
Date	07/08/23
Who?	TW

To be completed by consultant for all Phase I Desk Studies and completed form must be scanned/photographed and saved in job folder under 'Scanned Site EPS Lower Risk Assessment (EPS025a) also must be completed and scanned







Site Walkover Checklist V3.0







Geotechnical		COMMENTS
	Are there any abrupt changes in slope profiles?	-
	Is there evidence of overburden on the slopes?	-
	Is there evidence of excavation at the base of a slope?	-
	Are there signs of landslip, such as tilting trees/posts?	-
	Are there signs of subsidence?	-
	Is there evidence of cracked ground?	-
	Is there evidence of compressible ground (i.e. Peat)?	-
	Is there evidence of an abrupt change in ground conditions?	-
	Is there evidence of high groundwater, such as areas of waterlogged ground?	-
	Do signs of water loving plants such as reeds exist?	-
	Are there any ponds, streams, ditches (even if dry), springs or wells?	-
	What is the nature of the vegetation?	-
	Species & Height of trees	Deciduous trees and shrubbery surrounding the site
	What is the nature and condition of vegetation on adjoining land?	Trees between the site and the railway track
	Is there evidence of former vegetation?	-

Job No.	UK23.6611
Date	07/08/23
Who?	TW

To be completed by consultant for all Phase I Desk Studies and completed form must be scanned/photographed and saved in job folder under 'Scanned Site EPS Lower Risk Assessment (EPS025a) also must be completed and scanned










	Is there evidence of movement in any existing structures?	-
	Evidence of below ground structures & services?	-
	Any evidence of mine shafts or adits? (Check Coal Authority Mapping)	-
	Is there any access issues for a digger/drilling rig (slopes, height, gates etc.)?	-
Any other comments?		

Contamination		COMMENTS
	Evidence of ground contamination?	-
	Evidence of groundwater /surface water contamination?	-
	Evidence of historic site use?	Oil drums and a car garage/workshop (no longer used for intended purpose)
	Have all buildings been accessed internally, what was found?	Office space in the main building, old workshop now used for car storage
	Evidence of /suspected asbestos? In building fabric or on ground, describe condition and form (cement/ fibrous).	No evidence of asbestos
	Any man-made surfacing present? Including bituminous road planings/ scalpings. Describe condition of hardstanding.	Asphalt hardstanding across majority of site where cars are parked and paving around the perimeter of the office building

Job No.	UK23.6611
Date	07/08/23
Who?	TW

To be completed by consultant for all Phase I Desk Studies and completed form must be scanned/photographed and saved in job folder under 'Scanned Site EPS Lower Risk Assessment (EPS025a) also must be completed and scanned



	Any fuel or oil storage? If above ground, are tanks bunded/ steel/with above ground pipe or any staining?	Old oil drums with what appeared to be a black liquid inside (around 10% full), possibly just rainwater that has entered the drum
	Obvious drainage features observed such as 3-chamber oil-water interceptor?	No
	Any waste deposition observed, such as fly-tipped soils or chemical containers/ drums or areas of burning?	Some bin bags and wood at rear of valet station, some old exhaust pipes, wooden pallets, exhaust and alloys to the rear of the office building
	Electricity substation present, maintained/ operational? Are there any warning stickers on the gates/ fence regarding chemicals?	Electricity substation at the west of the site, behind the valet station, padlocked with appropriate warning stickers
	Evidence of previous investigation/ remediation (e.g. old monitoring wells)?	-
	Walked around surrounding areas? Identify any off-site sources such as petrol stations, heating oil tanks.	No identified off site sources
	Anecdotal evidence	Change of use to office and car sales Previously used for recovery of broken down cars and was a plant hire site prior to this Car workshop is not in use by current owner and appears well maintained Soft landscaping (outside of red line boundary) but is still required to be maintained by the user as part of the lease agreement – not in use by the current users
Any other comments?		

Air Quality (ONLY NECESSARY IF INSTRUCTED – CHECK WITH AQ TEAM)

Completed Air Quality Walkover Checklist?	No
---	----

Photo 1: Photograph of the entrance to the barn in the SE corner



Photo 2: Photograph of the site, facing SSE



Photo 3: Photograph of the site facing NNW

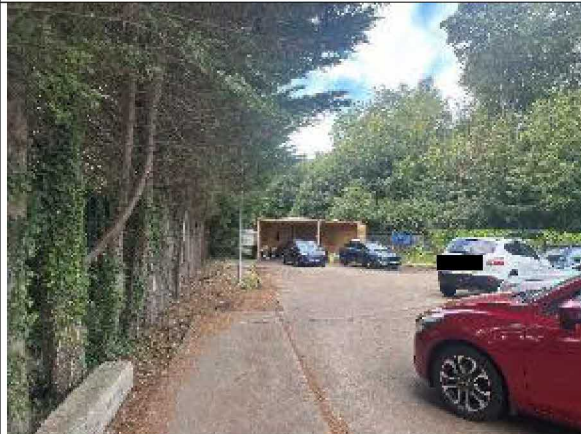


Photo 4: Photograph along the western face of the barn



Photo 5: Photograph of corrugated, cement bonded, sheet asbestos containing material and guttering also suspected to contain asbestos



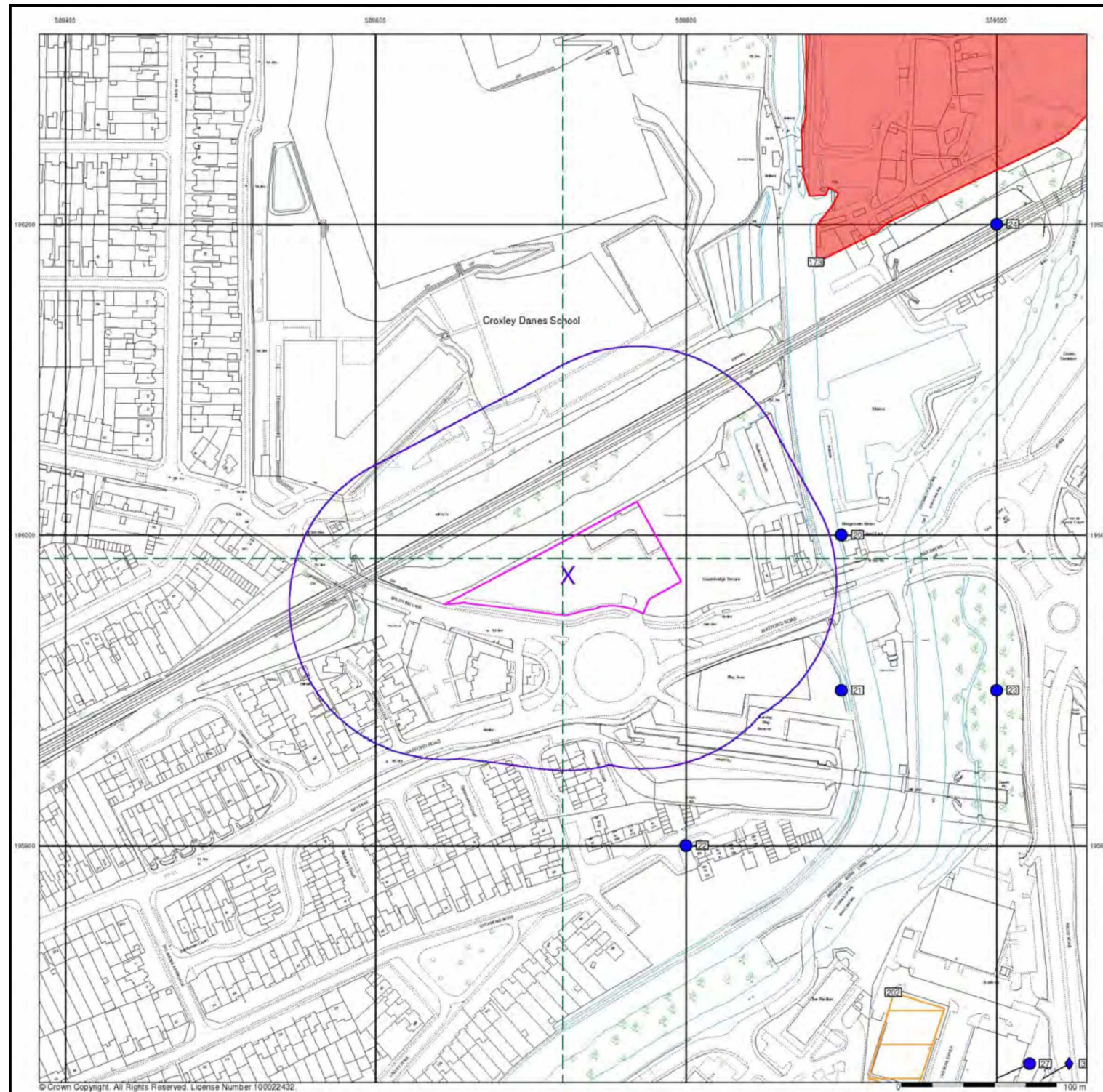
Photo 6: Photograph of the small drainage ditch / brook with flowing water outside the western boundary of the site.





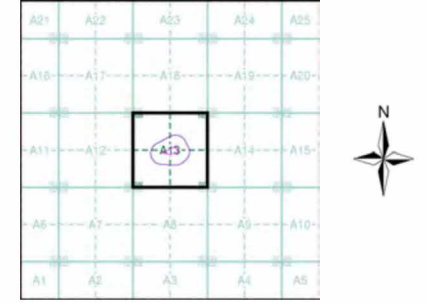
APPENDIX B

Surrounding Land Use



- General**
- Specified Site
 - Specified Buffer(s)
 - Several of Type at Location
 - Pylon
 - Bearing Reference Point
 - Overhead Transmission Line
 - Map ID
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Prosecution Relating to Authorised Processes
 - Prosecution Relating to Controlled Waters
 - Registered Radioactive Substance
 - River Network or Water Feature
 - River Quality Sampling Point
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- Hazardous Substances**
- COMAH Site
 - Explosive Site
 - NIHS Site
 - Planning Hazardous Substance Consent
 - Flanning Hazardous Substance Enforcement
 - BGS Recorded Mineral Site
- Waste**
- BGS Recorded Landfill Site (Location)
 - BGS Recorded Landfill Site
 - EA Historic Landfill (buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site

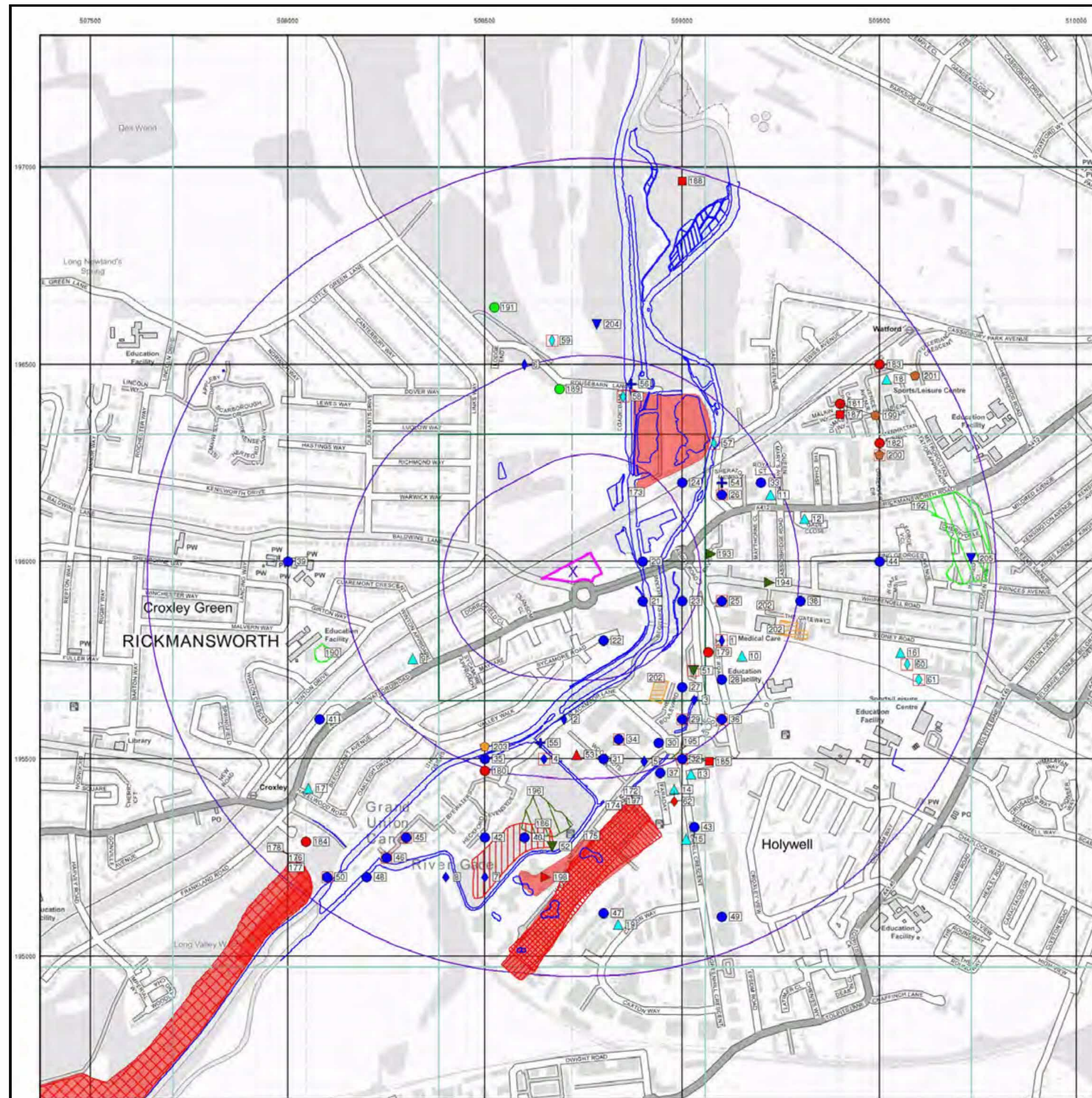
Site Sensitivity Map - Segment A13



Order Details

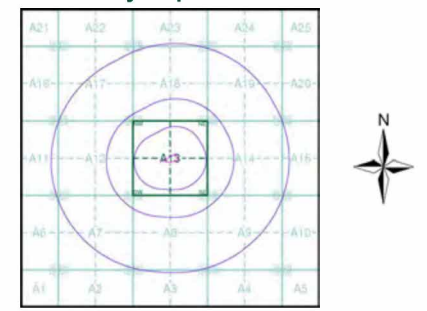
Order Number: 315146015_1_1
 Customer Ref: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Plot Buffer (m): 100

Site Details
 Site at 508740, 195980



- General**
- Specified Site
 - Specified Buffer(s)
 - Bearing Reference Point
 - Map ID
- Agency and Hydrological**
- Contaminated Land Register Entry or Notice (Location)
 - Discharge Consent
 - Enforcement or Prohibition Notice
 - Integrated Pollution Control
 - Integrated Pollution Prevention and Control
 - Local Authority Integrated Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control
 - Local Authority Pollution Prevention and Control Enforcement
 - Pollution Incident to Controlled Waters
 - Prosecution Relating to Authorised Processes
 - Prosecution Relating to Controlled Waters
 - Registered Radioactive Substance
 - River Network or Water Feature
 - River Quality Sampling Point
 - Substantiated Pollution Incident Register
 - Water Abstraction
 - Water Industry Act Referral
- Hazardous Substances**
- COMAH Site
 - Explosive Site
 - NHHS Site
 - Planning Hazardous Substance Consent
 - Planning Hazardous Substance Enforcement
 - BOS Recorded Mineral Site
- Waste**
- BOS Recorded Landfill Site (Location)
 - BOS Recorded Landfill Site
 - EA Historic Landfill (Buffered Point)
 - EA Historic Landfill (Polygon)
 - Integrated Pollution Control Registered Waste Site
 - Licensed Waste Management Facility (Landfill Boundary)
 - Licensed Waste Management Facility (Location)
 - Local Authority Recorded Landfill Site (Location)
 - Local Authority Recorded Landfill Site
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Non-water)
 - Potentially Infilled Land (Water)
 - Potentially Infilled Land (Water)
 - Registered Landfill Site
 - Registered Landfill Site (Location)
 - Registered Landfill Site (Point Buffered to 100m)
 - Registered Landfill Site (Point Buffered to 250m)
 - Registered Waste Transfer Site (Location)
 - Registered Waste Transfer Site
 - Registered Waste Treatment or Disposal Site (Location)
 - Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details

Order Number: 315146015_1_1
 Customer Ref: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Search Buffer (m): 1000




Site Details
 Site at 508740, 195980

APPENDIX C







Geological Context

Geology 1:50,000 Maps Legends





Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene
	WGR	Worked Ground (Undivided)	Void	Not Supplied - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	SHGR	Shepperton Gravel Member	Sand and Gravel	Not Supplied - Devensian
	TPGR	TAPLOW GRAVEL MEMBER	Sand and Gravel	Not Supplied - Wolstonian
	WIHG	Winter Hill Gravel	Sand and Gravel	Not Supplied - Anglian
	GCGR	Gerrards Cross Gravel	Sand and Gravel	Not Supplied - Cromerian
	HEAD	Head	Clay and Silt	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	LC	London Clay Formation	Clay, Silt and Sand	Not Supplied - Ypresian
	LMBE	Lambeth Group	Clay, Silt and Sand	Not Supplied - Thanetian
	SNCK	Seaford Chalk Formation and Newhaven Chalk Formation (Undifferentiated)	Chalk	Not Supplied - Coniacian
	LECH	Lewes Nodular Chalk Formation	Chalk	Not Supplied - Turonian



Geology 1:50,000 Maps

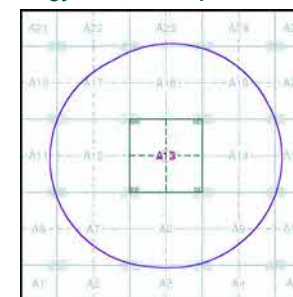
This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.

The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	1
Map Sheet No:	255
Map Name:	Beaconsfield
Map Date:	2005
Bedrock Geology:	Available
Superficial Geology:	Available
Artificial Geology:	Available
Faults:	Not Supplied
Landslip:	Available
Rock Segments:	Not Supplied

Geology 1:50,000 Maps - Slice A

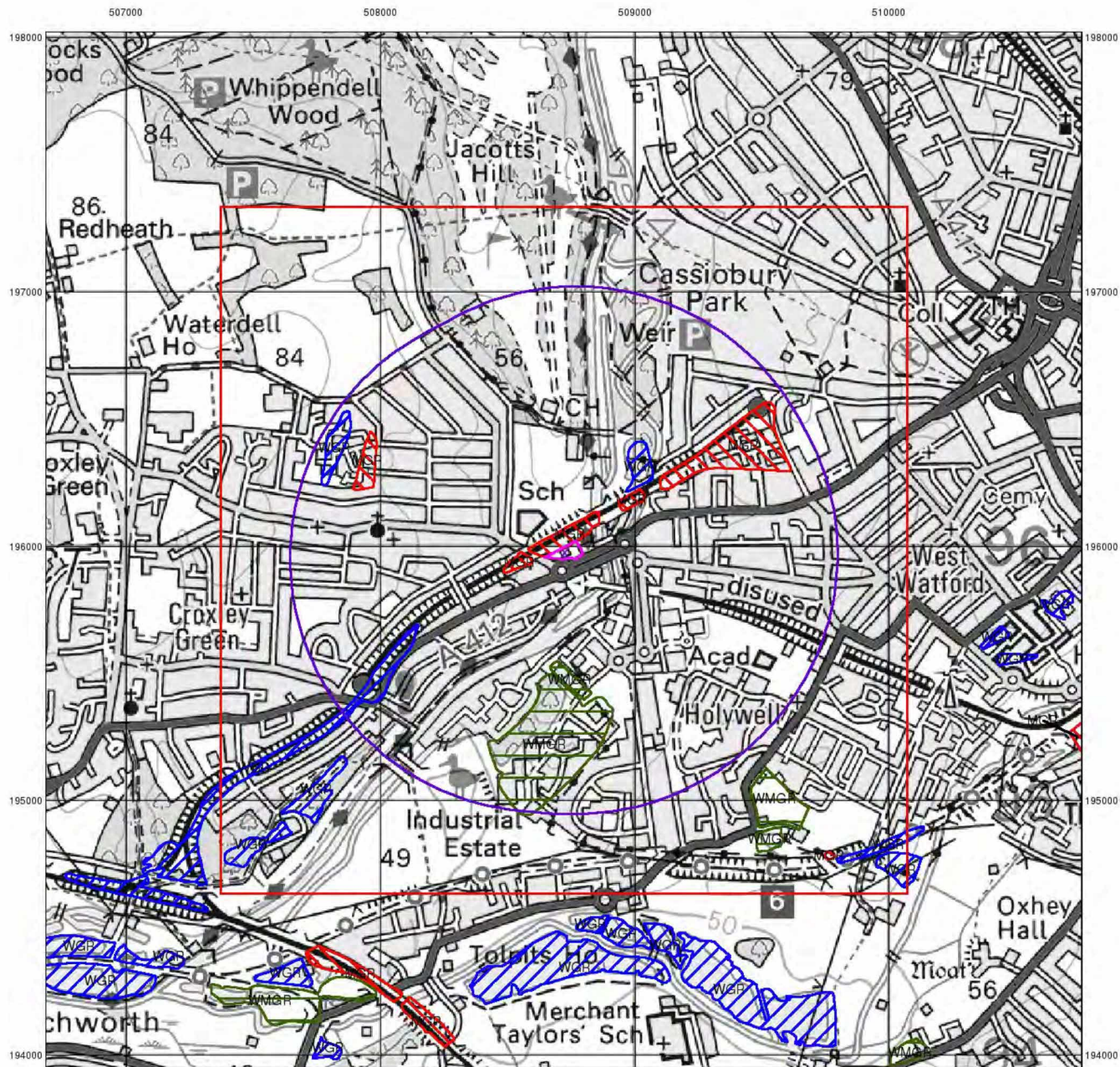


Order Details:

Order Number:	315146015_1_1
Customer Reference:	UK23.6611
National Grid Reference:	508720, 195970
Slice:	A
Site Area (Ha):	0.54
Search Buffer (m):	1000

Site Details:

Site at 508740, 195980



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Artificial Ground and Landslip

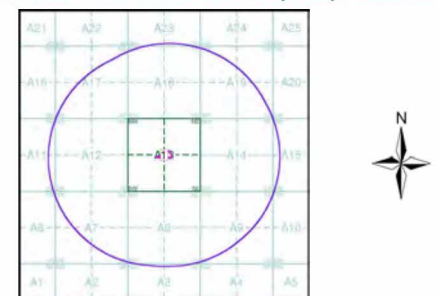
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



Order Details:

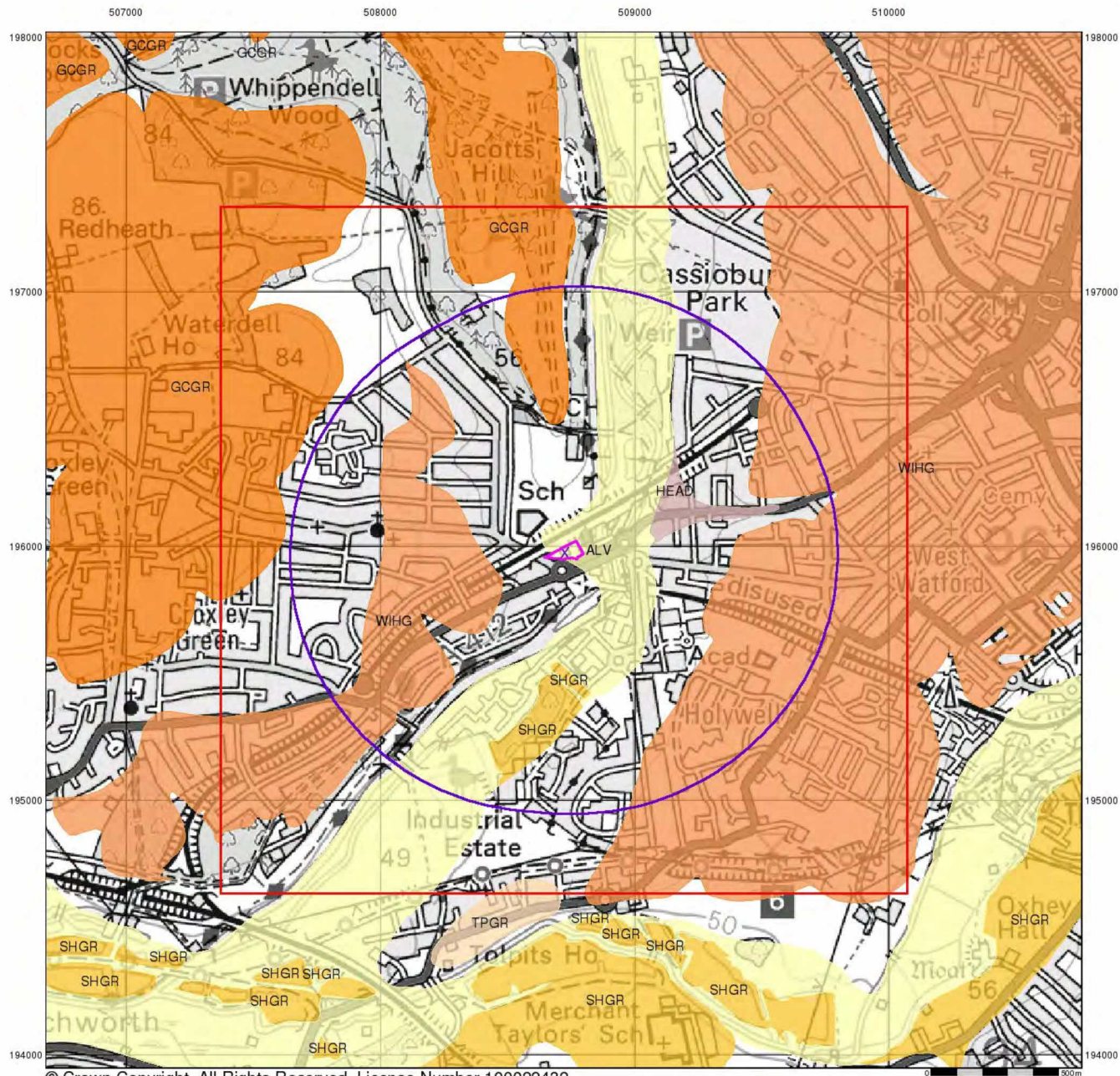
Order Number: 315146015_1_1
 Customer Reference: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Search Buffer (m): 1000

Site Details:

Site at 508740, 195980



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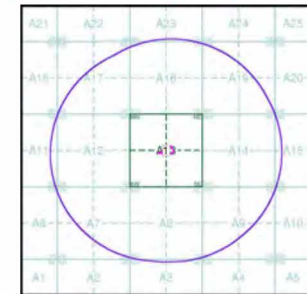
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



Order Details:

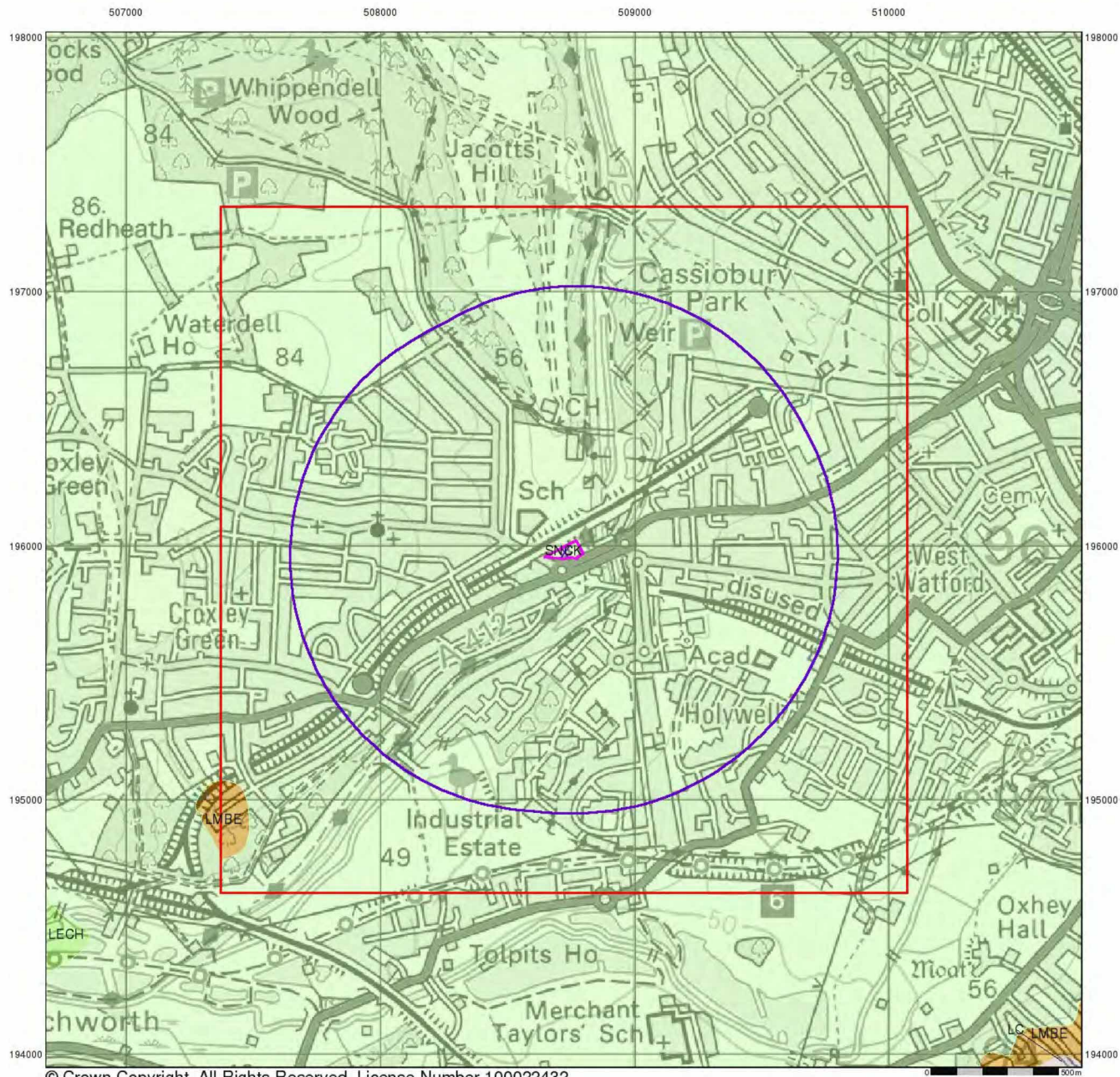
Order Number:	315146015_1_1
Customer Reference:	UK23.6611
National Grid Reference:	508720, 195970
Slice:	A
Site Area (Ha):	0.54
Search Buffer (m):	1000

Site Details:

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Bedrock and Faults

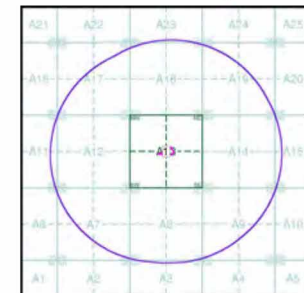
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



Order Details:

Order Number:	315146015_1_1
Customer Reference:	UK23.6611
National Grid Reference:	508720, 195970
Slice:	A
Site Area (Ha):	0.54
Search Buffer (m):	1000

Site Details:

Site at 508740, 195980



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 Fax: 0944 844 9951
 Web: www.envirocheck.co.uk

Borehole Log

M042D03B

Page 1 of 5

Project Name: Watford to Croxley [Baldwins Lane] M042 EM3 Project No: 0676EM3

Borehole ID: M042D03B

Location: Baldwins Lane Co-ords: 508726.909 - 196033.542 Level: 64.47

Hole Type: CP Logged By: Dates: 2005-06-15 - 2005-06-17

Client: Trans4m / SSL Alliance Contractor: Project Engineer: Trans4m / SSL Alliance

Plant Used: SPT Hammer Serial No:

Well	Water	Samples		Result	Depth (m)	Level (m)	Legend	Stratum Description	Depth m
		Depth (m)	Type						
					0.20	64.27		TOPSOIL driller s description	0.5
		0.55	D						
		1.2 - 1.65	U					MADE GROUND Cream white and light grey mottled sandy gravelly desiccated chalk Gravel is sub angular fine and medium of chalk chalk is weathered Occasional rootlets 2mm dia	1.0
		1.7 1.7 - 2.15 1.7 - 2.5	D D B	N=22 (4,5/6,5,5,6)					2.0
		2.5 - 2.95	U						2.5
		3.0 3.0 - 3.45 3.0 - 3.5	D D B	N=25 (4,5/8,5,6,6)	3.00	61.47		MADE GROUND Orange brown sandy to very sandy gravelly slightly desiccated clay Gravel is sub angular and sub rounded fine and medium of flint and chalk chalk is weathered	3.0
		3.5 - 3.95	U						3.5
		4.0 4.0 - 4.45 4.0 - 4.5	D D B	N=22 (2,3/5,8,4,5)					4.0
		4.5 - 4.95	U						4.5
				N=13 (2,3/3,3,3,4)					

IMPORTANT: This is a basic log auto-generated from AGS data held by the National Geoscience Data Centre (NGDC) and does not necessarily include all of the information supplied in the original AGS file. If you wish to deposit AGS files to the NGDC please see www.bgs.ac.uk/services/ngdc. Generated 10-08-2023 at 10:43. BGS Reference 2020020611422041900

Borehole Log

M042D03B

Page 2 of 5

Project Name: Watford to Croxley [Baldwins Lane] M042 EM3 Project No: 0676EM3

Borehole ID: M042D03B

Location: Baldwins Lane Co-ords: 508726.909 - 196033.542 Level: 64.47

Hole Type: CP Logged By: Dates: 2005-06-15 - 2005-06-17

Client: Trans4m / SSL Alliance Contractor: Project Engineer: Trans4m / SSL Alliance

Plant Used: SPT Hammer Serial No:

Well	Water	Samples		Result	Depth (m)	Level (m)	Legend	Stratum Description	Depth m
		Depth (m)	Type						
		5.0 5.0 - 5.45 5.0 - 5.5	D D B	N=13 (2,3/3,3,3,4)				MADE GROUND Orange brown sandy to very sandy gravelly slightly desiccated clay Gravel is sub angular and sub rounded fine and medium of flint and chalk chalk is weathered	
		5.5 - 5.95	U						5.5
		6.0 6.0 - 6.45 6.0 - 7.0	D D B	N=10 (2,2/2,3,2,3)					6.0
		7.0 - 7.45	U						6.5
		7.5 7.5 - 7.95	D D	N=11 (1,2/2,3,2,4)					7.5
		8.5 - 8.95	U						8.0
		9.0 9.0 - 9.45	D D	N=13 (2,3/3,3,4,3)					8.5
									9.0
									9.5

IMPORTANT: This is a basic log auto-generated from AGS data held by the National Geoscience Data Centre (NGDC) and does not necessarily include all of the information supplied in the original AGS file. If you wish to deposit AGS files to the NGDC please see www.bgs.ac.uk/services/ngdc. Generated 10-08-2023 at 10:43. BGS Reference 2020020611422041900

Borehole Log

M042D03B

Page 3 of 5

Project Name: Watford to Croxley [Baldwins Lane] M042 EM3 Project No: 0676EM3

Borehole ID: M042D03B

Location: Baldwins Lane Co-ords: 508726.909 - 196033.542 Level: 64.47

Hole Type: CP Logged By: Dates: 2005-06-15 - 2005-06-17

Client: Trans4m / SSL Alliance Contractor: Project Engineer: Trans4m / SSL Alliance

Plant Used: SPT Hammer Serial No:

Well	Water	Samples		Result	Depth (m)	Level (m)	Legend	Stratum Description	Depth m
		Depth (m)	Type						
		10.0	U					<p>MADE GROUND Orange brown sandy to very sandy gravelly slightly desiccated clay Gravel is sub angular and sub rounded fine and medium of flint and chalk chalk is weathered</p>	10.0
		10.5 10.5 - 10.95	D D	N=15 (2,3/4,4,3,4)					10.5
		11.5 11.5 - 13.0	D B	N=30 (2,3/5,7,10,8)	11.30	53.17			11.0
		13.0 - 13.45 13.0 - 14.5	D B	N=28 (3,4/6,7,7,8)					11.5
		14.5 - 16.0	B	N=28 (2,4/9,7,6,6)				<p>Brown slightly silty SAND GRAVEL Gravel is sub angular angular and sub rounded fine to coarse of mixed lithology Sand is fine to coarse</p>	12.0
									12.5
									13.0
									13.5
									14.0
									14.5

IMPORTANT: This is a basic log auto-generated from AGS data held by the National Geoscience Data Centre (NGDC) and does not necessarily include all of the information supplied in the original AGS file. If you wish to deposit AGS files to the NGDC please see www.bgs.ac.uk/services/ngdc. Generated 10-08-2023 at 10:43. BGS Reference 2020020611422041900

Borehole Log

M042D03B

Page 4 of 5

Project Name: Watford to Croxley [Baldwins Lane] M042 EM3 Project No: 0676EM3

Borehole ID: M042D03B

Location: Baldwins Lane Co-ords: 508726.909 - 196033.542 Level: 64.47

Hole Type: CP Logged By: Dates: 2005-06-15 - 2005-06-17

Client: Trans4m / SSL Alliance Contractor: Project Engineer: Trans4m / SSL Alliance

Plant Used: SPT Hammer Serial No:

Well	Water	Samples		Result	Depth (m)	Level (m)	Legend	Stratum Description	Depth m
		Depth (m)	Type						
		16.0 - 17.5	B	96 (3,5/11,8,77,0 for 0mm)				Brown slightly silty SAND GRAVEL Gravel is sub angular angular and sub rounded fine to coarse of mixed lithology Sand is fine to coarse	15.5
				N=25 (3,4/4,6,7,8)					16.0
									16.5
		18.3	D		18.30	46.17		Structureless CHALK composed of cream silty sandy GRAVEL Clasts are moderately weak subangular to subrounded low and medium density	17.0
				N=14 (2,3/3,3,4,4)					17.5
									18.0
									18.5
									19.0
									19.5

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Borehole Log

M042D03B

Page 5 of 5

Project Name: Watford to Croxley [Baldwins Lane] M042 EM3 Project No: 0676EM3


Borehole ID: M042D03B

Location: Baldwins Lane Co-ords: 508726.909 - 196033.542 Level: 64.47

Hole Type: CP Logged By: Dates: 2005-06-15 - 2005-06-17

Client: Trans4m / SSL Alliance Contractor: Project Engineer: Trans4m / SSL Alliance

Plant Used: SPT Hammer Serial No:

Well	Water	Samples		Result	Depth (m)	Level (m)	Legend	Stratum Description	Depth m
		Depth (m)	Type						
					21.00	43.47		Structureless CHALK composed of cream silty sandy GRAVEL Clasts are moderately weak subangular to subrounded low and medium density	20.5 21.0 21.5 22.0 22.5 23.0 23.5 24.0 24.5

IMPORTANT: This is a basic log auto-generated from AGS data held by the National Geoscience Data Centre (NGDC) and does not necessarily include all of the information supplied in the original AGS file. If you wish to deposit AGS files to the NGDC please see www.bgs.ac.uk/services/ngdc. Generated 10-08-2023 at 10:43. BGS Reference 2020020611422041900

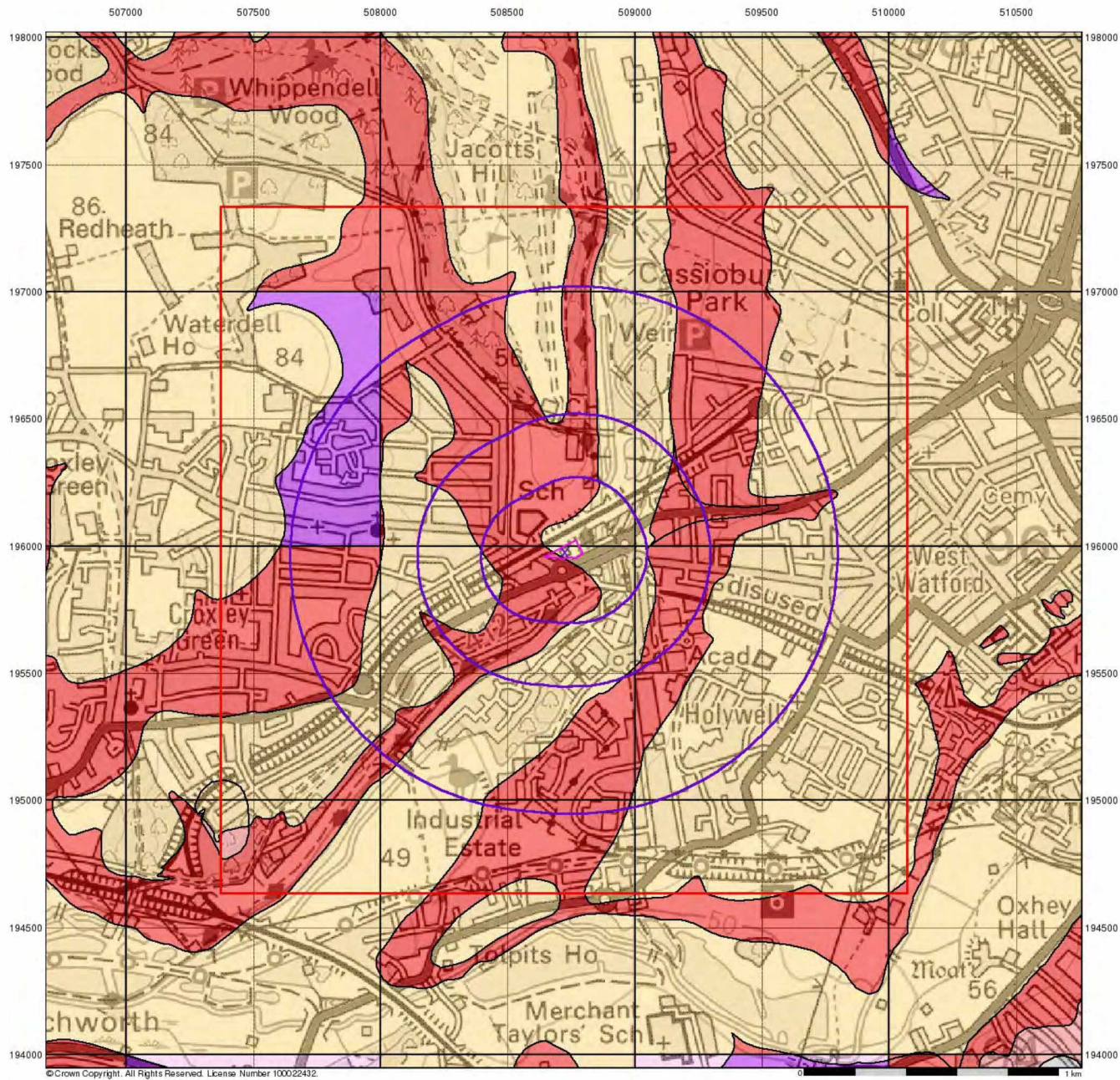
GENERAL REMARKS

1. Cable percussion borehole carried out during Traffic Hours. 2. Mobilised to site during Engineering Hours. 3. Inspection pit hand dug to 1.2m. 4. 19mm standpipe piezometer installed as follows, GL - 17.7m plain tubing, 17.7 - 18.0m piezo tip and stand up security cover. 5. Backfill details as follows, GL - 0.5m concrete, 0.5 - 1.0m bentonite seal, 1.0 - 17.0m 1:1 bentonite/cement grout. 17.0 - 18.3m sand filter, 18.3 - 21.0m 1:1 bentonite/cement grout. 6. No groundwater encountered.



APPENDIX D

Groundwater Vulnerability and Flood Maps



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Groundwater Vulnerability

General

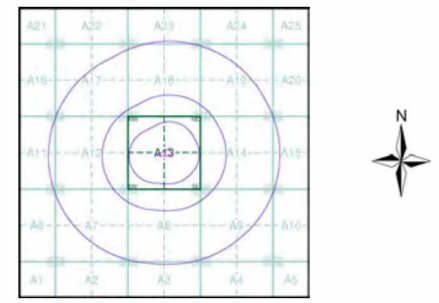
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

- | Bedrock Aquifers | Superficial Aquifers |
|---|---|
| High Vulnerability, Principal Aquifer | High Vulnerability, Principal Aquifer |
| High Vulnerability, Secondary Aquifer | High Vulnerability, Secondary Aquifer |
| Medium Vulnerability, Principal Aquifer | Medium Vulnerability, Principal Aquifer |
| Medium Vulnerability, Secondary Aquifer | Medium Vulnerability, Secondary Aquifer |
| Low Vulnerability, Principal Aquifer | Low Vulnerability, Principal Aquifer |
| Low Vulnerability, Secondary Aquifer | Low Vulnerability, Secondary Aquifer |

- Unproductive Aquifer
- Soluble Rock

Site Sensitivity Context Map - Slice A



Order Details

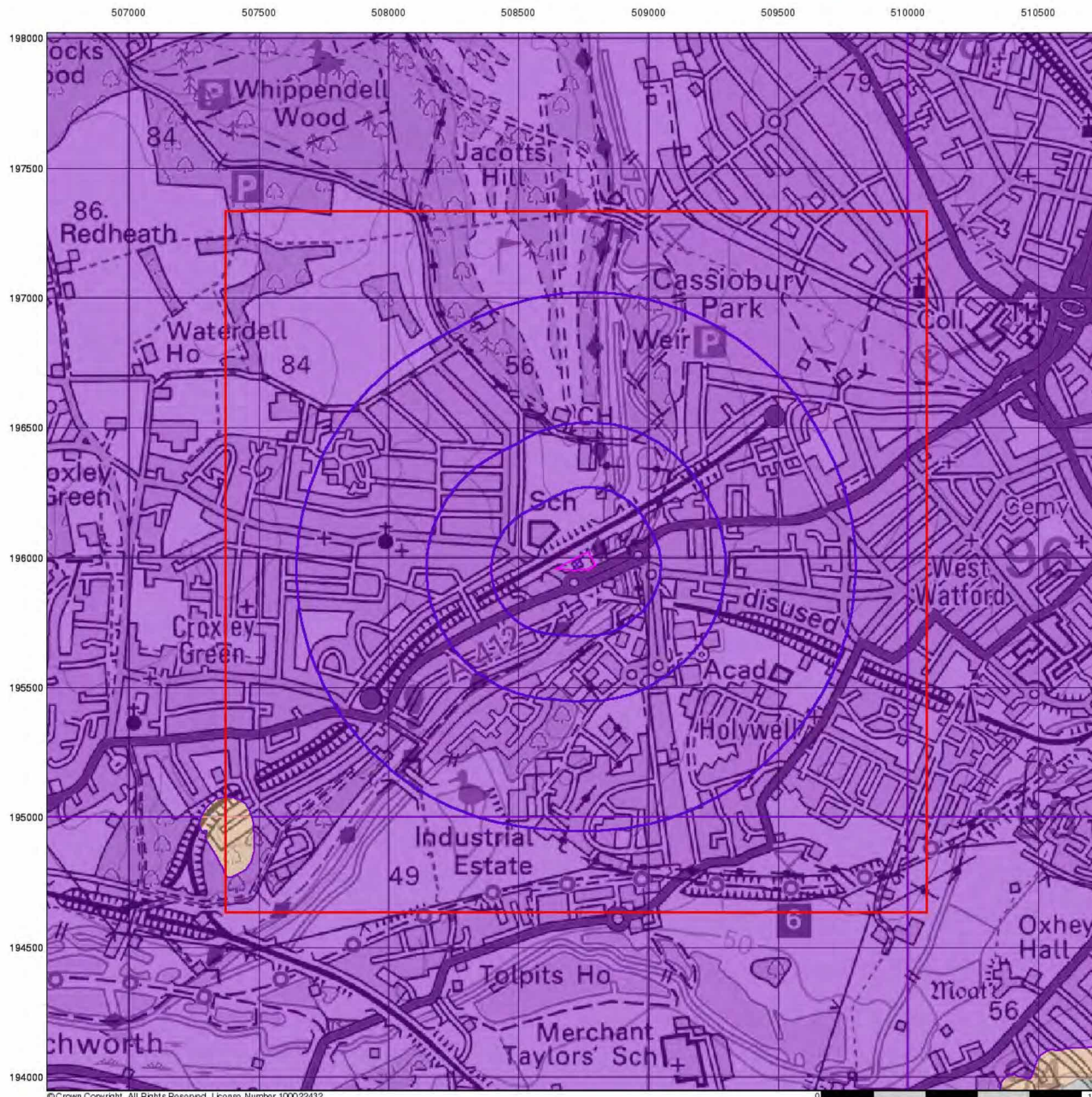
Order Number: 315146015_1_1
 Customer Ref: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Search Buffer (m): 1000

Site Details

Site at 508740, 195980



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Bedrock Aquifer Designation

General

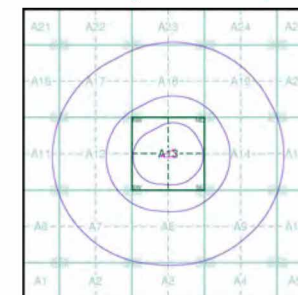
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

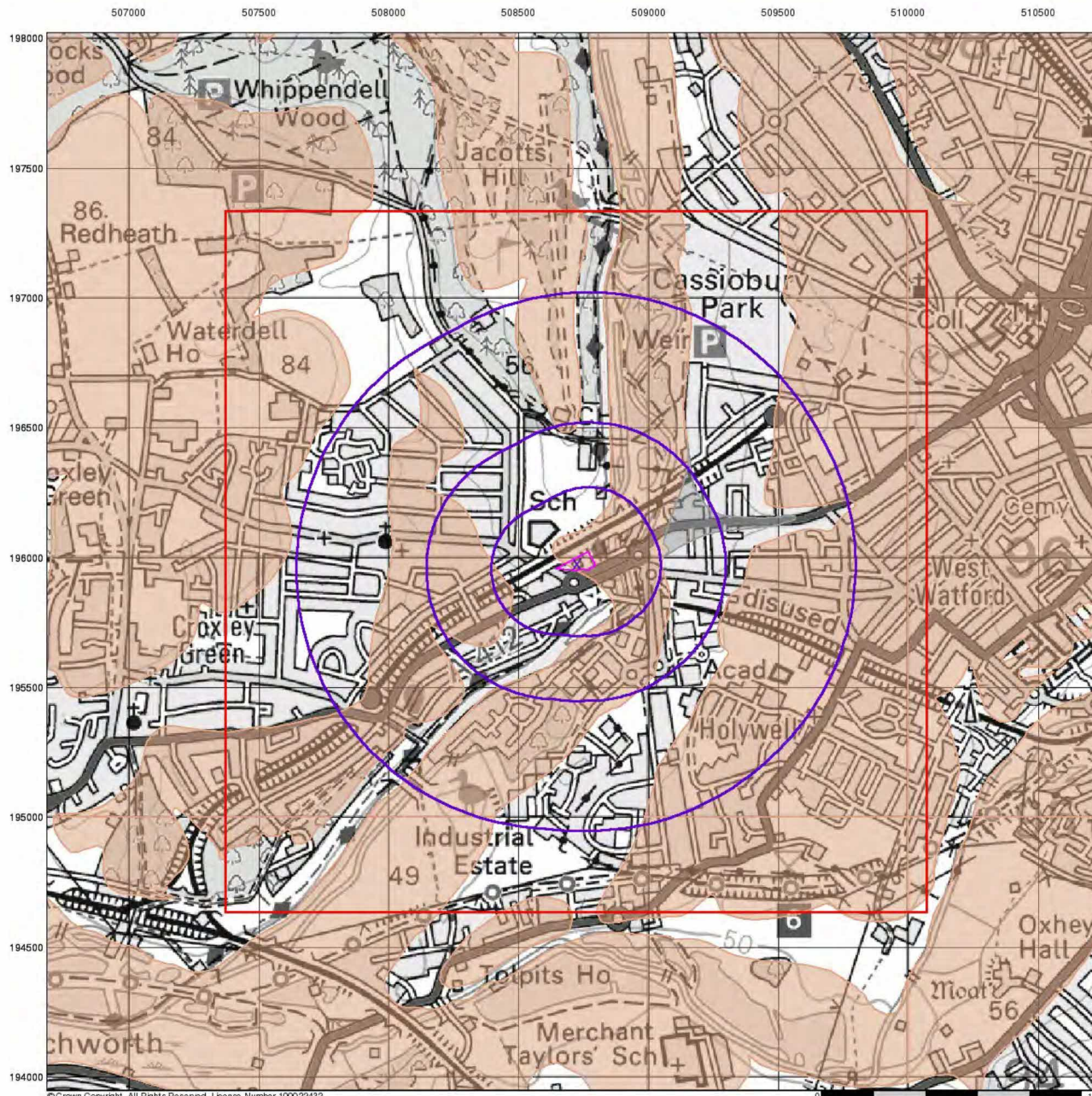
Order Number:	315146015_1_1
Customer Ref:	UK23.6611
National Grid Reference:	508720, 195970
Slice:	A
Site Area (Ha):	0.54
Search Buffer (m):	1000

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Superficial Aquifer Designation

General

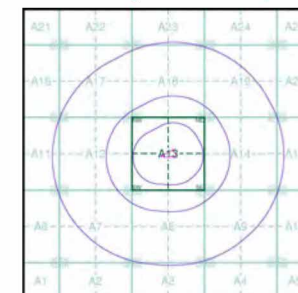
- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



Order Details

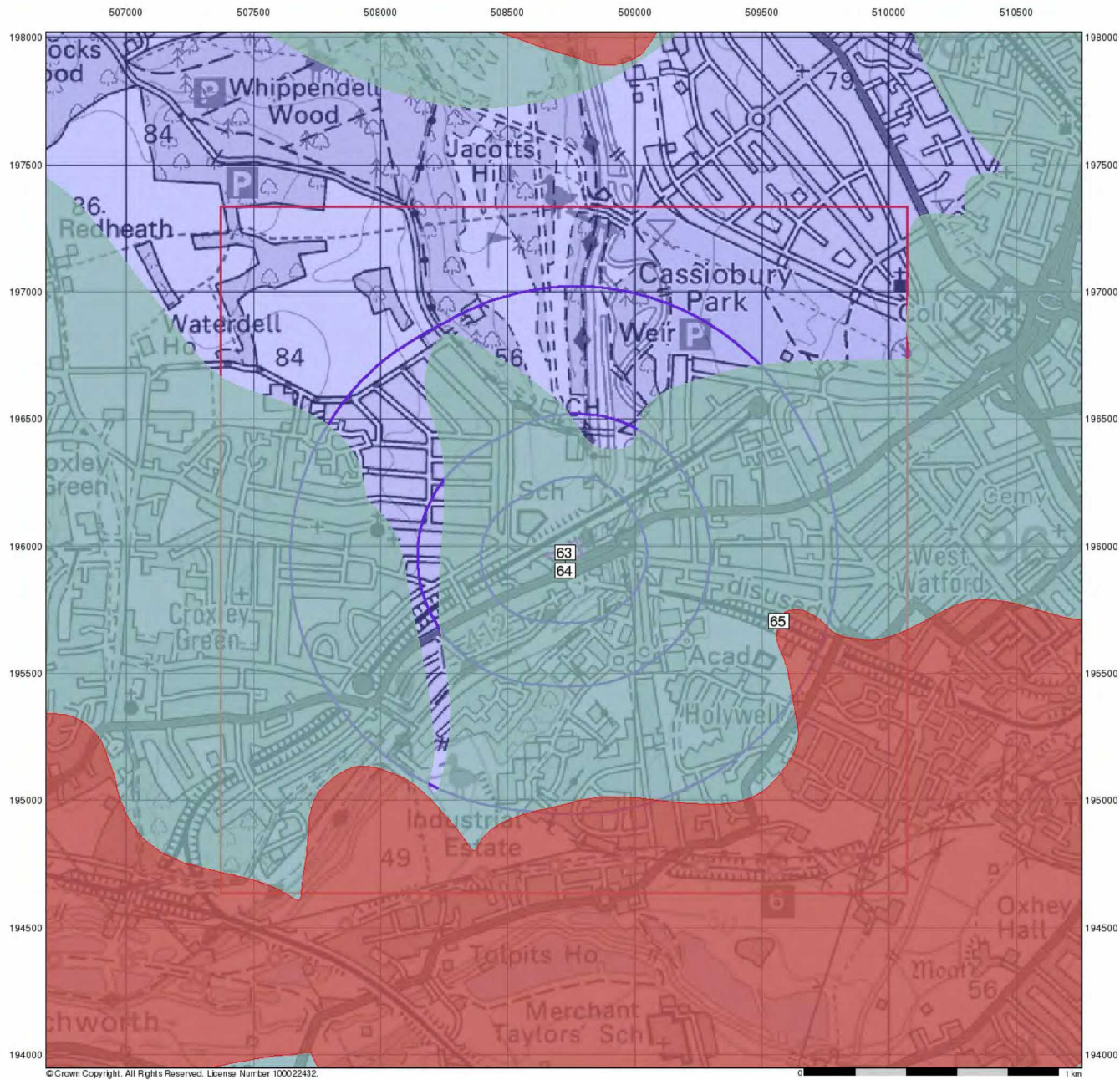
Order Number:	315146015_1_1
Customer Ref:	UK23.6611
National Grid Reference:	508720, 195970
Slice:	A
Site Area (Ha):	0.54
Search Buffer (m):	1000

Site Details

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Source Protection Zones

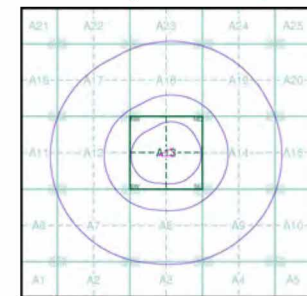
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A



Order Details

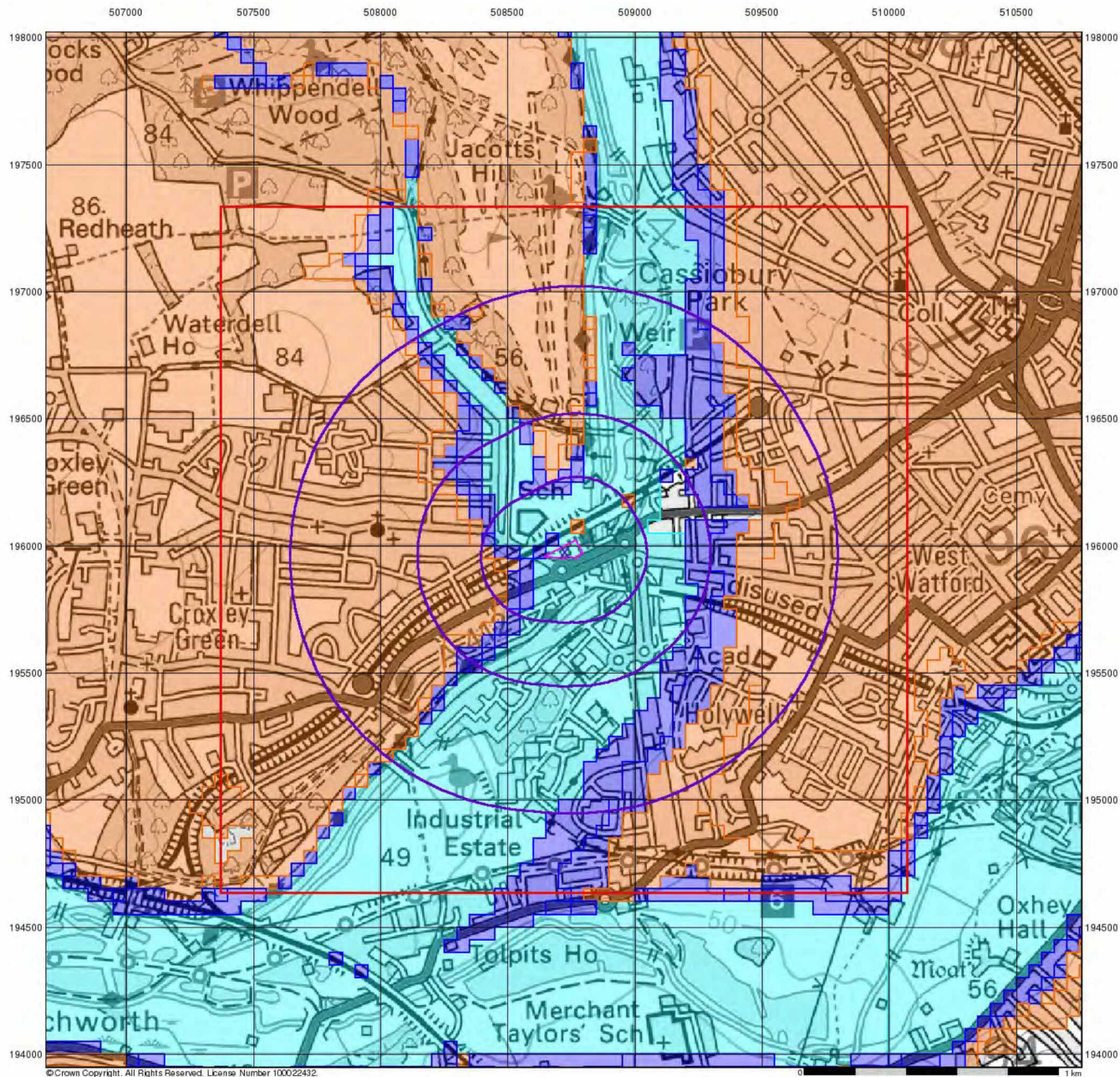
Order Number: 315146015_1_1
 Customer Ref: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Search Buffer (m): 1000

Site Details

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BGS Flood GFS Data

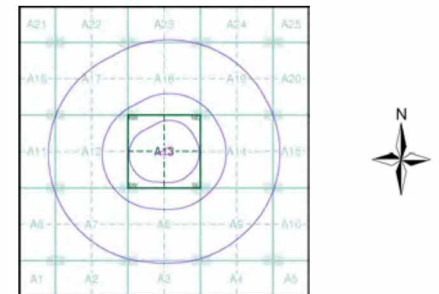
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

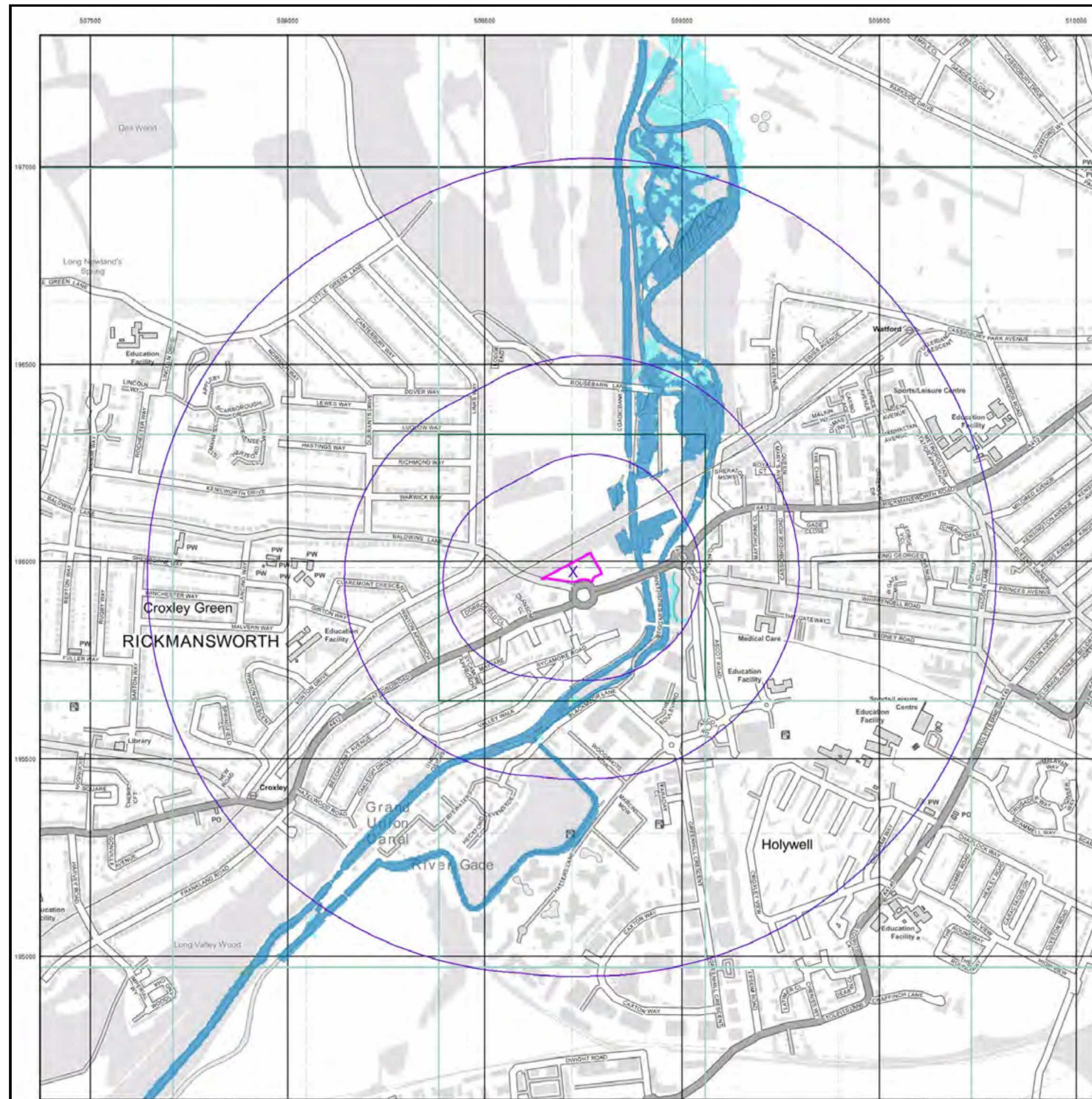
Order Number: 315146015_1_1
 Customer Ref: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Search Buffer (m): 1000

Site Details

Site at 508740, 195980



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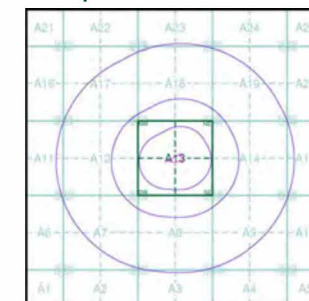
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



Order Details

Order Number: 315146015_1_1
 Customer Ref: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Search Buffer (m): 1000

Site Details

Site at 508740, 195980



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APPENDIX E

A Selection of Historic Maps



Hertfordshire

Published 1873

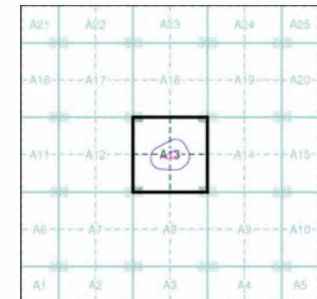
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

044_01	1873	1:2,500
044_05	1873	1:2,500

Historical Map - Segment A13



Order Details

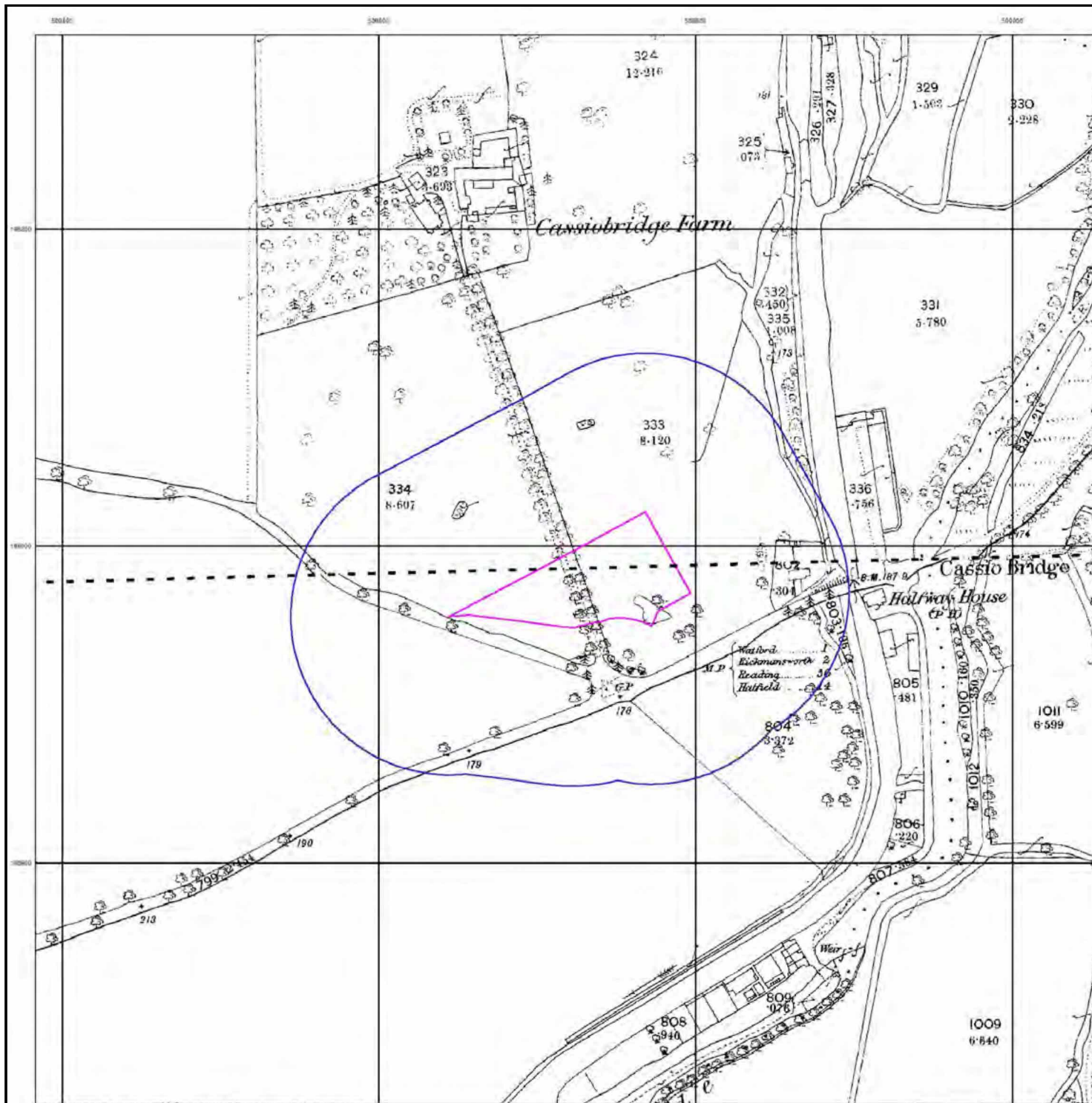
Order Number: 315146015_1_1
 Customer Ref: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Search Buffer (m): 100

Site Details

Site at 508740, 195980



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Hertfordshire
Published 1914

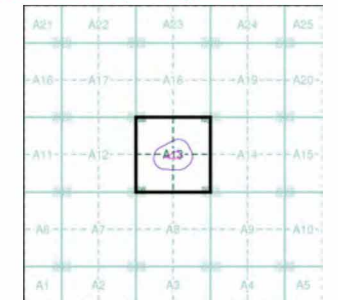
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

044_01	1914	1:2,500
044_05	1914	1:2,500

Historical Map - Segment A13



Order Details

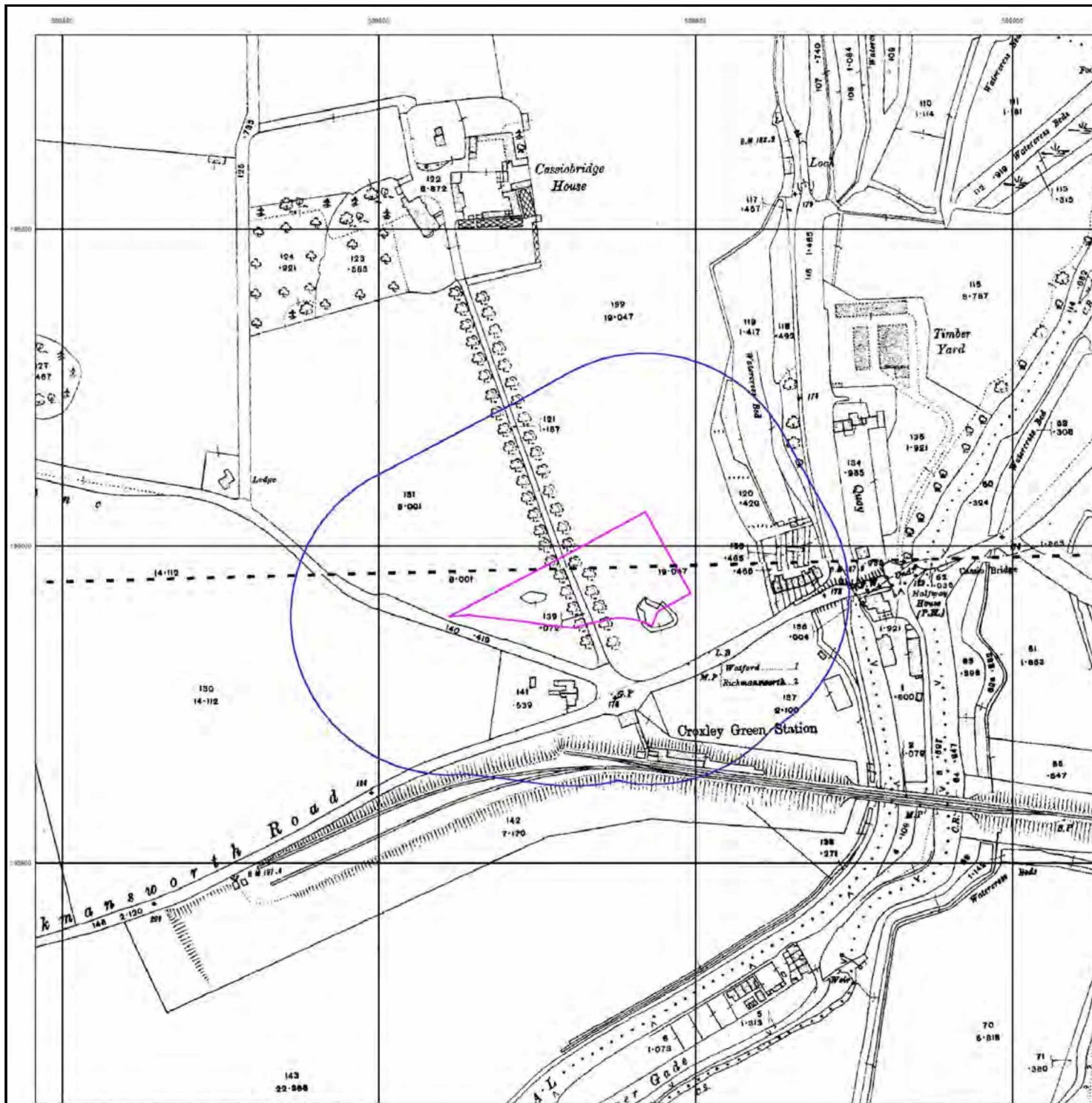
Order Number: 315146015_1_1
 Customer Ref: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Search Buffer (m): 100

Site Details

Site at 508740, 195980



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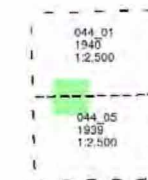
Hertfordshire

Published 1939 - 1940

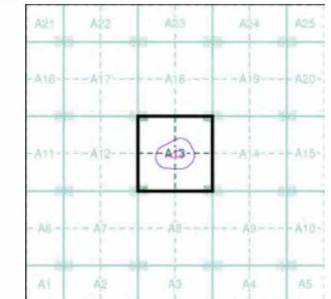
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

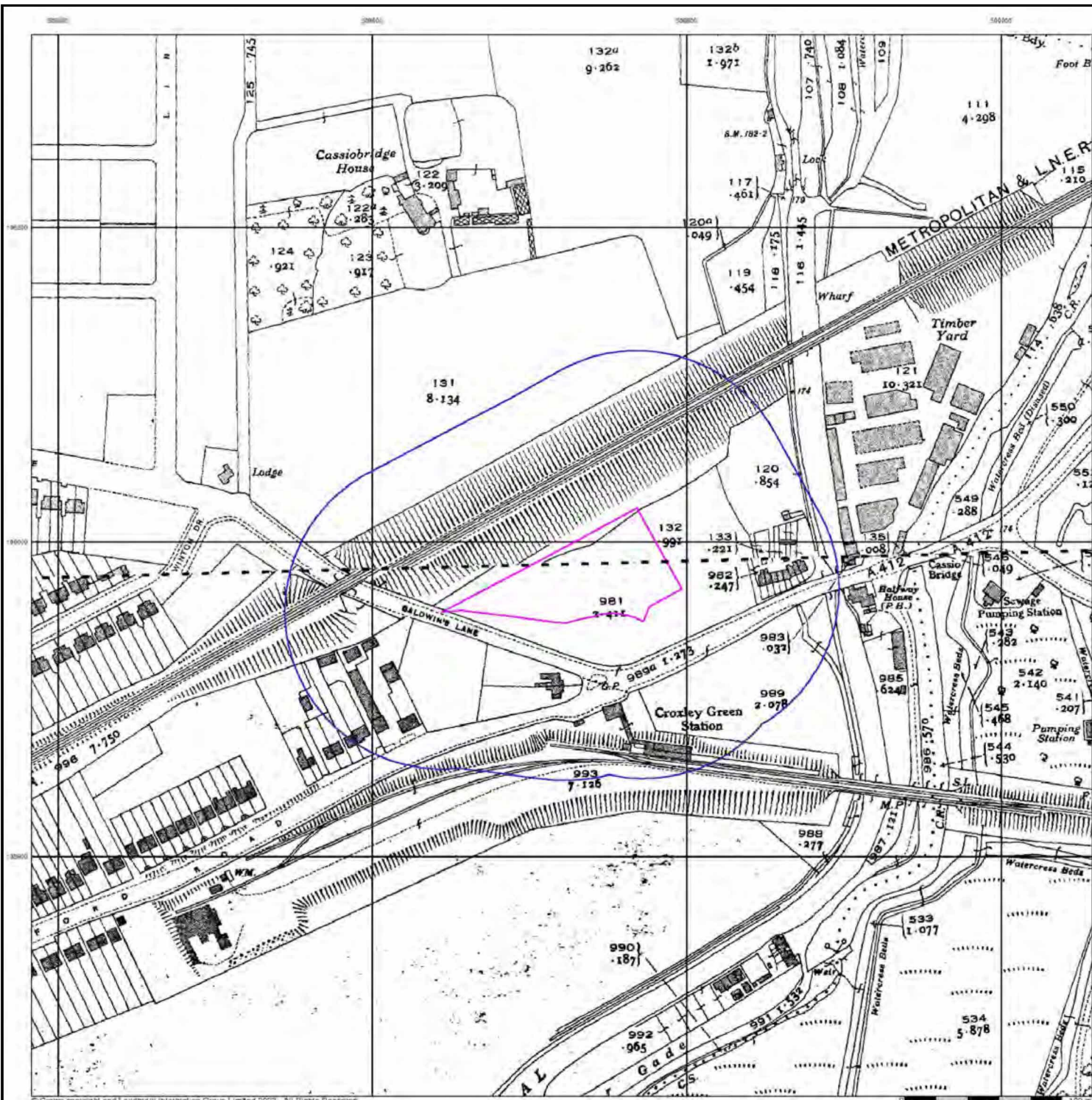
Order Number: 315146015_1_1
Customer Ref: UK23.6611
National Grid Reference: 508720, 195970
Slice: A
Site Area (Ha): 0.54
Search Buffer (m): 100

Site Details

Site at 508740, 195980



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Ordnance Survey Plan

Published 1960 - 1961

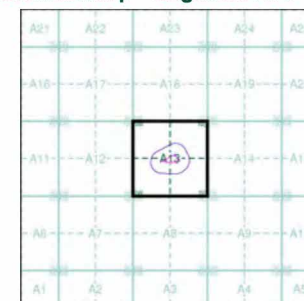
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

TO0996 1901 12,500	TO0996 1901 12,500
TO0995 1900 12,500	TO0995 1900 12,500

Historical Map - Segment A13



Order Details

Order Number: 315146015_1_1
 Customer Ref: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Search Buffer (m): 100

Site Details

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Large-Scale National Grid Data

Published 1992

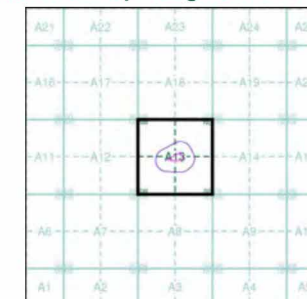
Source map scale - 1:1,250

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

T00996SW 1992 1:1,250	T00996SE 1992 1:1,250	T00996SW 1992 1:1,250
T00996NW 1992 1:1,250	T00996NE 1992 1:1,250	T00996NW 1992 1:1,250

Historical Map - Segment A13



Order Details

Order Number: 315146015_1_1
Customer Ref: UK23.6611
National Grid Reference: 508720, 195970
Slice: A
Site Area (Ha): 0.54
Search Buffer (m): 100

Site Details

Site at 508740, 195980

Landmark
INFORMATION GROUP

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508400

508600

508800

509000

1956200

1956200

1956000

1956000

1956800

1956800



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0 100 m

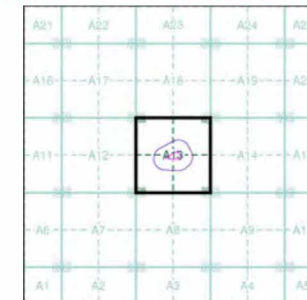


Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A13



Order Details

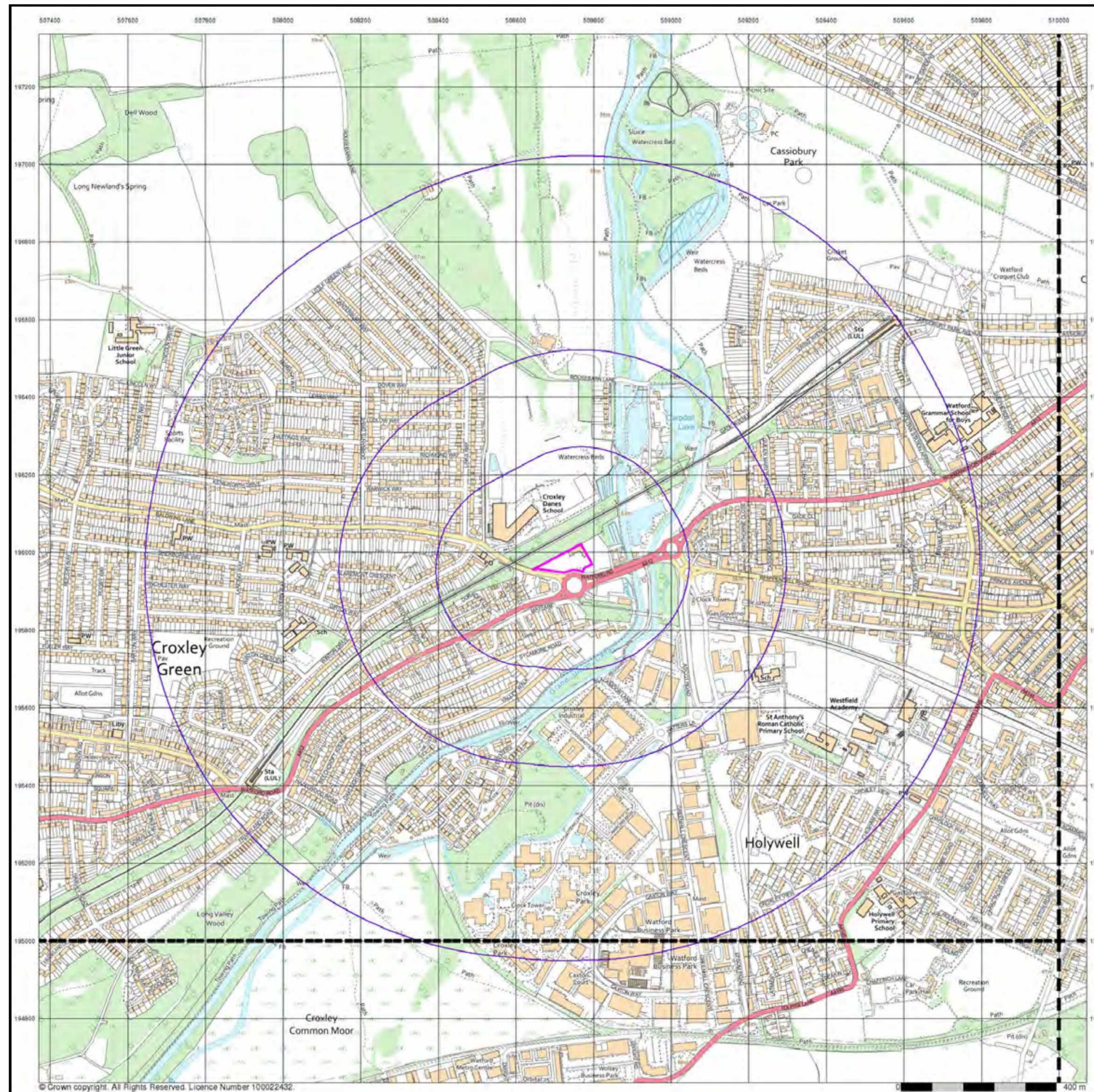
Order Number: 315146015_1_1
 Customer Ref: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Search Buffer (m): 100

Site Details

Site at 508740, 195980



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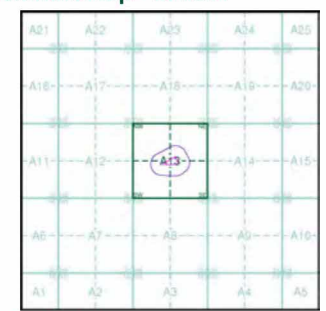
VectorMap Local
Published 2023
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities), 1:2500 scale (smaller towns, villages and developed rural areas), and 1:10,000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

TQ09NE 2023 Variable	TQ19NW 2023 Variable
TQ09SE 2023 Variable	TQ19SW 2023 Variable

Historical Map - Slice A



Order Details

Order Number: 315146015_1_1
 Customer Ref: UK23.6611
 National Grid Reference: 508720, 195970
 Slice: A
 Site Area (Ha): 0.54
 Search Buffer (m): 1000

Site Details

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Tel: 0844 844 9952
 Fax: 0844 844 9951
 Web: www.envirocheck.co.uk



7B Caxton House
Broad Street
Cambourne
Cambridge CB23 6JN

T +44(0) 1954 710666
F +44(0) 1954 710677
E info@epstrategies.co.uk
W www.epstrategies.co.uk

Registered Number: 4330320

