Preliminary Environmental Risk Assessment

Land at Bridge House, Oxford Road, Uxbridge, UB8 1HS

June 2017

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Comments

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Contents

Executive Summary

1. Introduction 2
1.1 Objectives 2
1.2 Proposed Development 2
1.3 Regulatory Context 2
1.4 Constraints 3

2. Methodology 5

3. Hazard Identification 6
3.1 Site Description and Reconnaissance 6
3.1.1 Site Surroundings 7
3.2 History 8
3.3 Geology 10
3.3.1 Ground Stability 10
3.3.2 Ground Gas 11
3.4 Controlled Waters 11
3.4.1 Surface Waters 11
3.4.2 Flood Risk 11
3.4.3 Groundwater 13
3.5 Ecological Systems 13
3.6 Consultations 13
3.6.1 Environmental Health 13
3.6.2 Planning Department 14
3.6.3 Building Control Department 14

4. Previous Environmental Assessments and Drawings 15
4.1 WSP Environmental Ltd Phase I Environmental Assessment, April 2013 15
4.2 Construction Drawings 15
4.2.1 Bridge House 15
4.2.2 Riverview House 16
4.2.3 Waterside House 16

5. Hazard Assessment and Preliminary Conceptual Model 17
5.1 Contaminants of Concern 17

6. Conclusions 21

7. Recommendations 22

Figures

Figure 1: Current Site Layout 6
Figure 2: Historical Site Use 8
Figure 3: Geology 10
Figure 4: Flood risk from rivers or seas 12
Figure 5: Flood risk from surface water 12

Tables

Table 1: Summary of potentially contaminative activities on-Site 7
Table 2: Summary of surrounding land uses 7
Table 3: Site history 9
Table 4: Site geology 10
Table 5: Summary of hydrogeological properties of the main geological strata 13
Table 6: List of parties consulted during this study 13
Table 7: Contaminants of concern 17
Table 8: Preliminary Conceptual Model for the Site 18

Appendices

Appendix A Site Plans
Appendix B Site Photographs
Appendix C Consultation Information
Appendix D Risk Rating Matrix
Appendix E Environmental Receptors

Executive Summary

Objectives	
Preliminary Environmental Risk Assessment (PERA) in support of a permitted development application for the proposed residential use of land at Bridge House, Oxford Road, Uxbridge, UB8 1HS (hereafter termed "the Site"). The report considers the risks posed by ground contamination to future receptors.	
Site Setting	
Current Use	Elongated area of land comprising three large office buildings, a multi-storey car park, hardstanding car park areas and amenity soft landscaping.
History	Undeveloped until a timber yard in the 1930s, mill in the 1960s, and depot and warehouses in the 1970s. Bridge House was constructed in the 1970s and Waterside and Riverview Houses in the 2000s. Surrounding historical land uses include warehouses, various works, timber yards, saw mills and factories.
Geology	Variable depths of Made Ground (up to 2.5m) with Alluvium (up to 3.3m) and Lambeth Group (up to 27m) beneath the Site. The bedrock beneath is the Chalk Formation
Controlled Waters	The Alluvium and Lambeth Group are classified as Secondary A Aquifers. The Chalk Formation is classified as a Principal Aquifer. The River Colne and the Grand Union Canal are located immediately west and east respectively.
Consultation	A Groundsure dataset was obtained for the Site. Information was requested from the Environmental Health and Building Control Department at the London Borough of Hillingdon. The planning register at the London Borough of Hillingdon website has also been accessed.

Preliminary Conceptual Model

The potential pollutant linkages identified for the Site as follows:

- Future Site users may be exposed to ground gas and vapours in Bridge House; and
- Collection of ground gas and vapours in voids in Bridge House may create a risk to on-Site structures

Conclusions

Given the proposed end use, and assuming the implementation of the recommendations below, the overall risk rating for the Site is assessed as **Low**. Therefore, it is expected the National Planning Policy Framework requirement that on completion of a development, the Site can no longer be captured under the Part IIA regime would be met.

Recommendations

- An intrusive environmental ground investigation to target the potential ground gas and vapour ingress to Bridge House. This should include:
  - Sampling and analysis of Made Ground in close proximity to the building;
  - Headspace analysis of soil samples to assess presence of vapours
  - Monitoring ground gas and vapours; and
  - Sampling and analysis of any groundwater in the Alluvium in the area of Bridge House
- Ambient air monitoring within Bridge House should be undertaken to further assess the risk from ground gas and vapour ingress into the building;
- A watching brief should be undertaken during the groundworks and environmental sampling should be undertaken where unforeseen visual or olfactory contamination is suspected; and
- Assessment of the potential risk of ground gas and vapour ingress to Bridge House

If the outcome of the risk assessment concludes there is no significant risk, then no further action is required.

If the outcome of the risk assessment concludes there is a potential risk, then mitigation measures will be required. These would comprise installation of a proprietary protection system to prevent ingress of ground gas or vapour into the building.

An example of a suitable protection system is the Clean Air Blanket (CAB) system, which maintains a zone of positive pressure beneath a building that dilutes and disperses any gas emerging from the ground. To do this, air from outside the building is introduced beneath the building via a system of pipes and diffuser heads. The air pressure is then released at the perimeter of the building. The CAB system can be retrofitted into an existing building. The installation is typically non-disruptive to the normal occupation or the fabric of the building, operates in the same way as a new-build system and mitigates the risk of ground gas and vapour ingress.

It is recommended that there is no 'in principle' reason why planning permission should not be granted. If the risk assessment identifies a significant risk this can be mitigated by the recommended measures provided in this document. For this reason, the following conditions could be appended to the 'prior approval' for Bridge House:

1) A condition requiring an intrusive environmental ground investigation to target the potential ground gas and vapour ingress to Bridge House;

2) A condition to require that if the ground investigation identifies a potential risk then mitigation measures are to be agreed and implemented prior to first occupation.

No potential pollutant linkages have been identified for Riverview House or Waterside house as ground gas protection measures are already in place. As such, no conditions are required to the prior approval for these properties.

1. Introduction

1.1 Objectives

Waterman Infrastructure & Environment Limited ("Waterman") was instructed by Mace Group on behalf of Legal & General Assurance (Pensions Management) Limited to undertake a Preliminary Environmental Risk Assessment for ground contamination for the proposed permitted development application of land at Bridge House, Oxford Road, Uxbridge, UB8 1HS (hereafter termed "the Site").

1.2 Proposed Development

The Site is currently an elongated area of land comprising three commercial office buildings and a multi-storey car park. Hardstanding car parking areas are located within the eastern and southern areas of the Site. It is proposed to refurbish Bridge House, Riverview House and Waterside House for residential use.

No basements are present on-Site. Soft landscaping is present in the western areas of the Site and covers about one third of the Site.

No groundworks are proposed for the development.

1.3 Regulatory Context

This report is to accompany an application for prior approval under Part O of the General Permitted Development Order. Generally, this allows the conversion of office buildings to residential accommodation, provided certain criteria are met. The section relevant to this report is:

O.2. — (1) Development under Class O is permitted subject to the condition that before beginning the development, the developer must apply to the local planning authority for a determination as to whether the prior approval of the authority will be required as to:

(a) transport and highways impacts of the development,

(b) <u>contamination risks on the site</u>,

(c) flooding risks on the site, and

(d) impacts of noise from commercial premises on the intended occupiers of the development.

This report details the contamination risks on-Site.

The National Planning Policy Framework (NPPF) sets out Government planning policy for England and how this is expected to be applied to development. Paragraphs 120 to 122 of Section 11 – Conserving and enhancing the natural environment of the NPPF relate to contaminated land matters and state the following:

"To prevent unacceptable risks from pollution and land instability, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be taken into account. Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

Planning policies and decisions should ensure that:

- *the site is suitable for its new use taking account of ground conditions and land instability, including from natural hazards or former activities such as mining, pollution arising from previous uses and any proposals for mitigation including land remediation or impacts on the natural environment arising from that remediation;*
- *after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and*
- *Adequate site investigation information, prepared by a competent person, is presented.*

In doing so, local planning authorities should focus on whether the development itself is an acceptable use of the land and the impact of the use, rather than the control of processes or emissions themselves where these are subject to approval under pollution control regimes. Local planning authorities should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."

In order to assess the contamination status of the Site, with respect to the proposed end use, it is necessary to assess whether the Site could potentially be classified as "Contaminated Land", as defined in Part IIA of the Environmental Protection Act 1990 and Contaminated Land Statutory Guidance 2012. This is assessed by the identification and assessment of potential pollutant linkages. The linkage between the potential sources and potential receptors identified needs to be established and evaluated.

To fall within this definition, it is necessary that, as a result of the condition of the land, substances may be present in, on or under the land such that:

a) significant harm is being caused or there is a significant possibility of such harm being caused; or

b) significant pollution of controlled waters is being caused, or there is significant possibility of such pollution being caused.

It should be noted that DEFRA has advised (Ref. Section 4, DEFRA Contaminated Land Statutory Guidance 2012) Local Authorities that land should not be designated as "Contaminated Land" where:

a) the relevant substance(s) are already present in controlled waters;

b) entry into controlled waters of the substance(s) from land has ceased; and

c) it is not likely that that further entry will take place.

These exclusions do not necessarily preclude regulatory action under the Environmental Permitting (England and Wales) Regulations 2010, which make it a criminal offence to cause or knowingly permit a water discharge of any poisonous, noxious or polluting matter to controlled waters. In England and Wales, under The Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009, a works notice may be served by the regulator requiring appropriate investigation and clean-up.

1.4 Constraints

The assessment was undertaken in accordance with the scope agreed between Waterman and Mace Group, and with Waterman's standard Terms of Appointment.

The benefit of this report is made to Legal & General Assurance (Pensions Management) Limited.

The information contained in this report is based on a review of available historical, geological and hydrogeological sources, consultation with the regulatory authorities and observations made on site on 2 June 2017.

Waterman has endeavoured to assess all information provided to them during this investigation, but makes no guarantees or warranties as to the accuracy or completeness of this information.

The scope of this site investigation includes an assessment of the presence of asbestos containing materials in the ground at the Site but not within buildings or structures or below ground structures (basements, buried service ducts and the like).

The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the Site.

During the Site walkover, access inside the buildings was not possible, and therefore the findings of this report are based on the external areas of the Site.

2. Methodology

This Preliminary Environmental Risk Assessment has been undertaken in general accordance with the Model Procedures for Management of Land Contamination (Contaminated Land Report 11 – Environment Agency, September 2004).

The report includes the following:

- collation of available documentary information;
- a Site reconnaissance;
- hazard identification;
- formulation of a Preliminary Conceptual Model for the Site;
- hazard assessment for the identification of potentially unacceptable risks; and
- recommendations for further action.

3. Hazard Identification

3.1 Site Description and Reconnaissance

The Site is located at National Grid Reference 505035, 184453 on Oxford Road, Uxbridge, UB8 1HS.

Figure 1: Current Site Layout

Source: Groundsure Enviro Insight (Report Ref: WTM1-3940279) | Photograph taken in 2015

The Site comprises an elongated parcel of land supporting:

- Three large commercial office buildings (Bridge, Riverview and Waterside Houses);
- A multi-storey car park;
- Hardstanding car parking areas in the eastern and southern areas;
- Soft landscaping in the western area
- Enclosure with aboveground storage tank (AST) and back-up generator; and
- Electrical substations

According to the Landmark EnviroCheck report, presented in Appendix C, there are no licences or consents registered to the property.

A Site location plan and Site layout plan are presented as Appendix A. A selection of photographs taken during the Site inspection is presented as Appendix B.

Current potentially contaminative Site uses were identified during the property inspection, and are summarised in Table 1:

Table 1: Summary of potentially contaminative activities on-Site

Potential Issue	Description	Condition
Aboveground Storage Tanks (and fuel lines)	3,630-litre double skinned oil tank	Drip tray was present. Hardstanding platform had vegetation growing and no hydrocarbon staining
Drainage	Multiple drains on-Site for car parking area. No interceptors identified. Surface water drain located adjacent to AST	No hydrocarbon sheens or odours noted in drains.
Hazardous Materials	Three electrical substations located on-Site	Substations were in enclosures, which were inaccessible and not able to be inspected.
Solid and Liquid Waste Storage	Multiple external waste storage areas on-Site for office waste. Office furniture and white goods observed on the ground floor of the multi-storey car park.	Waste not entirely contained within waste storage areas. Office equipment and white goods not located in specified area

3.1.1 Site Surroundings

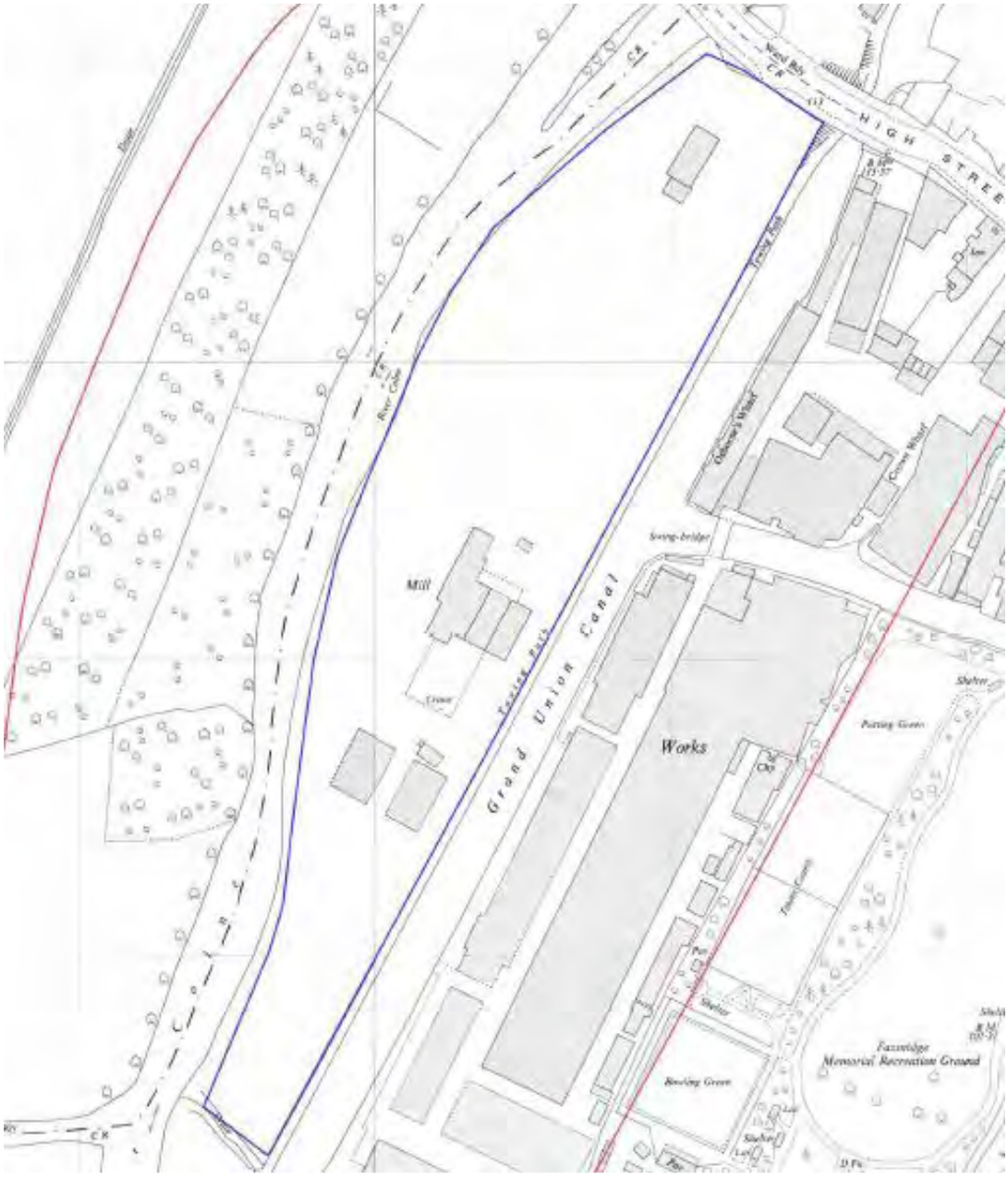
A summary of the current surrounding land uses, including relevant licences and consents, is shown in Table 2.

Table 2: Summary of surrounding land uses

Location	Description
North	Oxford Road, public house and Uxbridge business park
East	Grand Union Canal, Uxbridge, commercial and residential land use
South	Xerox Innovation Centre, Riverside Way industrial estate
West	River Colne and agricultural use 2 Part B environmental permits, the closest being 429m northwest registered to Willowbank Service Station for 'unloading of petrol into storage at service stations'.

3.2 History

Figure 2: Historical Site Use



Source: Groundsure Map Insight (Report Ref: WTM1-3940281) Date: 1962-63

A review of historical maps obtained from Landmark Information Group has been undertaken. Table 3 summarises the relevant information.

Table 3: Site history

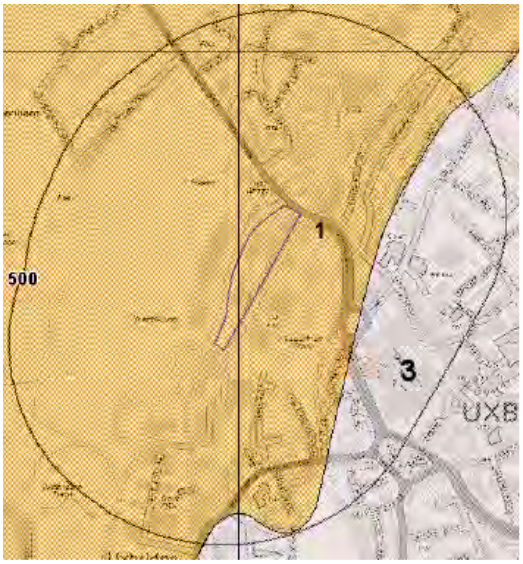
Source	Site [a]	Surroundings [a]
1865-68 County Series, 1: 10,560 1866 & 1877 County Series, 1: 2,500	Undeveloped assumed agricultural land.	River Colne located immediately west Towing path located immediately east with multiple wharfs to the east ***Steam saw mill***, located 75m east ***Brewery***, located 125m east ***Flour mill***, located 160m east Residential/commercial properties to the east and agriculture to the south and west Uxbridge located 450m southeast
1881-82 County Series, 1: 10,560 1896 & 1899 County Series, 1: 2,500	No significant change identified.	***Tan yard***, located 175m east ***Saw mills***, located 120m northeast
1914, County Series, 1: 2,500	No significant change identified.	***Timber yard***, located 50m east
1932-35 County Series, 1: 10,560 1932 & 1934 County Series, 1: 2,500	***Timber yard*** located in the centre of the Site.	***Timber yard*** to the east has expanded Farmland and lodges to the north and west Fassnidge Memorial Recreational Ground to the east
1962-63 National Grid, 1: 1,250	***Mill*** is identified in the centre of the Site with unidentified buildings in the north and south.	Towing path now shown as the Grand Union Canal Timber yard now shown as ***works*** ***Works*** identified 110m east
1972 National Grid, 1: 2,500 1973-74 & 1975-80 National Grid, 1: 1,250	Bridge House is identified in the north of the Site. Two ***warehouses*** are shown in the centre and a ***depot*** is identified in the south. A tank is shown in the west of the Site.	Works to the east of the Site now labelled as ***engineering works***, ***printing works*** and ***asbestos/fleet works*** ***Enamel works*** located 40m east ***Box and pallet factory*** located 110m northeast Works 120m east is now ***Colne Works (confectionary)*** Commercial properties expanding in the east
1987-92 National Grid, 1: 1,250	No significant change identified.	Development in Uxbridge has increased.
2002 & 2010 & 2014 National Grid, 1: 10,000	The warehouses and depots have been demolished and Riverview and Waterside House are shown in the centre, in the Site's current configuration	No significant change identified.

[a] potentially contaminative uses are shown in bold italics.

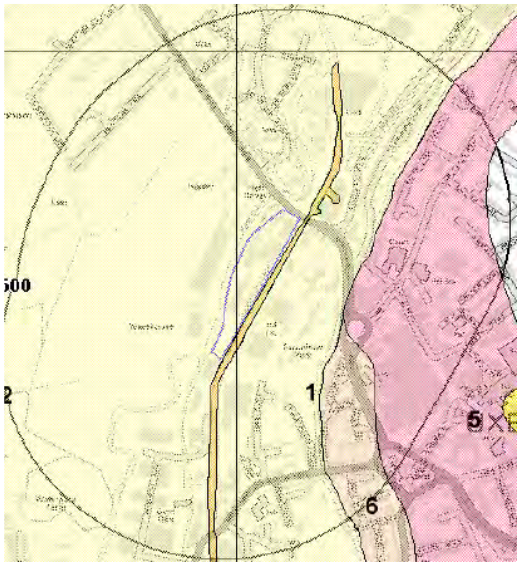
3.3 Geology

The geology beneath the Site has been established from the British Geological Survey (BGS) 1: 50,000 scale Geological Map, Sheet 255: Beaconsfield, Solid and Drift Edition, and is shown in Figure 3 below.

Figure 3: Geology



ID	Description
1	Lambeth Group - Clay, Silt And Sand
3	London Clay Formation - Clay, Silt And Sand



ID	Description
1	Alluvium - Silt And Clay
5	Lynch Hill Gravel Member - Gravel
6	Taplow Gravel Formation - Sand And Gravel

Source: Groundsure Geo Insight (Report Ref: WTM1-3940280)

A summary of the geology is provided in Table 4:

Table 4: Site geology

Stratum	Area Covered	Estimated Thickness	Typical Description
Made Ground	Entire Site	Up to 2.5m	Variable typically consisting of various amounts of clay, silt, sand and gravel. Gravel is of flint, brick, concrete, wood, plastic, wire and clinker
Alluvium	Entire Site	Up to 3.3m	Predominantly clay and peat overlying flint and shell gravel
Lambeth Group	Entire Site	Up to 27m	Brown and bluish grey closely fissured silty clay becoming sandy with depth below 11m bgl

3.3.1 Ground Stability

The BGS 1: 50,000 scale Geological Map, Sheet 255: Beaconsfield reveals no structural, geomorphological or geochemical features on or near to the Site.

The Groundsure Geo Insight report stated a moderate risk from shrink-swell clays and compressible deposits on-Site.

The Site is not in an area that could be affected by coal mining activity.

3.3.2 Ground Gas

Radon is a colourless and odourless radioactive gas, formed from the decay of naturally occurring uranium within soils and rocks. The radioactive elements formed by the decay of radon may be inhaled, entering the lungs, and potentially leading to localised damage, and lung cancer.

Current Building Regulations, endorsed by Public Health England (PHE) detail that all new buildings or extensions require radon protective measures where the development is in an area of high radon.

Information recovered from the Groundsure Enviro Insight report, BGS, and PHE show that the Site is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level however, no protective measures will be required in the proposed development.

In 2009 the Health Protection Agency ((HPA), now Public Health England) recommended that radon protection measures be built into all new occupied buildings in the UK, whether or not they were situated in radon sensitive area as identified by British Geological Survey (BGS) maps. The Building Regulations Advisory Committee supported the HPA's proposal. However the then Government rejected this recommendation and the current Building Regulations (2013) do not include it.

This approach should be confirmed with the Building Control Officer.

There are no registered landfills within 500m of the Site.

3.4 Controlled Waters

3.4.1 Surface Waters

The nearest surface water feature to the Site is a drain located 1m south of the Site. The River Colne is located 7m northwest of the Site and the Grand Union Canal is situated 9m to the east.

There are two active recorded surface water discharge consents within a 500m radius of the Site, the closest of which is located 225m northeast, registered to The Lock House for 'sewage discharges – final/treated effluent' into the Grand Union Canal.

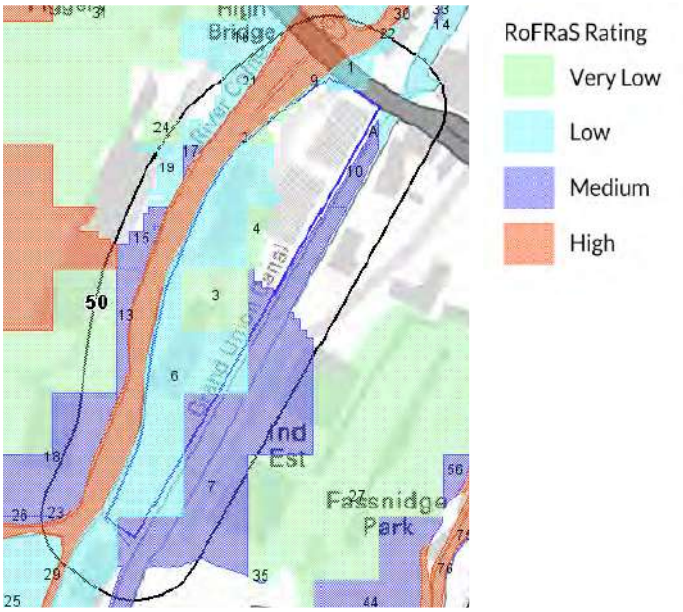
The Groundsure Enviro Insight report stated one surface water abstraction was located within 1km of the Site, which was registered to Mansfield Farm, Iver Heath 757m west, for 'spray irrigation – direct' from the Thames.

3.4.2 Flood Risk

According to the EA's indicative flooding data, the Site is not located in an area of fluvial or tidal flooding. There are no recorded flood defences in the area.

The risk of flooding from rivers or seas is shown in Figure 4 below:

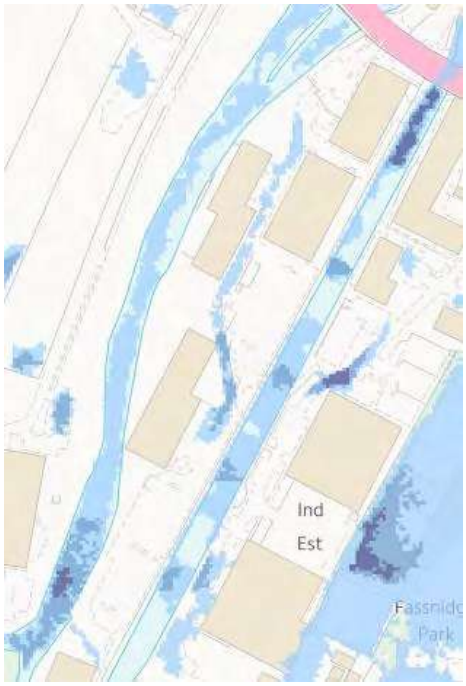
Figure 4: Flood risk from rivers or seas



Source: Groundsure Enviro Insight (Report Ref: WTM1-3940279)

The EA's indicative flooding data also indicates the Site is located in a medium risk area regarding surface water flooding.

Figure 5: Flood risk from surface water



Source: Environment Agency, 2017

The EA's indicative flooding data also indicates that the Site may be located in an area at risk of groundwater flooding. The Site is located in an area of potential groundwater flooding to occur at surface.

3.4.3 Groundwater

According to the EA online dataset (accessed online 30/05/2017), the geological deposits underlying the Site are classified as per Table 5:

Table 5: Summary of hydrogeological properties of the main geological strata

Stratum	EA Classification	Hydrogeological Significance
Alluvium	Secondary A Aquifer	May be important in supporting local abstractions or in providing baseflow to rivers and streams
Lambeth Group	Secondary A Aquifer	May be important in supporting local abstractions or in providing baseflow to rivers and streams
Chalk Formation	Principal Aquifer	Regionally important aquifer, likely to be used to support potable abstractions

The Site is not located within a groundwater Source Protection Zone.

Based on available information, it is anticipated that groundwater flow will be in a southerly direction.

There are four recorded groundwater abstractions within a 1km radius of the Site, the closest of which is located 672m northwest for 'spray irrigation' registered to Smiths Nurseries, Denham.

3.5 Ecological Systems

The Groundsure Enviro Insight report identified no ecological systems to be within 1km of the Site.

3.6 Consultations

The agencies and individuals which have been contacted and/or their records reviewed during this assessment are listed in Table 6.

Table 6: List of parties consulted during this study

Organisation	Consultee	Response
London Borough of Hillingdon		
Environmental Health	Mick Brough	Pending
Planning	Online Planning Portal	Accessed: 01/06/17
Building Control	Kay Tarrant	Written: 02/06/17

3.6.1 Environmental Health

Information has been requested from the Environmental Health Officer (EHO) and a response is currently pending.

3.6.2 Planning Department

Information has been requested from the Planning Department and a response is currently pending.

The London Borough of Hillingdon planning applications register has been consulted and the following planning application is relevant to the Site:

- Planning application (40050/APP/2016/852) – *"Demolition of existing office building (Use Class B1(a) and multi-storey car park and redevelopment of the site to provide a new office (Use Class B1(a) building, associated multi-storey car park and ancillary café unit (Use Class A1/A3)"*

This planning application is currently being reviewed by the Council and is awaiting a decision.

A Phase I Environmental Assessment undertaken by WSP Environmental Ltd was included with the planning application and the findings of the report are detailed in Section 4 of this report.

3.6.3 Building Control Department

Information has been requested from the Building Control Department and a response is presented in Appendix C.

Building Control were not able to assist with the assessment, as they did not have information for the Site.

4. Previous Environmental Assessments and Drawings

4.1 WSP Environmental Ltd Phase I Environmental Assessment, April 2013

WSP Environmental Ltd (WSPE) was instructed by Legal & General Assurance (Pension Management) Limitd to undertake a Phase I Environmental Assessment as part of the proposed purchase of the freehold interest in the Site.

On-Site activities identified during the assessment include a diesel generator, 3,630-litre AST, three electrical substations, two septic tanks and asbestos-containing materials (ACMs) within the ground floor and roof of Bridge House.

The report stated that the more recently constructed Riverview and Waterside House have ground gas protection measures installed within the buildings.

The geology and history of the Site and the surrounding areas were assessed as well as assessing risks to controlled waters. A Conceptual Site Model (CSM) was produced for the Site and the conclusions of the report are summarised below:

The Contaminated Land Officer at London Borough of Hillingdon stated that the Site has been identified as needing further assessment under the Local Authority's Contaminated Land Inspection Strategy, however the Site is not considered a priority for further investigation: **Low/Medium Risk**

Potential for contamination on-Site to migrate and impact third party land cannot be discounted. However, given the Site is located in a wider industrial area, contamination attributable to the Site is reduced: **Low/Medium Risk**

A more risk averse purchaser may have concerns over potentially contamination affecting saleability. However, given the hardstanding and building cover present across the majority of the Site, the risk is reduced: **Low/Medium Risk**

Given potential contamination on-Site, there is a risk of contaminated land liability for the freehold owner. However, based on current regulatory opinion and ongoing commercial use of the Site, the risk of a significant contaminated land liability arising from the Site's ongoing use is considerably reduced. However, in the event of redevelopment further work is likely to be required: **Low/Medium Risk**

Based on the information contained within this report and with due regard to the continued commercial land use, it is the opinion of WSPE that the Site represents a **low/medium** risk with respect to contaminated land liability issues.

No further contaminated land assessment works are considered necessary for the continued existing commercial use of the Site.

It should be noted that further assessment would be required in the event of re-development.

4.2 Construction Drawings

4.2.1 Bridge House

As Bridge House was constructed in the 1970s, drawings were not available for the building. However, drawings were available for the more recently constructed Riverview and Waterside Houses

4.2.2 Riverview House

Construction drawings for Riverview House were provided and the ground floor construction drawing is presented in Appendix C. It has details of the geofoil gas resistant membrane and periscopic ventilators installed within the building to prevent ingress of ground gas or vapours.

4.2.3 Waterside House

The ground floor construction drawing for Waterside House is also appended in Appendix C and details the protection measures used to prevent ground gas and vapour ingress.

5. Hazard Assessment and Preliminary Conceptual Model

The Preliminary Conceptual Model for the Site is presented in Table 8 below and graphically in Figure A3 in Appendix A. The risk rating included in Table 8 has been assessed qualitatively using the criteria given in Appendix D and the potential receptors identified using the criteria given in Appendix E.

5.1 Contaminants of Concern

Contaminants of concern identified above are summarised in Table 7.

Table 7: Contaminants of concern

Source	Associated Contaminants
On-Site (current)	
Made Ground	Potentially contains metals/metalloids, polyaromatic hydrocarbons (PAHs) and total petroleum hydrocarbons (TPH), volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs), methane and carbon dioxide.
Alluvium	Methane and carbon dioxide from peat or organic clays
Electrical substation	Polychlorinated biphenyls (PCBs)
Aboveground storage tank and back-up generator	TPHs, PAHs, mineral oil and benzene, toluene, ethylbenzene and xylene (BTEX) compounds and vapours
On-Site (historic)	
Warehouses	Metals/metalloids, PAHs, TPH, VOCs and SVOCs
Depot	Metals/metalloids, PAHs, TPH, VOCs and SVOCs
Mill	Metals/metalloids, PAHs, TPH, VOCs and SVOCs
Timber yard	Metals/metalloids, PAHs, TPH, VOCs and SVOCs, organic solvents and creosote
Off-site (current)	
None identified	None identified
Off-site (historic)	
Warehouses	Metals/metalloids, PAHs, TPH, VOCs and SVOCs
Asbestos works	Asbestos, metals/metalloids, PAHs, TPH, VOCs and SVOCs
Works	Metals/metalloids, PAHs, TPH, VOCs and SVOCs
Timber yard	Metals/metalloids, PAHs, TPH, VOCs and SVOCs, organic solvents and creosote

Table 8: Preliminary Conceptual Model for the Site

Receptor	Potential Sources	Pathways	Risk	Justification / Mitigation	Residual Risk
Future Site Users	Potential contamination in Made Ground and shallow soils	Direct contact, dermal contact and ingestion, inhalation	**Low**	Potential contamination may be present on-Site from historical Site uses. Variable depths of Made Ground are also anticipated to be present throughout the Site due to previous development. Contaminants from surrounding historical uses may also migrate on-Site through the shallow Secondary A Aquifer, however the Grand Union Canal is considered to block shallow contamination from the east of the Site. Areas of soft landscaping are situated on-Site, which could act as a pollutant pathway to future Site users. However, the soft landscaping is in an area that has not been previously developed. No private gardens are proposed and therefore the sensitivity of the receptor is reduced. For these reasons, no further works is considered necessary to mitigate this issue.	**Low**
	Ground gas and vapour arising from Made Ground and Alluvium	Accumulation in internal and confined spaces with potential risk of explosion, inhalation and asphyxiation	**Medium**	Potential contamination on-Site from historical Site uses and peat and organic clays may be a source of ground gas and vapours. Variable depths of Made Ground are also anticipated to be present throughout the Site due to previous development. Ground works are not proposed for the Site as the buildings will be refurbished for change of use. Therefore, no excavation will take place and no potentially contaminated Made Ground will be removed from the Site. The multi-storey car park is being retained and has a low sensitivity end use and is well ventilated as it is designed to reduce the accumulation of petrol and diesel fumes. Therefore, the impact of ground gas and vapours is considered low. Ground gas protection measures have been installed within Riverview and Waterside Houses and therefore the risk is mitigated for these buildings. Bridge House was built in the 1970s without gas protection measures. There is potential for ground gas and vapours to accumulate within the building. Further intrusive investigation including ground gas monitoring and groundwater sampling and testing will confirm the ground gas and vapour regime at Bridge House.	**Low**

Receptor	Potential Sources	Pathways	Risk	Justification / Mitigation	Residual Risk
Construction Workers	Potential contamination in Made Ground and shallow soils	Direct contact, dermal contact and ingestion	**Low**	As the proposed development is for the refurbishment of the buildings on-Site and the change of use from commercial to residential, no ground works are anticipated. Therefore, no construction workers will be in direct contact with potentially contaminative soils or materials.	**Low**
	Ground gas and vapours arising from Made Ground	Accumulation in internal and confined spaces with potential risk of explosion, inhalation and asphyxiation	**Low**	As the proposed development is for the refurbishment of the buildings on-Site and the change of use from commercial to residential, no ground works are anticipated. Therefore, no construction workers will be entering excavations and having direct contact with ground gases or vapours.	**Low**
Property					
On-Site structures	Potential contamination in Made Ground and shallow soils	Chemical attack to foundations and buried services	**Low**	As the proposed development is for the refurbishment of the buildings on-Site and the change of use from commercial to residential, the infrastructure and services will not be altered. Therefore, the risk of chemical attack to foundations and buried services is reduced.	**Low**
	Ground gas and vapours arising from Made Ground and Alluvium	Migration through Made Ground and accumulation in internal spaces with risk of explosion	**Medium**	Potential contamination may be present on-Site from the historical land uses. Variable depths of Made Ground are anticipated to be present throughout the Site due to previous development. Ground works are not proposed for the Site as the buildings will be refurbished for change of use. Therefore, no excavation will take place and no potentially contaminated Made Ground will be removed from the Site. The multi-storey car park is being retained and has a low sensitivity end use and is well ventilated as it is designed to reduce the accumulation of petrol and diesel fumes. Therefore, the impact of ground gas and vapours is considered low. Ground gas protection measures have been installed within Riverview and Waterside Houses and therefore the risk is mitigated for these buildings. Bridge House was built in the 1970s without gas protection measures. There is potential for ground gas and vapours to accumulate within the building. Further intrusive investigation including ground gas monitoring and groundwater sampling and testing will confirm the ground gas and vapour regime at Bridge House.	**Low**

Receptor	Potential Sources	Pathways	Risk	Justification / Mitigation	Residual Risk
Off-site structures	Potential contamination in groundwater; Ground gas and vapour arising from Made Ground	Lateral migration off-site through granular deposits and accumulation in internal spaces with risk of explosion	**Low**	As the proposed development is for the refurbishment of the buildings on-Site and the change of use from commercial to residential, no ground works are proposed for the Site. Therefore, the shallow Secondary A Aquifer beneath the Site will not be exposed, contamination will not be mobilised and off-site structures will not be impacted.	**Low**
Ecological Systems					
Proposed soft landscaping	Potential contamination in Made Ground and shallow soils	Plant uptake in Made Ground and shallow soils	**Low**	The current Site contains areas of soft landscaping used by office workers. No changes to these soft landscaping areas are proposed and they will be used by the residents for amenity purposes. No private gardens are proposed and therefore the risk to future Site users is low.	**Low**
Controlled Waters					
River Colne	Potentially contaminated Made Ground and shallow groundwater	Lateral migration of contaminants from Made Ground and shallow groundwater	**Low**	The River Colne is located to the west of the Site. As the proposed development is for the refurbishment of the buildings on-Site and the change of use from commercial to residential, no ground works are proposed for the Site. Therefore, the shallow Secondary A Aquifer beneath the Site will not be exposed, contamination will not be mobilised and off-site structures will not be impacted.	**Low**
Grand Union Canal	Potentially contaminated Made Ground and shallow groundwater	Lateral migration of contaminants from Made Ground and shallow groundwater	**Low**	The Grand Union Canal is located immediately to the east of the Site. A range of walls (sheet piled and masonry) located in the alluvium are present to act as barriers between shallow groundwater and the surface water in the Grand Union Canal. This is likely to reduce the migration of contaminants from the Site to the canal and vice versa.	**Low**
Shallow groundwater: Secondary A Aquifer within River Terrace Deposits	Potential contaminated groundwater in Made Ground and shallow soils	Vertical migration from Made Grounds and shallow soils Migration through pathway created by foundation activities	**Low**	It is possible that contamination may exist within the shallow groundwater beneath the Site due to both on- and off-site sources. Due to the historical nature of the surrounding area, any impact on off-site receptors is unlikely to be attributable to on-Site sources. As the development is for change of use and no groundworks are proposed, no preferential pathways between the shallow soils and the groundwater will be created. The shallow Secondary A Aquifer will not be exposed by the development and so impact on the underlying groundwater regime is low.	**Low**

6. Conclusions

Given the proposed end use the overall risk rating for the Site is assessed as **medium**.

Potentially Unacceptable Risks

The potential pollutant linkages identified for the site as follows:

- Future Site users may be exposed to ground gas and vapours in Bridge House; and
- Collection of ground gas and vapours in voids in Bridge House may create a risk to on-Site structures.

The recommendations of this report outline preliminary remedial and mitigation measures that require confirmation through additional works. However, once successfully implemented the risks are anticipated to be **Low**. Therefore, the NPPF requirement that on completion the Site can no longer be captured under the Part IIA regime is expected to be met.

7. Recommendations

The following actions are recommended to address the potentially unacceptable risks identified:

- An intrusive environmental ground investigation to target the potential ground gas and vapour ingress to Bridge House. This should include:
  - Sampling and analysis of Made Ground in close proximity to the building;
  - Headspace analysis of soil samples to assess presence of vapours
  - Monitoring ground gas and vapours; and
  - Sampling and analysis of any groundwater in the Alluvium in the area of Bridge House
- Ambient air monitoring within Bridge House should be undertaken to further assess the risk from ground gas and vapour ingress into the building;
- A watching brief should be undertaken during the groundworks and environmental sampling should be undertaken where unforeseen visual or olfactory contamination is suspected; and
- Assessment of the potential risk of ground gas and vapour ingress to Bridge House

If the outcome of the risk assessment concludes there is no significant risk, then no further action is required.

If the outcome of the risk assessment concludes there is a potential risk, then mitigation measures will be required. These would comprise installation of a proprietary protection system to prevent ingress of ground gas or vapour into the building.

An example of a suitable protection system is the Clean Air Blanket (CAB) system, which maintains a zone of positive pressure beneath a building that dilutes and disperses any gas emerging from the ground. To do this, air from outside the building is introduced beneath the building via a system of pipes and diffuser heads. The air pressure is then released at the perimeter of the building. The CAB system can be retrofitted into an existing building. The installation is typically non-disruptive to the normal occupation or the fabric of the building, operates in the same way as a new-build system and mitigates the risk of ground gas and vapour ingress.

It is recommended that there is no ‘in principle’ reason why planning permission should not be granted. If the risk assessment identifies a significant risk this can be mitigated by the recommended measures provided in this document. For this reason, the following conditions could be appended to the ‘prior approval’ for Bridge House:

3) A condition requiring an intrusive environmental ground investigation to target the potential ground gas and vapour ingress to Bridge House;

4) A condition to require that if the ground investigation identifies a potential risk then mitigation measures are to be agreed and implemented prior to first occupation.

No potential pollutant linkages have been identified for Riverview House or Waterside house as ground gas protection measures are already in place. As such, no conditions are required to the prior approval for these properties.

GLOSSARY

For the purpose of this report, the following terms and definitions apply (see BS 10175:2001).

Accuracy	Level of agreement between true value and observed value.
Conceptual Exposure model	Textual and or schematic hypothesis of the nature and sources of contamination, potential migration pathways (including description of the ground and groundwater) and potential receptors, developed on the basis of the information from the preliminary investigation and refined during subsequent phases of investigation and which is an essential part of the risk assessment process. **Note 1:** The conceptual exposure model is initially derived from the information obtained by the preliminary investigation. This conceptual model is used to focus subsequent investigations, where these are considered to be necessary, in order to meet the objectives of the investigations and the risk assessment. The results of the field investigation can provide additional data that can be used to further refine the conceptual model.
Contamination	Presence of a substance which is in, on or under land, and which has the potential to cause significant harm or to cause significant pollution of controlled water. **Note 1:** There is no assumption in this definition that harm results from the presence of the contamination. **Note 2:** Naturally enhanced concentrations of harmful substances can fall within this definition of contamination. **Note 3:** Contamination may relate to soils, groundwater or ground gas.
Controlled water	Inland freshwater (any lake, pond or watercourse above the freshwater limit), water contained in underground strata and any coastal water between the limit of highest tide or the freshwater line to the three mile limit of territorial waters. **Note 1:** See Section 104 of The Water Resources Act 1991.
Harm	Adverse effect on the health of living organisms, or other interference with ecological systems of which they form part, and, in the case humans, including property.
Hazard	Inherently dangerous quality of a substance, procedure or event.
Pathway	Mechanism or route by which a contaminant comes into contact with, or otherwise affects, a receptor.
Precision	Level of agreement within a series of measurements of a parameter.
Receptor	Persons, living organisms, ecological systems, controlled water, atmosphere, structures and utilities that could be adversely affected by the contaminant(s).
Risk	Probability of the occurrence, magnitude and consequences of an unwanted adverse effect on a receptor.
Risk assessment	Process of establishing, to the extent possible, the existence, nature and significance of risk.
Sampling	Methods and techniques used to obtain a representative sample of the material under investigation.
Soil	Upper layer of the earth's crust composed of mineral parts, organic substance, water, air and living matter. **Note 1:** In accordance with BS 10175:2001 the term soil has the meaning ascribed to it through general use in civil engineering and includes topsoil and subsoil; deposits such as clays, silt, sand, gravel, cobbles, boulders and organic deposits such as peat; and material of natural or human origin (e.g. fills and deposited wastes). The term embraces all components of soil, including mineral matter, organic matter, soil gas and moisture, and living organisms.
Source	Location from which contamination is, or was, derived. **Note 1:** This could be the location of the highest soil or groundwater concentration of the contaminant(s).
Uncertainty	Parameter, associated with the result of a measurement that characterizes the dispersion of the values that could reasonably be attributed to the measurement.

APPENDICES

Appendix A Site Plans

- **Site Location Plan**
- **Site Plan**
- **Conceptual Model**

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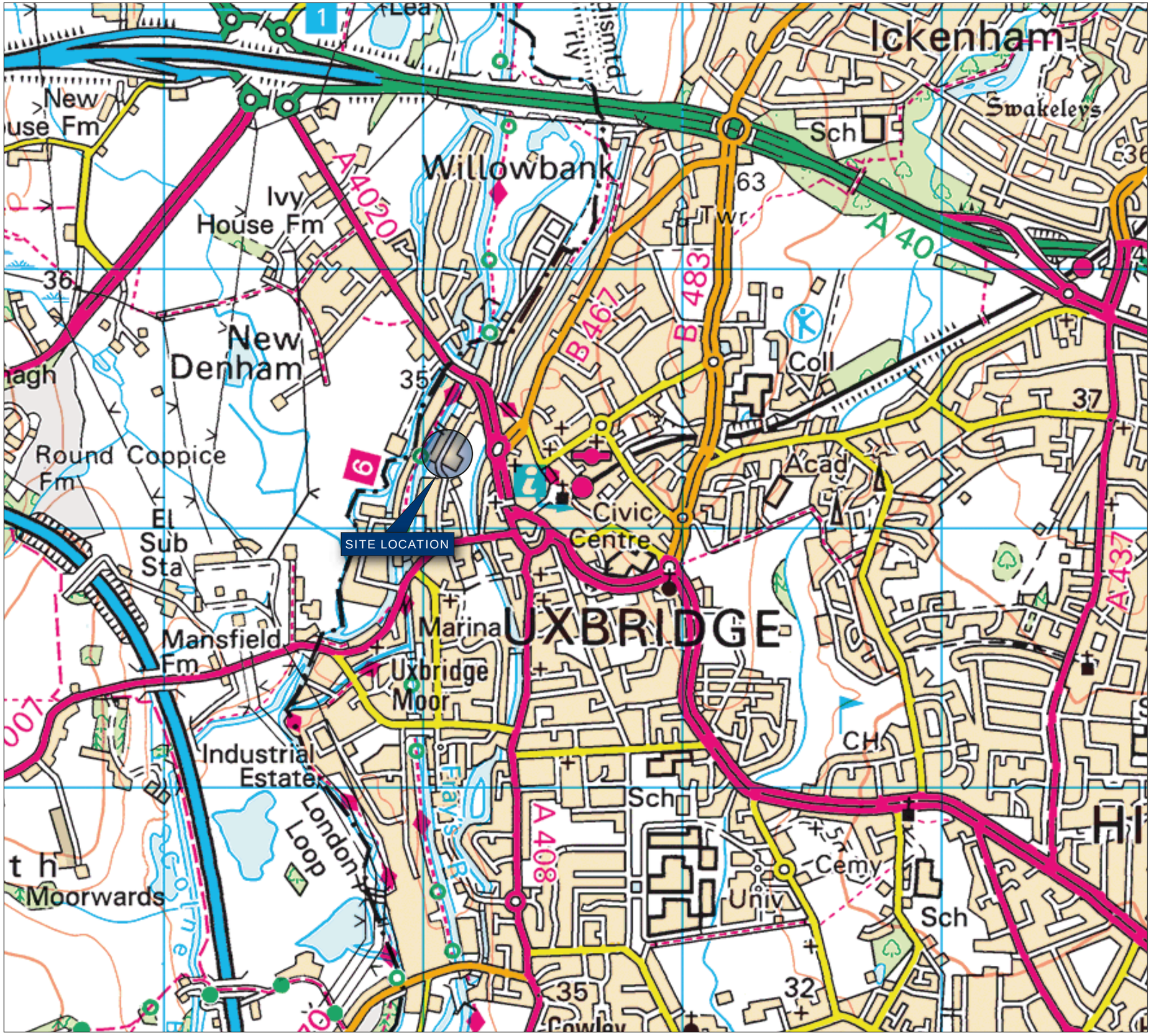

Project Details	WIC15644-101: Land at Bridge House, Oxford Road, Uxbridge, UB8 1HS
Figure Title	Figure A1: Site Location Plan
Figure Ref	WIC15644-101_GR_DD_A1A
Date	June 2017
File Location	\\s-lncs\wiel\projects\civ15644\101\graphics\dd\issued figures

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Site Boundary

N

Project Details	WIC15644-101: Land at Bridge House, Oxford Road, Uxbridge, UB8 1HS
Figure Title	Figure A2: Site Plan
Figure Ref	WIC15644-101_GR_DD_A2A
Date	June 2017
File Location	\\s-lncs\wiel\projects\civ15644\101\graphics\dd\issued figures

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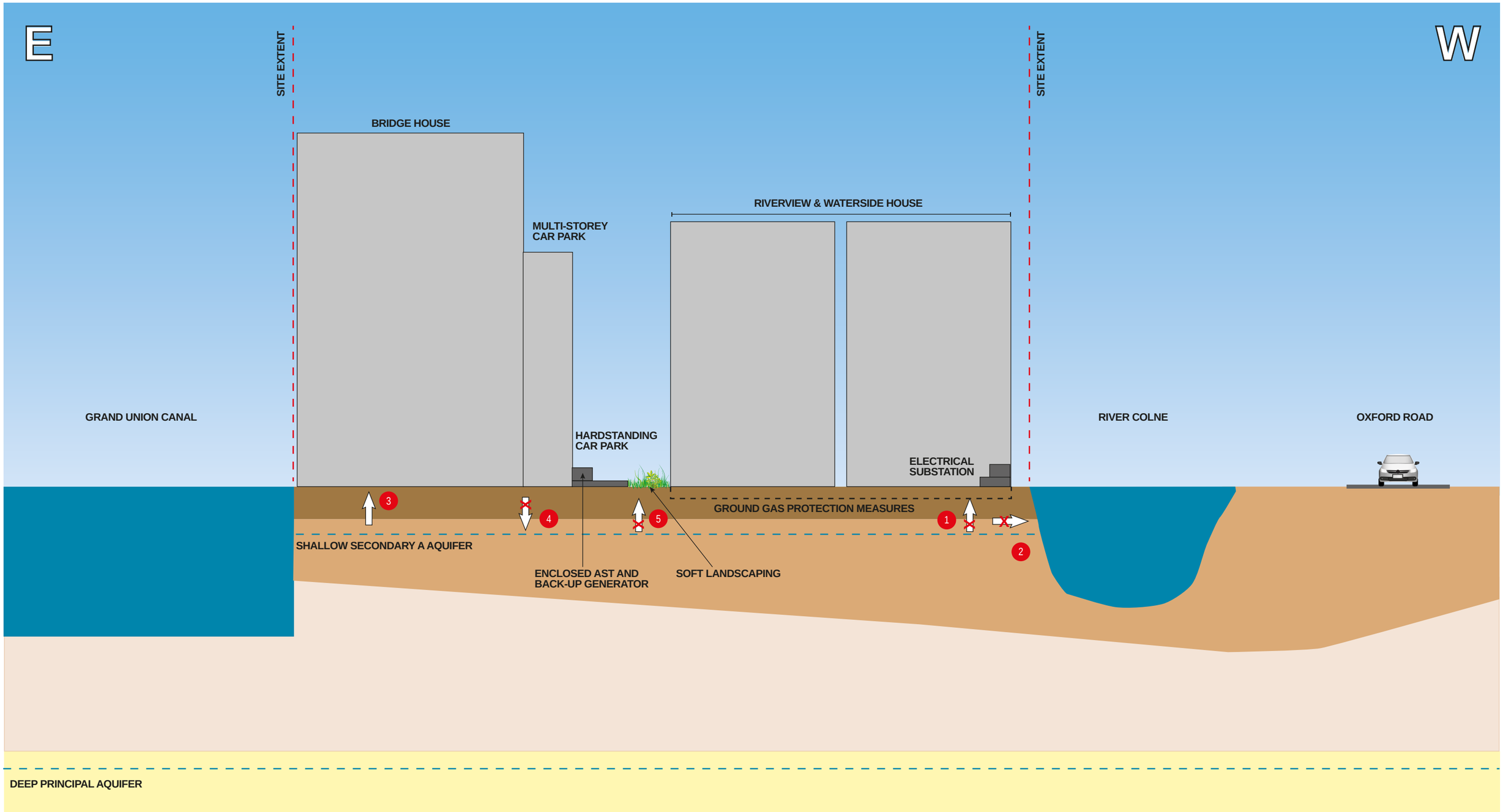

Made Ground

Alluvium

Lambeth Group

Chalk Formation

1. Potential ground gas and vapour ingress into Riverview and Waterside Houses originating from historical land use and organic alluvial deposits . Contaminant linkage blocked by ground gas protection measures installed within buildings
2. Potential lateral contaminant migration into the River Colne considered not significant due to lack of ground works and disturbance of shallow Secondary A Aquifer
3. Potential ground gas and vapour ingress into Bridge House originating from historical land use and organic alluvial deposits. Further investigation necessary to assess contaminant linkage.
4. Potential contaminant migration from Made Ground and shallow soils into the shallow Secondary A Aquifer considered not significant due to lack of ground works.
5. Potential contaminant exposure to future Site users considered not significant due to lack of private gardens

Project Details	WIC15644-101: Land at Bridge House, Oxford Road, Uxbridge, UB8 1HS
Figure Title	Figure A3: Conceptual Site Model
Figure Ref	WIC15644-101_GR_DD_A3A
Date	June 2017
File Location	\\s-lncs\wiel\projects\civ15644\101\graphics\dd\issued figures

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Appendix B Site Photographs

- **Plates 1 – 8 (1 Page)**

Bridge House with the Grand Union Canal to the east of the Site

River Colne running along the western boundary of the Site

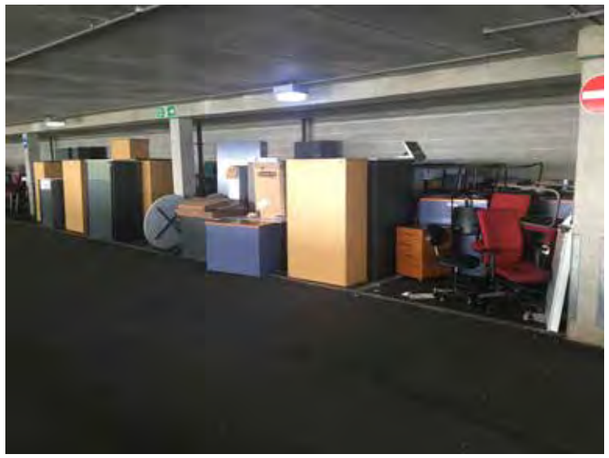
Soft landscaping between Riverview House and Waterside House (pictured)

3,630-litre diesel AST used for adjacent back-up generator

Back-up generator within enclosure in the centre of the Site

Self-contained electrical substation adjacent to Riverview House

Multi-storey car park in the centre of the Site



Office furniture and white goods on the ground floor of the multi-storey car park

Project Details	WIC15644-101: Land at Bridge House, Oxford Road, Uxbridge, UB8 1HS
Figure Title	Figure B1: Site Photographs
Figure Ref	WIC15644-101_GR_DD_B1A
Date	June 2017
File Location	\\s-lncs\wiel\projects\civ15644\101\graphics\dd\issued figures

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Appendix C Consultation Information

- **Groundsure Report (160 Pages)**
- **Response from Environmental Health Department (Pending)**
- **Response from Building Control Department (6 Pages)**
- **WSP Environmental Ltd – Phase I Environmental Assessment, Bridge House, Riverview House and Waterside House, Oxford Road, Uxbridge, UK, April 2013 (45 Pages)**
- **Construction Drawings for Riverview House (1 Page)**
- **Construction Drawings for Waterside House (1 Page)**

Waterman Infrastructure & Environment Limited

PICKFORDS WHARF WATERMAN GROUP,
CLINK STREET,
LONDON, SE1 9DG

Groundsure Reference:	WTM1-3940279
Your Reference:	WIC15644-82957
Report Date	30 May 2017
Report Delivery Method:	Email - pdf

Groundsure Enviro Insight

Address: XEROX UK LTD, BRIDGE HOUSE, OXFORD ROAD, UXBRIDGE, UB8 1HS

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159 000, queries: info@groundsure.com quoting the above report reference number

Yours faithfully,

Waterman

Enc.
Groundsure Enviroinsight

Groundsure Enviro Insight

Address:	**XEROX UK LTD, BRIDGE HOUSE, OXFORD ROAD, UXBRIDGE, UB8 1HS**
Date:	**30 May 2017**
Reference:	**WTM1-3940279**
Client:	**Waterman Infrastructure & Environment Limited**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	07-Jun-2015
Grid Reference:	505035,184453
Site Size:	2.42ha

Report Reference: WTM1-3940279
Client Reference: WIC15644-82957

Contents Page

Contents Page 3
Overview of Findings 6
Using this report 10
1. Historical Land Use 11
1. Historical Industrial Sites 12
1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping 12
1.2 Additional Information – Historical Tank Database 15
1.3 Additional Information – Historical Energy Features Database 16
1.4 Additional Information – Historical Petrol and Fuel Site Database 18
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database 19
1.6 Potentially Infilled Land 19
2. Environmental Permits, Incidents and Registers Map 22
2. Environmental Permits, Incidents and Registers 23
2.1 Industrial Sites Holding Licences and/or Authorisations 23
2.1.1 Records of historic IPC Authorisations within 500m of the study site: 23
2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site: 23
2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site: 23
2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site: 23
2.1.5 Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site: 24
2.1.6 Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site: 24
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations: 24
2.1.8 Records of Licensed Discharge Consents within 500m of the study site: 25
2.1.9 Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site: 28
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site: 28
2.2 Dangerous or Hazardous Sites 28
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents 28
2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site: 28
2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site: 30
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990 30
3. Landfill and Other Waste Sites Map 31
3. Landfill and Other Waste Sites 32
3.1 Landfill Sites 32
3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site: 32
3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site: 32
3.1.3 Records of BGS/DoE non-operational landfill sites within 1500m of the study site: 33
3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site: 33
3.2 Other Waste Sites 33
3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site: 33
3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site: 34
4. Current Land Use Map 36
4. Current Land Uses 37
4.1 Current Industrial Data 37
4.2 Petrol and Fuel Sites 39
4.3 National Grid High Voltage Underground Electricity Transmission Cables 39
4.4 National Grid High Pressure Gas Transmission Pipelines 39

5. Geology 40
5.1 Artificial Ground and Made Ground 40
5.2 Superficial Ground and Drift Geology 40
5.3 Bedrock and Solid Geology 40
6 Hydrogeology and Hydrology 41
6a. Aquifer Within Superficial Geology 41
6b. Aquifer Within Bedrock Geology and Abstraction Licenses 42
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses 43
6d. Hydrogeology – Source Protection Zones within confined aquifer 44
6e. Hydrology – Detailed River Network and River Quality 45
6.Hydrogeology and Hydrology 46
6.1 Aquifer within Superficial Deposits 46
6.2 Aquifer within Bedrock Deposits 46
6.3 Groundwater Abstraction Licences 47
6.4 Surface Water Abstraction Licences 51
6.5 Potable Water Abstraction Licences 52
6.6 Source Protection Zones 52
6.7 Source Protection Zones within Confined Aquifer 52
6.8 Groundwater Vulnerability and Soil Leaching Potential 53
6.9 River Quality 53
6.9.1 Biological Quality: 53
6.9.2 Chemical Quality: 54
6.10 Detailed River Network 54
6.11 Surface Water Features 57
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea) 58
7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map 59
7 Flooding 60
7.1 River and Coastal Zone 2 Flooding 60
7.2 River and Coastal Zone 3 Flooding 60
7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating 61
7.4 Flood Defences 62
7.5 Areas benefiting from Flood Defences 62
7.6 Areas benefiting from Flood Storage 62
7.7 Groundwater Flooding Susceptibility Areas 62
7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes 62
7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions? 62
7.8 Groundwater Flooding Confidence Areas 63
8. Designated Environmentally Sensitive Sites Map 64
8. Designated Environmentally Sensitive Sites 65
8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site: 65
8.2 Records of National Nature Reserves (NNR) within 2000m of the study site: 65
8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site: 65
8.4 Records of Special Protection Areas (SPA) within 2000m of the study site: 65
8.5 Records of Ramsar sites within 2000m of the study site: 66
8.6 Records of Ancient Woodland within 2000m of the study site: 66
8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site: 66
8.8 Records of World Heritage Sites within 2000m of the study site: 67
8.9 Records of Environmentally Sensitive Areas within 2000m of the study site: 67

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site: 67
8.11 Records of National Parks (NP) within 2000m of the study site: 67
8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:.....67
8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:.....67
8.14 Records of Green Belt land within 2000m of the study site:.....68
9. Natural Hazards Findings 69
9.1 Detailed BGS GeoSure Data.....69
9.1.1 Shrink Swell.....69
9.1.2 Landslides.....69
9.1.3 Soluble Rocks.....69
9.1.4 Compressible Ground.....70
9.1.5 Collapsible Rocks.....70
9.1.6 Running Sand.....70
9.2 Radon.....70
9.2.1 Radon Affected Areas.....70
9.2.2 Radon Protection.....71
10. Mining 72
10.1 Coal Mining.....72
10.2 Non-Coal Mining.....72
10.3 Brine Affected Areas 72
Contact Details 73
Standard Terms and Conditions 75

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	7	26	58	60
1.2 Additional Information – Historical Tank Database	5	8	13	21
1.3 Additional Information – Historical Energy Features Database	0	3	34	44
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	1	23
1.6 Potentially Infilled Land	16	12	13	6

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	2	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	4
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	8	16
2.1.9 Records of Water Industry Referrals	0	0	0	1
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	6	8
2.3.2 National Incidents Recording System, List 1	0	0	0	1
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	1	5
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	3
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	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	3	6

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	2	3	30	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?	Yes
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	23	7
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	1	1
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	1
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)	2	0	0	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	Yes	Yes
6.10 Detailed River Network entries within 500m of the site	0	10	16	22	Not searched	Not searched
6.11 Surface water features within 250m of the study site	Yes	Yes	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Are there any Enviroment 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?	High
7.4 Are there any Flood Defences within 250m of the study site?	Yes
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	Yes
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?	Potential at Surface
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Moderate

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	5
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	6
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	5
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	1	0	0	0	0	0
8.14 Records of Green Belt land	0	2	0	0	3	8

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?	Moderate
9.1.5 What is the maximum Collapsible Rocks hazard rating identified on the study site?	Negligible
9.1.6 What is the maximum Running Sand hazard rating identified on the study site?	Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is in a Radon Affected Area, as between 1 and 3% 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”.

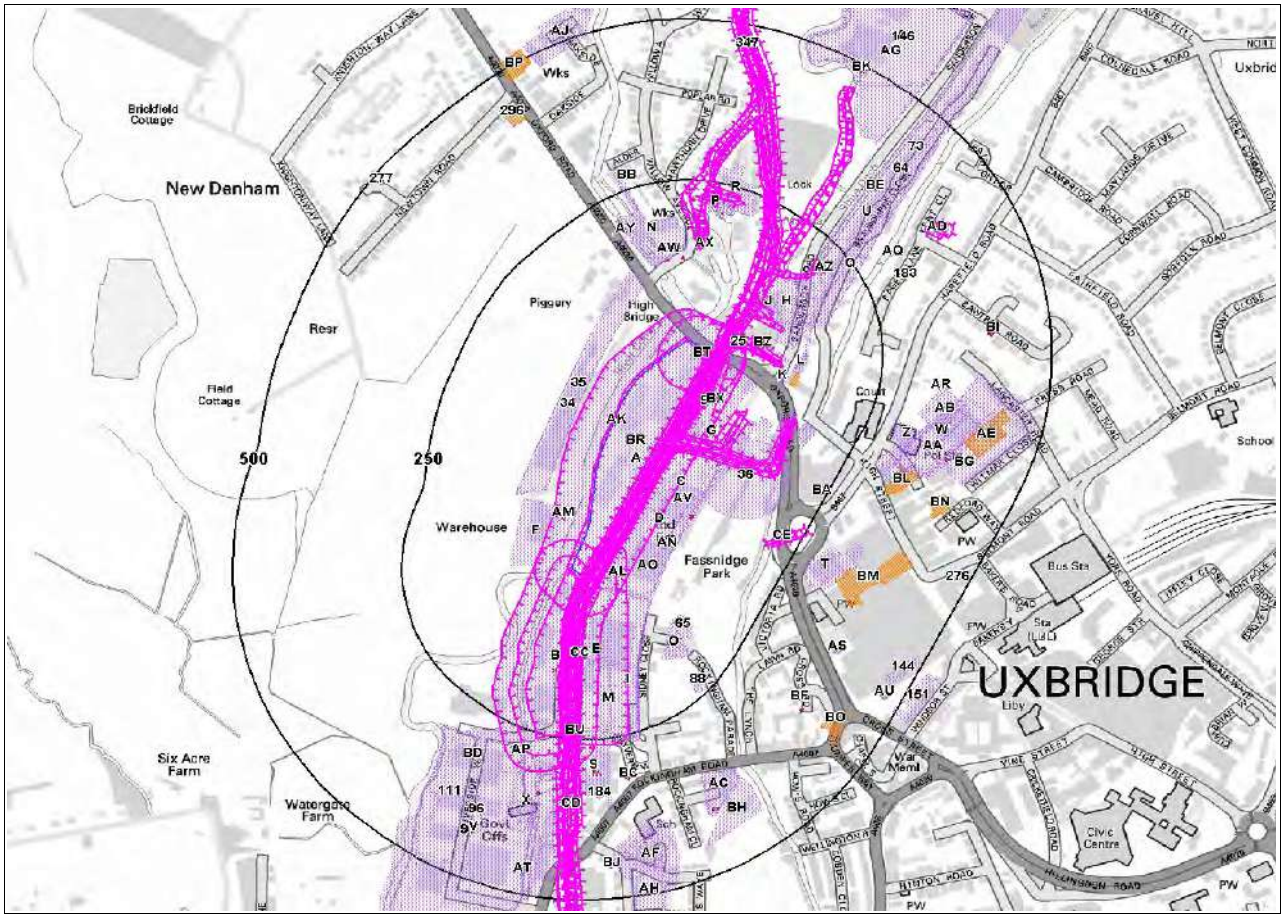
All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use

NW N NE

W E

SW S SE



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Historical 1:10,000 and 1:10,560 scale mapping

Industrial Land Use

Potentially Infilled Land

Site Outline

Historical 1:2,500, 1:1,250 and 1:500 scale mapping

250
500
Search Buffers (m)

Energy Features

Petrol Stations

Tanks

Garages

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: 151

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Unspecified Mills	1970
2BR	0	On Site	Unspecified Wharf	1913
3BT	0	On Site	Unspecified Wharf	1932
4A	0	On Site	Unspecified Wharf	1913
5E	0	On Site	Unspecified Wharf	1959
6B	0	On Site	Unspecified Wharf	1938
7B	0	On Site	Unspecified Wharf	1913
8BX	2	E	Sawmill	1895
9	3	E	Unspecified Wharves	1897
10B	5	SW	Unspecified Wharf	1938
11B	5	SW	Unspecified Wharf	1913
12AO	11	SE	Unspecified Commercial/Industrial	1959
13D	14	SE	Timber Yard	1938
14C	14	SE	Timber Yard	1932
15C	15	SE	Timber Yard	1913
16D	15	SE	Timber Yard	1938
17E	15	SE	Unspecified Commercial/Industrial	1974
18E	15	SE	Unspecified Works	1959
19E	15	SE	Unspecified Commercial/Industrial	1987
20E	18	SE	Steel Barrel Works	1938
21D	18	SE	Timber Yard	1935
22C	19	SE	Timber Yard	1913
23E	19	SE	Steel Barrel Works	1935
24E	19	SE	Steel Barrel Works	1938
25	30	E	Unspecified Wharf	1970
26F	32	NW	Unspecified Warehouse	1974
27F	32	NW	Unspecified Warehouse	1987
28D	36	SE	Unspecified Works	1989
29D	36	SE	Unspecified Works	1975
30BZ	42	NE	Basin	1882
31G	45	SE	Sawmill	1897
32AV	47	SE	Unspecified Works	1970

33G	49	SE	Unspecified Mill	1897
34	56	W	Nursery	1959
35	56	W	Nursery	1932
36	71	SE	Brewery	1897
37	81	SE	Unspecified Works	1970
38H	92	E	Sawmills	1897
39H	94	NE	Basin	1882
40H	96	NE	Sawmills	1932
41H	98	NE	Unspecified Mills	1959
42J	99	NE	Sawmills	1938
43H	101	NE	Sawmills	1938
44H	101	NE	Sawmills	1897
45H	103	NE	Sawmills	1935
46I	103	SE	Unspecified Works	1989
47I	103	SE	Unspecified Works	1975
48I	103	SE	Unspecified Works	1970
49H	104	NE	Sawmills	1912
50K	105	SE	Terminus	1913
51J	108	NE	Sawmills	1912
52J	108	NE	Sawmills	1895
53K	109	SE	Terminus	1913
54U	115	E	Railway Sidings	1959
55CC	116	S	Unspecified Wharf	1932
56M	118	S	Steel Works	1913
57L	119	E	Terminus	1938
58L	121	E	Terminus	1938
59M	122	S	Steel Barrel Works	1913
60L	123	E	Terminus	1935
61N	123	NW	Unspecified Works	1989
62N	123	NW	Unspecified Works	1975
63AW	126	N	Corn Mill	1882
64	132	E	Railway Sidings	1938
65	140	SE	Mortuary	1959
66O	141	SE	Mortuary	1932
67Q	145	E	Railway Sidings	1938
68O	146	SE	Mortuary	1913
69O	146	SE	Mortuary	1938
70O	164	SE	Mortuary	1913
71O	164	SE	Mortuary	1938
72M	167	S	Steel Barrel Works	1932
73	188	NE	Railway Sidings	1932
74P	195	N	Unspecified Mills	1932
75P	195	N	Unspecified Mills	1897
76P	195	N	Unspecified Mills	1938
77P	197	N	Unidentified Mills	1935
78P	197	N	Corn Mills	1912

79P	207	N	Unidentified Mills	1897
80P	210	N	Unspecified Mills	1938
81P	210	N	Corn Mills	1912
82P	210	N	Unspecified Mills	1895
83R	213	N	Unspecified Mill	1989
84P	213	N	Unspecified Mills	1959
85Q	214	NE	Railway Building	1938
86P	215	N	Unspecified Mill	1975
87P	215	N	Unspecified Mill	1970
88	219	SE	Unspecified Works	1970
89R	226	N	Corn Mill	1882
90S	246	S	Unspecified Works	1987
91S	246	S	Unspecified Works	1974
92V	251	SW	Unspecified Works	1974
93T	274	SE	Telephone Exchange	1989
94T	274	SE	Telephone Exchange	1975
95U	278	NE	Railway Sidings	1935
96	280	S	Unspecified Works	1938
97	281	S	Unspecified Works	1959
98V	282	S	Unspecified Works	1935
99V	283	S	Unspecified Works	1938
100T	285	SE	Telephone Exchange	1970
101W	289	SE	Iron Works	1897
102W	289	SE	Iron Works	1895
103Z	290	E	Police Station	1989
104X	297	S	Flour Mill	1868
105Y	298	S	Unspecified Mill	1913
106X	299	S	Unspecified Mill	1913
107X	300	S	Unspecified Mill	1932
108X	300	S	Unspecified Mill	1900
109W	300	SE	Iron Works	1913
110Y	307	S	Unspecified Mill	1895
111	309	SW	Unspecified Works	1987
112Z	310	SE	Iron Works	1938
113W	313	SE	Iron Works	1868
114AA	315	SE	Unspecified Works	1959
115AB	316	E	Unspecified Works	1970
116AA	317	SE	Iron Works	1938
117AA	318	SE	Iron Works	1935
118AA	319	SE	Iron Works	1913
119AB	323	E	Unspecified Depot	1989
120Y	336	S	Unspecified Mill	1897
121AC	346	SE	Iron Works	1913
122AC	348	SE	Iron Works	1913
123AC	349	SE	Iron Works	1932
124AC	349	SE	Iron Works	1900

125AE	359	SE	Iron Works	1897
126AD	368	NE	Gravel Pit	1865
127AD	380	NE	Gravel Pit	1882
128BH	387	SE	Unspecified Works	1959
129AE	387	SE	Iron Works	1932
130AF	387	S	Water Works	1932
131AF	387	S	Water Works	1900
132AF	397	S	Water Works	1882
133AF	398	S	Water Works	1897
134AF	399	S	Water Works	1895
135AF	401	S	Water Works	1868
136AG	405	NE	Fabric Works	1938
137AF	406	S	Water Works	1938
138AF	406	S	Water Works	1938
139AF	408	S	Water Works	1935
140AG	409	NE	Fabric Works	1938
141AG	416	NE	Fabric Works	1935
142AH	447	S	Water Works	1913
143AH	455	S	Water Works	1913
144	460	SE	Police Station	1975
145AG	467	NE	Works	1969
146	471	NE	Unspecified Works	1959
147AI	471	NE	Unspecified Factory	1987
148AI	471	NE	Unspecified Factory	1973
149AJ	477	NW	Unspecified Works	1989
150AJ	477	NW	Unspecified Works	1974
151	497	SE	Police Station	1970

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: 47

ID	Distance (m)	Direction	Use	Date
152AK	0	On Site	Unspecified Tank	1988
153AK	0	On Site	Unspecified Tank	1988
154AK	0	On Site	Unspecified Tank	1980
155AK	0	On Site	Unspecified Tank	1996
156AK	0	On Site	Unspecified Tank	1975
157AL	36	SE	Unspecified Tank	1996
158AL	36	SE	Unspecified Tank	1975
159AL	36	SE	Unspecified Tank	1988

160AL	36	SE	Unspecified Tank	1980
161AL	36	SE	Unspecified Tank	1988
162AM	39	W	Unspecified Tank	1992
163AM	39	W	Unspecified Tank	1981
164AM	39	W	Unspecified Tank	1981
165AN	78	SE	Tanks	1996
166AN	78	SE	Tanks	1975
167AN	79	SE	Tanks	1980
168AN	79	SE	Tanks	1988
169AN	79	SE	Tanks	1988
170AO	79	SE	Unspecified Tank	1996
171AO	80	SE	Unspecified Tank	1975
172AO	80	SE	Unspecified Tank	1988
173AO	80	SE	Unspecified Tank	1980
174AO	80	SE	Unspecified Tank	1988
175AN	88	SE	Tanks	1975
176P	205	N	Unspecified Tank	1987
177P	205	N	Unspecified Tank	1974
178AP	286	S	Unspecified Tank	1995
179AP	286	S	Unspecified Tank	1995
180AP	286	S	Unspecified Tank	1986
181AQ	305	NE	Unspecified Tank	1914
182AQ	305	NE	Unspecified Tank	1934
183	306	NE	Unspecified Tank	1914
184	333	S	Unspecified Tank	1866
185AR	336	E	Unspecified Tank	1896
186AR	337	E	Unspecified Tank	1914
187AS	371	SE	Unspecified Tank	1975
188AS	371	SE	Unspecified Tank	1996
189BG	406	SE	Unspecified Tank	1914
190AE	425	E	Unspecified Tank	1988
191AE	426	E	Unspecified Tank	1993
192AT	459	S	Tanks	1995
193AT	459	S	Tanks	1995
194AT	460	S	Tanks	1986
195AT	460	S	Unspecified Tank	1984
196AT	466	S	Tanks	1986
197AU	467	SE	Unspecified Tank	1996
198AU	467	SE	Unspecified Tank	1975

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: 81

ID	Distance (m)	Direction	Use	Date
199AM	37	W	Electricity Substation	1992
200AM	38	W	Electricity Substation	1981
201AM	38	W	Electricity Substation	1981
202AV	87	SE	Electricity Substation	1975
203AV	88	SE	Electricity Substation	1996
204AV	88	SE	Electricity Substation	1988
205AV	88	SE	Electricity Substation	1988
206AV	88	SE	Electricity Substation	1980
207AW	125	N	Electricity Substation	1989
208AW	125	N	Electricity Substation	1974
209AW	125	N	Electricity Substation	1989
210AW	125	N	Electricity Substation	1987
211AW	125	N	Electricity Substation	1992
212AW	125	N	Electricity Substation	1992
213AW	126	N	Electricity Substation	1987
214B	147	S	Electricity Substation	1992
215AX	147	N	Electricity Substation	1987
216AX	149	N	Electricity Substation	1974
217AX	149	N	Electricity Substation	1989
218AX	149	N	Electricity Substation	1992
219AY	189	NW	Electricity Substation	1987
220AY	189	NW	Electricity Substation	1974
221P	202	N	Electricity Substation	1987
222P	203	N	Electricity Substation	1992
223P	203	N	Electricity Substation	1989
224P	203	N	Electricity Substation	1974
225AZ	205	NE	Electricity Substation	1987
226AZ	205	NE	Electricity Substation	1992
227AZ	206	NE	Electricity Substation	1989
228R	227	N	Electricity Substation	1987
229R	227	N	Electricity Substation	1974
230R	227	N	Electricity Substation	1992
231R	228	N	Electricity Substation	1989
232BA	239	SE	Electricity Substation	1975
233BA	240	SE	Electricity Substation	1988
234BA	240	SE	Electricity Substation	1988
235BA	240	SE	Electricity Substation	1980
236BB	265	N	Electricity Substation	1989
237BB	265	N	Electricity Substation	1974
238BB	265	N	Electricity Substation	1987
239BB	266	N	Electricity Substation	1992

240S	294	S	Electricity Substation	1986
241S	295	S	Electricity Substation	1995
242S	295	S	Electricity Substation	1995
243S	299	S	Electricity Substation	1984
244BC	312	S	Electricity Substation	1980
245BC	312	S	Electricity Substation	1990
246BC	312	S	Electricity Substation	1976
247BD	321	SW	Electricity Substation	1984
248BD	322	SW	Electricity Substation	1986
249BD	322	SW	Electricity Substation	1995
250BD	322	SW	Electricity Substation	1995
251X	337	S	Electricity Substation	1986
252X	338	S	Electricity Substation	1984
253BE	349	NE	Electricity Substation	1987
254BE	350	NE	Electricity Substation	1992
255BE	351	NE	Electricity Substation	1989
256BF	363	SE	Electricity Substation	1996
257BF	375	SE	Electricity Substation	1975
258BF	375	SE	Electricity Substation	1980
259BF	375	SE	Electricity Substation	1988
260BF	375	SE	Electricity Substation	1988
261BG	379	SE	Electricity Substation	1980
262AA	379	SE	Electricity Substation	1975
263BH	402	SE	Electricity Substation	1976
264BH	405	SE	Electricity Substation	1980
265BH	405	SE	Electricity Substation	1990
266BI	407	E	Electricity Substation	1992
267BI	407	E	Electricity Substation	1972
268BI	407	E	Electricity Substation	1972
269BI	407	E	Electricity Substation	1981
270BI	407	E	Electricity Substation	1987
271BJ	445	S	Electricity Substation	1990
272BJ	446	S	Electricity Substation	1995
273BJ	446	S	Electricity Substation	1995
274BJ	447	S	Electricity Substation	1986
275BJ	447	S	Electricity Substation	1984
276	479	SE	Electricity Substation	1975
277	482	NW	Electricity Substation	1992
278BK	486	NE	Electricity Substation	1992
279BK	486	NE	Electricity Substation	1992

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: 24

ID	Distance (m)	Direction	Use	Date
280K	120	E	Garage	1974
281BL	319	SE	Garage	1962
282BL	321	SE	Garage	1962
283BL	322	SE	Garage	1972
284BM	324	SE	Garage	1962
285BM	325	SE	Garage	1962
286BN	390	SE	Motor Repair Works	1975
287BN	390	SE	Motor Repair Works	1980
288BN	390	SE	Motor Repair Works	1988
289BN	390	SE	Motor Repair Works	1988
290AE	396	E	Motor Repair Works	1980
291AE	396	E	Motor Repair Works	1980
292AE	396	E	Motor Repair Works	1986
293AE	396	E	Motor Repair Works	1975
294BO	415	SE	Garage	1962
295BO	415	SE	Garage	1962
296	418	NW	Garage	1992
297BO	428	SE	Garage	1963
298BP	479	NW	Garage	1989
299BP	479	NW	Garage	1989
300BP	485	NW	Garage	1962
301BP	485	NW	Garage	1974
302BP	485	NW	Garage	1969
303BP	486	NW	Garage	1989

1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 47

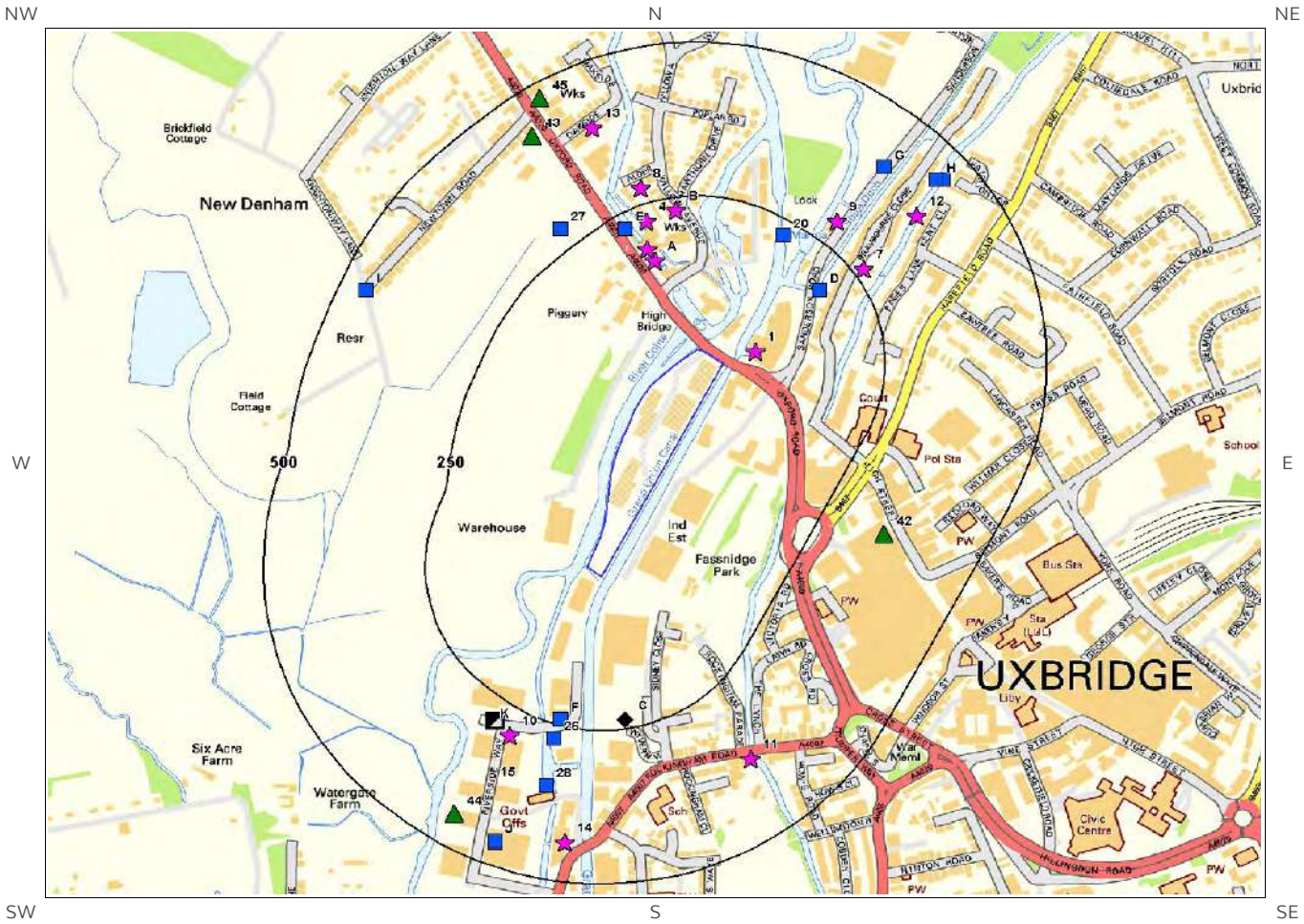
The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by Groundsure:

ID	Distance(m)	Direction	Use	Date

304BQ	0	On Site	Canal	1897
305BQ	0	On Site	Canal	1932
306BS	0	On Site	Canal	1938
307E	0	On Site	Unspecified Wharf	1959
308BR	0	On Site	Unspecified Wharf	1913
309B	0	On Site	Unspecified Wharf	1938
310B	0	On Site	Unspecified Wharf	1913
311BS	0	On Site	Canal	1897
312BY	0	On Site	Canal	1895
313	0	On Site	Canal	1959
314BT	0	On Site	Unspecified Wharf	1932
315BR	0	On Site	Unspecified Wharf	1913
316	0	On Site	Canal	1868
317BU	0	SE	Canal	1959
318BU	0	SE	Canal	1987
319BU	0	SE	Canal	1974
320BV	1	SE	Canal	1913
321BV	1	SE	Canal	1938
322BW	2	SE	Canal	1975
323BW	2	SE	Canal	1989
324BW	2	SE	Canal	1970
325BX	3	E	Unspecified Wharves	1897
326BS	3	SE	Canal	1935
327AC	4	SE	Canal	1882
328BY	4	SE	Canal	1913
329B	5	SW	Unspecified Wharf	1913
330B	5	SW	Unspecified Wharf	1938
331BZ	30	E	Unspecified Wharf	1970
332CA	53	NE	Canal	1938
333CA	56	NE	Canal	1912
334CA	56	NE	Canal	1935
335CA	56	NE	Canal	1897
336CB	59	NE	Canal	1912
337CB	59	NE	Canal	1938
338CB	59	NE	Canal	1895
339CC	116	S	Unspecified Wharf	1932
340CD	185	S	Canal	1900
341CD	185	S	Canal	1932
342CE	207	SE	Pond	1897
343CE	214	SE	Fish Pond	1868
344CE	219	SE	Fish Pond	1882
345AD	368	NE	Gravel Pit	1865
346AD	380	NE	Gravel Pit	1882
347	411	N	Canal	1969
348CF	411	N	Canal	1959
349CF	411	N	Canal	1973

350CF	411	N	Canal	1987

2. Environmental Permits, Incidents and Registers Map



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- Site Outline
- Search Buffers (m) (250, 500)
- Recorded Pollution Incident
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Water Industry Referrals
- Licenced Discharge Consents
- Red List Discharge Consents
- RAS 3 & 4 Authorisations
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes
- 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:

2

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

ID	Distance (m)	Direction	NGR	Details	
16C	235	S	505000 184000	Name: Electro Hi-tech Ltd Unit D 2 Riverside Drive Middx Ub8 Status: Not Active Receiving Water: -	Authorised Substances: -
17C	235	S	505000 184000	Name: Electro Hi-tech Ltd Unit D2 Riverside Way Middx Ub8 Status: Not Active Receiving Water: -	Authorised Substances: -

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

0

Database searched and no data found.

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

4

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

ID	Distance (m)	Direction	NGR	Details	
42	352	SE	505400 184300	Address: Lh Jennings, High St Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
43	429	NW	504856 184948	Address: Willowbank Service Station, Oxford Road, New Denham, Uxbridge, UB9 4DA 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
44	450	SW	504737 183844	Address: Sanyo Gallenkamp, Riverside Way Process: coating & enamelling process Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
45	474	NW	504868 185010	Address: New Denham Service Station, 66 Oxford Road, New Denham, Bucks, UB9 4DG 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

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:

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

ID	Distance (m)	Direction	NGR	Details	
18D	190	NE	505300 184700	Address: Braybourne Close (No.2) Uxbridge, Braybourne Close (No.2) Uxbridge, -, -, - Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.0522 Permit Version: 2	Receiving Water: Fray's River Status: SURRENDERED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03-Sep-2010 Revocation Date: 19/08/2014
19D	190	NE	505300 184700	Address: Braybourne Close (No.2) Uxbridge, Braybourne Close (No.2) Uxbridge, -, -, - Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.0522 Permit Version: 1	Receiving Water: FRAY'S RIVER Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 02/11/1989 Effective Date: 02-Nov-1989 Revocation Date: 02/09/2010
20	225	NE	505245 184789	Address: THE LOCK HOUSE, WILLOW AVENUE, DENHAM, UXBRIDGE, ENGLAND, UB9 4AF Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: EPRBP3326GK Permit Version: 1	Receiving Water: GRAND UNION CANAL Status: NEW ISSUED UNDER EPR 2010 Issue date: 28/06/2010 Effective Date: 28-Jun-2010 Revocation Date: -
21E	226	NW	505000 184800	Address: PREMISES, WILLOWBANK, LITTLE DENHAM, PREMISES, WILLOWBANK, LITTLE DEN, HAM, BUCKS, -, - Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCR.1440 Permit Version: 1	Receiving Water: COLNE Status: REVOKED - UNSPECIFIED Issue date: 26/02/1975 Effective Date: 26-Feb-1975 Revocation Date: 12/04/1990
22E	226	NW	505000 184800	Address: APEX WORKS, WILLOWBANK, DENHAM, BUC, APEX WORKS, WILLOWBANK, DENHAM,, BUCKS, -, - Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCR.0991 Permit Version: 1	Receiving Water: COLNE Status: REVOKED - UNSPECIFIED Issue date: 12/03/1968 Effective Date: 12-Mar-1968 Revocation Date: 12/04/1990
23F	240	S	504900 184001	Address: Riverside Way (No. 2) Uxbridge, Riverside Way (No. 2) Uxbridge, -, -, - Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1807 Permit Version: 1	Receiving Water: COLNE BROOK Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 02/11/1989 Effective Date: 02-Nov-1989 Revocation Date: 02/09/2010
24F	240	S	504900 184001	Address: Riverside Way (No. 2) Uxbridge, Riverside Way (No. 2) Uxbridge, -, -, - Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1807 Permit Version: 2	Receiving Water: Colne Brook Status: SURRENDERED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03-Sep-2010 Revocation Date: 19/08/2014
25F	241	S	504900 184000	Address: ROCKINGHAM ROAD, UXBRIDGE, MIDDX, ROCKINGHAM ROAD, UXBRIDGE, MIDDX, -, -, - Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCR.1216 Permit Version: 1	Receiving Water: GRAND UNIONCANAL Status: REVOKED - UNSPECIFIED Issue date: 08/02/1971 Effective Date: 08-Feb-1971 Revocation Date: 29/03/1990

ID	Distance (m)	Direction	NGR	Details	
26	273	S	504890 183970	Address: WEIR HOUSE, RIVERSIDE WAY, UXBRIDGE, WEIR HOUSE, RIVERSIDE WAY, UXBRI, DGE, MIDDLESEX, -, - Effluent Type: MISCELLANEOUS DISCHARGES - UNSPECIFIED Permit Number: CNTW.0789 Permit Version: 1	Receiving Water: RIVER COLNE Status: REVOKED - UNSPECIFIED Issue date: 30/10/1990 Effective Date: 30-Oct-1990 Revocation Date: 11/12/1992
27	284	NW	504900 184800	Address: OFFICE DEVELOPMENT, OLD BUS DEPOT,, OFFICE DEVELOPMENT, OLD BUS DEPO, T, 50 OXFORD ROAD, DENHAM, BUCKS, -, - Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.2014 Permit Version: 1	Receiving Water: RIVER COLNE Status: REVOKED - UNSPECIFIED Issue date: 12/11/1987 Effective Date: 12-Nov-1987 Revocation Date: 18/06/1992
28	349	S	504878 183894	Address: PHASE 300, RIVERSIDE WAY, UXBRIDGE, MIDDLESEX, UB8 2YF Effluent Type: TRADE DISCHARGES - SITE DRAINAGE (CONTAM SURFACE WATER, NOT WASTE SIT Permit Number: CANM.0981 Permit Version: 1	Receiving Water: RIVER COLNE Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 09/09/2005 Effective Date: 10-Sep-2005 Revocation Date: -
29G	404	NE	505400 184900	Address: Braybourne Close (No.1) Uxbridge, Braybourne Close (No.1) Uxbridge, -, -, - Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.0521 Permit Version: 2	Receiving Water: Fray's River Status: SURRENDERED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03-Sep-2010 Revocation Date: 19/08/2014
30G	404	NE	505400 184900	Address: Braybourne Close (No.1) Uxbridge, Braybourne Close (No.1) Uxbridge, -, -, - Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.0521 Permit Version: 1	Receiving Water: FRAY'S RIVER Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 02/11/1989 Effective Date: 02-Nov-1989 Revocation Date: 02/09/2010
31H	444	NE	505480 184880	Address: REAR OF HAREFIELD ROAD, UXBRIDGE, M, REAR OF HAREFIELD ROAD, UXBRIDGE, , MIDDLESEX, -, - Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0659 Permit Version: 1	Receiving Water: RIVER FRAYS Status: REVOKED - UNSPECIFIED Issue date: 11/02/1986 Effective Date: 11-Feb-1986 Revocation Date: 30/04/1992
32H	444	NE	505480 184880	Address: REAR OF HAREFIELD ROAD, UXBRIDGE, M, REAR OF HAREFIELD ROAD, UXBRIDGE, , MIDDLESEX, -, - Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0660 Permit Version: 1	Receiving Water: RIVER FRAYS Status: REVOKED - UNSPECIFIED Issue date: 11/02/1986 Effective Date: 11-Feb-1986 Revocation Date: 30/04/1992
33H	452	NE	505490 184880	Address: REAR OF 9-123 HAREFIELD ROAD, UXBRI, REAR OF 9-123 HAREFIELD ROAD, UX, BRIDGE, MIDDLESEX, -, - Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: CTWC.0350 Permit Version: 1	Receiving Water: FRAYS RIVER Status: REVOKED - UNSPECIFIED Issue date: 03/09/1985 Effective Date: 03-Sep-1985 Revocation Date: 30/04/1992
34I	459	NW	504600 184700	Address: Knighton Way Lane II, Denham, Knighton Way Lane II, Denham, -, - Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1279 Permit Version: 2	Receiving Water: Rusholt Brook Status: SURRENDERED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03-Sep-2010 Revocation Date: 19/08/2014

ID	Distance (m)	Direction	NGR	Details	
35I	459	NW	504600 184700	Address: Knighton Way Lane II, Denham, Knighton Way Lane II, Denham, -, - Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1279 Permit Version: 1	Receiving Water: RUSHOLT BROOK Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 02/11/1989 Effective Date: 02-Nov-1989 Revocation Date: 02/09/2010
36J	460	S	504800 183803	Address: Riverside Way (No. 1) Uxbridge, Riverside Way (No. 1) Uxbridge, -, -, - Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1806 Permit Version: 2	Receiving Water: Colne Status: SURRENDERED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03-Sep-2010 Revocation Date: 19/08/2014
37J	460	S	504800 183803	Address: Riverside Way (No. 1) Uxbridge, Riverside Way (No. 1) Uxbridge, -, -, - Effluent Type: SEWAGE DISCHARGES - PUMPING STATION - WATER COMPANY Permit Number: TEMP.1806 Permit Version: 1	Receiving Water: COLNE Status: TEMPORARY CONSENTS (WATER ACT 1989, SECTION 113) Issue date: 02/11/1989 Effective Date: 02-Nov-1989 Revocation Date: 02/09/2010
38J	463	S	504800 183800	Address: THE ISLAND, ST JOHNS ROAD, UXBRIDGE, THE ISLAND, ST JOHNS ROAD, UXBRI, DGE, MIDDX, -, - Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCU.0171 Permit Version: 1	Receiving Water: - Status: REVOKED - UNSPECIFIED Issue date: 15/03/1966 Effective Date: 13-May-1968 Revocation Date: 03/06/1992
39J	463	S	504800 183800	Address: FACTORY PREMISES, THE ISLAND, UXBRI, FACTORY PREMISES, THE ISLAND, UX, BRIDGE, MIDDX, -, - Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCU.0173 Permit Version: 1	Receiving Water: - Status: REVOKED - UNSPECIFIED Issue date: 15/03/1966 Effective Date: 15-Mar-1966 Revocation Date: 03/06/1992
40J	463	S	504800 183800	Address: SPORTS PAVILION, THE ISLAND, ST JOH, SPORTS PAVILION, THE ISLAND, ST, JOHNS ROAD, UXBRIDGE, MIDDX, -, - Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: CTCU.0170 Permit Version: 1	Receiving Water: - Status: REVOKED - UNSPECIFIED Issue date: 15/03/1966 Effective Date: 15-Mar-1966 Revocation Date: 08/04/1991
41J	463	S	504800 183800	Address: FACTORY PREMISES, THE ISLAND, UXBRI, FACTORY PREMISES, THE ISLAND, UX, BRIDGE, MIDDX, -, - Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: CTCU.0172 Permit Version: 1	Receiving Water: - Status: REVOKED - UNSPECIFIED Issue date: 15/03/1966 Effective Date: 15-Mar-1966 Revocation Date: 03/06/1992

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

1

The following Water Industry Referral records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	Address	Permission reference	Local Authority	First Date Received	Last Date Received	Status
47K	285	SW	ELECTRO HI-TEC LTD (DISSOLVED), UNIT D2, RIVERSIDE WAY, RIVERSIDE WAY, UXBRIDGE, UXBRIDGE, UB8 2YF	AT8363	LONDON BOROUGH OF HILLINGDON	01-Jul-2010	08-Oct-2016	RECEIVED

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:

14

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	52	E	505200 184600	Incident Date: 04-Oct-2001 Incident Identification: 34602 Pollutant: Contaminated Water Pollutant Description: Other Contaminated Water	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

ID	Distance (m)	Direction	NGR	Details	
2A	158	NW	505046 184748	Incident Date: 10-Nov-2001 Incident Identification: 42142 Pollutant: Sewage Materials Pollutant Description: Grey Water	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
3A	180	NW	505034 184766	Incident Date: 07-Feb-2003 Incident Identification: 135545 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
4	223	N	505032 184812	Incident Date: 26-Oct-2002 Incident Identification: 116834 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay	Water Impact: Category 2 (Significant) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
5B	228	N	505077 184829	Incident Date: 20-Dec-2002 Incident Identification: 126951 Pollutant: Contaminated Water Pollutant Description: Chemically Contaminated Run-Off	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
6B	228	N	505077 184829	Incident Date: 20-Dec-2002 Incident Identification: 126951 Pollutant: Contaminated Water Pollutant Description: Chemically Contaminated Run-Off	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
7	264	NE	505367 184734	Incident Date: 06-Jul-2002 Incident Identification: 89699 Pollutant: Sewage Materials Pollutant Description: Grey Water	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
8	278	N	505023 184867	Incident Date: 02-Sep-2002 Incident Identification: 104697 Pollutant: Contaminated Water Pollutant Description: Other Contaminated Water	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
9	290	NE	505326 184812	Incident Date: 05-Sep-2002 Incident Identification: 105511 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
10	295	SW	504822 183974	Incident Date: 17-Mar-2003 Incident Identification: 143655 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other General Biodegradable Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
11	375	SE	505193 183936	Incident Date: 20-Aug-2002 Incident Identification: 101774 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
12	383	NE	505450 184821	Incident Date: 06-Feb-2003 Incident Identification: 135245 Pollutant: Sewage Materials Pollutant Description: Crude Sewage	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
13	396	NW	504949 184965	Incident Date: 31-May-2003 Incident Identification: 162196 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
14	435	S	504906 183801	Incident Date: 08-Nov-2001 Incident Identification: 46486 Pollutant: Oils and Fuel Pollutant Description: Other Oil or Fuel	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

1

The following NIRS List 1 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance(m)	Direction	NGR	Details	
15	371	SW		Incident Date: 03-May-2000 Incident Identification: 7977.0 Catchments Name: COLNE Water Description: GROUNDWATER - NOT AQUIFER Water Course: GROUNDWATER Incident Substantiated: N/A	Priority Description: 1 Day (24 Hours) Waste Description: Not Available Water Impact: Significant Impact Land Impact: No Impact Air Impact: No Impact Action Taken: Not Available

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

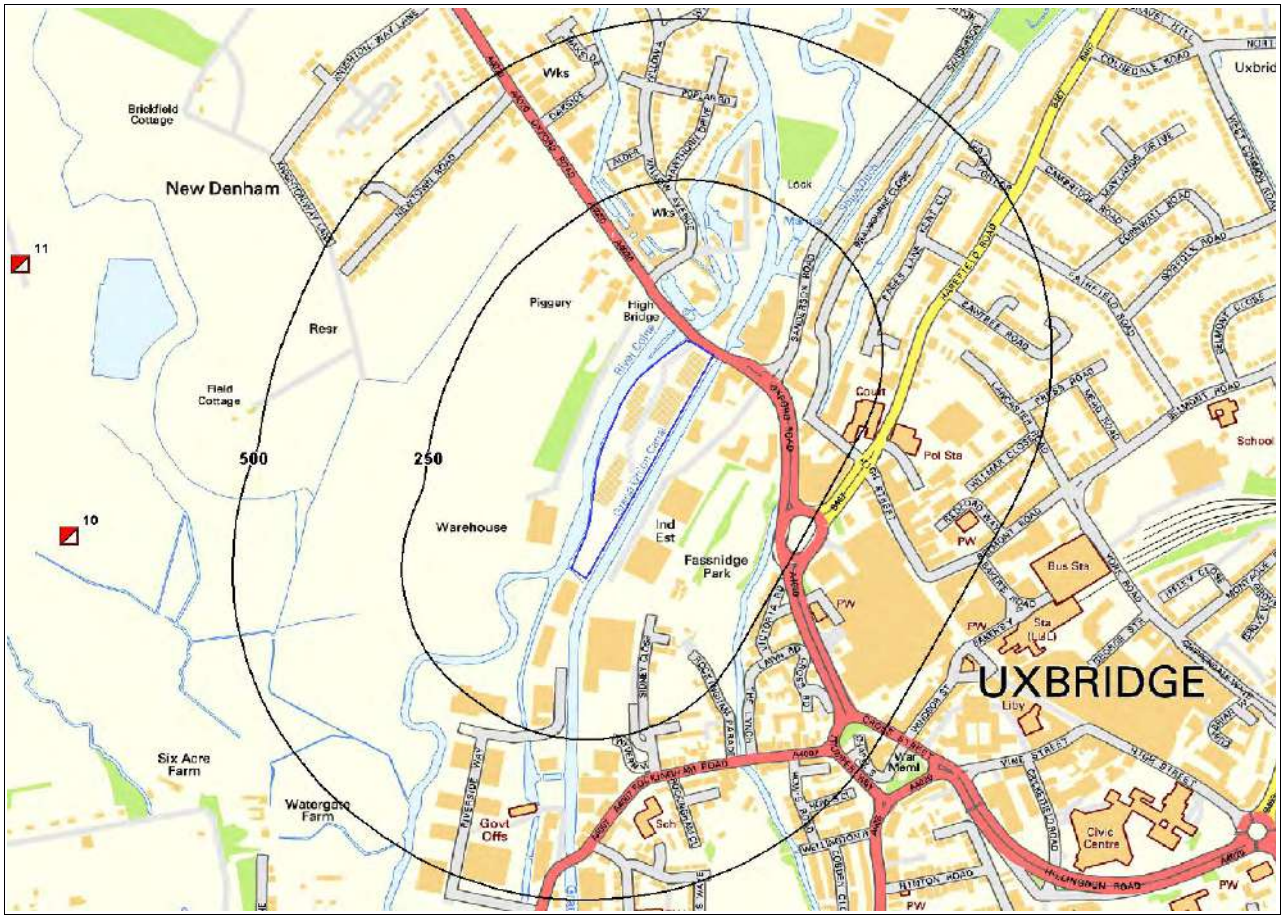
Database searched and no data found.

3. Landfill and Other Waste Sites Map

NW N NE

W E

SW S SE



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Site Outline

250 500 Search Buffers (m)

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

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:

6

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

ID	Distance (m)	Direction	NGR	Details	
Not shown	839	SW	504300 183300	Site Address: Slough Road B, Slough Road Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1088	SW	504000 183200	Site Address: Slough Road A, Slough Road Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1117	SW	504200 183100	Site Address: Elk Meadow Estate, Slough Road, Iver Heath, Buckinghamshire Waste Licence: Yes Site Reference: WDA/266, 1092/2 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 13-Feb-1989 Licence Surrendered: 13-Jun-1989 Licence Holder Address: Moorwards Farm Operator: - Licence Holder: P J Gray First Recorded: 30-Nov-1988 Last Recorded: 30-Nov-1992
Not shown	1149	SW	504300 183100	Site Address: Elk Meadows Estate, Slough Road, Iver Heath, Buckinghamshire Waste Licence: Yes Site Reference: WDA/275 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 13-Jun-1989 Licence Surrendered: 03-May-1994 Licence Holder Address: Moorwards Farm Operator: - Licence Holder: P J Gray First Recorded: 30-Nov-1988 Last Recorded: 30-Jun-1993

ID	Distance (m)	Direction	NGR	Details	
Not shown	1194	SW	504400 182600	Site Address: Woodlands Park, Slough Road, Iver Heath, Buckinghamshire Waste Licence: Yes Site Reference: WDA/108 (1092/1), WDA/134, 0400/0138 Waste Type: Inert, Industrial, Commercial, Household, Special Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 09-Mar-1978 Licence Surrendered: 20-May-1993 Licence Holder Address: Iver Lane, Uxbridge Operator: - Licence Holder: Cape Boards and Panels Limited First Recorded: 31-Dec-1972 Last Recorded: 20-May-1993
Not shown	1299	S	504500 182800	Site Address: Cape Products, Iver Lane, Uxbridge, Middlesex Waste Licence: - Site Reference: - Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -

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

3

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

ID	Distance (m)	Direction	NGR	Details	
Not shown	1065	SW	504300.0 183400.0	Address: Willment Bros, Woodlands Pk, Slough Rd, Denham BGS Number: 1581.0	Risk: Risk to minor aquifer Waste Type: N/A
Not shown	1269	SW	504100.0 183300.0	Address: Willment Bros, Woodlands Park, Slough Rd, Denham BGS Number: 1580.0	Risk: Risk to minor aquifer Waste Type: N/A
Not shown	1457	S	504700.0 182800.0	Address: Cape Products, Iver Lane, Uxbridge , Middx BGS Number: 1582.0	Risk: Risk to minor aquifer Waste Type: N/A

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:

0

Database searched and no data found.

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

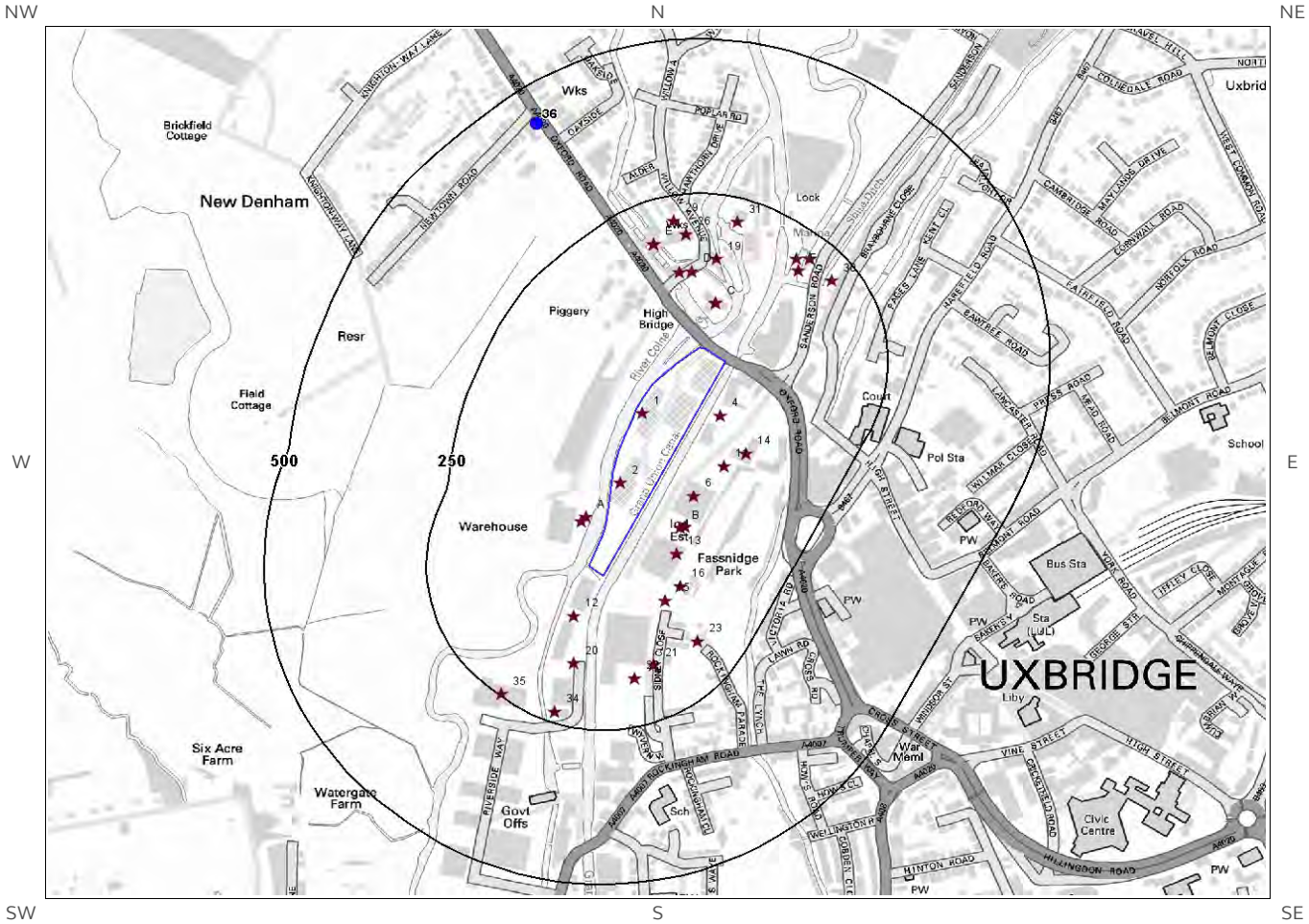
9

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	
10	744	W	504200 184300	Site Address: Denham Quarry, Denham Road, Uxbridge, Buckinghamshire, UB9 4EH Type: Inert & Excavation WTS with treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SUM017 EPR reference: EA/EPR/ZP3198VX/A001 Operator: Summerleaze Limited Waste Management licence No: 102886 Annual Tonnage: 250000.0	Issue Date: 30/08/2011 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Denham Quarry Correspondence Address: -
11	905	W	504129 184723	Site Address: Land At Denham, Uxbridge, Middlesex, UB9 4HE Type: Deposit of waste to land as a recovery operation Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SUM009 EPR reference: EA/EPR/BP3693MY/V002 Operator: Summerleaze Ltd Waste Management licence No: 100631 Annual Tonnage: 165000.0	Issue Date: 24/08/2010 Effective Date: - Modified: 06/03/2012 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: New Denham Quarry Correspondence Address: -
Not shown	971	W	504097 184825	Site Address: Denham Quarry, Denham Road, Uxbridge, Buckinghamshire, UB9 4EH Type: Mining Waste Operations Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SUM018 EPR reference: EA/EPR/BB3030AU/A001 Operator: Summerleaze Limited Waste Management licence No: 103151 Annual Tonnage: 0.0	Issue Date: 19/09/2011 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Denham Quarry Correspondence Address: -
Not shown	1461	S	504921 182772	Site Address: Wallingford Road Recycling Facility, 1a, Wallingford Road, Uxbridge Ind Est, Uxbridge, Middlesex, UB8 2FR Type: Material Recycling Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JMW005 EPR reference: EA/EPR/PB3330RA/T001 Operator: Johal Mya Waste Management Limited Waste Management licence No: 104532 Annual Tonnage: 74999.0	Issue Date: 16/10/2012 Effective Date: 25/04/2013 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Wallingford Road Recycling Facility Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details	
Not shown	1461	S	504921 182772	Site Address: Wallingford Road Recycling Facility, 1a, Wallingford Road, Uxbridge Ind Est, Uxbridge, Middlesex, UB8 2FR Type: Material Recycling Treatment Facility Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MYA004 EPR reference: EA/EPR/JB3834RX/A001 Operator: Mya Recycling Ltd Waste Management licence No: 104532 Annual Tonnage: 74999.0	Issue Date: 16/10/2012 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Wallingford Road Recycling Facility Correspondence Address: -
Not shown	1467	S	504922 182766	Site Address: Wallingford Road Recycling Facility, 1a, Wallingford Road, Uxbridge Ind Est, Uxbridge, Middlesex, UB8 2FR Type: Material Recycling Treatment Facility Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: BAL172 EPR reference: EA/EPR/DB3604KH/T001 Operator: Bally Skips Limited Waste Management licence No: 104532 Annual Tonnage: 74999.0	Issue Date: 16/10/2012 Effective Date: 19/11/2015 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Wallingford Road Recycling Facility Correspondence Address: -
Not shown	1479	S	504938 182754	Site Address: A1 Uxbridge Waste Lrd, 1A, Wallingford Road, Uxbridge Ind.Est, Uxbridge, Middx, UB8 2FR Type: Transfer Station taking Non-Biodegradable Wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: A1U001 EPR reference: - Operator: A1 Uxbridge Waste Ltd Waste Management licence No: 80506 Annual Tonnage: 77988.0	Issue Date: 06/09/1999 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: A1 Uxbridge Waste Ltd Correspondence Address: Smith Stuart Reynolds, Bignell Park Barns, Chesterton, Bicester, Oxon, OX6 8TD
Not shown	1479	S	504938 182754	Site Address: A1 Uxbridge Waste Lrd, 1A, Wallingford Road, Uxbridge Ind.Est, Uxbridge, Middx, UB8 2FR Type: Transfer Station taking Non-Biodegradable Wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: UXB002 EPR reference: - Operator: A1 Uxbridge Environmental Services Ltd Waste Management licence No: 80506 Annual Tonnage: 77988.0	Issue Date: 06/09/1999 Effective Date: 26/10/2004 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: - Correspondence Address: 1 A Wallingford Road, Uxbridge Ind Estate, Uxbridge, Middlesex, UB8 2FR
Not shown	1479	S	504938 182754	Site Address: A1 Uxbridge Waste Lrd, 1A, Wallingford Road, Uxbridge Ind.Est, Uxbridge, Middlesex, UB8 2FR Type: Transfer Station taking Non-Biodegradable Wastes Size: >= 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AAA001 EPR reference: EA/EPR/GP3497NG/T002 Operator: A & A Recycling Ltd Waste Management licence No: 80506 Annual Tonnage: 77988.0	Issue Date: 06/09/1999 Effective Date: 21/06/2007 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked Site Name: Wallingford Road, Uxbridge Correspondence Address: -

4. Current Land Use Map



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Site Outline

Current Industrial Sites

Electricity Transmission Cables

250
500
Search Buffers (m)

Petrol & Fuel Sites

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 35

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0	On Site	Electricity Sub Station	505023 184498	Electricity Sub Station, UB8	Electrical Features	Infrastructure and Facilities
2	0	On Site	Electricity Sub Station	504989 184385	Electricity Sub Station, UB9	Electrical Features	Infrastructure and Facilities
3A	33	W	Tank	504937 184329	Tank, UB9	Tanks (Generic)	Industrial Features
4	34	SE	Nexen Petroleum UK	505143 184494	Nexen Petroleum UK, Prospect House 97, Oxford Road, Uxbridge, UB8 1LU	Fuel Distributors and Suppliers	Household, Office, Leisure and Garden
5A	39	W	Electricity Sub Station	504930 184323	Electricity Sub Station, UB9	Electrical Features	Infrastructure and Facilities
6	59	SE	A R R I GB Ltd	505102 184363	A R R I GB Ltd, Unit 2 Highbridge Industrial Estate, Oxford Road, Uxbridge, UB8 1LX	Lampshades and Lighting	Consumer Products
7B	66	SE	Highbridge Industrial Estate	505082 184312	Highbridge Industrial Estate, UB8	Business Parks and Industrial Estates	Industrial Features
8B	72	SE	Electricity Sub Station	505090 184313	Electricity Sub Station, UB8	Electrical Features	Infrastructure and Facilities
9C	76	N	We Do Any Clearance	505136 184676	We Do Any Clearance, 23 Denham Lodge, Oxford Road, Denham, Uxbridge, UB9 4AA	Clearance and Salvage Dealers	Recycling Services
10C	76	N	L G International Ltd	505136 184676	L G International Ltd, 35 Denham Lodge, Oxford Road, Denham, Uxbridge, UB9 4AB	Carpets, Flooring, Rugs and Soft Furnishings	Consumer Products
11	78	SE	Electricity Sub Station	505149 184412	Electricity Sub Station, UB8	Electrical Features	Infrastructure and Facilities
12	78	SW	Wks	504918 184169	Wks, UB8	Unspecified Works Or Factories	Industrial Features
13	81	SE	Arri Media	505076 184270	Arri Media, Unit 3 Highbridge Industrial Estate, Oxford Road, Uxbridge, UB8 1LX	Photographic and Optical Equipment	Household, Office, Leisure and Garden
14	98	SE	Otsuka Pharmaceuticals UK Ltd	505183 184432	Otsuka Pharmaceuticals UK Ltd, Hunton House Highbridge Industrial Estate, Oxford Road, Uxbridge, UB8 1LX	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
15	101	SE	Electricity Sub Station	505058 184194	Electricity Sub Station, UB8	Electrical Features	Infrastructure and Facilities
16	111	SE	Depot	505082 184217	Depot, UB8	Container and Storage	Transport, Storage and Delivery
17D	124	N	Electricity Sub Station	505100 184728	Electricity Sub Station, UB9	Electrical Features	Infrastructure and Facilities
18D	126	N	Electricity Sub Station	505081 184726	Electricity Sub Station, UB9	Electrical Features	Infrastructure and Facilities
19	146	N	Electricity Sub Station	505138 184748	Electricity Sub Station, UB9	Electrical Features	Infrastructure and Facilities
20	148	S	Electricity Sub Station	504918 184092	Electricity Sub Station, UB8	Electrical Features	Infrastructure and Facilities
21	163	SE	Electricity Sub Station	505041 184089	Electricity Sub Station, UB8	Electrical Features	Infrastructure and Facilities
22	171	S	Union Business Park	505012 184068	Union Business Park, UB8	Business Parks and Industrial Estates	Industrial Features
23	178	SE	Depot	505108 184128	Depot, UB8	Container and Storage	Transport, Storage and Delivery
24E	183	NW	Thames Valley Hire Services Ltd	505041 184772	Thames Valley Hire Services Ltd, 30, Oxford Road, Denham, Uxbridge, UB9 4DQ	Construction and Tool Hire	Hire Services
25E	183	NW	Coolwater4you	505041 184772	Coolwater4you, 30, Oxford Road, Denham, Uxbridge, UB9 4DQ	Cooling and Refrigeration	Industrial Products
26	185	N	Works	505091 184788	Works, UB9	Unspecified Works Or Factories	Industrial Features
27F	186	NE	Landing Stage	505264 184729	Landing Stage, UB8	Moorings and Unloading Facilities	Water
28F	199	NE	Jetties	505260 184748	Jetties, UB9	Moorings and Unloading Facilities	Water
29	210	N	Works	505071 184810	Works, UB9	Unspecified Works Or Factories	Industrial Features
30	210	NE	Electricity Sub Station	505315 184713	Electricity Sub Station, UB8	Electrical Features	Infrastructure and Facilities
31	212	N	Electricity Sub Station	505170 184808	Electricity Sub Station, UB9	Electrical Features	Infrastructure and Facilities
32F	212	NE	Tideway Adventurers Narrowboat Project	505281 184748	Tideway Adventurers Narrowboat Project, Hundred Acres, Sanderson Road, Uxbridge, UB8 1NB	Boat Hiring Services	Hire Services
33F	212	NE	Denham Yacht Station	505281 184748	Denham Yacht Station, Hundred Acres, Sanderson Road, Uxbridge, UB8 1NB	Marine Equipment Including Boats and Ships	Industrial Products
34	232	S	E T Enterprises Ltd	504888 184013	E T Enterprises Ltd, 45, Riverside Way, Cowley, Uxbridge, UB8 2YF	Electrical Components	Industrial Products
35	247	SW	Warehouse	504807 184042	Warehouse, UB8	Container and Storage	Transport, Storage and Delivery

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
36	441	NW	504861 184967	Esso	Willowbank Service Station, Oxford Road, Oxford Road, Newton Road, New Denham, Denham, Buckinghamshire, UB9 4DA	No	Open

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site: 0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

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

Records of National Grid high pressure gas transmission pipelines within 500m of the study site: 0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

5.3 Bedrock and Solid Geology

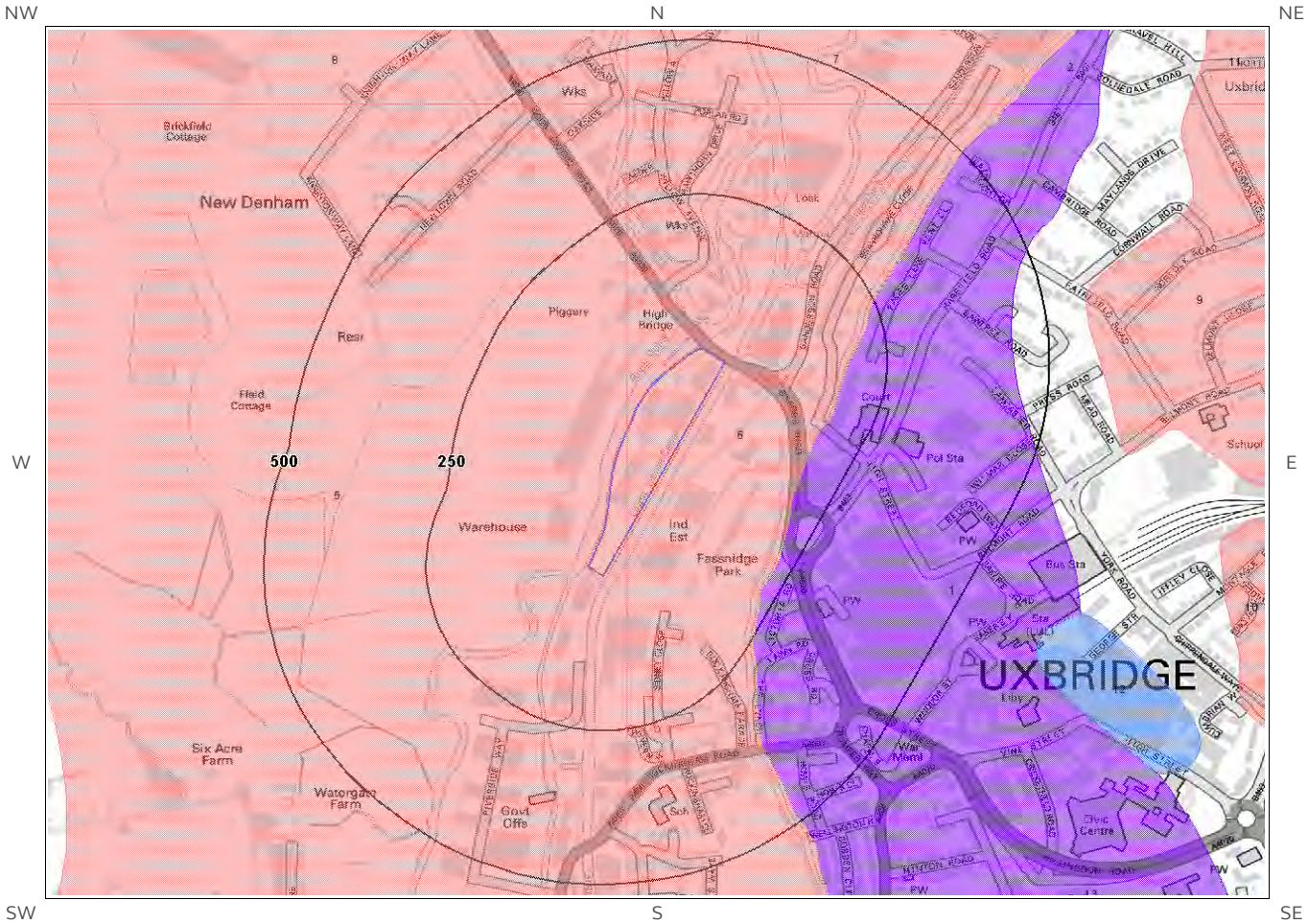
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
LMBE-XCZS	LAMBETH GROUP	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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Site Outline

250 — 500 — Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

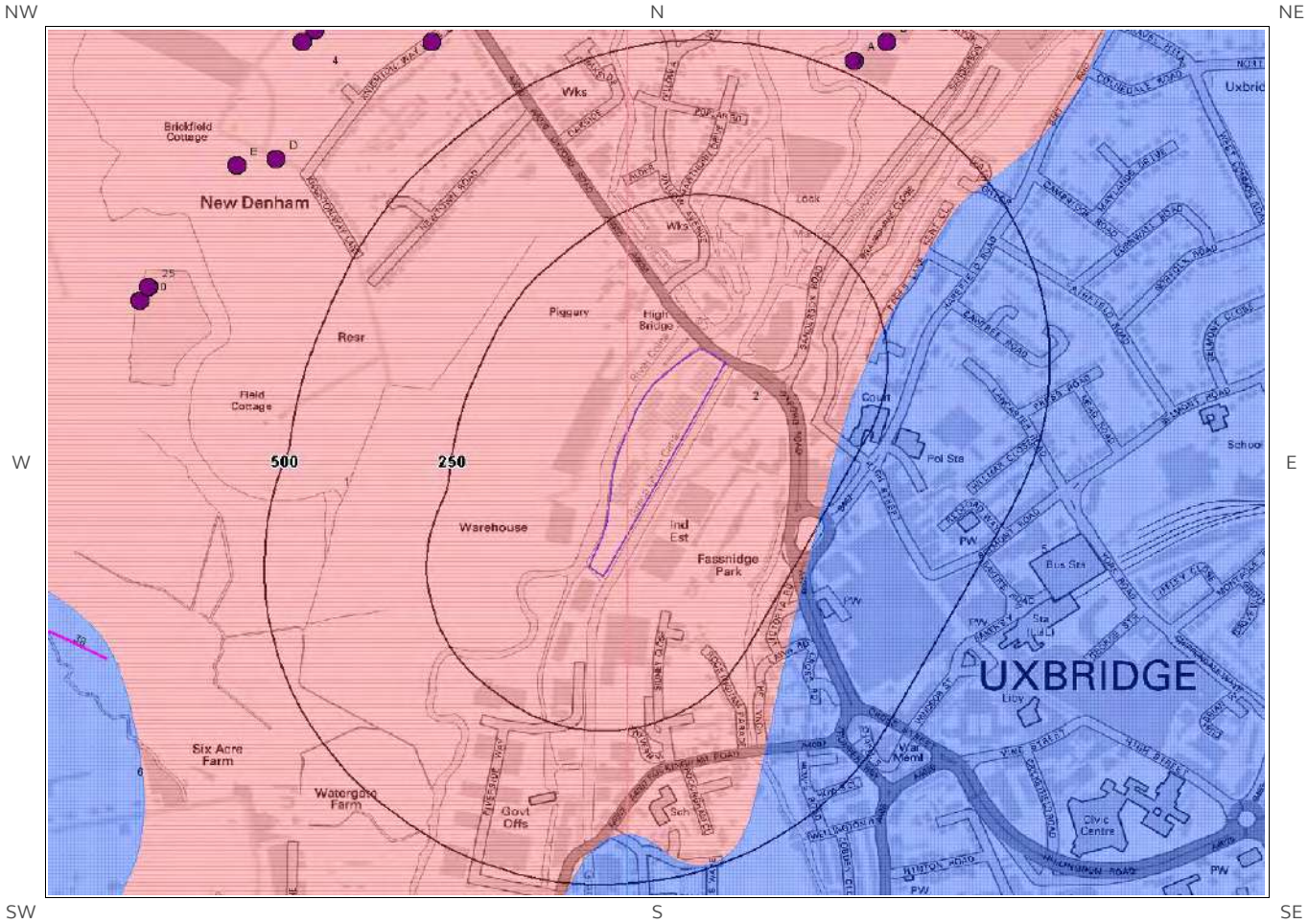
Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licenses



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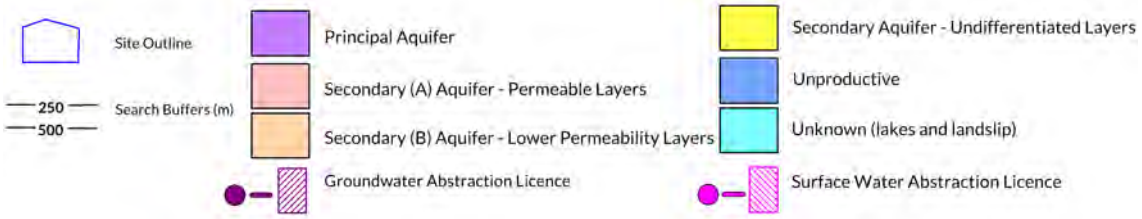
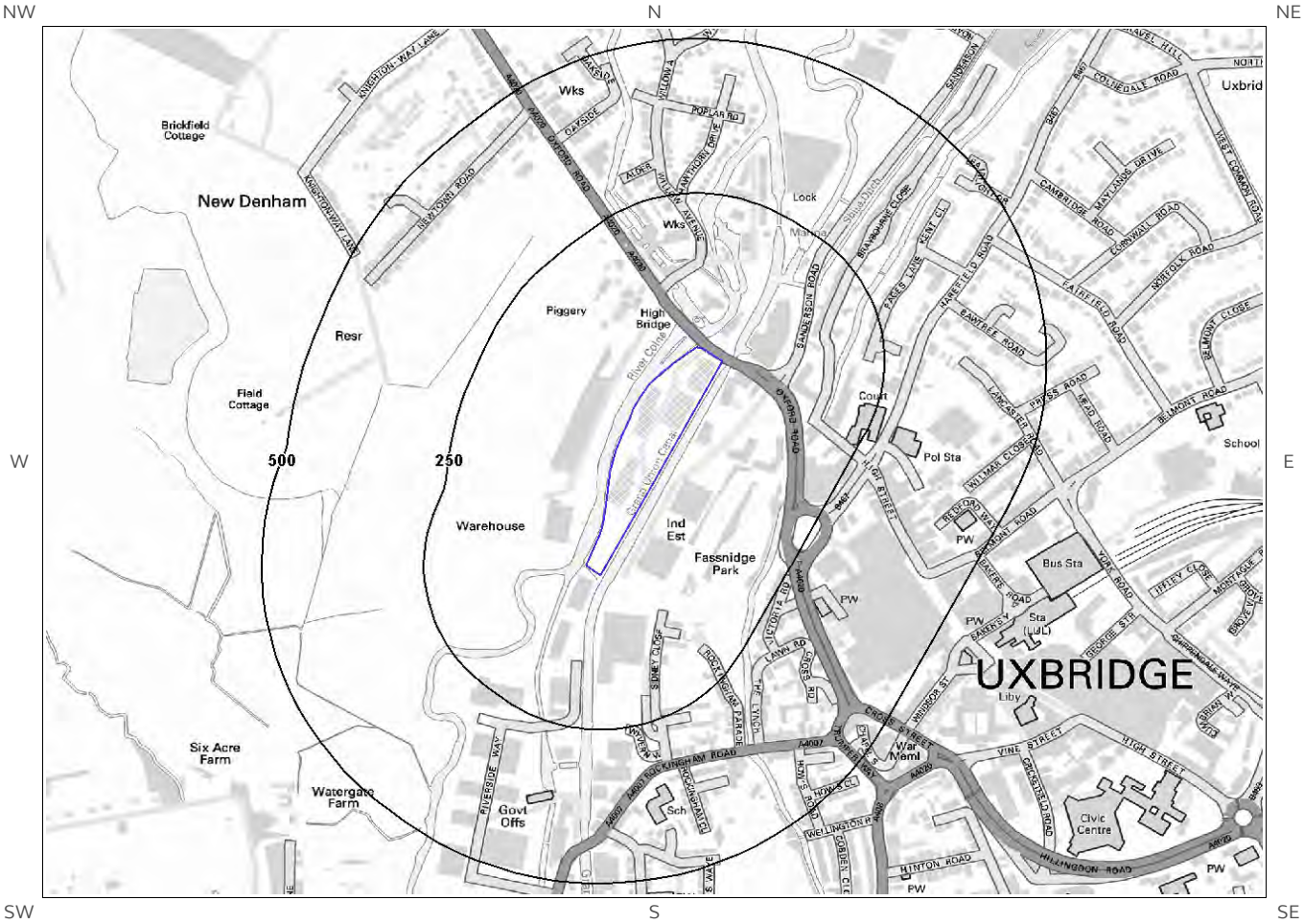


6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licenses



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Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2 - Outer Catchment

Source Protection Zone 3 - Total Catchment

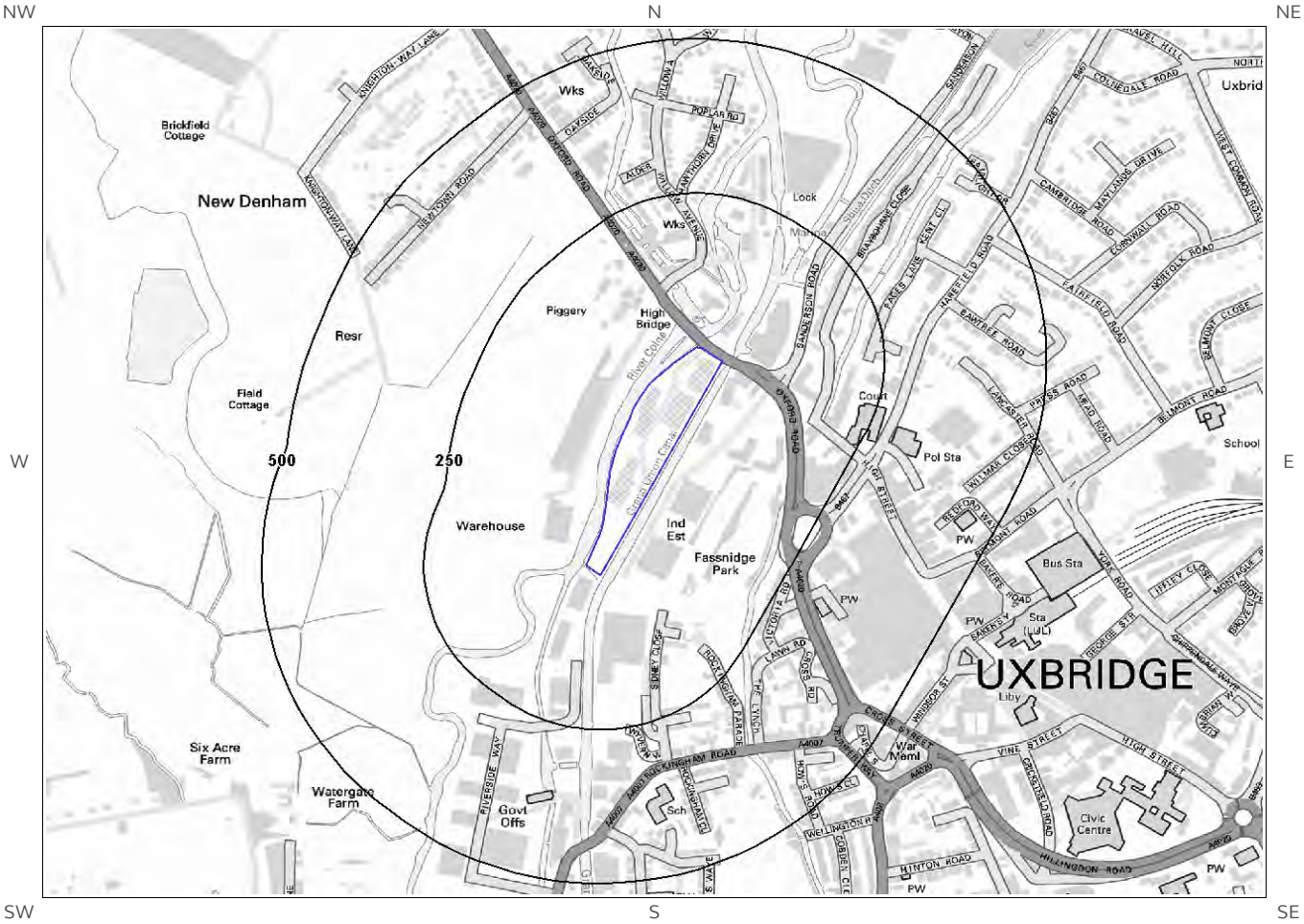
Source Protection Zone 4 - Zone of Special Interest

Potable Water Abstraction Licence

Site Outline

250
500
Search Buffers (m)

6d. Hydrogeology – Source Protection Zones within confined aquifer



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Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

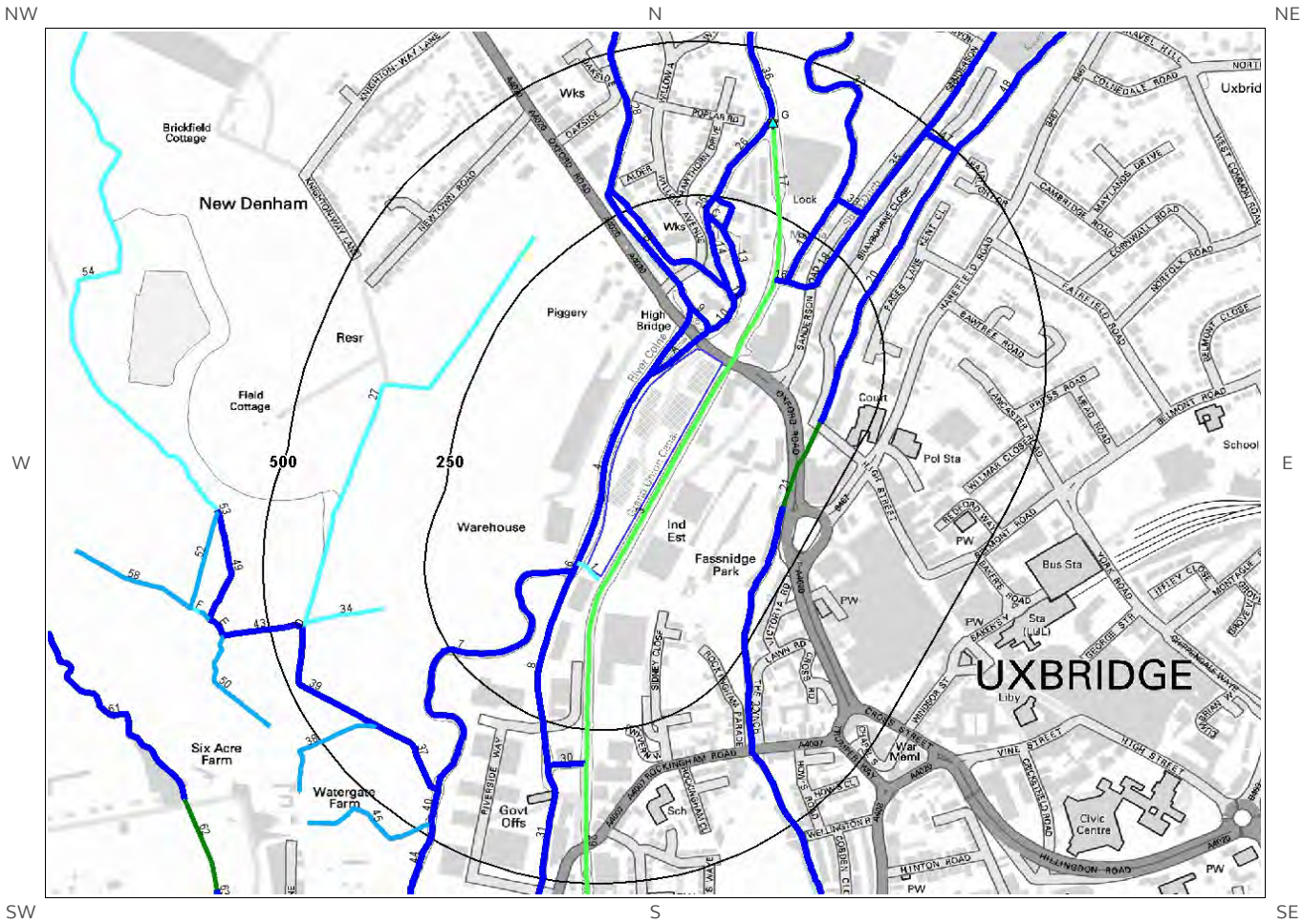
Source Protection Zone 3C - Total Catchment within Confined Aquifer

Site Outline

250
500
Search Buffers (m)

Potable Water Abstraction Licence

6e. Hydrology – Detailed River Network and River Quality



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Primary River
Secondary River
Tertiary River
Lake/Reservoir
Underground River (inferred)
General Quality Assessment: Biology
General Quality Assessment: Chemistry
Canal
Canal Tunnel
Culvert
Multiple Channel Culvert
Underground River (Potential Sewer)
Underground River (local knowledge)
Site Outline
250
500
Search Buffers (m)

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
5	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
6	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
1	181	SE	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
7	396	N	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
8	411	N	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	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	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
5	204	E	Unproductive	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow

ID	Distance (m)	Direction	Designation	Description
3	396	N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	411	N	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	420	S	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? Yes

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

ID	Distance (m)	Direction	NGR	Details	
8A	523	NE	505350 185070	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: Thames Groundwater Point: Borehole A At 100 Acres, Denham, Bucks. Data Type: Point Name: HARBOUR PROPERTIES LIMITED	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 8/11/1965 Expiry Date: - Issue No: 101 Version Start Date: 1/1/2002 Version End Date:
9A	523	NE	505350 185070	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: Thames Groundwater Point: 100 Acres, Denham, Bucks- Borehole A Data Type: Point Name: ARLINGTON BUSINESS PARKS GP LTD	Annual Volume (m^3): 454600 Max Daily Volume (m^3): 1637 Original Application No: - Original Start Date: 8/11/1965 Expiry Date: - Issue No: 102 Version Start Date: 8/9/2003 Version End Date:
10B	572	NE	505400 185100	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: Thames Groundwater Point: Borehole A At 100 Acres Data Type: Point Name: A SANDERSON AND SONS LIMITED	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 8/11/1965 Expiry Date: - Issue No: 100 Version Start Date: 8/11/1965 Version End Date:
11B	572	NE	505400 185100	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: Thames Groundwater Point: Borehole B At 100acres Data Type: Point Name: A SANDERSON AND SONS LIMITED	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 8/11/1965 Expiry Date: - Issue No: 100 Version Start Date: 8/11/1965 Version End Date:
12B	572	NE	505400 185100	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: Thames Groundwater Point: Borehole C At 100 Acres Data Type: Point Name: A SANDERSON AND SONS LIMITED	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 8/11/1965 Expiry Date: - Issue No: 100 Version Start Date: 8/11/1965 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	599	NE	505360 185150	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: Thames Groundwater Point: Borehole C At 100 Acres, Denham, Bucks. Data Type: Point Name: HARBOUR PROPERTIES LIMITED	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 8/11/1965 Expiry Date: - Issue No: 101 Version Start Date: 1/1/2002 Version End Date:
Not shown	599	NE	505360 185150	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: Thames Groundwater Point: 100 Acres, Denham, Bucks- Borehole C Data Type: Point Name: ARLINGTON BUSINESS PARKS GP LTD	Annual Volume (m^3): 454600 Max Daily Volume (m^3): 1637 Original Application No: - Original Start Date: 8/11/1965 Expiry Date: - Issue No: 102 Version Start Date: 8/9/2003 Version End Date:
15C	644	NW	504700 185100	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: Thames Groundwater Point: Well 'a' At New Denham Data Type: Point Name: B T SMITH & SON	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date:
16C	644	NW	504700 185100	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Well 'a' At New Denham Data Type: Point Name: B T SMITH & SON	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date:
Not shown	648	NE	505410 185180	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: Thames Groundwater Point: 100 Acres, Denham, Bucks- Borehole B Data Type: Point Name: ARLINGTON BUSINESS PARKS GP LTD	Annual Volume (m^3): 454600 Max Daily Volume (m^3): 1637 Original Application No: - Original Start Date: 8/11/1965 Expiry Date: - Issue No: 102 Version Start Date: 8/9/2003 Version End Date:
Not shown	648	NE	505410 185180	Status: Historical Licence No: 28/39/28/0010 Details: General Washing/Process Washing Direct Source: Thames Groundwater Point: Borehole B At 100 Acres, Denham, Bucks Data Type: Point Name: HARBOUR PROPERTIES LIMITED	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 8/11/1965 Expiry Date: - Issue No: 101 Version Start Date: 1/1/2002 Version End Date:
Not shown	672	NW	504720 185150	Status: Active Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: Thames Groundwater Point: Smiths Nurseries, Denham- Well A Data Type: Point Name: SMITHS NURSERIES LIMITED	Annual Volume (m^3): 9819 Max Daily Volume (m^3): 54.6 Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 101 Version Start Date: 1/4/2008 Version End Date:
Not shown	672	NW	504720 185150	Status: Active Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Smiths Nurseries, Denham- Well A Data Type: Point Name: SMITHS NURSERIES LIMITED	Annual Volume (m^3): 9819 Max Daily Volume (m^3): 54.6 Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 101 Version Start Date: 1/4/2008 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
21D	685	NW	504460 184910	Status: Active Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Smiths Nurseries, Denham- Well C Data Type: Point Name: SMITHS NURSERIES LIMITED	Annual Volume (m^3): 9819 Max Daily Volume (m^3): 54.6 Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 101 Version Start Date: 1/4/2008 Version End Date:
22D	685	NW	504460 184910	Status: Active Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: Thames Groundwater Point: Smiths Nurseries, Denham- Well C Data Type: Point Name: SMITHS NURSERIES LIMITED	Annual Volume (m^3): 9819 Max Daily Volume (m^3): 54.6 Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 101 Version Start Date: 1/4/2008 Version End Date:
23E	730	NW	504400 184900	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: Thames Groundwater Point: Well 'c' At New Denham Data Type: Point Name: B T SMITH & SON	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date:
24E	730	NW	504400 184900	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Well 'c' At New Denham Data Type: Point Name: B T SMITH & SON	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date:
25	772	W	504263 184702	Status: Active Licence No: TH/039/0028/035 Details: Mineral Washing Direct Source: Thames Groundwater Point: Lagoon At New Denham Quarry, Buckinghamshire Data Type: Point Name: SUMMERLEAZE LIMITED	Annual Volume (m^3): 742500 Max Daily Volume (m^3): 2600 Original Application No: NPS/WR/012708 Original Start Date: 1/4/2014 Expiry Date: 31/3/2026 Issue No: 1 Version Start Date: 1/4/2014 Version End Date:
26F	774	NW	504500 185100	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Well 'b' At New Denham Data Type: Point Name: B T SMITH & SON	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date:
27F	774	NW	504500 185100	Status: Historical Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: Thames Groundwater Point: Well 'b' At New Denham Data Type: Point Name: B T SMITH & SON	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 100 Version Start Date: 10/12/1993 Version End Date:
28F	775	NW	504520 185120	Status: Active Licence No: 28/39/28/0132 Details: Spray Irrigation - Spray Irrigation Definition Order Direct Source: Thames Groundwater Point: Smiths Nurseries, Denham- Well B Data Type: Point Name: SMITHS NURSERIES LIMITED	Annual Volume (m^3): 9819 Max Daily Volume (m^3): 54.6 Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 101 Version Start Date: 1/4/2008 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
29F	775	NW	504520 185120	Status: Active Licence No: 28/39/28/0132 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Smiths Nurseries, Denham- Well B Data Type: Point Name: SMITHS NURSERIES LIMITED	Annual Volume (m^3): 9819 Max Daily Volume (m^3): 54.6 Original Application No: - Original Start Date: 5/9/1966 Expiry Date: - Issue No: 101 Version Start Date: 1/4/2008 Version End Date:
30	777	W	504250 184680	Status: Historical Licence No: 28/39/28/0610 Details: Mineral Washing Direct Source: Thames Groundwater Point: Summerleaze New Denham Quarry, Buckinghamshire Data Type: Point Name: SUMMERLEAZE LIMITED	Annual Volume (m^3): 742500 Max Daily Volume (m^3): 2600 Original Application No: GEN/28/252 Original Start Date: 26/10/2007 Expiry Date: 31/3/2014 Issue No: 1 Version Start Date: 26/10/2007 Version End Date:
Not shown	1451	SW	503700 183500	Status: Historical Licence No: 28/39/28/0080 Details: General Farming & Domestic Direct Source: Thames Groundwater Point: Well At Iver Heath, Slough Data Type: Point Name: JONES	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 4/4/1966 Expiry Date: - Issue No: 100 Version Start Date: 25/6/1986 Version End Date:
Not shown	1496	N	505100 186100	Status: Historical Licence No: 28/39/28/0230 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Well At The Lea, Western Avenue, Denham Data Type: Point Name: ANOOPAM MISSION LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 12/12/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/6/1979 Version End Date:
Not shown	1501	NW	503658 185145	Status: Active Licence No: 28/39/28/0593/R01 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Kingcup Farm, Denham-borehole Data Type: Point Name: Mr Intisar Hussain and Mrs Attiya Hussain	Annual Volume (m^3): 7500 Max Daily Volume (m^3): 200 Original Application No: NPS/WR/009972 Original Start Date: 1/4/2014 Expiry Date: 31/3/2026 Issue No: 2 Version Start Date: 16/10/2014 Version End Date:
Not shown	1506	NW	503660 185160	Status: Historical Licence No: 28/39/28/0533 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Borehole At Kingcup Farm, Denham Data Type: Point Name: CLARKE	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: WRA/6359 Original Start Date: 10/2/1997 Expiry Date: 31/12/2004 Issue No: 100 Version Start Date: 10/2/1997 Version End Date:
Not shown	1511	NW	503650 185150	Status: Historical Licence No: 28/39/28/0593 Details: Spray Irrigation - Direct Direct Source: Thames Groundwater Point: Kingcup Farm, Denham-borehole Data Type: Point Name: Mr Intisar Hussain and Mrs Attiya Hussain	Annual Volume (m^3): 7500 Max Daily Volume (m^3): 200 Original Application No: NPS/WR/009461 Original Start Date: 14/2/2005 Expiry Date: 31/3/2014 Issue No: 3 Version Start Date: 25/2/2012 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1541	S	504800 182700	Status: Historical Licence No: 28/39/28/0444 Details: Process water Direct Source: Thames Groundwater Point: Borehole A & B At Iver Lane, Uxbridge Data Type: Point Name: CAPE BUILDING PRODUCTS LIMITED	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 9/5/1979 Expiry Date: - Issue No: 100 Version Start Date: 17/5/1989 Version End Date:
Not shown	1601	S	504500 182700	Status: Historical Licence No: 28/39/28/0444 Details: Process water Direct Source: Thames Groundwater Point: Wet Gravel Pit At Iver Lane, Uxbridge Data Type: Point Name: CAPE BUILDING PRODUCTS LIMITED	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 9/5/1979 Expiry Date: - Issue No: 100 Version Start Date: 17/5/1989 Version End Date:

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? Yes

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

ID	Distance (m)	Direction	NGR	Details	
38	757	W	504000 184200	Status: Active Licence No: 28/39/28/0079 Details: Spray Irrigation - Direct Direct Source: Thames Surface Water - Non Tidal Point: Reach A-b On River Alderbourne At Mansfield Farm, Iver Heath Data Type: Line Name: JONES	Annual Volume (m^3): 6819 Max Daily Volume (m^3): 205 Application No: - Original Start Date: 4/4/1966 Expiry Date: - Issue No: 100 Version Start Date: 25/6/1986 Version End Date:
Not shown	1127	SW	504100 183500	Status: Active Licence No: 28/39/28/0079 Details: Spray Irrigation - Direct Direct Source: Thames Surface Water - Non Tidal Point: Reach C-d On River Alderbourne At Mansfield Farm, Iver Heath Data Type: Line Name: JONES	Annual Volume (m^3): 6819 Max Daily Volume (m^3): 205 Application No: - Original Start Date: 4/4/1966 Expiry Date: - Issue No: 100 Version Start Date: 25/6/1986 Version End Date:

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site? Yes

The following Potable Water Abstraction Licences records are represented as points, lines and regions on the SPZ and Potable Water Abstraction Licences Map (6c):

ID	Distance (m)	Direction	NGR	Details	
Not shown	1496	N	505100 186100	Status: Historical Licence No: 28/39/28/0230 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Thames Groundwater Point: Well At The Lea, Western Avenue, Denham Data Type: Point Name: ANOOPAM MISSION LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 12/12/1966 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:

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
0	On Site	Major Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
0	On Site	Major Aquifer/High Leaching Potential	H1	Soils which readily transmit liquid discharges because they are shallow or susceptible to rapid flow directly to rock, gravel or groundwater.

6.9 River Quality

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
76G	384	N	505230 184970	River Name: Grand Union Canal (cowley Reach) Reach: Source - Iron Bridge End/Start of Stretch: Start of Stretch NGR	C	C	C	E	E
Not shown	867	SW	504500 183500	River Name: Colne Reach: Misbourne - Uxbridge End/Start of Stretch: Start of Stretch NGR	B	B	B	B	B
Not shown	910	N	505270 185500	River Name: Grand Union Canal (denham Reach) Reach: Source - New Denham Stream End/Start of Stretch: End of Stretch NGR	C	C	C	C	B
Not shown	1456	N	505280 186050	River Name: Colne Reach: Guc (harefield Reach) - Misbourne End/Start of Stretch: End of Stretch NGR	B	B	B	B	C

6.9.2 Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAHI). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

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

					Chemical Quality Grade				
ID	Distance (m)	Direction	NGR	River Quality Grade	2005	2006	2007	2008	2009
80G	384	N	505230 184970	River Name: Guc (cowley Reach) Reach: Source - Iron Bridge End/Start of Stretch: Start of Stretch NGR	C	C	D	D	D
Not shown	801	SW	504580 183530	River Name: Colne Brook Reach: Uxbridge Moor - Thames End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
Not shown	1456	N	505280 186050	River Name: Colne Reach: Guc (harefield Reach) - Misbourne End/Start of Stretch: End of Stretch NGR	B	C	C	C	B

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	1	SW	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
2A	7	NW	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
3	9	SE	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: -	River Type: Canal Main River Status: Currently Undefined
4	10	NW	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
5A	12	NW	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
6	16	NW	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
7	22	W	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
8	22	W	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
9	33	NE	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
10	33	NE	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
11B	67	N	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
12	97	NE	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
13	97	NE	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
14	109	NE	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
15B	109	NE	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
16	157	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
17	157	NE	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: -	River Type: Canal Main River Status: Currently Undefined
18	165	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
19	165	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
20	176	E	River Name: Fray's River Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
21	179	SE	River Name: Fray's River Welsh River Name: - Alternative Name: -	River Type: Culvert Main River Status: Currently Undefined
22	194	SE	River Name: Fray's River Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
23C	197	N	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
24C	197	N	River Name: - Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
25	219	N	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
26	248	N	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
27	280	NW	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
28	290	NW	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
29	305	S	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: -	River Type: Canal Main River Status: Currently Undefined
30	305	S	River Name: - Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
31	318	S	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
32	320	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
33	320	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
34	322	W	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
35	326	NE	River Name: Shire Ditch Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
36	393	N	River Name: Grand Union Canal Regent's Canal Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
37	395	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
38	415	SW	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
39	415	SW	River Name: - Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
40	429	SW	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
41D	444	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Tertiary River Main River Status: Currently Undefined
42D	448	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined
43	450	W	River Name: - Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
44	480	SW	River Name: River Colne Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
45	480	SW	River Name: Drain Welsh River Name: - Alternative Name: -	River Type: Secondary River Main River Status: Currently Undefined

ID	Distance (m)	Direction	Details	
46	489	NE	River Name: Shire Ditch Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
47	489	NE	River Name: - Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
48	499	NE	River Name: Fray's River Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined

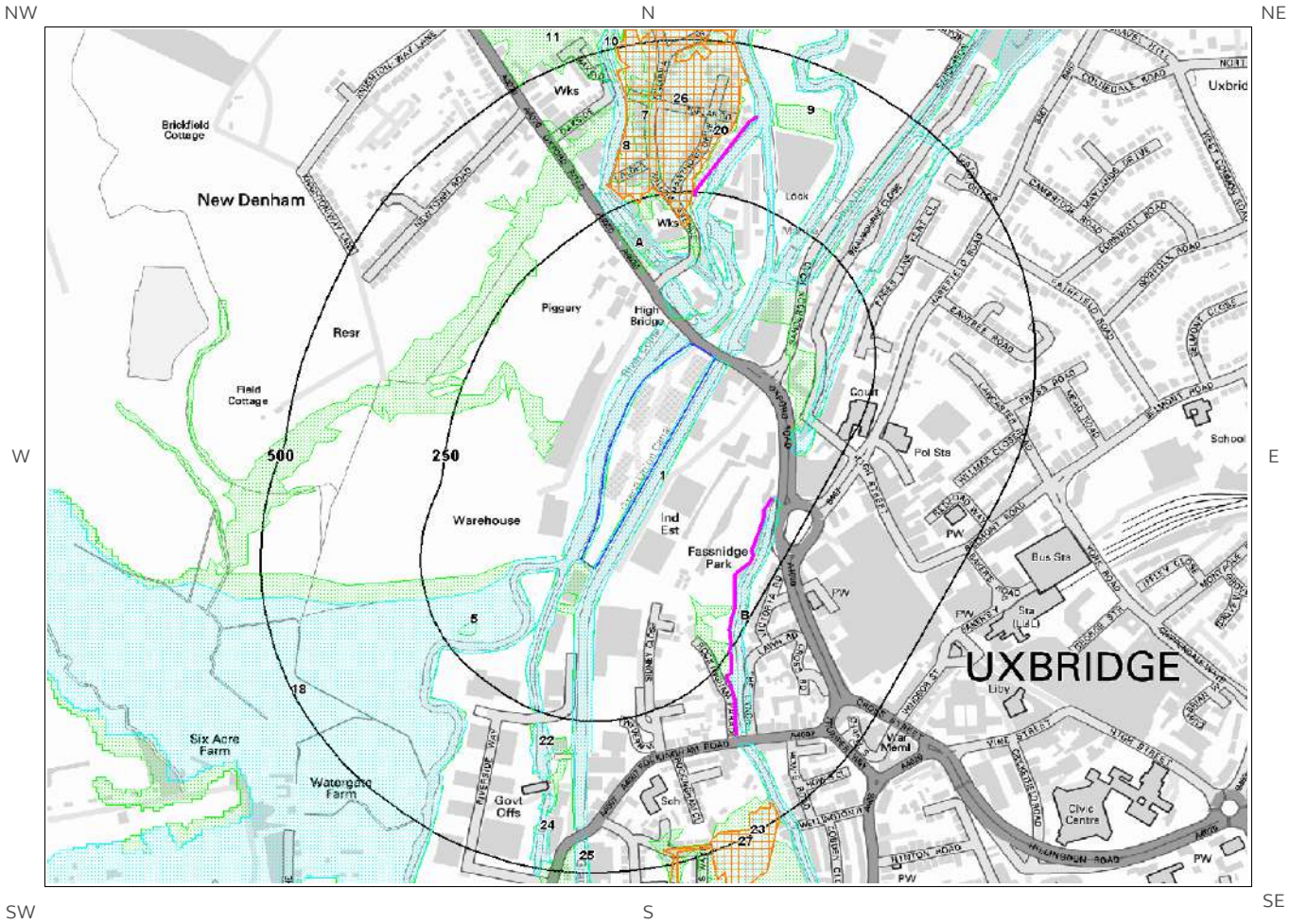
6.11 Surface Water Features

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
0	NW
2	SW
3	SE
19	NE
20	NE
143	N
145	NW
172	E
189	SE
192	NE
195	NW
212	NW

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



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Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

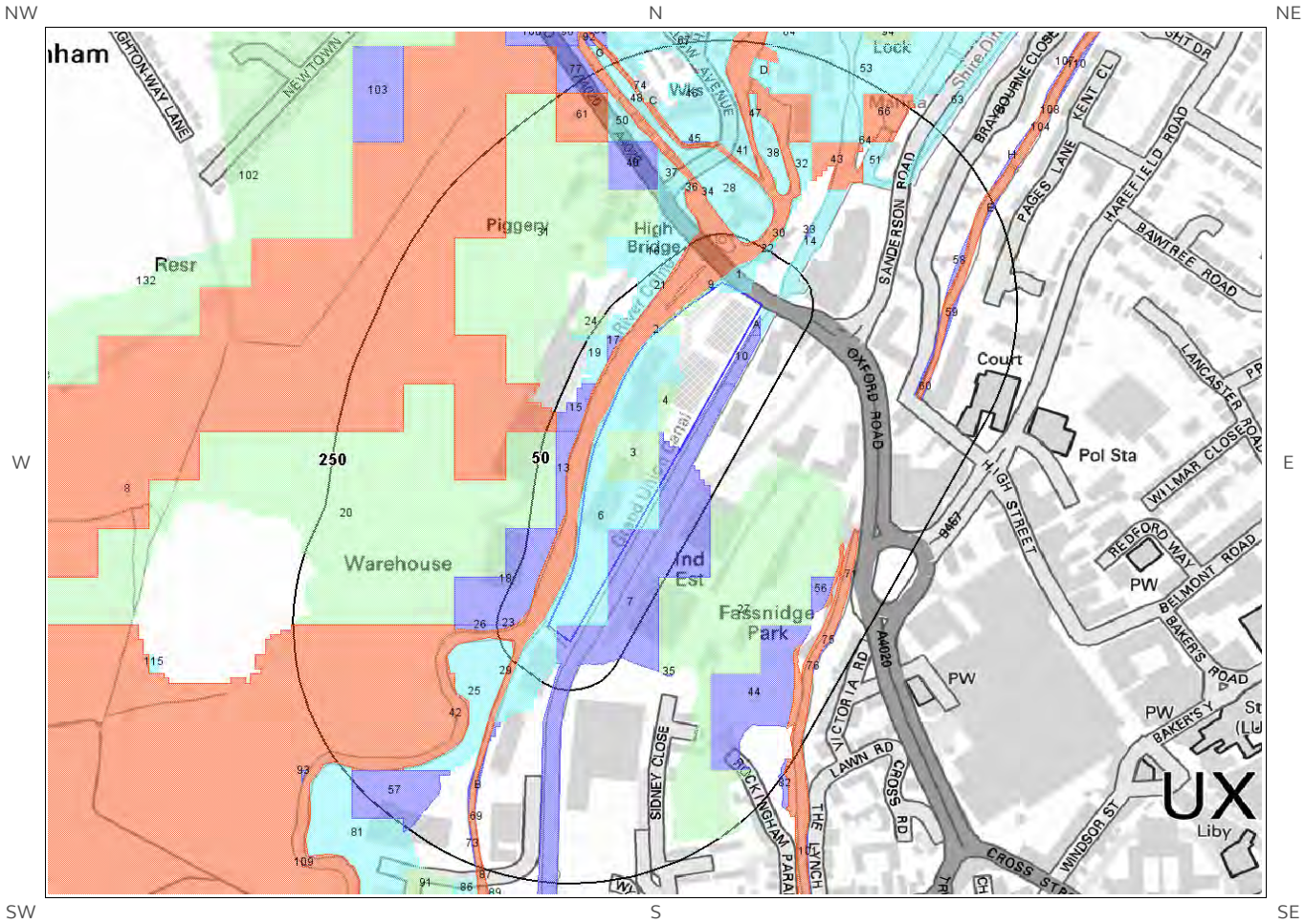
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

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



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Site Outline

100
250
Search Buffers (m)

RoFRaS Rating

Very Low

Low

Medium

High

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	12-May-2017	Zone 2 - (Fluvial /Tidal Models)
2A	140	NW	12-May-2017	Zone 2 - (Fluvial /Tidal Models)
3B	151	SE	12-May-2017	Zone 2 - (Fluvial /Tidal Models)
4A	163	NW	12-May-2017	Zone 2 - (Fluvial /Tidal Models)
5	190	SW	12-May-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	0	On Site	15-May-2017	Zone 3 - (Fluvial Models)
2A	0	On Site	15-May-2017	Zone 3 - (Fluvial Models)
3B	16	NE	15-May-2017	Zone 3 - (Fluvial Models)
4A	183	SE	15-May-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? High

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 High (1 in 30 or greater) 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	0.0	On Site	Low
3	0.0	On Site	Very Low
4	0.0	On Site	Very Low
5	0.0	On Site	Very Low
6	0.0	On Site	Low
7	0.0	On Site	Medium
8	0.0	NW	High
9	1.0	NW	Medium
10	2.0	SE	Medium
11A	3.0	SE	Medium
12A	4.0	SE	Low
13	15.0	W	Medium
14	18.0	NE	Low
15	20.0	W	Medium
16	21.0	NW	Low
17	22.0	NW	Medium
18	22.0	W	Medium
19	22.0	NW	Low
20	23.0	W	Very Low
21	31.0	NW	Medium
22	35.0	NE	Low
23	35.0	W	Medium
24	36.0	NW	Very Low
25	38.0	SW	Low
26	42.0	W	Medium
27	43.0	SE	Very Low
28	46.0	NE	Low

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? Yes

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

ID	Distance (m)	Direction	Update
28	185	SE	12-May-2017
29	241	N	12-May-2017

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? Yes

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? Yes

Does this relate to Clearwater Flooding or Superficial Deposits Flooding? Superficial Deposits Flooding

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

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

Potential at Surface

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

7.8 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result?	Moderate

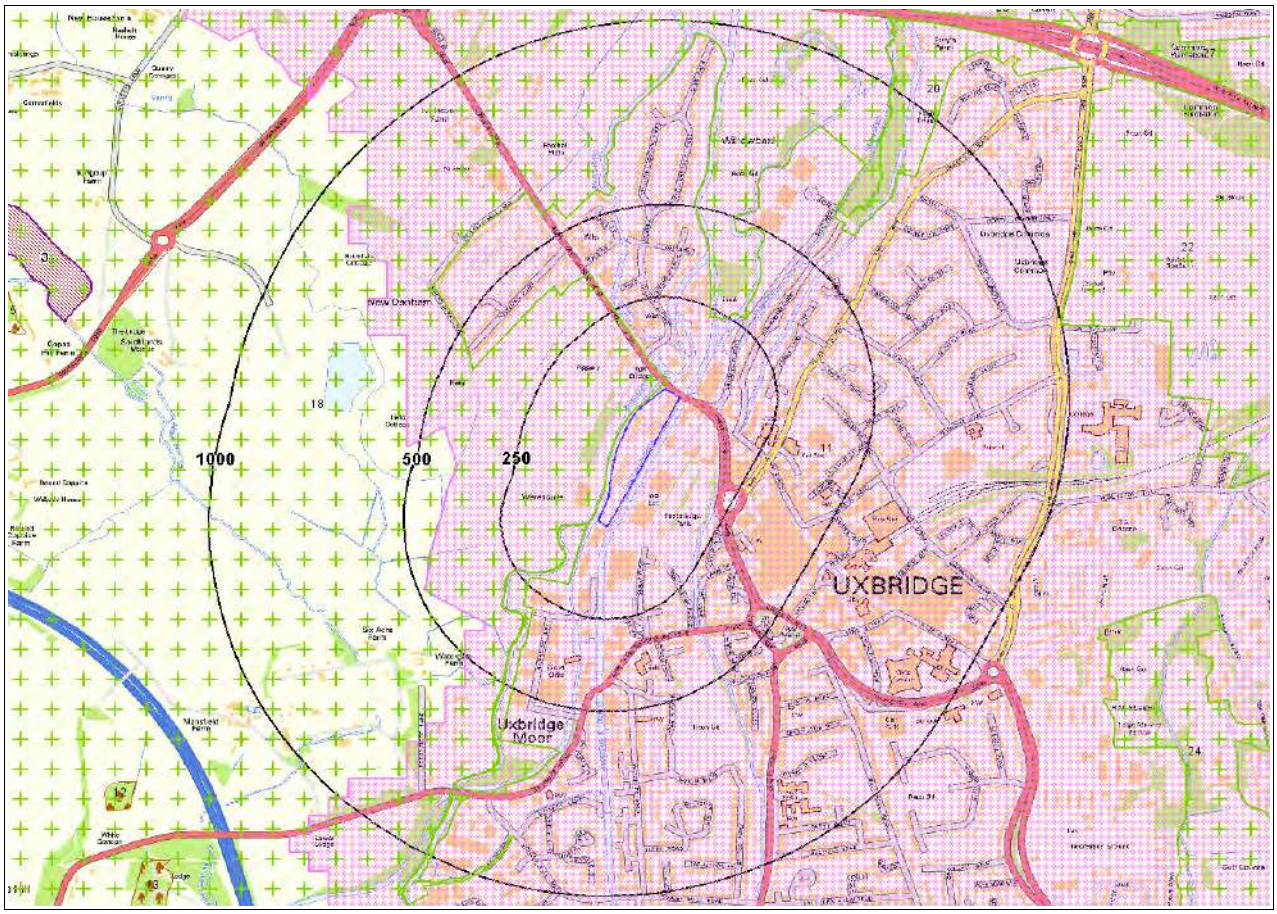
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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

8. Designated Environmentally Sensitive Sites Map

NW N NE

W E



SW S SE

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Site Outline

100 250 Search Buffers (m)

AONB
National Park
SSSI
Special Protection Areas
Nitrate Vulnerable Zones

Green Belt
Environmentally Sensitive Areas
Special Areas of Conservation
World Heritage Sites
Nitrate Sensitive Areas

Ancient Woodland
National Nature Reserve
Local Nature Reserves
Ramsar Sites

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:

5

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
Not shown	1169	N	Fray's Farm Meadows	Natural England
Not shown	1262	NE	Fray's Farm Meadows	Natural England
3	1417	W	Kingcup Meadows and Oldhouse Wood	Natural England
Not shown	1589	N	Denham Lock Wood	Natural England
Not shown	1802	W	Kingcup Meadows and Oldhouse Wood	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:

6

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
12	1382	SW	UNKNOWN	Ancient and Semi-Natural Woodland
13	1433	SW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1532	W	UNKNOWN	Ancient and Semi-Natural Woodland
15	1550	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1618	W	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1891	NE	UNKNOWN	Ancient and Semi-Natural Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

5

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
Not shown	1169	N	Frays Valley	Natural England
7	1195	NE	Frays Valley	Natural England
Not shown	1468	N	Denham Quarry Park	Natural England
Not shown	1472	N	Denham Country Park	Natural England
Not shown	1776	N	Denham Quarry 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:

1

The following Nitrate Vulnerable Zone records produced by DEFRA are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	NVZ Name	Data Source
11	0	On Site	Existing	DEFRA

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

13

Green Belt data contains Ordnance Survey data © Crown copyright and database right [2015].

ID	Distance	Direction	Green Belt Name	Local Authority Name
18	6	NW	London Area Greenbelt	South Bucks District
19	32	W	London Area Greenbelt	Hillingdon London Borough
20	616	NE	London Area Greenbelt	Hillingdon London Borough
21	813	SW	London Area Greenbelt	Hillingdon London Borough
22	997	E	London Area Greenbelt	Hillingdon London Borough
23	1171	N	London Area Greenbelt	Hillingdon London Borough
24	1244	SE	London Area Greenbelt	Hillingdon London Borough
Not shown	1357	N	London Area Greenbelt	Hillingdon London Borough
Not shown	1381	SE	London Area Greenbelt	Hillingdon London Borough
27	1463	NE	London Area Greenbelt	Hillingdon London Borough
Not shown	1764	E	London Area Greenbelt	Hillingdon London Borough
Not shown	1916	SE	London Area Greenbelt	Hillingdon London Borough
Not shown	1949	S	London Area Greenbelt	Hillingdon London Borough

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? Moderate

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

Hazard
Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

9.1.5 Collapsible Rocks

What is the maximum Collapsible 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
No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. 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? Low

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

Hazard
Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property no significant increase in insurance risk due to running sand problems is likely.

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 in a Radon Affected Area, as between 1 and 3% 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

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info@groundsure.com

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Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
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Rotherham, S60 1BY
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Public Health England
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DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey
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SO16 0AS
Tel: 08456 050505

Local Authority
Authority: London Borough of Hillingdon
Phone: 01895 250 111
Web: http://www.hillingdon.gov.uk/
Address: Civic Centre, High Street, Uxbridge, Middlesex, UB8 1UW

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

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Waterman Infrastructure & Environment Limited

PICKFORDS WHARF WATERMAN GROUP,
CLINK STREET,
LONDON, SE1 9DG

Report Reference:	WTM1-3940280
Your Reference:	WIC15644-82957
Report Date	30 May 2017
Report Delivery Method:	Email - pdf

Groundsure Geo Insight

Address: XEROX UK LTD, BRIDGE HOUSE, OXFORD ROAD, UXBRIDGE, UB8 1HS

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 159 000, queries: info@groundsure.com quoting the above report reference number

Yours faithfully,

Waterman

Enc.
Groundsure Geo Insight

Groundsure Geo Insight

Address:	**XEROX UK LTD, BRIDGE HOUSE, OXFORD ROAD, UXBRIDGE, UB8 1HS**
Date:	**30 May 2017**
Reference:	**WTM1-3940280**
Client:	**Waterman Infrastructure & Environment Limited**

NW N NE

W E

SW S SE

Aerial Photograph Capture date:	07-Jun-2015
Grid Reference:	505035,184453
Site Size:	2.42ha

Contents Page

Contents Page ... 3
Overview of Findings ... 5
1:10,000 Scale Availability ... 8
Availability of 1:10,000 Scale Geology Mapping ... 9
1 Geology (1:10,000 scale) ... 10
1.1 Artificial Ground Map (1:10,000 scale) ... 10
1. Geology 1:10,000 scale ... 11
1.1 Artificial Ground ... 11
1.2 Superficial Deposits and Landslips Map (1:10,000 scale) ... 12
1.2 Superficial Deposits and Landslips ... 13
1.2.1 Superficial Deposits/ Drift Geology ... 13
1.2.2 Landslip ... 13
1.3 Bedrock and Faults Map (1:10,000 scale) ... 14
1.3 Bedrock and Faults ... 15
1.3.1 Bedrock/ Solid Geology ... 15
1.3.2 Faults ... 15
2 Geology 1:50,000 Scale ... 16
2.1 Artificial Ground Map ... 16
2. Geology 1:50,000 scale ... 17
2.1 Artificial Ground ... 17
2.1.1 Artificial/ Made Ground ... 17
2.1.2 Permeability of Artificial Ground ... 17
2.2 Superficial Deposits and Landslips Map (1:50,000 scale) ... 18
2.2 Superficial Deposits and Landslips ... 19
2.2.1 Superficial Deposits/ Drift Geology ... 19
2.2.2 Permeability of Superficial Ground ... 19
2.2.3 Landslip ... 19
2.2.4 Landslip Permeability ... 19
2.3 Bedrock and Faults Map (1:50,000 scale) ... 20
2.3 Bedrock, Solid Geology & Faults ... 21
2.3.1 Bedrock/Solid Geology ... 21
2.3.2 Permeability of Bedrock Ground ... 21
2.3.3 Faults ... 21
3 Radon Data ... 22
3.1 Radon Affected Areas ... 22
3.2 Radon Protection ... 22
4 Ground Workings Map ... 23
4 Ground Workings ... 24
4.1 Historical Surface Ground Working Features derived from Historical Mapping ... 24
4.2 Historical Underground Working Features derived from Historical Mapping ... 25
4.3 Current Ground Workings ... 25
5 Mining, Extraction & Natural Cavities ... 28
5.1 Historical Mining ... 28
5.2 Coal Mining ... 28
5.3 Johnson Poole and Bloomer ... 28
5.4 Non-Coal Mining ... 28
5.5 Non-Coal Mining Cavities ... 29
5.6 Natural Cavities ... 29
5.7 Brine Extraction ... 29
5.8 Gypsum Extraction ... 29
5.9 Tin Mining ... 30
5.10 Clay Mining ... 30
6 Natural Ground Subsidence ... 31
6.1 Shrink-Swell Clay Map ... 31
6.2 Landslides Map ... 32
6.3 Ground Dissolution of Soluble Rocks Map ... 33
6.4 Compressible Deposits Map ... 34
6.5 Collapsible Deposits Map ... 35
6.6 Running Sand Map ... 36

6 Natural Ground Subsidence..... 37
6.1 Shrink-Swell Clays..... 37
6.2 Landslides..... 38
6.3 Ground Dissolution of Soluble Rocks..... 38
6.4 Compressible Deposits..... 38
6.5 Collapsible Deposits..... 39
6.6 Running Sands..... 39
7 Borehole Records..... 41
8 Estimated Background Soil Chemistry..... 42
9 Railways and Tunnels Map..... 43
9 Railways and Tunnels..... 44
9.1 Tunnels..... 44
9.2 Historical Railway and Tunnel Features..... 44
9.3 Historical Railways..... 45
9.4 Active Railways..... 45
9.5 Railway Projects..... 46

Overview of Findings

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

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

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

Section 1: Geology 1:10,000 Scale		
1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslip 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?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslip 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	3.1Is 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 in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.
	3.2Radon 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	10	9	13	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	7

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	1	0	2
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	Moderate
6.5 Collapsible Deposits	Negligible
6.5 Running Sand	Low

Section 7: Borehole Records	On-site	0-50m	51-250
7 BGS Recorded Boreholes	8	0	5

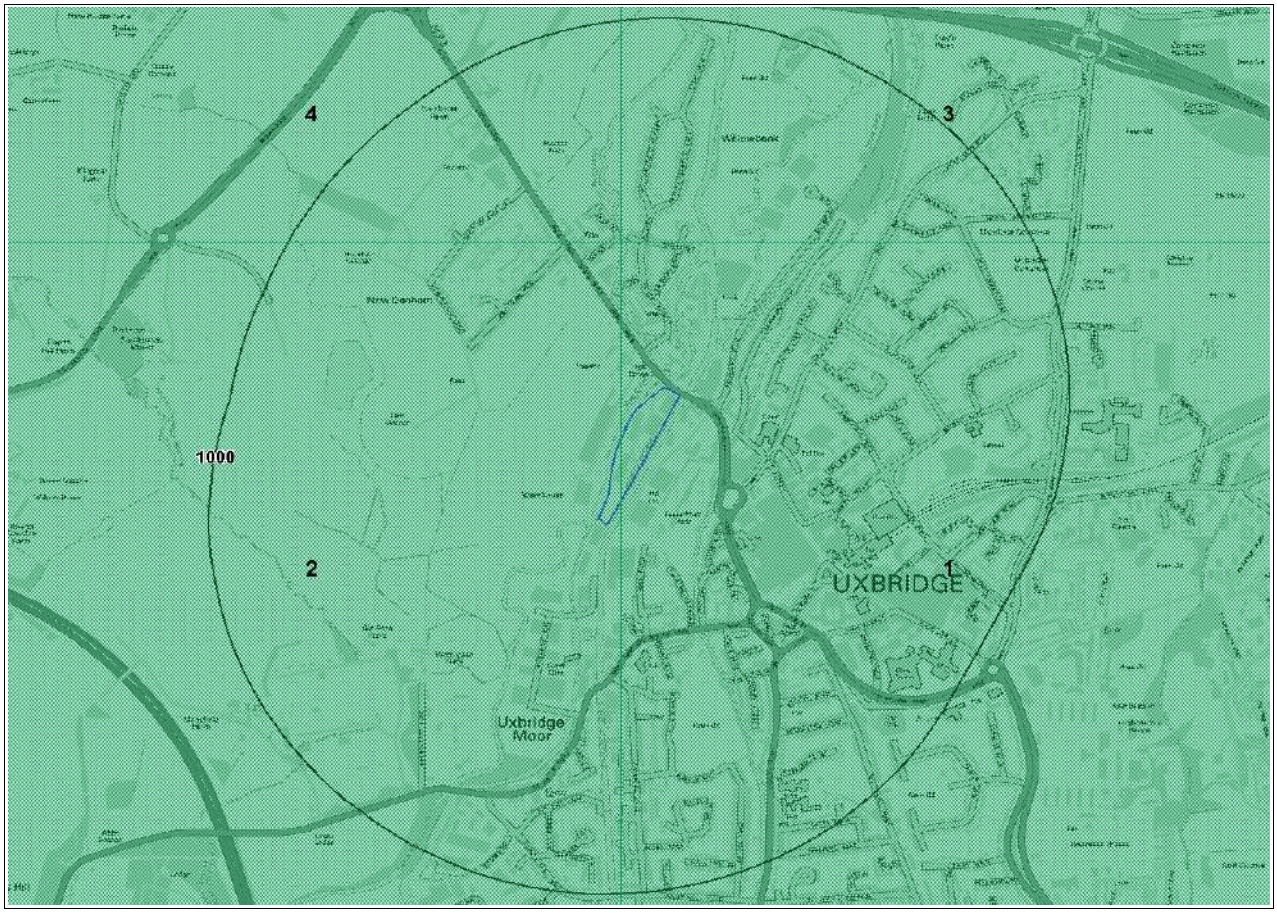
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250
8 Records of Background Soil Chemistry	4	2	0

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	11	Not Searched
9.3 Historical Railways	0	0	2	Not Searched
9.4 Active Railways	0	0	0	Not Searched
9.5 Railway Projects	0	0	0	0

1:10,000 Scale Availability

NW N NE

W E



SW S SE

1_10,000 Availability Legend

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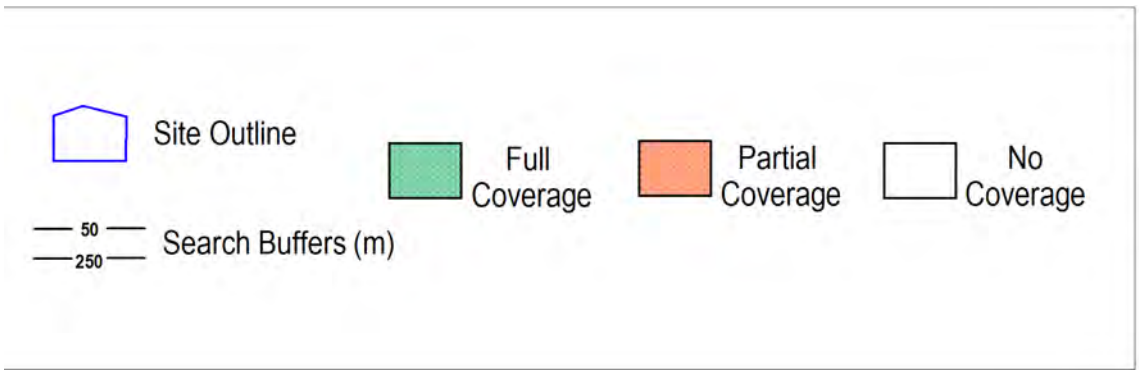


Availability of 1:10,000 Scale Geology Mapping

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	0.0	Some deposits are mapped	Full	Full	No coverage
3	396.0	Some deposits are mapped	Full	Full	No coverage
4	411.0	Some deposits are mapped	Full	Full	No coverage

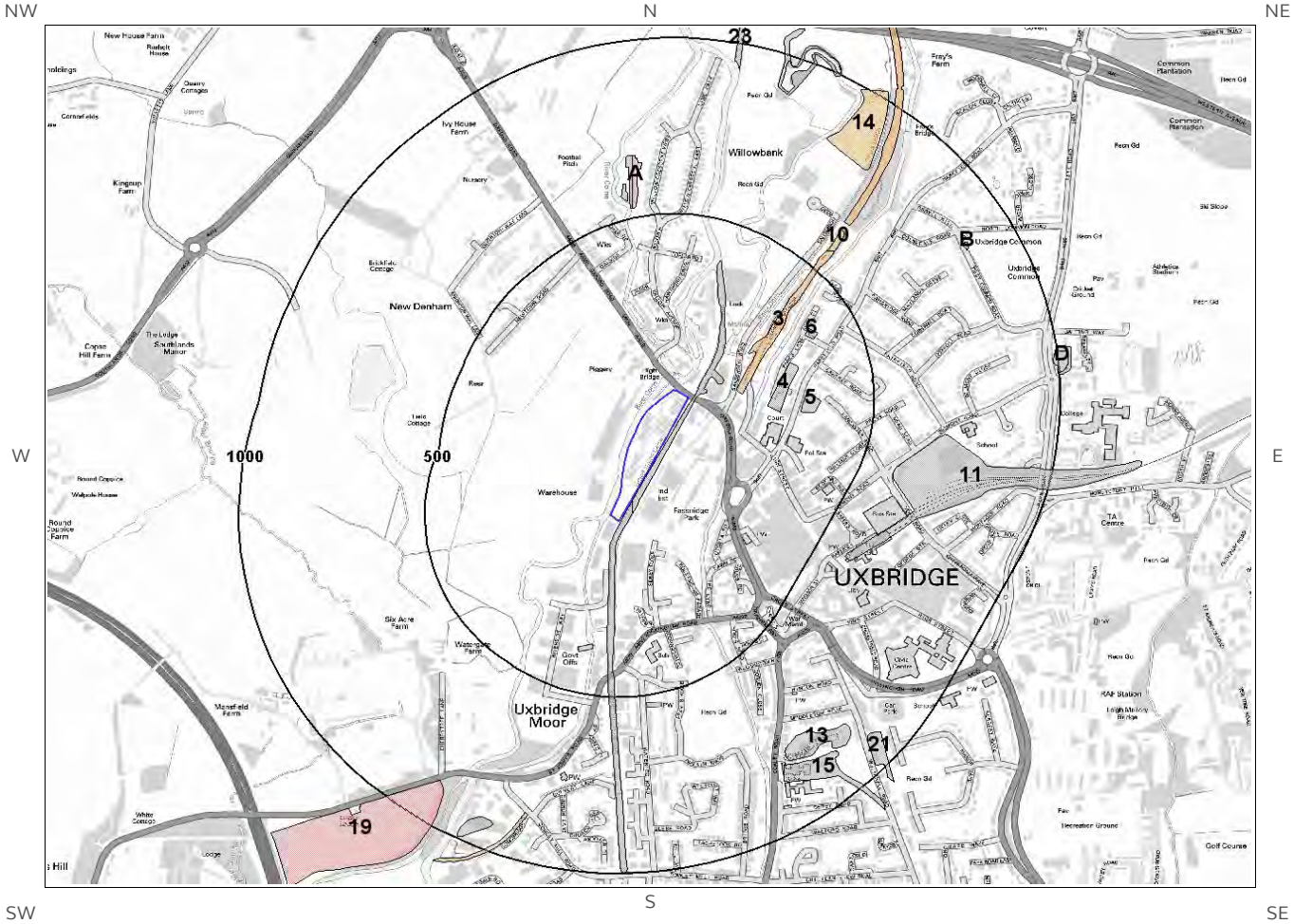
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not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

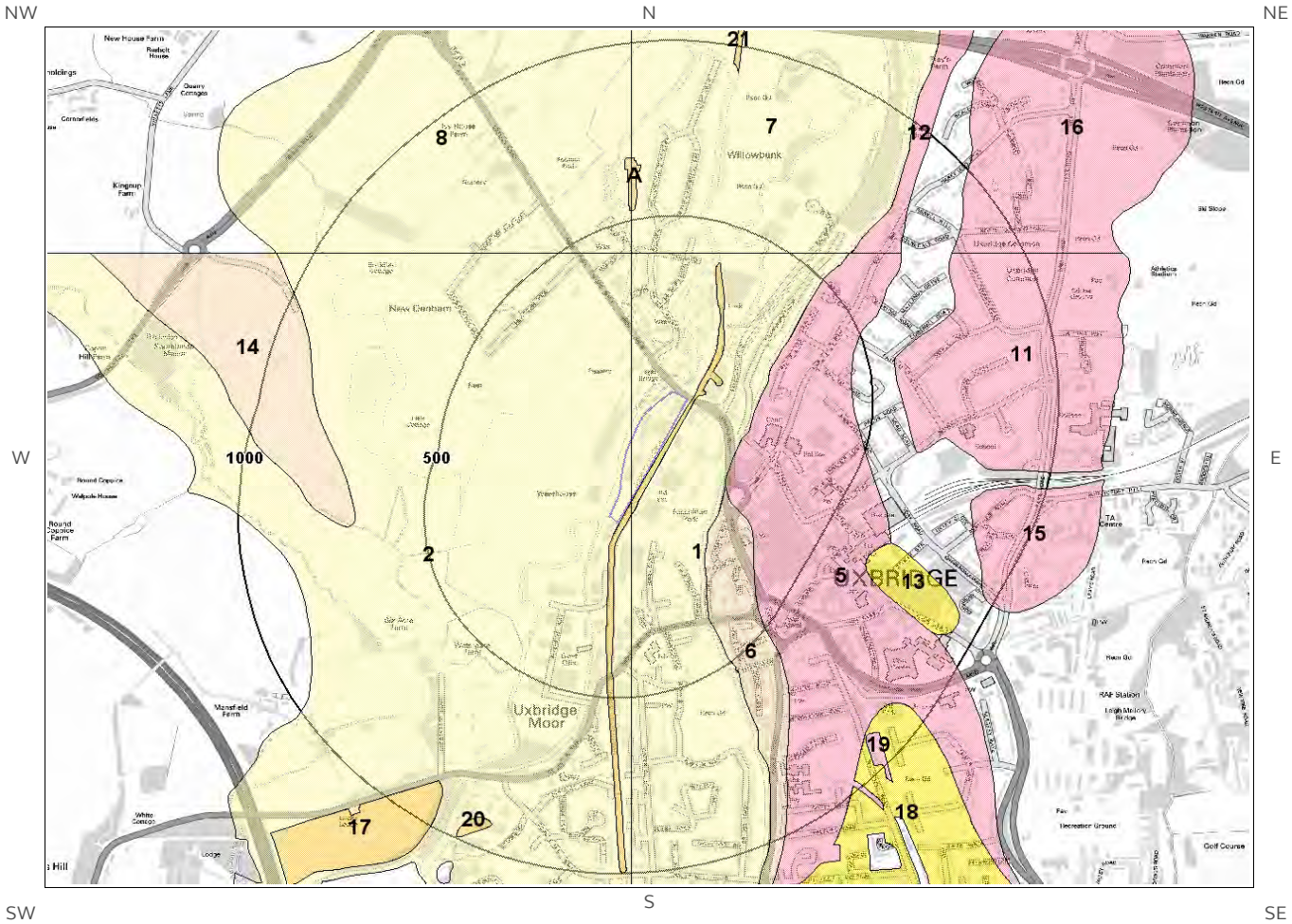
1.1 Artificial Ground

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	3.0	SE	WGR-VOID	Worked Ground (Undivided)	Void
2	3.0	SE	WGR-VOID	Worked Ground (Undivided)	Void
3	133.0	E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	214.0	E	WGR-VOID	Worked Ground (Undivided)	Void
5	304.0	E	WGR-VOID	Worked Ground (Undivided)	Void
6	361.0	NE	WGR-VOID	Worked Ground (Undivided)	Void

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



Artificial Ground Legend

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Site Outline

500
1000
Search Buffers (m)

1.2 Superficial Deposits and Landslips

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

1.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	ALV-XZC	Alluvium - Silt And Clay	Silt And Clay
2	0.0	On Site	ALV-XZC	Alluvium - Silt And Clay	Silt And Clay
3	3.0	SE	SHGR-XSV	Shepperton Gravel Member - Sand And Gravel	Sand And Gravel
4	3.0	SE	SHGR-XSV	Shepperton Gravel Member - Sand And Gravel	Sand And Gravel
5	181.0	SE	LHGR-V	Lynch Hill Gravel Member - Gravel (unlithified Deposits Coding Scheme)	Gravel
6	204.0	SE	TPGR-XSV	Taplow Gravel Formation - Sand And Gravel	Sand And Gravel
7	396.0	N	ALV-XZC	Alluvium - Silt And Clay	Silt And Clay
8	411.0	N	ALV-XZC	Alluvium - Silt And Clay	Silt And Clay

1.2.2 Landslip

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

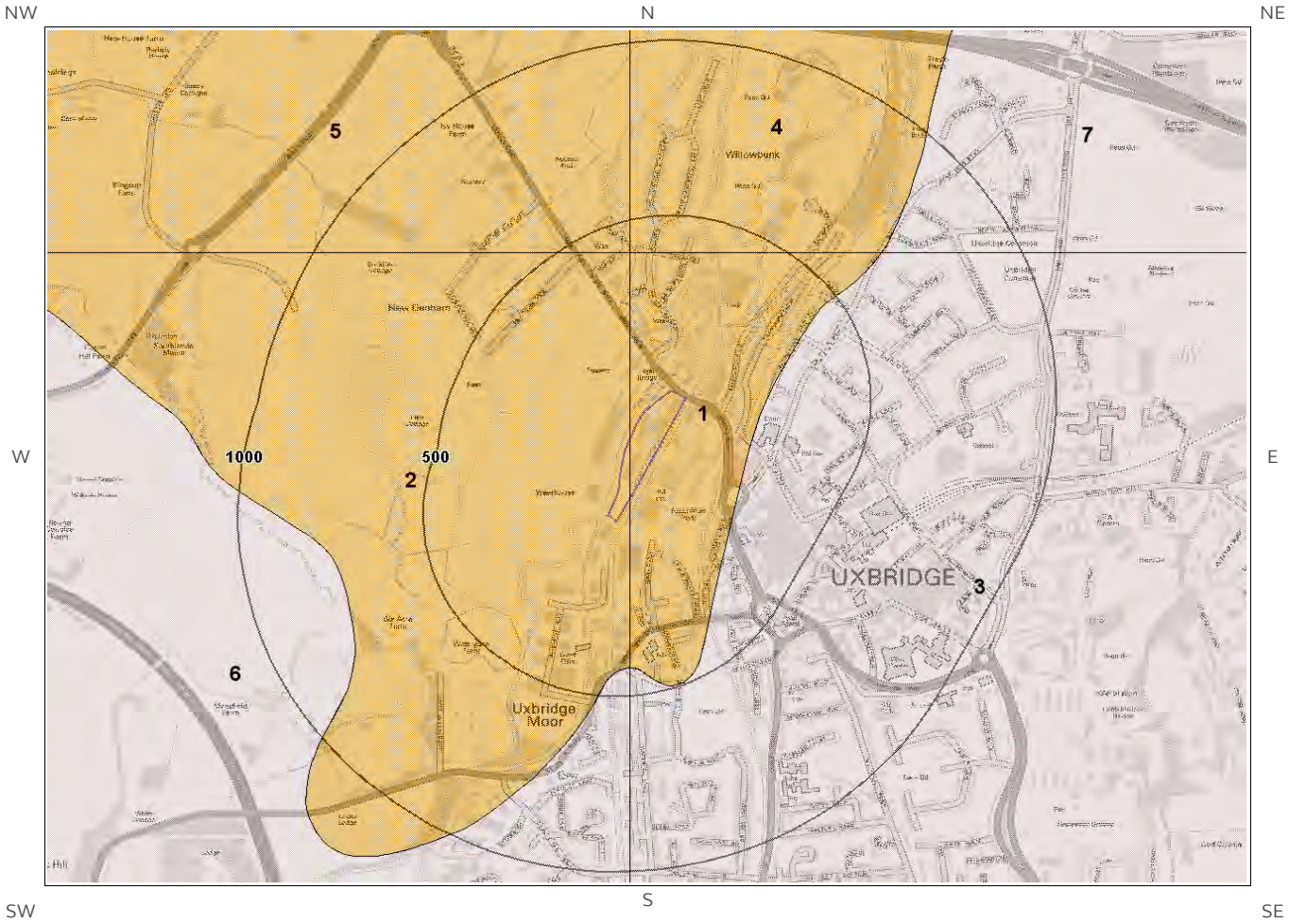
No

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

500
1000
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	LMBE-CLSISA	Lambeth Group - Clay, Silt And Sand	Paleocene Epoch
2	0.0	On Site	LMBE-CLSISA	Lambeth Group - Clay, Silt And Sand	Paleocene Epoch
3	204.0	E	LC-CLSISA	London Clay Formation - Clay, Silt And Sand	Eocene Epoch
4	396.0	N	LMBE-CLSISA	Lambeth Group - Clay, Silt And Sand	Paleocene Epoch
5	411.0	N	LMBE-CLSISA	Lambeth Group - Clay, Silt And Sand	Paleocene Epoch
6	420.0	S	LC-CLSISA	London Clay Formation - Clay, Silt And Sand	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.

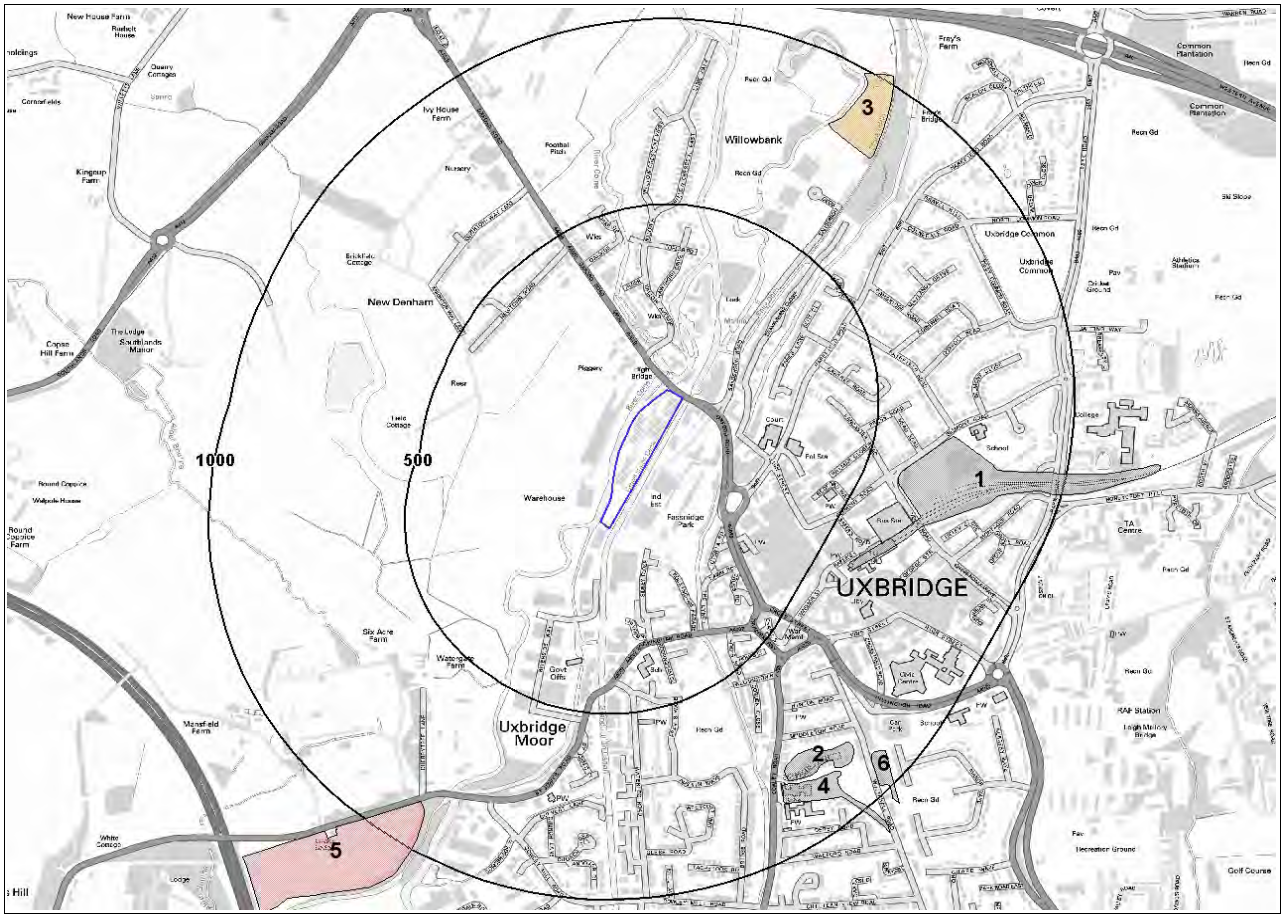
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as Faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground Map

NW N NE

W E



SW S SE

Ground Workings Legend

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Site Outline

500
1000
Search Buffers (m)

Made Ground (undivided)

Worked Ground (undivided)

Infilled Ground

Disturbed Ground (undivided)

Landscaped Ground (undivided)

Reclaimed Ground

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: 255

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? No

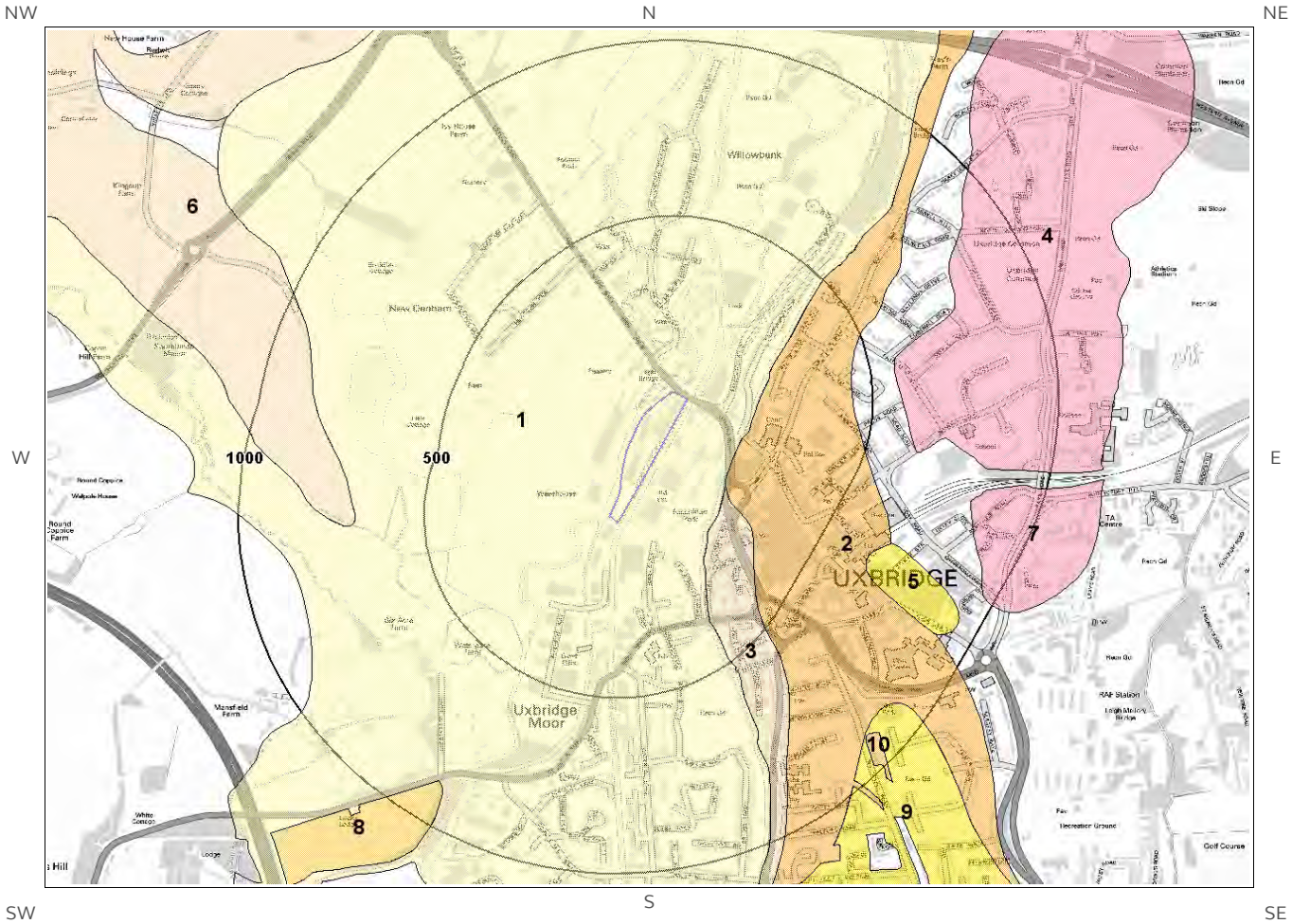
Database searched and no data found.

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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Site Outline

500
1000
Search Buffers (m)

2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

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

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
2	181.0	SE	LHGR-XSV	LYNCH HILL GRAVEL MEMBER	SAND AND GRAVEL
3	203.0	SE	TPGR-XSV	TAPLOW GRAVEL MEMBER	SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

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

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

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.

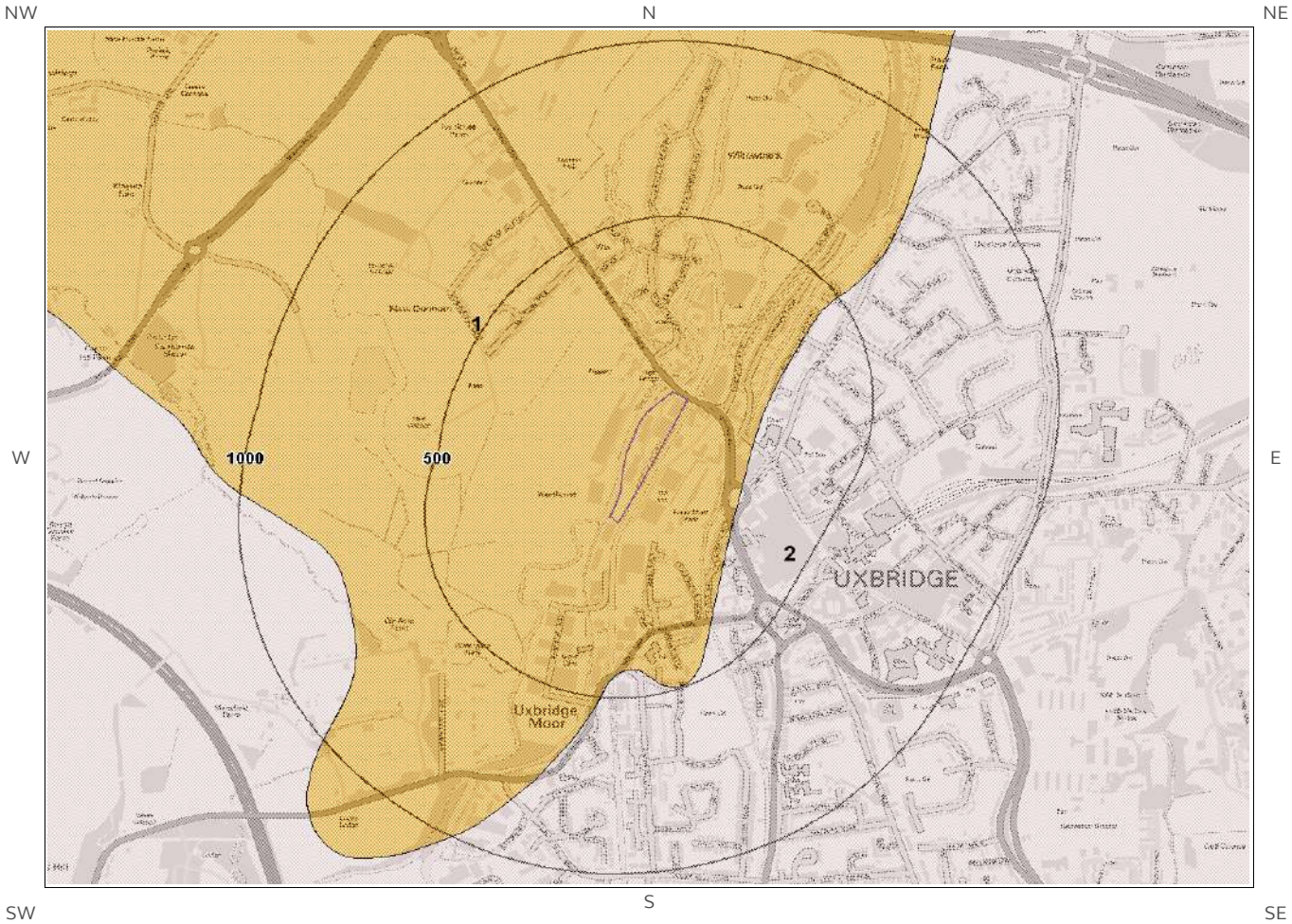
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

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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Site Outline

500
1000
Search Buffers (m)

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: 255

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	LMBE-XCZS	LAMBETH GROUP - CLAY, SILT AND SAND	THANETIAN
2	204.0	E	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
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 in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

3.2 Radon Protection

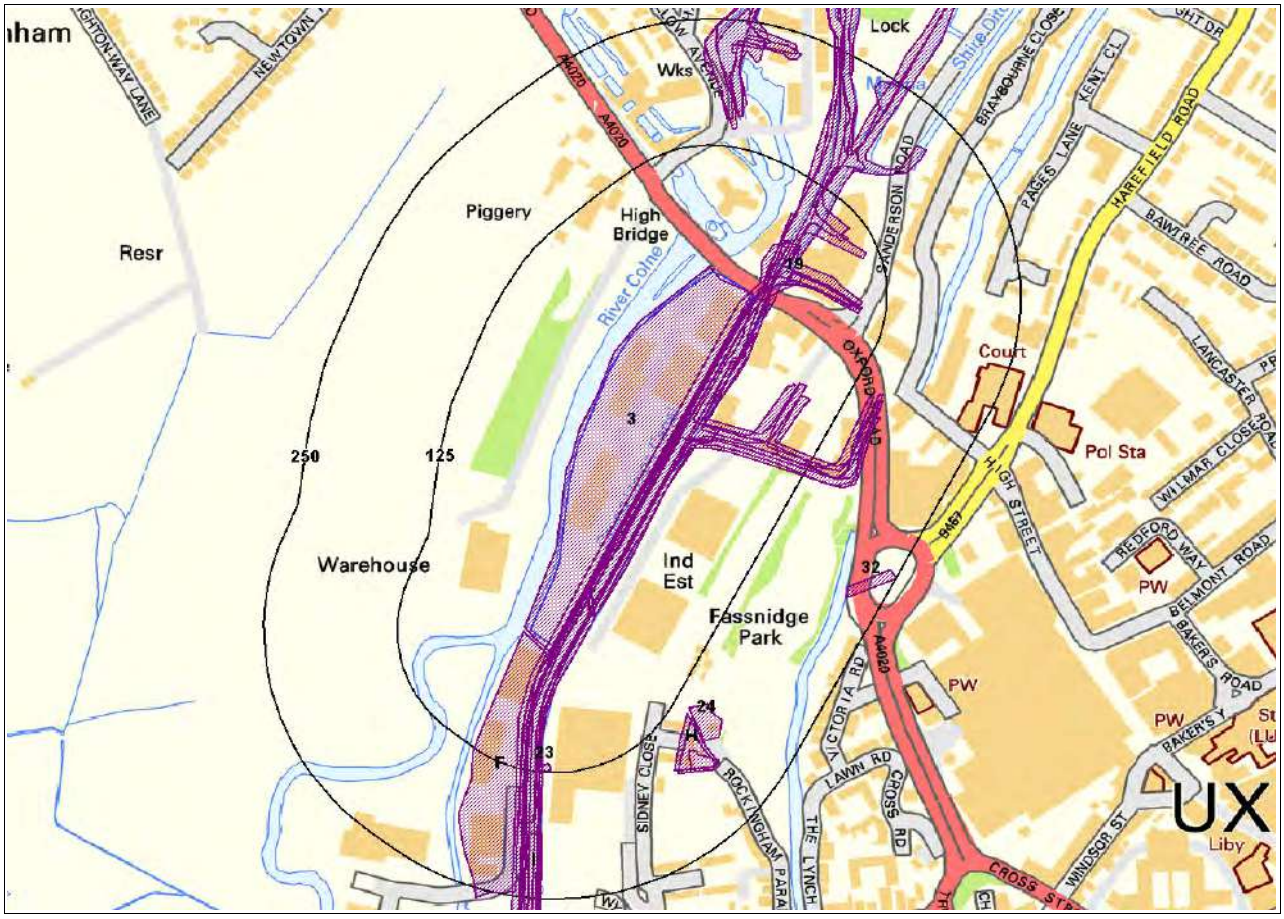
Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

---

4 Ground Workings Map

NW N NE

W E



SW S SE

Ground Workings Legend

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Site Outline

125
250
Search Buffers (m)

Historic Surface Ground Workings

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	0.0	On Site	505177 184634	Canal	1955
2	0.0	On Site	505139 182074	Canal	1864
3	0.0	On Site	505043 184419	Unspecified Wharf	1913
4A	0.0	On Site	505291 185672	Canal	1897
5A	0.0	On Site	505291 185672	Canal	1932
6	0.0	On Site	504990 182997	Canal	1935
7E	0.0	On Site	504983 183023	Canal	1895
8B	0.0	SE	504954 183544	Canal	1955
9B	0.0	SE	504954 183544	Canal	1987
10B	0.0	SE	504954 183544	Canal	1974
11C	1.0	SE	504988 183019	Canal	1913
12C	1.0	SE	504988 183019	Canal	1938
13D	2.0	SE	505195 184630	Canal	1989
14D	2.0	SE	505195 184630	Canal	1970
15D	2.0	SE	505195 184630	Canal	1975
16E	4.0	SE	504991 183018	Canal	1913
17F	5.0	SW	504916 184116	Unspecified Wharf	1913
18F	5.0	SW	504916 184116	Unspecified Wharf	1938
19	30.0	E	505188 184598	Unspecified Wharf	1970
20G	59.0	NE	505298 186238	Canal	1938
21G	59.0	NE	505298 186238	Canal	1912

ID	Distance (m)	Direction	NGR	Use	Date
22G	59.0	NE	505298 186238	Canal	1895
23	116.0	S	504954 184112	Unspecified Wharf	1932
24	140.0	SE	505106 184158	Mortuary	1955
25H	141.0	SE	505096 184138	Mortuary	1932
26H	146.0	SE	505097 184123	Mortuary	1935
27H	146.0	SE	505097 184123	Mortuary	1913
28H	164.0	SE	505105 184121	Mortuary	1938
29H	164.0	SE	505105 184121	Mortuary	1913
30I	185.0	S	505097 182450	Canal	1897
31I	185.0	S	505097 182450	Canal	1932
32	214.0	SE	505261 184295	Fish Pond	1864

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	660.0	W	504300 184400	Sand & Gravel	New Denham Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Active
Not shown	787.0	SE	505449 183613	Sand & Gravel	Cowley Road Gravel Pits	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

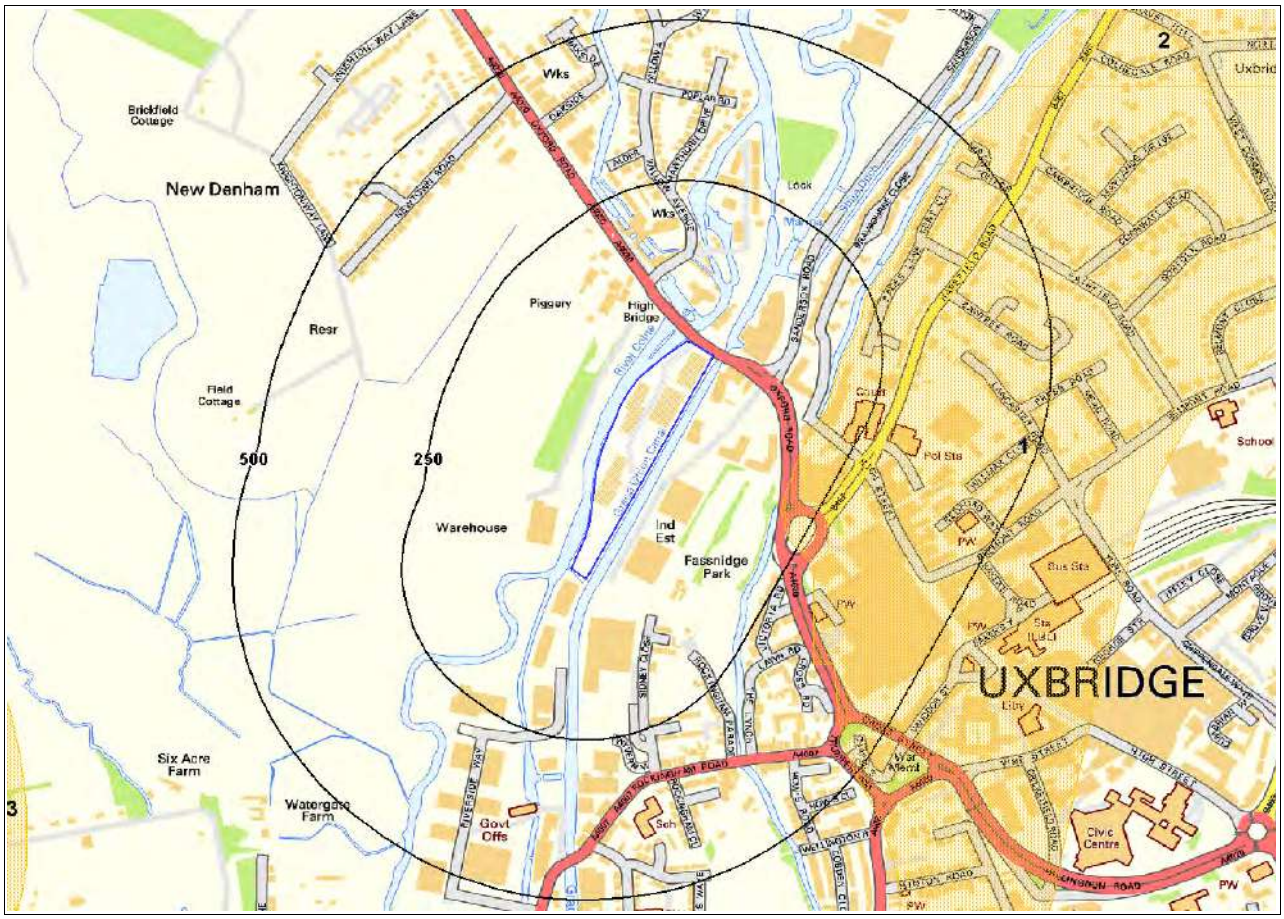
ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	842.0	SE	505554 183632	Sand & Gravel	Cowley Road Gravel Pits	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	872.0	SE	505500 183545	Sand & Gravel	Cowley Road Grvael Pits	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	878.0	W	504130 184625	Sand & Gravel	New Denham Quarry	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Inactive
Not shown	904.0	NE	505870 185130	Clay & Shale	Uxbridge Common Tileworks	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	960.0	SW	504567 183358	Sand & Gravel	The Culvert Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities Map

NW N NE

W E

SW S SE



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? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	181.0	SE	Not available	Chalk	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
2	607.0	NE	Not available	Chalk	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered
3	858.0	W	Not available	Chalk	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered

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.

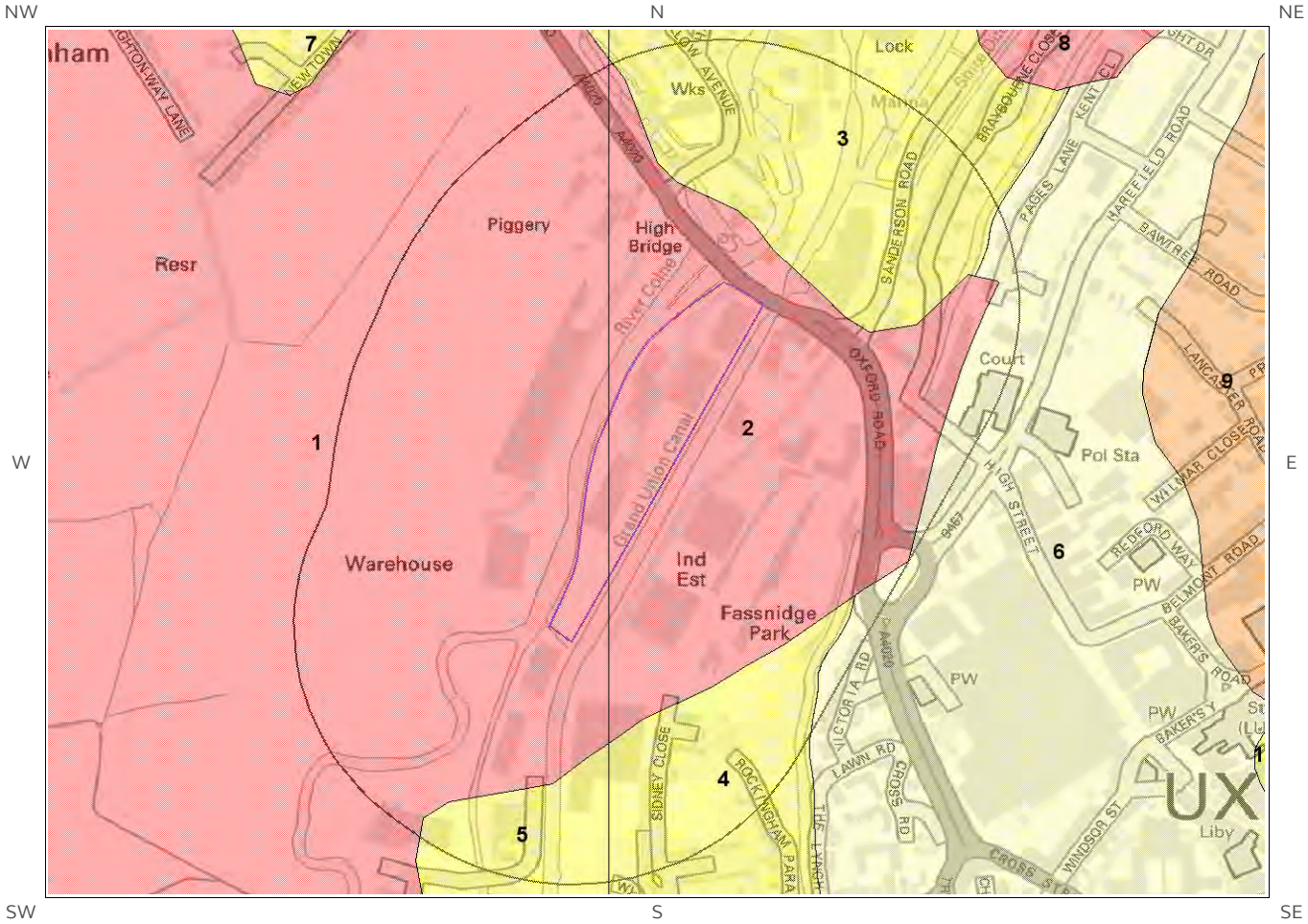
Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

---

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay Map



Shrink Swell Clay Legend

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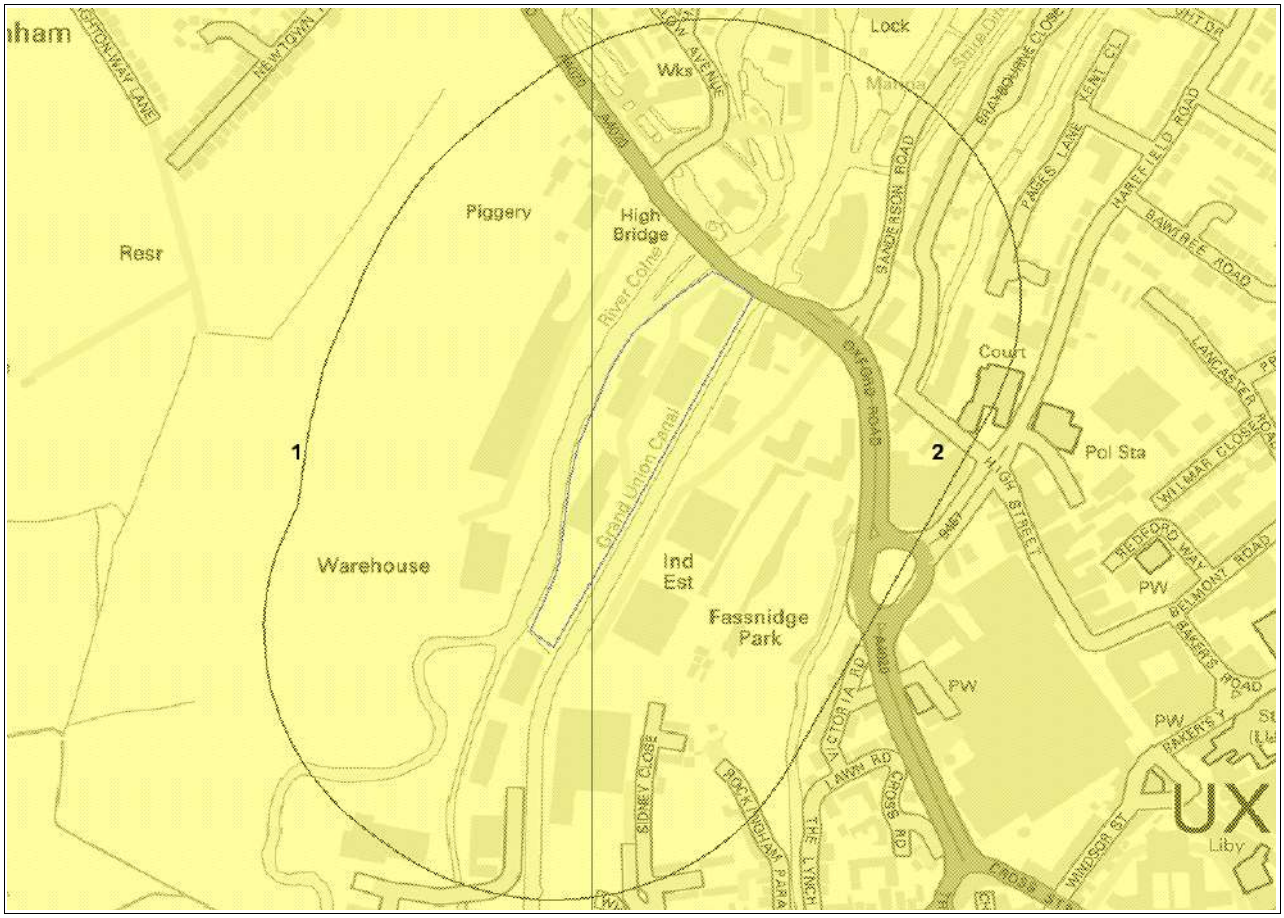
6.2 Landslides Map

NW N NE

W E

SW S SE



Landslides Legend

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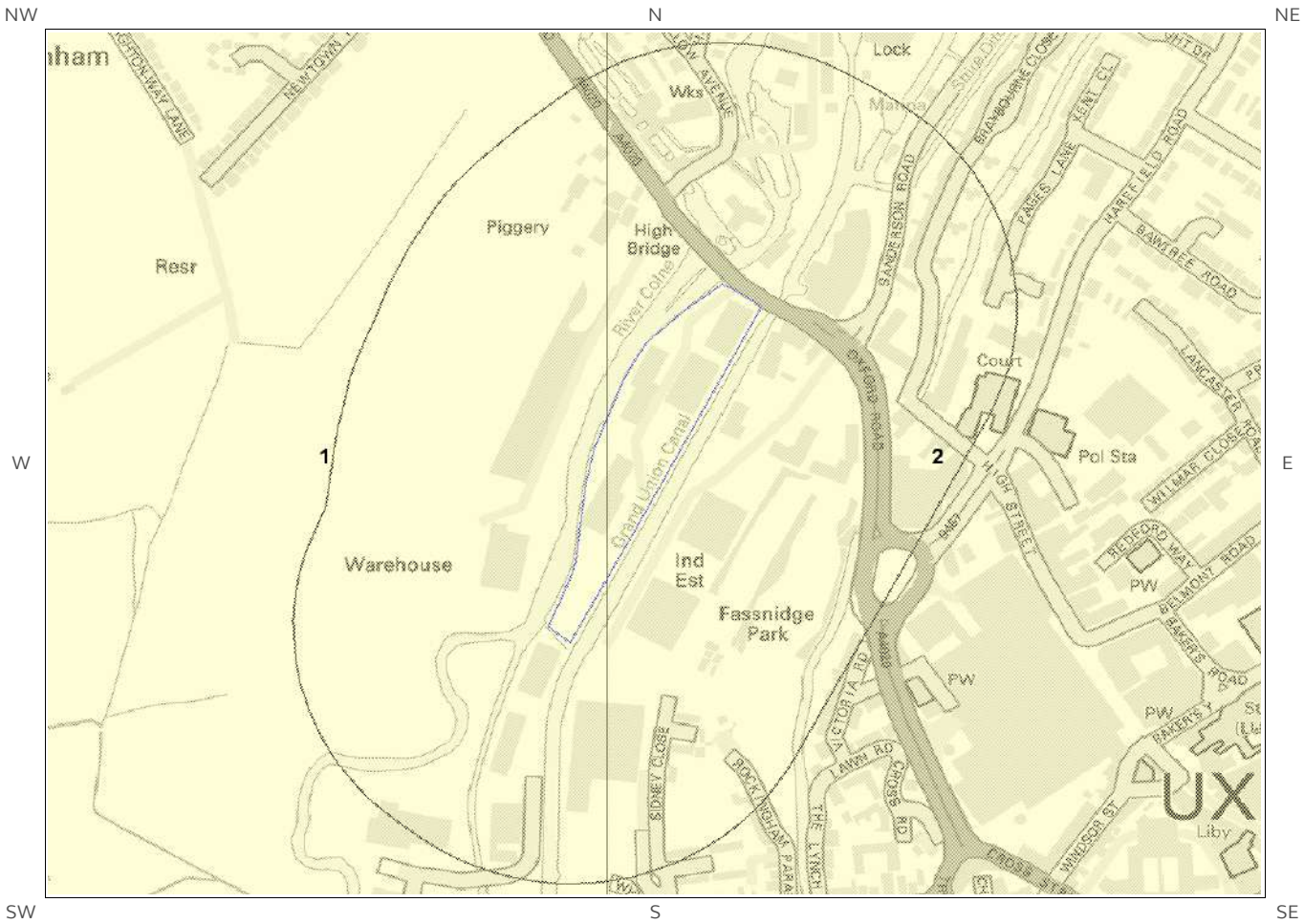
6.3 Ground Dissolution of Soluble Rocks Map



Ground Dissolution Soluble Rocks Legend

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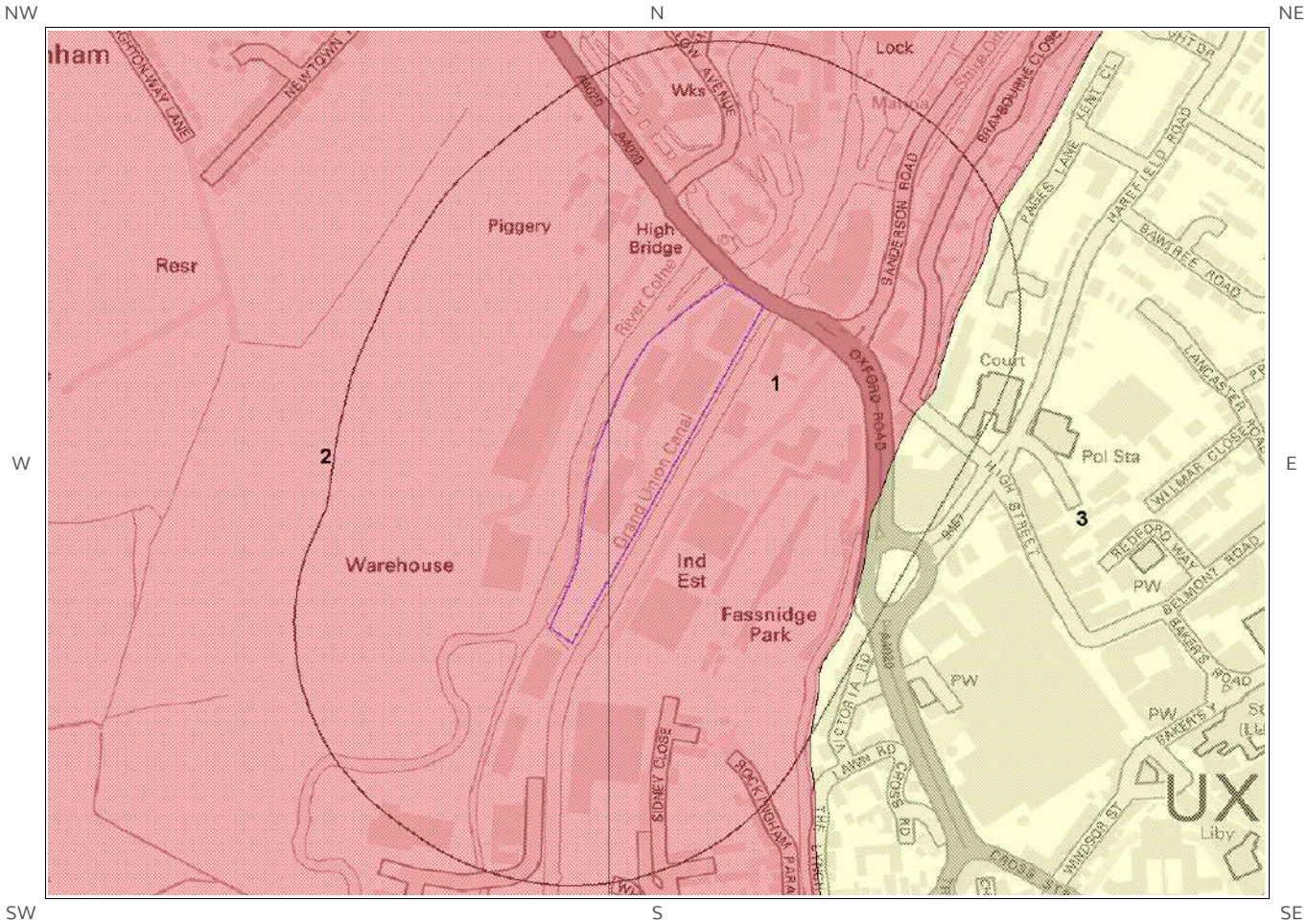
6.4 Compressible Deposits Map



Compressible Deposits Legend

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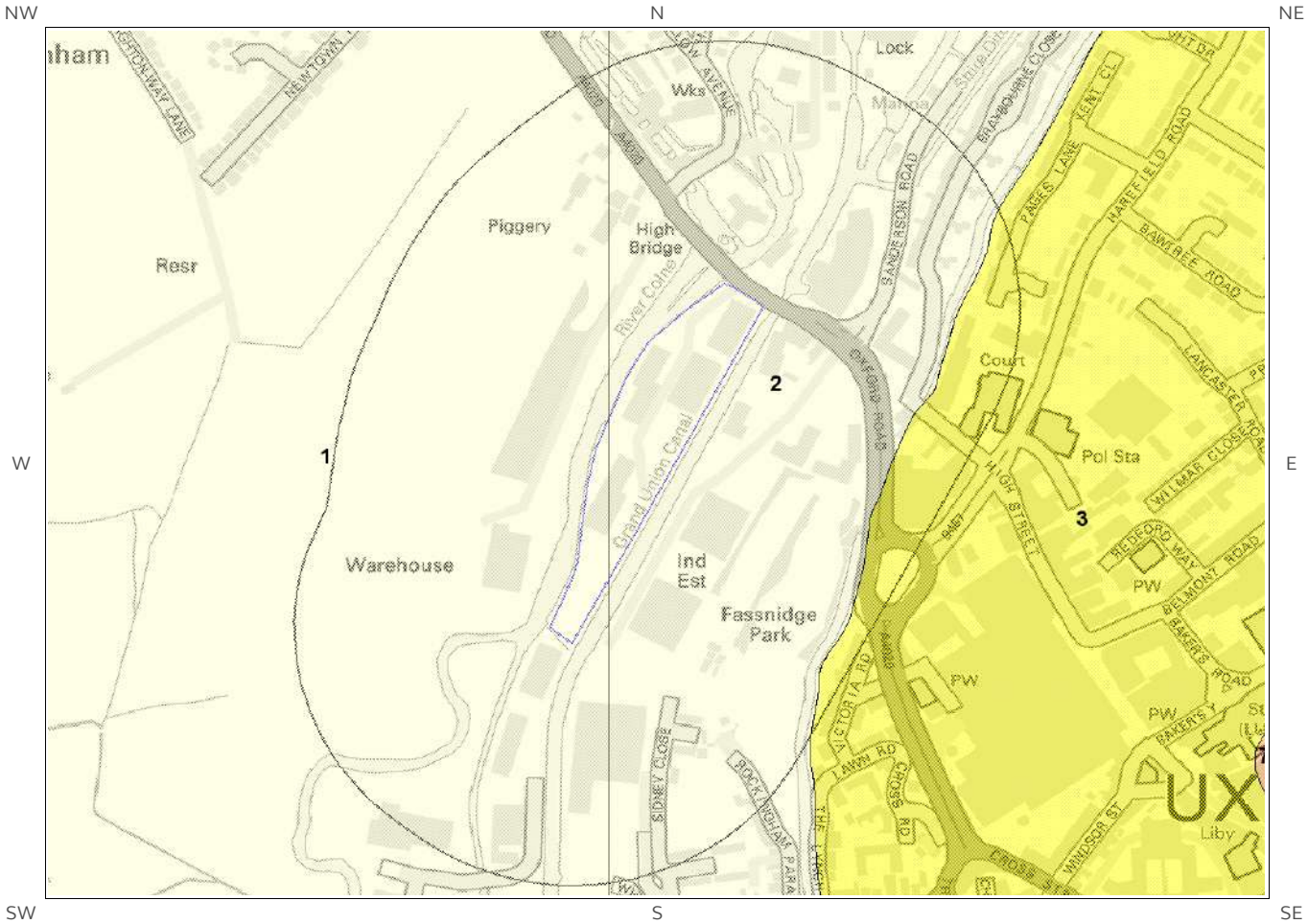
6.5 Collapsible Deposits Map



Collapsible Deposits Legend

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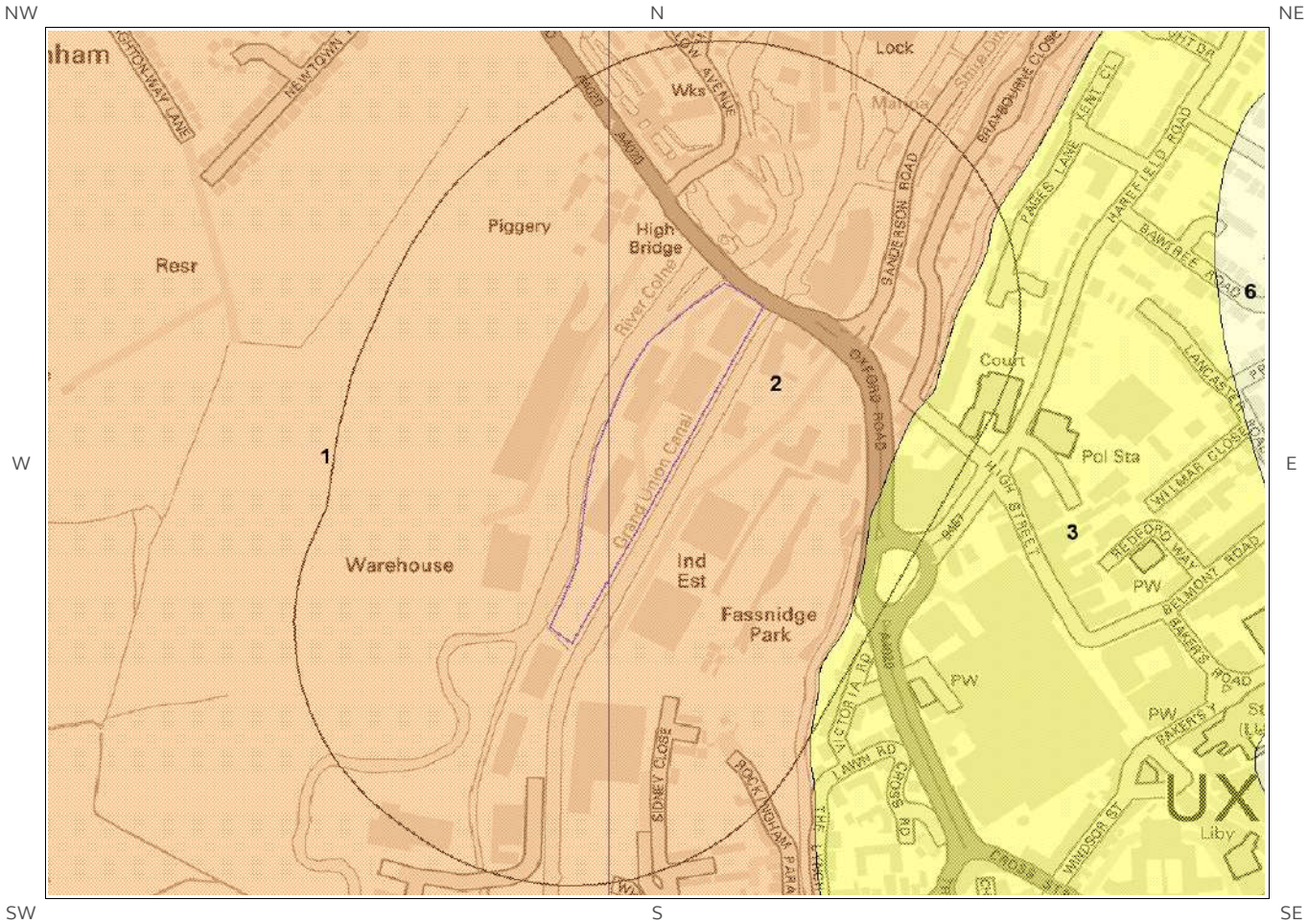
6.6 Running Sand Map



Running Sand Legend

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6 Natural Ground Subsidence

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

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

What is the maximum hazard rating of natural subsidence within the study site*[*] boundary? 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.
2	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.
3	48.0	NE	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

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

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.
2	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

6.3 Ground Dissolution of Soluble Rocks

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

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.
2	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	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

ID	Distance (m)	Direction	Hazard Rating	Details
2	0.0	On Site	Moderate	Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build - consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property - possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

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	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. No special ground investigation required, or increased construction costs or increased financial risk due to potential problems with collapsible deposits.
2	0.0	On Site	Negligible	No indicators for collapsible deposits identified. No actions required to avoid problems due to collapsible deposits. 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:

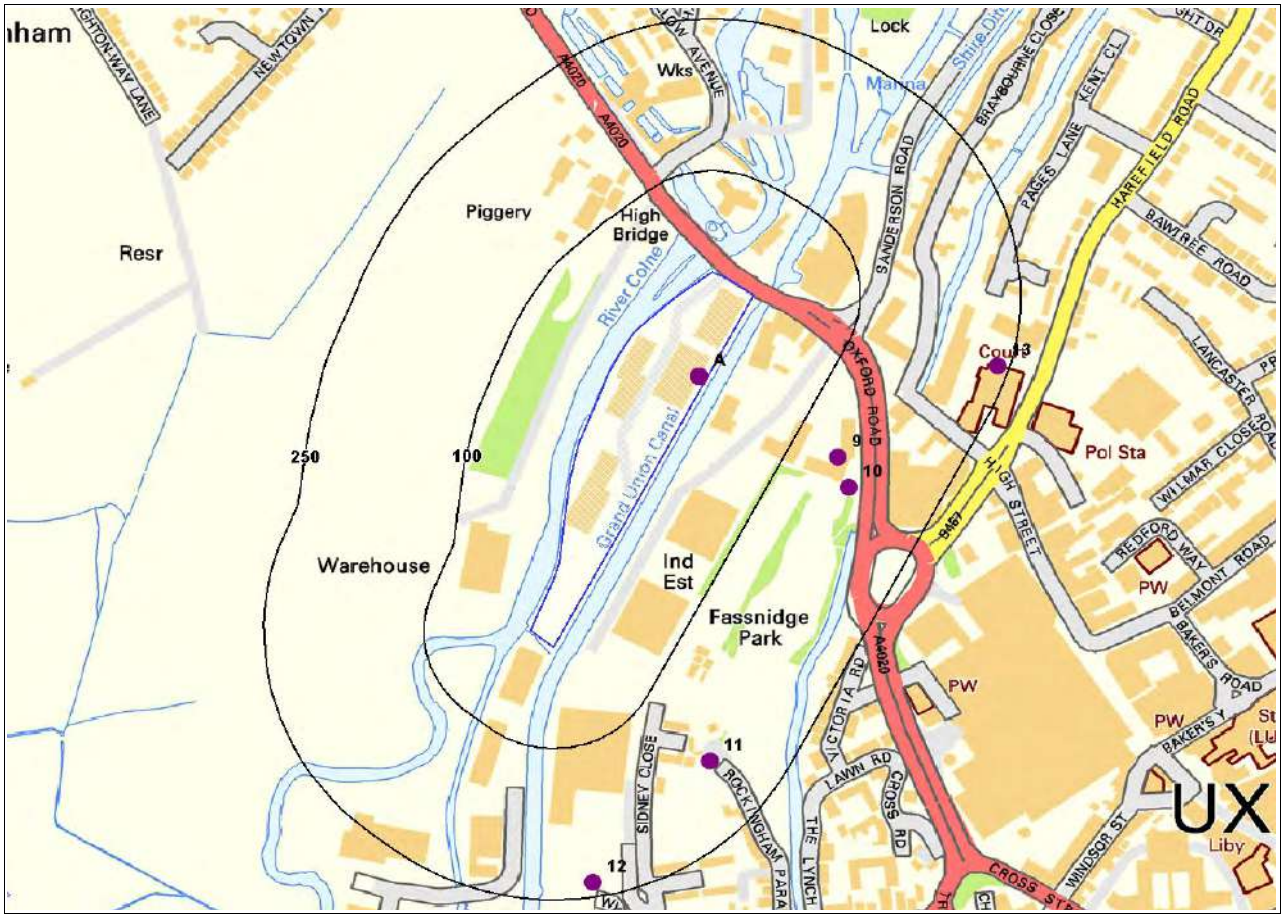
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Low	Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build - consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property - no significant increase in insurance risk due to running sand problems is likely.
2	0.0	On Site	Low	Possibility of running sand problems after major changes in ground conditions. Normal maintenance to avoid leakage of water-bearing services or water bodies (ponds, swimming pools) should reduce likelihood of problems due to running sand. For new build - consider possibility of running sand into trenches or excavations if water table is high or sandy strata are exposed to water. Avoid concentrated water inputs to site. Unlikely to be an increase in construction costs due to potential for running sand. For existing property - no significant increase in insurance risk due to running sand problems is likely.

7 Borehole Records Map

NW N NE

W E

SW S SE



Borehole Records Legend

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Site Outline

Borehole Locations

125
250
Search Buffers (m)

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: 13

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1A	0.0	On Site	505100 184500	TQ08SE152	-1.0	RANK ZEROX OXFORD RD WS7
2A	0.0	On Site	505100 184500	TQ08SE148	-1.0	RANK ZEROX OXFORD RD WS3
3A	0.0	On Site	505100 184500	TQ08SE149	-1.0	RANK ZEROX OXFORD RD WS4
4A	0.0	On Site	505100 184500	TQ08SE150	-1.0	RANK ZEROX OXFORD RD WS5
5A	0.0	On Site	505100 184500	TQ08SE146	-1.0	RANK ZEROX OXFORD RD WS1
6A	0.0	On Site	505100 184500	TQ08SE151	-1.0	RANK ZEROX OXFORD RD WS6
7A	0.0	On Site	505100 184500	TQ08SE147	-1.0	RANK ZEROX OXFORD RD WS2
8A	0.0	On Site	505100 184500	TQ08SE153	-1.0	RANK ZEROX OXFORD RD WS8
9	145.0	SE	505230 184420	TQ08SE246	35.05	HIGH STREET, UXBRIDGE
10	168.0	SE	505240 184390	TQ08SE219	9.14	HIGH STREET UXBRIDGE BH1
11	184.0	SE	505110 184120	TQ08SE39	61.56	WATERWORKS UXBRIDGE
12	235.0	S	505000 184000	TQ08SE262	35.81	HURDLE YARD, UXBRIDGE
13	239.0	E	505380 184510	TQ08SE6/1-3	12.0	UXBRIDGE COURT HOUSE UXBRIDGE

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

#9: scans.bgs.ac.uk/sobi_scans/boreholes/576579
#10: scans.bgs.ac.uk/sobi_scans/boreholes/576552
#11: scans.bgs.ac.uk/sobi_scans/boreholes/576372
#12: scans.bgs.ac.uk/sobi_scans/boreholes/12082597
#13: scans.bgs.ac.uk/sobi_scans/boreholes/576339

8 Estimated Background Soil Chemistry

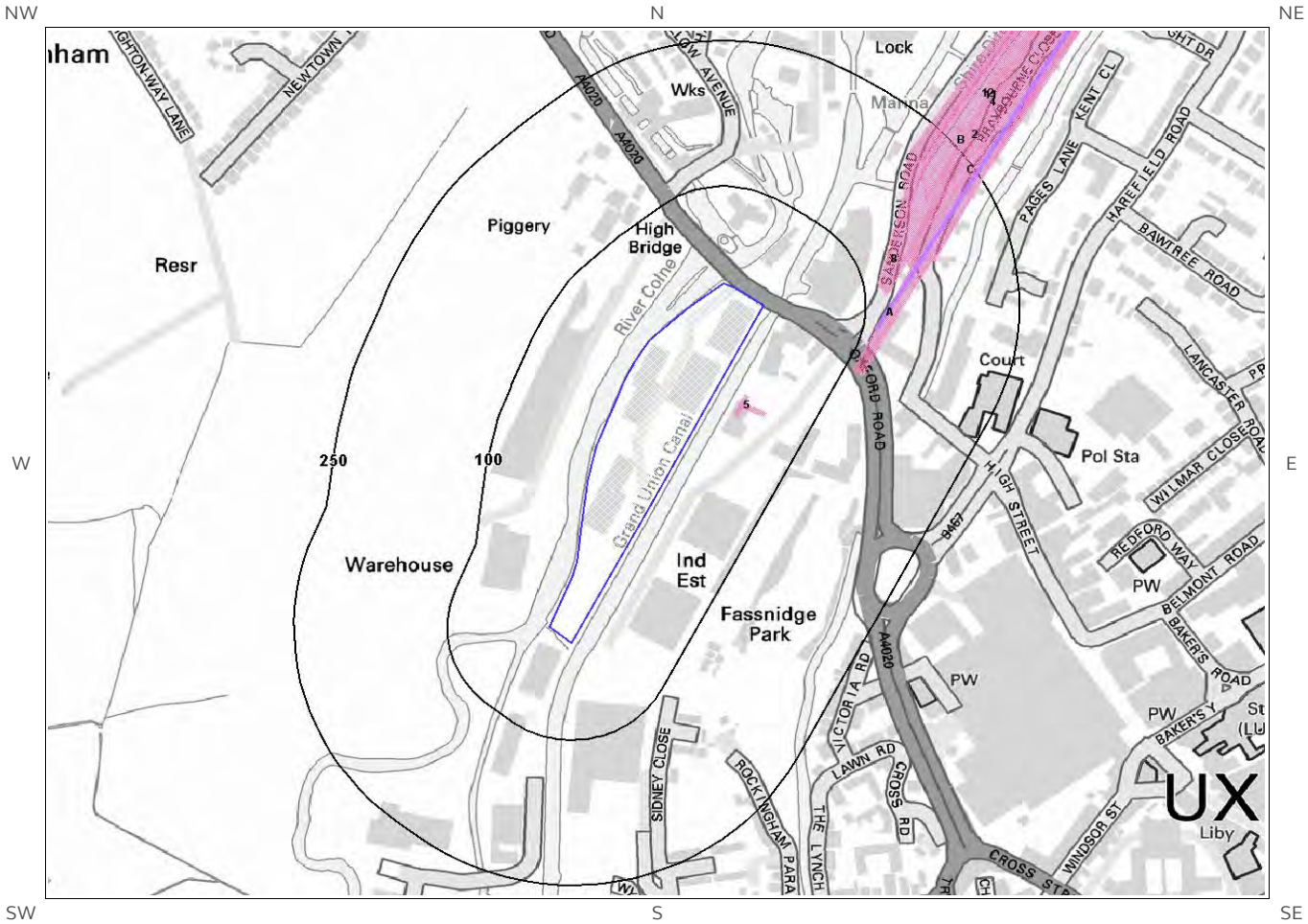
Records of background estimated soil chemistry within 250m of the study site boundary: 6

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	Sediment	15 - 25 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
0.0	On Site	Sediment	15 - 25 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
13.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg
13.0	W	Sediment	15 - 25 mg/kg	<1.8 mg/kg	90 - 120 mg/kg	15 - 30 mg/kg	100 - 200 mg/kg

*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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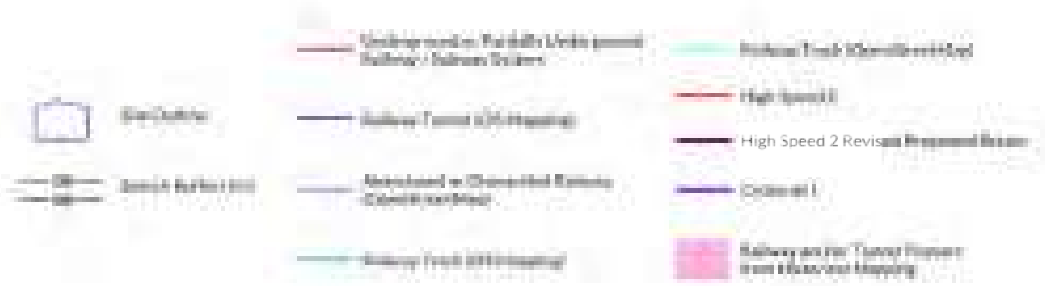

9 Railways and Tunnels

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
5	27	SE	505137 184477	Railway Sidings	1934
6A	108	SE	505277 184570	Railway Sidings	1914
7A	109	SE	n/a	Railway	1914
1B	115	E	505390 184796	Railway Sidings	1959
8	131	E	505280 184625	Railway Sidings	1934
2	132	E	505483 184959	Railway Sidings	1938

ID	Distance (m)	Direction	NGR	Details	Date
9B	135	E	505377 184806	Railway Sidings	1962
3C	145	E	505353 184720	Railway Sidings	1938
10C	163	E	505359 184720	Railway Sidings	1934
11	183	NE	n/a	Railway	1932
4	188	NE	505500 184979	Railway Sidings	1932
12	197	NE	505504 184997	Railway Sidings	1932

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? Yes

Distance (m)	Direction	Status
112	E	Abandoned
112	E	Historical

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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info@groundsure.com

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Fax: 0115 936 3276.
Email:**enquiries@bgs.ac.uk**
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries

British Gypsum

British Gypsum Ltd
East Leake
Loughborough
Leicestershire
LE12 6HX

The Coal Authority

200 Lichfield Lane
Mansfield
Notts NG18 4RG
Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Public Health England

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

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Harris and Pearson Building, Brettel Lane
Brierley Hill, West Midlands
DY5 3LH
Tel: +44 (0) 1384 262 000
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Website: **www.jpb.co.uk**

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Adanac Drive, Southampton
SO16 0AS

Tel: 08456 050505
Website: http://www.ordnancesurvey.co.uk/

Getmapping PLC

Virginia Villas, High Street, Hartley Witney,
Hampshire RG27 8NW
Tel: 01252 845444
Website:**http://www1.getmapping.com/**

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Caversham Bridge House
Waterman Place
Reading
Berkshire RG1 8DN
Tel: +44 (0)118 950 0761 E-mail:**reading@pba.co.uk**
Website:**http://www.peterbrett.com/home**

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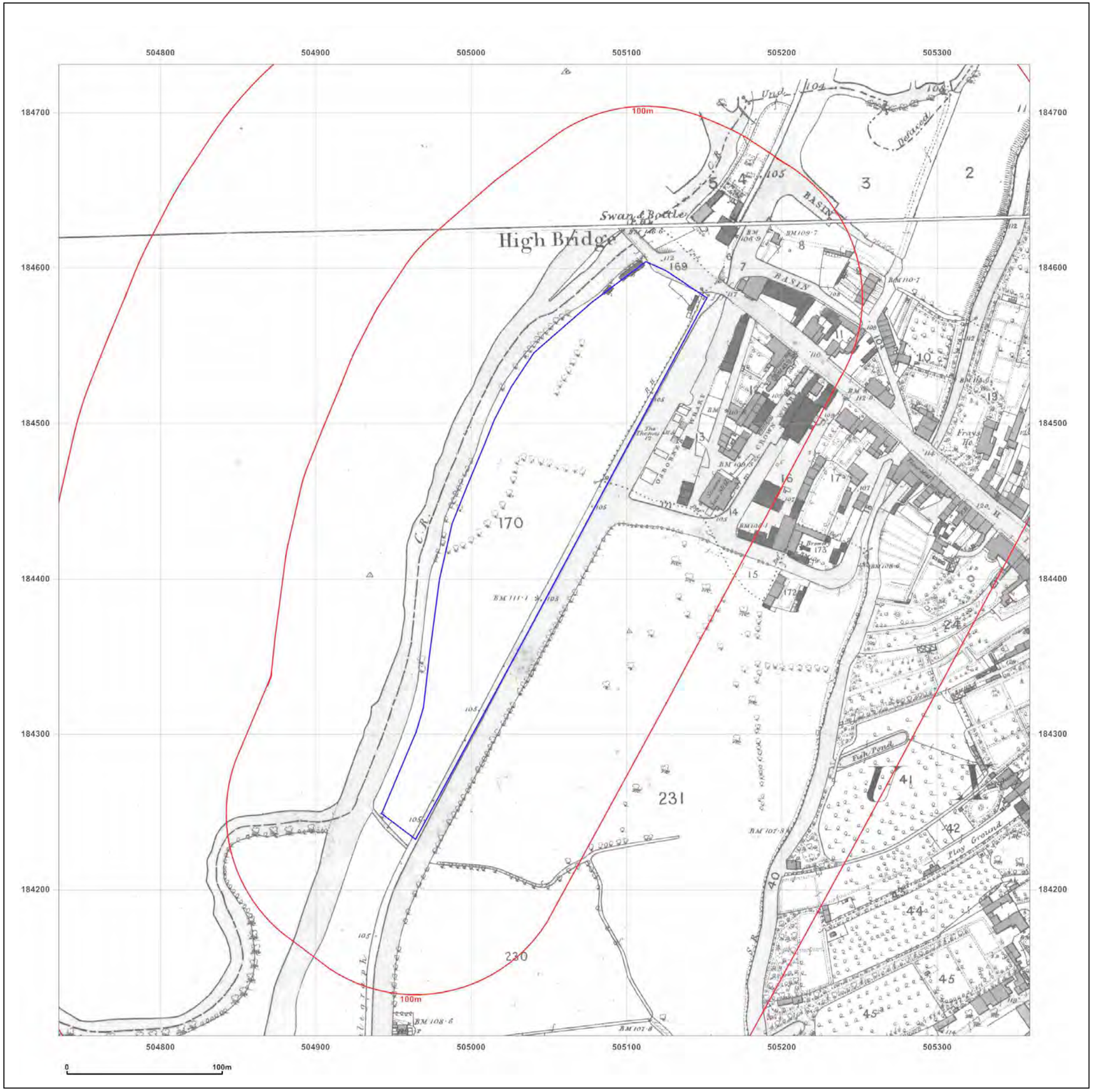

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1866**

Scale: 1:2,500

Printed at: 1:2,500

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

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Revised N/A
Edition 1866
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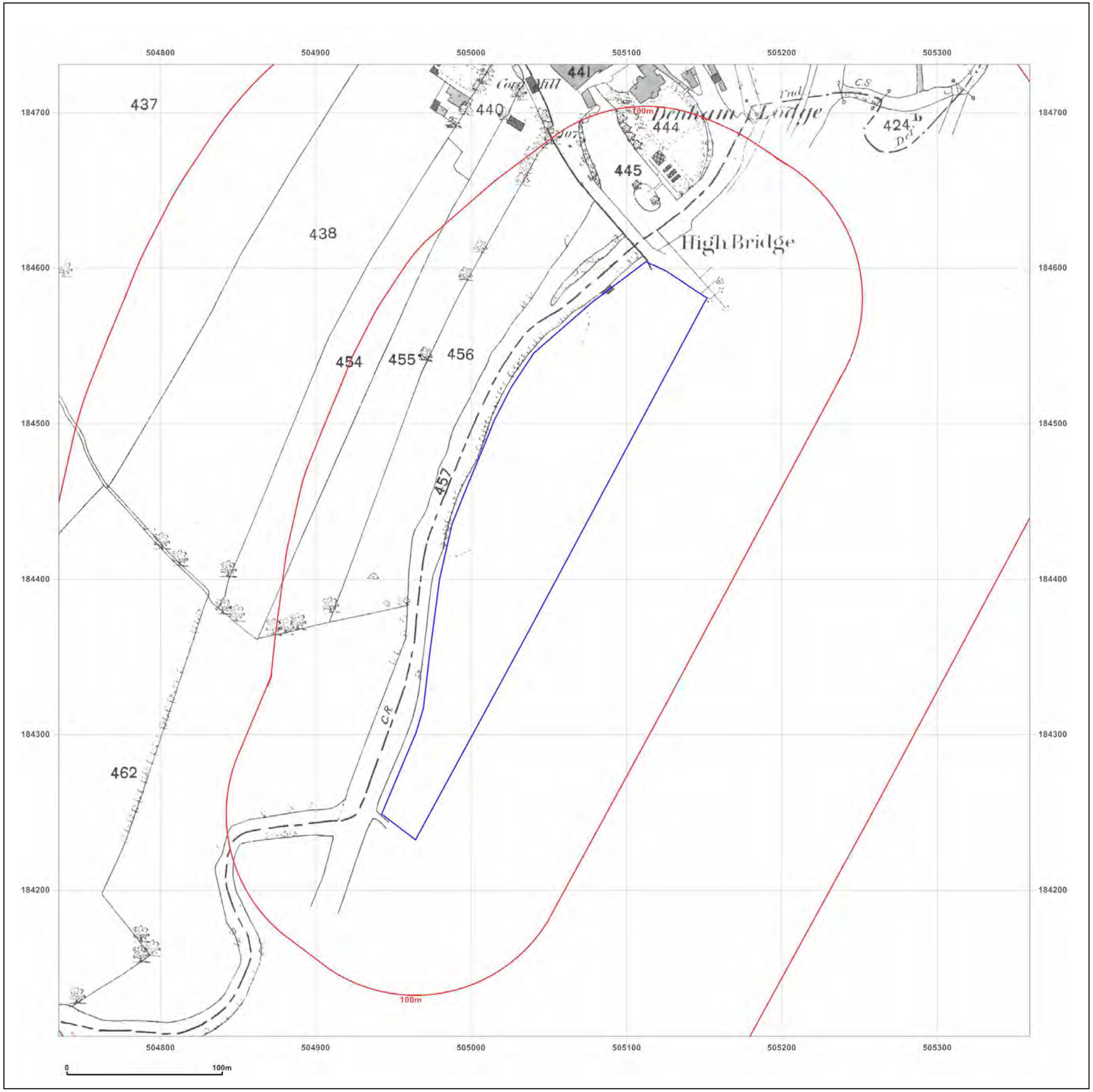

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1877**

Scale: 1:2,500

Printed at: 1:2,500

N
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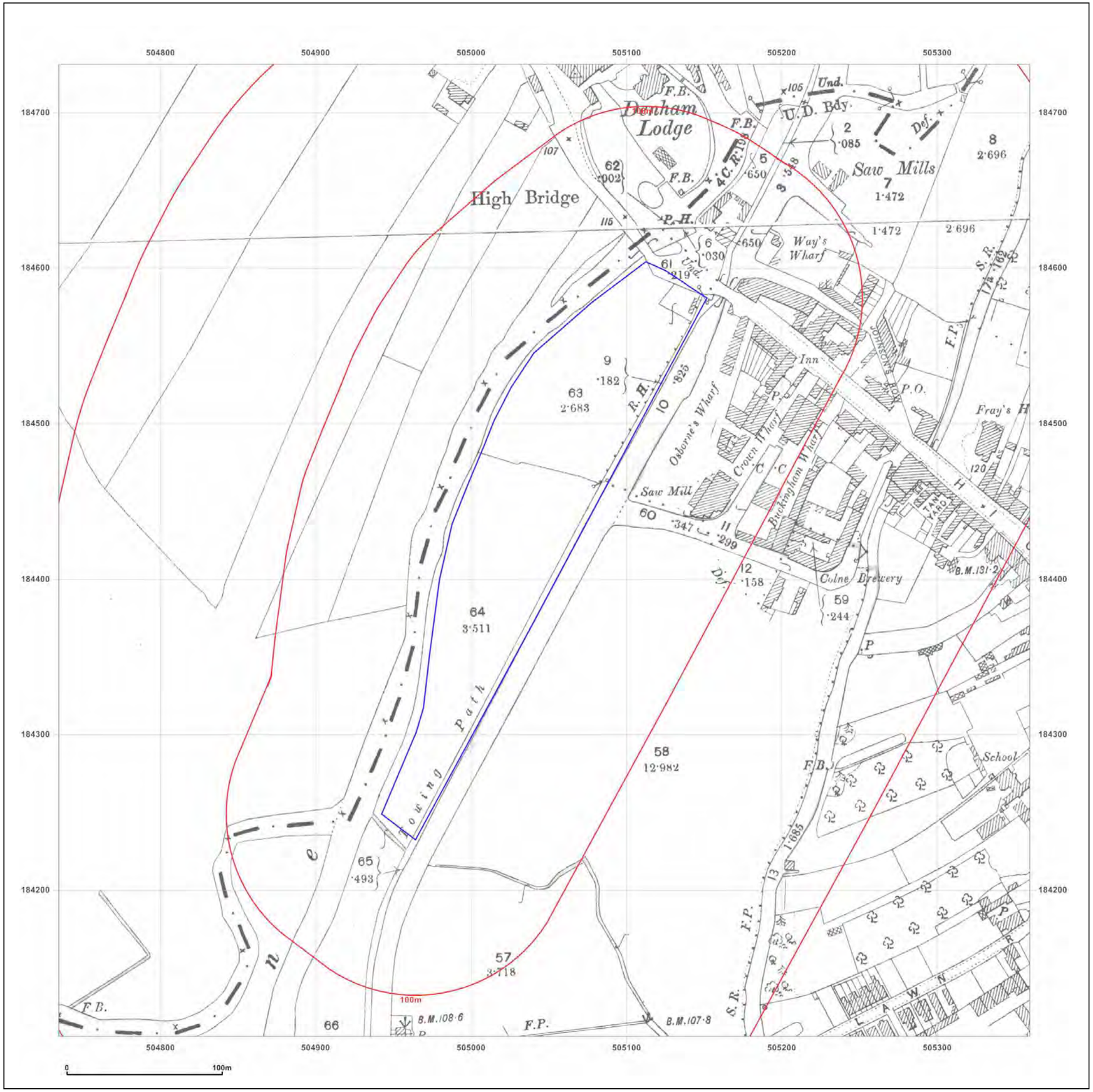

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1896**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1864
Revised 1894
Edition 1896
Copyright N/A
Levelled N/A

Surveyed 1864
Revised 1894
Edition 1896
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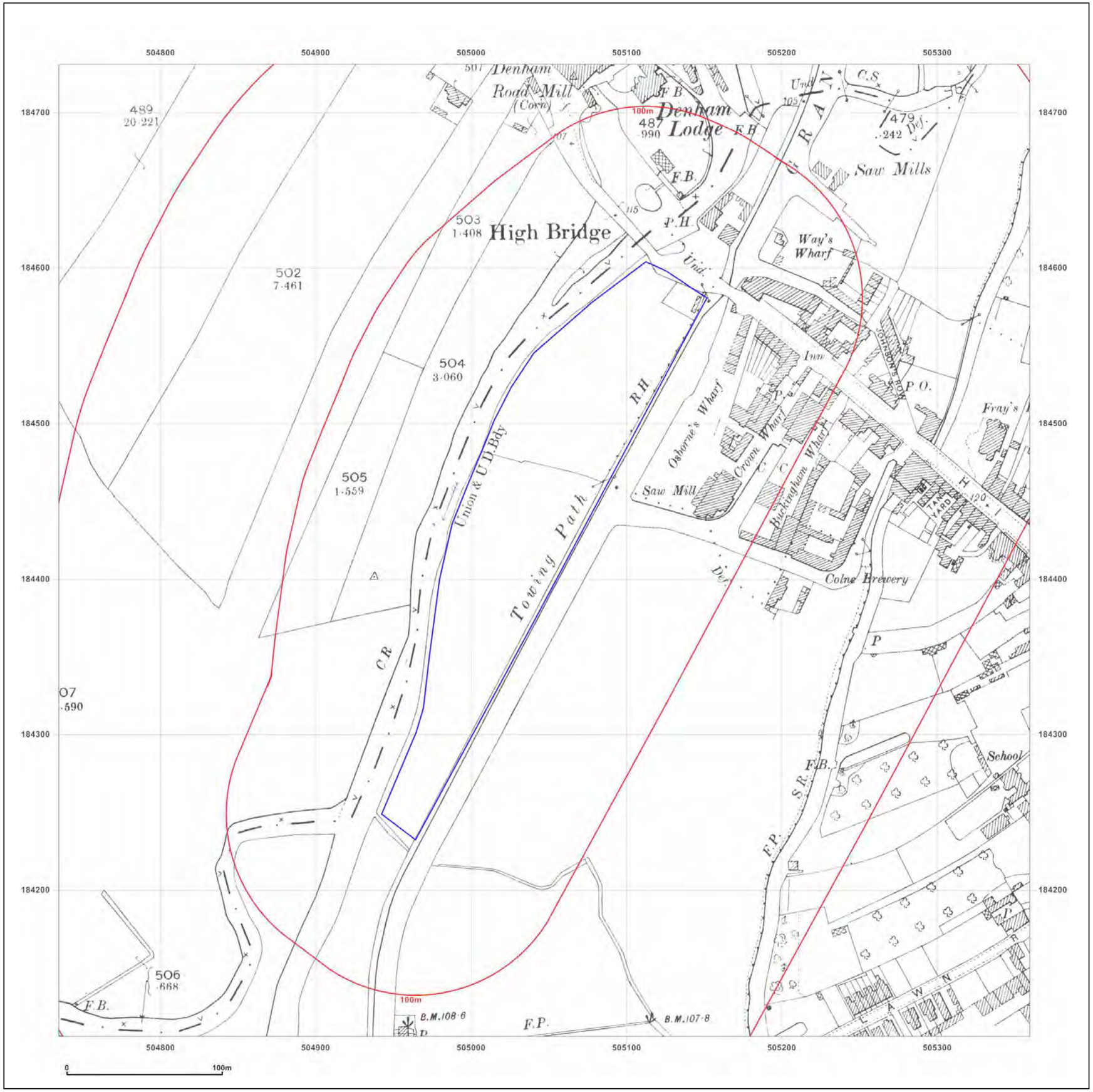

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1899**

Scale: 1:2,500

Printed at: 1:2,500

N
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Revised 1897
Edition 1899
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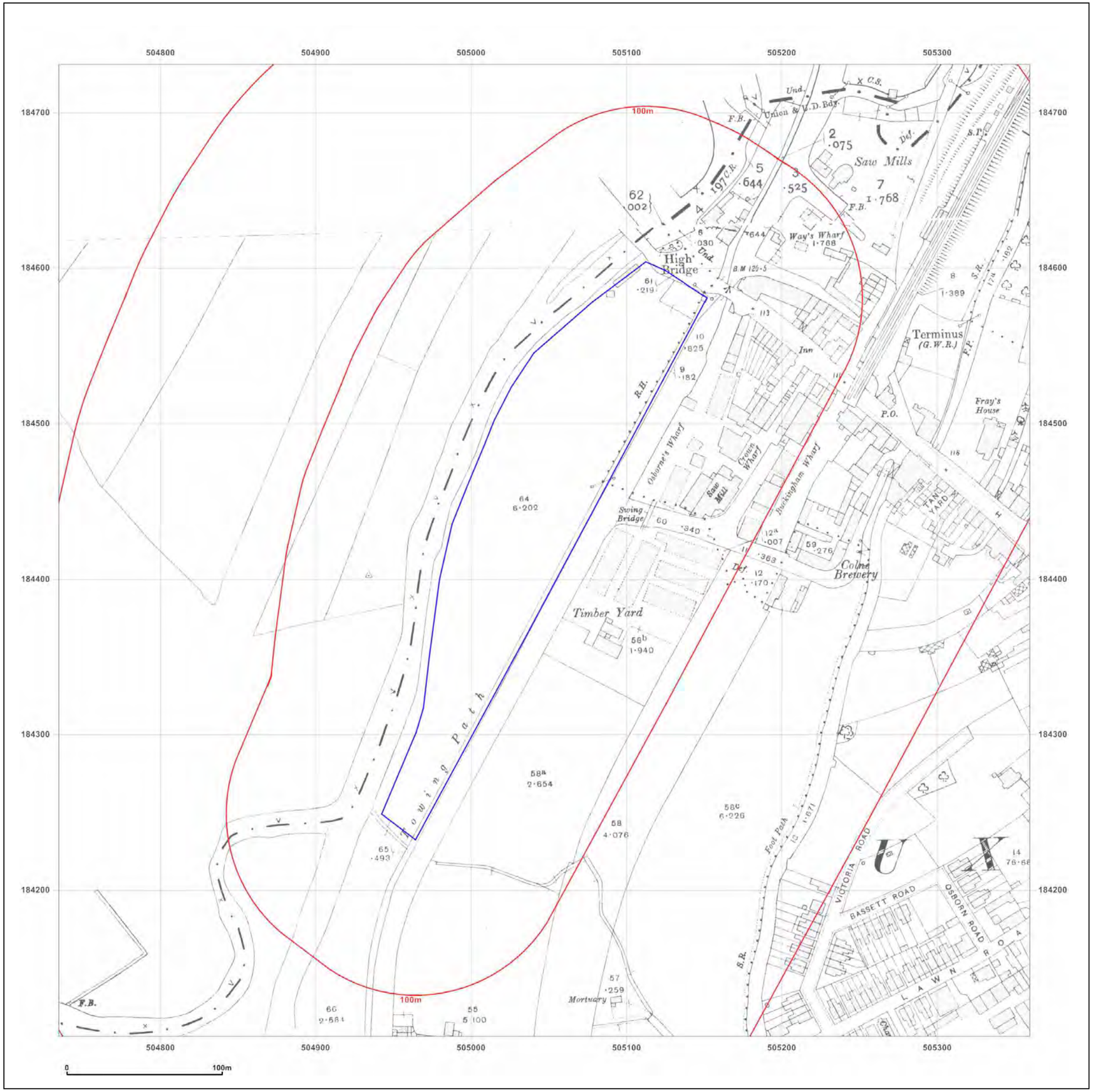

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1914**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1864
Revised 1912
Edition 1914
Copyright N/A
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Revised 1912
Edition 1914
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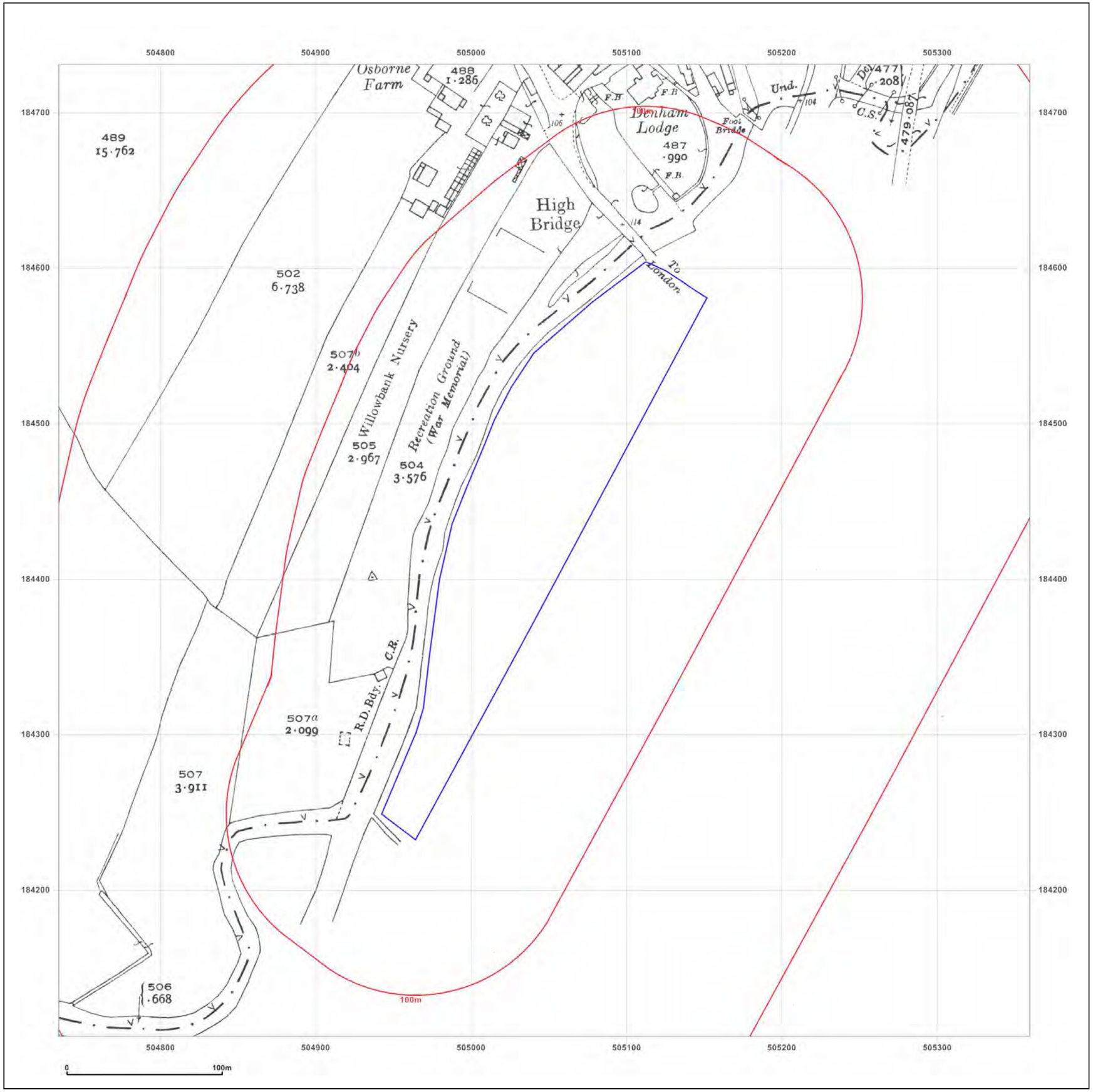

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1932**

Scale: 1:2,500

Printed at: 1:2,500

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Edition 1932
Copyright N/A
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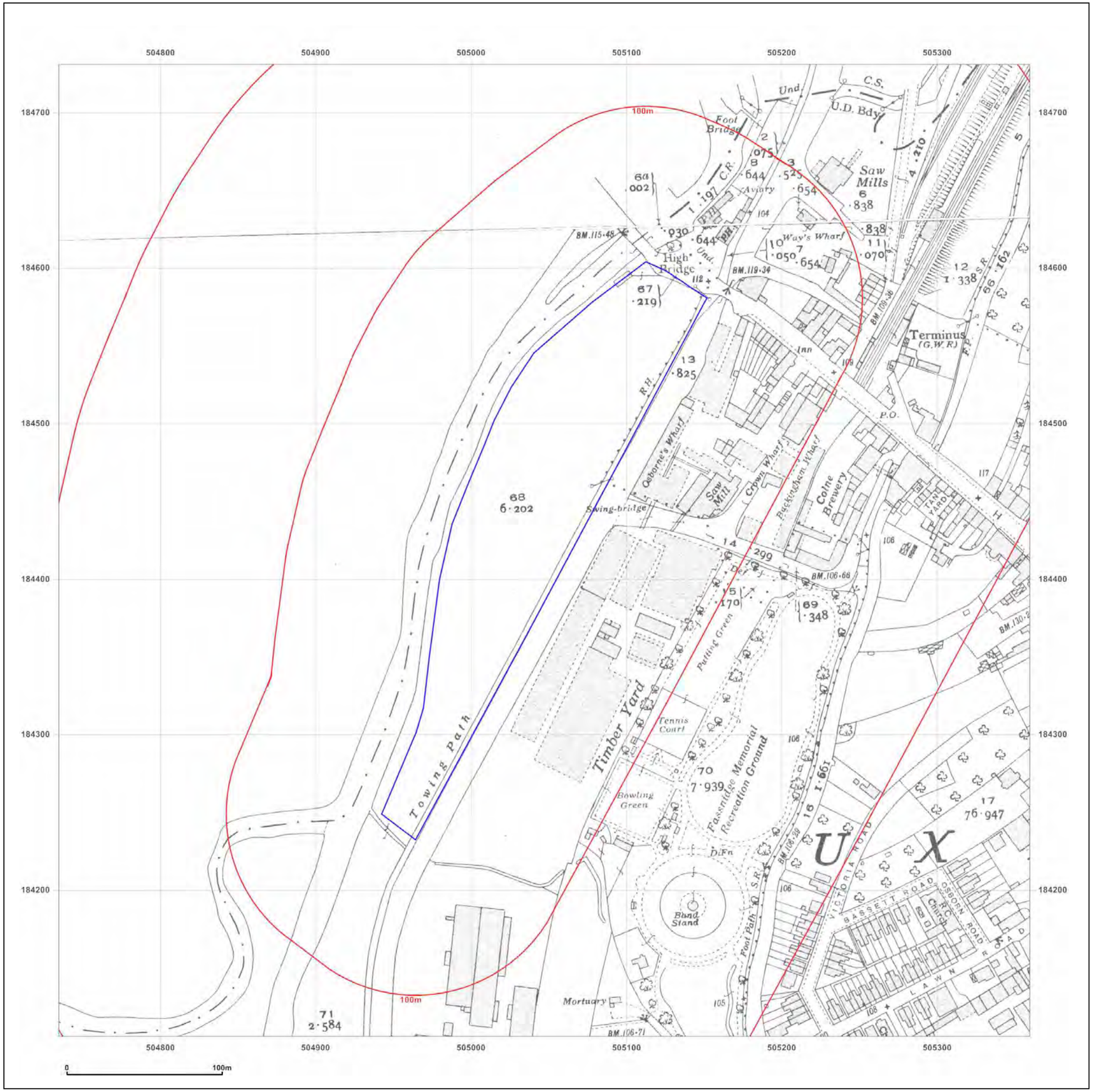

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1934**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1864
Revised 1934
Edition 1934
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Levelled 1935

Surveyed 1864
Revised 1934
Edition 1934
Copyright N/A
Levelled 1935

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1962**

Scale: 1:1,250

Printed at: 1:2,000

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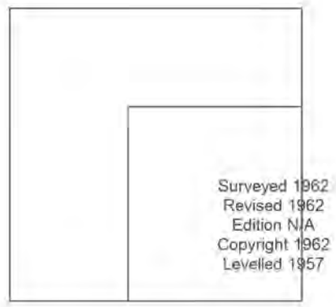

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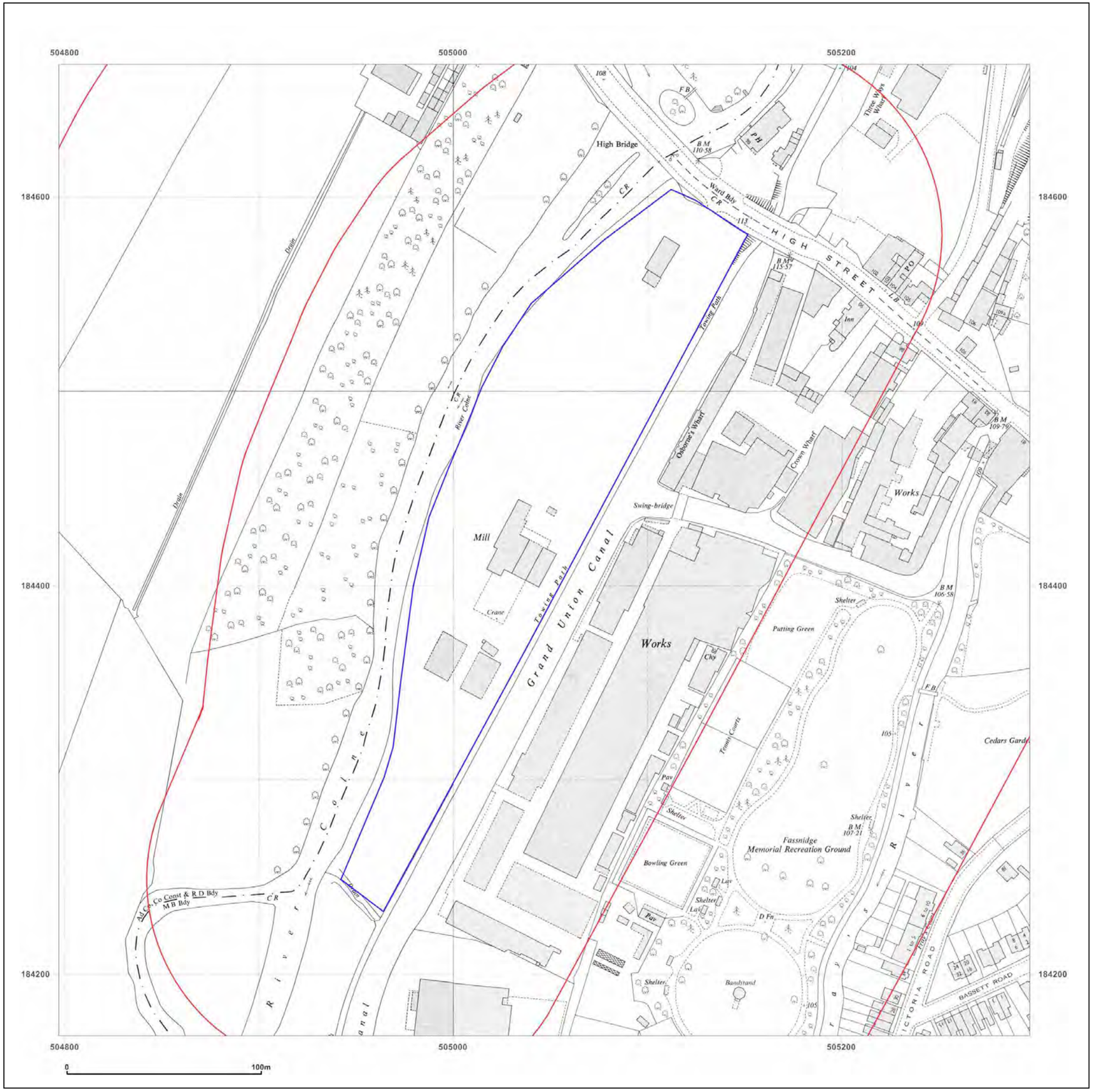

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1962-1963**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1962
Revised 1962
Edition N/A
Copyright 1963
Levelled 1957

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

Surveyed 1962
Revised 1962
Edition N/A
Copyright 1963
Levelled 1957

Surveyed 1962
Revised 1962
Edition N/A
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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1972**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1962
Revised 1971
Edition N/A
Copyright 1973
Levelled 1957

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Production date: 30 May 2017

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1973-1974**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
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Surveyed 1962
Revised 1973
Edition N/A
Copyright 1974
Levelled 1957

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

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Production date: 30 May 2017

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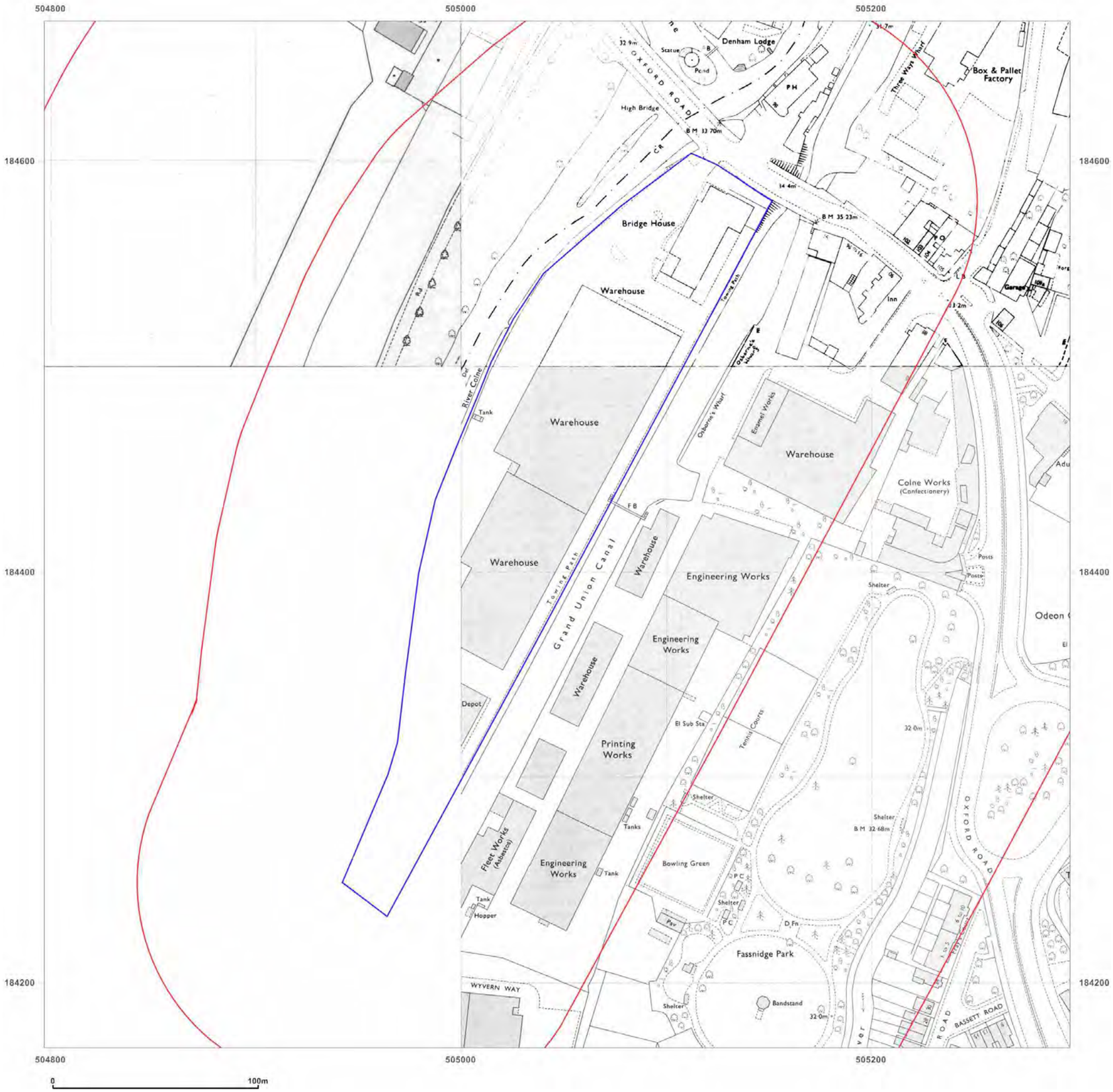

Site Details:

XEROX UK LTD, BRIDGE HOUSE, OXFORD ROAD, UXBRIDGE, UB8 1HS

Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1975-1980**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

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

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

Surveyed 1962
Revised 1974
Edition N/A
Copyright 1975
Levelled 1957

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Production date: 30 May 2017

To view map legend click here *Legend*

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1978-1981**

Scale: 1:1,250

Printed at: 1:2,000

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W E
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1978
Levelled N/A

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1981
Levelled 1957

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

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Production date: 30 May 2017

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1981**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1981
Levelled 1957

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1988-1989**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

Surveyed 1962
Revised 1988
Edition N/A
Copyright 1989
Levelled 1957

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1988
Levelled 1957

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1992**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

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

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

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1987-1992**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

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

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

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

Surveyed 1957
Revised 1988
Edition N/A
Copyright 1988
Levelled 1957

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series Town Plan

Map date: **1866**

Scale: 1:528

Printed at: 1:1,000

N
W E
S

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

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

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

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

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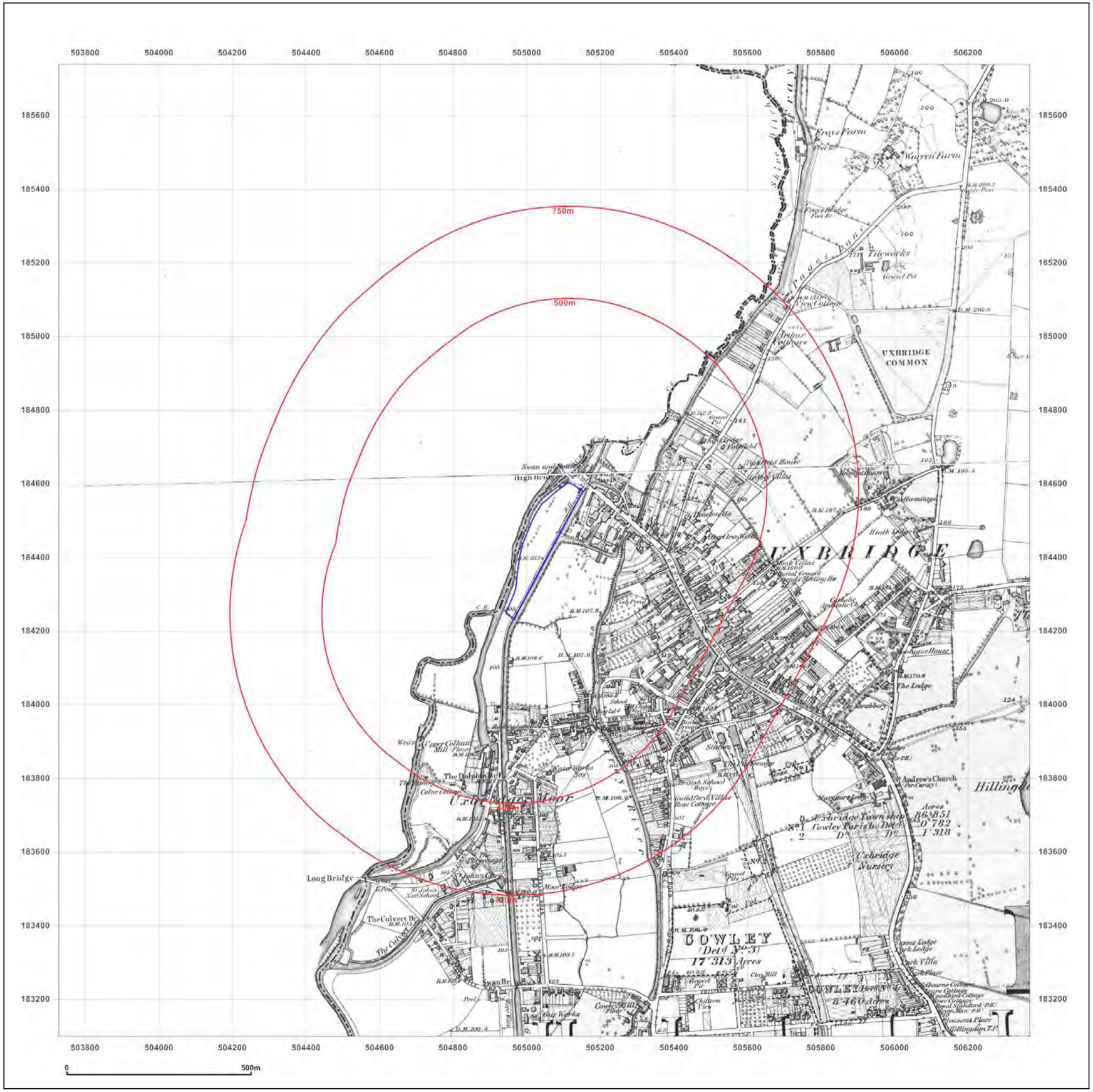

Site Details:

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1865-1868**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

Surveyed 1864
Revised 1868
Edition 1868
Copyright N/A
Levelled N/A

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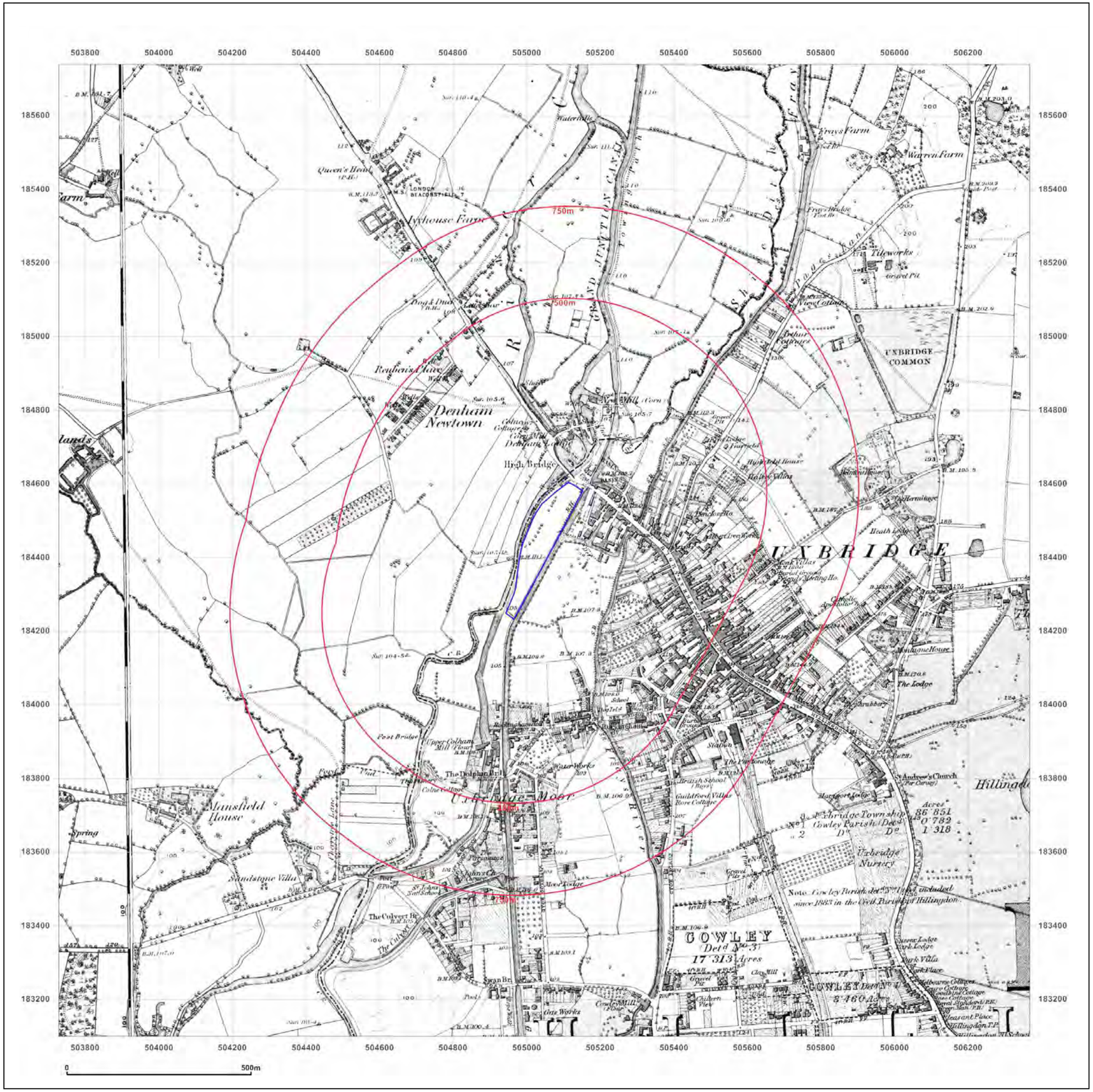

Site Details:

XEROX UK LTD, BRIDGE HOUSE, OXFORD ROAD, UXBRIDGE, UB8 1HS

Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1881-1882**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1875
Revised N/A
Edition 1882
Copyright N/A
Levelled N/A

Surveyed 1875
Revised N/A
Edition 1881
Copyright N/A
Levelled N/A

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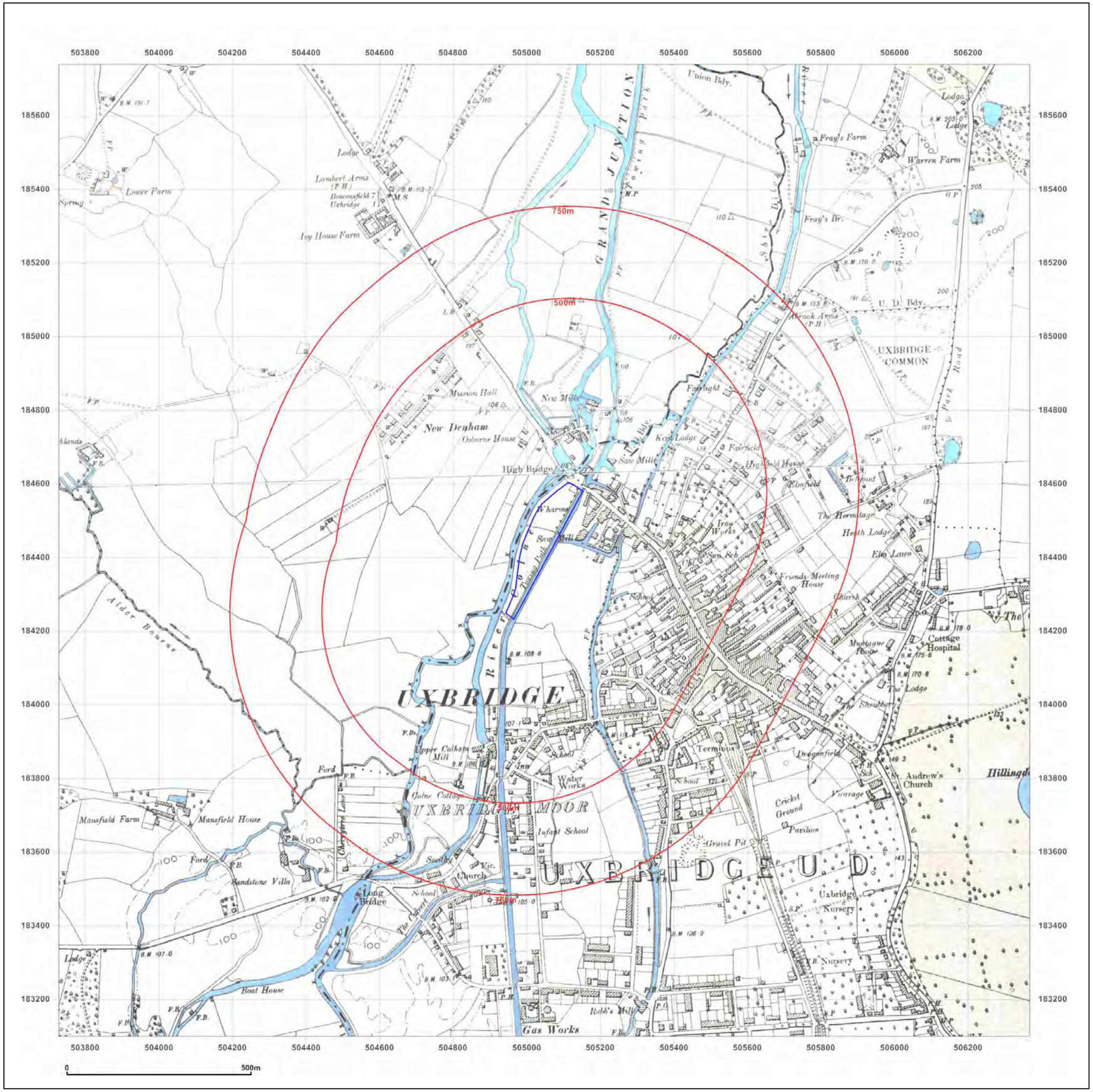

Site Details:

XEROX UK LTD, BRIDGE HOUSE, OXFORD ROAD, UXBRIDGE, UB8 1HS

Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1895-1897**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1875
Revised 1895
Edition 1897
Copyright N/A
Levelled N/A

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

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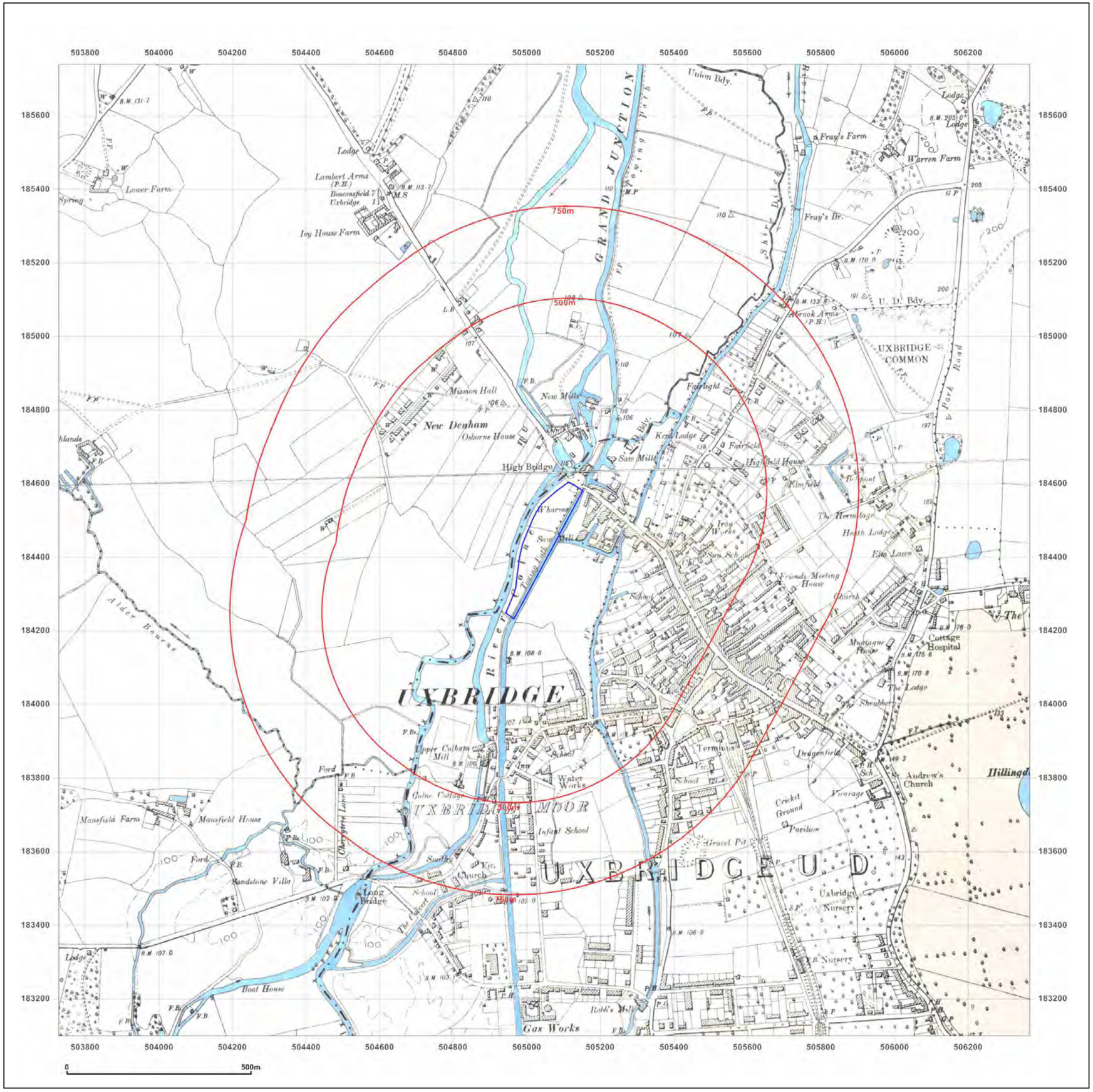

Site Details:

XEROX UK LTD, BRIDGE HOUSE, OXFORD ROAD, UXBRIDGE, UB8 1HS

Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1895-1897**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

Surveyed 1875
Revised 1895
Edition 1897
Copyright N/A
Levelled N/A

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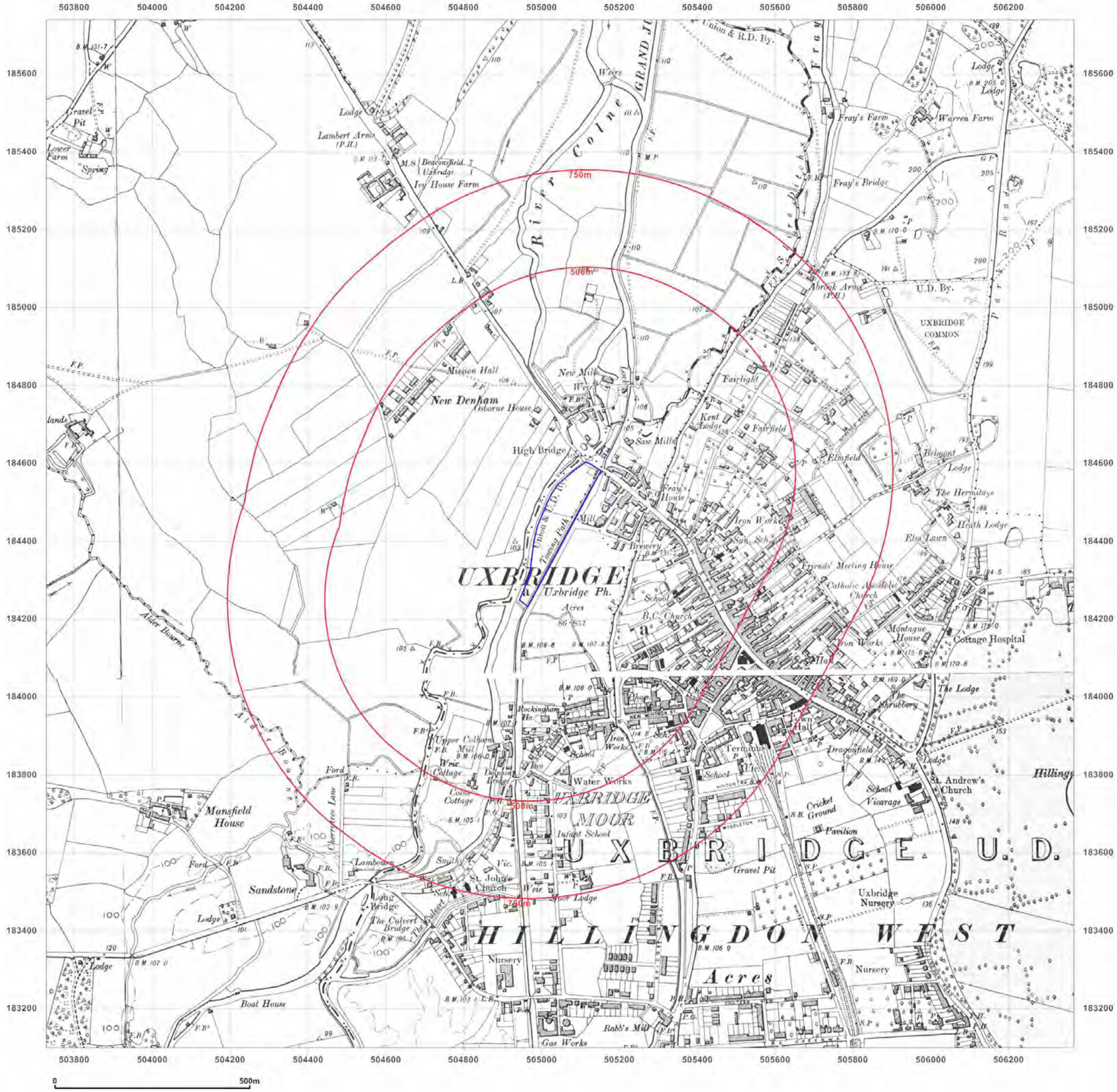

Site Details:

XEROX UK LTD, BRIDGE HOUSE, OXFORD ROAD, UXBRIDGE, UB8 1HS

Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1897-1900**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1875
Revised 1897
Edition 1900
Copyright N/A
Levelled N/A

Surveyed 1875
Revised 1897
Edition 1900
Copyright N/A
Levelled N/A

Surveyed 1875
Revised 1897
Edition 1900
Copyright N/A
Levelled N/A

Surveyed 1875
Revised 1900
Edition 1900
Copyright N/A
Levelled N/A

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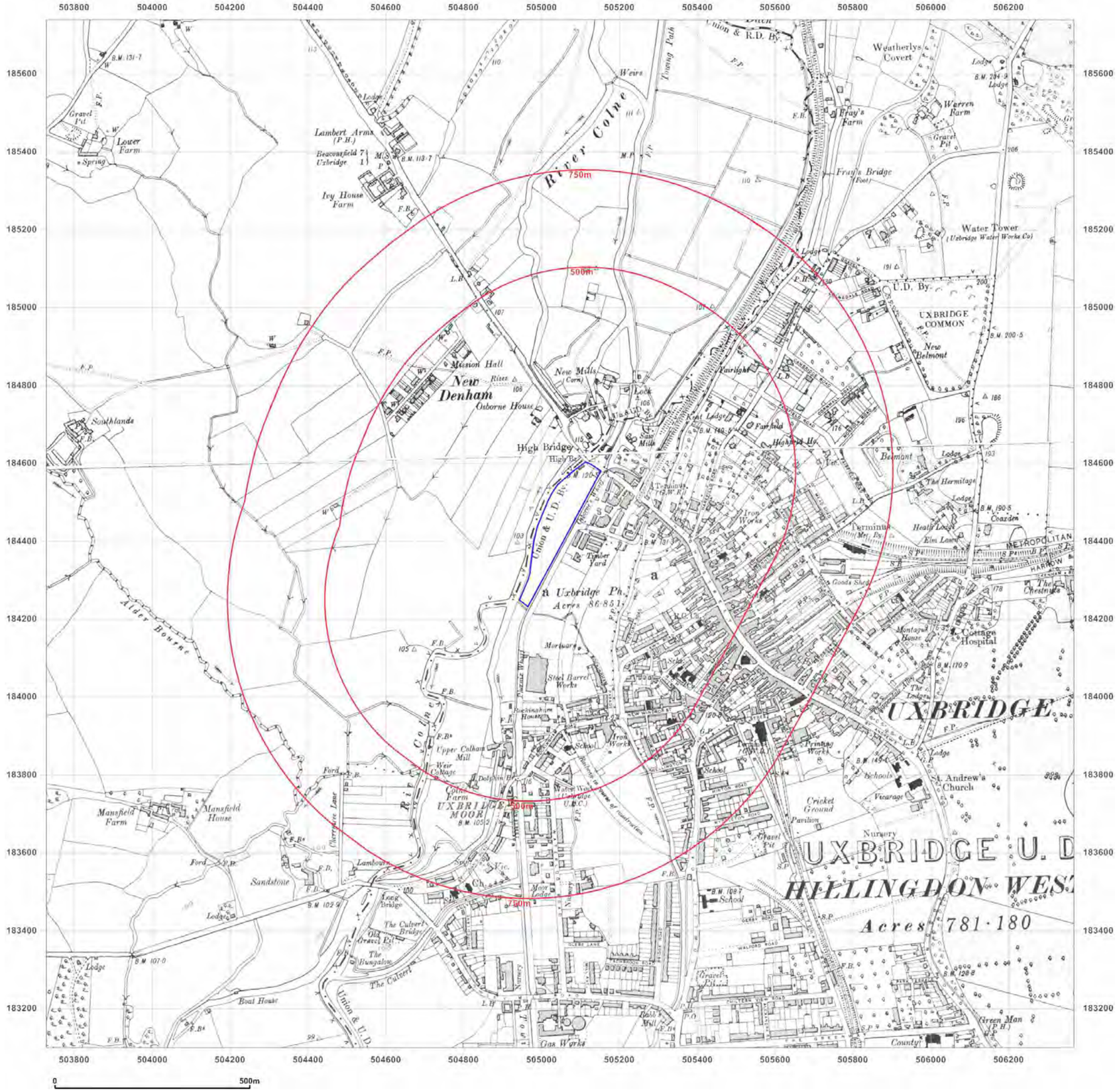

Site Details:

XEROX UK LTD, BRIDGE HOUSE, OXFORD ROAD, UXBRIDGE, UB8 1HS

Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1912-1913**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1864
Revised 1912
Edition 1920
Copyright N/A
Levelled 1913

Surveyed 1864
Revised 1913
Edition 1920
Copyright N/A
Levelled 1913

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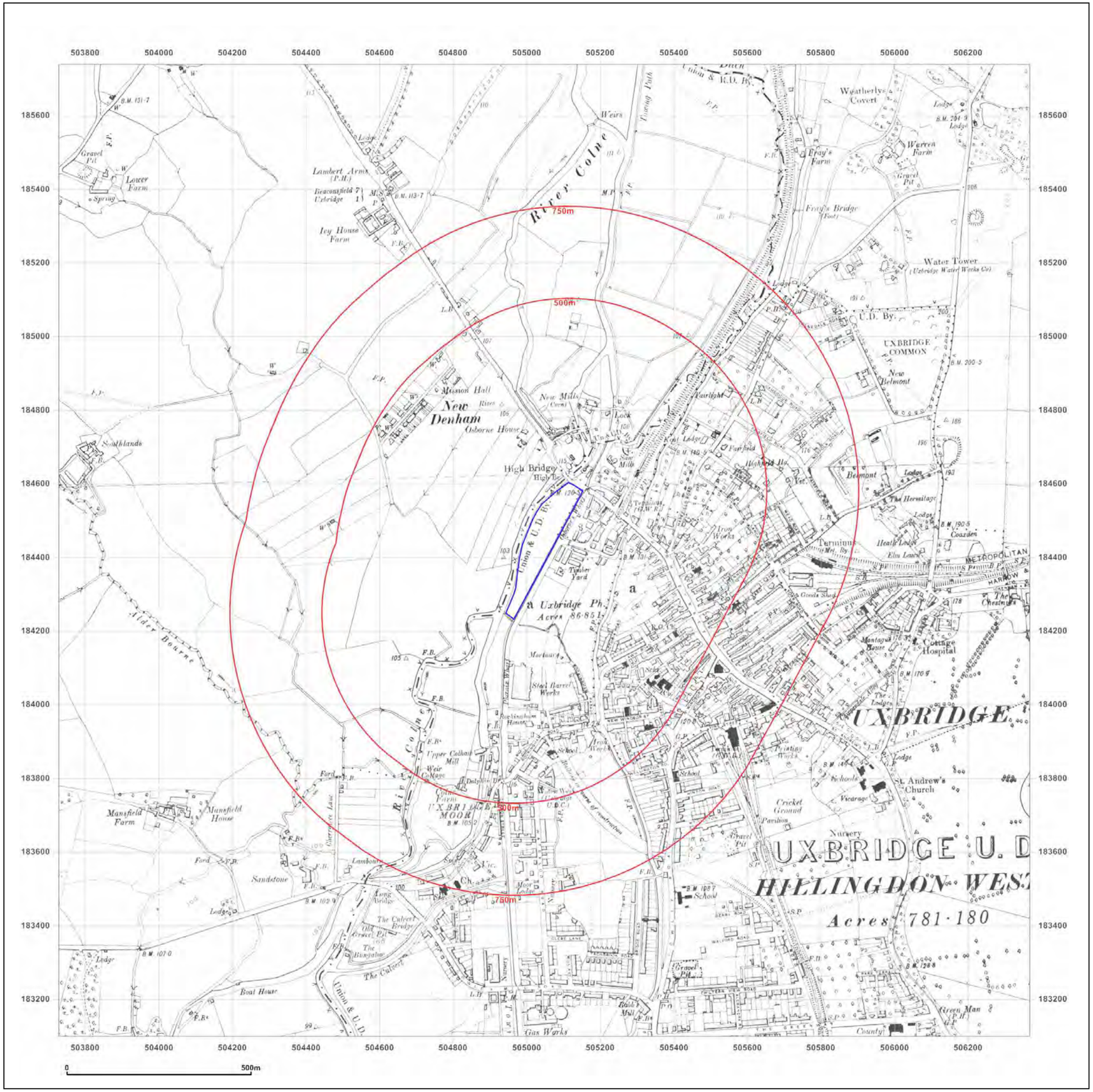

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Site Details:

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1912-1913**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1864
Revised 1912
Edition 1920
Copyright N/A
Levelled 1913

Surveyed 1864
Revised 1913
Edition 1920
Copyright N/A
Levelled 1913

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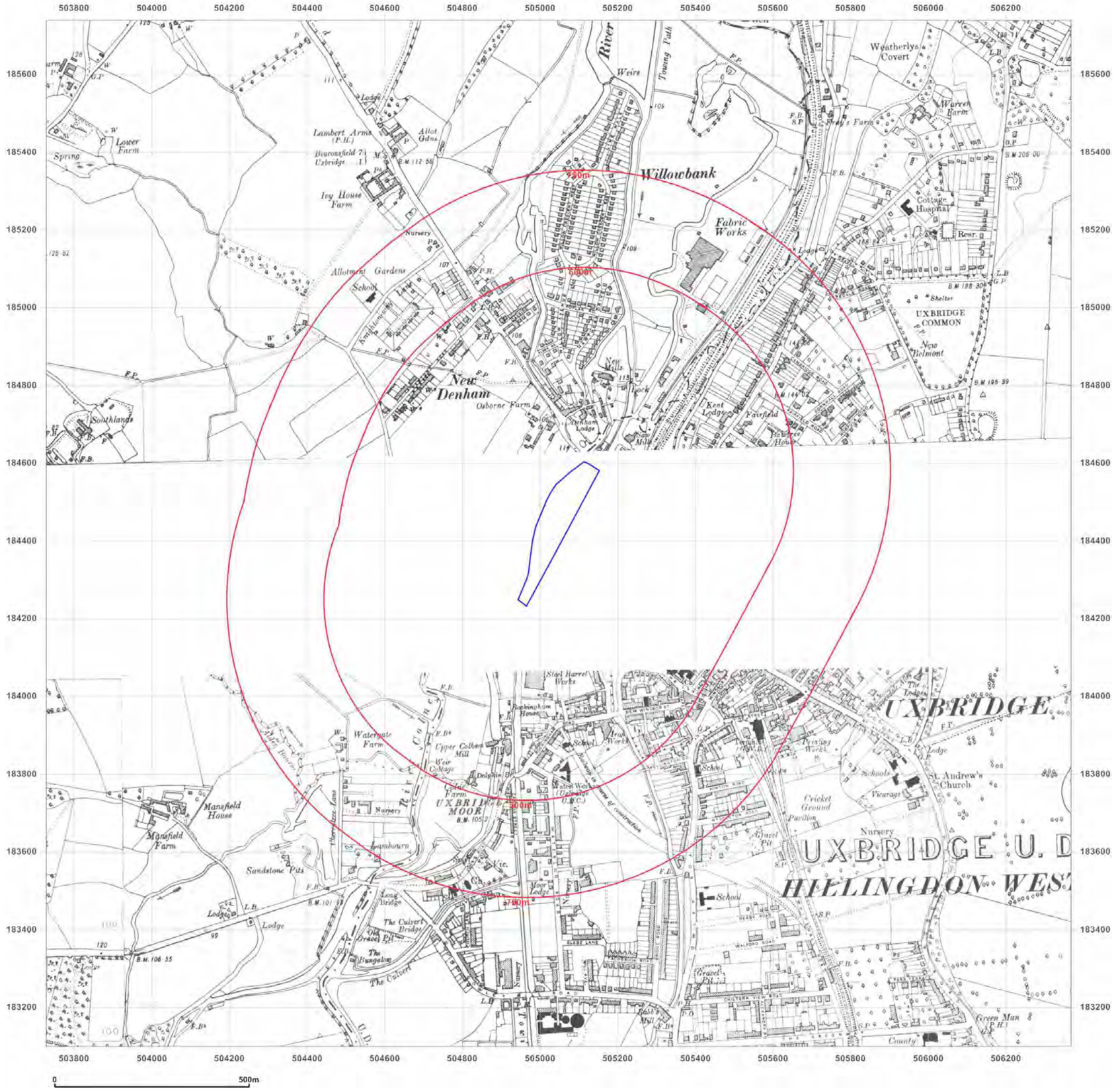

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1932-1935**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1864
Revised 1935
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1874
Revised 1932
Edition 1932
Copyright N/A
Levelled 1923

Surveyed 1874
Revised 1932
Edition 1932
Copyright N/A
Levelled 1923

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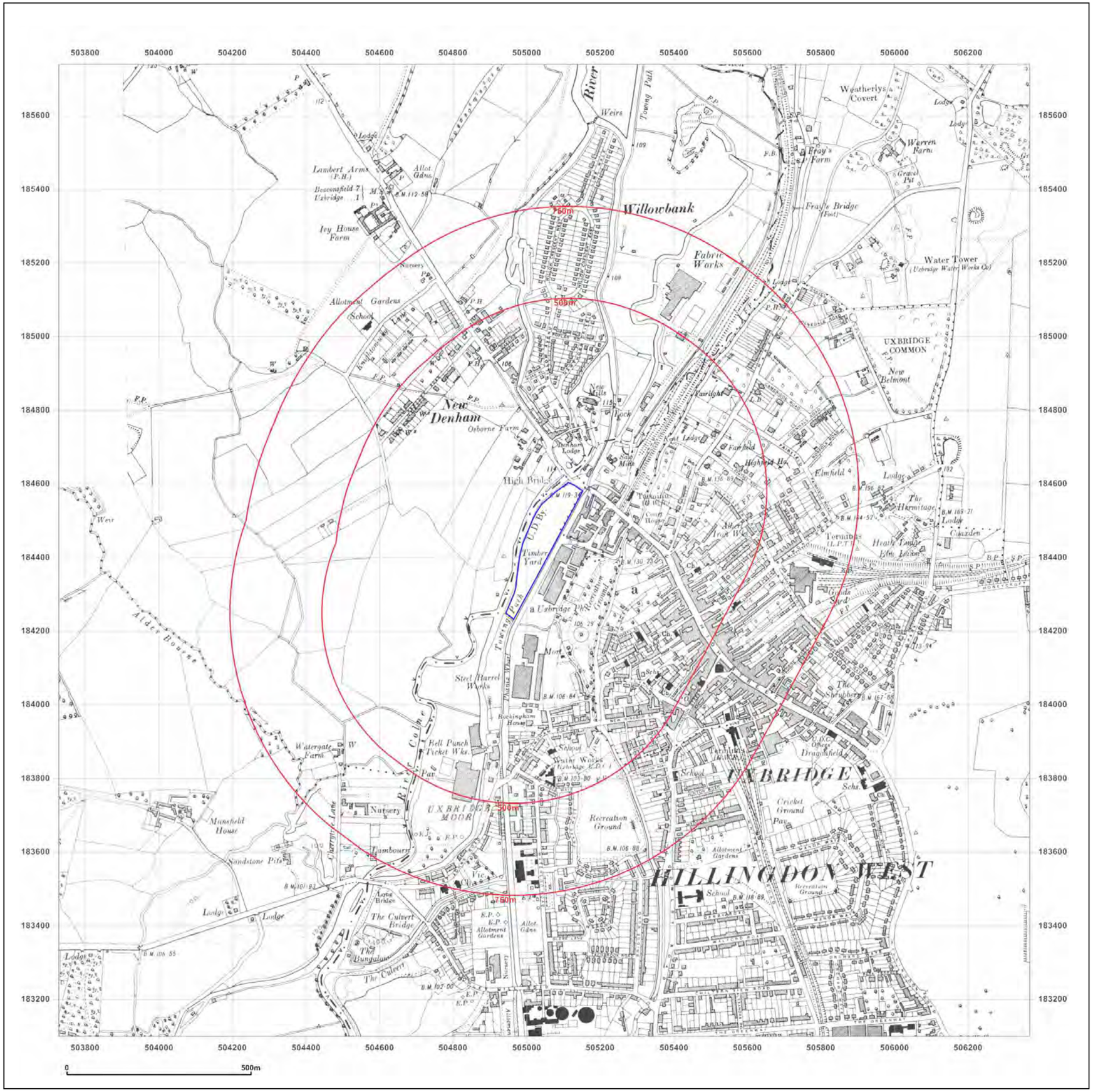

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Site Details:

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1932-1935**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1875
Revised 1932
Edition 1932
Copyright N/A
Levelled 1923

Surveyed 1864
Revised 1935
Edition N/A
Copyright N/A
Levelled N/A

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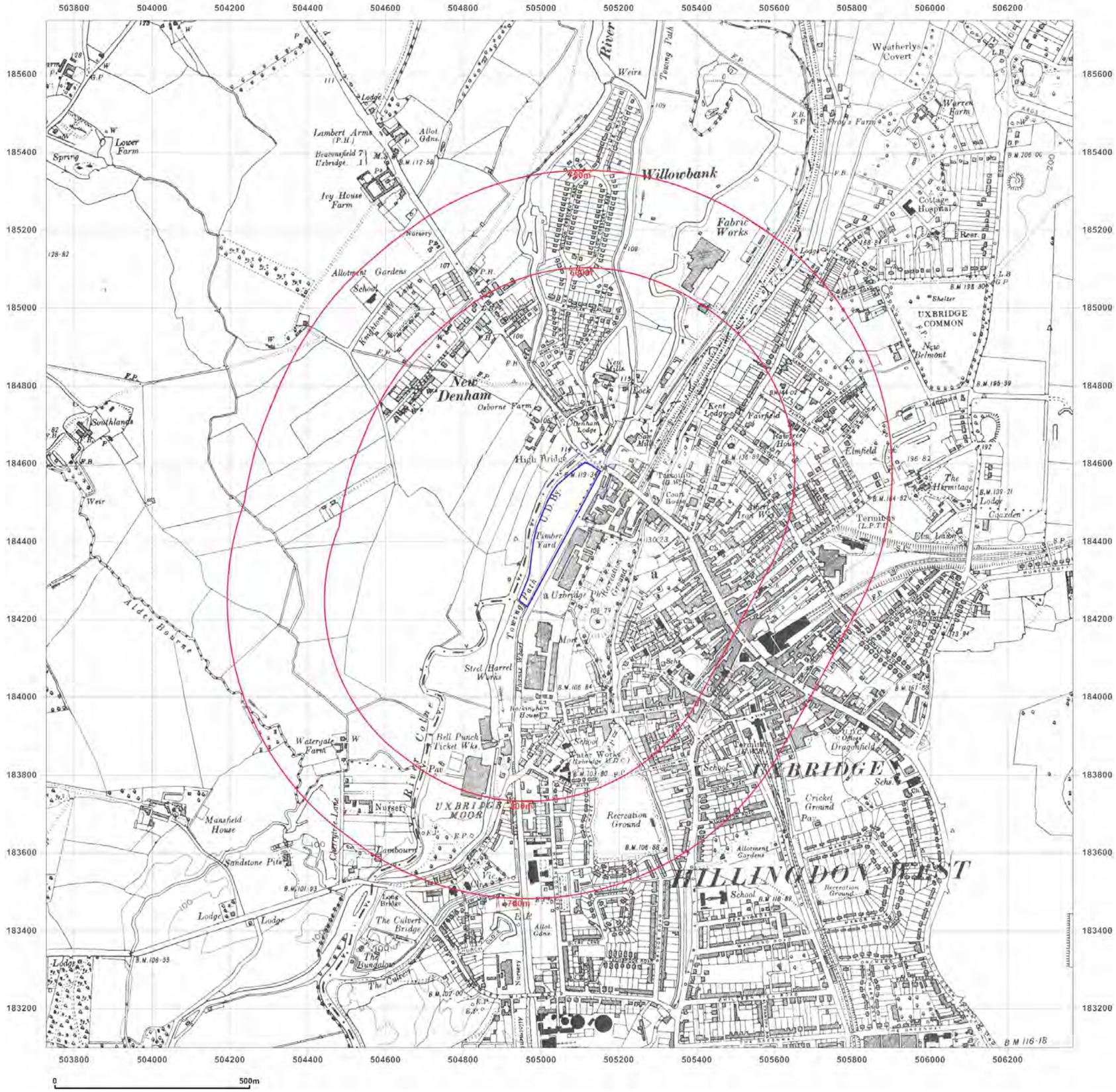

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Site Details:

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

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

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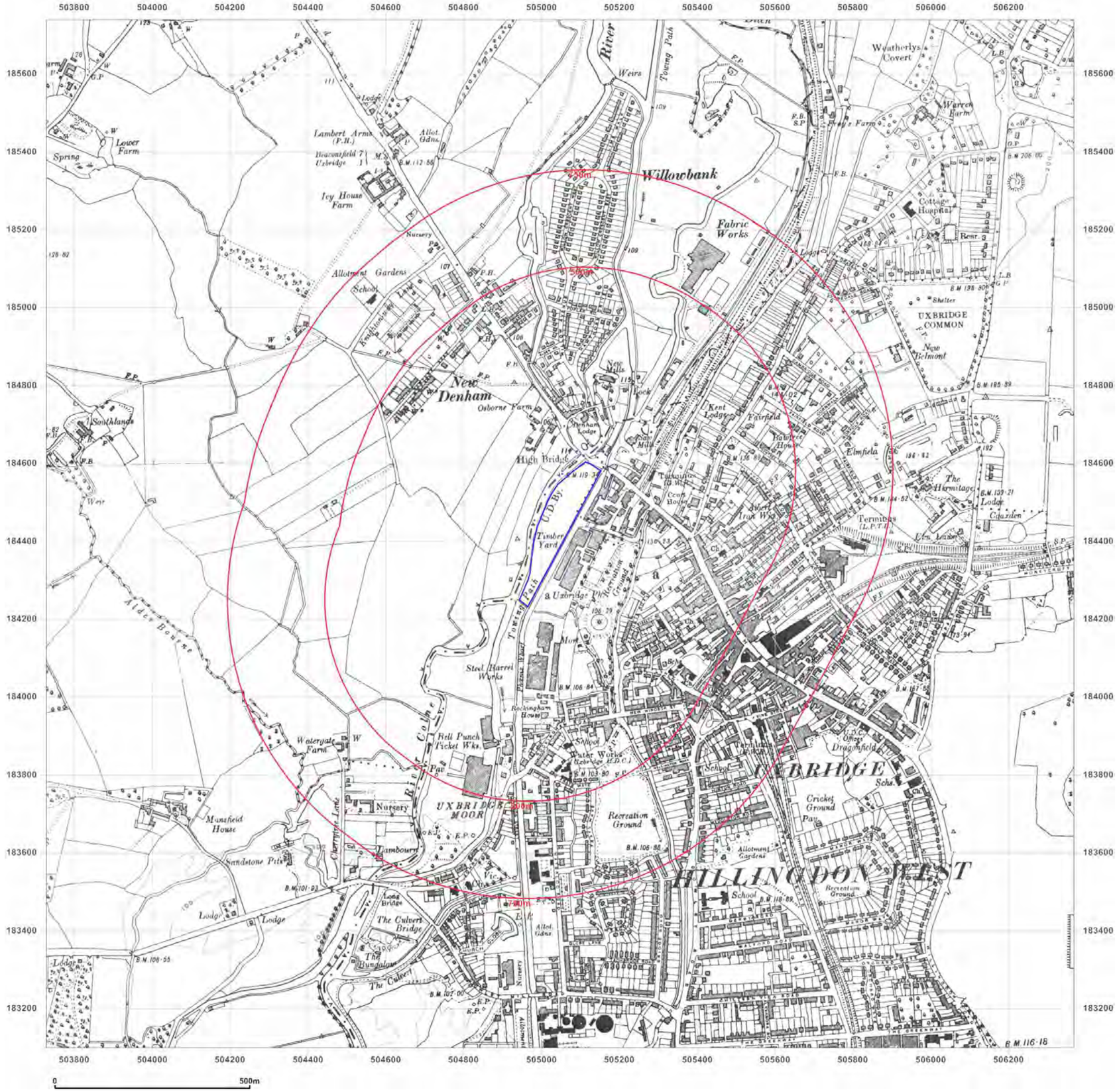

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

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

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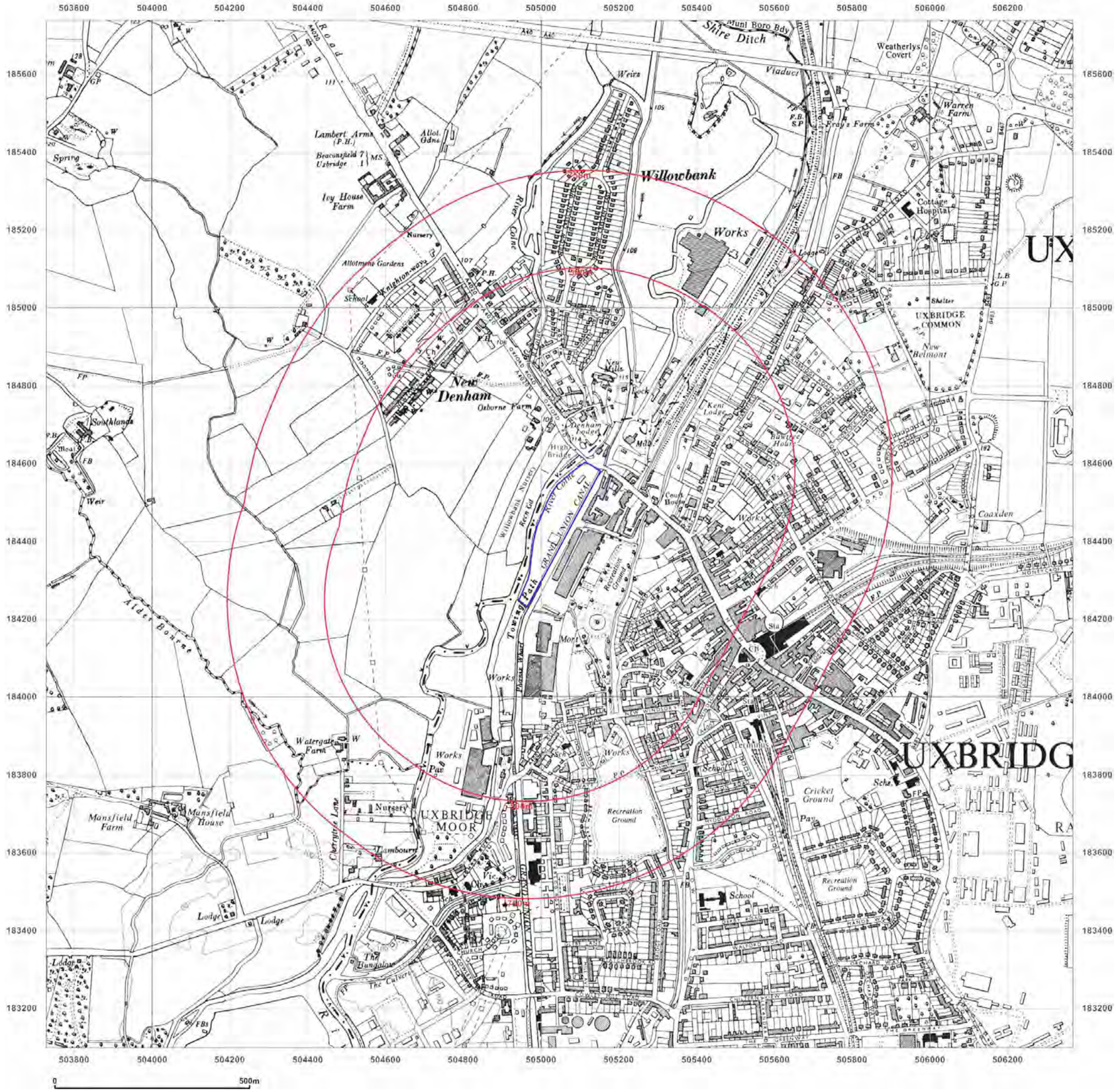

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: Provisional

Map date: **1959-1960**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

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

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

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

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

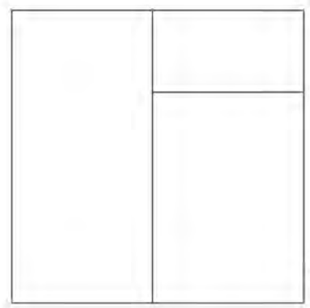
Map Name: Provisional

Map date: **1967-1970**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



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Production date: 30 May 2017

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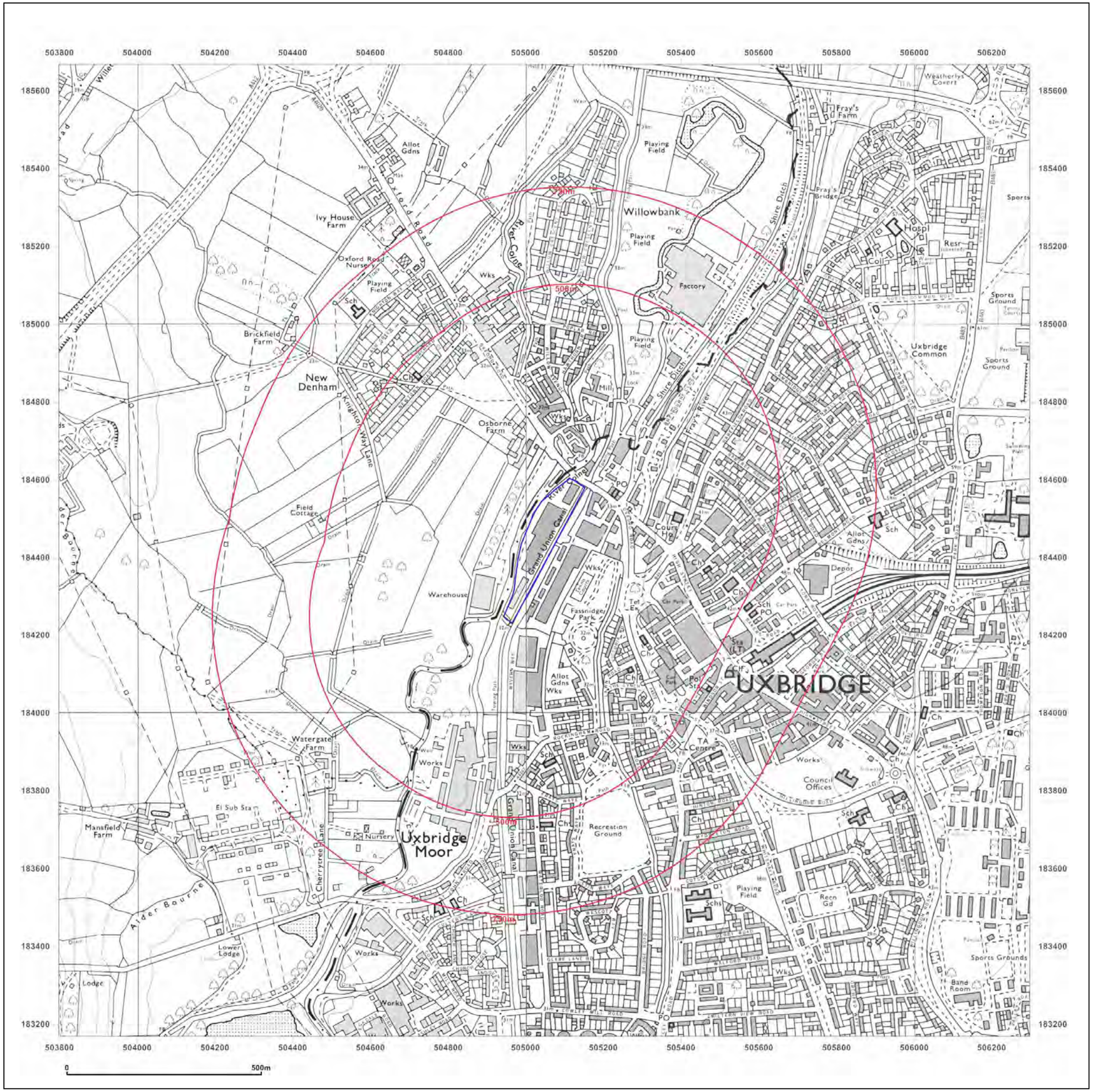

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1973-1975**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1972
Revised 1974
Edition N/A
Copyright 1975
Levelled 1972

Surveyed 1972
Revised 1973
Edition N/A
Copyright 1974
Levelled 1972

Surveyed 1974
Revised 1974
Edition N/A
Copyright 1975
Levelled 1972

Surveyed 1975
Revised 1975
Edition N/A
Copyright 1976
Levelled 1972

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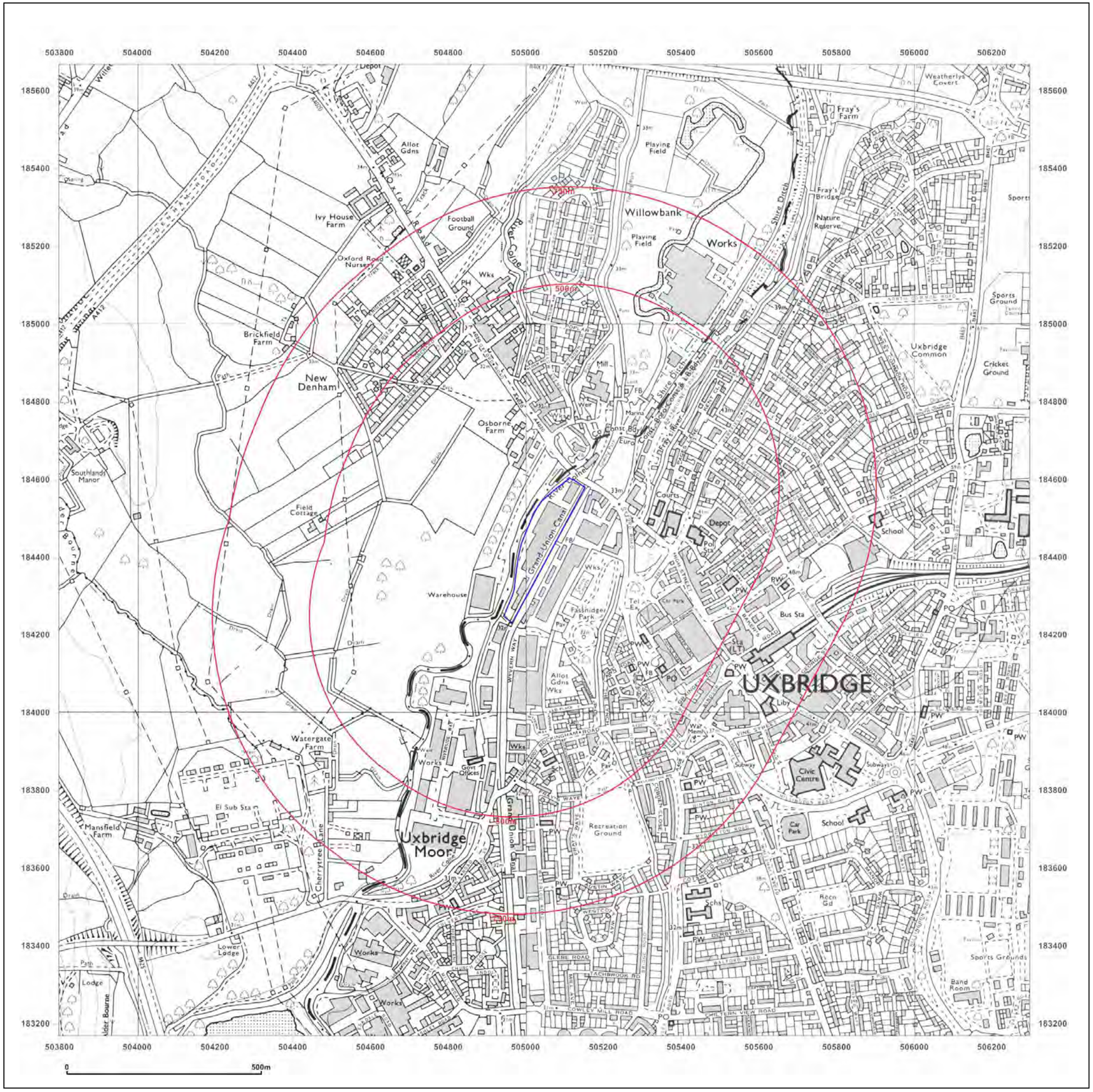

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: **1987-1989**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1977
Revised 1989
Edition N/A
Copyright 1990
Levelled 1972

Surveyed 1985
Revised 1987
Edition N/A
Copyright 1988
Levelled 1972

Surveyed 1987
Revised 1987
Edition N/A
Copyright 1988
Levelled 1972

Surveyed 1988
Revised 1989
Edition N/A
Copyright 1990
Levelled 1972

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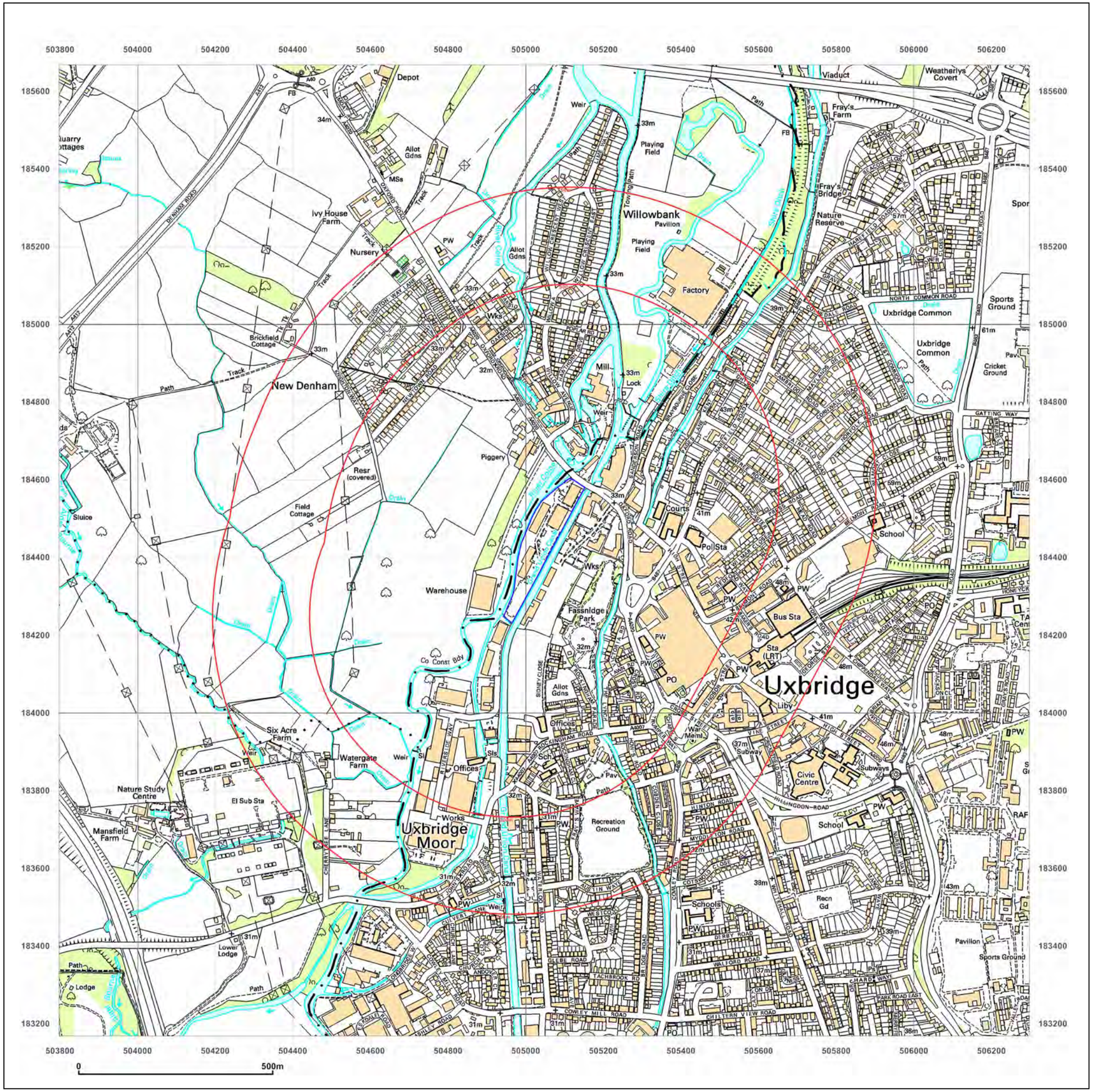

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Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: 1:10,000 Raster

Map date: **2002**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2002

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Production date: 30 May 2017

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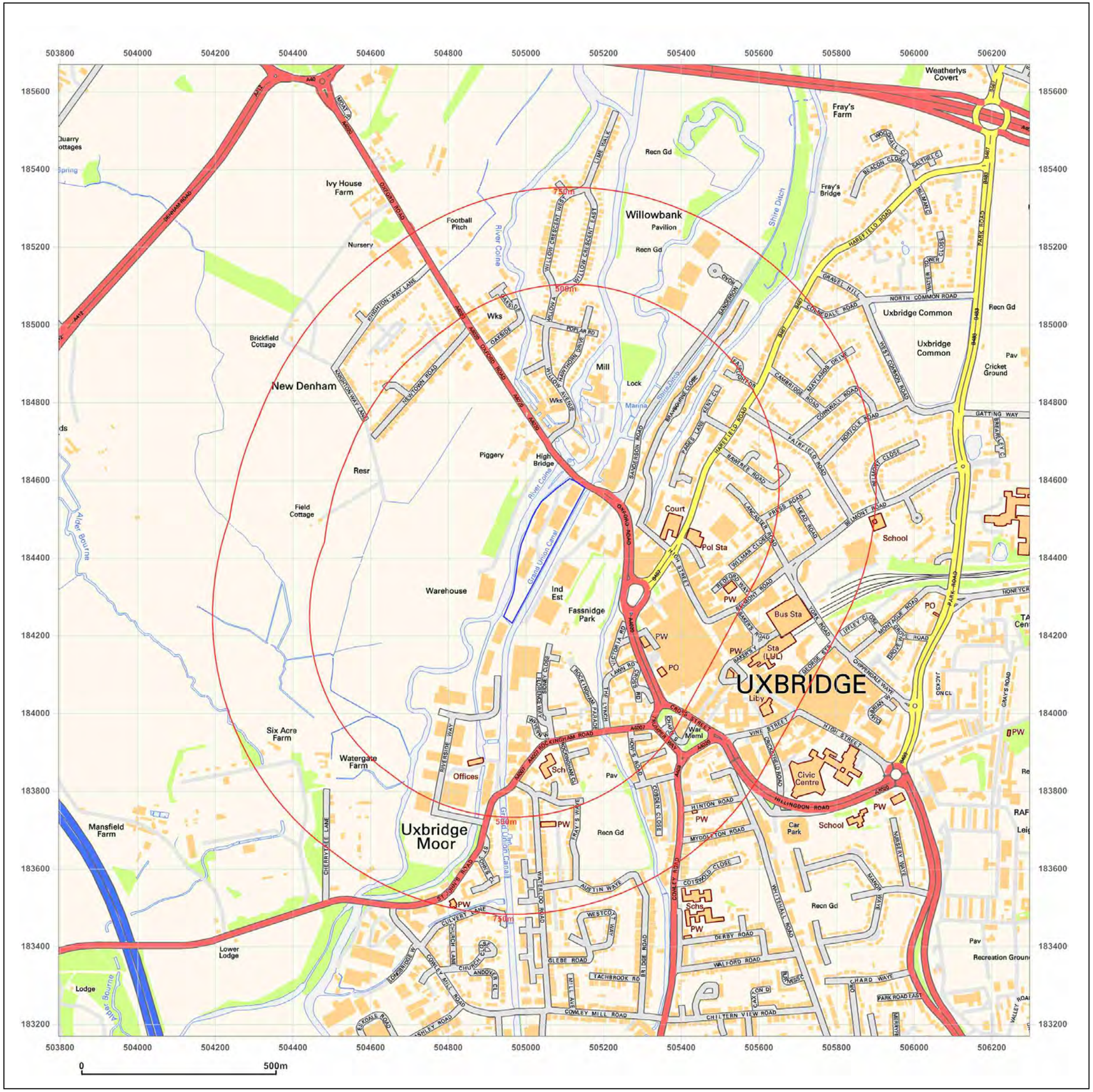

Site Details:

XEROX UK LTD, BRIDGE HOUSE, OXFORD ROAD, UXBRIDGE, UB8 1HS

Client Ref: WIC15644-82957
Report Ref: WTM1-3940281
Grid Ref: 505047, 184418

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2010

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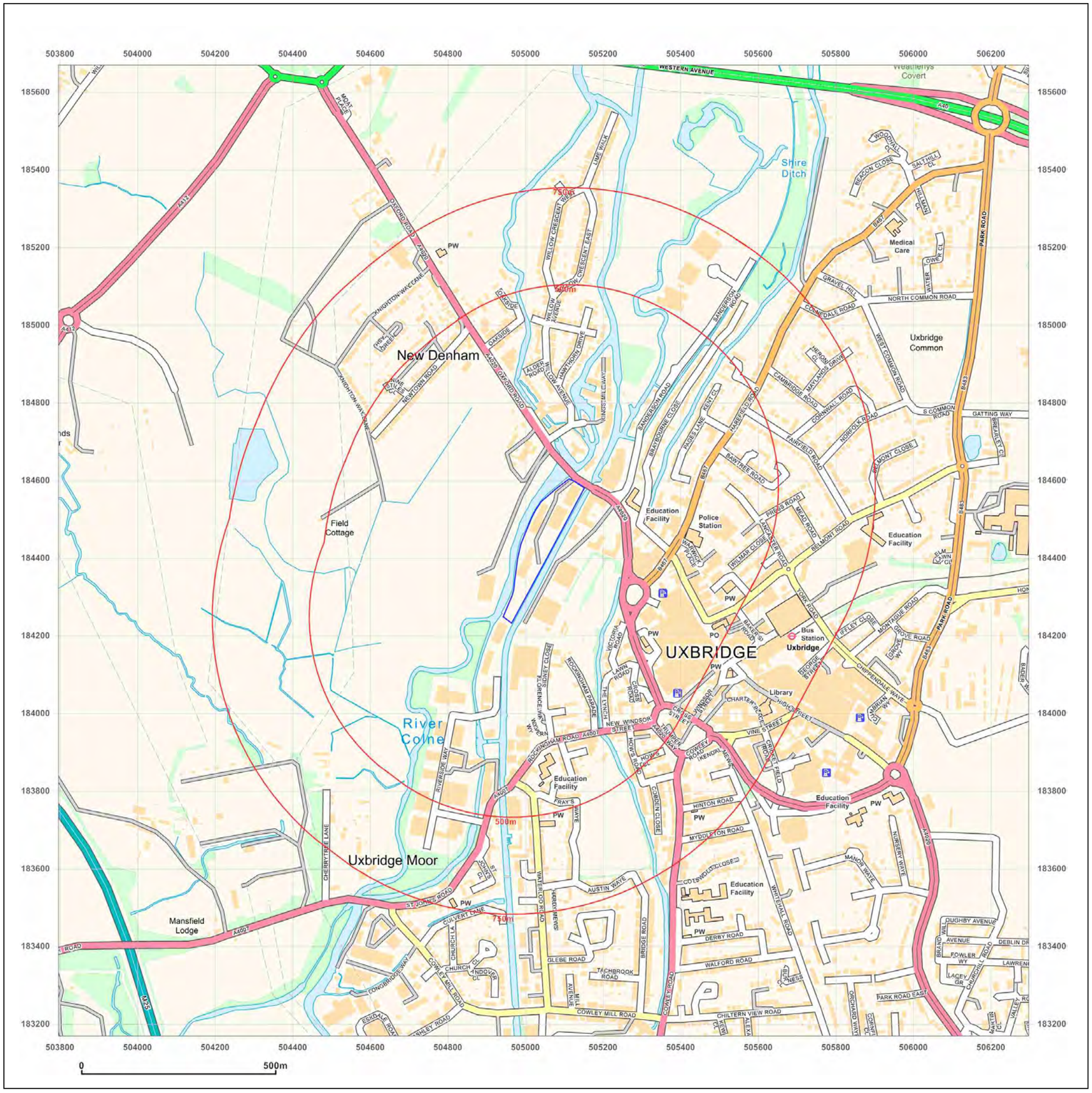
New Denham
UXBRIDGE
Uxbridge Moor
River Colne
Shire Ditch
Field Cottage
Mansfield Lodge
Uxbridge Common
Medical Care
Education Facility
Police Station
Bus Station Uxbridge
Library
WESTERN AVENUE
OXFORD ROAD
PARK ROAD
NORTH COMMON ROAD
S COMMON ROAD
GATTING WAY
NEWTOWN ROAD
KNIGHTON WAY
ROCKINGHAM ROAD
NEW WINDSOR STREET
HIGH STREET
VINE STREET
COWLEY MILL ROAD
CHILTERN VIEW ROAD
WALFORD ROAD
DERBY ROAD
HINTON ROAD
MYDDLETON ROAD
BELMONT ROAD
BAYTREE ROAD
FAIRFIELD ROAD
CORNWALL ROAD
NORFOLK ROAD
CAMBRIDGE ROAD
GRAVEL HILL
CONNEDALE ROAD
WEST COMMON ROAD
SANDERSON ROAD
BRAYBOURNE CLOSE
PAGES LANE
HAREFIELD ROAD
KENT CL
WILLOW CRESCENT WEST
WILLOW CRESCENT EAST
WILLOW AVENUE
HAWTHORN DRIVE
ALDER ROAD
OAKSIDE
LIME WALK
MOAT PLACE
A40
A412
A4020
A4007
A4020
A4020
A4020

From: Kay Tarrant
To: Andrew Le Masurier
Subject: Re: Bridge House, Uxbridge Environmental Assessment
Date: 02 June 2017 10:56:16

Andrew

Apologies, we do not have the micro film for the undercroft. The other records are internal alterations. I am sorry I cannot help.

Kind Regards

Kay

On 1 June 2017 at 16:50, Andrew Le Masurier <andrew.lemasurier@watermangroup.com> wrote:

> Hi Kay,
>
> I would like you to go ahead with that for £30 please.
>
> Kind Regards,
>
> Andrew
>
> **From:** Kay Tarrant [mailto:ktarrant@hillingdon.gov.uk]
> **Sent:** 01 June 2017 16:47
> **To:** Andrew Le Masurier <andrew.lemasurier@watermangroup.com>
> **Subject:** Re: Bridge House, Uxbridge Environmental Assessment
>
> Andrew
>
> We do not have the micro film for the original building. There is an enclosure for the undercroft from 1999. The fee is £30.00 per half an hour of time. Half an hour should be enough.
>
> Regards
>
> Kay

On 1 June 2017 at 16:31, Andrew Le Masurier <andrew.lemasurier@watermangroup.com> wrote:

> Hi Kay,
>
> Thanks for replying so promptly.
>
> Would there be a charge for yourselves to draft a letter regarding foundation detail?
>
> Kind Regards,
>
> Andrew
>
> **From:** Kay Tarrant [mailto:ktarrant@hillingdon.gov.uk]
> **Sent:** 01 June 2017 16:29
> **To:** Andrew Le Masurier <andrew.lemasurier@watermangroup.com>
> **Subject:** Re: Bridge House, Uxbridge Environmental Assessment
>
> Andrew
>
> Thank you for your email.
>
> The ground condition is alluvium.
>
> It is possible to view the councils records regarding foundation detail of the buildings on site or have us draft a letter. We have no information on flooding or gas.
>
> Regards
>
> Kay

On 1 June 2017 at 15:51, Andrew Le Masurier <andrew.lemasurier@watermangroup.com> wrote:

Dear Kay,

We are completing an environmental assessment on a site at Land at Bridge House, Uxbridge, UB8 1HS (see attached plan), and I would be grateful if you could provide me with the following information:

- Gas protection measures (type, date of installation)
- Information on ground conditions at the site
- Any records of Made Ground (type, who by, dates)
- Any records of settlement/drainage/groundwater problems
- Any records of type of foundations on site
- Any records of flooding on the site
- Presence of interceptors on site
- Ownership of drainage, particularly surface water drainage and discharge consents.

I would be grateful if you could inform me if there will be a charge for this information search.

I would like to thank you in advance for your time.

Please do not hesitate to contact me should you have any questions.

Yours Faithfully,

Andrew

Andrew W Le Masurier BSc MSc AIEMA

Graduate Environmental Consultant

Waterman Infrastructure & Environment Ltd.

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Kay Tarrant
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London Borough of Hillingdon

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UNITED BY OUR DIFFERENCE

WSP

PHASE I ENVIRONMENTAL ASSESSMENT, BRIDGE HOUSE, RIVERVIEW HOUSE AND WATERSIDE HOUSE, OXFORD ROAD, UXBRIDGE, UK

Legal & General Assurance (Pensions Management) Limited

April 2013

Quality Management

Issue/revision	Issue 1	Revision 1	Revision 2	Revision 3
Remarks	Final	Revised Final		
Date	March 2013	April 2013		
Prepared by	N Sandercock	N Sandercock		
Signature				
Checked by	S Cossins	P Dowley		
Signature				
Authorised by	P Dowley	P Dowley		
Signature				
Project number	38109	38109		
Report number	38109	38109		
File reference	001	001		

At WSP, our Environment & Energy business helps clients across the world to manage risks, reduce costs and create competitive opportunities in their markets. We are part of WSP and GENIVAR, one of the world's leading professional services firms with 14,500 people operating from more than 300 offices in 35 countries. We provide services to transform the built environment and enhance the natural environment, including:

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- Corporate environmental & carbon strategies
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- Asbestos & hazardous materials management
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- Managing water & waste
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- Geotechnical & ground engineering
- Land remediation
- Environmental planning & impact assessment
- Sustainable development & master planning
- Acoustics, noise & vibration
- Natural resources, ecology & habitat management
- Climate change adaptation
- Renewable energy
- Low carbon buildings
- Energy & emissions management (Energy Performance Certificates (EPC's) and Energy Audits)
- Online analysis, compliance and training solutions

PHASE I ENVIRONMENTAL ASSESSMENT, BRIDGE HOUSE, RIVERVIEW HOUSE AND WATERSIDE HOUSE, OXFORD ROAD, UXBRIDGE, UK

Legal & General Assurance (Pensions Management) Limited

April 2013

Client

Legal & General Assurance (Pensions Management) Limited

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Nichola Sandercock

Table of Contents

Executive Summary 5
1. Site Information 7
2. Historical Land Use 13
3. Regulatory Information & Consultation 16
4. Other Relevant Information 19
5. Environmental Setting 20
6. Preliminary Risk Assessment 23
7. Conclusions & Recommendations 26
Appendices 28
Appendix A Site Location & Site Boundary Plan 29
Appendix B Photographic Record 31
Appendix C Selection of Historical Map Extracts 34
Appendix D Methodology and Report Limitations 39
Appendix E Report References 43

Executive Summary

WSP Environmental Ltd. (WSPE) was instructed by Legal & General Assurance (Pensions Management) Limited ("the client") to undertake a Phase I Environmental Assessment of Bridge House, Riverview House and Waterside House, Oxford Road, Uxbridge, UB8 1HS, UK. The report highlights environmental considerations, predominantly with respect to ground conditions, and is required as part of the proposed purchase of the freehold interest in the site, which is subject to leasehold interests. Please refer to Appendix D for WSPEE's Methodology and Report Limitations.

KEY FINDINGS

The subject site comprises an elongated parcel of land supporting three large commercial office buildings and a multi-storey car park. Further car parking areas are located within the eastern and southern areas of the site. The current site use is not considered to represent a potential source of contamination.

The site is located to the northwest of Uxbridge town centre, approximately 650 metres (m) west of Uxbridge underground station; it is mixed use commercial, agricultural and residential area.

Historical maps indicate that from at least 1866, the subject site comprised undeveloped assumed agricultural land. By 1938, a timber yard was located within the centre of the site and by 1962, the timber yard had been redeveloped into a mill. By 1973, the mill had been redeveloped into two large warehouses and a depot was located within the southern area of the site. Furthermore, at this time an assumed commercial building labelled as 'Bridge House' had been developed within the northern area of the site, forming part of the current site layout. By 1974, a tank was labelled on-site, in close proximity to the western boundary of the site. Between 1992 and 2006, the warehouses, depot and tank were cleared and two further commercial properties and a multi-storey car park were developed, forming the current site layout.

Surrounding sites (within 250 metres) have had a significant industrial history and include a box and pallet factory, an asbestos works, a printing works, an engineering works, an enamel works, a cork works, a mill, a council depot, a steel barrel works, a garage, a brewery, a corn mill, a flour mill and numerous works, railway line, warehouses, saw mills and unlabelled assumed industrial properties. However, the historical activities have largely been redeveloped into the current commercial and residential uses through various periods of redevelopment.

The Contaminated Land Officer at London Borough of Hillingdon stated that the site has been identified as needing further assessment under the Local Authority's Contaminated Land Inspection Strategy however the site is not considered a priority for further investigation.

The site setting is considered to be of moderate sensitivity, due to the underlying Secondary A Aquifers, the presence of nearby surface water features (Grand Union Canal located from adjacent to the east, north and south, the River Colne located from adjacent to the west, north and south, and the Fray's River located from 190m east and northeast and southeast of the site), the presence of groundwater surface water abstractions within a 1km radius of the site (for general washing/process washing, spray irrigation, and mineral washing uses), and the residential and agricultural land uses within the surrounding area.

CONTAMINATED LAND LIABILITY

While the current use of the site is not considered to act as a significant source of contamination, historic potentially contaminative activities including a mill, timber yard, warehouses and a depot (including tank) have been identified on-site. Therefore, the potential for contamination associated with these activities cannot be discounted. However, any contamination, if present, are likely to be characteristic of the wider surrounding area and given the nature of the current site uses and associated structures; the potential for a significant environmental liability to arise for the on-going commercial use of the site is considered reduced.

Based on the information contained within this report and with due regard to the continued commercial land use, it is the opinion of WSPE that the site represents a **low/medium** risk with respect to contaminated land liability issues

Other environmental considerations include Asbestos Containing Materials (ACM's), Energy Performance Certificates (EPC's) and tenant/housekeeping issues. Further detail is provided within Section 6.3

RECOMMENDATIONS

No further contaminated land assessment works are considered necessary for the continued existing commercial use of the site.

It should be noted that further assessment would be required in the event of re-development.

Please note: This summary forms part of WSP Environmental Ltd. Phase I Environmental Assessment (ref: 38109). Under no circumstances is it to be used as an independent document.

WSP Environmental Ltd

1. Site Information

1.1 Site Details

Site Address	Bridge House, Riverview House and Waterside House, Oxford Road, Uxbridge, UB8 1HS, UK
National Grid Reference	505040, 184420
Size	2.52 Hectares
Tenure	Freehold (subject to leasehold interests)
Site Location	The site is located to the northwest of Uxbridge town centre, approximately 650 metres (m) west of Uxbridge underground station; it is mixed use commercial, agricultural and residential area. A site location plan is included as Appendix A.
Current Site Use	The subject site supports a commercial office development.

1.2 Site Reconnaissance

A walk over survey of the site was carried out on 15th March 2013, including an inspection of the interior and exterior of the buildings on-site and the external areas. Access was made available to all areas of the site. A site boundary plan is included in Appendix A and photographs of the site are presented in Appendix B.

The following key observations were made during the site reconnaissance.

Site Description

The subject site comprises an elongated parcel of land supporting three large commercial office buildings. Bridge House is located in the north of the site and is arranged over ground and six upper floors. Waterside House is located in the centre of the site and is arranged over ground and three upper floors. Riverview House located in the south of the site and is also arranged over ground and three upper floors. A three storey car park is located to the south of Bridge House. Further car parking areas are located within the eastern and southern areas of the site.

Specific On-Site Activities

- The site is known as the Xerox Campus housing the headquarters of Xerox UK.
- The site is supplied with mains water, gas and electricity.
- Six gas fired boilers are located within a plant room on the sixth floor of Bridge House. Two gas fired boilers are located within plant rooms on the third floor of both Riverview House and Waterside House. The site representative reported that the boilers on-site are serviced by Initial Facilities (Rentokil Initial Group) on a regular basis.
- Two electricity powered passenger lifts and an electricity powered goods lift are located within Bridge House. Two hydraulic powered passenger lifts are located within Riverview House and two further hydraulic powered passenger lifts are located within Waterside House. Minor hydrocarbon staining was noted to be present on-top of the concrete hardstanding within the bunded lift motor room located on the third floor of Waterside House.

- A diesel powered back-up generator is located within an external enclosure, adjacent to the south of the multi-storey car park (see *Bulk Hazardous Materials Storage* below for further details).
- An approximately 8000 litre cold water storage tank is located on the third floor of Waterside House and a similar size tank k is located on the third floor of Riverview House. The site representative reported that there have been no issues associated with legionella on-site and that water sampling is carried out by an external contractor once every four months. Minor chemical staining was noted to be present on top of the concrete hardstanding below a dosing pot located within the water storage room on the third floor of Riverview House.
- UPS systems are present in third floor plant rooms in both Riverview House and Waterside House with associated large battery units. No environmental concerns were noted to be associated with these systems.

External Areas

- Numerous car parking spaces are provided within the eastern section of the site, from adjacent to the south of the multi-storey car park. No significant staining was noted in these areas. Approximately 30% of the external areas comprise soft landscaping with the remainder laid to concrete, asphalt concrete paving and brick paving hardstanding.

Bulk Hazardous Materials Storage

- The site representative stated that there are no underground storage tanks (UST's) and no evidence of such tanks was noted during the site reconnaissance.
- A 3,630 litre diesel above ground storage tank (AST) utilised for filling a day tank, which in turn is used to power an adjacent back-up generator, is located within an enclosure to the south of the multi-storey car park. A metal plate attached to the AST stated that the AST is double skinned. The fill point for the AST is located above a drip tray within a metal cabinet attached to the front of the AST. A drain point was noted to be stored without secondary containment, within close proximity to a surface water drain. However, the drain point was noted to be locked and the site representative reported that this drain point is not used. No significant hydrocarbon staining was noted to be present on top of the concrete hardstanding within the vicinity of the tank or fill point. The site representative was not aware of any past or present issues associated with the AST and stated that the AST is serviced on an annual basis by Power and Installation Generators Ltd.
- Above ground pipework feeds diesel from the 3,630 litre AST to an approximately 750 litre day tank which is integrated into the base of the generator located within the compound to the south of the multi-storey car park. The site representative was unaware if the day tank was double skinned. The AST was located within metal housing and therefore the presence of a bund could not be determined. The site representative did not report any past or present issues associated with the day tank. The day tank is reportedly serviced on an annual basis by Power and Installation Generators Ltd. As mentioned above, the AST and generator were noted to be stored adjacent to a drain reportedly associated with surface water drainage. No hydrocarbon staining was noted to be present on top of the concrete hardstanding surrounding the AST and generator.
- It is recommended that a drain cover is installed to prevent any spillages/leaks from the tank the AST entering the drainage system.

Other Hazardous Materials

- The site representative stated that there are no significant quantities of potentially contaminative substances stored on-site. No such materials were observed on-site.

Polychlorinated Biphenyls (PCBs) in electrical plant

- Three electricity substations operated by SSE Power Distribution are located within the sites' boundary. It was not possible to assess the compound in which the substation is located and therefore the condition could not be determined. As the substation is owned by SSE Power Distribution, responsibility for any contamination if present should rest with them.

Ozone Depleting Substances (ODS)

- A number of air conditioning units and chillers service the buildings; the units inspected during the walkover were observed to be charged with the refrigerants R22, which is a hydrochlorofluorocarbon (HCFC) (an ODS) and R407C, R410A, and R134a, which are hydrofluorocarbons (HFCs) (non-ODSs).
- The use of virgin HCFCs when servicing air conditioning systems is now banned and the use of all HCFCs (including recycled/recovered/reclaimed) when servicing systems is banned from January 2015 under the Environmental Protection (Controls on Ozone-Depleting Substances) Regulations 2002. All ODS used in refrigeration and air conditioning equipment must be recovered prior to dismantling or disposal of equipment (if not already replaced). This is typically a tenant issue, although it would be prudent to clarify.

Waste Storage

- Waste produced within Bridge House and Waterside House is largely stored within an enclosure located to the south of the multi-storey car park. Waste produced within Riverview House is largely stored within an enclosure located to the south of the building. Tenants reportedly segregate waste into general and mixed recycling waste streams. General waste and mixed recycling is stored with numerous large wheeled waste containers prior to collection and transferral off-site by Grundon Waste Management Limited.
- Confidential paper for recycling is stored within numerous small wheeled plastic waste containers within the enclosure located to the south of the multi-storey car park prior to collection and transported off-site by PHS Datashred.
- Waste vegetable oil is stored within 20 litre plastic containers located without secondary containment on top of wooden pallets, within an enclosure adjacent to the east of Waterside House prior to collection, and transferral off-site by a reportedly licenced waste contractor. No hydrocarbon staining was noted to be present on top of the good quality concrete hardstanding.
- It is recommended that waste vegetable oil is stored within secondary contaminant. No further issues were identified at the site in relation to waste storage.
- Waste light bulbs and florescent tubes are stored within a plastic coffin adjacent to the north of the multi-storey car park prior to collection and transferral off-site by Lampcare (UK) Recycling Ltd.

Drainage Issues

No drainage survey or drainage plans were available for review during the site visit. Additionally, drainage covers were not lifted as part of the assessment.

- *Surface water*

- The site representative indicated that stormwater run-off generated from the car park areas drains into a surface water drainage system which in turn drains off-site into the municipal drainage system. The site representative was unaware of any oil/water interceptors present in the surface water drainage system on-site.

- *Foul Water*

- Foul water on-site is limited to sewage and domestic waste water. Two septic tanks were reported to be present on-site and were noted to be located adjacent to the north of Waterside House and adjacent to the east of Bridge House. The septic tanks are reportedly cleaned out on a regular basis by an external

contractor. The site representative did not report any issues associated with on-site foul water, and none were observed.

- *Trade Effluent*

- No trade effluent discharges that would require the freeholder to obtain consent to discharge were identified during the site visit.

Asbestos Containing Materials (ACM)

- An asbestos report was available for inspection. The report was prepared by Blues Consulting Ltd in August 2004. No critical review of the competency or technical quality of the above report has been undertaken (this can be provided by WSPE for an additional fee if required); however, the report indicates that asbestos is present within numerous locations on the roof plant rooms of Bridge House. Recommendations within the report include removal, replacement during routine maintenance, and encapsulating, labelling and management of the ACM's identified.
- A further asbestos report prepared by Blues Consulting Ltd in April 2006 was available for inspection. The report indicates that asbestos is present within the ground floor and roof of Bridge House. Handmade notes referencing various email correspondence and documentary evidence were observed in the report. It should be noted that not all referenced email correspondence and documentary evidence was available for inspection. The following information has been identified from the report:

Location of ACMs	Recommendations	Notes
Debris located on the floor of a roof level plant room	Remove	Completed on 19th February 2007
Possible break lining to motors, roof level lift motor room	Manage	None
Rope gasket to ducting in a roof level plant room	Encapsulate, label and manage	Completed (no date given)
Roll of gasket on ducting in roof level plant room and CAF gasket residue to valve in roof level pump room	Remove	Completed 5th April 2008
CAF gasket to boiler, roof level boiler room	Replace during routine maintenance	Encapsulated and labelled 5th April 2008
Possible rope gasket to flue roof level boiler room	Encapsulate, label and manage	Completed 5th April 2008
Possible CAF gaskets to pipes, roof level boiler room	Replace during routine maintenance	Encapsulated and labelled 5th April 2008
Typical gaskets to pipework, roof level chiller isolation room	Replace during routine maintenance	Encapsulated and labelled 19th February 2007
Promenade tiles beneath roof covering	Manage	Covering in place, need to advise contractors working on-site if to be disturbed. Will need sample if tiles need to be removed.
Possible brake linings, roof level goods lift motor room	Replace during routine maintenance	None
CAF gaskets, roof level pump room	Remove	Removed 5th April 2008
Gaskets to pipework, ground floor pump room	Replace during routine maintenance	Labelled and encapsulated (no date given).

- No further information relating to ACM's on-site has been provided for review. Based on information provided by the Client and historical mapping information, it is understood that Waterside House, Riverview House and the multi-storey car park were constructed in 2000. All forms of ACMs were banned in the UK from 24th November 1999 under the Asbestos (Prohibitions) (Amendment) Regulations 1999 (although very limited exclusions still applied). Although it is considered unlikely that ACMs are present in the building, no review of the post-construction Health & Safety file has been undertaken to confirm no ACMs were utilised in the construction. This can be undertaken for an additional fee if required.
- It should be noted that, under Regulation 4 of the Control of Asbestos Regulations 2012, the duty holder must not only establish whether ACMs are present and what condition they are in, but also manage the ACMs on an on-going basis (using a suitable asbestos management plan (AMP)). It should also be noted that the presence of asbestos may lead to increased asset management costs. No AMP was identified during the site inspection.

Energy Performance Certificates (EPC)

- The Energy Performance of Buildings (Certificates and Inspections)(England and Wales) Regulations 2007 requires that non-domestic buildings are supported by an EPC document when constructed, sold or let. Please refer to Appendix E for further discussion on this issue.

  Three EPCs have been provided to WSPE. The reports were prepared by Energyscope Ltd and 4See Environmental Ltd, and were dated between October 2012 and November 2012. The following information has been identified:

Building	Current Energy Performance Asset Rating	Typical Existing Stock	If Newly Built
Bridge House	121 (E)	100 (D)	38 (B)
Riverview	137 (F)	126 (F)	47 (B)
Waterside	136 (F)	126 (F)	47 (B)

- The Energy Act 2011 states that for commercial properties from April 2018, it will be unlawful to let properties which have a poor energy rating, generally considered to be F or G, and landlords will need to assess the energy efficiency of their properties and consider carrying out improvements. Surrounding Land Use.
- The EPC Recommendation Reports for Riverview House and Waterside House include similar recommendations, none of which are stated to a high potential impact on the energy performance of the buildings and therefore the EPC rating. Default efficiency scores have been used in relation to the chiller systems, which could be reviewed. In addition, recommendations for the replacement of light fittings is included within the report.
- Two EPCs and Recommendation reports are listed on the National database for Bridge House. Both were prepared by the same assessor and are dated 2nd and 5th October 2012. The EPC dated 2nd October shows an EPC rating of F (146) and the EPC dated 6th October shows a E rating (121). The Recommendation Reports includes one recommendation which has a high potential impact; the replacement of light fittings.
- At this stage is not possible to advise on the level of capital expenditure required to achieve D ratings for the three buildings.

1.3 Surrounding Land Use

The site is located to the northwest of Uxbridge town centre it is mixed use commercial, agricultural and residential area. Oxford Road is located adjacent to the north of the site, beyond which a public house is located. A section of the Grand Union Canal is located from adjacent to the east of the site, beyond which numerous commercial properties are located. Industrial units and a large warehouse are located from adjacent to the south and southwest of the site. The River Colne is located adjacent to the west of the site, beyond which Oxford Road, agricultural land and a piggery are located.

2. Historical Land Use

2.1 Site History

Map Information

A study of historical Ordinance Survey maps has been undertaken to identify significant potentially contaminative former land uses. Historical maps indicate that from at least 1866, the subject site comprised undeveloped assumed agricultural land. By 1938, a timber yard was located within the centre of the site and by 1962, the timber yard had been redeveloped into a mill. By 1973, the mill had been redeveloped into two large warehouses and a depot was located within the southern area of the site. Furthermore, at this time an assumed commercial building labelled as 'Bridge House' had been developed within the northern area of the site, forming part of the current site layout. By 1974, a tank was labelled in close proximity to the western boundary of the site. Between 1992 and 2006, the warehouses, depot and tank were cleared and two further commercial properties and a multi-storey car park were developed, forming the current site layout.

A selection of historical map extracts is included as Appendix C.

Planning

An inspection of the available online planning record held at London Borough of Hillingdon was carried out on 13th March 2013. The following environmentally pertinent information was viewed.

- Planning permission was granted for external alterations (cladding) to Bridge House, dated February (Ref: 40050/N/95/1966). No land quality conditions were attached to this planning application.

No further environmentally pertinent information was available for review.

Ancedotal Information

According to information provided by the Client, Bridge House was originally constructed in 1970, but was comprehensively refurbished, re-fenestrated and re-cladded in 1998. Riverview House, Waterside House and the multi-storey car park were constructed in 2000.

2.2 Surrounding Area

A study of historical Ordnance Survey maps has been undertaken to identify significant potentially contaminative former land uses within a 250m radius of the site. A selection of relevant historical map extracts is included as Appendix C. The following represents a summary of the available map information:

Surrounding Features	Distance	Dates	Direction
Warehouse	25m	Pre 1914 – Pre 1935	East
Then cleared vacant land		Pre 1935 – Pre 1938	
Then redeveloped into numerous unlabelled assumed warehouses		Pre 1938 – Pre 1973	
Then labelled as numerous warehouses and asbestos works		Pre 1973 – Pre 2006	
Then redeveloped into sections of two large		Pre 2006 – Present	

unlabelled assumed commercial properties and associated car parking areas			
Unlabelled assumed industrial property *Then* labelled as an engineering works *Then* redeveloped into unlabelled assumed commercial property	35m	Pre 1896 – Pre 1974 Pre 1974 – Pre 1978 Pre 1978 – Present	East
Timber yard *Then* redeveloped into a large works *Then* re-labelled as works, printing works and engineering works *Then* re-labelled as numerous works *Then* redeveloped into sections of two large unlabelled assumed commercial properties	40m	Pre 1914 – Pre 1938 Pre 1938 – pre 1973 pre 1973 – Pre 1992 Pre 1992 – Pre 2006 Pre 2006 – Present	East
Steam saw mill *Then* redeveloped into a large warehouse *Then* labelled as warehouse and enamel works *Then* unlabelled assumed warehouse *Then* redeveloped into two unlabelled assumed commercial buildings	55m	Pre 1866 – Pre 1973 Pre 1973 – Pre 1975 Pre 1975 – Pre 1980 Pre 1980 – Pre 2006 Pre 2006 - Present	East
Warehouse	60m	Pre 1973 – Present	Southwest
Unlabelled assumed industrial property *Then* re-labelled as a cork works *Then* re-labelled as a works and warehouse *Then* redeveloped into a section of a large unlabelled assumed light industrial unit	80m	Pre 1934 – Pre 1975 Pre 1975 – Pre 1980 Pre 1980 – Pre 2006 Pre 2006 - Present	South
Saw mills *Then* redeveloped into a box and pallet factory *Then* redeveloped into unlabelled assumed commercial property	110m	Pre 1896 – Pre 1975 Pre 1975 – Pre 1992 Pre 1992 – Present	Northeast
Railway lines *Then* cleared vacant land *Then* redeveloped into sections of numerous unlabelled assumed commercial, retail and residential properties	*From* 110m	Pre 1914 – Pre 1962 Pre 1962 – Pre 1978 Pre 1978 – Present	Northeast
Garage *Then* redeveloped into an unlabelled assumed commercial property	125m	Pre 1974 – Pre 1987 Pre 1987 – Present	Northeast
Brewery	125m	Pre 1866 – Pre 1962	East

Then redeveloped into a works Then redeveloped into an unlabelled assumed commercial property		Pre 1962 – Pre 1988 Pre 1988 – Present	
Corn mill *Then* unlabelled assumed dis-used mill *Then* labelled as a works	145m	Pre 1896 – Pre 1938 Pre 1938 – Pre 2006 Pre 2006 – Present	North
Flour mill *Then* unlabelled assumed mill *Then* labelled as an adult training centre	160m	Pre 1866 – Pre 1885 Pre 1885 – Pre 1975 Pre 1975 - Present	East
Steel barrel works *Then* unlabelled assumed works *Then* redeveloped into an unlabelled assumed distribution warehouse	165m	Pre 1914 – Pre 1938 Pre 1938 – Pre 2006 Pre 2006 - Present	South
Council depot	170m	Pre 1962 – Present	Southeast
Mill	235m	Pre 1920 - Present	North

3. Regulatory Information & Consultation

3.1 Regulatory Database

The following data has been obtained from a summary of information databases.

	0-249m	250-500m	Details
Contaminated Land register and notices	0	0	Not applicable (NA)
Registered landfills	0	0	N/A
Closed Landfill facilities	0	0	N/A
Registered transfer stations/ treatment facilities	0	0	N/A
Closed transfer stations/ treatment facilities	0	0	N/A
Authorised industrial processes	0	3	The nearest authorised industrial process is for a Local Authority Pollution Prevention and Control authorisation for a vehicle re-spraying process located approximately 400m to the east of the site.
Fuel Station entries	0	2	The nearest fuel station entry is for an open petrol station located approximately 420m north of the site.
Licensed radioactive substances	0	0	N/A
Enforcements, prohibitions or prosecutions	1	0	A prosecution relating to an authorised process for failure to comply with packaging waste regulations is located approximately 135m south of the site. This has not been attributed to the subject site.
Discharge Consents	3	4	The nearest discharge consent is for the discharge of sewage into the Fray's River and is located approximately 190m northeast of the site.
Pollution incidents	18	22	The nearest pollution incident occurred adjacent to the north of the site. The incident comprised the release of an unknown pollutant to an un-named receiving water and was classified by the Environment Agency as a Category 3 (Minor) incident.

			A substantiated pollution incident occurred approximately 220m north of the site. The incident comprised the release of inert materials and waste (soils and clay) and was classified by the Environment Agency as having a significant impact on water and no impact on either air or land.
Consents issued under the Planning (Hazardous Substances) Act 1990	0	0	N/A
Control of Major Accident Hazards (COMAH)	0	0	N/A

3.2 Consultees

Local Authority Contaminated Land Officer (CLO)

The CLO at London Borough of Hillingdon was contacted for environmentally pertinent information relating to the site. The CLO reported that the three properties on-site were identified for further investigation under the Councils Contaminated Land Inspection Strategy in 2005 as part of a larger industrial estate known as 'Uxbridge Industrial Estate North'. This site was given a priority of inspection by June 2012, (this was not a high priority). The CLO visited this industrial estate in 2007. No further work has been carried out. The CLO stated that the site will remain on the Councils list of sites highlighted for further inspection when time permits.

The CLO stated that the Council do not have any major concerns under Part IIA within the vicinity of the site and that most industrial redevelopment on the estate has been carried out under the planning regime.

Local Authority Building Control Officer (BCO)

The BCO at London Borough of Hillingdon was contacted with regard to ground conditions beneath the subject site. The BCO was unable to provide any information within the timescales available for this report, however this is not considered to represent a concern given the other information presented within this report.

Petroleum Officer

No issues have been identified that warrant further consultation with the Petroleum Officer.

Environment Agency (EA) Flooding Data

According to the EA website the site is not located within an EA indicative floodplain. However, the areas of land located along the western and eastern boundaries of the site are located within an EA indicated floodplain where the chance of flooding is 1 in 200 years or less (0.5% per annum).

A public register enquiry letter regarding land comprising the Denbridge Industrial Estate (which includes the subject site) prepared by the EA, dated 5 June 2005 (Ref: NE 11777) has been provided by the Client for review. At the time the letter was written, Denbridge Industrial Estate was located within the indicative floodplain of the River Colne. However, the EA had no record of Denbridge Industrial Estate having been affected by flooding in the past.

Environment Agency (EA)

No issues have been identified that warrant further consultation with the EA.

Transport for London

A review of available mapping data has not identified any London underground railway tunnels located within the vicinity of the subject site.

Health Protection Agency – Existing Buildings Continued Use

The site is located within an Intermediate Probability radon area where between 1 and 3% of homes are above the Action Level. However, no radon protective measures are necessary in the construction of new dwellings or extensions.

Coal Authority & Brine Report

The site is not located within an area by Coal Mining or brine extraction activities.

4. Other Relevant Information

4.1 Previous Reports

- Sales particulars have been provided for review and any relevant information has been incorporated into the relevant sections of this report, where applicable.

Phase I Environmental Audit of The Uxbridge Park Estate, Uxbridge by WSP Environmental Ltd for Allard Ryan Consulting, dated March 2003 (Ref: 12021154).

- Any environmentally pertinent information has been incorporated into the main body of this report.
- The report refers to a previous Report on Ground Investigation, prepared by Weeks Site Investigation Services, dated June 1998 (ref. S.10596); a Factual Report on Gas Contamination, prepared by Upton McGougan PLC, dated October 1998 (ref: S.10596B); and a Report on Site Investigation at Highbridge Industrial Estate, prepared by Structural Soils Ltd, dated February 1997 (ref: 61171).
- Previous investigations have shown the site to be free from significant site-wide contamination. Isolated areas of contamination, including slight groundwater contamination were encountered. However, the contaminant levels identified were not considered to be of significant concern to the use of the site as an industrial park.
- The Waterside House and Riverview House reportedly include a gas-resistant membrane and passive venting as a precautionary measure to mitigate the risk of ground gas.
- The previous Phase I Environmental Audit concluded that the site represented a low/medium risk with respect to environmental considerations.

5. Environmental Setting

5.1 Geology and Hydrogeology

Geological Map Sheet 255, Beaconsfield, scale 1:50,000, Solid & Drift edition (1974), and online BGS (British Geological Society) published geological data www.bgs.ac.uk shows the following geological sequence (please refer to Appendix EReport Referencesfor EA aquifer classification system):

Geological Unit	Estimated Thickness	Description	Aquifer Status
Alluvium	Not recorded	Clay, silt, sand and gravel superficial deposits	Secondary A Aquifer
Lambeth Group	Up to 27m	Clay, silt and sand sedimentary bedrock	Secondary A Aquifer

According to a report on Ground Investigation as referenced by a previous Phase I Environmental Audit provided by the Client for review, conditions encountered comprised Fill material to a maximum depth of 2.5m bgl. The composition of the Fill material typically consisted of various amounts of clay, silt, sand and gravel of flint, brick, concrete, wood, plastic, wire and clinker. Below this Fill, superficial alluvial clay deposits comprising predominantly of clay and peat overlying flint and shell gravel were encountered proved to a maximum depth of 3.3m bgl. The soil geology of the Reading Beds was encountered beneath the alluvial deposits, and was proved to the base of each borehole. The Reading Beds are described as a brown and bluish grey clsely fissured silty clay becoming sandy with depth below 11m bgl. Standing groundwater levels were recorded at typical depths of between 1.5m and 2.0m bgl

No British Geological Survey (BGS) borehole logs are available relating to the subject site.

The following current EA licensed groundwater abstractions have been identified within a 1km radius of the site:

Use	Distance	Direction
Other Industrial/Commercial/Public Services: General Washing/Process Washing	520m	Northeast
Horticulture And Nurseries: Spray Irrigation - Direct	640m	Northwest
Extractive: Mineral Washing	775m	West

The site is not located within an EA designated groundwater Source Protection Zone.

5.2 Hydrology

Surface water features in the vicinity of the subject site are as follows:

Surface Water Feature	Quality*	Distance	Direction
Grand Union Canal	Un-classified	*From* adjacent	East, north and south
River Colne	A (very good)	*From* adjacent	West, north and south
Fray's River	Un-classified	*From* 190m	East, northeast and southeast

*Chemical water quality under the EA's General Quality Assessment (GQA) Scheme.

No current EA licensed surface water abstractions have been identified within a 250m radius of the subject site.

5.3 Surrounding Features

Sensitive surrounding land uses within a 250m radius of the subject site are as follows:

Sensitive Land Use	Distance	Direction
Residential properties with gardens	*From* 100m	Southeast and northeast
Agricultural Land	*From* 50m	West

5.4 Environmental Sensitivity

Overall, the site setting is considered to be of moderate sensitivity, due to the following reasons:

- The underlying Secondary A Aquifers;
- The presence of nearby surface water features (Grand Union Canal located from adjacent to the east, north and south, the River Colne located from adjacent to the west, north and south, and the Fray's River located from 190m east and northeast and southeast of the site);
- The presence of groundwater surface water abstractions within a 1km radius of the site (for general washing/process washing, spray irrigation, and mineral washing uses); and
- The residential and agricultural land uses within the surrounding area.

6. Preliminary Risk Assessment

6.1 Outline Conceptual Model

The methods used within this preliminary risk assessment follow a risk-based approach, with the potential environmental risk assessed qualitatively using the 'source-pathway-receptor pollutant linkage' concept introduced in the Environmental Protection Act 1990. For a site to be designated as Contaminated Land a plausible linkage between the identified sources, Pathways and Receptors must be demonstrated. The technical basis for this assessment is further discussed within Methodology and Report Limitations

Potential Contaminant Sources	On-Site Contaminant Sources	The current site use is not considered to act as a significant source of contamination. The site has been subject to a history of potentially contaminative activities in particular a former mill, Timber Yard, depot, and warehouses. Typical contaminants may potentially include (but may not be limited to) metals, hydrocarbons and volatile organic compounds. Previous site investigations have found the site to be free from significant contamination. However, slight soil and groundwater contamination was identified; furthermore, the potential exists for further contamination to exist in areas not previously investigated.
	Off-Site Contaminant Sources	Surrounding sites (within 250 metres) have had a significant industrial history and include a box and pallet factory, an asbestos works, a printing works, an engineering works, an enamel works, a cork works, a mill, a council depot, a steel barrel works, a garage, a brewery, a corn mill, a flour mill and numerous works, railway line, warehouses, saw mills and unlabelled assumed industrial properties. However, the historical activities have largely been redeveloped into commercial and residential uses through various periods of redevelopment.

Potential Receptors	Controlled Waters	■ Groundwater in the underlying Secondary A Aquifers ■ Near-by surface watercourse (Grand Union Canal located from adjacent to the east, north and south, the River Colne located from adjacent to the west, north and south, and the Fray's River located from 190m east and northeast and southeast of the site).
	Human Health Risks	■ Site Occupiers ■ Third Party neighbours ■ Site workers in the event of below ground works
	Other	■ Buildings and Underground services

Potential Contaminant Pathways & Pollutant Linkages	On-Site Contaminant Sources	■ Given the presence of the permeable geology directly underlying the site, there is the potential for any mobile contaminants within soils to impact groundwater. ■ Shallow groundwater within alluvial deposits underlying the site is likely to be in hydraulic continuity with the adjacent River Colne and Grand Union Canal. There is therefore the potential

		for any shallow groundwater contamination on the site to migrate through the alluvial deposits and impact on the surface watercourse. ■ Human exposure to any contaminated soils and groundwater via direct contact (ingestion, dermal contact and inhalation of dust) would be limited as the current site conditions comprise building cover and large areas of concrete, asphalt, brick paved and concrete paved hardstanding, reducing the likelihood that site occupiers would be exposed to any subsurface contaminants (if present) under normal working conditions. ■ In the event of below ground works, site workers may be exposed to any subsurface contamination. It should be ensured that future construction workers adopt appropriate procedures to manage health and safety risks associated with any contamination.
	Off-Site Contaminant Sources	■ Given the presence of the underlying permeable geology, there is the potential for contaminated groundwater from the off-site sources identified to migrate onto the subject site. However, this is considered unlikely to significantly impact the current commercial use of the site given the comments on the potential exposure pathways made above.

6.2 Contaminated Land Risk assessment for On-going Commercial Use

Having evaluated the information gathered during this study and described in the previous sections, WSPE has produced the following assessment of risk primarily focused in contaminated land issues, assuming an on-going use;

	Assessment	Risk Category
Potential for statutory liability and designation as Contaminated Land	The Contaminated Land Officer at London Borough of Hillingdon stated that the site has been identified as needing further assessment under the Local Authority's Contaminated Land Inspection Strategy however the site is not considered a priority for further investigation.	Low/Medium
Potential for third party liability	On the basis of the conceptual site model, the potential for contamination on the subject site to migrate and impact third party land cannot be discounted. However, given that the site is situated within a wider area of similar historical and current land uses, the site is not considered to be identified as a significant 'point source' of contamination and therefore the potential for third party liability is considered reduced.	Low/Medium
Risk of commercial liability on resale	A more risk adverse purchaser may have concerns over the potential for contamination which could potentially affect the saleability of the site. However, given the presence of hardstanding and building cover across the majority of the site, the risk is considered reduced.	Low/Medium
Risk of contaminated land liability for owner	Given the potential for contamination on the site there is a risk of contaminated land liability for the freehold owner. However, based on the current regulatory opinion and the on-going commercial use of the site, the risk of a significant contaminated land liability arising for the sites on-going use is considerably reduced. However, in the event of redevelopment further work is likely to be required.	Low/Medium
	CONTAMINATED LAND LIABILITY RISK FOR ON-GOING USE	**LOW/MEDIUM**

6.3 Other Environmental Considerations

These matters could also require further assessment. This may be during a continuation of the current site use, or in the event of any proposed redevelopment of the site. It should be noted that a detailed assessment of compliance with environmental law lies outside the scope of this assessment,

Other Considerations

Flooding	According to the EA website the site is not located within an EA indicative floodplain. However, the areas of land located along the western and eastern boundaries of the site are located within an EA indicated floodplain where the chance of flooding is 1 in 200 years or less (0.5% per annum).
Asbestos Containing Materials	According to an asbestos survey; ACMs are present within Bridge House. Under Regulation 4 of the Control of Asbestos Regulations 2012, the duty holder must establish whether ACMs are present and what condition they are in, and manage the ACMs on an on-going basis (using a suitable AMP). It should also be noted that the presence of asbestos may lead to increased asset management costs.

Tenant / Housekeeping Issues	The generator with a built-in day tank and associated diesel AST were noted to be located adjacent to a surface water drain. It would be considered best environmental practise that the generator with a built-in day tank and associated diesel AST are isolated from the surface water drainage system. It is recommended that a drain cover is installed to prevent any spillages/leaks from the day tank or the AST entering the drainage system. Minor hydrocarbon staining was noted to be present on-top of the concrete hardstanding within the bunded lift motor room located on the third floor of Waterside House. It is recommended that the cause of the hydrocarbon staining is identified and that that the staining is cleaned up. A number of air conditioning units service the buildings; the units inspected during the walkover were observed to be charged with the refrigerants R22, which is a hydrochlorofluorocarbon (HCFC) (an ODS). The use of OSDs is being phased out and replacement HCFCs will not be available from 2015. There may be costs associated with upgrade or replacement of cooling equipment that contains HCFCs. Waste vegetable oil is stored within 20 litre plastic contains located without secondary containment on top of wooden pallets, within an enclosure adjacent to the east of Waterside House. It would be considered best environmental practise to store waste vegetable oil within secondary contaminant (i.e above a drip tray). Minor chemical staining was noted to be present on top of the concrete hardstanding below a dosing pot located within the water storage room on the third floor of Riverview House. It is recommended that this staining is cleaned up.
Energy Performance Certificates (EPCs)	The Energy Act 2011 states that for commercial properties from April 2018, it will be unlawful to let properties which have a poor energy rating, generally considered to be F or G, and landlords will need to assess the energy efficiency of their properties and consider carrying out improvements.

7. Conclusions & Recommendations

Conclusions	While the current use of the site is not considered to act as a significant source of contamination, historic potentially contaminative activities including a mill, timber yard, warehouses and a depot (including tank) have been identified on-site. Therefore, the potential for contamination associated with these activities cannot be discounted. However, any contamination, if present, are likely to be characteristic of the wider surrounding area and given the nature of the current site uses and associated structures; the potential for a significant environmental liability to arise for the on-going commercial use of the site is considered reduced. Based on the information contained within this report and with due regard to the continued commercial land use, it is the opinion of WSPE that the site represents a **low/medium** risk with respect to contaminated land liability issues Other environmental considerations include ACM's, EPC's and tenant/housekeeping issues. Further detail is provided within Section 6.3.
Recommendations	No further contaminated land assessment work is considered necessary for the current on-going commercial use of the site. It should be noted that further contaminated land assessment would be required in the event of redevelopment.

Please note: this summary forms part of WSP Environmental Ltd Phase 1 Environmental Assessment (ref: 38109). Under no circumstances is it to be used as an independent document.

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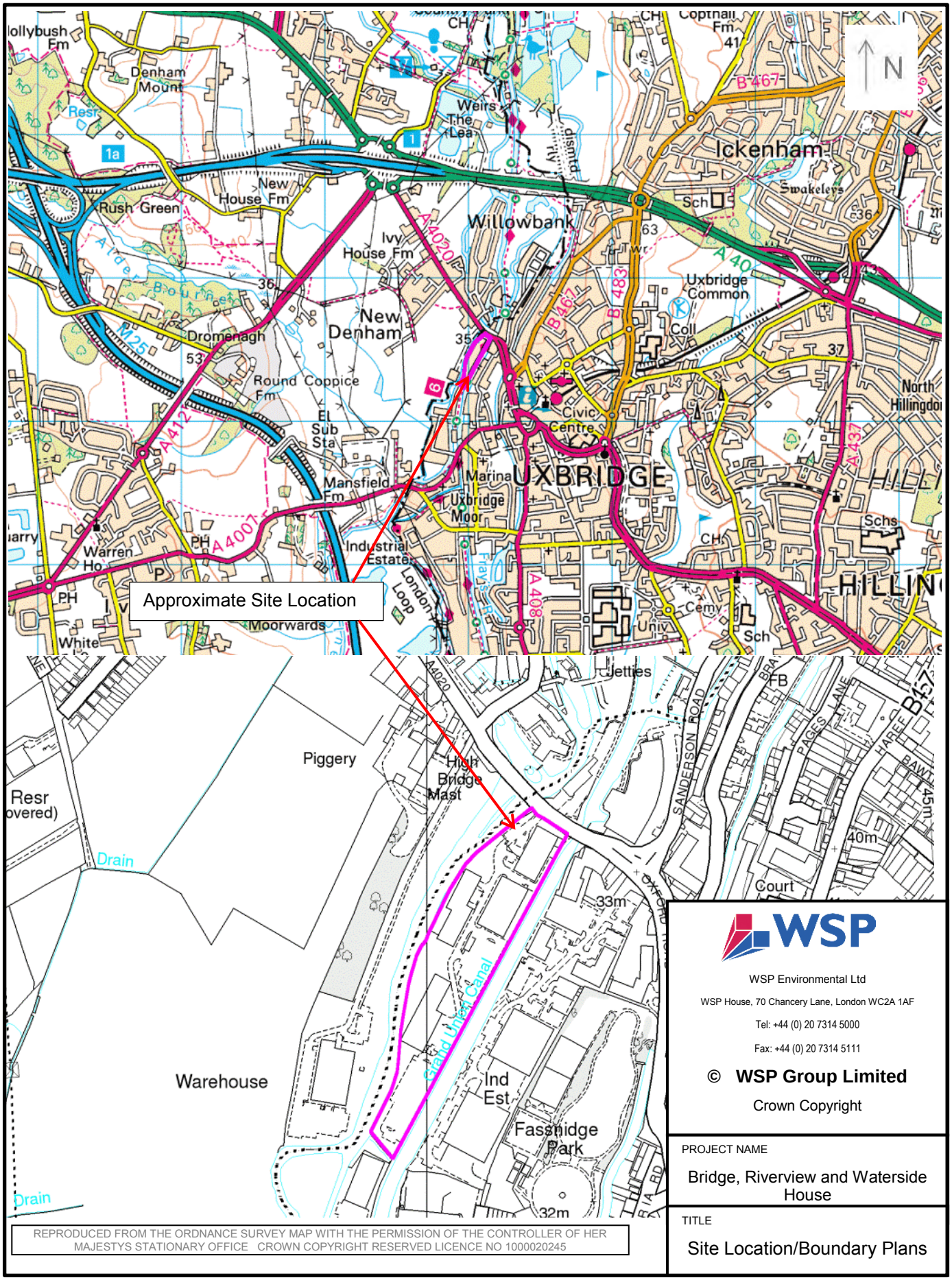
Appendices

Appendix A Site Location & Site Boundary Plan



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PROJECT NAME

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Site Location/Boundary Plans

Appendix B Photographic Record

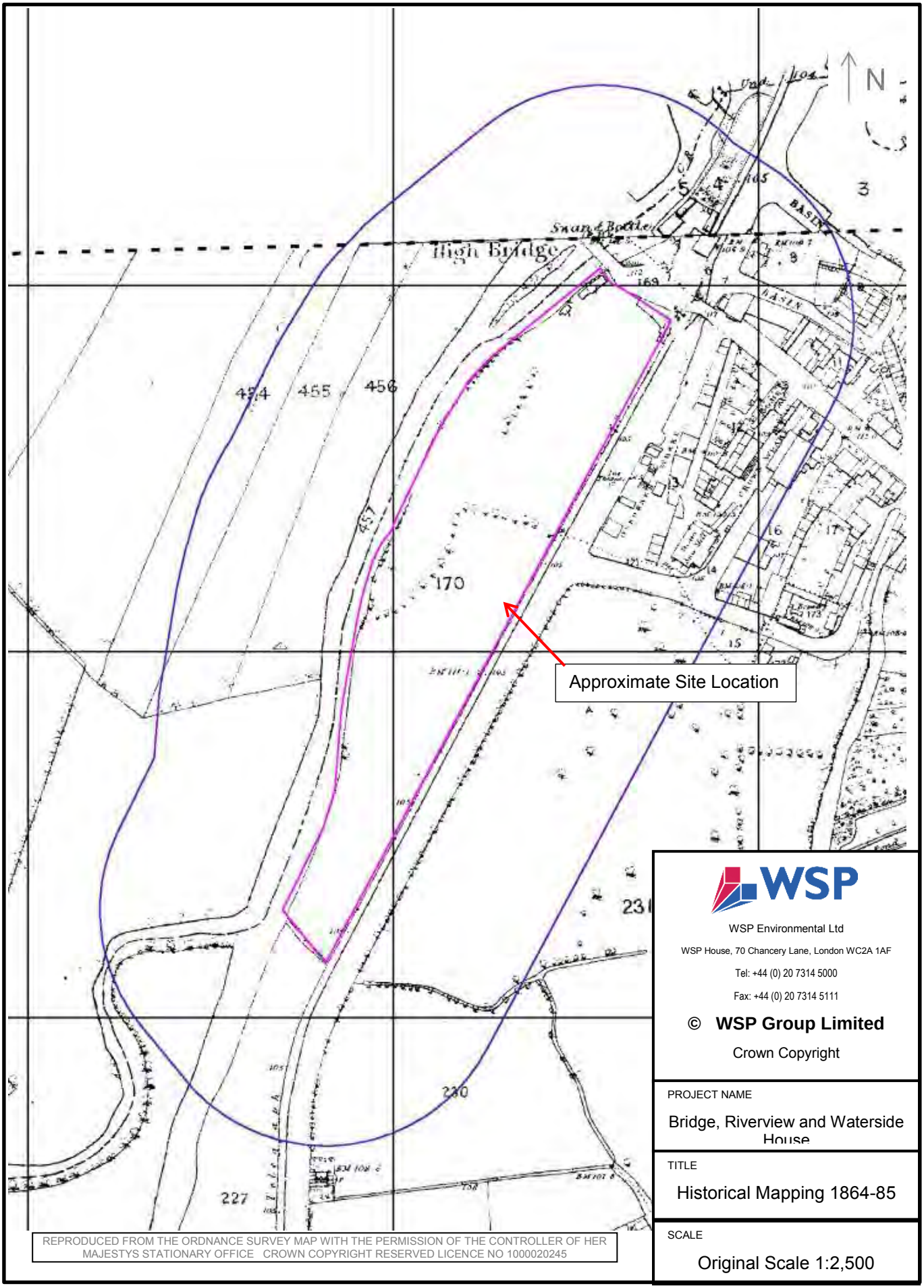
PLATE 1: EXTERNAL VIEW OF THE NORTHERN SECTION OF THE SITE

PLATE 2: 3,630 LITRE DOUBLE SKINNED DIESEL AST LOCATED ADJACENT TO A DRAIN, WITHIN AN ENCLOSURE TO THE SOUTH OF THE MULTI-STOREY CAR PARK.

PLATE 3: BACK-UP GENERATOR LOCATED ADJACENT TO THE DIESEL AST ON-SITE

PLATE 4: WASTE VEGETABLE OIL LOCATED WITHOUT SECONDARY CONTAINMENT

Appendix C Selection of Historical Map Extracts



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PROJECT NAME

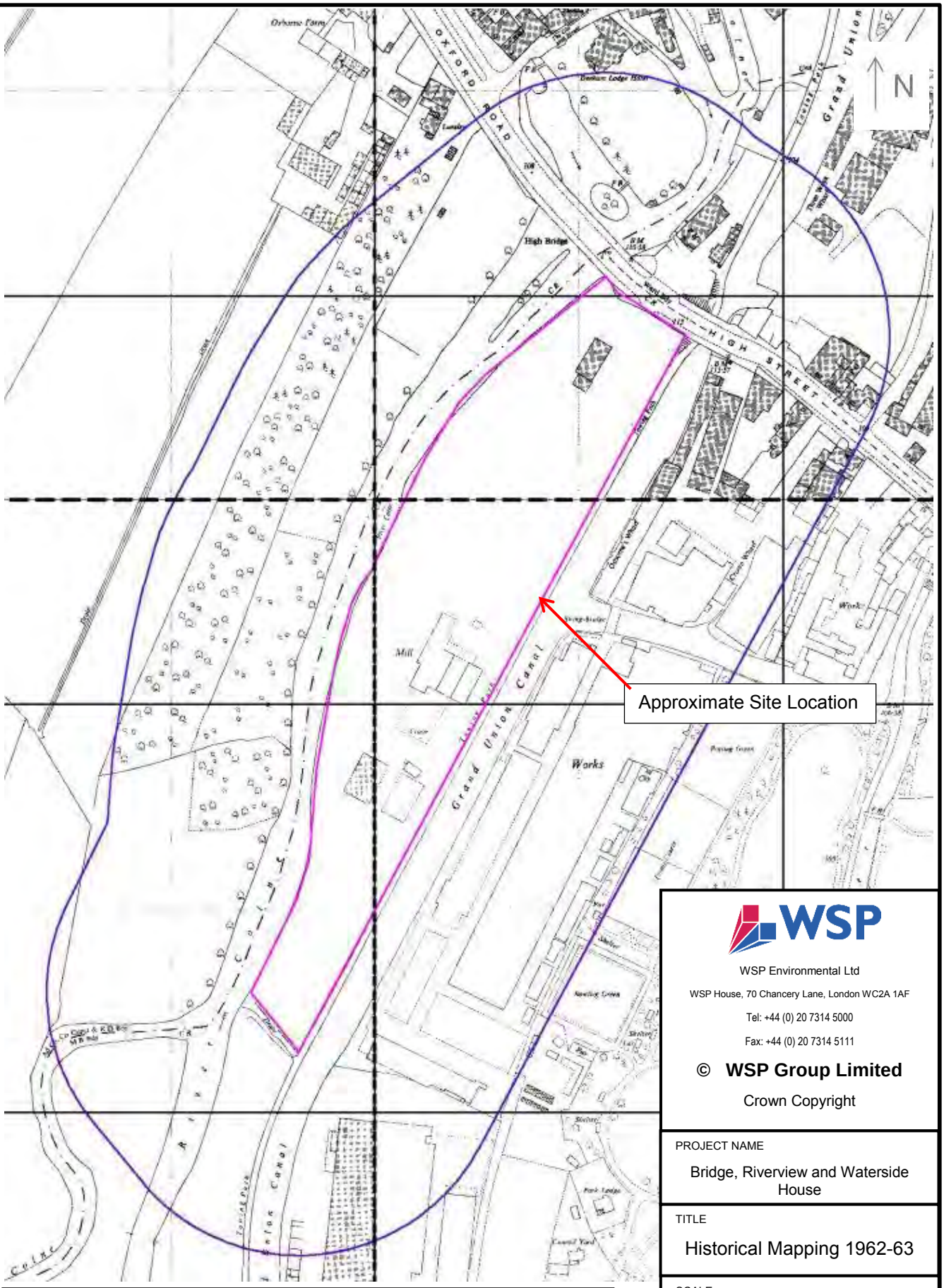
Bridge, Riverview and Waterside House

TITLE

Historical Mapping 1864-85

SCALE

Original Scale 1:2,500



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TITLE

Historical Mapping 1962-63

SCALE

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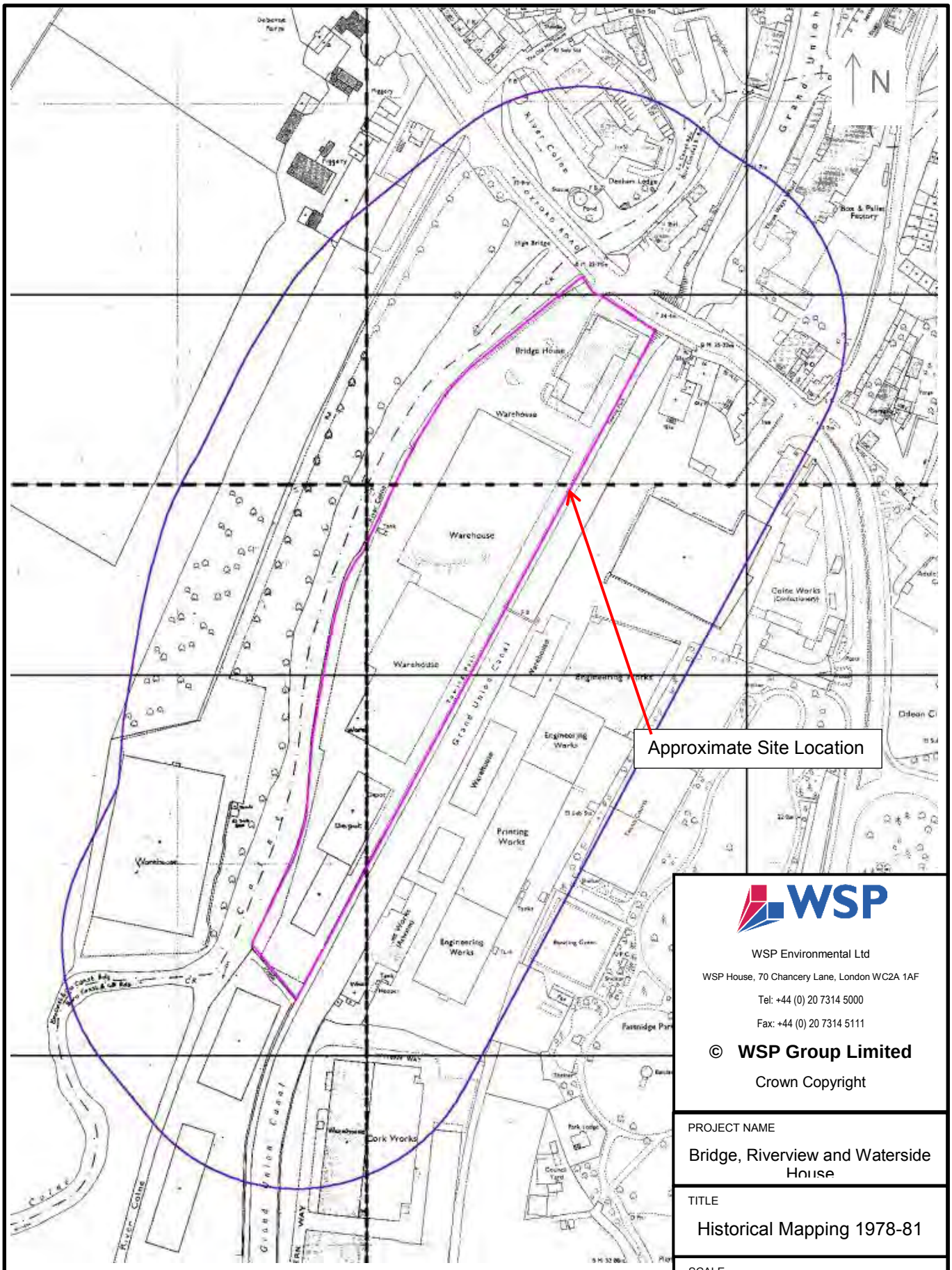

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PROJECT NAME

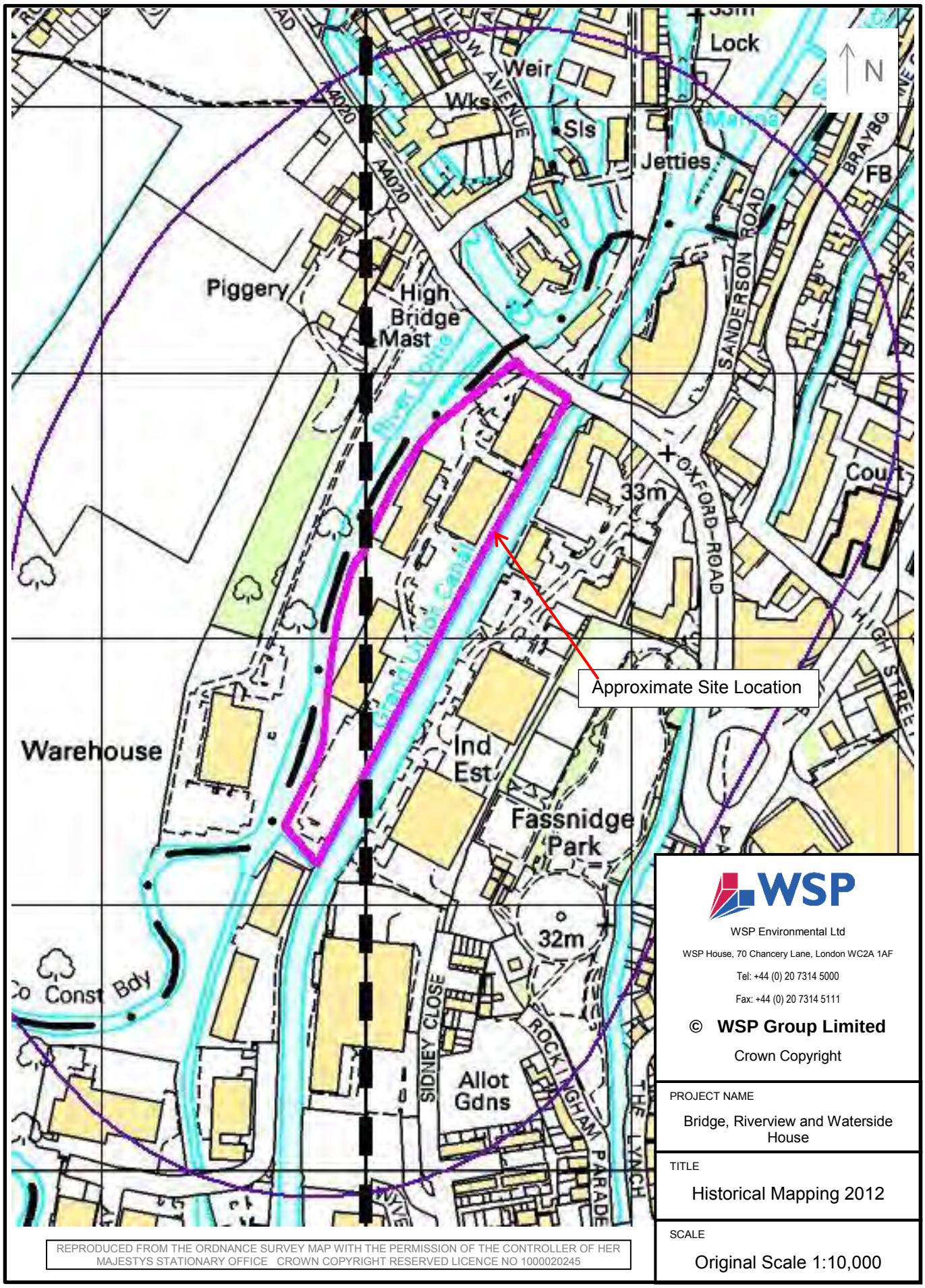
Bridge, Riverview and Waterside House

TITLE

Historical Mapping 1978-81

SCALE

Original Scale 1:1,250



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PROJECT NAME

Bridge, Riverview and Waterside House

TITLE

Historical Mapping 2012

SCALE

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Appendix D Methodology and Report Limitations

Methodology

This Environmental Assessment has been designed to provide information relating to:

- the current and former land uses on and surrounding the site;
- the environmental sensitivity of the site location as determined by factors including geology, hydrogeology, surface watercourses and neighbouring land uses; and,
- relevant records held by the environmental regulators.

Any relevant information provided by the Client has been reviewed, with action taken to ensure this information is taken into account and/or verified where necessary. All information is then assessed to define the potential for the site to give rise to environmental liabilities for the freehold/leasehold owner (as appropriate). Recommendations are made for additional work where this is necessary to fully define the site's environmental liabilities, and cost estimates of the financial implications of the findings can be provided under separate cover, where appropriate.

Risk Classification

This assessment has been undertaken with due regard to Contaminated Land Guidance documents issued by the Department for Environment, Food and Rural Affairs (and its Predecessors), the British Standards Institute (the BSi), the Royal Institution of Chartered Surveyors (RICS) and the American Society for Testing and Materials (ASTM) Standard E 1527-05. The methods used follow a risk-based approach, with the potential environmental risk assessed qualitatively using the 'source-pathway-target pollutant linkage' concept introduced in the Environmental Protection Act 1990.

Specific comment is made regarding the site's status under the Contaminated Land Regime implemented on the 1st April 2000 as Part IIA of the Environmental Protection Act 1990, and the actual or potential designation of the site as 'Contaminated Land' as defined in Section 78A(2). Unless specifically stated as relating to this definition, references to 'contamination' and 'contaminants' relate in general terms to the presence of potentially hazardous substances in, on or under the site.

In addition, consideration has been given to a wide range of related topics including (where appropriate): environmental processes; current and foreseeable environmental legislation; the practices and duties of environmental regulators; the health and safety of occupiers and neighbours as affected by contamination; effects on the structure of buildings; and financial implications. References to risk classifications are made according to the following definitions:

Low Risk

It is unlikely that the issue will arise as a liability/cost for the freehold/leasehold owner (as appropriate) of the site.

Medium Risk

It is possible that the issue could arise as a liability/cost for the freehold/leasehold owner (as appropriate) of the site. Further work is usually required to clarify the risk.

High Risk

It is likely that the issue will arise as a liability/cost for the site freehold/leasehold (as appropriate) owner of the site.

Environmental Risk Assessment

The presence of contaminated materials on a site is generally only of concern if an actual or potentially unacceptable risk exists. Within the context of current UK Legislation, the interpretation of a "significant risk" is termed to be one where:

- Significant harm is being caused or there is a significant possibility of such harm being caused, (where harm is defined as harm to health of living organisms or other interference with the ecological systems of which they form a part and, in the case of man, includes harm to his property); and / or, pollution of Controlled Waters is being caused.

The potential for harm to occur requires three conditions to be satisfied:

- Presence of substances (potential contaminants/pollutants) that may cause harm (Source of Pollution).
- The presence of a receptor which may be harmed, e.g. the water environment or humans, buildings, fauna and flora (The Receptor).
- The existence of a linkage between the source and the receptor (The Migration Pathway).

Therefore, the presence of measurable concentrations of contaminants within the ground and subsurface environment does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and unacceptable risk of harm.

The nature and importance of both pathways and receptors, which are relevant to a particular site, will vary according to the intended use of the site, its characteristics and its surroundings.

In order to assess the contamination risk at the subject site the above rational has been applied and is discussed within Section 6 in the context of Contamination Sources and Potential Pollutant Linkages.

Energy Performance Certificates

The Energy Performance of Building within the UK is derived from The Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007 SI 2007/991 and SI 2007/1669 and stems from the European Directive 2002/91/EC on the Energy Performance of Buildings (“the Directive”). Part 2 of these Regulations implements articles 7(1) and (2) of the Directive, and requires the production of energy performance certificates when buildings are constructed, sold or rented out.

Regulation 11 sets out the minimum requirements for energy performance certificates. In particular, certificates must be no more than 10 years old, except in circumstances where the Housing Act 2004 requires a home information pack, in which case a certificate is only valid if it is less than three months old at the first point of marketing, as that term is defined in the Home Information Pack Regulations 2007.

Part 7 deals with enforcement and makes provision for enforcement by way of civil penalties. Regulation 38 imposes a duty on local weights and measures authorities to enforce the duties relating to certificates and air-conditioning inspections. Regulation 40 empowers enforcement authorities to issue penalty charge notices for any breach.

Limitations

WSP Environmental Limited has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from WSP Environmental Limited; a charge may be levied against such approval.

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a) the consequences of this document being used for any purpose or project other than for which it was commissioned, and

b) this document to any third party with whom an agreement has not been executed.

The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources (including the Client) and discussions with relevant authorities and other interested

parties. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, WSP Environmental Limited reserves the right to review such information and, if warranted, to modify the opinions accordingly.

Where no site inspection is undertaken (for example a Desk Study Assessment or due to restricted site access), WSPE cannot comment on the potential for environmental concerns associated with the current use or structure including the presence of asbestos.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed; actual risks can only be assessed following a physical investigation of the site.

WSPE are unaware of any proposed redevelopment plans and any reference made to actions that might be required in the event of redevelopment are made for information only.

Appendix E Report References

Environment Agency Aquifer Classifications

The Environment Agency (EA) divide the underlying strata in England and Wales into Principal Aquifer, Secondary Aquifer and Unproductive Strata in line with the updated Groundwater Protection Policy (GP3) and the Water Framework Directive (WFD). This replaces the former designation of Major, Minor and Non Aquifers. The following is derived from the main policy document.

Principal Aquifers

These are geological strata that exhibit high intergranular and/or fracture permeability. They usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. Principal Aquifers equate in most cases to aquifers previously designated as Major Aquifer.

Secondary Aquifers

These include a wide range of geological strata with a correspondingly wide range of permeability and storage. Secondary aquifers are subdivided into two types:

Secondary A - permeable strata 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 generally equate to aquifers formerly classified as 'Minor Aquifers'

Secondary B - predominantly lower permeability strata which may in part have the ability to store and yield limited amounts of groundwater by virtue of localised features such as fissures, thin permeable horizons and weathering. These are generally the water bearing parts of the former 'Non-Aquifers'

In cases where it has not been possible to attribute either category A or B to a rock type, a designation of Secondary Undifferentiated has been assigned. In most cases, this means that the stratum in question has previously been designated as both Minor and Non-Aquifer in different locations due to the variable characteristics of the rock type.

Unproductive Strata

These are geological strata with low permeability that have negligible significance for water supply or river base flow.

Regulatory Information Sources

Reference has been made to the Landmark Information Group data provision service. This includes information and data collated from several organisations, including the Environment Agency (EA), Department for Environment, Food & Rural Affairs (DEFRA), Health & Safety Executive (HSE), the Health Protection Agency (HPA), and the Coal Authority.

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DIFFERENCE

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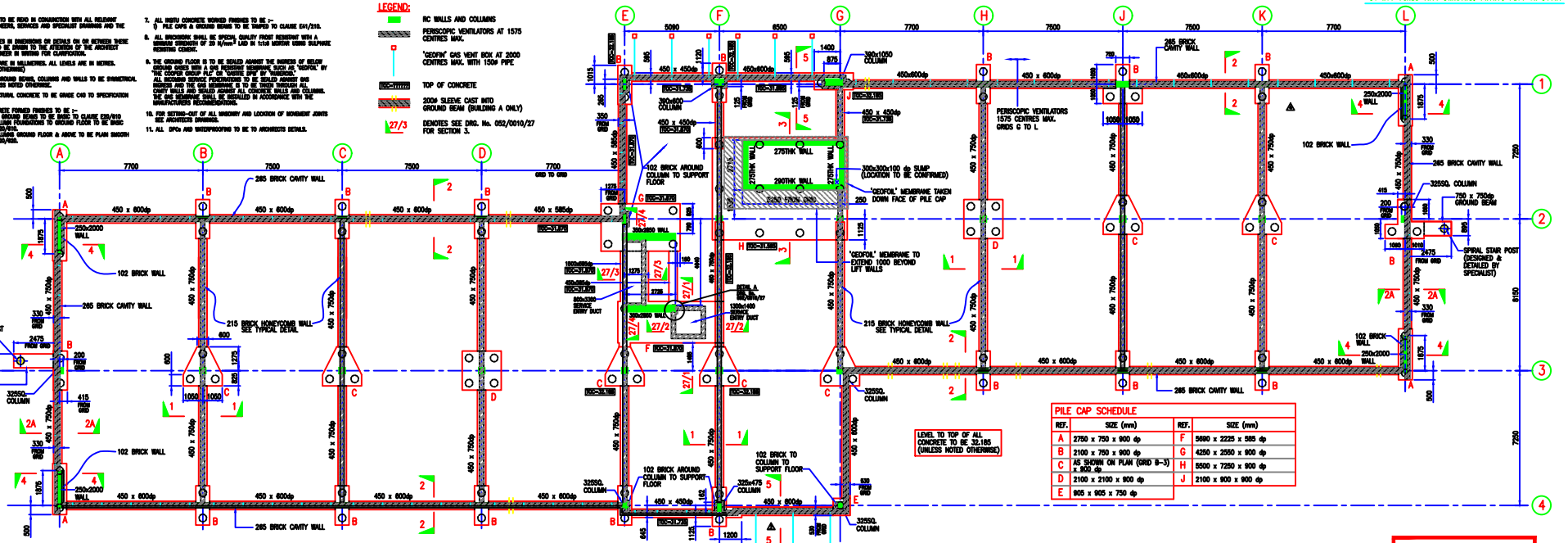
3. ALL DIMENSIONS ARE IN MILLIMETRES. ALL LEVELS ARE IN METRES. (UNLESS SHOWN OTHERWISE)
4. ALL PILE CAPS, GROUND BEAMS, COLUMNS AND WALLS TO BE SYMMETRICAL ABOUT GRID UNLESS NOTED OTHERWISE.
5. ALL BURIED STRUCTURAL CONCRETE TO BE GRADE C40 TO SPECIFICATION CLAUSE E10/130.
6. ALL BURIED CONCRETE FORMED FINISHES TO BE :-
   i) PILE CAPS & GROUND BEAMS TO BE BASIC TO CLAUSE E20/910
   ii) WALLS & COLUMN FOUNDATIONS TO GROUND FLOOR TO BE BASIC TO CLAUSE E20/910.
   iii) WALLS & COLUMNS GROUND FLOOR & ABOVE TO BE PLAIN SMOOTH TO CLAUSE E20/920.
7. ALL BURIED CONCRETE WORKED FINISHES TO BE :-
   i) PILE CAPS & GROUND BEAMS TO BE TAMPED TO CLAUSE E41/210.
8. ALL BRICKWORK SHALL BE SPECIAL QUALITY FROST RESISTANT WITH A MINIMUM STRENGTH OF 20 N/mm² LAID IN 1:1:6 MORTAR USING SULPHATE RESISTING CEMENT.
9. THE GROUND FLOOR IS TO BE SEALED AGAINST THE INGRESS OF BELOW GROUND GASES WITH A 3PLY PROPRIETARY MEMBRANE SUCH AS 'GEOFOIL' BY 'THE COOPER GROUP PLC' OR 'CONTRE DAMP' BY 'KORDON'. ALL BRICKWORK SERVICE PENETRATIONS TO BE SEALED AGAINST GAS PASSAGE AND THE MEMBRANE IS TO BE CARRIED THROUGH ALL CAVITY WALLS AND SEALED AGAINST ALL CONCRETE WALLS AND COLUMNS. THE MEMBRANE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
10. FOR SETTING-OUT OF ALL MASONRY AND LOCATION OF MOVEMENT JOINTS SEE ARCHITECTS DRAWINGS.
11. ALL DPCs AND WATERPROOFING TO BE TO ARCHITECTS DETAILS.

LEGEND:

- RC WALLS AND COLUMNS
- PERISCOPIC VENTILATORS AT 1575 CENTRES MAX.
- 'GEOFIN' GAS VENT BOX AT 2000 CENTRES MAX. WITH 150ø PIPE
- TOP OF CONCRETE
- 200ø SLEEVE CAST INTO GROUND BEAM (BUILDING A ONLY)
- 27/3 DENOTES SEE DRG. No. 052/0010/27 FOR SECTION 3.

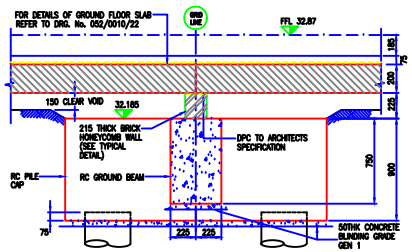


PILE CAP SCHEDULE			
REF.	SIZE (mm)	REF.	SIZE (mm)
A	2750 x 750 x 900 dp	F	5690 x 2225 x 585 dp
B	2100 x 750 x 900 dp	G	4250 x 2550 x 900 dp
C	AS SHOWN ON PLAN (GRID B–J) x 800 dp	H	5500 x 7250 x 900 dp
D	2100 x 2100 x 800 dp	J	2100 x 900 x 900 dp
E	905 x 905 x 750 dp		

PILE CAP & GROUND BEAM LAYOUT

ALL INTERNAL COLUMNS TO BE 325SQ. (UNLESS NOTED OTHERWISE)
ALL PERIMETER COLUMNS TO BE 250x600 (UNLESS NOTED OTHERWISE)

AS-BUILT DRAWING



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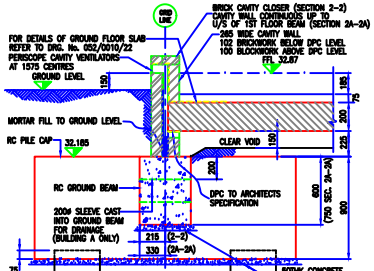

SECTION 2–2
SECTION 2A–2A SIMILAR UNLESS NOTED OTHERWISE
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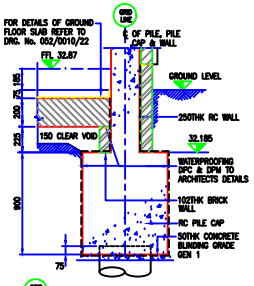

SECTION 4–4
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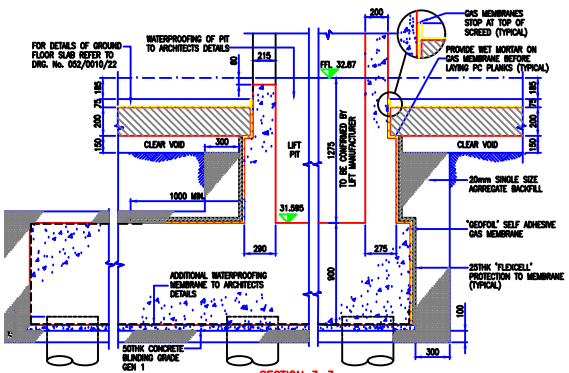

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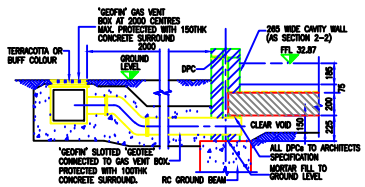

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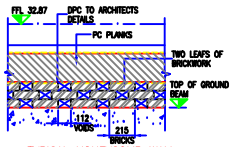

TYPICAL HONEYCOMB WALL
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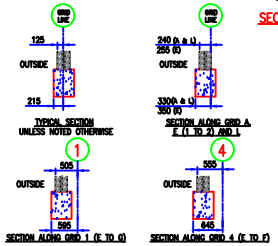

GROUND BEAM & WALL SETTING-OUT
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AS BUILT	5		
ADDITIONAL GAS VENT BOXES ADDED ALONG GRID 1 TO SUIT ARCHITECTS LATEST INFO.	4	DS	20.A.99
REVISIONS INDICATED THUS	3	DS	12.1.99
BUILDING B PILE CAPS ON GRID J–1 & L–2 REVISED TO SUIT EXISTING PILES. SERVICE ENTRY DUCTS REVISED TO SUIT MAC LATEST INFO. REVISIONS INDICATED THUS	2	DS	2.12.98
CONSTRUCTION ISSUE. RENUMBERED AND RETITLED (1 No. DRAWING FOR BOTH BUILDINGS). SETTING-OUT REVISED TO SUIT ARCHITECTS LATEST INFO. SERVICE ENTRY DUCT REVISED TO SUIT B & E LATEST INFO. REVISIONS INDICATED THUS	1	DS	21.10.98
REDRAWN AND RETITLED	B	–	2.10.98
REVISIONS AS INDICATED THUS	A	–	26.8.98
Revision		Suff App	Date

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IAC House, Moorside Road
Winchester
Hampshire, SO23 7RX
Tel: 01962 873100
Fax: 01962 873110
email: win@upton.mcgougan.plc.uk

UPTON McGOUGAN
DRAWING STANDARD

Project
XEROX
DENBRIDGE
UXBRIDGE

Drawing Title
BUILDING B
PILE CAP AND GROUND
BEAM LAYOUT

Drawn	Date	Checked	Date
JT	JUNE 98	DS	21.10.98

Scale
1:100 (AT EXTENDED A1 SIZE)

Drawing Number
052/0010/21/B
Rev 5

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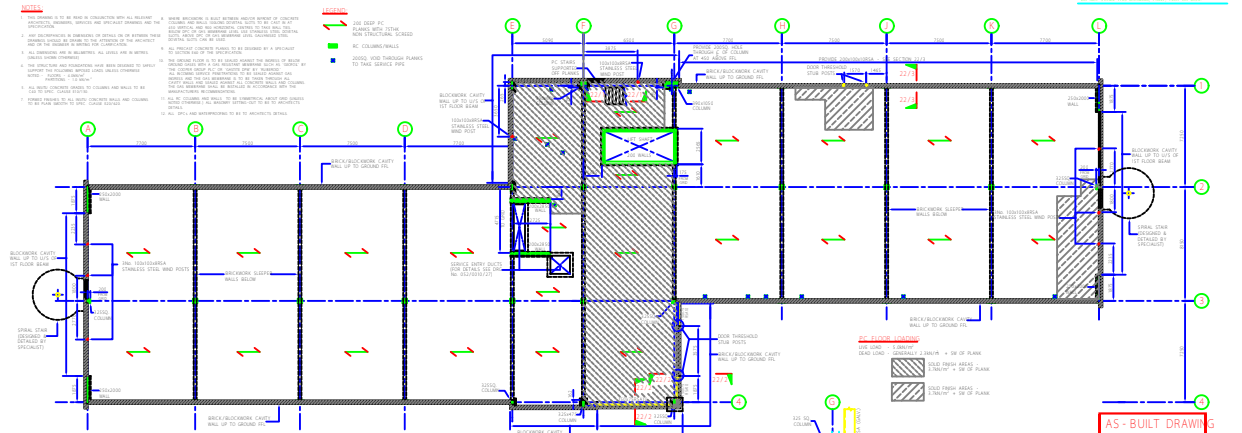
3. ALL DIMENSIONS ARE IN MILLIMETRES. ALL LEVELS ARE IN METRES. UNLESS SHOWN OTHERWISE.
4. THE STRUCTURE AND FOUNDATIONS HAVE BEEN DESIGNED TO SUPPLY SUPPORT THE FOLLOWING IMPOSED LOADS UNLESS OTHERWISE NOTED - PARTITIONS - 1.0 kN/m²
   - PARTITIONS - 1.0 kN/m²
5. ALL BLOCK CONCRETE GIRDERS TO COLUMNS AND WALLS TO BE CAN TO SPEC. CLASSIC STATICS.
7. FORMED FINISHES TO ALL INSITU CONCRETE WALLS AND COLUMNS TO BE PLAIN SMOOTH TO SPEC. CLASSIC STATICS.
8. WHERE BRICKWORK IS BUILT BETWEEN AND/OR BEFORE OF CONCRETE FRAMES THE CONTRACTOR SHALL ENSURE THAT THE FRAME IS FIXED VERTICALLY AND ALSO HORIZONTALLY CONTROL TO PREVENT THE BRICKWORK OFF THE SAID WEARBRAND LEVEL USE STAINLESS STEEL DOVETAIL SLOTS CAN BE USED. WEARBRAND LEVEL CALVANISED STEEL DOVETAIL SLOTS CAN BE USED.
9. ALL PRECAST CONCRETE PLANKS TO BE DESIGNED BY A SPECIALIST TO SECTION 5.6.2 OF THE SPECIFICATION.
10. THE GROUND FLOOR IS TO BE SEALED AGAINST THE DEGREES OF BELOW GROUND WATER TABLE AS DETERMINED BY THE GEOTECHNICAL REPORT. THE CONTRACTOR MUST ENSURE THAT THE CONCRETE SPRAY MUST WEARBRAND ALL BELOWING SERVICE PENETRATIONS TO BE SEALED AGAINST GAS PENETRATION. THE CONTRACTOR MUST ENSURE THAT THE CONCRETE SPRAY WALLS AND SEALED AGAINST ALL CONCRETED WALLS AND COLUMNS. THE GAS WEARBRAND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
11. ALL RC COLUMNS AND WALLS TO BE CHAMFERED ABOUT 20MM UNLESS OTHERWISE NOTED ON ARCHITECTS DETAILS.
12. ALL EPOLLAND ANTIMICROBIONS TO BE TO ARCHITECTS DETAILS.

LEGENDS:

- 200 DEEP PC PLANKS WITH 75THK NON STRUCTURAL SCREED
- RC COLUMNS/WALLS
- 200SQ. VOID THROUGH PLANKS TO TAKE SERVICE PIPE



AS - BUILT DRAWING

REVISIONS			
BSA LEVEL SHOWN ON SECTION 2/22 & 2/27	A	01.12.09	
REVISIONS AS INDICATED THUS	B	01.12.09	
REVISIONS AS INDICATED THUS	C	01.12.09	
SERVICE ENTRY DUCTS REVISED TO SUIT LATEST INFO	D	21.12.09	
REVISIONS AS INDICATED THUS	E	21.12.09	
REVISED TO SUIT LATEST INFO - REVISED SERVICE ENTRY DUCTS & REVISED FLOOR LEVELS	F	21.01.10	
WALL ROUNDING INDICATED THUS	G	21.01.10	
REVISIONS AS INDICATED THUS	H	21.01.10	
TO SUIT AS BUILT INFO	J	12.04.10	
REVISIONS AS INDICATED THUS	K	12.04.10	
REVISIONS AS INDICATED THUS	L	12.04.10	

Revision	Ref	Rqs	Date

Up Ion M Gougan plc
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Winchester, off
Hampshire, SO23 7RX
Tel: 01962 873800
Fax: 01962 873810
email: info@upton-mcgougan.co.uk

UPTON M^GOUGAN

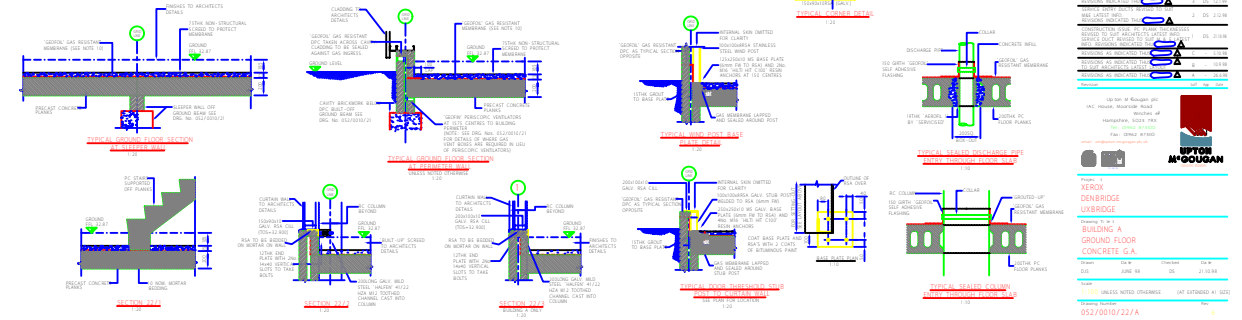
Project: 1
XEROX
DENBRIDGE
UXBRIDGE

Drawing 1: or 1
BUILDING A
GROUND FLOOR
CONCRETE G.A.

Drawn	Date	Checked	Date
DG	JUNE 08	DG	21.10.08

Scale
1:100 UNLESS NOTED OTHERWISE (AT EXTENDED A1 SIZE)

Drawing Number: 052/0010/22/A Rev: K



Appendix D Risk Rating Matrix

Table D.1: Risk rating for contaminated land qualitative risk assessment

Level of Severity	Likelihood		
	Most Likely	Reasonably Foreseeable	Unlikely
Acute harm or severe chronic harm. Direct pollution of sensitive water receptors or serious pollution of other water bodies.	High	High	Low
Harm from long-term exposure. Slight pollution of sensitive receptors or pollution of other water bodies.	Medium	Medium	Low
No significant harm in either short or long term. No pollution of water that is likely to affect sensitive receptors. No more than slight pollution of other water bodies.	Low	Low	Low

Appendix E Environmental Receptors

The Contaminated Land Statutory Guidance has a four category system that considers harm to human health, controlled waters, flora and fauna, property, livestock and crops. The Categories are broadly defined as follows:

1 Contaminated Land – similar to land where it is known that significant harm has been caused or significant harm is being caused

2 Contaminated Land – no significant harm being caused but there is a significant possibility for significant harm to be caused in the future

3 Not Contaminated Land – there may be harm being caused but no significant possibility for significant harm to be caused in the future

4 Not Contaminated Land – no pollutant linkage, normal levels of contaminants and no significant harm being caused and no significant possibility for significant harm to be caused in the future.

Table E.1: Significant pollution to controlled waters

Pollution of controlled waters
Under Section 78A(9) of Part 2A the term "pollution of controlled waters means the entry into controlled waters of any poisonous, noxious or polluting matter or any solid waste matter. The term "controlled waters" in relation to England has the same meaning as in Part 3 of the Water Resources Act 1991, except that "ground waters" does not include water contained in underground strata but above the saturation zones. (Paragraph 4.36)
Given that the Part 2A regime seeks to identify and deal with significant pollution (rather than lesser levels of pollution), the local authority should seek to focus on pollution which: (i) may be harmful to human health or the quality of aquatic ecosystems or terrestrial ecosystems directly depending on aquatic ecosystems; (ii) which may result in damage to material property; or (iii) which may impair or interfere with amenities and other legitimate uses of the environment. (Paragraph 4.37)
Significant pollution of controlled waters
Paragraph 4.38 states that "The following types of pollution should be considered to constitute significant pollution of controlled waters:
(a) Pollution equivalent to "environmental damage" to surface water or groundwater as defined by The Environmental Damage (Prevention and Remediation) Regulations 2009, but which cannot be dealt with under those Regulations.
(b) Inputs resulting in deterioration of the quality of water abstracted, or intended to be used in the future, for human consumption such that additional treatment would be required to enable that use.
(c) A breach of a statutory surface water Environment Quality Standard, either directly or via a groundwater pathway.
(d) Input of a substance into groundwater resulting in a significant and sustained upward trend in concentration of contaminants (as defined in Article 2(3) of the Groundwater Daughter Directive (2006/118/EC)5)".
Paragraph 4.39 states that "In some circumstances, the local authority may consider that the following types of pollution may constitute significant pollution: (a) significant concentrations6 of hazardous substances or non-hazardous pollutants in groundwater; or (b) significant concentrations of priority hazardous substances, priority substances or other specific polluting substances in surface water; at an appropriate, risk based compliance point. The local authority should only conclude that pollution is significant if it considers that treating the land as contaminated land would be in accordance with the broad objectives of the regime as described in Section 1 (of the Contaminated Land Statutory Guidance). This would normally mean that the authority should conclude that less serious forms of pollution are not significant. In such cases the authority should consult the Environment Agency".
The following types of circumstance should not be considered to be contaminated land on water pollution grounds:
(a) The fact that substances are merely entering water and none of the conditions for considering that significant

pollution is being caused set out in paragraphs 4.38 and 4.39 above are being met.

(b) The fact that land is causing a discharge that is not discernible at a location immediately downstream or down-gradient of the land (when compared to upstream or up-gradient concentrations).

(c) Substances entering water in compliance with a discharge authorised under the Environmental Permitting Regulations.

Significant pollution of controlled waters is being caused

In deciding whether significant pollution of controlled waters is being caused, the local authority should consider that this test is only met where it is satisfied that the substances in question are continuing to enter controlled waters; or that they have already entered the waters and are likely to do so again in such a manner that past and likely future entry in effect constitutes ongoing pollution. For these purposes, the local authority should:

(a) Regard substances as having entered controlled waters where they are dissolved or suspended in those waters, or (if they are immiscible with water) they have direct contact with those waters on or beneath the surface of the water.

(b) Take the term “continuing to enter” to mean any measurable entry of the substance(s) into controlled waters additional to any which has already occurred.

(c) Take the term “likely to do so again” to mean more likely than not to occur again.

Land should not be determined as contaminated land on grounds that significant pollution of controlled waters is being caused where: (a) the relevant substance(s) are already present in controlled waters; (b) entry into controlled waters of the substance(s) from land has ceased; and (c) it is not likely that further entry will take place.

Significant Possibility of Significant Pollution of Controlled Waters

In deciding whether or not a significant possibility of significant pollution of controlled waters exists, the local authority should first understand the possibility of significant pollution of controlled waters posed by the land, and the levels of certainty/uncertainty attached to that understanding, before it goes on to decide whether or not that possibility is significant. The term “possibility of significant pollution of controlled waters” means the estimated likelihood that significant pollution of controlled waters might occur. In assessing the possibility of significant pollution of controlled waters from land, the local authority should act in accordance with the advice on risk assessment in Section 3 and the guidance in this sub-section.

In deciding whether the possibility of significant pollution of controlled waters is significant the local authority should bear in mind that Part 2A makes the decision a positive legal test. In other words, for particular land to meet the test the authority needs reasonably to believe that there is a significant possibility of such pollution, rather than to demonstrate that there is not.

Before making its decision on whether a given possibility of significant pollution of controlled waters is significant, the local authority should consider:

(a) The estimated likelihood that the potential significant pollution of controlled waters would become manifest; the strength of evidence underlying the estimate; and the level of uncertainty underlying the estimate.

(b) The estimated impact of the potential significant pollution if it did occur. This should include consideration of whether the pollution would be likely to cause a breach of European water legislation, or make a major contribution to such a breach.

(c) The estimated timescale over which the significant pollution might become manifest.

(d) The authority’s initial estimate of whether remediation is feasible, and if so what it would involve and the extent to which it might provide a solution to the problem; how long it would take; what benefit it would be likely to bring; and whether the benefits would outweigh the costs and any impacts on local society or the environment from taking action.

Reproduced from DEFRA (2012) Contaminated Land Statutory Guidance pursuant to section 78YA of the Environmental Protection Act 1990 as amended by Section 57 of the Environment Act 1995.

Table E.2: Significant harm to human health, ecological systems and property

Relevant types of receptor	Significant harm	Significant possibility of significant harm
Human beings	The following health effects should always be considered to constitute significant harm to human health: death; life threatening diseases (eg cancers); other diseases likely to have serious impacts on health; serious injury; birth defects; and impairment of reproductive functions. Other health effects may be considered by the local authority to constitute significant harm. For example, a wide range of conditions may or may not constitute significant harm (alone or in combination) including: physical injury; gastrointestinal disturbances; respiratory tract effects; cardio-vascular effects; central nervous system effects; skin ailments; effects on organs such as the liver or kidneys; or a wide range of other health impacts. In deciding whether or not a particular form of harm is significant harm, the local authority should consider the seriousness of the harm in question: including the impact on the health, and quality of life, of any person suffering the harm; and the scale of the harm. The authority should only conclude that harm is significant if it considers that treating the land as contaminated land would be in accordance with the broad objectives of the regime as described in Section 1 of the Contaminated Land Statutory Guidance.	The risk posed by one or more relevant contaminant linkage(s) relating to the land comprises: (a) The estimated likelihood that significant harm might occur to an identified receptor, taking account of the current use of the land in question. (b) The estimated impact if the significant harm did occur – i.e. the nature of the harm, the seriousness of the harm to any person who might suffer it, and (where relevant) the extent of the harm in terms of how many people might suffer it. In estimating the likelihood that a specific form of significant harm might occur the local authority should, among other things, consider: (a) The estimated probability that the significant harm might occur: (i) if the land continues to be used as it is currently being used; and (ii) where relevant, if the land were to be used in a different way (or ways) in the future having regard to the guidance on "current use" in Section 3 of the Contaminated Land Statutory Guidance. (b) The strength of evidence underlying the risk estimate. It should also consider the key assumptions on which the estimate of likelihood is based, and the level of uncertainty underlying the estimate.
Any ecological system, or living organism forming part of such a system, within a location which is:	The following types of harm should be considered to be significant harm: • harm which results in an irreversible adverse change, or in	Conditions would exist for considering that a significant possibility of significant harm exists to a relevant ecological

Relevant types of receptor	Significant harm	Significant possibility of significant harm
• a site of special scientific interest (under section 28 of the Wildlife and Countryside Act (WCA) 1981 (as amended) and Part 4 of the Natural Environment and Rural Communitites Act 2006 (as amended)); • a national nature reserve (under Section 35 of the WCA 1981 (as amended)); • a marine nature reserve (under Section 36 of the WCA 1981 (as amended)); • an area of special protection for birds (under Section 3 of the WCA 1981 (as amended)); • a "European site" within the meaning of regulation 8 of the Conservation of Habitats and Species Regulations 2010 (as amended); • any habitat or site afforded policy protection under Section 11 of The National Planning Policy Framework (NPPF) on conserving and enhancing the natural environment (i.e. possible Special Areas of Conservation, potential Special Protection Areas and listed or proposed Ramsar sites); or • any nature reserve established under Section 21 of the National Parks and Access to the Countryside Act 1949.	some other substantial adverse change, in the functioning of the ecological system within any substantial part of that location; or • harm which significantly affects any species of special interest within that location and which endangers the long-term maintenance of the population of that species at that location. In the case of European sites, harm should also be considered to be significant harm if it endangers the favourable conservation status of natural habitats at such locations or species typically found there. In deciding what constitutes such harm, the local authority should have regard to the advice of Natural England and to the requirements of the Conservation of Habitats and Species Regulations 2010 (as amended).	receptor where the local authority considers that: • significant harm of that description is more likely than not to result from the contaminant linkage in question; or • there is a reasonable possibility of significant harm of that description being caused, and if that harm were to occur, it would result in such a degree of damage to features of special interest at the location in question that they would be beyond any practicable possibility of restoration. Any assessment made for these purposes should take into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.
Property in the form of: • crops, including timber • produce grown domestically, or on allotments, for consumption • livestock • other owned or domesticated animals; • wild animals which are the subject of shooting or fishing rights.	For crops, a substantial diminution in yield or other substantial loss in their value resulting from death, disease or other physical damage. For domestic pets, death, serious disease or serious physical damage. For other property in this category, a substantial loss in its value resulting from death, disease or other serious physical damage. The local authority should regard a substantial loss in value as occurring only when a substantial proportion of the animals or crops are dead or otherwise no longer fit for their intended purpose. Food should be regarded as being no longer fit for purpose when it	Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question, taking into account relevant information for that type of contaminant linkage, particularly in relation to the ecotoxicological effects of the contaminant.

Relevant types of receptor	Significant harm	Significant possibility of significant harm
	fails to comply with the provisions of the Food Safety Act 1990. Where a diminution in yield or loss in value is caused by a pollutant linkage, a 20% diminution or loss should be regarded as a benchmark for what constitutes a substantial diminution or loss. In the Guidance states that this description of significant harm is referred to as an "animal or crop effect".	
Property in the form of buildings. For this purpose 'building' means any structure or erection and any part of a building, including any part below ground level, but does not include plant or machinery comprised in a building, or buried services such as sewers, water pipes or electricity cables.	Structural failure, substantial damage or substantial interference with any right of occupation. The local authority should regard substantial damage or substantial interference as occurring when any part of the building ceases to be capable of being used for the purpose for which it is or was intended. In the case of a scheduled Ancient Monument, substantial damage should be regarded as occurring when the damage significantly impairs the historic, architectural, traditional, artistic or archaeological interest by reason of which the monument was scheduled. The Guidance states that this description of significant harm is referred to as a 'building effect'.	Conditions would exist for considering that a significant possibility of significant harm exists to the relevant types of receptor where the local authority considers that significant harm is more likely than not to result from the contaminant linkage in question during the expected economic life of the building (or in the case of a scheduled Ancient Monument the foreseeable future), taking into account relevant information for that type of contaminant linkage.

Reproduced from DEFRA (2012) Contaminated Land Statutory Guidance pursuant to section 78YA of the Environmental Protection Act 1990 as amended by Section 57 of the Environment Act 1995.

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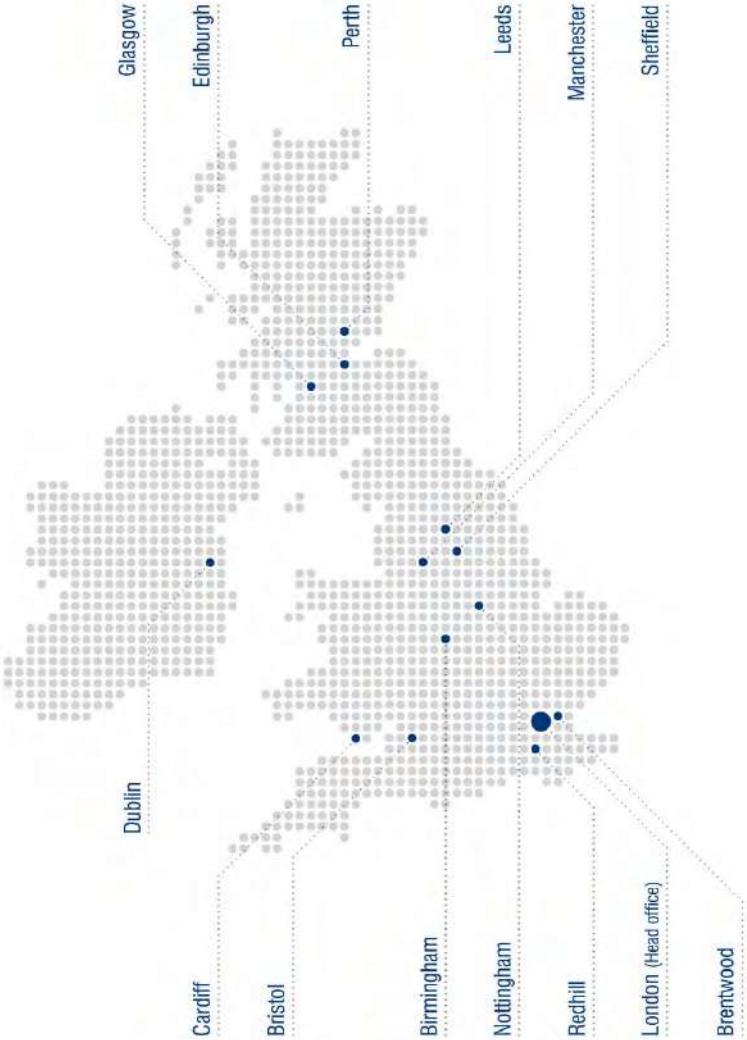
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