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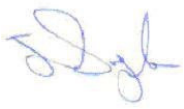
123 BARLOW MOOR ROAD, DIDSBURY

GEO-ENVIRONMENTAL APPRAISAL

TAHIR AHMED

MARCH 2024

GROUNDTECH
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SUMMARY

Site Details		
Site Location	*The site is located circa 4.8 miles south of Manchester City Centre and is approximately centred on National Grid Reference 383692, 391745.*	
Site Area	*The site is currently occupied by an existing single storey dwelling of brick construction located in the centre of the site. A driveway is present in the north of the site and a private garden area in the south. A detached garage is also present in the south west of the site.* *The site is surfaced by tarmac and concrete in the northern and western sections. The south of the site is surfaced by grass. The east of the site is surfaced with paving flags. Shrubbery along with semi mature and mature trees are present in the south east and north east of the site.*	
Preliminary Risk Assessment		
History	*Historical maps indicate the site remained undeveloped until 1894 when buildings encroach onto the south of the site associated with the adjacent Stormarn building. Maps from 1907 show residential buildings in the extreme east of west of the site and a small development in the north of the site. Maps from 1955 show the site to be in its current configuration. Greenhouses were historically located surrounding the site.*	
Geology/Hydrogeology	*The superficial deposits are indicated to be Glaciofluvial Sheet deposits characteristically comprising Sand and Gravel. The superficial deposits are classified as a Secondary A Aquifer.* *The Bedrock geology is indicated to be the Wilmslow Sandstone Formation comprising Sandstone. The bedrock geology is classified as a Principal Aquifer.*	
Environmental Setting	*Waste exemptions are located 45m and 356m Northeast that relate sorting and de-naturing of controlled drugs for disposal.* *No active or historical landfill is present surrounding the site.* *There are five current industrial land uses all within 217m of the site, three locations are electrical sub stations located 217m north east, 157m west and 121m north west. Two other industrial land uses are located 202m north west and 141m south of the site.*	
Pollution Linkage (PL) Assessment	Human Health	*The risk to Human Health is considered to be Moderate.*
	Controlled Waters	*The risk to controlled waters is considered to be Low.*
	Permanent Ground Gas	*The risk from Ground Gas is considered to be Low.*
Ground Model		
Made Ground Soils	*Made Ground was encountered in the north and west of the site to a maximum depth of 1.35m bgl and generally comprised sandy gravel with minor constituents of brick, concrete and ceramic.*	
Natural Soils	*Natural granular soils were encountered from minimum depths of between 0.2m and 1.35m bgl and consisted of clayey gravelly Sand with gravel of Sandstone.*	

Bedrock	*Bedrock was not encountered during the Ground Investigation.*
Groundwater	*No groundwater was encountered during the Ground Investigation.*
Ground Engineering Assessment	
Foundations	*The most suitable foundations for the proposed development are considered to be traditional shallow strip trench foundations constructed within the medium dense Sand deposits. Foundations should be deepened through all Made Ground and loose to medium dense Sand deposits.*
Highways	*CBR values of greater than 5% are likely to be achieved in undisturbed natural granular soils for pavement design purposes, unless proven otherwise by in-situ testing at sub-base level by a specialist geotechnical engineer. Untreated Made Ground should be assumed to have a CBR value of <2.5%, unless proven otherwise.*
SuDS	*The use of SuDS drainage may be feasible for the proposed development if sufficient attenuation and storage is available.*
Constraints	*The main constraint of the site is the existing building on the site restricting the areas of investigation. A watching brief should be maintained during the demolition of the existing buildings to ensure that ground conditions remain consistent across the site.*
GQRA and Revised (PL) Assessment	
Human Health	*Due to the elevated levels of CoC identified through laboratory testing, the risk to Human Health is considered to be Moderate. A cover system is required in garden areas where Made Ground is present at formation level.*
Controlled Waters	*The risk to controlled waters is considered to be Low due to no mobile contamination being identified during the Ground Investigation.*
Permanent Ground Gas	*No source of ground gas has been identified during the PRA or Ground Investigation. The risk from ground gas is considered to be Low.* *No radon protective measures are required for the proposed development.*
Final Appraisal	

The following further work is required to progress the site into the construction phase:

- *Watching brief during demolition of existing buildings*
- *Demolition asbestos survey*
- *Detailed Foundation design*
- *Topsoil strip and delineation*
- *Confirmation of recommendations made in this appraisal with regulators*

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Plans		
Plan Reference	*Revision*	*Title*
GRO-23382-P01	-	*Project Location Plan*
GRO-23382-P02	-	*Preliminary Findings and Constraints Plan*
GRO-23382-P03	-	*Illustrative Preliminary Conceptual Site Model (CSM)*
GRO-23382-P04	-	*Exploratory Hole Location Plan*
GRO-23382-P05	-	*Ground Model*
GRO-23382-P06	-	*Soil Contamination Plan*
GRO-23382-P07	-	*Revised Illustrative Conceptual Site Model (CSM)*

1.0 INTRODUCTION

1.1 Project Objectives

Groundtech Consulting Limited have been instructed by Tahir Ahmed on behalf of Brennan Consult to undertake a Preliminary Risk Assessment for a site at 123 Barlow Moor Road in Didsbury.

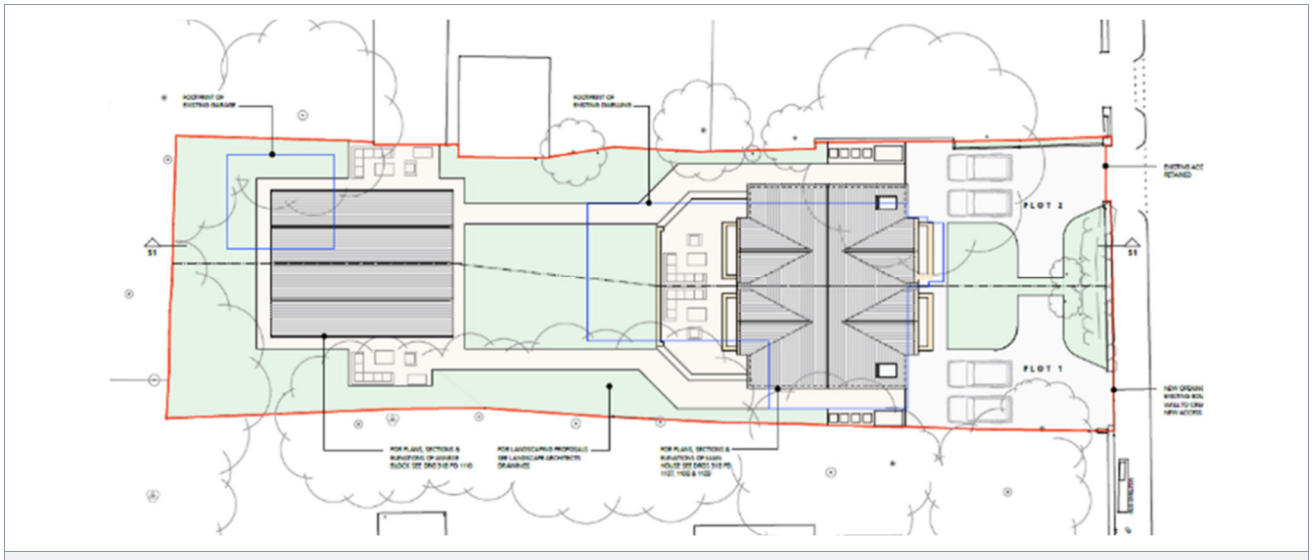
The objectives of the Preliminary Risk Assessment were to establish the sites environmental and geotechnical background in order to generate a Conceptual Site Model to identify any potential constraints and linkages which may affect the redevelopment of the site.

A main investigation was undertaken in accordance with BS 5930:2020, BS 10175:2017, BS 8576:2013 and Eurocode 7 to revise the CSM and quantify the level of risk identified in the PRA. The Appraisal has been prepared in accordance with current UK Legislation and to discharge Land Quality pre-commencement planning conditions.

The report has been undertaken to fulfil the requirements of a preliminary risk assessment in accordance with current LCRM risk assessment guidance.

1.2 Proposed Development

The proposed development is residential end use comprising the construction of a pair of semi-detached dwellings and a pair of annexes to the rear of the garden.



Proposed Development

1.3 Limitations

This Preliminary Risk Assessment is based on information obtained from a number of sources, and the information is assumed to be correct.

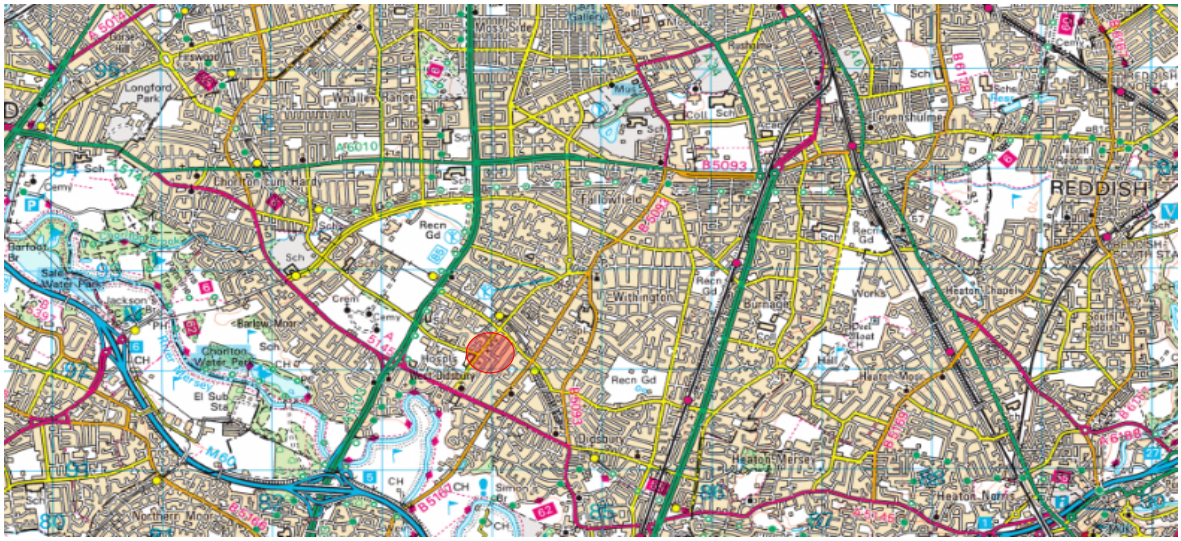
Other conditions may exist on the site that have not been taken into account in this assessment as they are outside the scope of works. Groundtech Consulting are not responsible for these circumstances that are not outlined in the report.

The assessment has been prepared for the exclusive use of the client. No third parties may rely on or reproduce the contents of the report without the written permission of Groundtech Consulting Limited. If any unauthorised third party comes into possession of the report, they rely on it at their own risk and Groundtech Consulting Limited will not be obliged to provide a duty of care.

2.0 SITE SETTING

2.1 Location

The site is located circa 4.8 miles south of Manchester City Centre, as shown on the Project Location Plan *GRO-23382-P01*. The site is approximately centred on National Grid Reference 383692, 391745.



Project Location

Access to the site is gained off Barlow Moor Road to north of the site.

2.2 Site Description

The site is approximately 0.13 hectares in area, rectangular in shape and is topographically level.

The site is currently occupied by an existing single storey dwelling of brick construction located in the centre of the site. A driveway is present in the north of the site and a private garden area in the south. A detached garage is also present in the south west of the site.

The site is surfaced by tarmac and concrete in the northern and western extents, the south of the site is surfaced by grass. The east of the site is surfaced with paving flags. Shrubbery along with semi-mature and mature trees are present in the south east and north east of the site.

Site Boundaries
The north of the site is bounded by a circa 0.5m high wall of brick construction. The east, south and west of the site is bounded by a circa 2.0m high wooden fence. Semi-mature and mature trees are also present along the southern boundary.

The site is surrounded by the following features/land uses:

- *North* - *A5145 Barlow Moor Road followed by Douglas House and residential housing*
- *East* - *Broomfield Court and Residential dwellings*
- *South* - *Residential dwellings*
- *West* - *Residential dwellings followed by Palatine Road*

Site photographs are presented in *Appendix 2* and relevant features are recorded on the Preliminary Development and Constraints Plan *GRO-23382-P02*.

3.0 ENVIRONMENTAL SETTING

3.1 Site History

Available historical maps have been obtained, a list of dates and scale are listed in the table below:

Scale	Date
1:1,250	*1955, 1964, 1983/87, 1989/92, 1992, 1994, 1993/94, 2003*
1:2,500	*1881, 1894, 1907, 1910, 1922, 1935, 1955, 1971/74*
1:10,000/10,560	*1849, 1892, 1893, 1897, 1905, 1908/11, 1911, 1923, 1934/38, 1938, 1955, 1965/66, 1981/83, 1988/89, 2001, 2010, 2023*

The plans were examined and potential issues have been identified and summarised in the table below:

Date	Site	Surrounding Area
1881	*Site occupied by fields.*	***Greenhouses** located c.50m south and c.150m south west.* *Residential buildings surround the site to the north and south c.50m.*
1894	*Southern area of site comprises a portion of the adjacent Stormarn building.*	*Netherby building located c.50m east.* *Expansion of residential buildings surrounding.* ***Greenhouse** located c.10m west.*
1907	*Residential buildings encroach onto the eastern and western extent and small development present in northern area.*	*Expansion of surrounding residential developments.*
1922	*Small **greenhouse** encroaching on the western area from adjacent property.*	*Expansion of surrounding residential developments.* *Tennis grounds c.130m north west of the site.*
1955	*A building is located centrally to the site and in the southern area in its current configuration.* *Other buildings have been **demolished**.*	*Expansion of surrounding residential developments.*
1964	*No Change.*	*Tennis Court c.200m south west and 180m south.*
1989/92	*Buildings onsite labelled as part of Broomfield Court.*	-
2003	*No Change.*	-

The historical plans are presented in *Appendix 3*.

3.2 Geology

The following British Geological Survey (BGS) records and other available information were inspected to accurately determine the geology underlying the site:

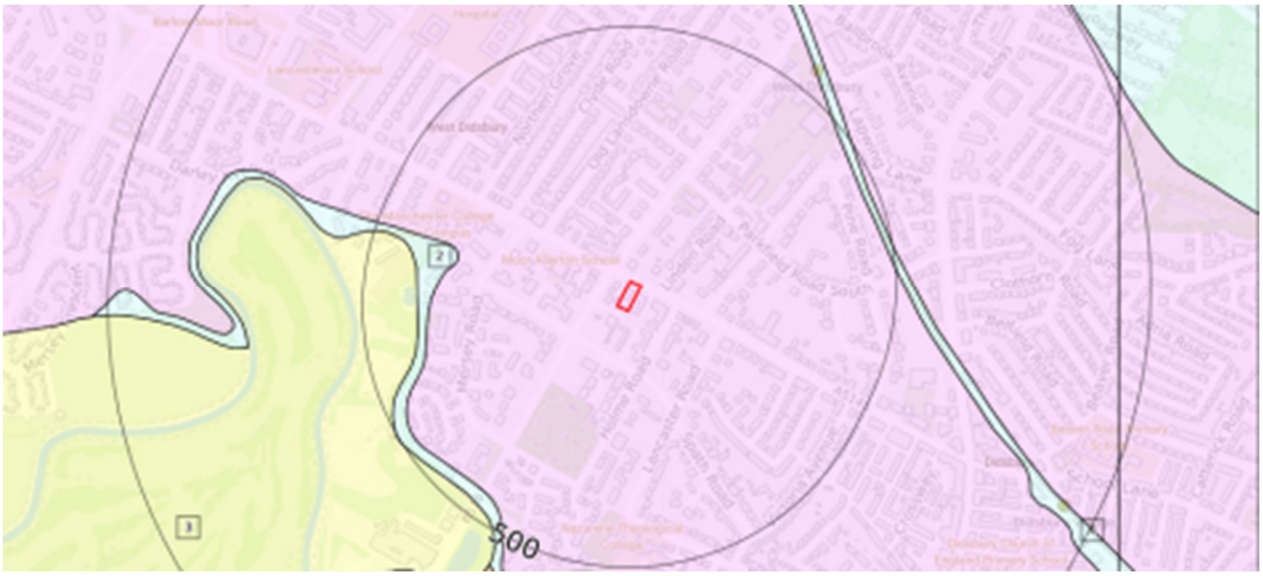
- *1:63,360 Scale Geological Sheet 98, Stockport - Drift Edition*
- *1:50,000 Scale Geological Sheet 98, Stockport - Solid Edition*
- *BGS Records*

Made Ground

Based off the Groundsure report and available geological plans Made Ground is not indicated to be present beneath the site. However due to previous and current developments, Made Ground is anticipated to be present.

Superficial Deposits

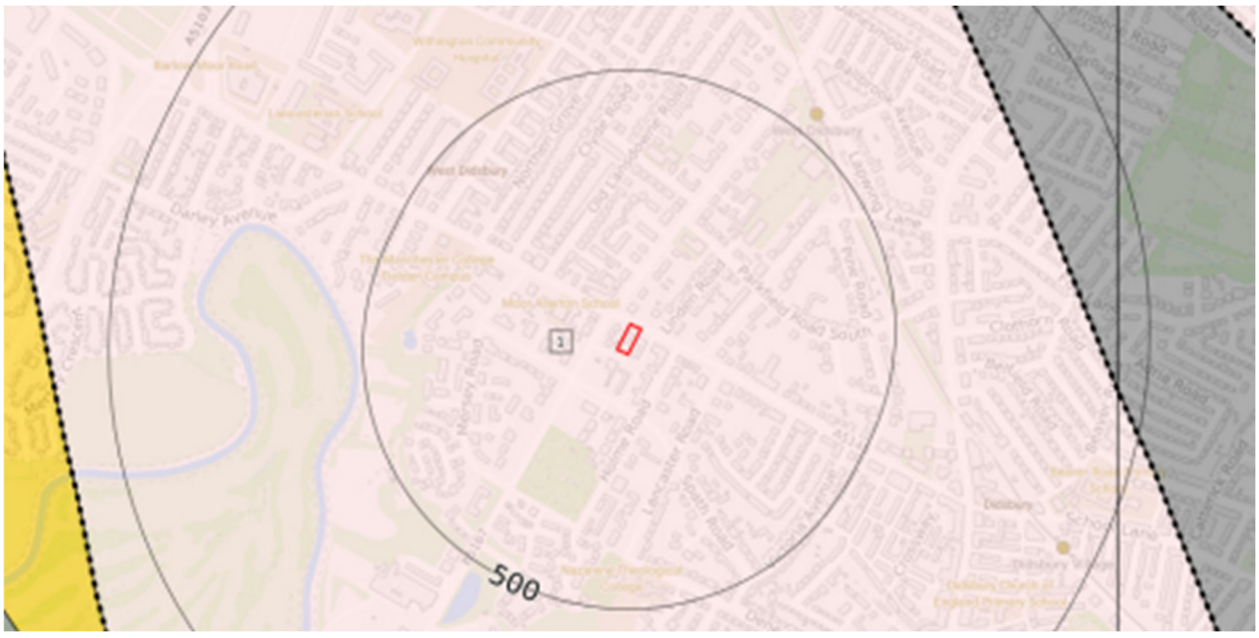
The superficial deposits beneath this site are indicated to be glaciofluvial sheet deposits comprising mainly of Sand and Gravel.



Geological Map – Superficial Deposits

Solid geology

The solid geology present on the site is of the Wilmslow Sandstone Formation which characteristically comprises Sandstone.



Geological Map – Solid Geology

Geological faults

No faults are shown on or within an influencing distance of the site.

BGS Records
There are no available BGS records within 250m of the site.

3.3 Hydrogeology

The superficial glaciofluvial sheet deposits in this area are classified by the Environment Agency as a Secondary A Aquifer. These are 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.

The bedrock geology is classified as a Principal Aquifer (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).

The site does not lie within a Source Protection Zone and there are no potable abstraction points within 2000m of the site.

There are four groundwater abstraction points within 2000m of the site, two of which are active located 1054m south of the site that is used for spray irrigation at Didsbury Golf Club and 1874m west that is used for spray irrigation at Chorlton Golf Club.

3.4 Hydrology

There are no named watercourses within 250m of the site, the nearest surface water feature which is the River Mersey 516m west of the site.

There are two historical surface water abstraction points within 2000m of the site. The two historical abstractions are located 1458m west of the site and was used for general washing, process washing and dust suppression for AMEC/ALFRED MCALPINE JV.

There are no potable water abstraction points within 2000m of the site.

Environment Agency information indicates that the site is outside a flood risk zone and is not at risk of flooding.

3.5 Environmental Consultations

An environmental consultation has been conducted through Groundsure, which accesses British Geological Survey and Environment Agency databases. The complete EnviroInsight Report can be found in *Appendix 4*, a summary of the more relevant points are presented in the table below.

Record	<250m	250 – 500m	Description
Authorised Processes	-	*1*	*There is one licensed pollutant release 343m south west of the site which related to petrol vapour recovery and no enforcement was noted.*
Pollution Incidents	-	*3*	*There are three historical pollution incidents involving inert materials and waste with minor impact on land.*
Landfill and Waste Treatment	-	*2*	*Waste exemptions are located 45m and 356m north east that relate sorting and de-naturing of controlled drugs for disposal.*

Record	<250m	250 – 500m	Description
Discharge Consents	-	-	-
Petrol Filling Stations	-	-	-
Current industrial Uses	-	*5*	*There are five current industrial land uses all within 217m of the site, three locations are electrical sub stations located 217m north east, 157m west and 121m north west. Two other industrial land uses are located 202m north west and 141m south of the site.*

3.6 Radon

In accordance with the latest Radon maps launched by UKHSA in December 2023, this site is in an area where less than 1% of homes exceed the Radon action level, therefore no Radon protection measures are required for the proposed dwelling.

The radon data in the Groundsure report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland and confirms the recommendations of radon maps. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supersede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square.

4.0 LAND QUALITY CONCEPTUAL SITE MODEL AND RISK ASSESSMENT

4.1 Introduction

The potential level of risk posed by contaminants in soil and/or groundwater will be influenced by the type and concentration of the contamination at source, the likelihood of exposure occurring, the potential pollution linkages and the likely chronic or acute effects on the receptors.

A contaminant is defined as a substance that has the potential to cause harm, a risk is considered to exist if such a substance is present at sufficient concentrations to cause harm and if a pathway is present a receptor could be exposed to the contaminant.

Section 4.0 compiles the information from the previous sections to assemble a Conceptual Site Model to inform the risk assessment process. The potential sources identified on the site and off the site that are within influencing distance are assessed to determine if pollution linkages exist and an unacceptable risk is posed to human health and controlled waters. The assessment has been carried out on a qualitative basis and aims to produce a complete and comprehensive Preliminary Conceptual Site Model; the potential pollution linkages are displayed on *GRO-23382-P03* Illustrative Preliminary CSM.

Three potential types of impacts exist for a site and all three need to be considered in the qualitative preliminary risk assessment:

- *Impacts from sources on the subject site*
- *Impacts to the surrounding area from the subject site*
- *Impacts to the subject site from the surrounding area*

4.2 Potential Contamination Sources

Onsite Sources and Associated Contaminants of Concern (CoC)
From the information obtained during the preliminary risk assessment, a single potentially contaminative on the site source has been identified which may affect the redevelopment of the site for residential end use, This consists the former buildings on the site which will subsequently be demolished.

The potential Made Ground associated with the former and present buildings is a potential source of CoC including heavy metals, speciated Polycyclic Aromatic Hydrocarbons (PAHs), and asbestos.

Offsite Sources and Associated Contaminants of Concern (CoC)
There are several potential offsite sources of contamination which have been identified through the PRA and include the following:

- *Electrical substations approximately 217m and 121m north east and 157m west*
- *Two industries producing industrial products located 202m north west and 141m south*
- *Tennis Ground circa 130m north west approximately 200m south west and circa 180m south*
- *Greenhouses circa 50m south and approximately 150m south west*

The former electricity substations at 217m, 121m north east and 157m west are potentially sources of Polychlorinated biphenyls (PCBs) dependant on their age as these were widely used as cooling agents in transformers prior to being banned.

The current industrial land uses located 202m north west and 141m south are a potential source of heavy metals, inorganic compounds and asbestos. Additionally, they are a potential source of speciated PAHs and hydrocarbons due to machinery that may utilised and stored.

4.3 Pollution Linkages

The definition of a pollution linkage is a medium which allows a contaminant to impact a receptor. Potential pollution linkages have been recognized for the residential development from the identified contamination sources that exist.

At this stage the contaminants identified above are considered to potentially pose an unacceptable risk human health and controlled waters through the following pollution linkages:

- *Direct soil and dust ingestion*
- *Dermal contact with soil both indoors and outdoors*
- *Indoor air inhalation from soil and vapour*
- *Outdoor inhalation of soil and vapour*
- *Migration and accumulation of ground gas into internal spaces*
- *Impaction of groundwater from soil contamination (diffuse and point)*
- *Impaction of groundwater from groundwater plume*
- *Migration of soil and groundwater contamination impacting surface waters*

4.4 Receptors

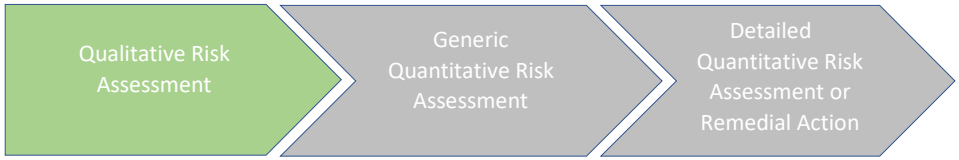
Receptors generally fall into the categories of human health or controlled waters within the river basin system. The recognized receptors are listed below:

- *Site End Users*
- *Clean potable water supply pipe*
- *Secondary A Superficial Aquifer*
- *Principal Bedrock Aquifer*

4.5 Preliminary Conceptual Site Model (CSM)

The factual information obtained from the consultations and summarised in Section 2.0 and 3.0 has been used to compile a Preliminary CSM. Using Source-Pathway-Receptor assessment criteria that is applicable in the UK, a risk assessment has been completed to determine if a plausible pollution linkage exists between the identified contaminants and receptors. The risk classification has been estimated in accordance with the CIRIA C552 assessment criteria outlined in *Appendix 5*. The CSM is visually represented on Groundtech Plan *GRO-23382-P03*.

Human Health Pollution Linkage Assessment



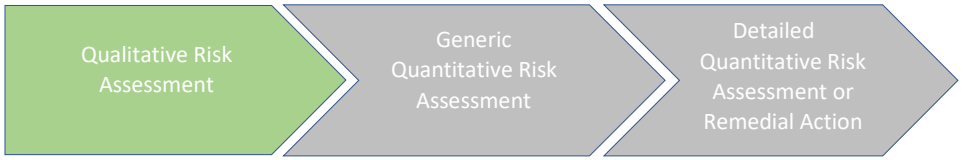
- The table below represents the first stage in the land quality risk assessment process - **the Qualitative Risk Assessment**.
- In order for a development site to be deemed 'suitable for use' the level of risk needs to be reduced to an acceptable level - low to negligible risk. The purpose of each stage of risk assessment is to establish if there is a requirement for additional stages of assessment in order to have sufficient confidence to support a risk characterisation or remedial action.

Conceptual Site Model					*Qualitative Risk Assessment*	
PL	Potential Source	Pollution Linkage	Likelihood	Consequence/ Severity	Risk Rating	*Rationale and Action*
PL1	Contaminated Soils	Ingestion of soil and dust. Dermal contact with soil.	Low Likelihood to Likely	Medium	Moderate	*Pollution Linkage 1 refers to proposed site users coming into contact with contaminated soils on the site.* *The site is currently occupied by an existing residential building, Made Ground is therefore anticipated beneath the site which may be a source of heavy metals, speciated PAHs and asbestos. Made ground may also be a product of former buildings which have since been demolished.* *PCBs may have been used in the former electricity substations that are located 217m NW, 121m NE and 157m West, however this are mobile and will be localised. PCB contamination from offsite substations is unlikely to have affected the site given the distance.* *Other offsite sources of contamination are at a considerable at a distance unlikely to impact the subject site.*

Conceptual Site Model						*Qualitative Risk Assessment*
PL	Potential Source	Pollution Linkage	Likelihood	Consequence/ Severity	Risk Rating	*Rationale and Action*
						The proposed development is residential end use comprising a pair of semi-detached residential dwellings and a pair of annexes towards the rear of the garden, Made Ground is likely to be present and a plausible pollution linkage has been identified.
PL2	Contaminated Soils	Inhalation of vapour.	Unlikely	Medium to Severe	Low	*Pollution linkage 2 refers to vapours migrating into confined spaces within the proposed development. No significant sources of volatile vapours have been identified on the site through the PRA and a plausible pollution linkage is not considered to exist.*
PL3	Contaminated Soils	Inhalation of soil dust by adjacent site users.	Unlikely	Medium	Low	*Pollution Linkage 3 relates to contamination on the subject site affecting adjacent site users. Significant sources of mobile contamination have not been identified on the site through the desk-based study, a viable pollution linkage is not considered to be present.*
PL4	Contaminated Soils	Attacking potable water supply pipe.	Likely	Medium	Low	*Pollution Linkage 4 refers to the possible contaminants permeating potable water pipes and consumption by the future site end users of the tainted water supply. Shallow Made Ground is expected to be present on site due to the presence of an existing residential structure, however deep Made Ground is not anticipated and it is assumed that potable water pipes will be placed in the natural strata, therefore a contamination linkage is not considered to exist.*

Conceptual Site Model						*Qualitative Risk Assessment*
PL	Potential Source	Pollution Linkage	Likelihood	Consequence/ Severity	Risk Rating	*Rationale and Action*
PL5	Ground Gas	Migration and accumulation of ground gas in internal spaces.	Unlikely	Medium to Severe	Low	*No significant on-site or offsite sources of Ground Gas has been identified through the desk based study.* *No Radon protection measures are required for the proposed dwelling.*

Controlled Waters Pollution Linkage Assessment



- The table below represents the first stage in the land quality risk assessment process – **Qualitative Risk Assessment**.
- In order for a development site to be deemed 'suitable for use' the level of risk needs to be reduced to an acceptable level - low to negligible risk. The purpose of each stage of risk assessment is to establish if there is a requirement for additional stages of assessment in order to have sufficient confidence to support a risk characterisation or remedial action.

Conceptual Site Model					*Qualitative Risk Assessment*	
PL	Potential source	Pollution linkage	Likelihood	Severity	Level of risk	*Rationale*
PL6	Contaminated Soils	Impaction of groundwater from soil contamination (diffuse and point). Impaction of groundwater from groundwater plume.	Unlikely	Mild	*Very Low*	*Based on the history of the site, limited Made Ground is likely to be present associated with the former residential dwelling. No sources of mobile contamination have been identified through the PRA.* *Geological maps indicate that the site is underlain by superficial deposits underlain by the solid rock geology of Wilmslow Sandstone formation (Secondary A Aquifer).* *The site is not within a groundwater SPZ and the groundwater is not considered to be a sensitive resource. There are also no potable abstraction licenses within 2000m.* *As a potential source of mobile contamination has not been identified, no realistic pollution linkage is present.*
PL7	Contaminated Soils	Migration of soil and groundwater contamination impacting surface waters.	Unlikely	Mild	*Very Low*	*Pollution Linkage 7 refers to the impaction of nearby surface watercourses from contaminated soils and groundwater.*

Conceptual Site Model						*Qualitative Risk Assessment*
PL	Potential source	Pollution linkage	Likelihood	Severity	Level of risk	*Rationale*
						There are no surface water features within 250m and no sources of mobile contamination have been identified on the site. *Therefore, no pollution linkage is considered to exist*

5.0 SCOPE OF INVESTIGATION AND RATIONALE

5.1 Project Objectives

The aim of the fieldwork was to:

Determine the stratification beneath the site
Maintain watching brief for visual and olfactory evidence of contamination
Obtain samples using methodology in current guidance for contamination testing
Identify realistic pollution linkages to groundwater.
Obtain relevant geotechnical parameters for preliminary foundation design to address both ULS and SLS conditions
Determine if targeted supplementary investigation in areas of concern is required and for remedial design
Assess the identified pollution linkages in the CSM
Determine the feasibility of SuDS drainage

5.2 Scope of Works

The following scope of works was completed on 16th January 2024:

- *6 No. Windowless sample boreholes (WS01 to WS06) were drilled to a maximum depth of 5.0m bgl*
- *1 No soil percolation trial pit (SuDS01) was undertaken at 2.0m bgl*

The exploratory hole locations are presented on Groundtech Plan *GRO-23382-P04* and the exploratory hole logs are in *Appendix 6*.

The exploratory holes were positioned to establish the stratification beneath the site and target any areas of concern as summarised in the table below:

Location	Target Rationale
WS01 to WS06	*Site coverage*
WS01 and WS02	*Proposed garage*
WS03 to WS05	*Former buildings/greenhouses* *Proposed dwellings*
SuDS1	*Proposed SuDS location*

The exploratory holes were logged by a suitably experienced Geo-Environmental engineer in general accordance with the following current guidance:

- *BS 5930 'Code of Practice for Site Investigations' 2020*
- *BS EN 14688-1:2002 'Geotechnical Investigation and Testing – Identification and classification of soil'*

5.3 Soil Sampling

During the intrusive investigation, representative samples were taken at regular intervals, changes of strata and where evidence of contamination existed. Laboratory analysis was scheduled on the samples obtained.

The samples obtained are summarised in the table below:

Soil Sample	Number
Environmental Sample	*15*
Disturbed Sample	*28*

The samples have been obtained in accordance with current environmental and geotechnical guidance. The sampling plan has been designed obtain samples from all required strata using the correct methodology.

Disturbed samples of soil for geo-environmental testing were placed in the correct sampling containers as required by the laboratory in accordance with their MCERTS and UKAS Accreditation. Transportation was arranged in a timely manner and the samples were at the correct temperature.

The sample locations and depths are recorded on the exploratory logs.

5.4 Geo-Environmental Testing

To inform the Generic Quantitative Risk Assessment, the following geo-environmental testing was scheduled to assess the risk from contamination on the site. The testing is based on the potential sources identified in the PRA and observations during the Ground Investigation.

Contaminant of Concern (CoC)	Matrix	Number
Arsenic, cadmium, chromium (total and hexavalent), copper, lead, mercury, nickel, selenium, zinc, sulphate and pH.	*Soil*	*4*
Speciated Polycyclic Aromatic Hydrocrbons (PAHs)	*Soil*	*4*
Asbestos Screening	*Soil*	*4*

The Geo-Environmental Laboratory Testing Results are presented in *Appendix 7*.

Representative disturbed samples were obtained for all soil types encountered. Selected samples were scheduled for testing at an approved laboratory in accordance with BS 1377 'Method of Test for Soils for Civil Engineering Purposes' 1990. The following tests were scheduled:

British Standard	Test Method	Number
Part 3	*pH Value*	*3*
Part 3	*Water Soluble Sulphate Content*	*3*

6.0 GROUND MODEL

6.1 Made Ground

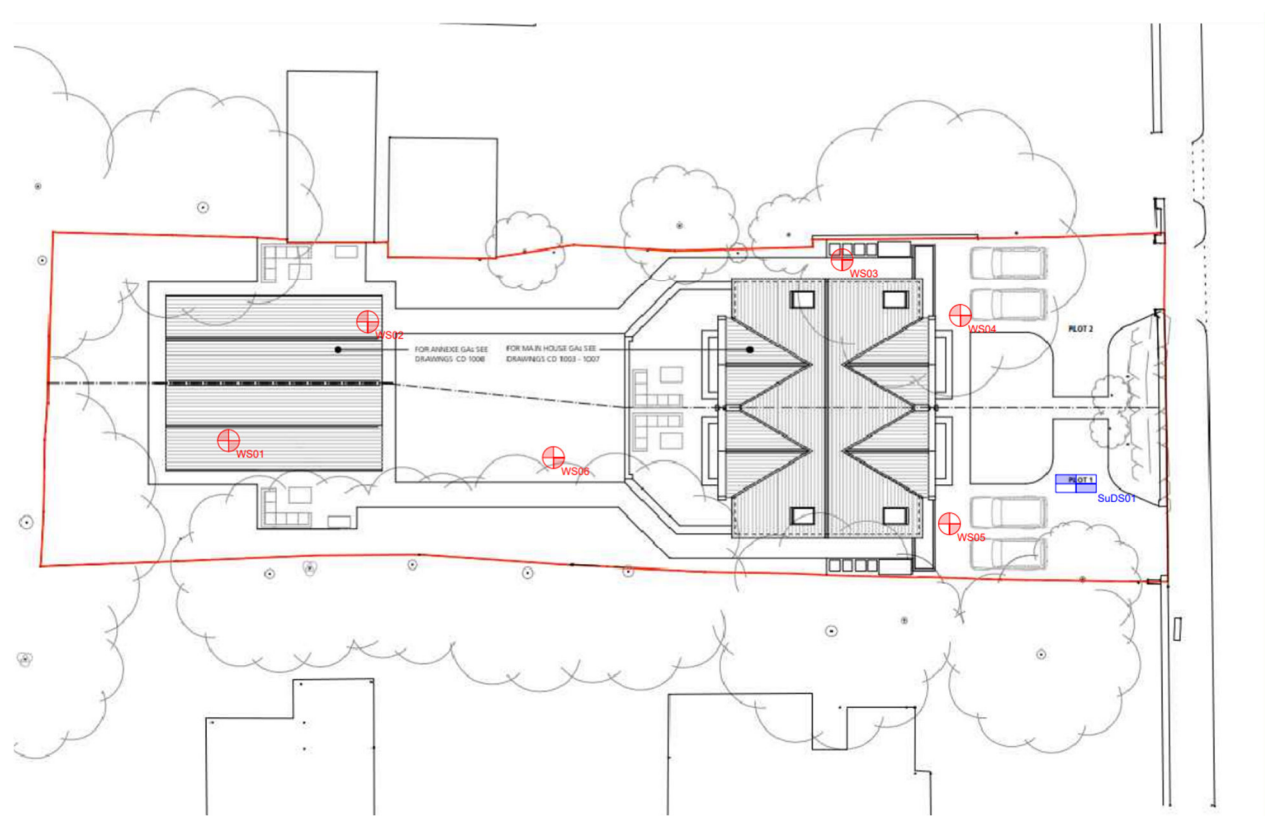
Made Ground was encountered in the north and west of the site to a maximum depth of 1.35m bgl.

The site was surfaced by tarmac and concrete in the north and west of the site to a depth of 0.15m bgl. The south east of the site is surfaced by grass. Grass surfacing is also present around the perimeter of the north eastern boundary. Dark brown sandy topsoil was encountered in WS01, WS05 and WS06 to a maximum depth of between 0.2m and 0.4m bgl.

One main Made Ground populations were encountered during the investigation and are described below:

1. *Brown sandy angular to subangular fine to coarse gravel of brick, ceramic, tarmac and sandstone in WS02, WS03, WS04 and SuDS01 from 0.15m depths of between 0.3m and 1.35m bgl.*

Brown gravelly fine to coarse sand was encountered locally in SuDS01 between 0.15m and 1.05m bgl.



Exploratory Hole Locations

6.2 Natural Ground

The natural strata encountered generally confirmed the published geological records. One main natural stratification encountered during the investigation and consisted of loose to very dense brown clayey gravelly fine to coarse Sand in all exploratory hole locations between 0.2 and 5.0m bgl.

6.3 Bedrock

Bedrock was not encountered during the investigation.

6.4 Groundwater

Groundwater was not encountered during the Ground Investigation.

6.5 Watching Brief

A watching brief was maintained during the Ground Investigation for visual and olfactory evidence of contamination. No visual or olfactory evidence of contamination was noted.

6.6 Excavation Stability

No evidence of spalling or collapse was noted during excavation of the trial pit or drilling of the boreholes.

6.7 Excavation Progress

Slow progress while excavating the trial pit was not experienced.

SPT refusals were recorded in WS01 to WS03, WS05 and WS06 between 4.0m and 5.0m bgl.

7.0 GROUND ENGINEERING

7.1 Assessment Background

The ground engineering investigation has been undertaken to formulate an accurate ground model in order to undertake preliminary foundation design. The ground model has been constructed with a moderate level of confidence, the ground model has evolved from the information obtained by the PRA.

Background
The site is currently occupied by a single storey residential dwelling the centre of the site with associated driveway and garden. It is proposed to demolish the current buildings on the site and construct a pair of semi-detached residential dwellings in the north of the site and a pair of annexes in the south.

Ground Conditions
The site is surfaced with tarmac and concrete in the north and west. Grass over sandy topsoil covers the south of the site. Made Ground was encountered in WS02 and WS03 in the north west of the site to a maximum depth of 1.35m bgl and comprised brown sandy angular to subangular fine to coarse gravel of brick, concrete and ceramic.

Superficial deposits were encountered at minimum depths of between 0.2m and 1.35m bgl to depths of between 4.0m and 5.0m bgl and generally comprised medium dense brown clayey gravelly fine to coarse Sand with gravel of sandstone.

No groundwater was encountered during the Ground Investigation.

Limitations
The main limitation of the site is the existing building in the centre of site limiting the investigation area. A watching brief should be maintained during the demolition of the existing buildings to ensure that the ground conditions beneath the building are consistent with the remainder of the site.

All below ground substructure and hardsurfacing associated with the demolition of the current building on site and tarmac surfacing will require grubbing up as part of the enabling works. A watching brief should be maintained during the demolition of the existing building for any evidence contamination not identified during the Ground Investigation.

Consideration should be given to the existing surrounding properties during the enabling and construction phase.

7.2 Geotechnical Parameters

The geotechnical test results have been evaluated to derive geotechnical parameters for the soils underlying the site. A *'depth to SPT N value'* graph is presented on Plan *GRO-23382-P05* in *Appendix 8* to provide a generalised ground model for the site.

Characterisation of the geotechnical parameters above has been undertaken based on the correlation to SPT values to select a characteristic value, which is a cautious estimate of the value affecting the occurrence of the limit state.

The characteristic values for the Ultimate Limit State (ULS) conditions selected are presented in the table below:

Stratum	Parameter	Selected Characteristic Value
Loose Sand	*Drained angle of friction (ϕ')*	*29°*
Medium Dense Sand	*Drained angle of friction (ϕ')*	*32°*
Dense Sand	*Drained angle of friction (ϕ')*	*37°*
Very Dense Sand	*Drained angle of friction (ϕ')*	*41°*

7.3 Preliminary Foundation Design

The most suitable foundations for the proposed residential development are considered to be traditional shallow strip trench foundations constructed in the medium dense Sand at a minimum depth of 0.6m bgl. Loose to Medium Dense Sand was encountered in the north eastern corner of the proposed development. All foundations should be deepened through Made Ground and unsuitable Sand deposits.

Preliminary foundation design has been undertaken by calculation, a safe allowable bearing pressure of 140kN/m^2 is provided for ultimate limit state design based on a 0.6m wide strip trench foundation constructed within the medium dense Sand deposits.

The settlement of the medium dense Sand will be immediate and will predominantly occur during the construction phase. Settlement will be negligible and Serviceability Limit State conditions will be satisfied.

Construction Recommendations

The recommendations in this appraisal are preliminary and the detailed design should be developed in advance and during the construction phase. If the ground conditions or groundwater regime encountered during the construction phase differ significantly to the conditions encountered during the Ground Investigation, work should cease and Groundtech Consulting contacted for further advice.

During the construction phase, supervision by a suitably qualified geotechnical engineer should be on a continuous basis to check the design assumptions are correct and construction conforms to design in accordance with EC7. Supervision should include inspections, Control Ground Investigations and monitoring by a suitably qualified geotechnical engineer.

7.4 Building Near Trees

Semi-mature and mature trees are present along the southern boundary of the site. Foundations are to be constructed within granular soils therefore heave precautions are not required.

All foundations should be deepened below roots of greater than 5mm diameter during excavations for footings.

7.5 Floor Slabs

Made Ground is generally greater than 600mm in thickness has been recorded beneath the western end of site and floor slabs for the proposed development should be suspended. Clay strata was not encountered during the Ground Investigation and does not influence the floor slab design.

A ground bearing floor slab is potentially an option subject to suitable earthworks design and validation testing, this would include a drainage strategy to prevent inundation settlement.

7.6 Construction

The trial pits indicate that instability of excavations is not anticipated provided they are not exposed to adverse weather conditions for any substantial period of time. Instability of the Made Ground is a possibility and should be considered in the groundworks method statements.

Tracked high specification plant is recommended to maintain the build programme. Breaking equipment may also be required locally to penetrate obstructions following the demolition of the existing building on the site.

No groundwater was encountered during the Ground Investigation and is not anticipated to be present during foundation excavations.

7.7 Concrete Classification

Made Ground
Water soluble sulphate testing was undertaken on three samples of the Made Ground. The range of soluble sulphate (SO_4) recorded is 6.6mg/l to 74.7mg/l. Associated pH values ranged between 8.08 and 9.1 indicating slightly alkaline conditions.

For a dataset containing less than five results, the highest soluble sulphate value is taken as the characteristic value along with the lowest of the pH results. For the Made Ground, the characteristic soluble sulphate value is 74.7mg/l and the associated pH value is 8.08.

Natural Strata
Water soluble sulphate testing was undertaken on three samples of the natural strata. The range of soluble sulphate (SO_4) recorded is <1.5mg/l to 4.8mg/l. Associated pH values ranged between 7.2 and 7.95 indicating neutral conditions.

For a dataset containing less than five results, the highest soluble sulphate value is taken as the characteristic value along with the lowest of the pH results. For the natural strata, the characteristic soluble sulphate value is 4.8mg/l and the associated pH value is 7.2.

Due to the granular deposits beneath the site, the groundwater is considered to be mobile.

The results of laboratory pH and sulphate content indicate that ACEC Class AC-1 and sulphate class DS-1 conditions prevail in accordance with BRE Special Digest 1 “Concrete in aggressive ground” 2005. The specific concrete mixes (the Design Concrete Class) to be used on site will be determined by the site specific concrete requirements in terms of the durability and structural performance. These are assessed in terms of the Structural Performance Level (SPL) and any need for Additional Protective Measures (APM) detailed in Part D of BRE Special Digest 1 with further guidance in Pt E and F.

7.8 Highway Design

CBR values of greater than 5% are likely to be achieved in undisturbed natural granular soils for pavement design purposes, unless proven otherwise by in-situ testing at sub-base level by a specialist geotechnical engineer. As a minimum the subgrade should be proof rolled prior to construction.

Untreated Made Ground should be assumed to have a CBR value of <2.5%, unless proven otherwise. Highways Agency document HD25 ‘Interim Advice Note 73/06 Revision 1’ (2009) states that where a

subgrade has a CBR value lower than 2.5%, it is considered unsuitable support for a pavement foundation since it would tend to deform under construction traffic, and must be improved.

The soils are considered to frost susceptible due to the fines content, highway construction should be a minimum thickness of 450mm to mitigate against the risk.

7.9 Sustainable Urban Drainage System (SuDS)

Soil infiltration testing was undertaken at one location across the site where SuDS drainage is proposed in accordance with BRE Digest 365 'Soakaways' (2016). A summary of the soil percolation test results is given below, and the full results are presented in *Appendix 9*.

Location	*Depth (m bgl)*	*Test No.*	*Soil Infiltration Rate (m/sec)*
SuDS1	*1.55*	*1*	*$1.14 X 10^{-5}$*
SuDS1	*1.55*	*2*	*$8.78 X 10^{-6}$*
SuDS1	*1.55*	*3*	*$3.94 X 10^{-6}$*

The soil infiltration rates in the natural ground at the proposed locations displayed moderate soil infiltration rates due to the presence of clay as a minor constituent in the granular soils. The use of soakaways may be considered feasible if sufficient attenuation and storage is available.

8.0 LAND QUALITY

8.1 Geo-Environmental Testing Results - Soils

Samples of Made Ground have been tested for a range of relevant Contaminants of Concern. In accordance with LCRM, a Generic Quantitative Risk Assessment (GQRA) has been undertaken to determine the significance of the concentrations as derived through Geo-Environmental testing.

The GQRA process comprises the comparison of the actual concentrations measured on site with Generic Assessment Criteria (GACs) for the protection of human health.

The GACs used for the assessment of soil concentrations have been derived using the CLEA model. The GACs used are listed below:

- *Soil Guideline Values (SGVs) which demonstrate minimal risk.*
- *LQM/CIEH S4ULs which use the same toxicological data as the SGVs but different exposure criteria.*
- *C4SLs which demonstrate low risk.*

In deriving the GACs for use on Brownfield sites we have assumed a 1% Soil Organic Matter, unless the results indicate otherwise.

The proposed end-use for the site is a residential development comprising a pair of semi-detached two storey dwellings with private domestic gardens and associated driveways, pavements and garages. We have therefore undertaken the GQRA on the basis that the proposed development site falls under the Residential (with Plant Uptake) land-use scenario as defined in SR3 (EA, 2009b).

The strata or sources of contamination targeted by the laboratory testing scheduled is summarised in the table below:

Strata	Number of Samples Tested	Locations
Granular Made Ground	*3*	*WS02, WS03, WS04*
Made Ground Topsoil	*1*	*WS06*
Former greenhouses	*2*	*WS03, WS04*

A summary of the Geo-Environmental Testing results is presented below and the GQRA screening values are presented in *Appendix 10*:

Metals				
Contaminant	Range (mg/kg)	Screening value (mg/kg)	Exceedances	Locations
Arsenic	*9.8 – 16.8*	*37*	-	-
Cadmium	*<0.1 – 0.5*	*10*	-	-
Chromium	*32.8 – 39.7*	*910*	-	-
Hexavalent Chromium	*<0.3*	*21*	-	-
Copper	*12 – 38*	*2400*	-	-
Lead	*87 – 274*	*200*	*2*	*WS04 at 0.20* *WS06 at 0.10*
Mercury	*<0.1 – 0.2*	*1.2*	-	-
Nickel	*5.3 – 15.4*	*130*	-	-

Selenium	*<1*	*350*	-	-
Zinc	*94 – 258*	*3700*	-	-
Polycyclic Aromatic Hydrocarbons (PAHs)				
Contaminant	Range (mg/kg)	Screening value (mg/kg)	Exceedances	Locations
Naphthalene	*<0.04 – 1.16*	*2.3*	-	-
Acenaphthylene	*0.10 – 0.17*	*170*	-	-
Acenaphthene	*<0.05 – 0.24*	*210*	-	-
Fluorene	*0.07 – 0.16*	*170*	-	-
Phenanthrene	*0.82 – 2.26*	*95*	-	-
Anthracene	*0.19 – 0.52*	*2400*	-	-
Fluoranthene	*1.52 – 4.83*	*280*	-	-
Pyrene	*1.32 – 4.30*	*620*	-	-
Benzo(a)anthracene	*0.60 – 2.01*	*7.2*	-	-
Chrysene	*0.62 – 2.46*	*15*	-	-
Benzo(b)fluoranthene	*0.68 – 2.92*	*2.6*	*1*	*WS04 at 0.20*
Benzo(k)fluoranthene	*0.26 – 1.13*	*77*	-	-
Benzo(a)pyrene	*0.58 – 2.33*	*2.2*	*1*	*WS04 at 0.20*
Indeno(123cd)pyrene	*0.34 – 1.61*	*27*	-	-
Dibenzo(ah)anthracene	*0.08 – 0.31*	*0.24*	*1*	*WS04 at 0.20*
Benzo(ghi)perylene	*0.33 – 1.49*	*320*	-	-
Others				
Organic Matter	*1.6 – 6.4%*			

Asbestos Screen			
Position	Depth (m bgl)	Result	Quantification
WS02	*0.40*	*None Detected*	*n/a*
WS03	*1.10*	*None Detected*	*n/a*
WS04	*0.20*	*None Detected*	*n/a*
WS06	*0.10*	*None Detected*	*n/a*

8.2 Generic Quantitative Risk Assessment - Soils

The site is currently occupied by a single storey residential dwelling with an associated driveway, garden area and garage. The north and west of the site is surfaced with tarmac and concrete. The south of the site is surfaced with grass. Made Ground has been encountered locally to western end of site to 1.35m bgl and generally consisted of sandy gravel of brick and sandstone. Natural granular stratum was encountered across the site to a maximum depth of 5.0m bgl.

No visual or olfactory evidence of contamination was noted.

Metals

Elevated levels of lead were recorded in the granular Made Ground subbase of WS04 at 0.2m bgl in the north of the site and in the Made Ground topsoil in WS06 in the east. The elevated heavy metals concentration is likely associated with the sites former use as greenhouses and the associated pesticides and fertilizers.

No other elevated levels of heavy metals were recorded against residential with plant uptake screening values.

Speciated Polycyclic Aromatic Hydrocarbons (PAHs)
Elevated concentrations of speciated PAHs including Benzo(b)fluoranthene, Benzo(a)pyrene and Dibenzo(ah)anthracene have been recorded in WS04 at 0.2m bgl when compared to residential with plant uptake screening values. No other elevated levels of PAHs were recorded in other samples tested.

The elevated levels of PAHs are likely to be associated with tarmac content of the subbase in the northern area of site.

Asbestos
Four samples of the granular Made Ground and Made Ground topsoil were screened for asbestos and no asbestos was detected.

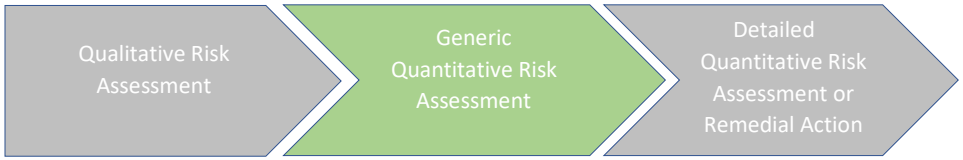
Other Contaminants of Concern
No other contamination was noted during the Ground Investigation.

All elevated Contaminants of Concern are presented on Groundtech Plan *GRO-23382-P06*.

8.3 Revised Pollution Linkage Assessment

A pollution linkage assessment has been revised based on the findings of the Ground Investigation and testing to identify any realistic pollution linkages in order to quantify the risks to human health and controlled waters. An Illustrative CSM is presented as Plan *GRO-23382-P07*.

Human Health Pollution Linkage Assessment



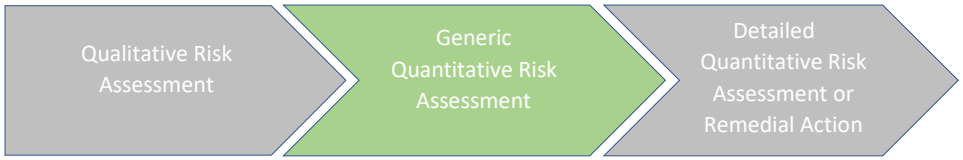
- The table below represents the second stage in the land quality risk assessment process - **the Generic Quantitative Risk Assessment**.
- In order for a development site to be deemed 'suitable for use' the level of risk needs to be reduced to an acceptable level - low to negligible risk. The purpose of each stage of risk assessment is to establish if there is a requirement for additional stages of assessment in order to have sufficient confidence to support a risk characterisation or remedial action.

Conceptual Site Model					*Generic Quantitative Risk Assessment*	
PL	Potential Source	Pollution Linkage	Likelihood	Consequence/ Severity	Risk Rating	*Rationale and Action*
PL1	Contaminated Soils	Ingestion of soil and dust. Dermal contact with soil.	Unlikely	Medium	Moderate	*Pollution Linkage 1 refers to proposed site users coming into contact with contaminated soils on the site.* *The proposed development is residential end use comprising a pair of semi detached two storey dwellings with a pair of annexes in the rear of the garden.* *Made Ground has been encountered along the western end of the site to a maximum depth of 1.35m bgl and generally comprised granular soils with minor constituents of brick, tarmac and ceramic. Elevated levels of lead were identified in the Made Ground subbase of WS04 at 0.2m bgl in the north of the site and the Made Ground topsoil of WS06 at 0.1m bgl in the east of the site. Elevated levels of PAHs (Benzo(b)fluoranthene, Benzo(a)pyrene and Dibenzo(ah)anthracene) were also identified in the granular subbase of WS04 at 0.2m bgl. No asbestos was identified in the samples screened through laboratory testing.*

	Conceptual Site Model					*Generic Quantitative Risk Assessment*
PL	Potential Source	Pollution Linkage	Likelihood	Consequence/ Severity	Risk Rating	*Rationale and Action*
						Soft landscaping is proposed as a part of the development - as elevated CoC were identified a source, pathway and receptor is present and a pollution linkage is considered to exist.
PL2	Contaminated Soils	Inhalation of vapour.	Unlikely	Medium to Severe	Low	*No source of volatile contamination was identified during the Ground Investigation or PRA and therefore a plausible pollution linkage is not considered to exist.*
PL3	Contaminated Soils	Inhalation of soil dust by adjacent site users.	Unlikely	Medium	Low	*No evidence or source of contamination has been identified on site and a plausible pollution linkage is not considered to exist.*
PL4	Contaminated Soils	Attacking potable water supply pipe.	Likely	Medium	Low	*Pollution Linkage 4 refers to the possible contaminants permeating potable water pipes and consumption by the future site end users of the tainted water supply.* *Made Ground was encountered to a maximum depth of 1.35m bgl and water pipes may be installed in Made Ground, no sources of organic contaminants have been identified in the Made Ground at this depth and a pollution linkage is not considered to exist.*

Conceptual Site Model						*Generic Quantitative Risk Assessment*
PL	Potential Source	Pollution Linkage	Likelihood	Consequence/ Severity	Risk Rating	*Rationale and Action*
PL5	Ground Gas	Migration and accumulation of ground gas in internal spaces.	Likely	Medium to Severe	Low	*No source of ground gas has been identified on site or in the surrounding area therefore a plausible pollution linkage is not considered to exist.* *The site is not within an area requiring radon precautions within foundations.*

Controlled Waters Pollution Linkage Assessment



- The table below represents the second stage in the land quality risk assessment process – **Generic Quantitative Risk Assessment**.
- In order for a development site to be deemed 'suitable for use' the level of risk needs to be reduced to an acceptable level - low to negligible risk. The purpose of each stage of risk assessment is to establish if there is a requirement for additional stages of assessment in order to have sufficient confidence to support a risk characterisation or remedial action.

Conceptual Site Model						*Generic Quantitative Risk Assessment*
PL	Potential source	Pollution linkage	Likelihood	Severity	Level of risk	*Rationale*
PL6	Contaminated Soils	Impaction of groundwater from soil contamination (diffuse and point). Impaction of groundwater from groundwater plume.	Unlikely	Medium	Very Low	*Made Ground was encountered to a maximum depth of 1.35m bgl.* *The site is underlain by a Secondary A superficial and Principal bedrock Aquifer. The site is not within a Source Protection Zone and there are no active potable water abstractions within 500m of the site.* *No groundwater was encountered during the Ground Investigation and groundwater is not considered to be a sensitive resource.* *No pollution linkage is considered to exist as no significant impaction of the groundwater has been recorded.*
PL7	Contaminated Soils	Migration of soil and groundwater	Likely	Medium	Very Low	*Pollution linkage 7 refers to the impaction of nearby surface water features from contaminated soils and groundwater.*

Conceptual Site Model						*Generic Quantitative Risk Assessment*
PL	Potential source	Pollution linkage	Likelihood	Severity	Level of risk	*Rationale*
		contamination impacting surface waters.				*No source of mobile contamination has been identified during the Ground Investigation and all surface water features are at a distance from site to allow considerable attenuation.* *No pollution linkage is considered to exist.*

8.4 Outline Remedial Strategy

Soils

Elevated Lead was identified in the granular Made Ground subbase and WS06 in the Made Ground topsoil when compared to residential with plant uptake screening values. Elevated PAHs were also identified in the granular Made Ground of WS04 at 0.2m bgl. No asbestos was identified in any of the four samples screened through laboratory testing.

It is anticipated that the tarmac and associated subbase in the north and west of the site will be grubbed up and if reused will be below proposed hardsurfacing. A nominal 150mm cover system comprising suitably clean topsoil should be placed in soft landscaping areas where no Made Ground is present. Where Made Ground is present, 450mm of cover system should be placed.

The topsoil around WS06 is not suitable for reuse in private residential gardens due to the elevated level of Lead. The topsoil in this area should be stockpiled separately to be removed from site to a licensed waste site or a commercial development site. The remainder of the topsoil across the site should be stripped and stockpiled separately to be tested for reuse.

A watching brief should be maintained during the demolition of the existing buildings onsite to ensure that ground conditions are consistent with the rest of the site and recommendations can remain the same.

Vapours

No visual or olfactory evidence of mobile contamination was noted during the Ground Investigation, no remedial action is required.

Ground Gas

No source of ground gas was identified on the site or offsite in the preliminary risk assessment and no source was identified during the Ground Investigation - no remediation is required with respect to ground gas.

In addition, the site is not in an area affected by radon and precaution measure are not required.

Watching Brief and Regulatory Liaison

A watching brief is recommended during future ground works for any previously unseen contamination. If identified, work should cease in that area and advice sought from Groundtech Consulting Limited.

Approval from the regulators should be obtained prior to the development commencing to avoid any delays at the construction stage.

8.5 Asbestos in Soils

No asbestos was identified in the samples screened by laboratory testing, the contractor should implement control measures to their satisfaction.

8.6 Health and Safety - Construction and Ground Workers

During the reclamation and construction phases of the site development it will be necessary to protect the health and safety of site personnel. The risk to construction and ground workers is assessed in the table below:

PL Ref	Potential Source	Pollution Linkage	Likelihood	Severity	Level of Risk
PL8	*Made Ground*	*Ingestion, direct contact, inhalation of dusts.*	*Likely*	*Medium*	*Moderate to Low*
PL8	*Asbestos*	*Ingestion, direct contact, inhalation of dusts.*	*Likely*	*Medium*	*Low*

Elevated levels of lead and speciated PAHs were recorded, the risk to site personnel should be communicated through inductions and information boards.

General guidance on these matters is given in the Health and Safety Executive (HSE) document "Protection of Workers and the General Public during the Redevelopment of Contaminated Land". In summary, the following measures are suggested to provide a minimum level of protection:

- *All ground workers should be issued with the relevant protective clothing, footwear and gloves. These protective items should not be removed from the site and personnel should be instructed as to why and how they are to be used.*
- *Hand-washing and boot-washing facilities should be provided.*
- *Care should be taken to minimise the potential for off-site migration of contamination by the provision of dust suppression control and wheel cleaning equipment during the construction works.*
- *Good practices relating to personal hygiene should be adopted on the site.*
- *The contractor shall satisfy the Health and Safety Executive with regard to any other matters concerning the health, safety and welfare of persons on the site.*

8.7 Waste Classification by Assessment

We have reviewed the testing results and inputted them into the HazWasteOnline model which allows users to code and classify waste as defined in the EWC (European Waste Catalogue 2002) based on EC Regulation 1272/2008 on the Classification, labelling and packaging of substances and mixtures (CLP) and latest Environment Agency guidance (WM3 "Guidance on the classification and assessment of waste (1st edition 2015)-Technical Guidance").

This is a useful tool as waste producers have the legal responsibility to classify any waste they produce.

Four samples were tested to assess whether they contained any contaminants in the hazardous range when screened against assessment criteria within WM3. The results are in the Waste Classification Report presented in *Appendix 11*.

Location	Depth (m bgl)	Material	Classification	Hazardous Properties
WS02	*0.60*	*Made Ground*	*Non-Hazardous*	-
WS03	*1.10*	*Made Ground*	*Non-Hazardous*	-
WS04	*0.20*	*Made Ground*	*Non-Hazardous*	-
WS06	*0.10*	*Made Ground topsoil*	*Non-Hazardous*	-

Based on the assessment tool the Made Ground has been classified as *Non-Hazardous*. Total testing was not undertaken on the natural soils and are assumed to also be *Non-Hazardous*.

No asbestos was identified in the samples screened by the laboratory testing and does not influence the classification.

8.8 Waste Acceptance Criteria (WAC) Results

The Landfill Directive (Directive 1999/31/EC on the landfilling of waste) led to the establishment of a methodology for classifying wastes. Wastes can only be accepted at a landfill if they meet the relevant Waste Acceptance Criteria (WAC) for that type of landfill. There are three different WAC, these are for:

- *Inert waste*
- *Non-Hazardous waste*
- *Hazardous waste*

Wastes should first be classified based on their total concentrations as detailed in the previous section. WAC testing is then required if the end disposal route is a landfill.

Waste Acceptance Criteria (WAC) testing was outside the scope of this investigation and the guidance given below is general.

The possibility of automatic inert classification of the natural soils should be explored in accordance with Section 4.3 of the EA guidance document. The Council Decision includes a list of wastes in Section 2.1.1 of the document that are assumed to be inert and therefore acceptable at a landfill for inert waste without testing, this is the case if:

- *They are single stream waste of a single waste type (although different waste types from the list may be accepted together if they are from a single source)*
  and
- *There is no suspicion of material or substances such as metals, asbestos, plastics, chemicals, etc to an extent which increases the risk associated with the waste sufficiently to justify contamination and they do not contain other their disposal in other classes of landfill.*

If any organic contaminated material is encountered during the construction phase, it is possible that this may be classified as hazardous and testing should be undertaken at that time.

Materials should segregated and where necessary sufficient time is allowed to further classify the material properly, including discussion with landfill sites and waste transfer stations to find the best disposal route. It is recommended that where possible that the soils could be recycled at a suitable local waste treatment plant or transfer station rather than a landfill disposal route.

The reuse of soils on the site this should be done in accordance with the CL:AIRE "Development Industry Code of Practice for the Definition of Waste" (CL:AIRE CoP). Any re-use scheme should be designed to minimise disposal costs.

After a cut and fill balance plan/volume calculation has been carried out, a U1 and T5 exemption could be registered. This will allow the use of the following soils without a waste permit or under Dow CoP MMP:

- *1,000 tonnes (c. 600m^3) of non-hazardous soil*
- *5,000 tonnes (c. 3,000m^3) of natural sand and gravels.*
- *50,000 tonnes (c. 25,000m^3) of bituminous material to be used in roadways.*

- *5,000 tonnes (c. 3,000m^3) of crushed concrete/stone.*

9.0 FINAL APPRAISAL

9.1 Land Quality

Historical maps indicate the site remained undeveloped until 1894 when buildings encroach onto the south of the site associated with the adjacent Stormarn building. Maps from 1907 show residential buildings in the extreme east of west of the site and a small development in the north of the site. Maps from 1955 show the site to be in its current configuration. Greenhouses were historically located surrounding the site.

Made Ground was encountered beneath the northern and western end of the site to a maximum depth of 1.35m bgl and consisted of granular soils with constituents of brick, tarmac and ceramic. Natural granular strata was encountered in all exploratory hole locations to a maximum depth of 5.0m bgl. No visual or olfactory evidence of contamination was noted during the Ground Investigation.

Elevated levels of lead were identified in WS04 at 0.2m in the granular Made Ground tarmac subbase and in WS06 at 0.1m bgl within the Made Ground topsoil. Elevated levels of PAHs were also identified in WS04 at 0.2m bgl.

The risk from contaminated soils is considered to be *Moderate*. In private gardens, a nominal 150mm of topsoil should be placed where no Made Ground is present at formation level and 450mm where Made Ground is observed.

The existing topsoil around WS06 will be stripped and stockpiled separately and disposed from site. The remainder of the topsoil should be stripped and tested for proposed residential garden reuse.

The risk from vapours is considered to be *Low* as no source of volatile contamination has been identified during the Ground Investigation.

The risk to controlled waters is considered to be *Low*, no mobile contamination was identified during the Ground Investigation and no further action is required.

No evidence or sources of ground gas were identified in the PRA or the Ground Investigation. No radon protective measures are required for the proposed development.

The Made Ground has been classified as *Non-Hazardous* for waste disposal purposes.

9.2 Ground Engineering

The most suitable foundation solution for the proposed residential development will be traditional shallow strip trench foundations constructed within the medium dense Sand deposits at a minimum depth of 0.6m bgl.

SuDS drainage may be feasible at the site if sufficient attenuation and storage is available.

A watching brief should be maintained during the demolition of existing buildings on site to ensure that ground conditions are consistent across the site.

9.3 Required Further Work

The following further work is considered necessary to progress the site to construction phase:

Watching brief during demolition of existing buildings
Demolition asbestos survey
Detailed Foundation design
Topsoil strip and delineation
Confirmation of recommendations made in this appraisal with regulators

10.0 RELEVANT INDUSTRY REFERENCES

British Standards Institution. *Investigation of Potentially Contaminated sites - code of practice*. BS 10175:2017.

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NHBC Standards 2024

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Privett, K D, Matthews, S C, & Hodges, R, A, 'Barriers, liners and cover systems for containment and control of land contamination' 1996. CIRIA Special Publication 124.

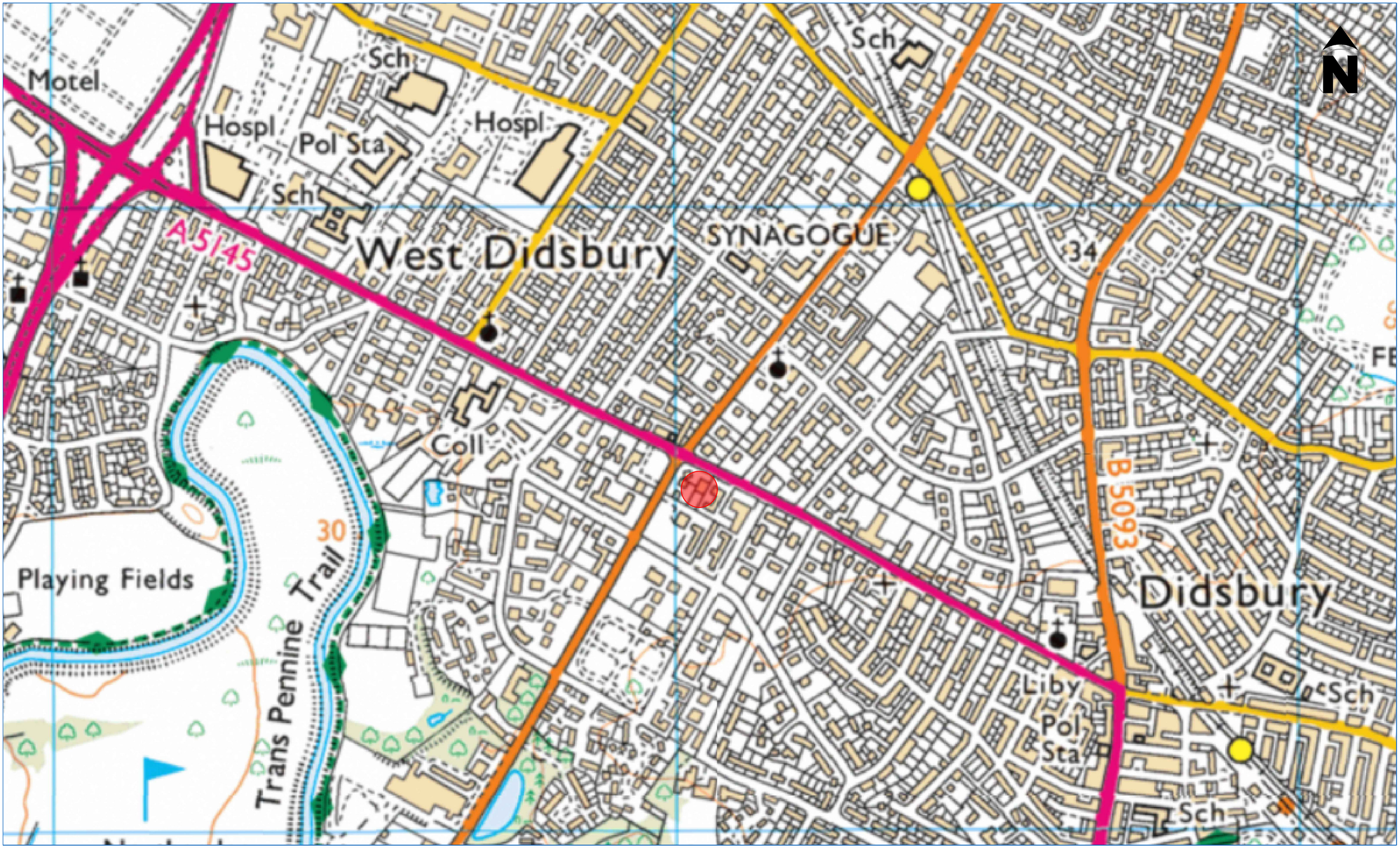
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APPENDIX 1 - Plans



GROUNDTECH CONSULTING

CLIENT	TAHIR AHMED
PROJECT TITLE	123 BARLOW MOOR ROAD, DIDSBURY
PLAN TITLE	PROJECT LOCATION PLAN
DATE	MARCH 2024
SCALE	NTS
PLAN NUMBER	GRO-23382-P01

Rev.	Details	Date

Status	
Preliminary	
Draft	
Issued	●
For Comment	
Approved	

Notes

Site Location



GROUNDTECH CONSULTING

CLIENT	TAHIR AHMED
PROJECT TITLE	123 BARLOW MOOR ROAD
PLAN TITLE	PRELIMINARY DEVELOPMENT CONSTRAINTS PLAN
DATE	MARCH 2024
SCALE	NTS
PLAN NUMBER	GRO-23382-P02

Rev.	Details	Date

Status	
Preliminary	
Draft	
Issued	●
For Comment	
Approved	

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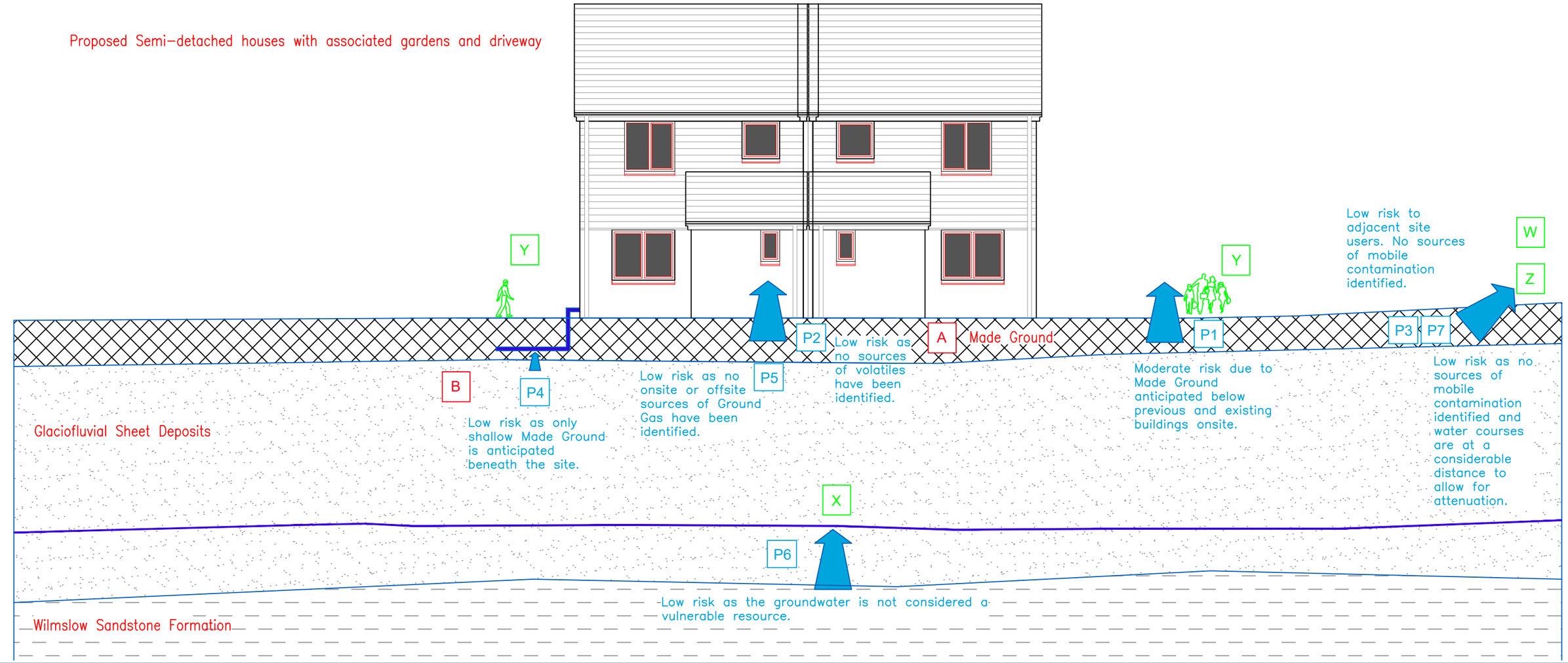
Site Boundary

SOURCES
A. Contaminated soils / Made ground. B. Ground gas.

POLLUTION LINKAGES
P1. Ingestion of soil and dust. P2. Inhalation of vapour. P3. Inhalation of soil dust by adjacent site users. P4. Attacking of potable water supply pipe. P5. Migration and accumulation of ground gas in internal places. P6. Impaction of groundwater from soil contamination. P7. Migration of soil and groundwater contamination impacting surface waters.

RECEPTORS
Y. Site end users. X. Groundwater within the Secondary A superficial and Principal bedrock Aquifers. Z. Adjacent site users. W. Surface Water Features.

Proposed Semi-detached houses with associated gardens and driveway



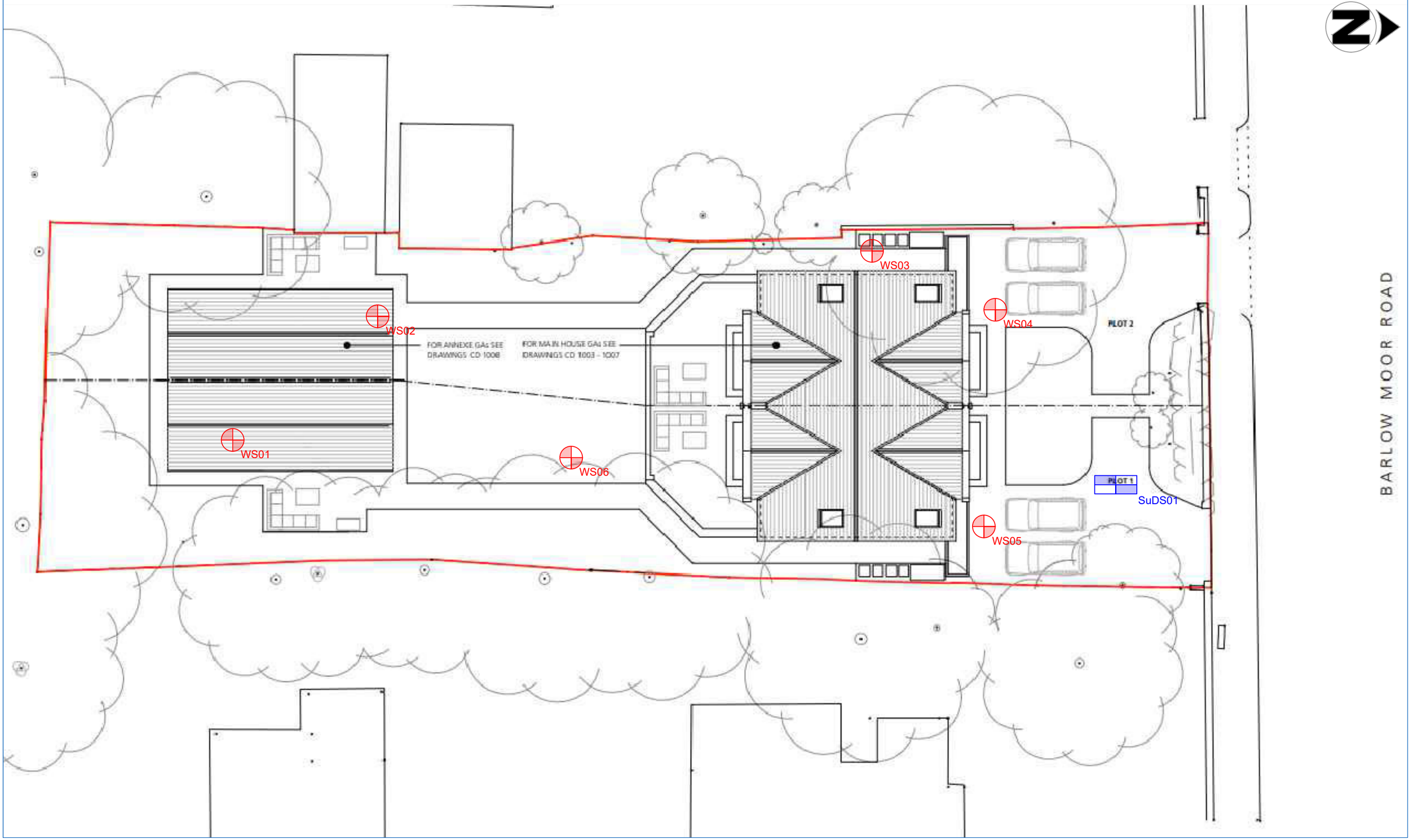
GROUNDTECH CONSULTING

CLIENT	TAHIR AHMED
PROJECT TITLE	123 BARLOW MOOR ROAD
PLAN TITLE	ILLUSTRATIVE PRELIMINARY CSM
DATE	MARCH 2024
SCALE	NTS
PLAN NUMBER	GRO-23382-P03

Rev.	Details	Date

Status	
Preliminary	
Draft	
Issued	●
For Comment	
Approved	

Notes



GROUNDTECH CONSULTING

CLIENT	TAHIR AHMED
PROJECT TITLE	123 BARLOW MOOR ROAD, DIDSBURY
PLAN TITLE	EXPLORATORY HOLE LOCATION PLAN
DATE	JANUARY 2024
SCALE	NTS
PLAN NUMBER	GRO-23382-P04

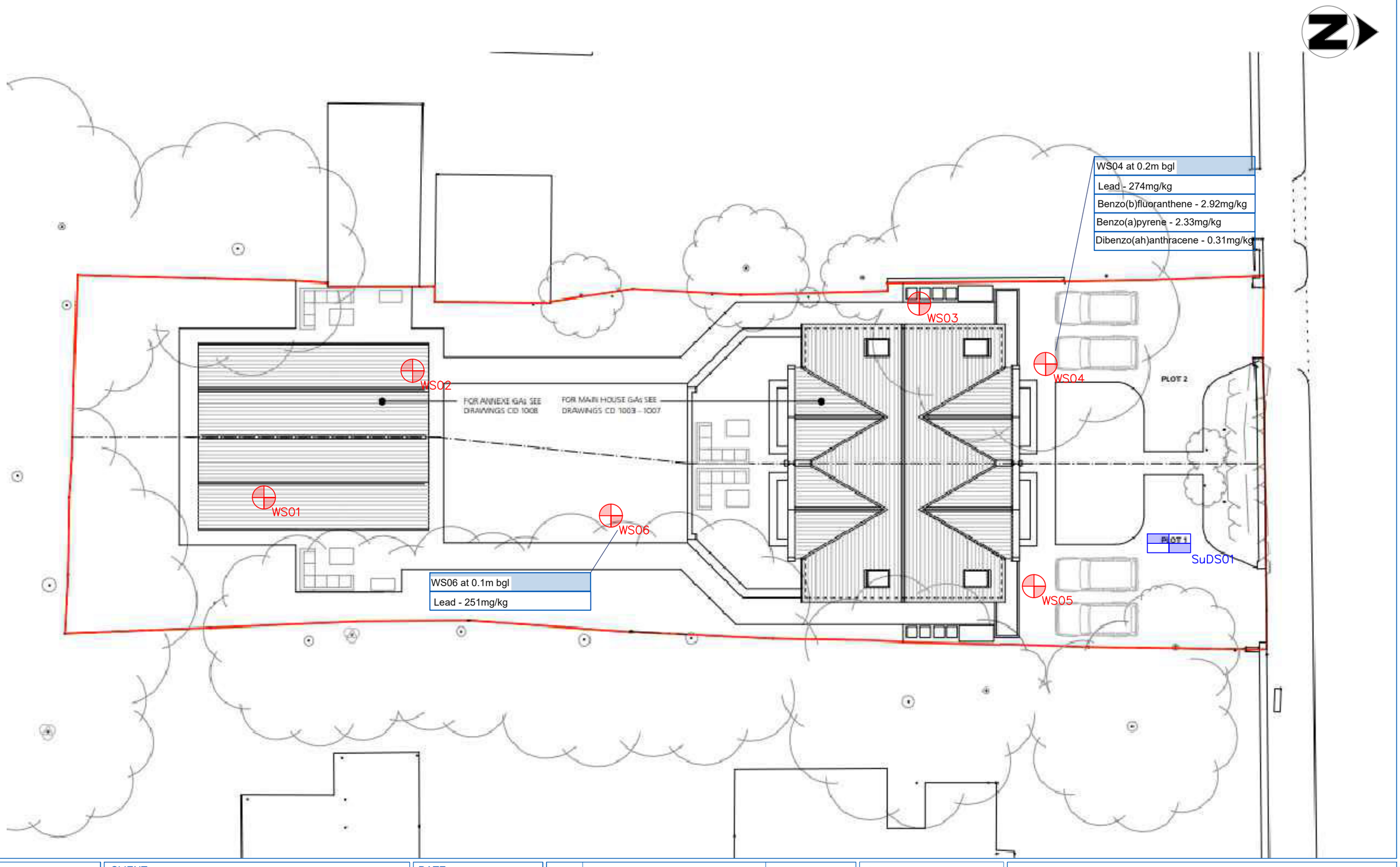
Rev.	Details	Date

Status	
Preliminary	
Draft	
Issued	●
For Comment	
Approved	

Notes

Windowless Sample Borehole Location

Soil Percolation Test Location



GROUNDTECH CONSULTING

CLIENT	TAHIR AHMED
PROJECT TITLE	123 BARLOW MOOR ROAD, DIDSBURY
PLAN TITLE	SOIL CONTAMINATION PLAN
DATE	MARCH 2024
SCALE	NTS
PLAN NUMBER	GRO-23382-P06

Rev.	Details	Date

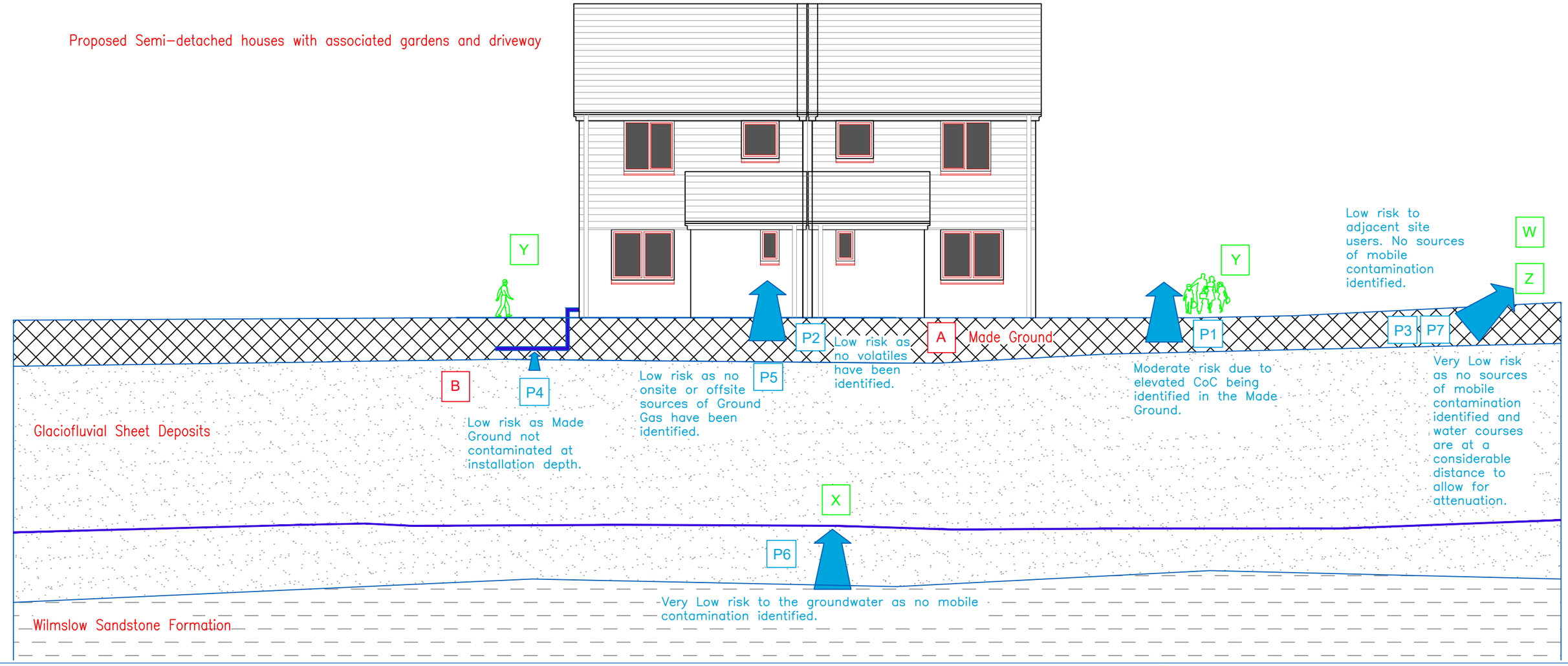
Status	
Preliminary	
Draft	
Issued	●
For Comment	
Approved	

Notes

- Site Boundary
- Soil Percolation Test Location
- Windowless Sample Borehole Location

SOURCES	POLLUTION LINKAGES	RECEPTORS
A. Contaminated soils / Made ground. B. Ground gas.	P1. Ingestion of soil and dust. P2. Inhalation of vapour. P3. Inhalation of soil dust by adjacent site users. P4. Attacking of potable water supply pipe. P5. Migration and accumulation of ground gas in internal places. P6. Impaction of groundwater from soil contamination. P7. Migration of soil and groundwater contamination impacting surface waters.	Y. Site end users. X. Groundwater within the Secondary A superficial and Principal bedrock Aquifers. Z. Adjacent site users. W. Surface Water Features.

Proposed Semi-detached houses with associated gardens and driveway



GROUNDTECH CONSULTING

CLIENT	TAHIR AHMED
PROJECT TITLE	123 BARLOW MOOR ROAD, DIDSBURY
PLAN TITLE	REVISED ILLUSTRATIVE PRELIMINARY CSM
DATE	MARCH 2024
SCALE	NTS
PLAN NUMBER	GRO-23382-P07

Rev.	Details	Date

Status	
Preliminary	
Draft	
Issued	●
For Comment	
Approved	

Notes

APPENDIX 2 - Site Photographs



Photograph 1 – Northern area of existing building onsite



Photograph 2 – Assess gate to south of the site

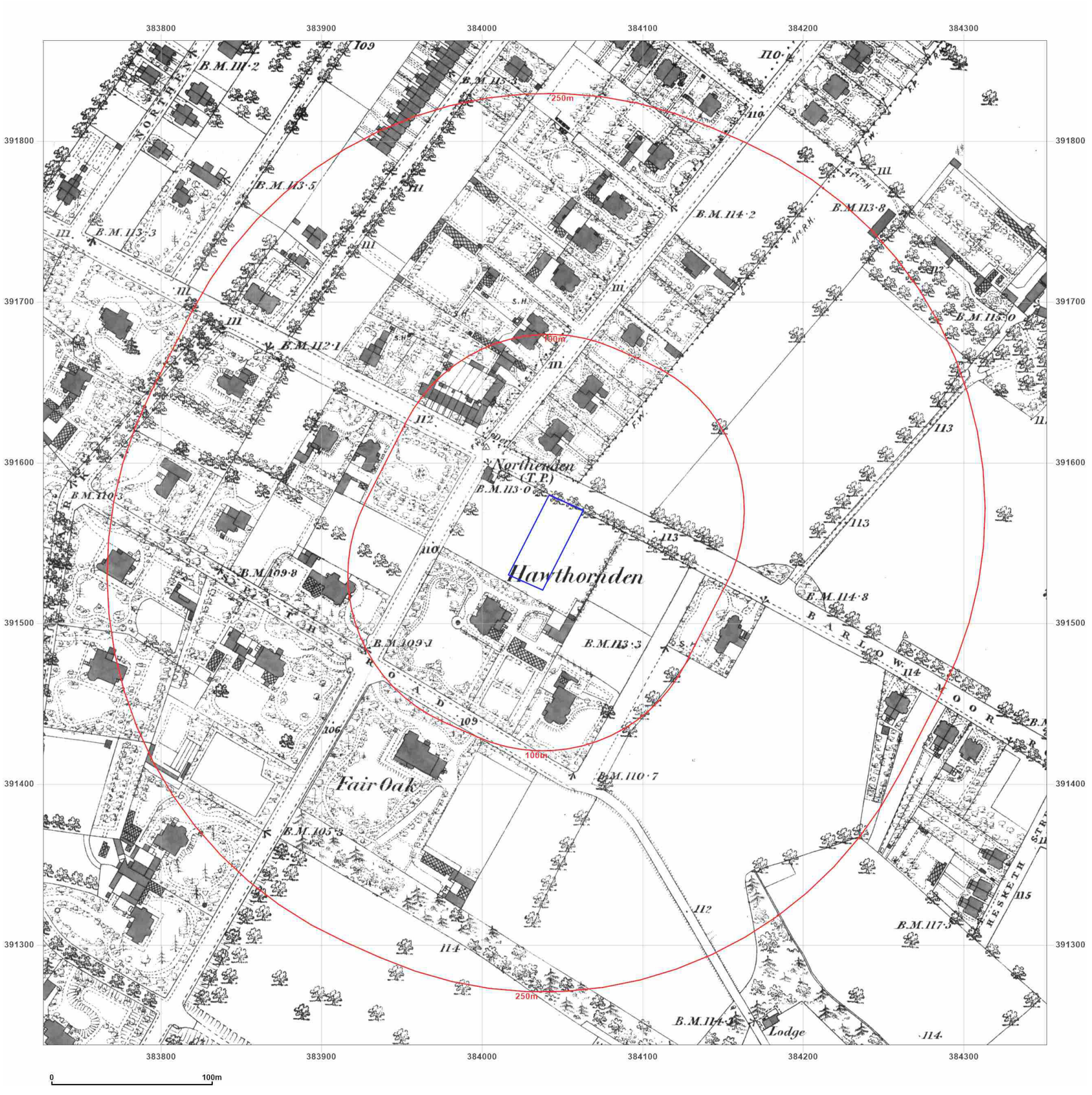


Photograph 3 – Eastern area of site.



Photograph 4 - Southern area of site.

APPENDIX 3 - Historical Plans



EMAPSITE™

Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1881**

Scale: 1:2,500

Printed at: 1:2,500

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

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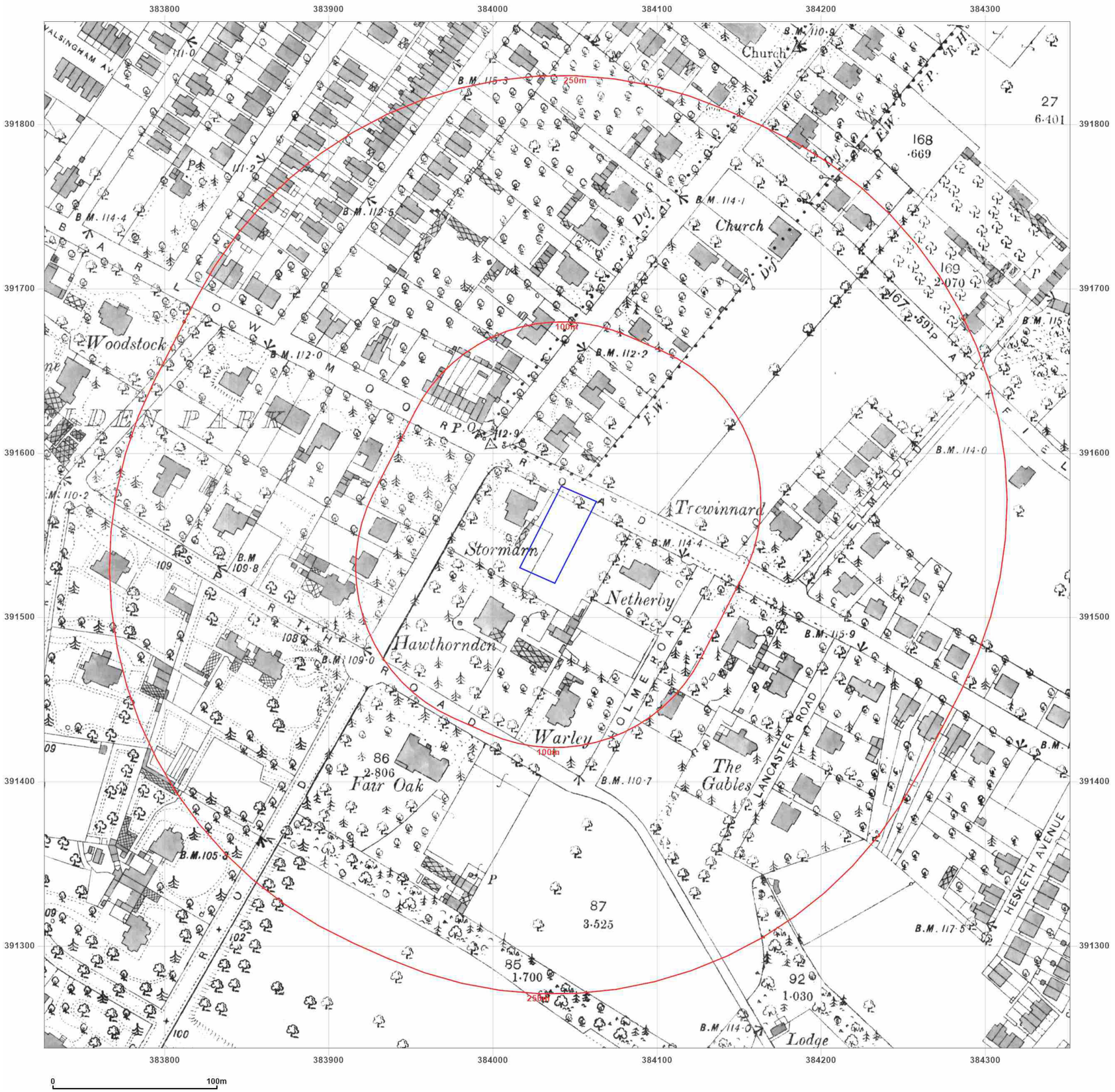
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unspecified

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Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1894**

Scale: 1:2,500

Printed at: 1:2,500

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

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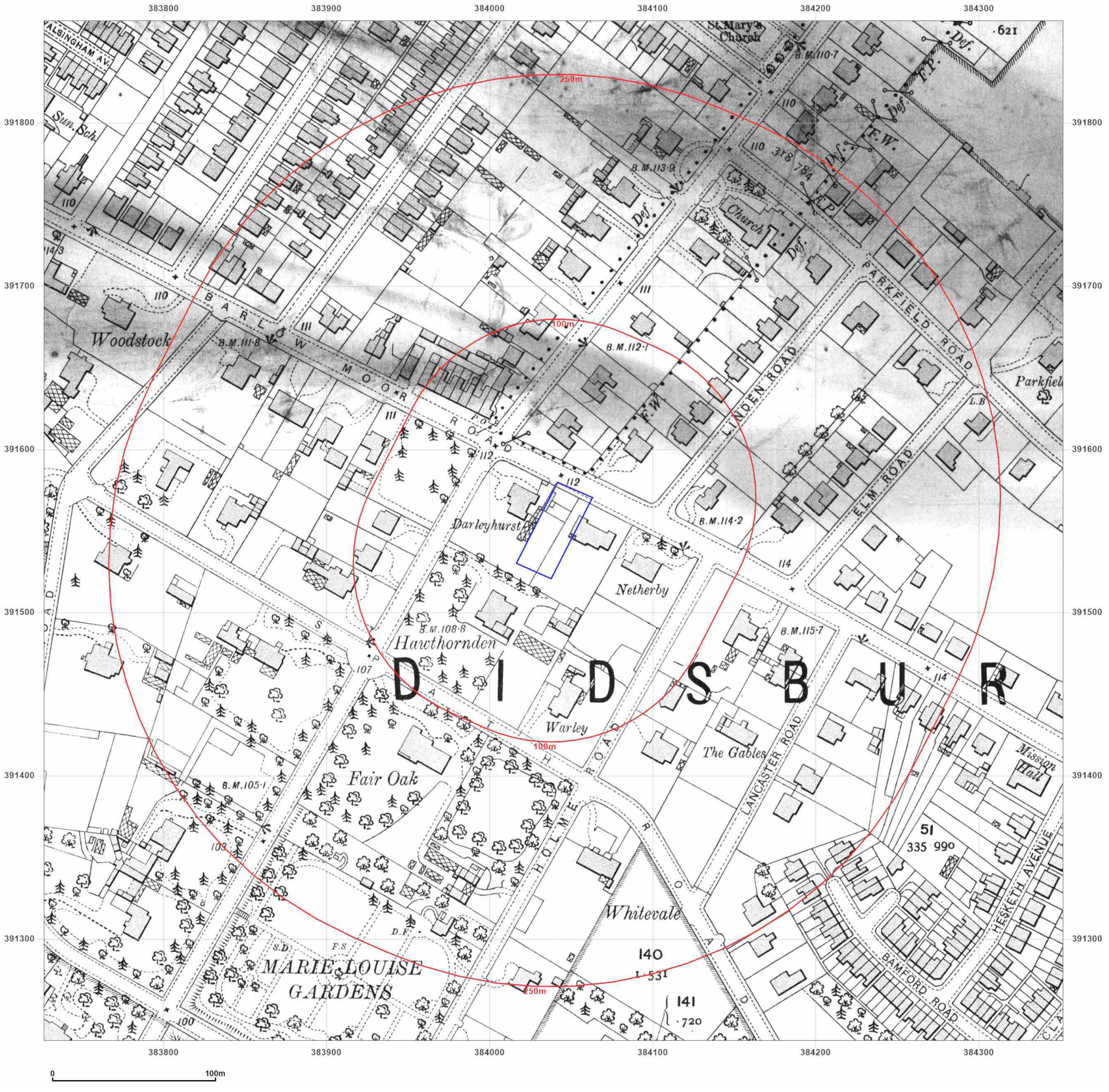
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unspecified

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Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1907**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1891
Revised 1905
Edition 1907
Copyright N/A
Levelled N/A

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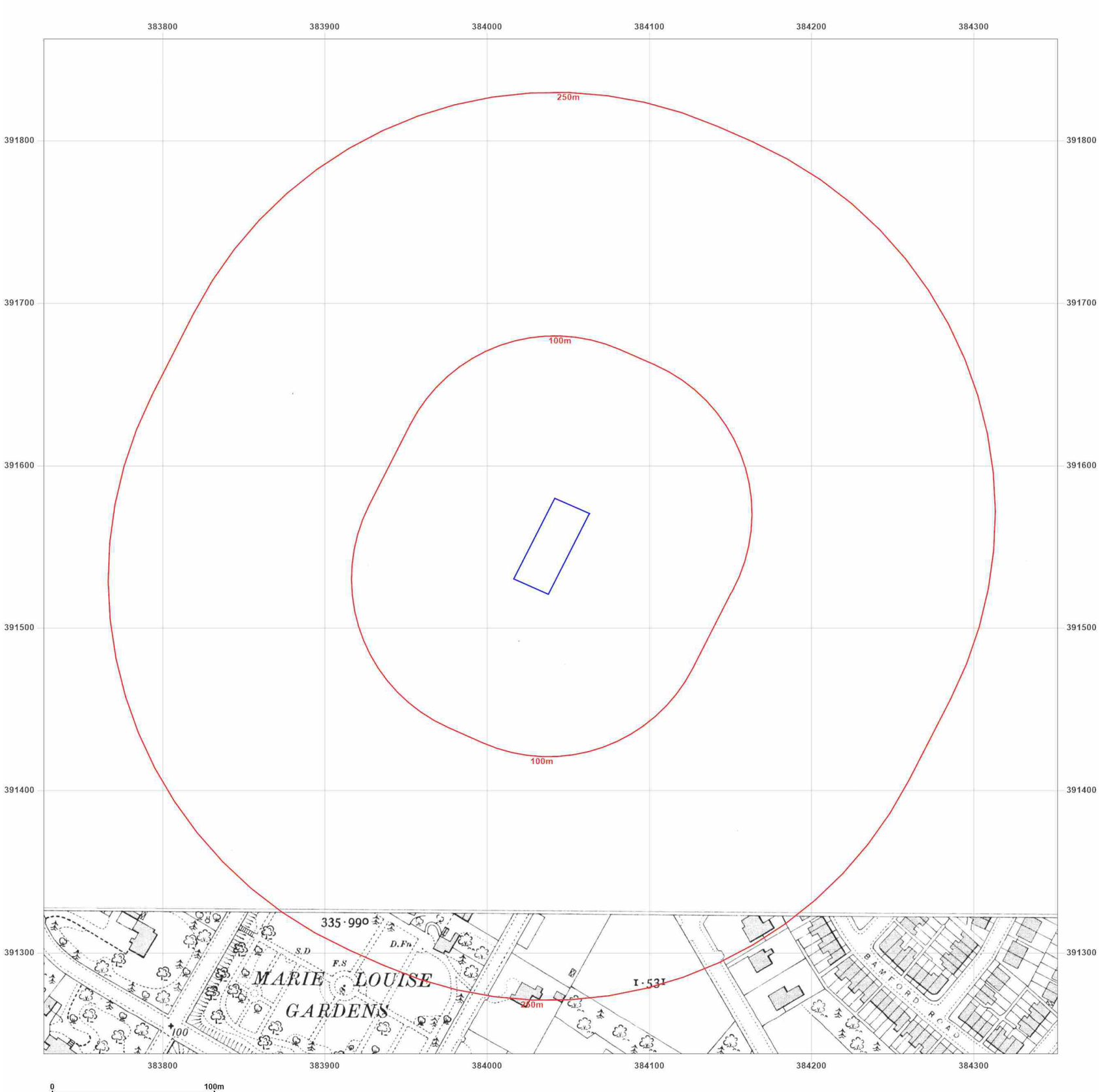
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Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1910**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1910
Revised 1908
Edition 1910
Copyright N/A
Levelled N/A

Surveyed 1910
Revised 1908
Edition 1910
Copyright N/A
Levelled N/A

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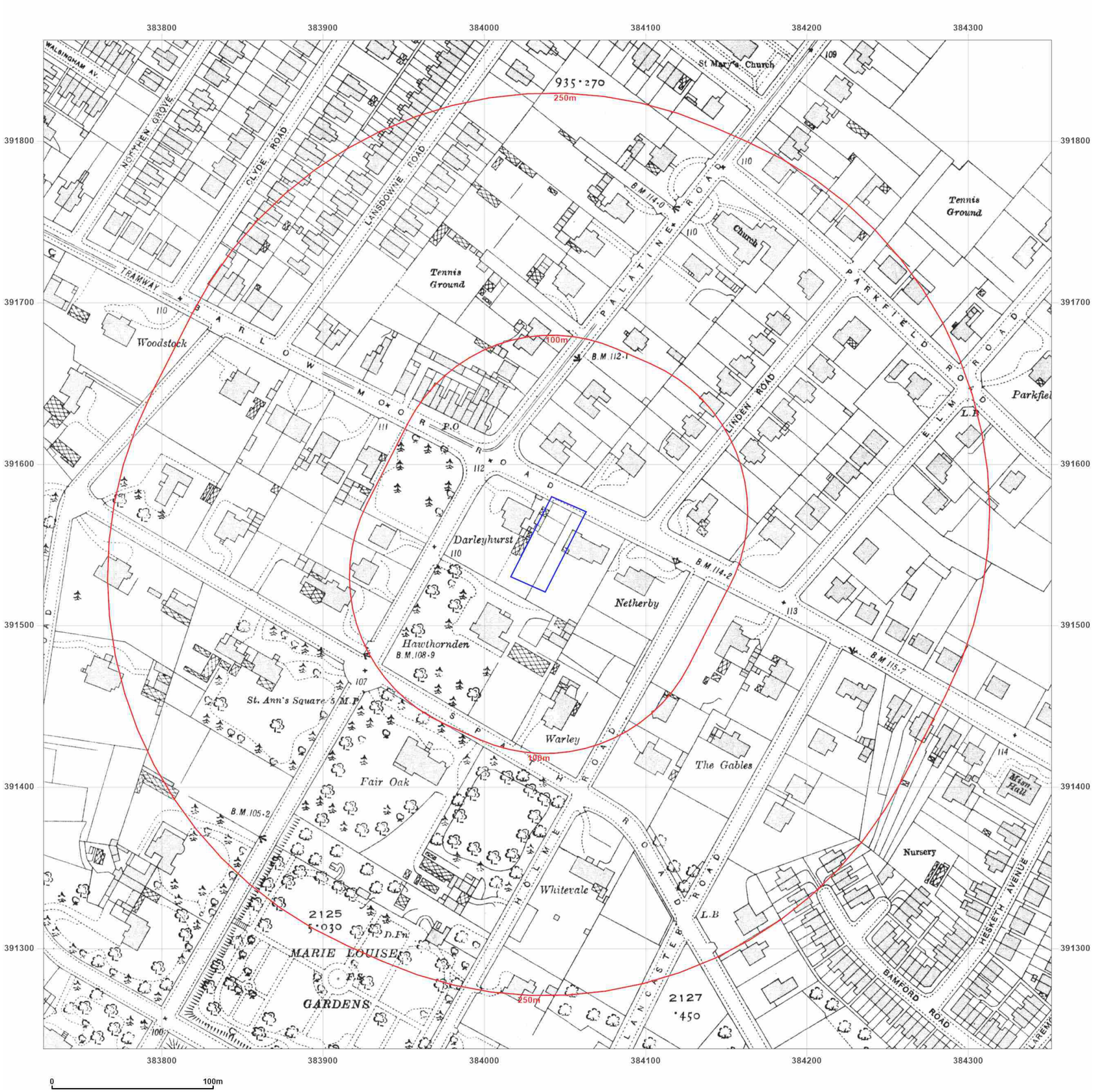
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Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1922**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1922
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Edition 1922
Copyright N/A
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Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1935**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1873
Revised 1935
Edition N/A
Copyright N/A
Levelled 1927

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Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **1955**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1955 Revised 1955 Edition N/A Copyright 1955 Levelled 1927	Surveyed 1955 Revised 1955 Edition N/A Copyright 1955 Levelled 1927
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Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **1955**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1955
Revised 1955
Edition N/A
Copyright 1956
Levelled 1949

Surveyed 1955
Revised 1955
Edition N/A
Copyright 1956
Levelled 1949

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Report Ref: EMS-914809_1166377
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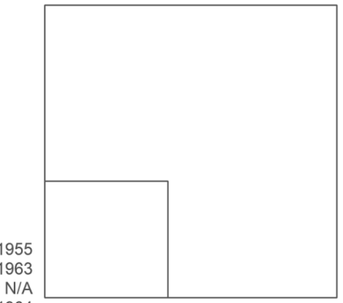
Map Name: National Grid

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Surveyed 1955
Revised 1963
Edition N/A
Copyright 1964
Levelled 1958

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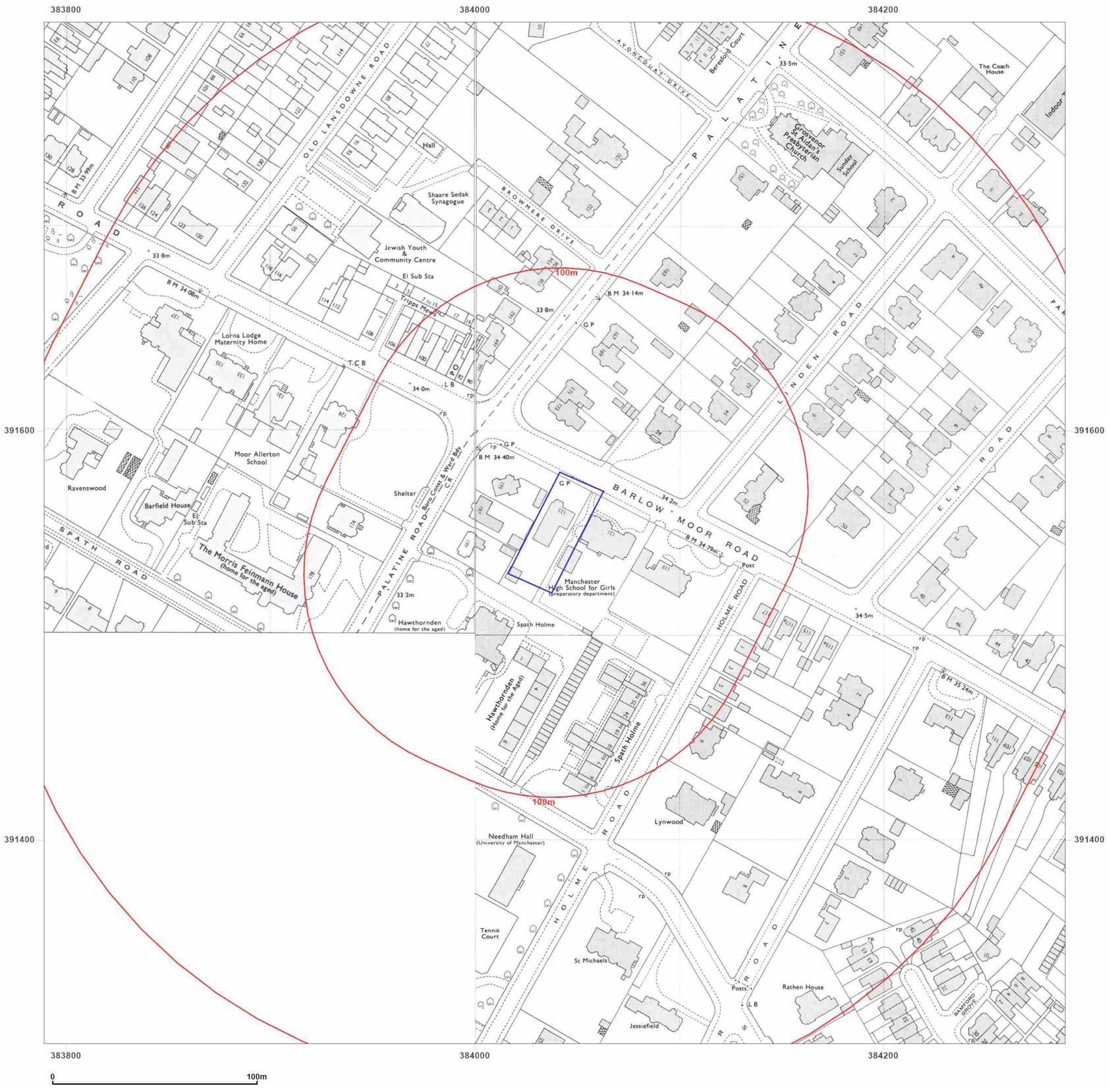
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Production date: 19 December 2023

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Site Details:

unspecified

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Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **1971-1974**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1955
Revised 1970
Edition N/A
Copyright 1971
Levelled 1958

Surveyed 1955
Revised 1972
Edition N/A
Copyright 1973
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Surveyed 1955
Revised 1974
Edition N/A
Copyright 1974
Levelled 1958

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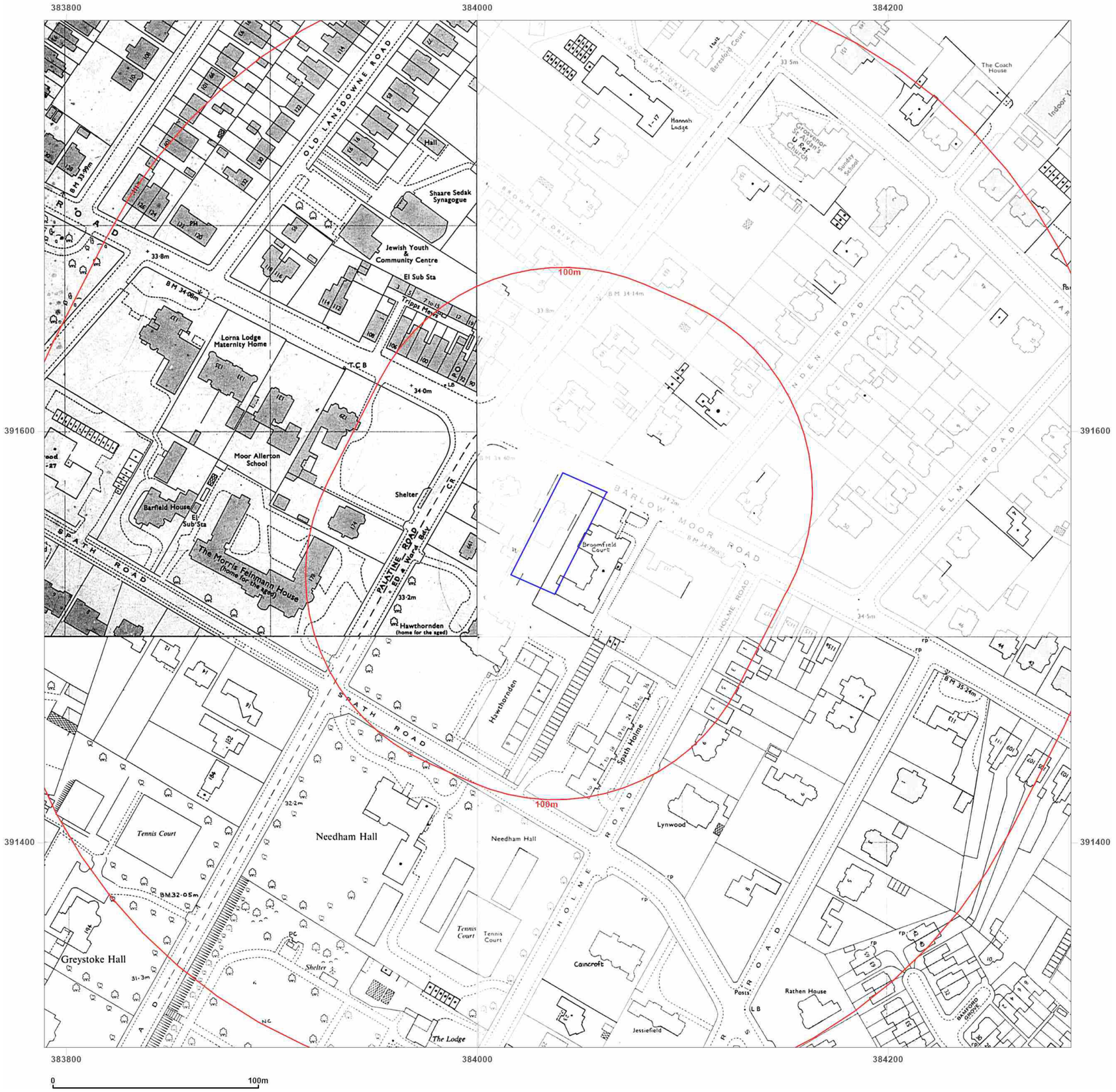
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Production date: 19 December 2023

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unspecified

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Map Name: National Grid

Map date: **1983-1987**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright 1985 Levelled 1958	Surveyed 1958 Revised 1983 Edition N/A Copyright 1983 Levelled 1958
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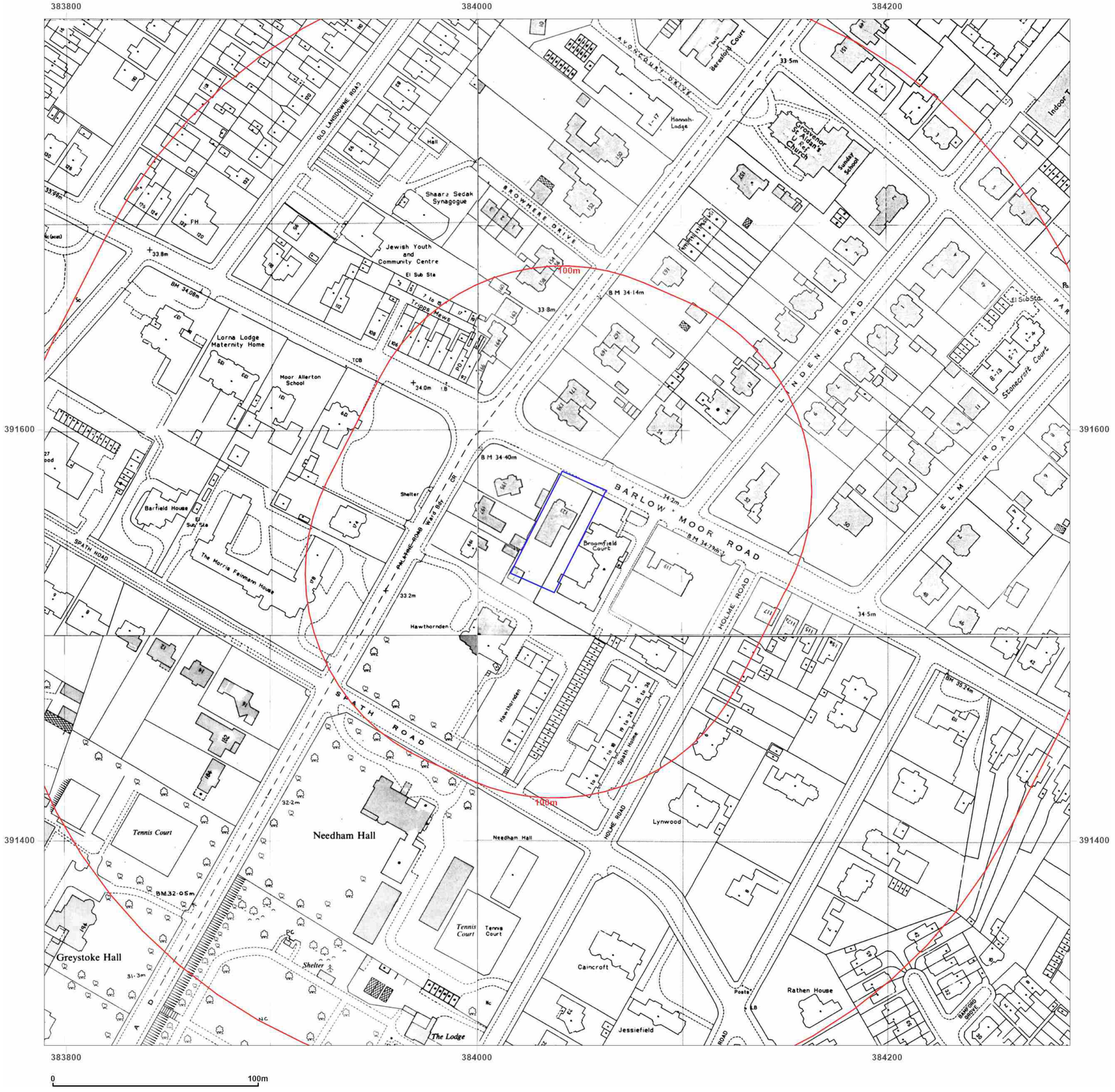
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Production date: 19 December 2023

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EMAPSITE™

Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **1989-1992**

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 1958 Revised 1989 Edition N/A Copyright 1989 Levelled 1958
Surveyed 1958 Revised 1990 Edition N/A Copyright 1990 Levelled 1958	Surveyed 1992 Revised 1992 Edition N/A Copyright 1992 Levelled N/A

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Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **1989-1992**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1989
Levelled 1958

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

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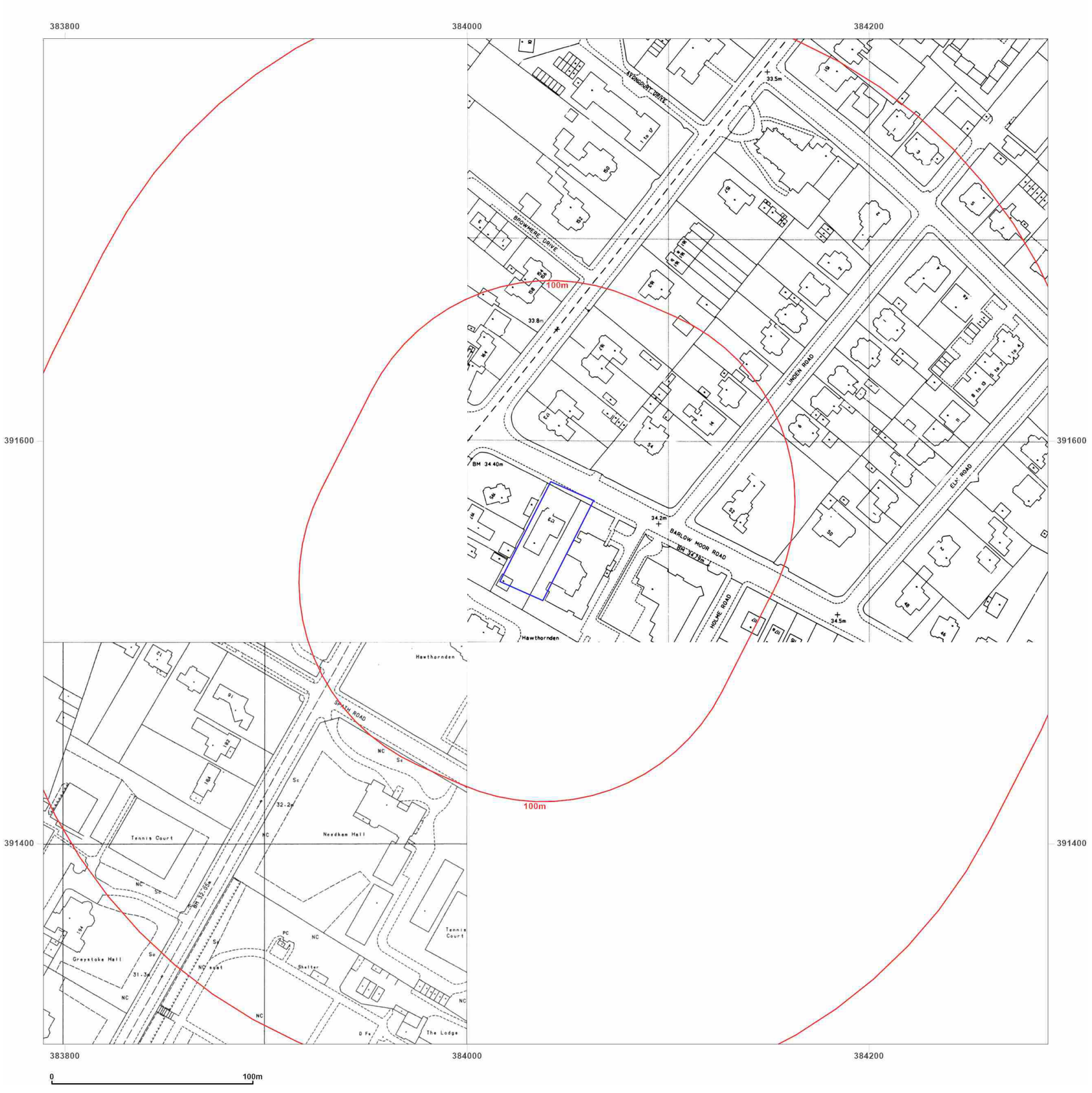
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Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **1992**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
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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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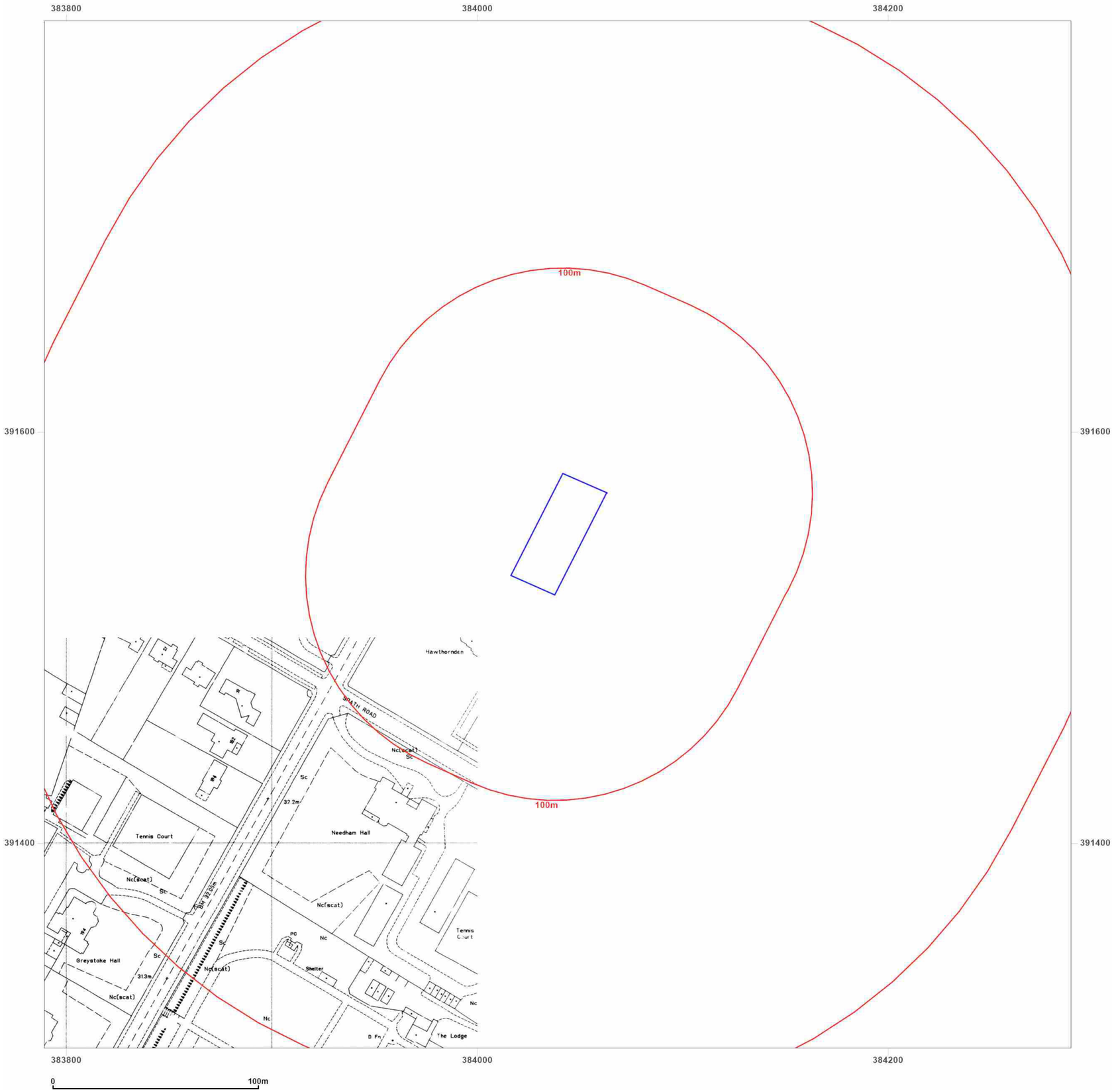
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Site Details:

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Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

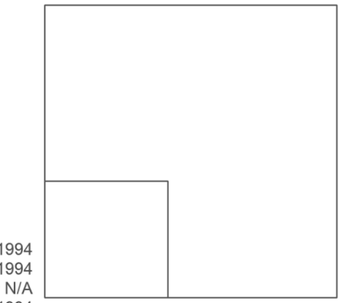
Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

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

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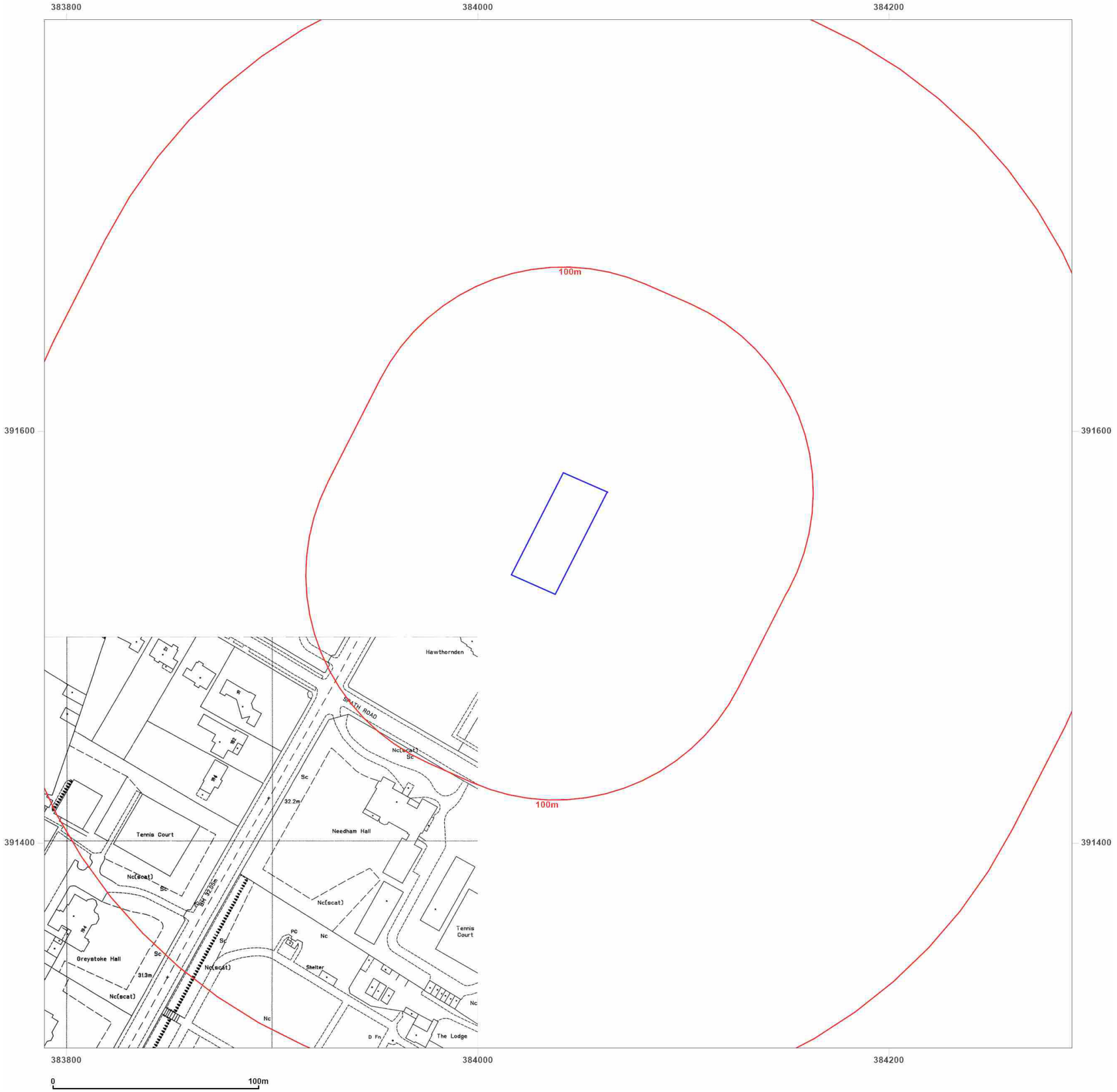
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Site Details:

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Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

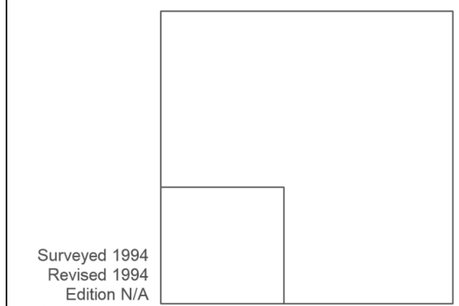
Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

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

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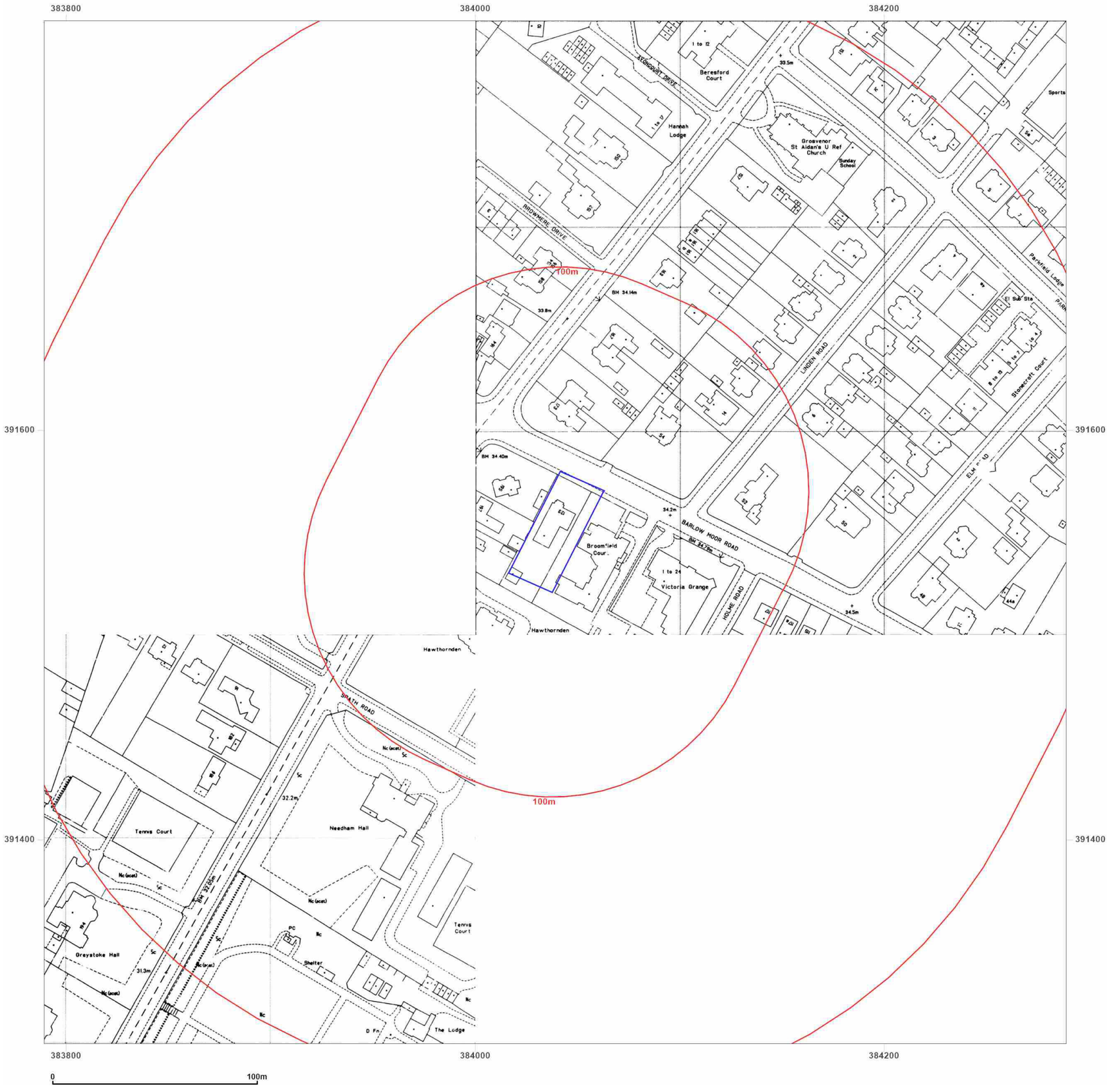
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Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **1993-1994**

Scale: 1:1,250

Printed at: 1:2,000

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

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

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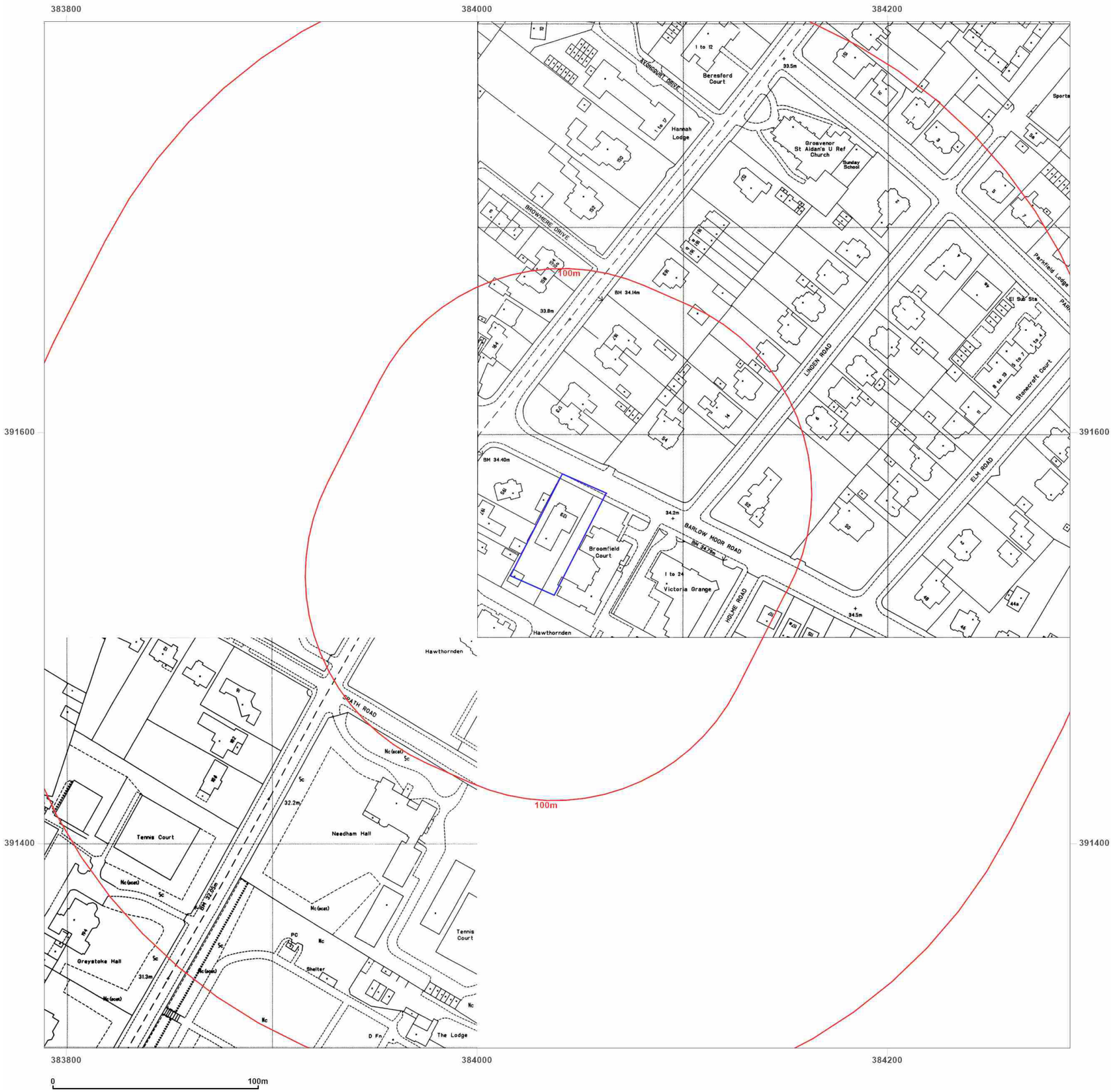
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Site Details:

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Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **1993-1994**

Scale: 1:1,250

Printed at: 1:2,000

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

Surveyed 1993
Revised 1993
Edition N/A
Copyright 1993
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Site Details:

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Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: LandLine
Map date: **2003**
Scale: 1:1,250
Printed at: 1:1,250

N
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2003

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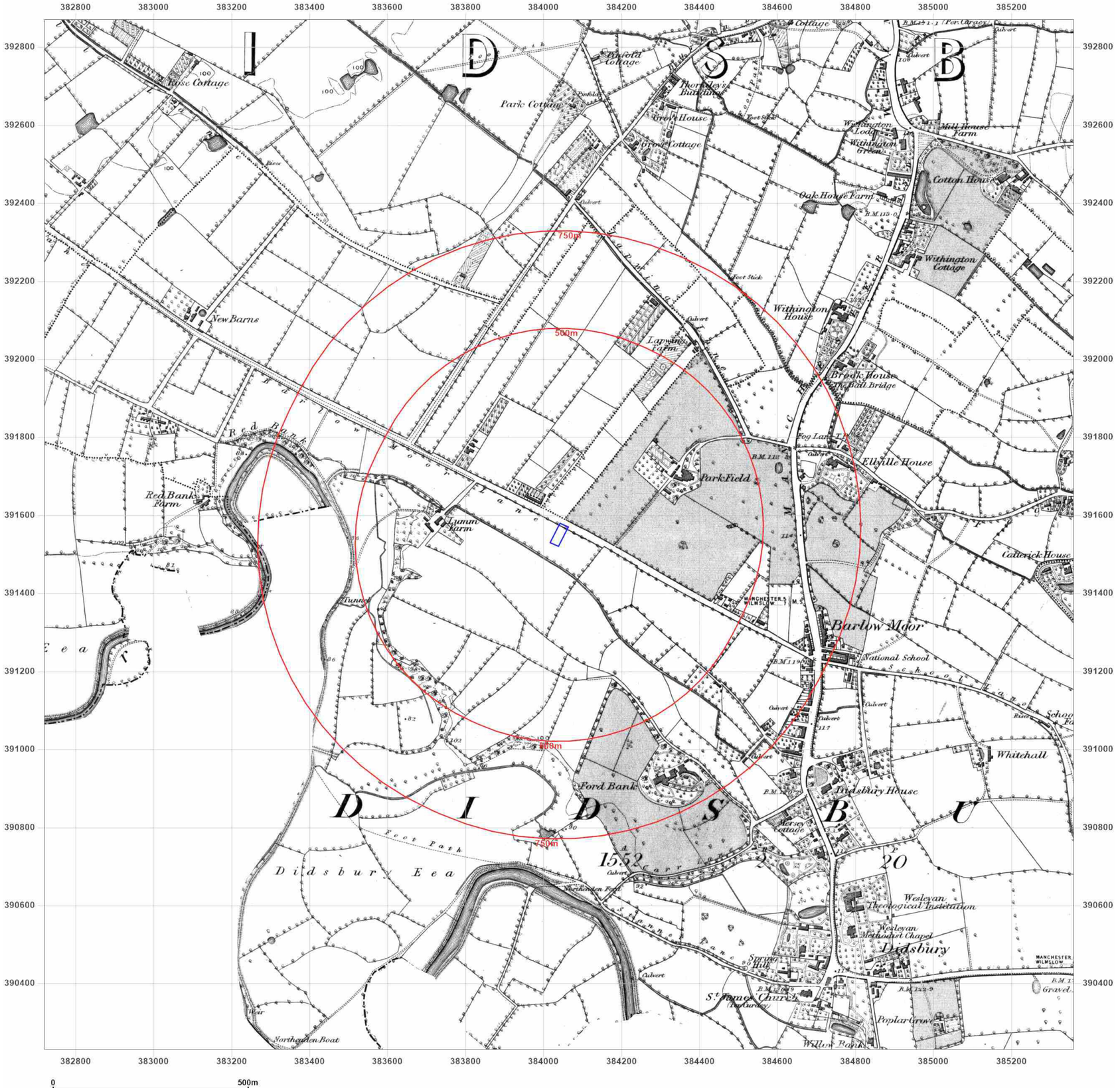
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Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1849**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1845
Revised 1849
Edition 1849
Copyright N/A
Levelled N/A



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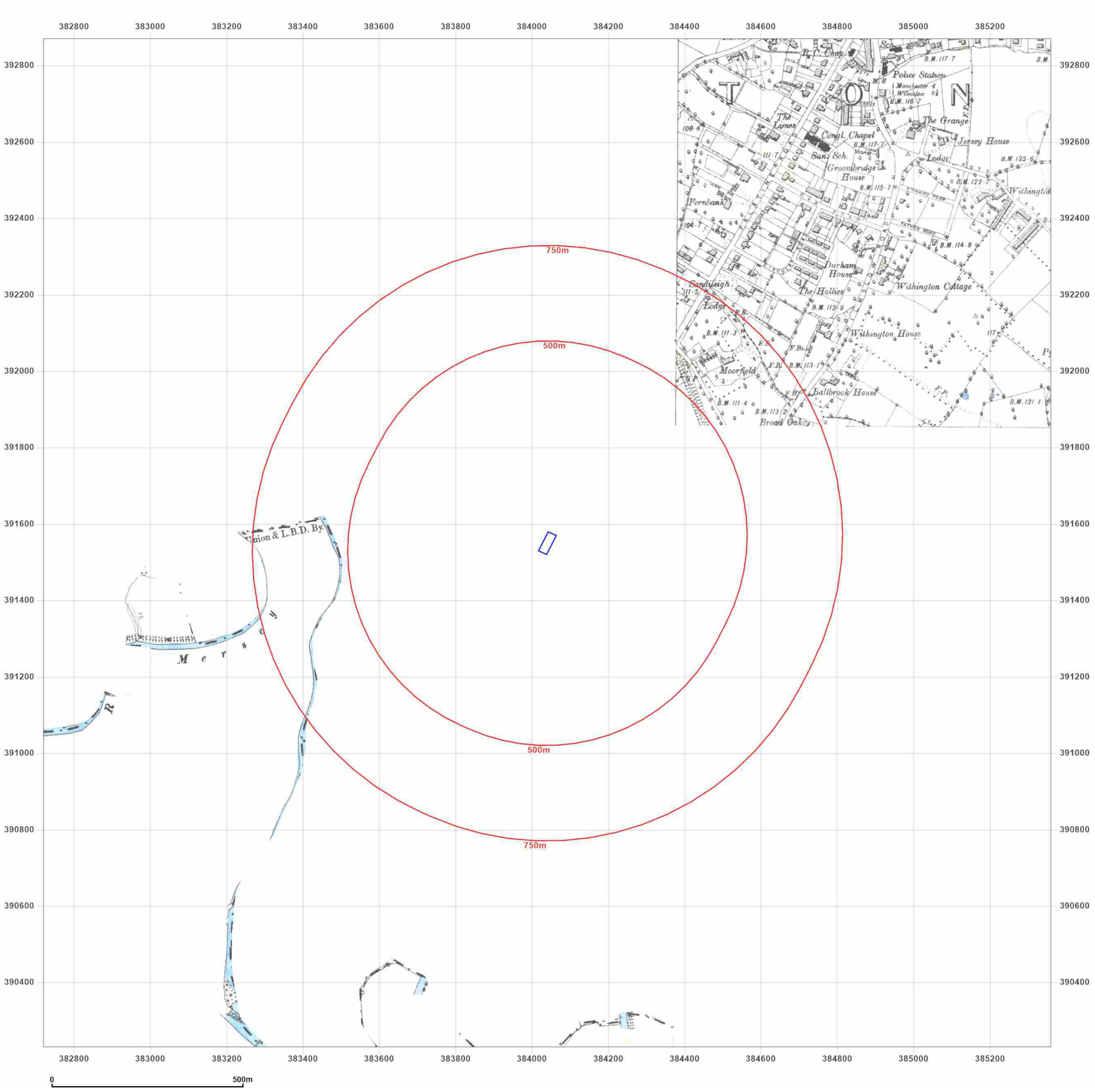
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Site Details:

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Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1892**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1892
Revised 1892
Edition 1892
Copyright N/A
Levelled N/A



Surveyed 1892
Revised 1892
Edition 1892
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Levelled N/A

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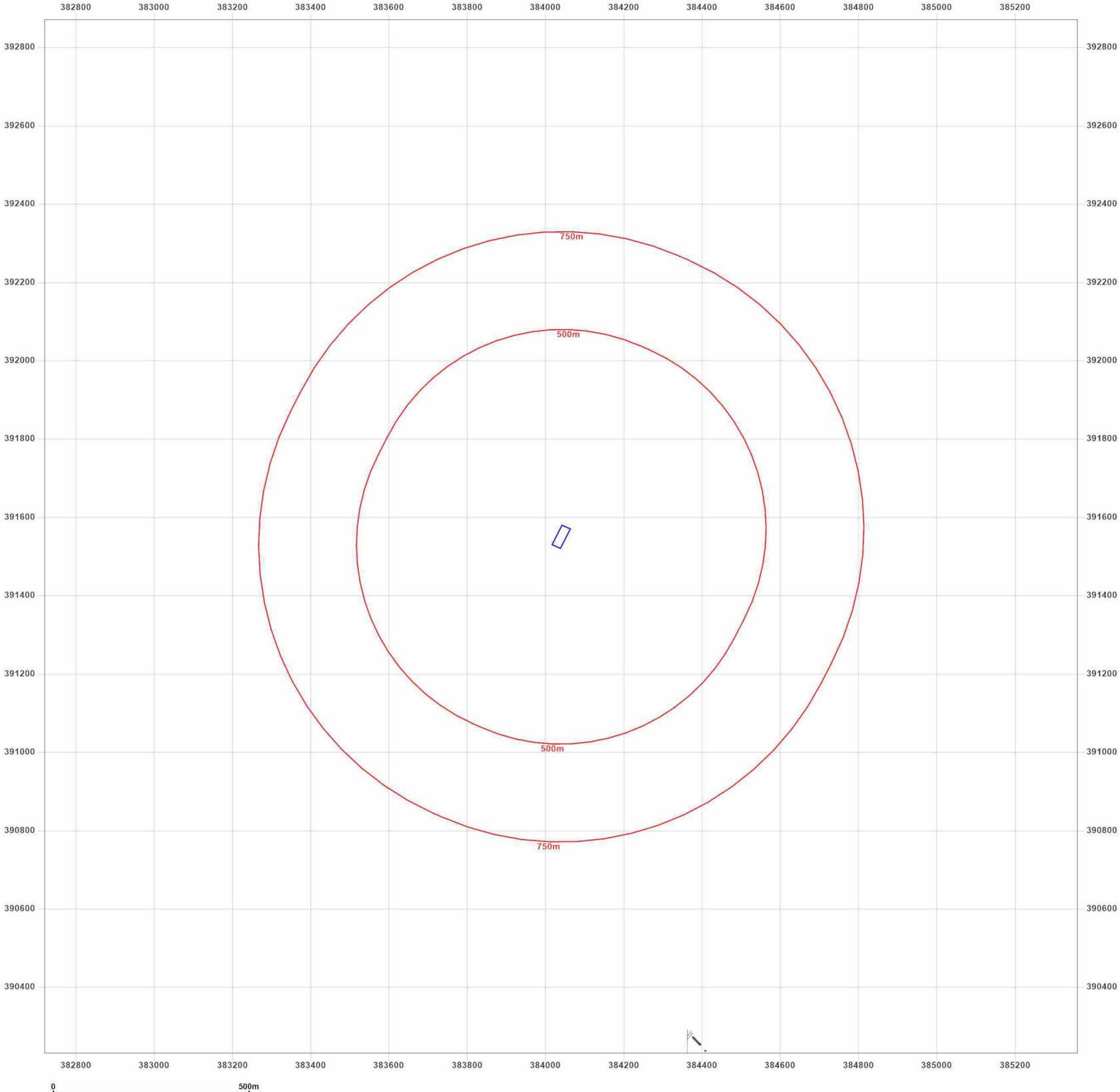
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Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

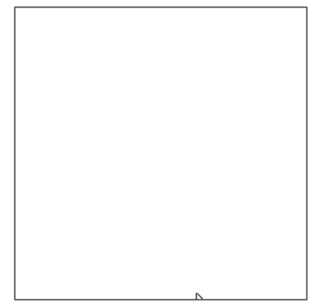
Map Name: County Series

Map date: **1893**

Scale: 1:10,560

Printed at: 1:10,560

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

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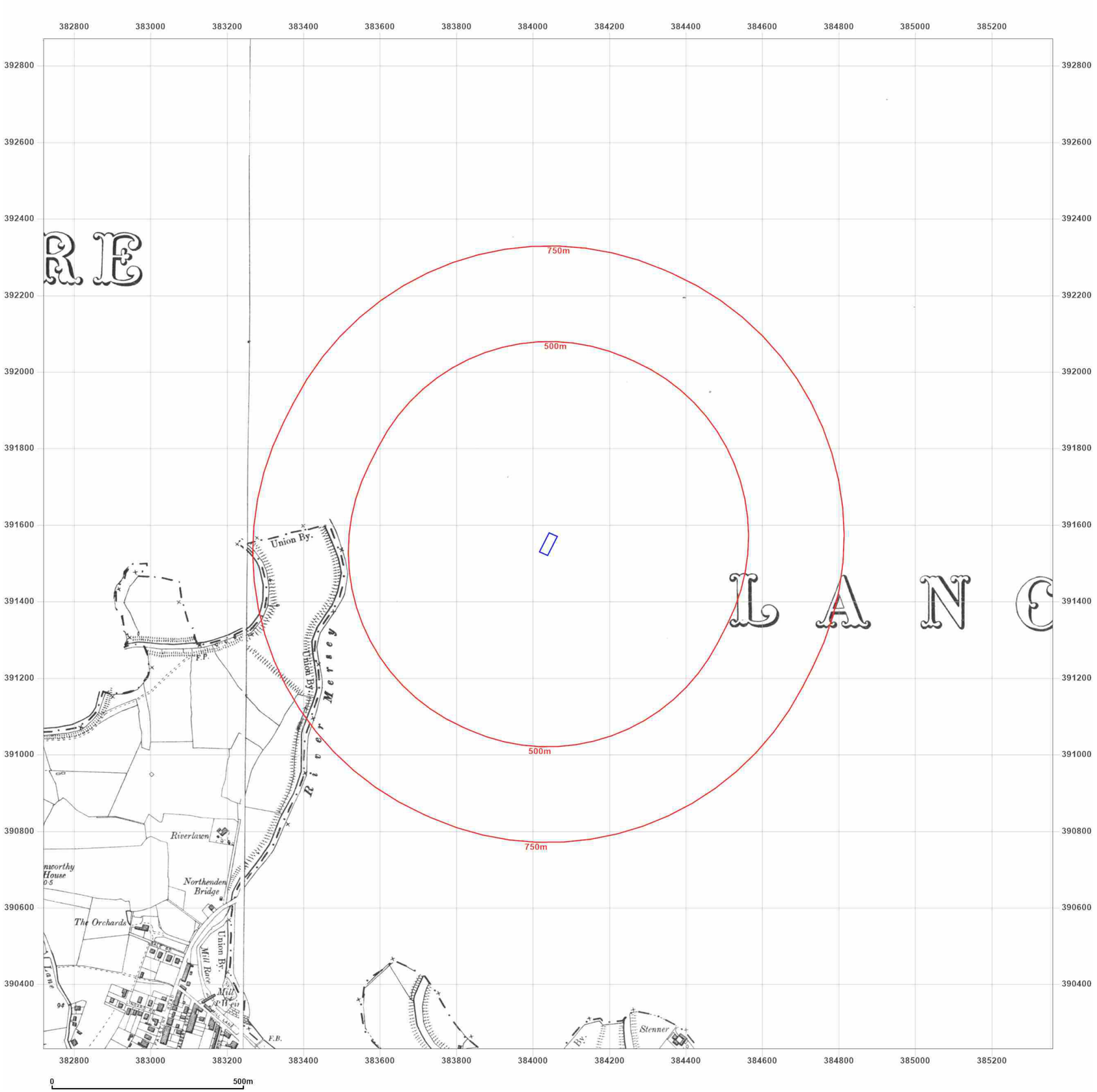
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Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
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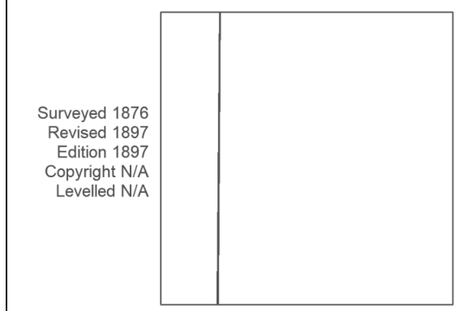
Map Name: County Series

Map date: **1897**

Scale: 1:10,560

Printed at: 1:10,560

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Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1905**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1892
Revised 1905
Edition 1905
Copyright N/A
Levelled N/A

Surveyed 1892
Revised 1905
Edition 1905
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1905
Edition 1905
Copyright N/A
Levelled N/A

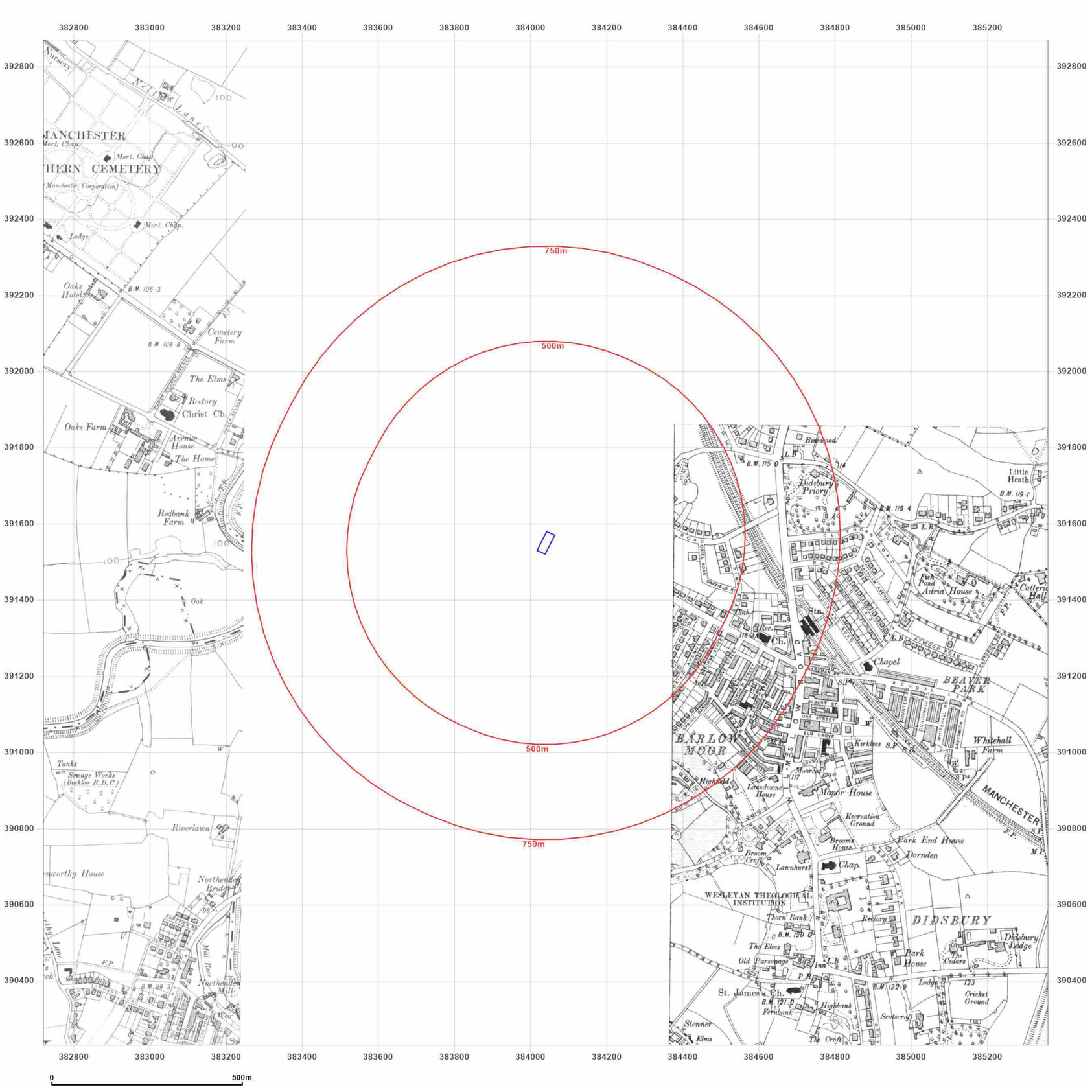
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Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

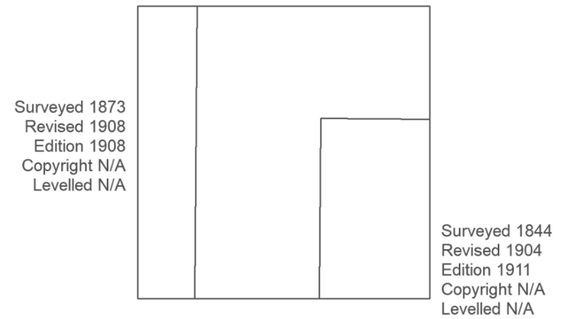
Map Name: County Series

Map date: **1908-1911**

Scale: 1:10,560

Printed at: 1:10,560

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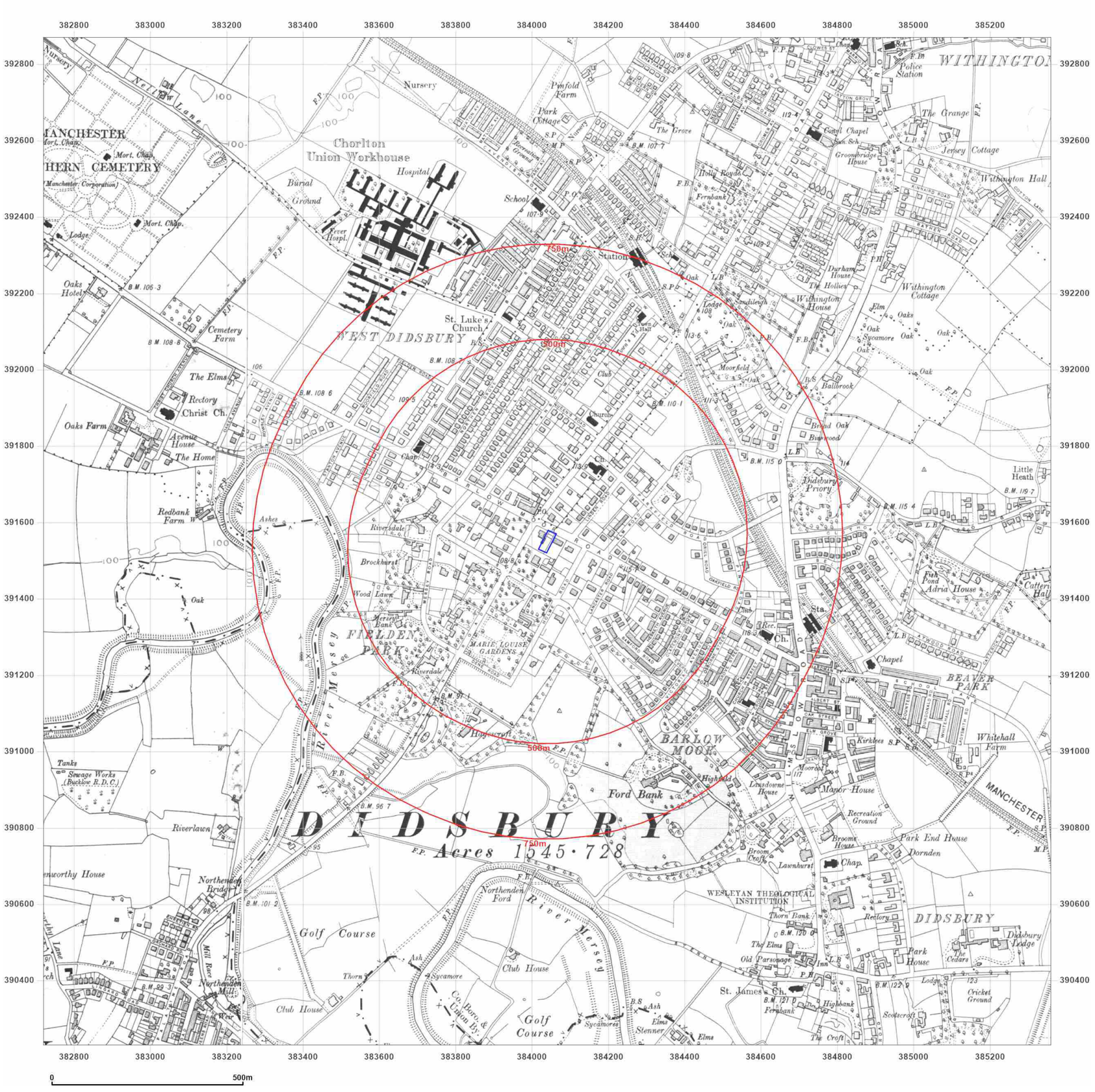
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Site Details:

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Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1911**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1873
Revised 1908
Edition 1911
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1908
Edition 1911
Copyright N/A
Levelled N/A

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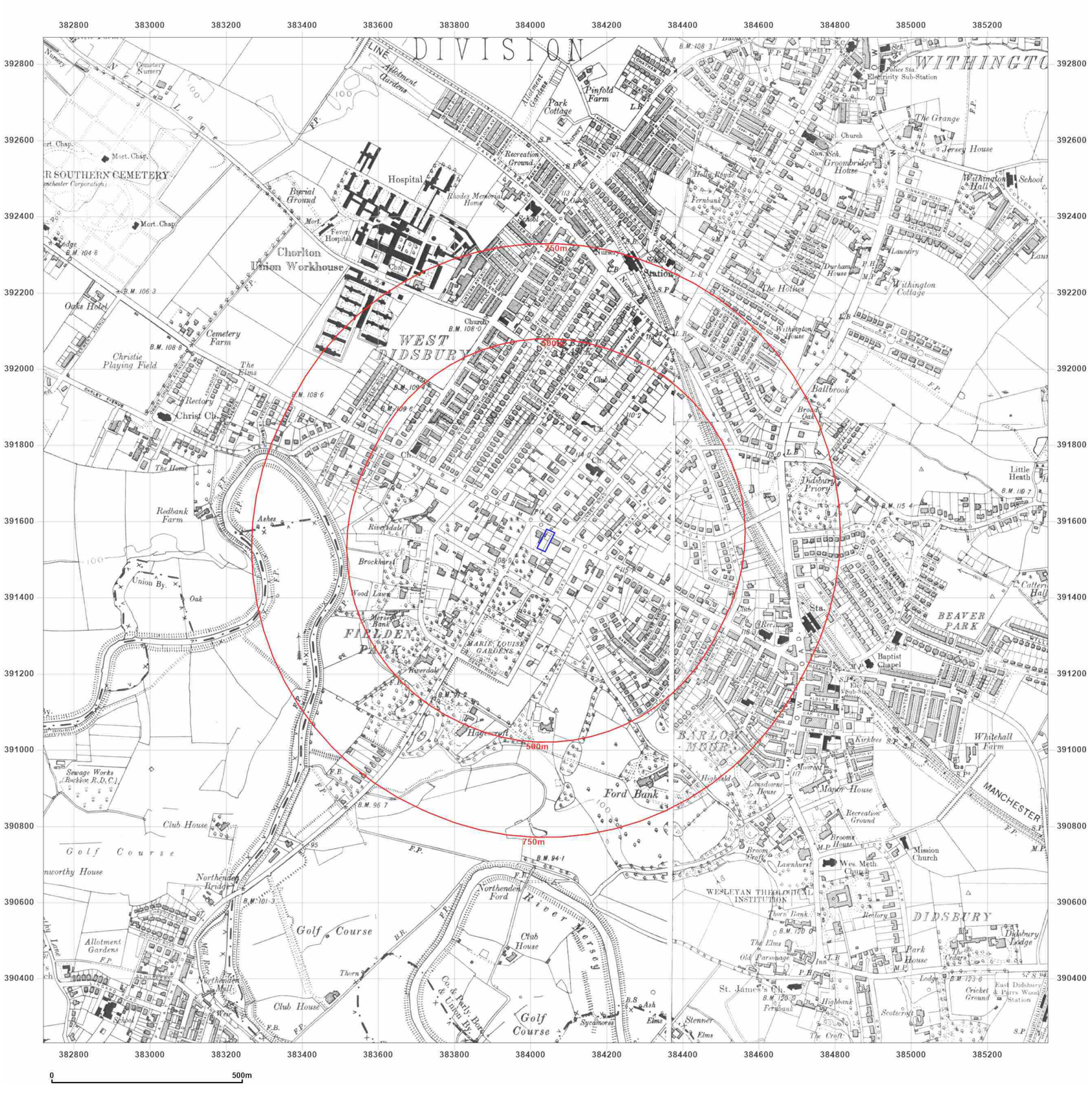
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Site Details:

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Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1844
Revised 1916
Edition 1923
Copyright N/A
Levelled 1915

Surveyed 1844
Revised 1916
Edition 1923
Copyright N/A
Levelled 1915

Surveyed 1844
Revised 1916
Edition 1923
Copyright N/A
Levelled 1915

Surveyed 1844
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Edition 1923
Copyright N/A
Levelled 1915

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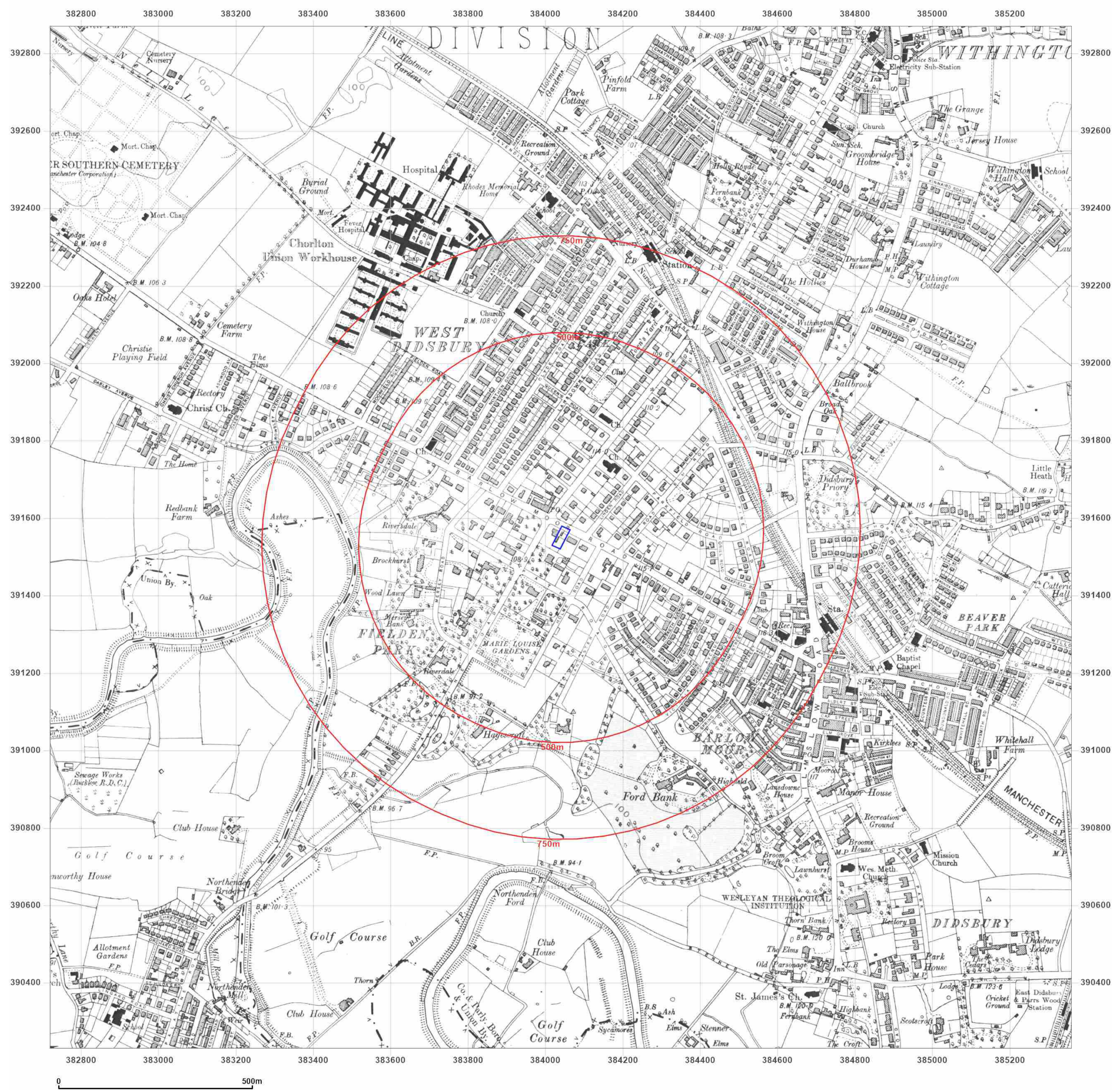
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Site Details:

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Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1844
Revised 1916
Edition 1923
Copyright N/A
Levelled 1915

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Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1934-1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1844
Revised 1934
Edition 1934
Copyright N/A
Levelled 1927

Surveyed 1844
Revised 1934
Edition 1934
Copyright N/A
Levelled 1927

Surveyed 1844
Revised 1938
Edition 1938
Copyright N/A
Levelled 1927

Surveyed 1844
Revised 1934
Edition 1934
Copyright N/A
Levelled 1927

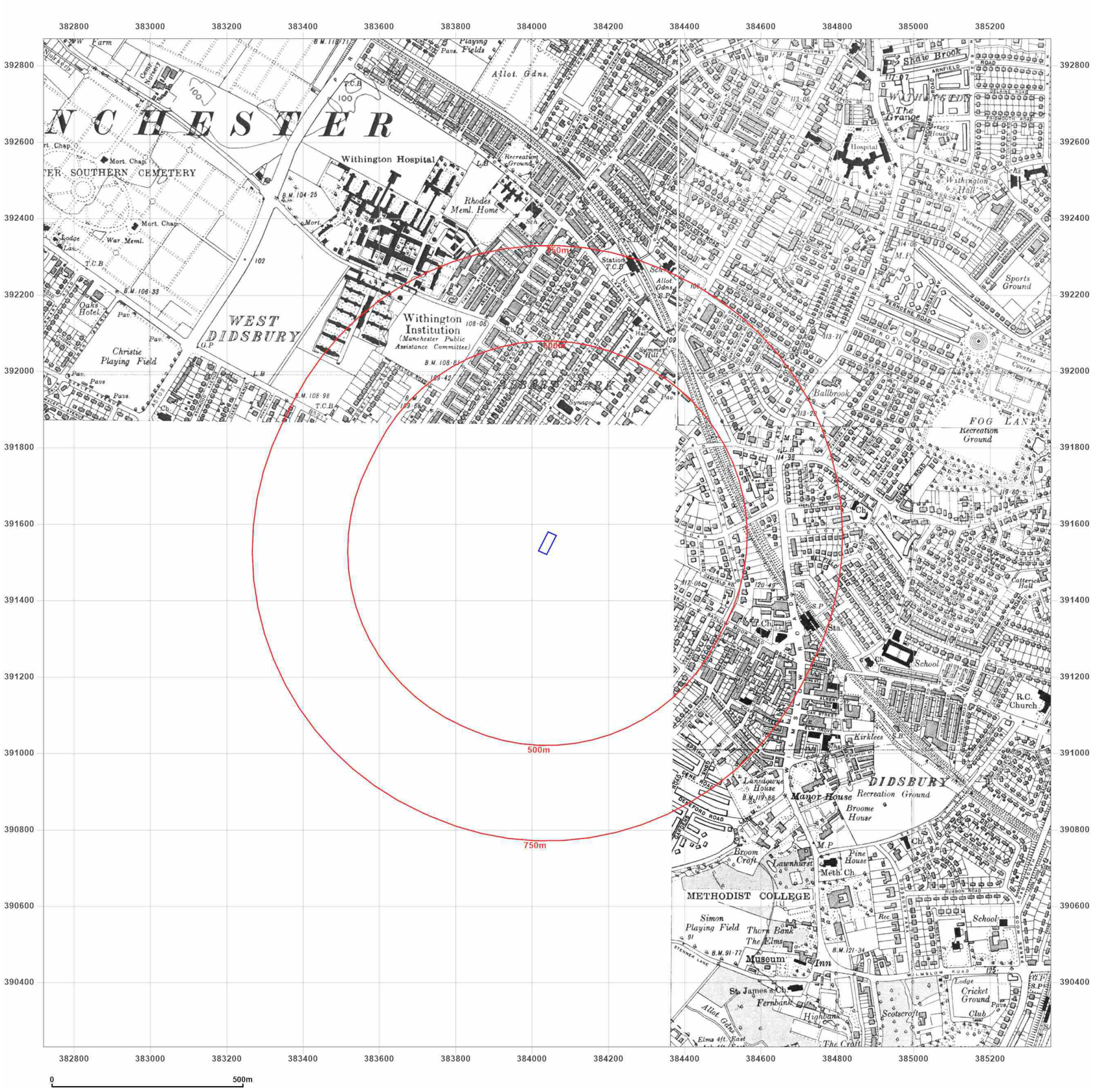
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Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1844
Revised 1938
Edition 1938
Copyright N/A
Levelled 1927

Surveyed 1844
Revised 1938
Edition 1938
Copyright N/A
Levelled 1927

Surveyed 1872
Revised 1938
Edition 1938
Copyright N/A
Levelled 1927

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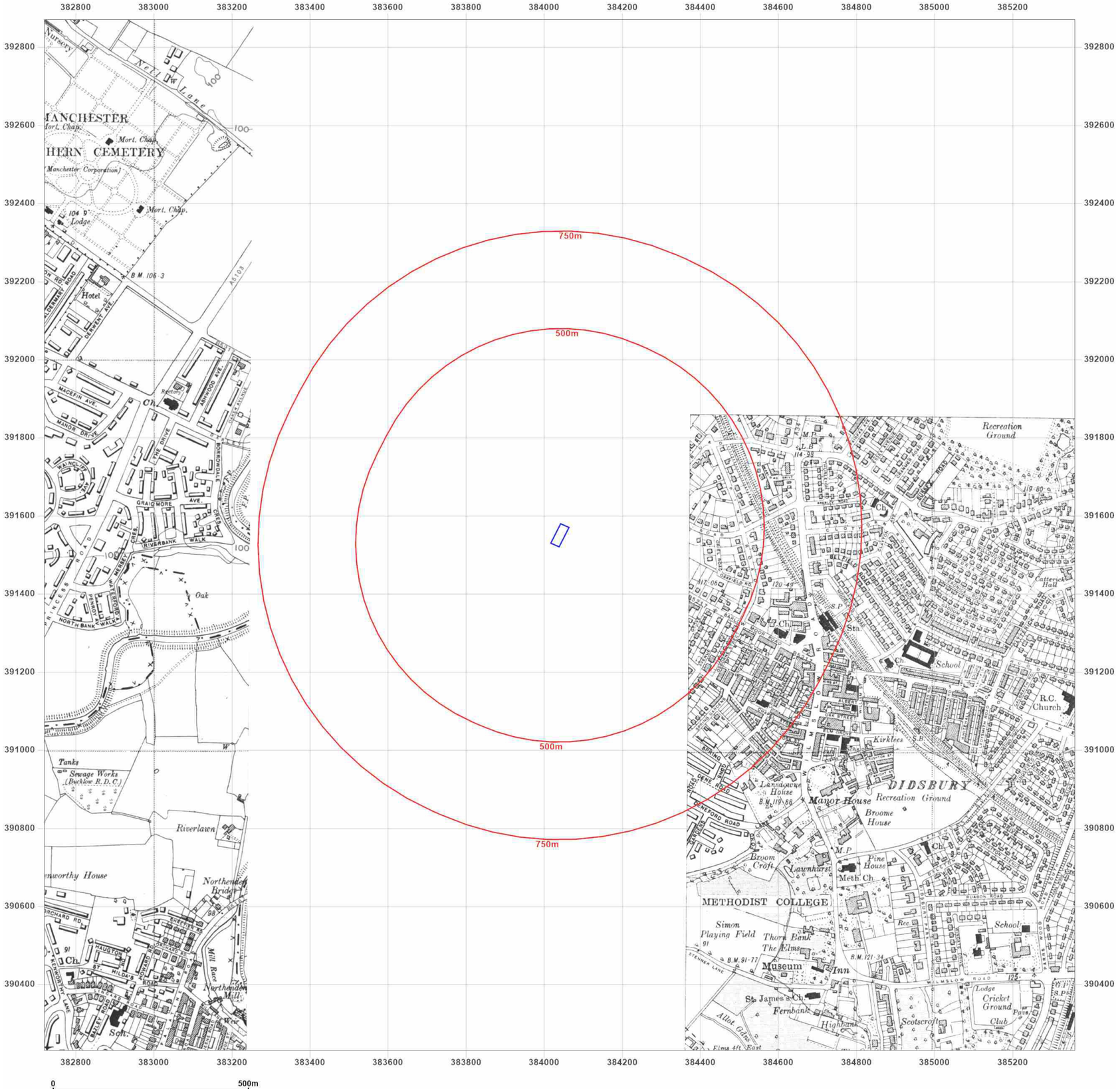
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Site Details:

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Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

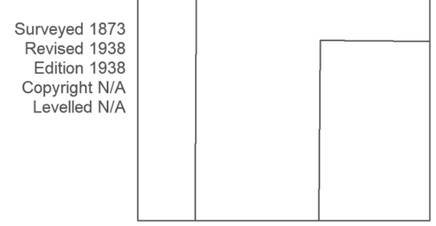
Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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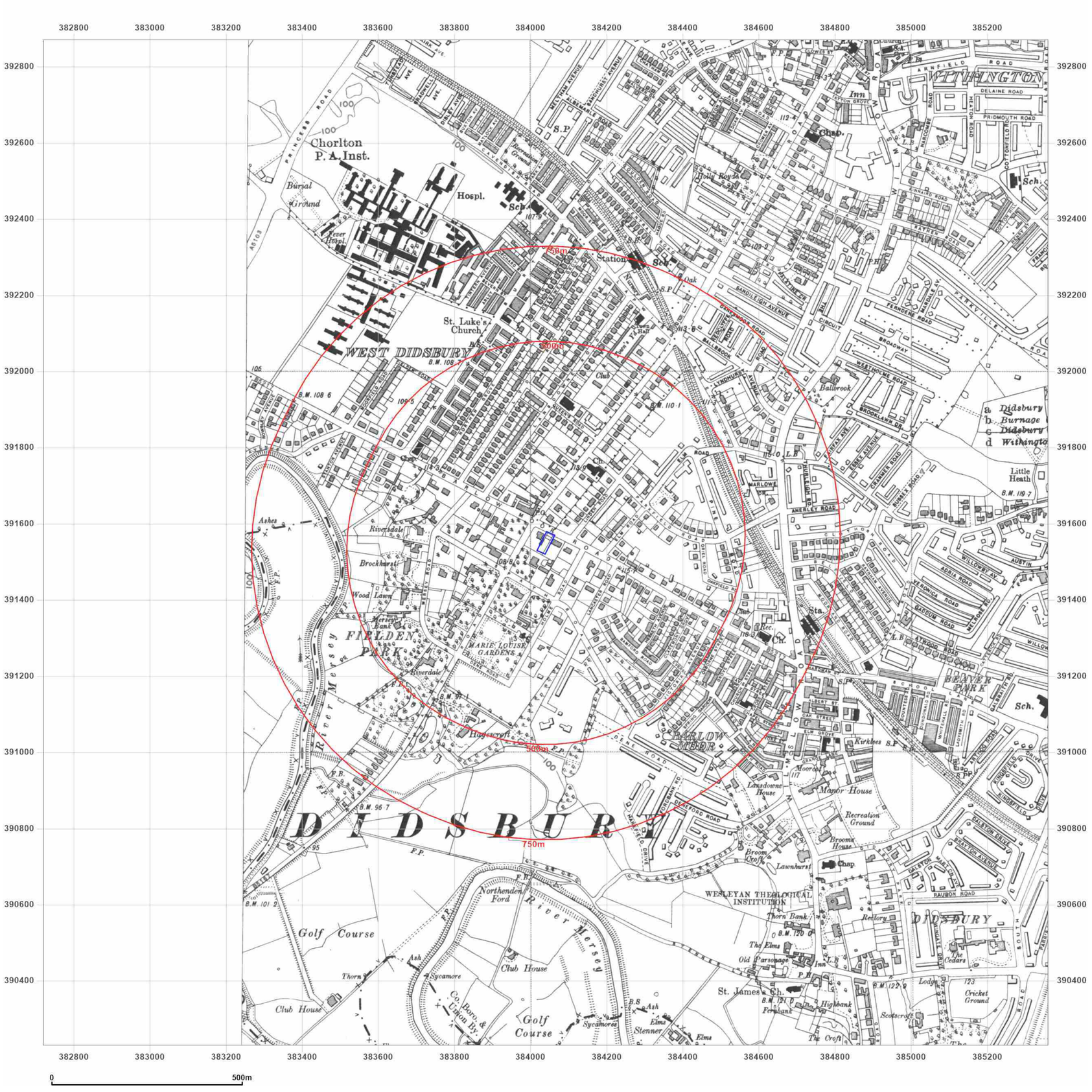
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Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
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Surveyed 1872
Revised 1938
Edition 1938
Copyright N/A
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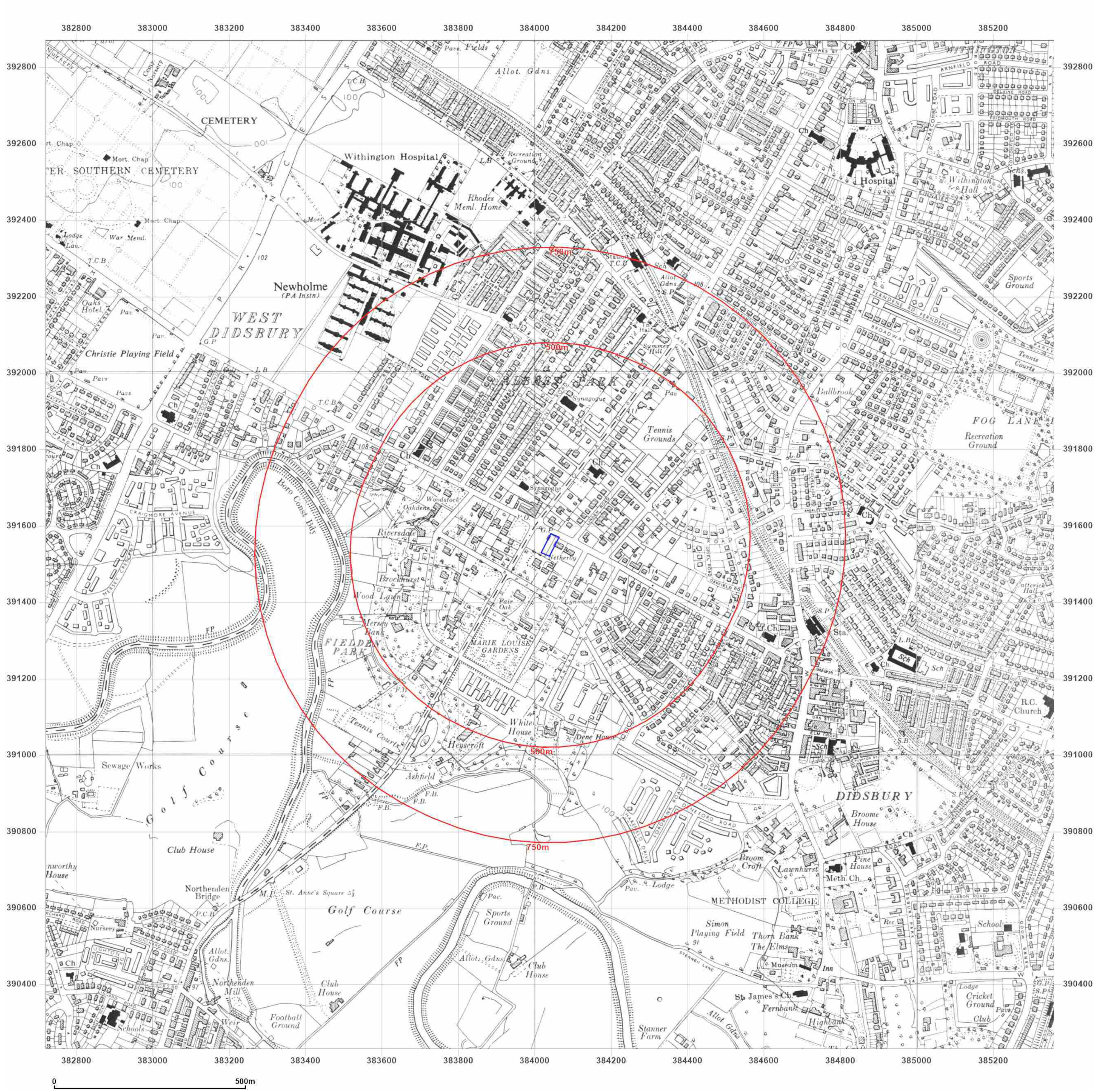
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EMAPSITE™

Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: Provisional

Map date: **1955**

Scale: 1:10,560

Printed at: 1:10,560

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

Surveyed N/A
Revised 1955
Edition N/A
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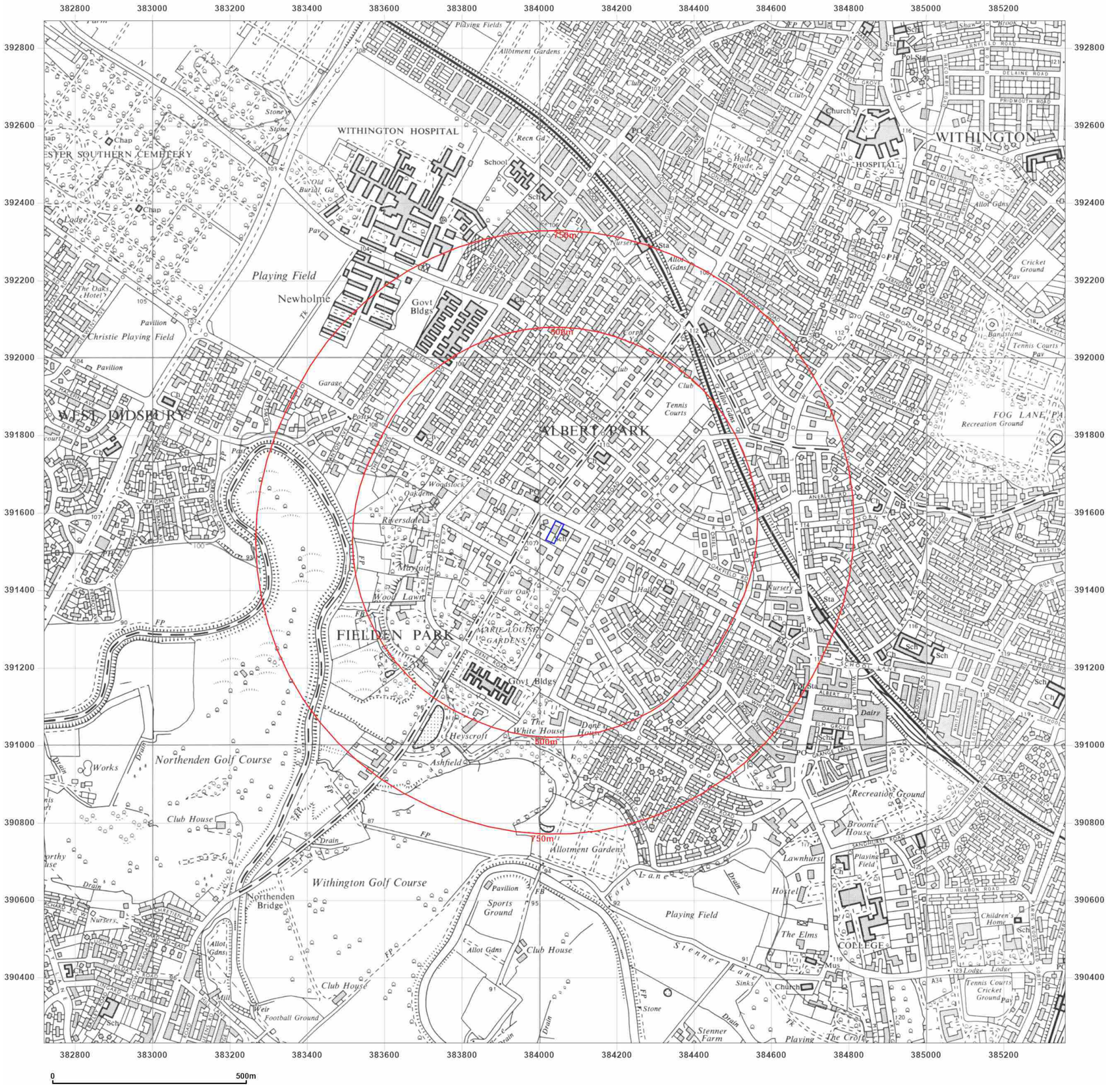
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Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: Provisional

Map date: **1965-1966**

Scale: 1:10,560

Printed at: 1:10,560

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

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

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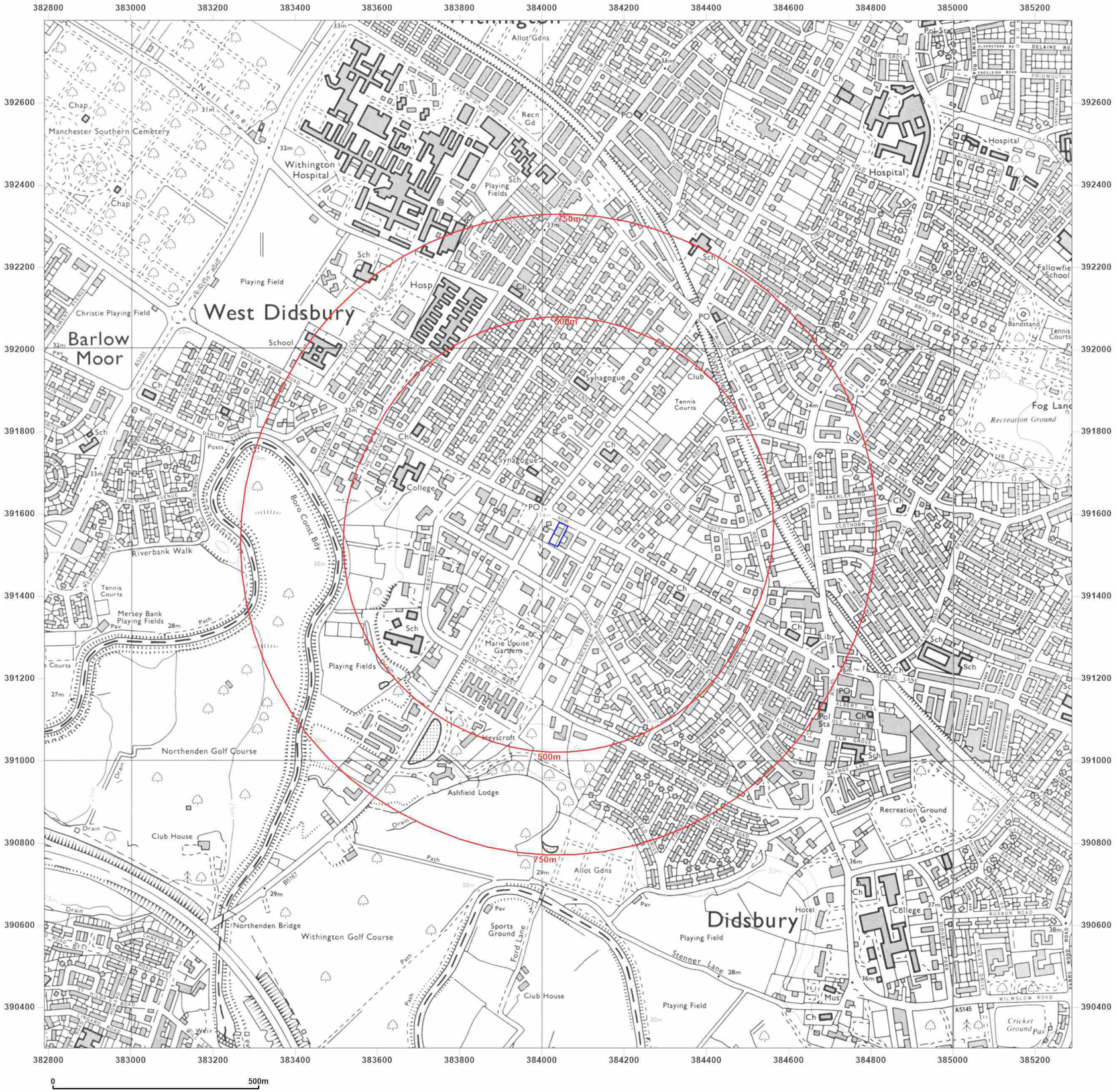
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EMAPSITE™

Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **1981-1983**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1977
Revised 1981
Edition N/A
Copyright 1981
Levelled 1976

Surveyed 1981
Revised 1983
Edition N/A
Copyright 1983
Levelled 1981

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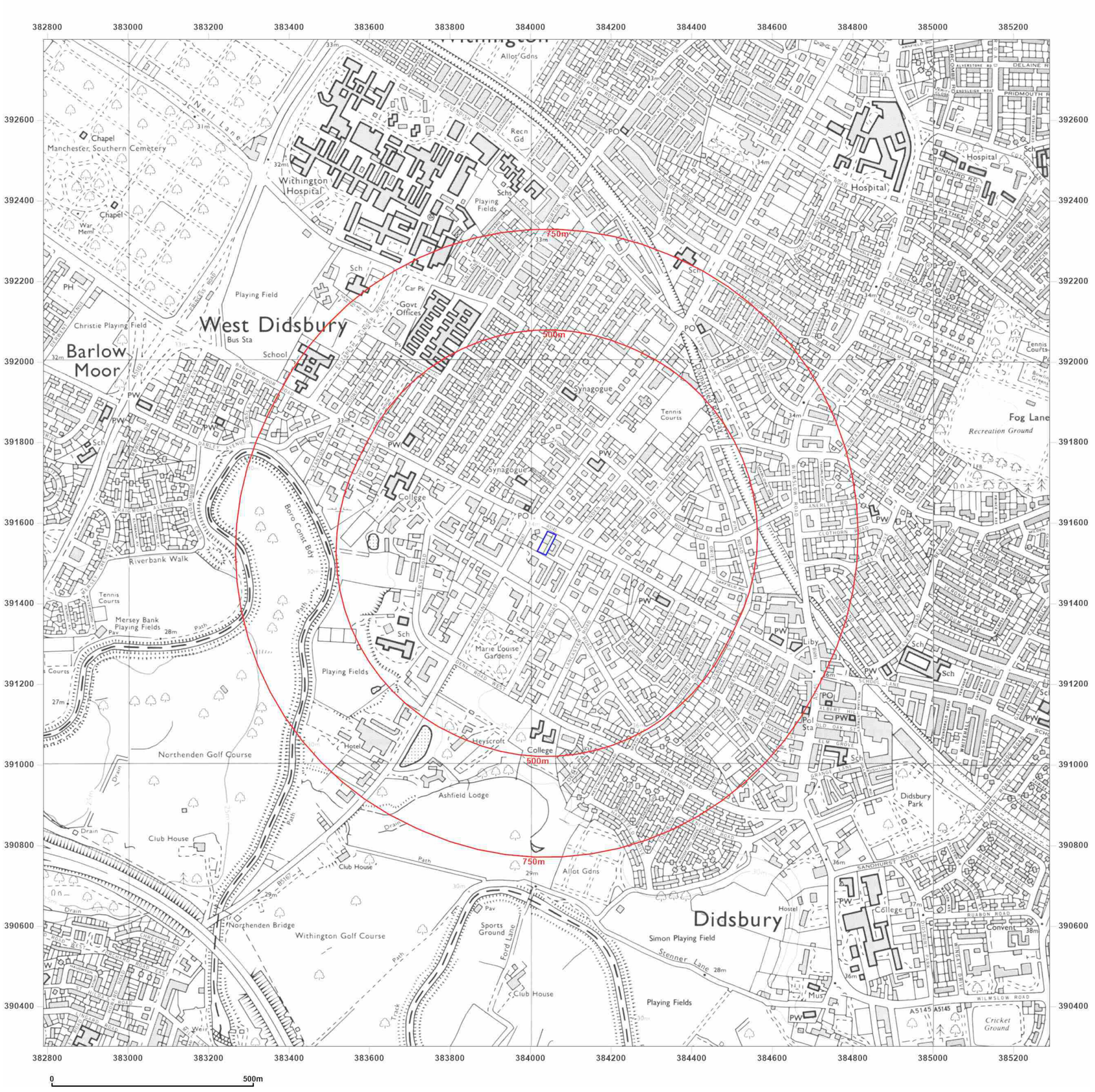
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EMAPSITE™

Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **1988-1989**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1985
Revised 1988
Edition N/A
Copyright 1988
Levelled 1981

Surveyed 1986
Revised 1989
Edition N/A
Copyright 1989
Levelled 1981

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Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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2001

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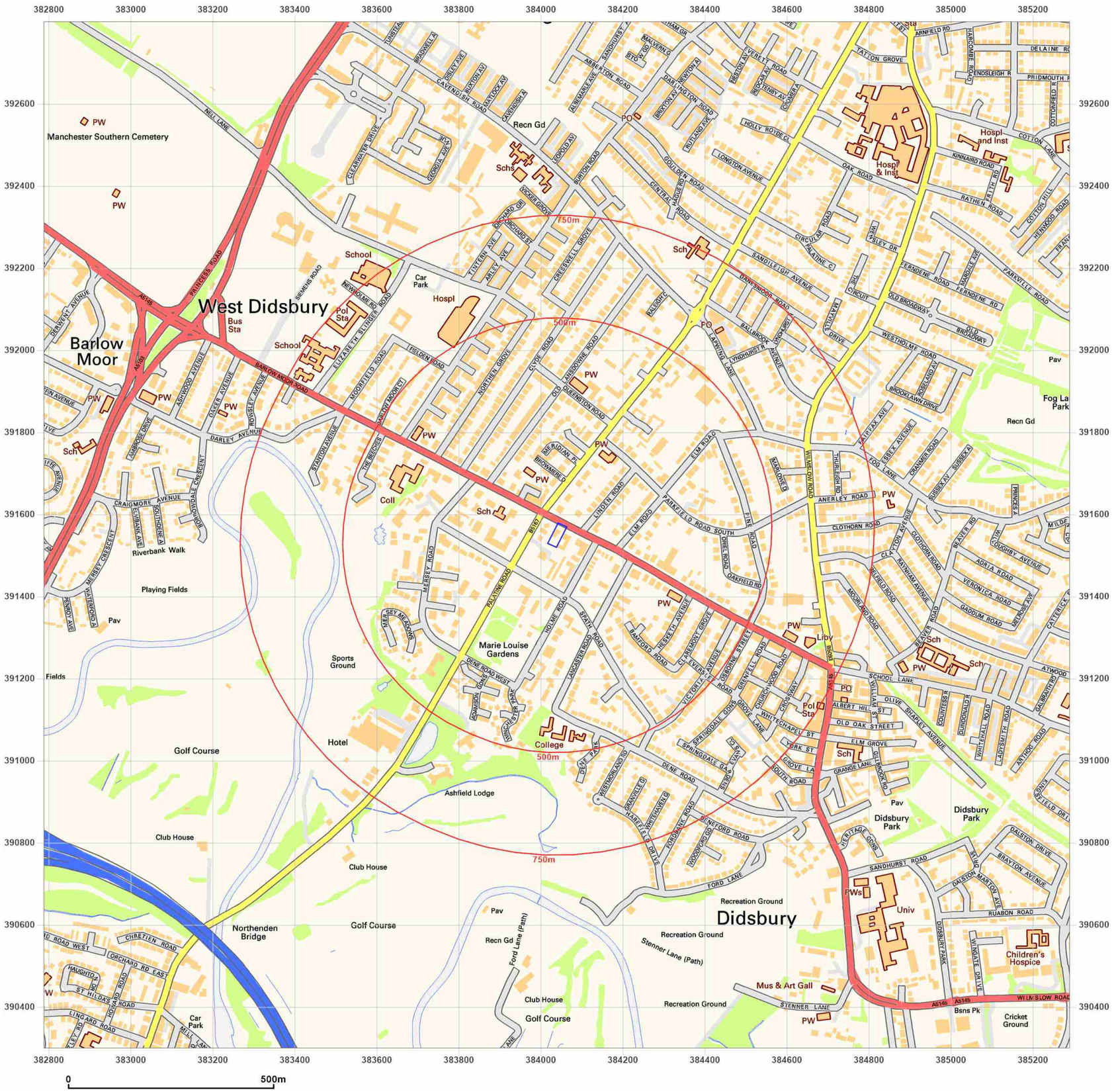
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Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

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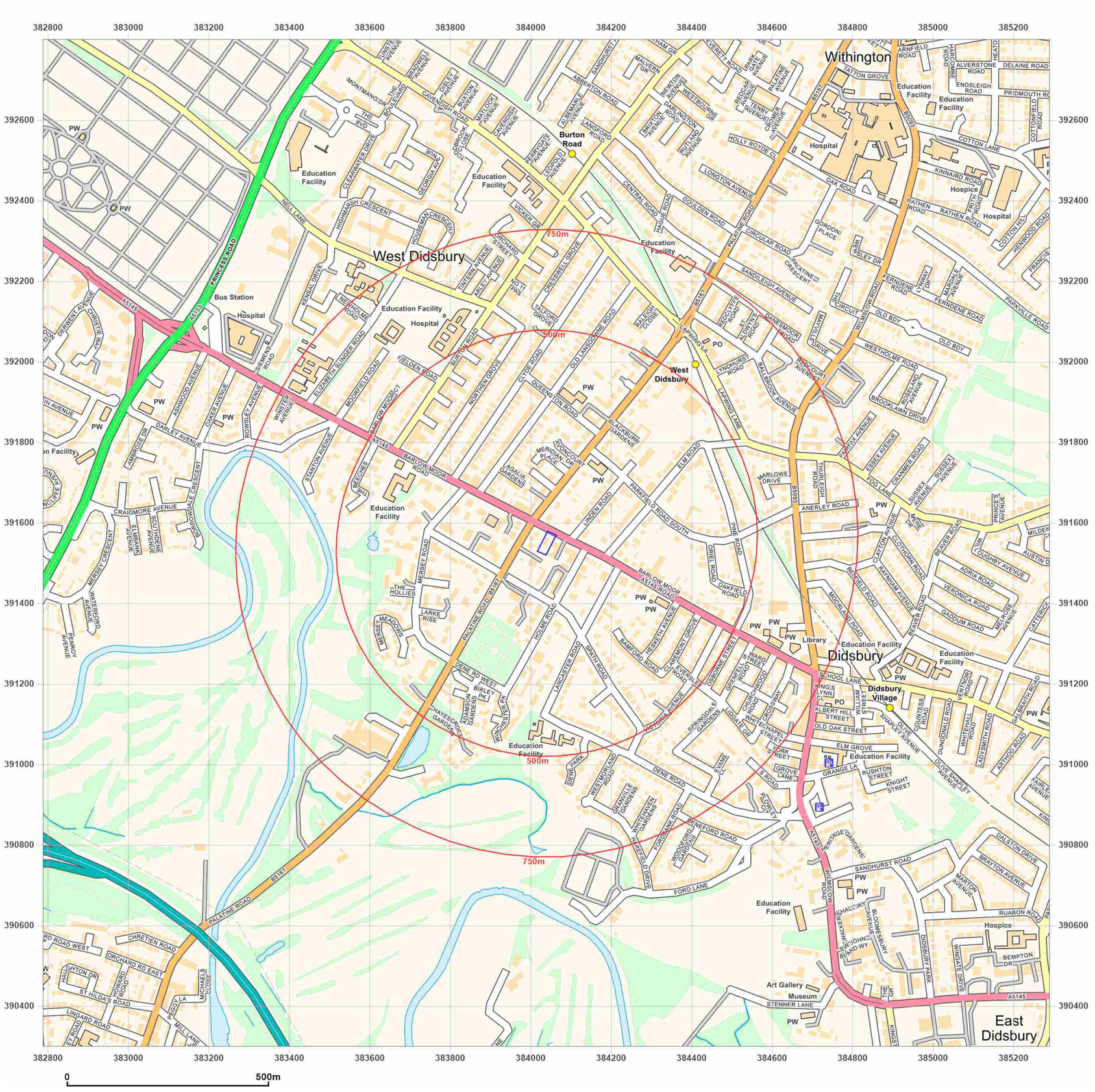
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EMAPSITE™

Site Details:

unspecified

Client Ref: EMS_914809_1133794
Report Ref: EMS-914809_1166377
Grid Ref: 384039, 391550

Map Name: National Grid

Map date: **2023**

Scale: 1:10,000

Printed at: 1:10,000

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2023

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Production date: 19 December 2023

Map legend available at:
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APPENDIX 4 - Groundsure Report

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

unspecified

Order Details

Date: 19/12/2023

Your ref: EMS_914809_1133794

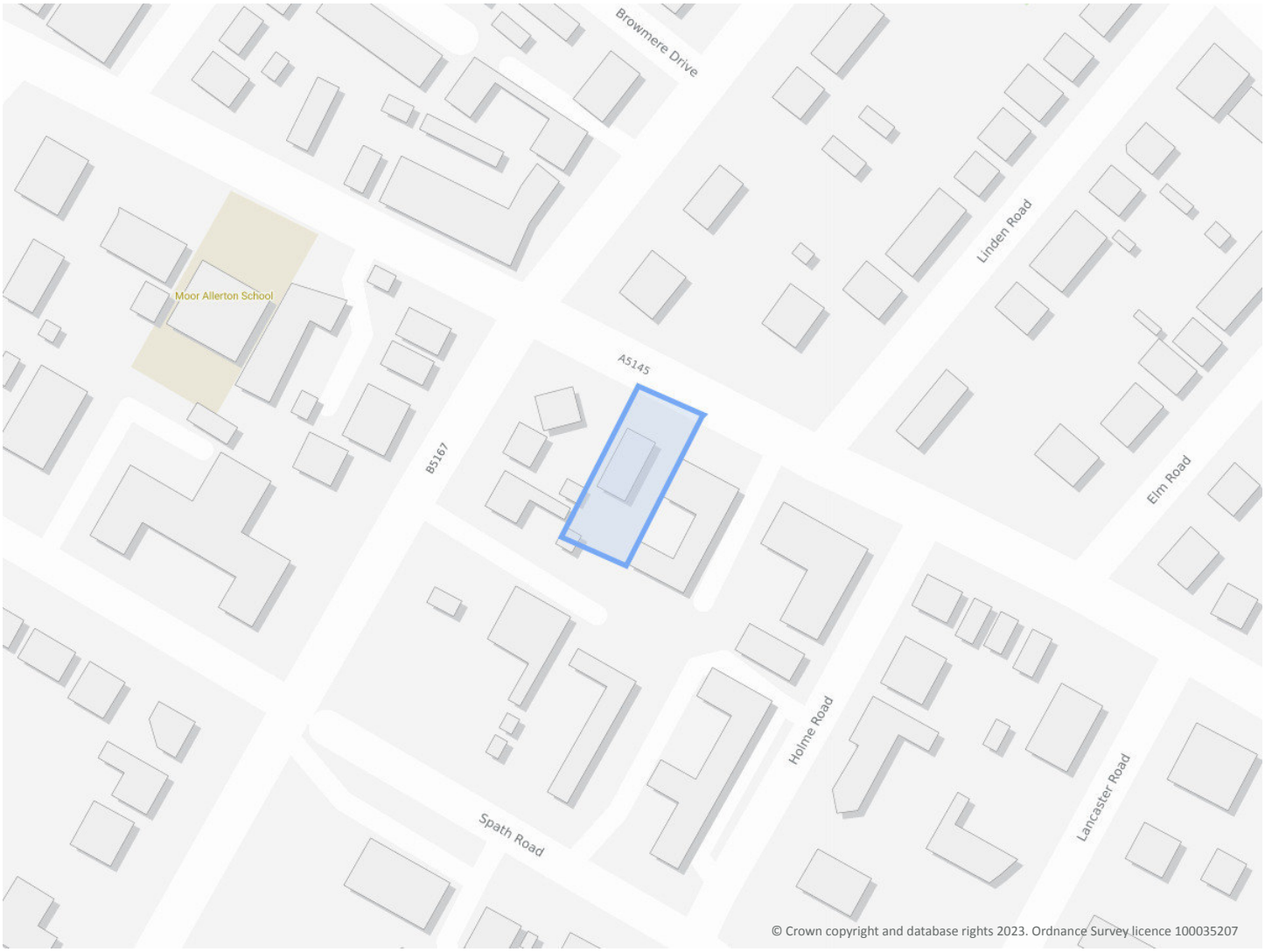
Our Ref: EMS-914809_1166378

Site Details

Location: 384039 391550

Area: 0.13 ha

Authority: Manchester City Council ↗



Summary of findings p. 2 >

OS MasterMap site plan p.13 >

Aerial image p. 9 >

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Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
14 >	1.1 >	Historical industrial land uses >	0	1	0	29	-
16 >	1.2 >	Historical tanks >	0	1	0	3	-
16 >	1.3 >	Historical energy features >	0	0	7	4	-
17	1.4	Historical petrol stations	0	0	0	0	-
17 >	1.5 >	Historical garages >	0	0	0	5	-
18	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
19 >	2.1 >	Historical industrial land uses >	0	1	0	45	-
21 >	2.2 >	Historical tanks >	0	1	0	4	-
22 >	2.3 >	Historical energy features >	0	0	10	10	-
23	2.4	Historical petrol stations	0	0	0	0	-
23 >	2.5 >	Historical garages >	0	0	0	9	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
24	3.1	Active or recent landfill	0	0	0	0	-
24	3.2	Historical landfill (BGS records)	0	0	0	0	-
25	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
25	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
25	3.5	Historical waste sites	0	0	0	0	-
25	3.6	Licensed waste sites	0	0	0	0	-
25 >	3.7 >	Waste exemptions >	0	1	0	1	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
27 >	4.1 >	Recent industrial land uses >	0	0	5	-	-
28	4.2	Current or recent petrol stations	0	0	0	0	-
28	4.3	Electricity cables	0	0	0	0	-
28	4.4	Gas pipelines	0	0	0	0	-
28	4.5	Sites determined as Contaminated Land	0	0	0	0	-

29	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
29	4.7	Regulated explosive sites	0	0	0	0	-
29	4.8	Hazardous substance storage/usage	0	0	0	0	-
29	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
29	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
30 >	**4.11 >**	**Licensed pollutant release (Part A(2)/B) >**	0	0	0	1	-
30	4.12	Radioactive Substance Authorisations	0	0	0	0	-
30	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
30	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
31	4.15	Pollutant release to public sewer	0	0	0	0	-
31	4.16	List 1 Dangerous Substances	0	0	0	0	-
31	4.17	List 2 Dangerous Substances	0	0	0	0	-
31 >	**4.18 >**	**Pollution Incidents (EA/NRW) >**	0	0	0	3	-
32	4.19	Pollution inventory substances	0	0	0	0	-
32	4.20	Pollution inventory waste transfers	0	0	0	0	-
32	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	**Hydrogeology >**	On site	0-50m	50-250m	250-500m	500-2000m
33 >	**5.1 >**	**Superficial aquifer >**	Identified (within 500m)				
35 >	**5.2 >**	**Bedrock aquifer >**	Identified (within 500m)				
36 >	**5.3 >**	**Groundwater vulnerability >**	Identified (within 50m)				
37	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
37	5.5	Groundwater vulnerability- local information	None (within 0m)				
38 >	**5.6 >**	**Groundwater abstractions >**	0	0	0	0	4
40 >	**5.7 >**	**Surface water abstractions >**	0	0	0	0	2
40	5.8	Potable abstractions	0	0	0	0	0
41	5.9	Source Protection Zones	0	0	0	0	-
41	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	**Hydrology >**	On site	0-50m	50-250m	250-500m	500-2000m
42	6.1	Water Network (OS MasterMap)	0	0	0	-	-

42	6.2	Surface water features	0	0	0	-	-
43 >	6.3 >	WFD Surface water body catchments >	2	-	-	-	-
43 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
44 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
45	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
45	7.2	Historical Flood Events	0	0	0	-	-
45	7.3	Flood Defences	0	0	0	-	-
46	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
46	7.5	Flood Storage Areas	0	0	0	-	-
47	7.6	Flood Zone 2	None (within 50m)				
47	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
48 >	8.1 >	Surface water flooding >	1 in 100 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
50 >	9.1 >	Groundwater flooding >	Moderate-High (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
51	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
52	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
52	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
52	10.4	Special Protection Areas (SPA)	0	0	0	0	0
52	10.5	National Nature Reserves (NNR)	0	0	0	0	0
53 >	10.6 >	Local Nature Reserves (LNR) >	0	0	0	0	2
53	10.7	Designated Ancient Woodland	0	0	0	0	0
53	10.8	Biosphere Reserves	0	0	0	0	0
53	10.9	Forest Parks	0	0	0	0	0
54	10.10	Marine Conservation Zones	0	0	0	0	0
54 >	10.11 >	Green Belt >	0	0	0	1	0
54	10.12	Proposed Ramsar sites	0	0	0	0	0

54	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
55	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
55	10.15	Nitrate Sensitive Areas	0	0	0	0	0
55	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
56	10.17	SSSI Impact Risk Zones	0	-	-	-	-
56	10.18	SSSI Units	0	0	0	0	0
Page	Section	**Visual and cultural designations** >	On site	0-50m	50-250m	250-500m	500-2000m
57	11.1	World Heritage Sites	0	0	0	-	-
58	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
58	11.3	National Parks	0	0	0	-	-
58 >	**11.4** >	**Listed Buildings** >	0	0	2	-	-
59 >	**11.5** >	**Conservation Areas** >	0	2	0	-	-
59	11.6	Scheduled Ancient Monuments	0	0	0	-	-
59	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	**Agricultural designations** >	On site	0-50m	50-250m	250-500m	500-2000m
60 >	**12.1** >	**Agricultural Land Classification** >	Urban (within 250m)				
61	12.2	Open Access Land	0	0	0	-	-
61	12.3	Tree Felling Licences	0	0	0	-	-
61	12.4	Environmental Stewardship Schemes	0	0	0	-	-
61	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	**Habitat designations** >	On site	0-50m	50-250m	250-500m	500-2000m
62 >	**13.1** >	**Priority Habitat Inventory** >	0	0	6	-	-
63	13.2	Habitat Networks	0	0	0	-	-
63	13.3	Open Mosaic Habitat	0	0	0	-	-
63	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	**Geology 1:10,000 scale** >	On site	0-50m	50-250m	250-500m	500-2000m
64 >	**14.1** >	**10k Availability** >	Identified (within 500m)				
65 >	**14.2** >	**Artificial and made ground (10k)** >	0	0	0	2	-
66 >	**14.3** >	**Superficial geology (10k)** >	1	0	0	3	-

67	14.4	Landslip (10k)	0	0	0	0	-
68 >	14.5 >	Bedrock geology (10k) >	1	0	0	0	-
69	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
70 >	15.1 >	50k Availability >	Identified (within 500m)				
71	15.2	Artificial and made ground (50k)	0	0	0	0	-
71	15.3	Artificial ground permeability (50k)	0	0	-	-	-
72 >	15.4 >	Superficial geology (50k) >	1	0	0	4	-
73 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
73	15.6	Landslip (50k)	0	0	0	0	-
73	15.7	Landslip permeability (50k)	None (within 50m)				
74 >	15.8 >	Bedrock geology (50k) >	1	0	0	0	-
75 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
75	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
76 >	16.1 >	BGS Boreholes >	0	0	10	-	-
Page	Section	Natural ground subsidence >					
78 >	17.1 >	Shrink swell clays >	Negligible (within 50m)				
79 >	17.2 >	Running sands >	Very low (within 50m)				
80 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
81 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
82 >	17.5 >	Landslides >	Very low (within 50m)				
83 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
85	18.1	BritPits	0	0	0	0	-
86 >	18.2 >	Surface ground workings >	0	1	0	-	-
86	18.3	Underground workings	0	0	0	0	0
86	18.4	Underground mining extents	0	0	0	0	-
86	18.5	Historical Mineral Planning Areas	0	0	0	0	-

87	18.6	Non-coal mining	0	0	0	0	0
87 >	18.7 >	JPB mining areas >	Identified (within 0m)				
87	18.8	The Coal Authority non-coal mining	0	0	0	0	-
87	18.9	Researched mining	0	0	0	0	-
88	18.10	Mining record office plans	0	0	0	0	-
88	18.11	BGS mine plans	0	0	0	0	-
88	18.12	Coal mining	None (within 0m)				
88	18.13	Brine areas	None (within 0m)				
88	18.14	Gypsum areas	None (within 0m)				
89	18.15	Tin mining	None (within 0m)				
89	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
90	19.1	Natural cavities	0	0	0	0	-
90	19.2	Mining cavities	0	0	0	0	0
90	19.3	Reported recent incidents	0	0	0	0	-
90	19.4	Historical incidents	0	0	0	0	-
91	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
92 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
94 >	21.1 >	BGS Estimated Background Soil Chemistry >	1	5	-	-	-
94	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
95	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
96	22.1	Underground railways (London)	0	0	0	-	-
96	22.2	Underground railways (Non-London)	0	0	0	-	-
97	22.3	Railway tunnels	0	0	0	-	-
97	22.4	Historical railway and tunnel features	0	0	0	-	-
97	22.5	Royal Mail tunnels	0	0	0	-	-

97	22.6	Historical railways	0	0	0	-	-
97	22.7	Railways	0	0	0	-	-
98	22.8	Crossrail 1	0	0	0	0	-
98	22.9	Crossrail 2	0	0	0	0	-
98 >	**22.10 >**	**HS2 >**	0	0	2	0	-

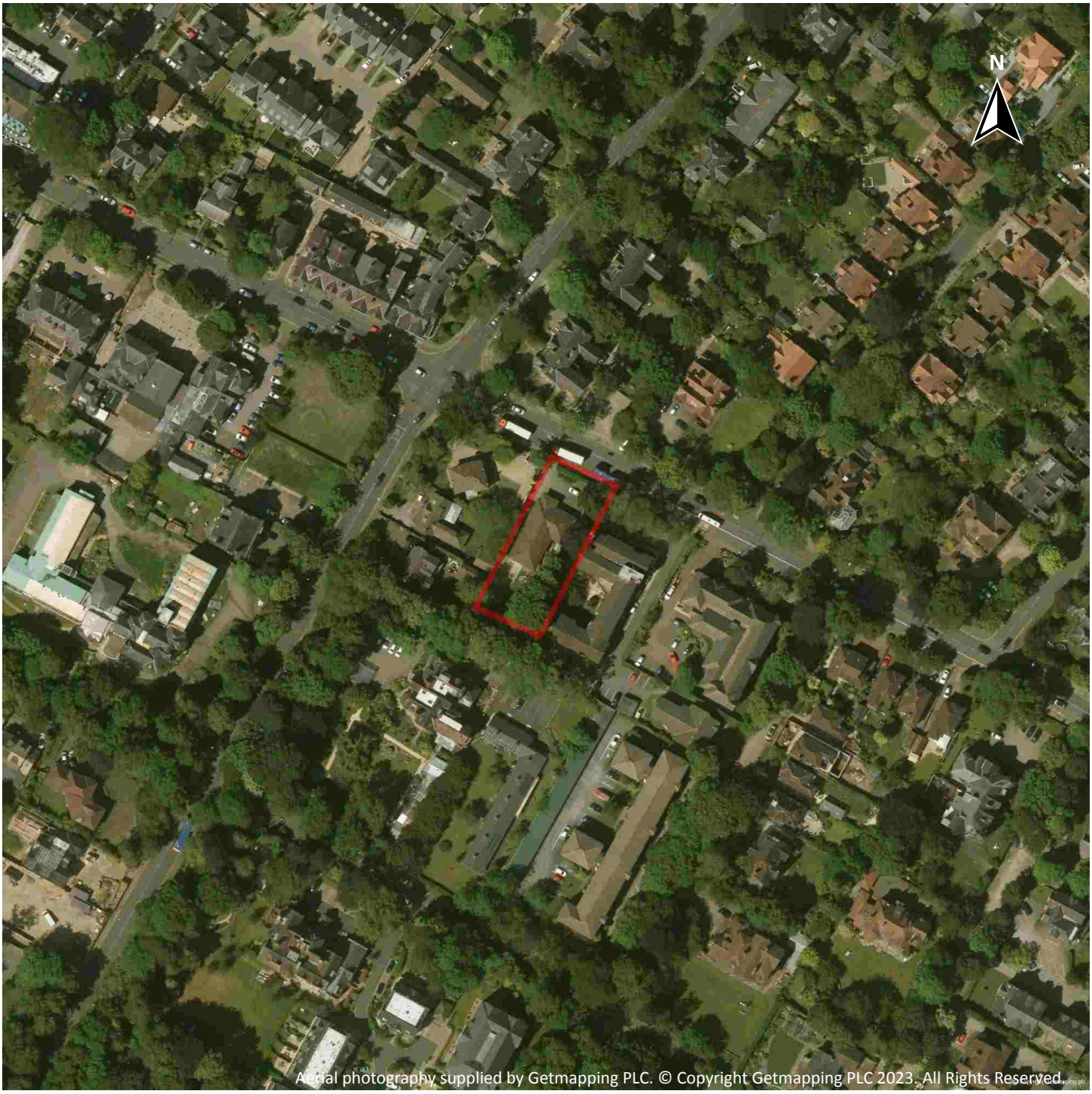
Recent aerial photograph



Capture Date: 22/04/2019

Site Area: 0.13ha

Recent site history - 2015 aerial photograph



Capture Date: 11/06/2015

Site Area: 0.13ha

Recent site history - 2009 aerial photograph



Capture Date: 02/06/2009

Site Area: 0.13ha

Recent site history - 2000 aerial photograph



Capture Date: 27/06/2000

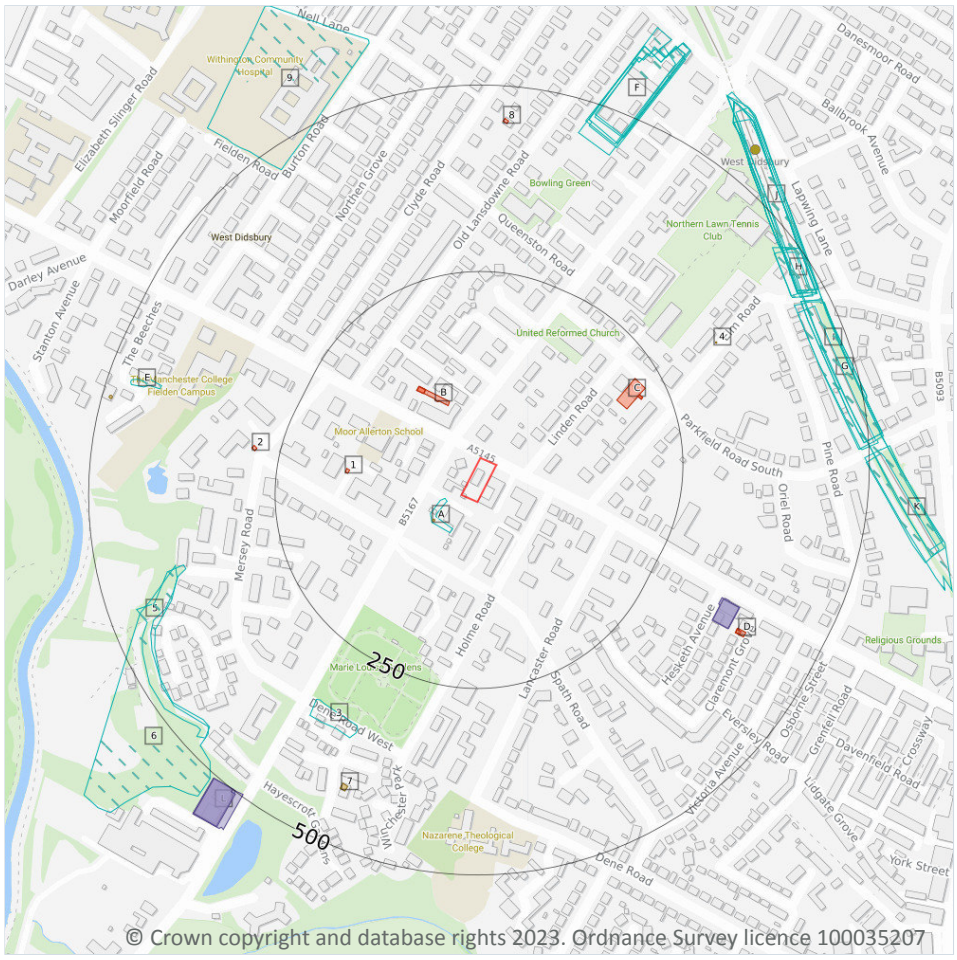
Site Area: 0.13ha

OS MasterMap site plan



Site Area: 0.13ha

1 Past land use



1.1 Historical industrial land uses

Records within 500m	30

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
A	21m SW	Unspecified Ground Workings	1955	800601

ID	Location	Land use	Dates present	Group ID
3	334m SW	Unspecified Pit	1892	840493
5	383m W	Unspecified Ground Workings	1988	800602
6	395m W	Unspecified Pit	1978	840487
E	428m W	Unspecified Ground Workings	1955	800600
F	441m N	Corporation Yard	1966	833877
G	451m NE	Cuttings	1911 - 1938	921814
G	451m NE	Cuttings	1893	982269
F	454m NE	Unspecified Yard	1916 - 1934	956999
H	455m NE	Cuttings	1893	943844
H	456m NE	Cuttings	1938	991889
F	458m N	Unspecified Yard	1938	854641
F	460m N	Unspecified Yard	1905	931795
G	460m NE	Cuttings	1988	853550
G	460m NE	Cuttings	1966 - 1978	884305
I	464m NE	Cuttings	1955	879201
H	465m NE	Cuttings	1911	851335
J	465m NE	Cuttings	1923 - 1938	989663
I	465m NE	Cuttings	1911	976940
J	465m NE	Cuttings	1923	951971
J	466m NE	Cuttings	1966	882142
J	466m NE	Cuttings	1938 - 1988	984884
9	470m NW	Hospital	1978	883747
F	470m NE	Unspecified Yard	1911	986419
F	472m NE	Unspecified Yard	1938	858223
J	479m NE	Cuttings	1905	872260
J	479m NE	Cuttings	1916	888211
J	479m NE	Cuttings	1892	974883
K	494m E	Cuttings	1938	888207

ID	Location	Land use	Dates present	Group ID
K	496m E	Cuttings	1893	958644

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**4**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
A	49m SW	Unspecified Tank	1894	116923
4	336m NE	Tank or Trough	1881	121268
7	418m SW	Unspecified Tank	1987	116933
E	486m W	Unspecified Tank	1922 - 1935	137148

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**11**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
B	82m N	Electricity Substation	1955	74594
B	115m NW	Electricity Substation	1955	77527
B	115m NW	Electricity Substation	1971 - 1997	65868

ID	Location	Land use	Dates present	Group ID
1	154m W	Electricity Substation	1971 - 1985	72674
C	183m NE	Electricity Substation	1994	66046
C	211m NE	Electricity Substation	1989	69150
C	211m NE	Electricity Substation	1989	73255
2	281m W	Electricity Substation	1985 - 1997	67263
D	387m SE	Electricity Substation	1974 - 1996	74943
D	388m SE	Electricity Substation	1987	73052
8	450m N	Electricity Substation	1973 - 1996	64399

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	**0**

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	**5**

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
D	350m SE	Garage	1955	23851
D	352m SE	Garage	1955 - 1974	24326
L	497m SW	Garage	1993 - 1994	24711

ID	Location	Land use	Dates present	Group ID
L	499m SW	Garage	1964	22486
L	499m SW	Garage	1987 - 1992	27253

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m	**0**

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



2.1 Historical industrial land uses

Records within 500m	46

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19 >**

ID	Location	Land Use	Date	Group ID
A	21m SW	Unspecified Ground Workings	1955	800601
1	334m SW	Unspecified Pit	1892	840493
3	383m W	Unspecified Ground Workings	1988	800602

ID	Location	Land Use	Date	Group ID
4	395m W	Unspecified Pit	1978	840487
G	428m W	Unspecified Ground Workings	1955	800600
H	441m N	Corporation Yard	1966	833877
J	451m NE	Cuttings	1938	921814
J	451m NE	Cuttings	1893	982269
J	452m NE	Cuttings	1938	921814
H	454m NE	Unspecified Yard	1934	956999
H	454m NE	Unspecified Yard	1916	956999
K	455m NE	Cuttings	1893	943844
K	456m NE	Cuttings	1938	991889
K	456m NE	Cuttings	1938	991889
H	458m N	Unspecified Yard	1938	854641
J	460m NE	Cuttings	1923	921814
J	460m NE	Cuttings	1923	921814
J	460m NE	Cuttings	1934	921814
J	460m NE	Cuttings	1911	921814
H	460m N	Unspecified Yard	1905	931795
H	460m N	Unspecified Yard	1923	956999
J	460m NE	Cuttings	1978	884305
J	460m NE	Cuttings	1966	884305
J	460m NE	Cuttings	1988	853550
J	463m E	Cuttings	1938	921814
L	464m NE	Cuttings	1955	879201
K	465m NE	Cuttings	1923	989663
K	465m NE	Cuttings	1934	989663
K	465m NE	Cuttings	1911	851335
L	465m NE	Cuttings	1911	976940
M	465m NE	Cuttings	1923	951971

ID	Location	Land Use	Date	Group ID
M	466m NE	Cuttings	1978	984884
M	466m NE	Cuttings	1966	882142
M	466m NE	Cuttings	1988	984884
M	469m NE	Cuttings	1938	984884
6	470m NW	Hospital	1978	883747
H	470m NE	Unspecified Yard	1911	986419
H	472m NE	Unspecified Yard	1938	858223
M	479m NE	Cuttings	1938	989663
M	479m NE	Cuttings	1934	989663
M	479m NE	Cuttings	1916	888211
M	479m NE	Cuttings	1905	872260
M	479m NE	Cuttings	1892	974883
N	494m E	Cuttings	1938	888207
N	496m E	Cuttings	1893	958644
N	496m E	Cuttings	1938	888207

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**5**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19 >**

ID	Location	Land Use	Date	Group ID
A	49m SW	Unspecified Tank	1894	116923
2	336m NE	Tank or Trough	1881	121268
5	418m SW	Unspecified Tank	1987	116933
G	486m W	Unspecified Tank	1922	137148
G	486m W	Unspecified Tank	1935	137148

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**20**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19 >**

ID	Location	Land Use	Date	Group ID
B	82m N	Electricity Substation	1955	74594
B	115m NW	Electricity Substation	1955	77527
B	115m NW	Electricity Substation	1997	65868
B	115m NW	Electricity Substation	1971	65868
B	116m NW	Electricity Substation	1985	65868
C	154m W	Electricity Substation	1971	72674
C	155m W	Electricity Substation	1985	72674
D	183m NE	Electricity Substation	1994	66046
D	211m NE	Electricity Substation	1989	73255
D	211m NE	Electricity Substation	1989	69150
E	281m W	Electricity Substation	1997	67263
E	282m W	Electricity Substation	1985	67263
F	387m SE	Electricity Substation	1996	74943
F	388m SE	Electricity Substation	1987	73052
F	388m SE	Electricity Substation	1974	74943
I	450m N	Electricity Substation	1986	64399
I	450m N	Electricity Substation	1986	64399
I	450m N	Electricity Substation	1973	64399
I	451m N	Electricity Substation	1993	64399
I	451m N	Electricity Substation	1996	64399

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	9

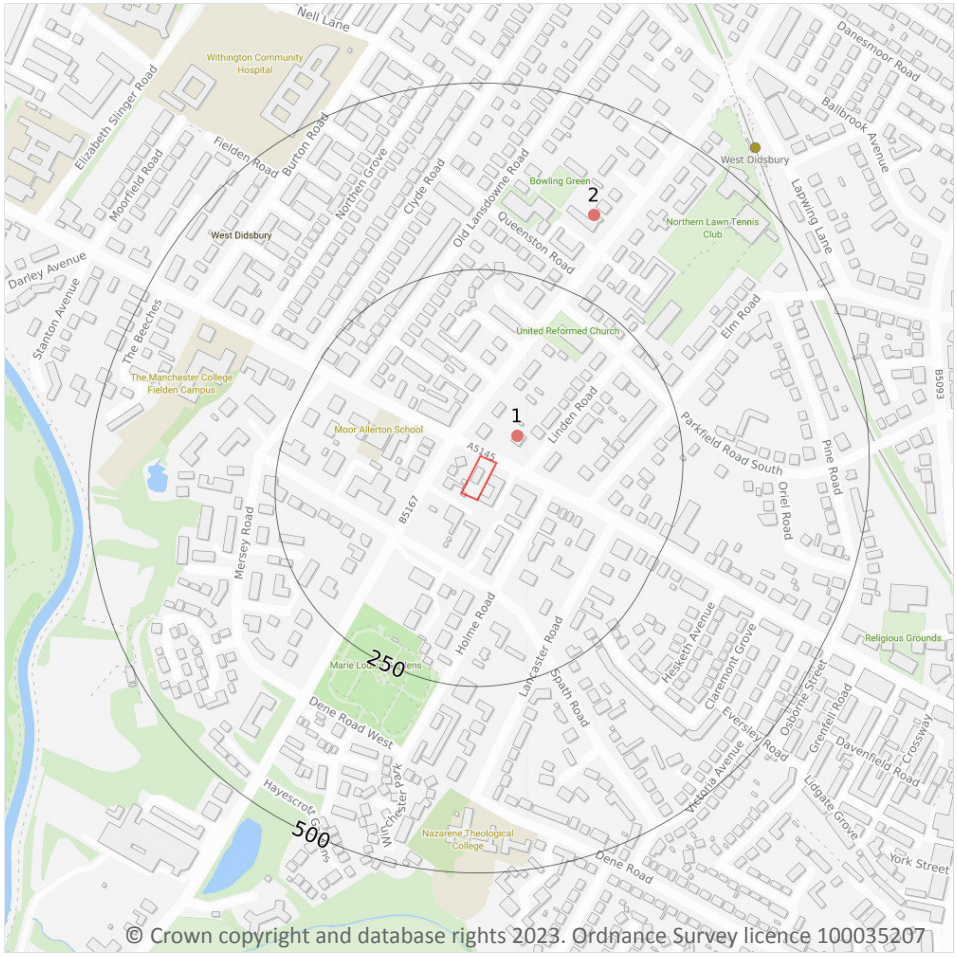
Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 19 >**

ID	Location	Land Use	Date	Group ID
F	350m SE	Garage	1955	23851
F	352m SE	Garage	1974	24326
F	352m SE	Garage	1955	24326
O	497m SW	Garage	1994	24711
O	497m SW	Garage	1993	24711
O	499m SW	Garage	1964	22486
O	499m SW	Garage	1987	27253
O	499m SW	Garage	1990	27253
O	499m SW	Garage	1992	27253

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m	0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m	0

Waste site records derived from Local Authority planning records and high detail historical mapping.

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m	0

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	2

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

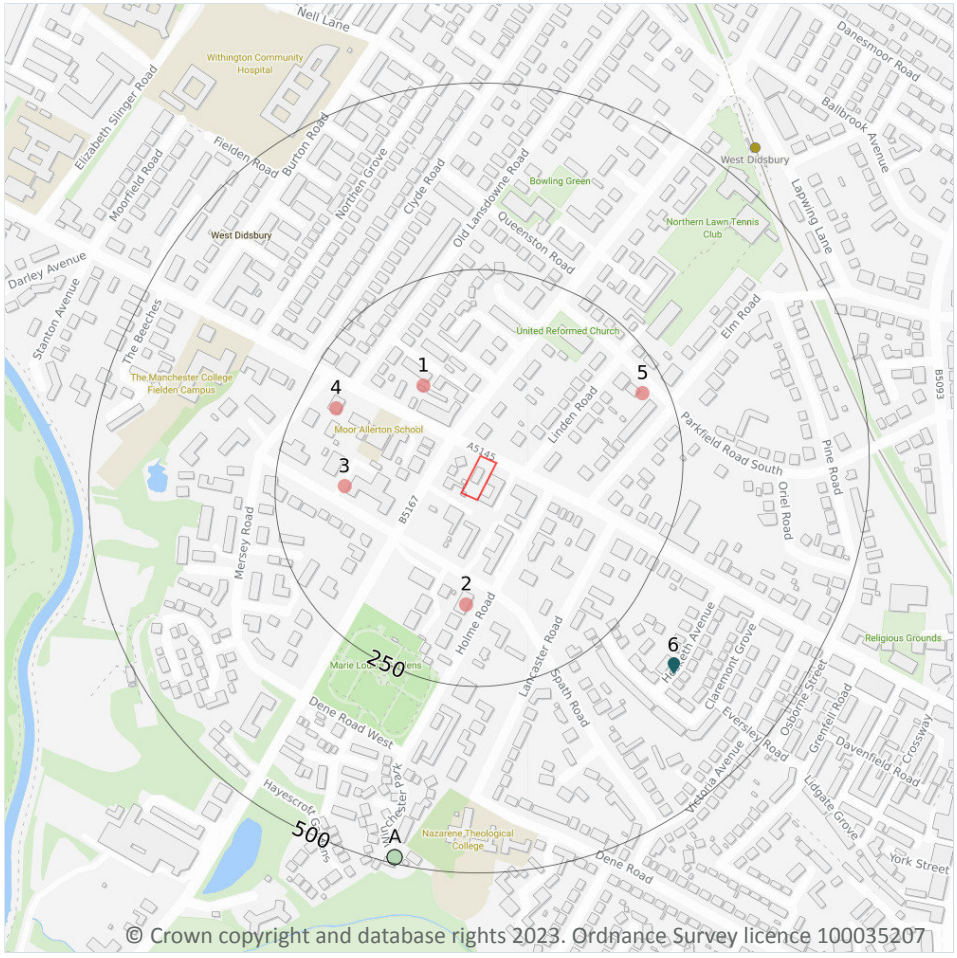
Features are displayed on the Waste and landfill map on **page 24 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	45m NE	54, BARLOW MOOR ROAD, MANCHESTER, M20 2TR	WEX370612	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

ID	Location	Site	Reference	Category	Sub-Category	Description
2	356m NE	134, PALATINE ROAD, MANCHESTER, M20 3ZA	WEX219930	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

Licensed pollutant release (Part A(2)/B)

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	5

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 27 >**

ID	Location	Company	Address	Activity	Category
1	121m NW	Electricity Sub Station	Greater Manchester, M20	Electrical Features	Infrastructure and Facilities
2	141m S	S P X Flow Technology	7, Dundreggan Gardens, Manchester, Greater Manchester, M20 2EJ	Special Purpose Machinery and Equipment	Industrial Products
3	157m W	Electricity Sub Station	Greater Manchester, M20	Electrical Features	Infrastructure and Facilities

ID	Location	Company	Address	Activity	Category
4	202m NW	Didsbury Business Centre	137, Barlow Moor Road, Manchester, Greater Manchester, M20 2PW	Business Parks and Industrial Estates	Industrial Features
5	217m NE	Electricity Sub Station	Greater Manchester, M20	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m	1

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 27 >**

ID	Location	Address	Details	
6	343m SE	Didsbury Serv Stn, Barlow Moor Rd, M20 2GN	Process: Petrol Vapour Recovery Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	0

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m	0

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m	3

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 27 >**

ID	Location	Details	
A	491m S	Incident Date: 24/05/2001 Incident Identification: 6553 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
A	491m S	Incident Date: 24/05/2001 Incident Identification: 6553 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

ID	Location	Details	
A	491m S	Incident Date: 24/05/2001 Incident Identification: 6553 Pollutant: Inert Materials and Wastes:Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes:Soils and Clay	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m	**0**

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m	**0**

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

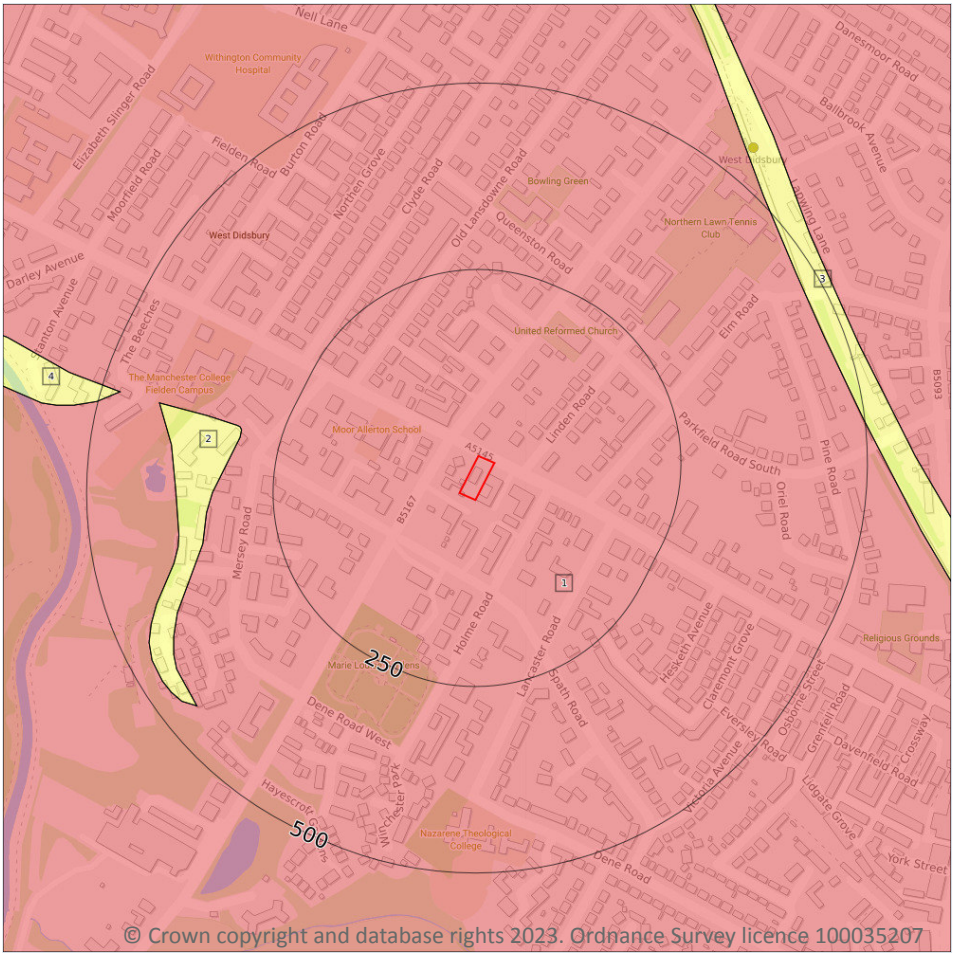
4.21 Pollution inventory radioactive waste

Records within 500m	**0**

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	4

Aquifer status of groundwater held within superficial geology.

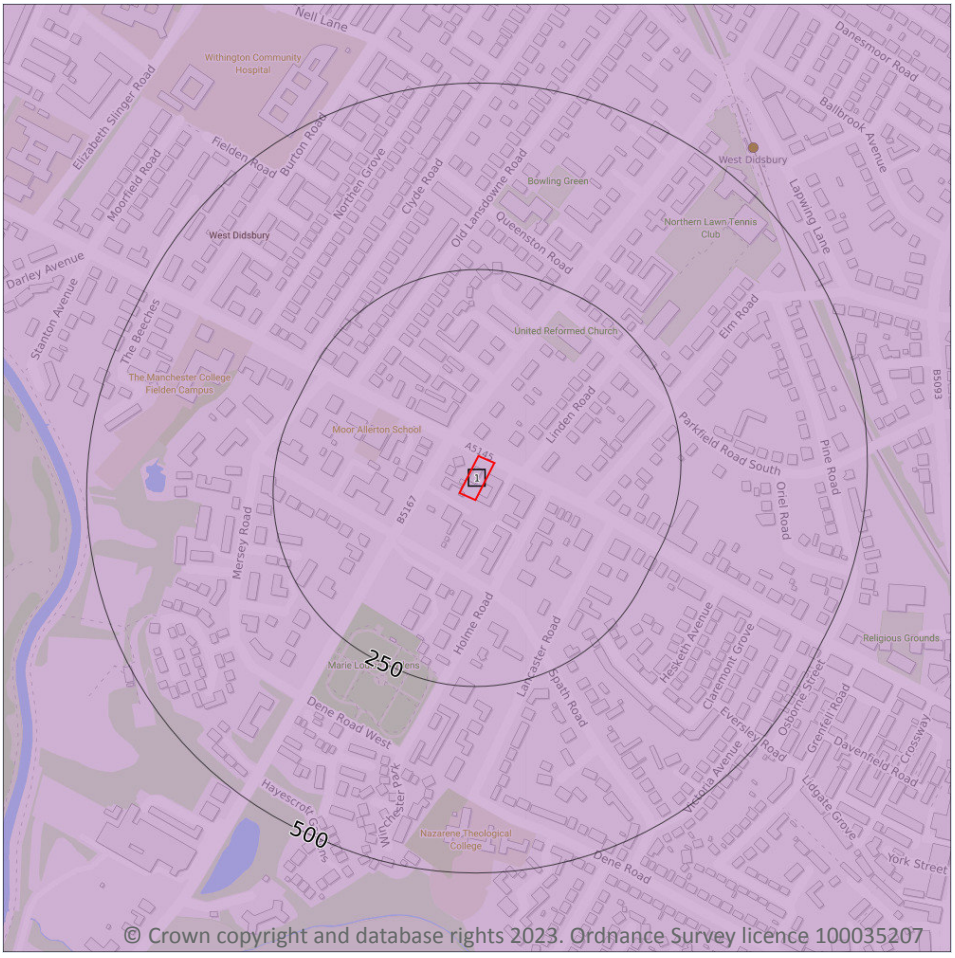
Features are displayed on the Hydrogeology map on **page 33 >**

ID	Location	Designation	Description
1	**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	304m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	473m NE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	475m W	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	1

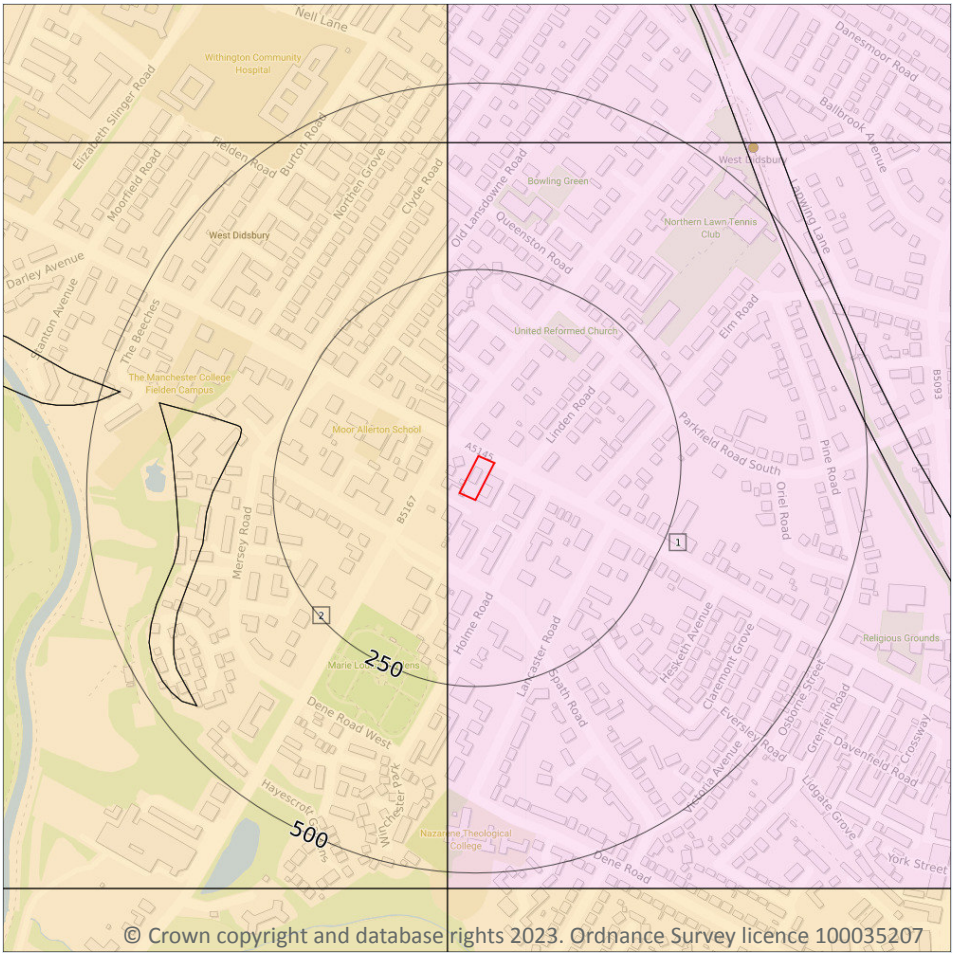
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 35 >**

ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	2

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 36 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: High**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Mixed**
2	16m SW	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Principal Flow mechanism: Intergranular

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**0**

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	**0**

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



Site Outline

Search buffers in metres (m)

- 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
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	4

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 38 >**

ID	Location	Details	
-	1054m S	Status: Active Licence No: 2569015006 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT DIDSBURY GOLF CLUB NORTHENDEN WYTHENSHAWE Data Type: Point Name: DIDSBURY GOLF CLUB LTD Easting: 383950 Northing: 390470	Annual Volume (m^3): 9092 Max Daily Volume (m^3): 68.19 Original Application No: 1053 Original Start Date: 22/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	1054m S	Status: Historical Licence No: 2569015006 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLE AT DIDSBURY GOLF CLUB, NORTHENDEN, WYTHENSHAWE," Data Type: Point Name: DIDSBURY GOLF CLUB LTD Easting: 383950 Northing: 390470	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 22/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 24/12/1992 Version End Date: -
-	1054m S	Status: Historical Licence No: 2569015006 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT DIDSBURY GOLF CLUB, NORTHENDEN, WYTHENSHAWE Data Type: Point Name: DIDSBURY GOLF CLUB LTD Easting: 383950 Northing: 390470	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 22/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 24/12/1992 Version End Date: -
-	1874m W	Status: Active Licence No: 2569015015 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT CHORLTON-CUM-HARDY GOLF CLUB Data Type: Point Name: CHORLTON CUM HARDY GOLF CO LTD Easting: 382230 Northing: 392100	Annual Volume (m^3): 8500 Max Daily Volume (m^3): 70 Original Application No: 7427 Original Start Date: 04/09/1998 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2019 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	2

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 38 >**

ID	Location	Details	
-	1458m W	Status: Historical Licence No: 2569015016 Details: Dust suppression Direct Source: Surface, Non-Tidal - North West Region Point: RIVER MERSEY AT TRAFFORD, MANCHESTER Data Type: Point Name: AMEC / ALFRED MCALPINE JV Easting: 382650 Northing: 391020	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 28/11/2003 Expiry Date: 31/12/2006 Issue No: 1 Version Start Date: 28/11/2003 Version End Date: -
-	1458m W	Status: Historical Licence No: 2569015016 Details: General Washing/Process Washing Direct Source: Surface, Non-Tidal - North West Region Point: RIVER MERSEY AT TRAFFORD, MANCHESTER Data Type: Point Name: AMEC / ALFRED MCALPINE JV Easting: 382650 Northing: 391020	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 28/11/2003 Expiry Date: 31/12/2006 Issue No: 1 Version Start Date: 28/11/2003 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m	0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m	0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology



Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	0

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	0

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	2

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 42 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River**	**Mersey (upstream of Manchester Ship Canal)**	**GB112069061030**	**Bollin Dean Mersey Upper**	**Mersey Upper**
2	**On site**	**River**	**Chorlton Brook (Princess Parkway to Mersey)**	**GB112069061040**	**Bollin Dean Mersey Upper**	**Mersey Upper**

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified	2

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 42 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	516m W	River	Mersey (upstream of Manchester Ship Canal)	GB112069061030 ↗	Moderate	Fail	Moderate	2019
-	2086m N	River	Chorlton Brook (Princess Parkway to Mersey)	GB112069061040 ↗	Moderate	Fail	Moderate	2019

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site	1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 42 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
3	**On site**	**Manchester and East Cheshire Permo-Triassic Sandstone Aquifers**	**GB41201G101100** ↗	**Poor**	**Poor**	**Poor**	**2019**

This data is sourced from the Environment Agency and Natural Resources Wales.

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m	0

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m	0

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m	0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m	0

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

This data is sourced from the Environment Agency and Natural Resources Wales.

8 Surface water flooding



Site Outline
Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**Negligible**
Highest risk within 50m	**1 in 100 year, 0.1m - 0.3m**

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 48 >**

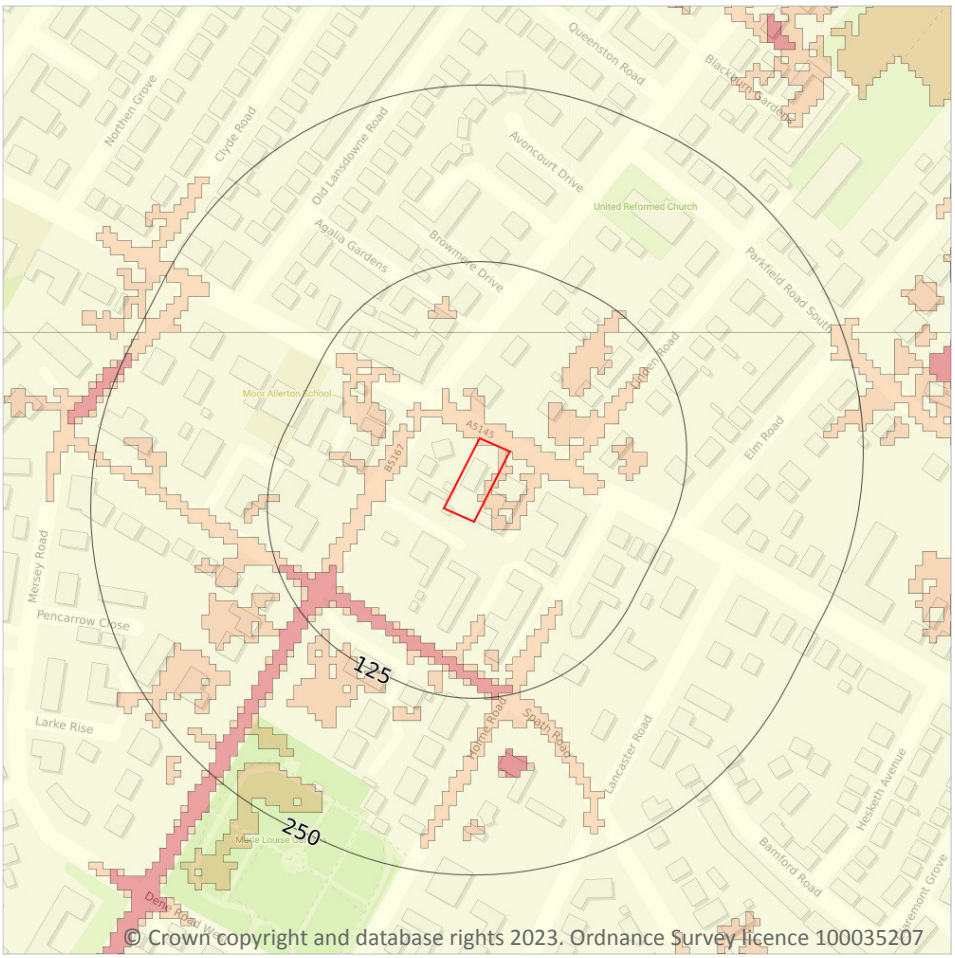
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

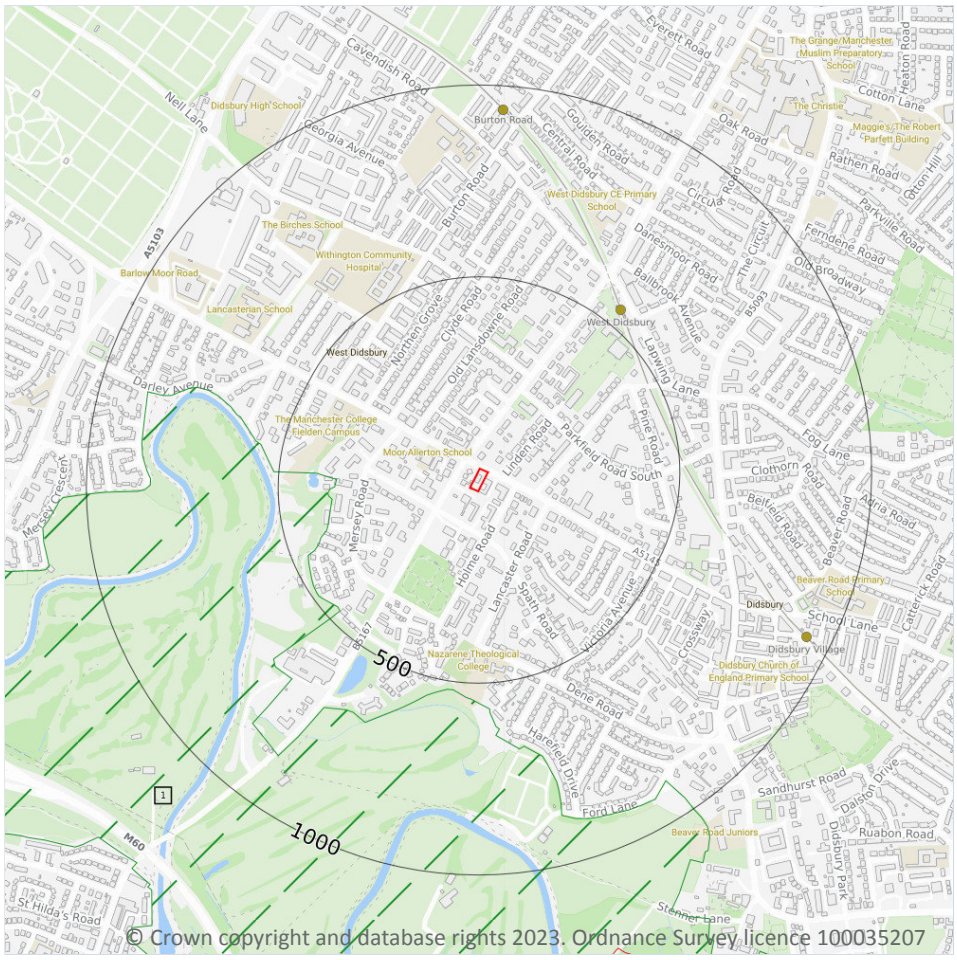
Highest risk on site	**Moderate-High**
Highest risk within 50m	**Moderate-High**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 50 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



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10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m	2

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

Features are displayed on the Environmental designations map on **page 51 >**

ID	Location	Name	Data source
2	1245m S	Stenner Woods and Milgate Fields, Didsbury	Natural England
-	1595m W	Chorlton Water Park	Natural England

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m	0

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m	0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m	0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m	1

Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on **page 51 >**

ID	Location	Name	Local Authority name
1	348m W	Merseyside and Greater Manchester	Manchester

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m	0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m	0

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units

10.17 SSSI Impact Risk Zones

Records on site	0

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

This data is sourced from Natural England.

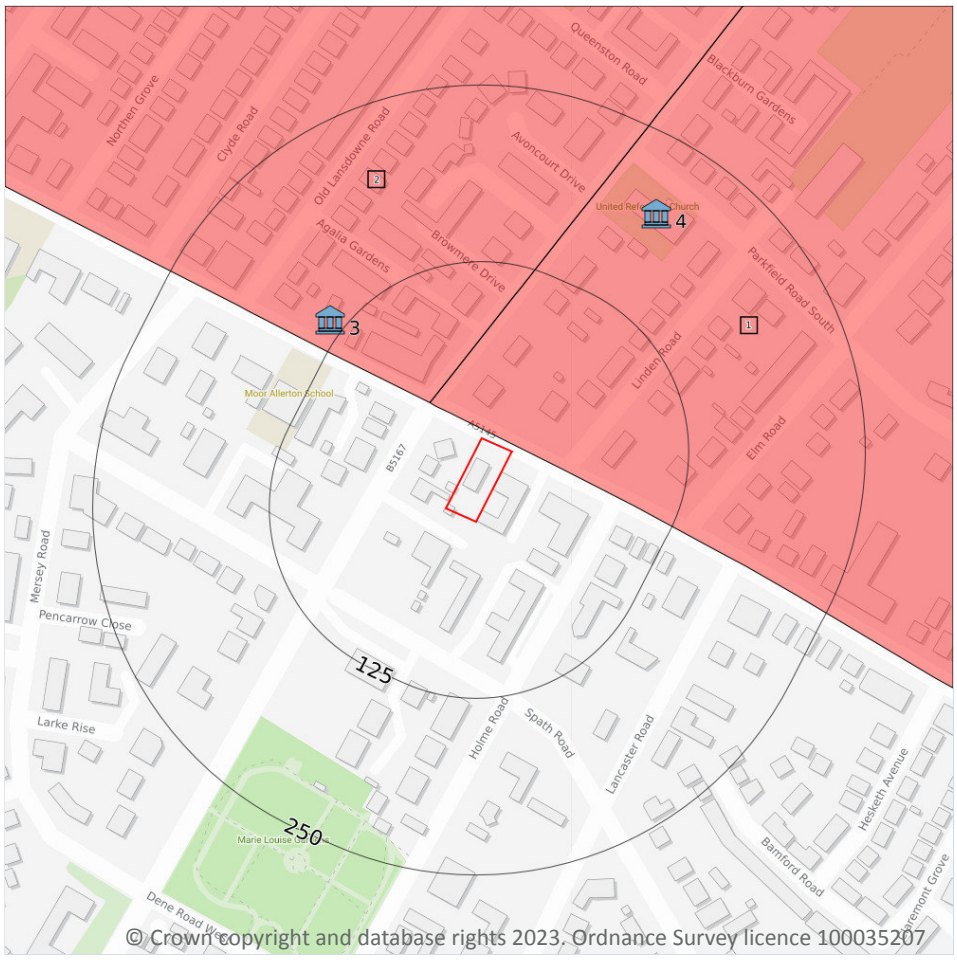
10.18 SSSI Units

Records within 2000m	0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations



Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m	0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m	2

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on **page 57 >**

ID	Location	Name	Grade	Reference Number	Listed date
3	137m NW	Oak Bank	II	1279558	03/10/1974
4	197m NE	Church Of St Aidan	II	1246658	20/06/1988

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m	2

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

Features are displayed on the Visual and cultural designations map on **page 57 >**

ID	Location	Name	District	Date of designation
1	5m NE	Blackburn Park, Didsbury	Manchester	01/12/1979
2	44m NW	Albert Park, West Didsbury	Manchester	01/03/1988

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m	0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

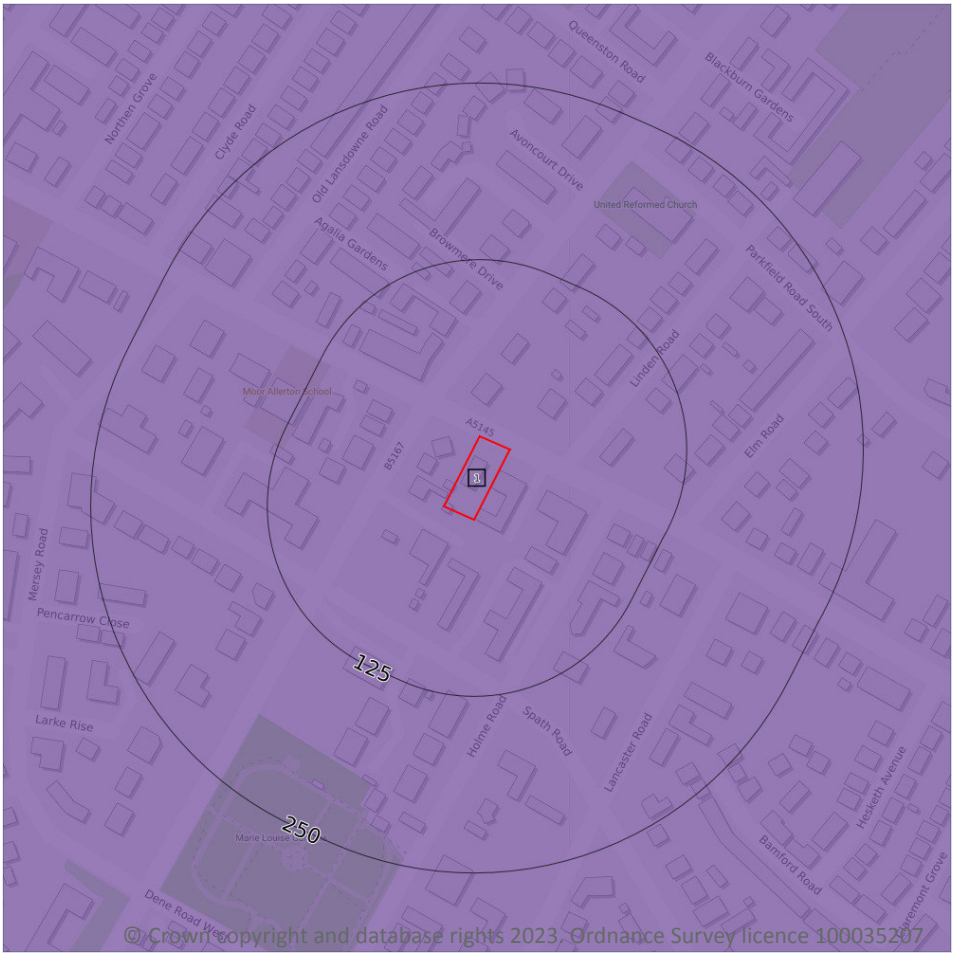
11.7 Registered Parks and Gardens

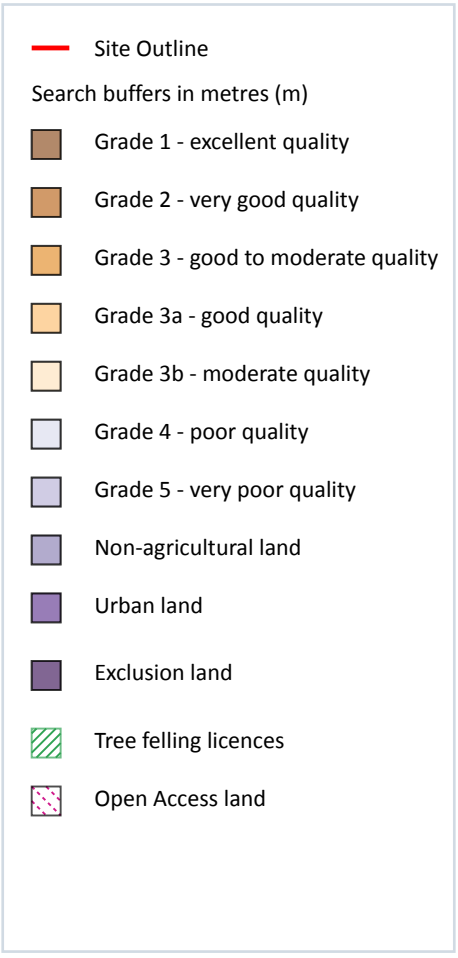
Records within 250m	0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12 Agricultural designations





12.1 Agricultural Land Classification

Records within 250m	1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 60 >**

ID	Location	Classification	Description
1	**On site**	**Urban**	-

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m	0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations



Site Outline

Search buffers in metres (m)

Priority Habitat Inventory
Open Mosaic Habitat
Limestone Pavement Orders

Habitat Networks
Primary Habitat
Restorable Habitat
Associated Habitats
Habitat Restoration-Creation
Network Enhancement Zone 1
Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m	6

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

Features are displayed on the Habitat designations map on **page 62 >**

ID	Location	Main Habitat	Other habitats
A	194m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	207m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
1	221m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	223m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
3	231m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	243m S	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

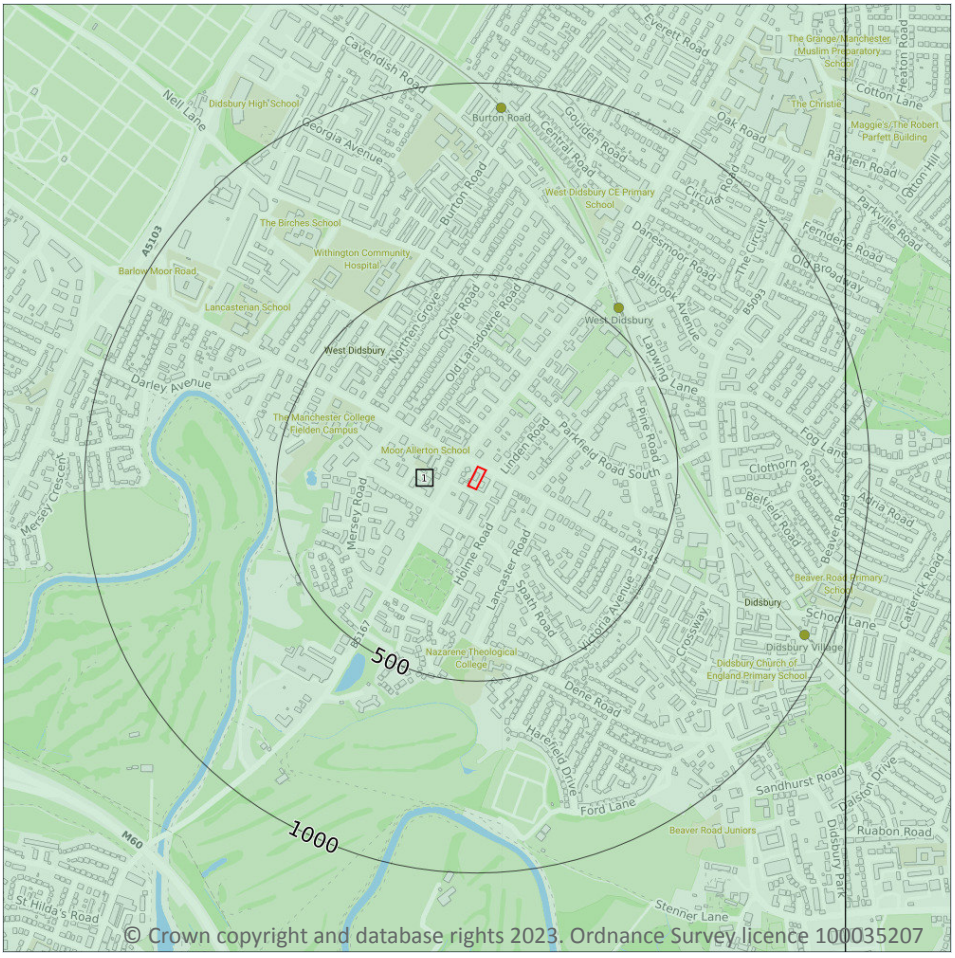
13.4 Limestone Pavement Orders

Records within 250m	0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

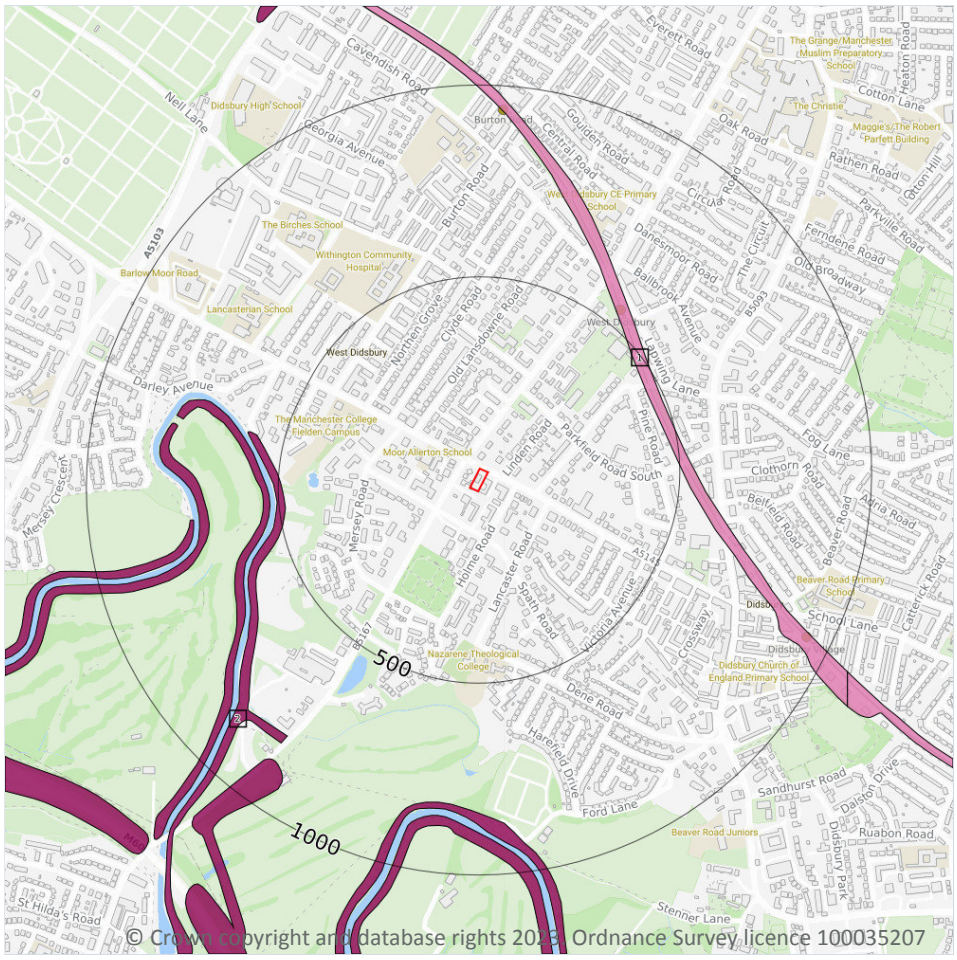
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 64 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SJ89SW**

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Artificial and made ground



Site Outline

Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m	2

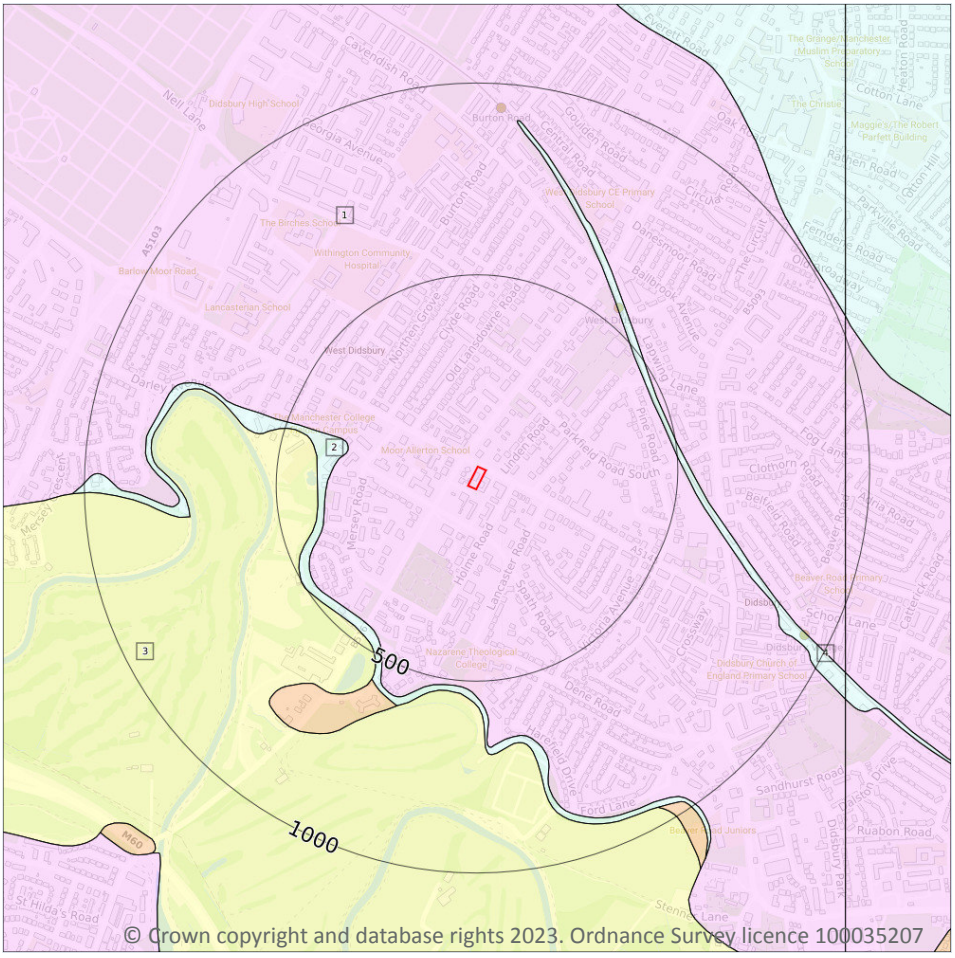
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 65 >**

ID	Location	LEX Code	Description	Rock description
1	463m NE	WGR-VOID	Worked Ground (Undivided)	Void
2	484m W	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m **4**

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 66 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**GFSDD-XSV**	**Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel**	**Sand And Gravel**
2	326m W	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
3	392m W	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
4	470m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

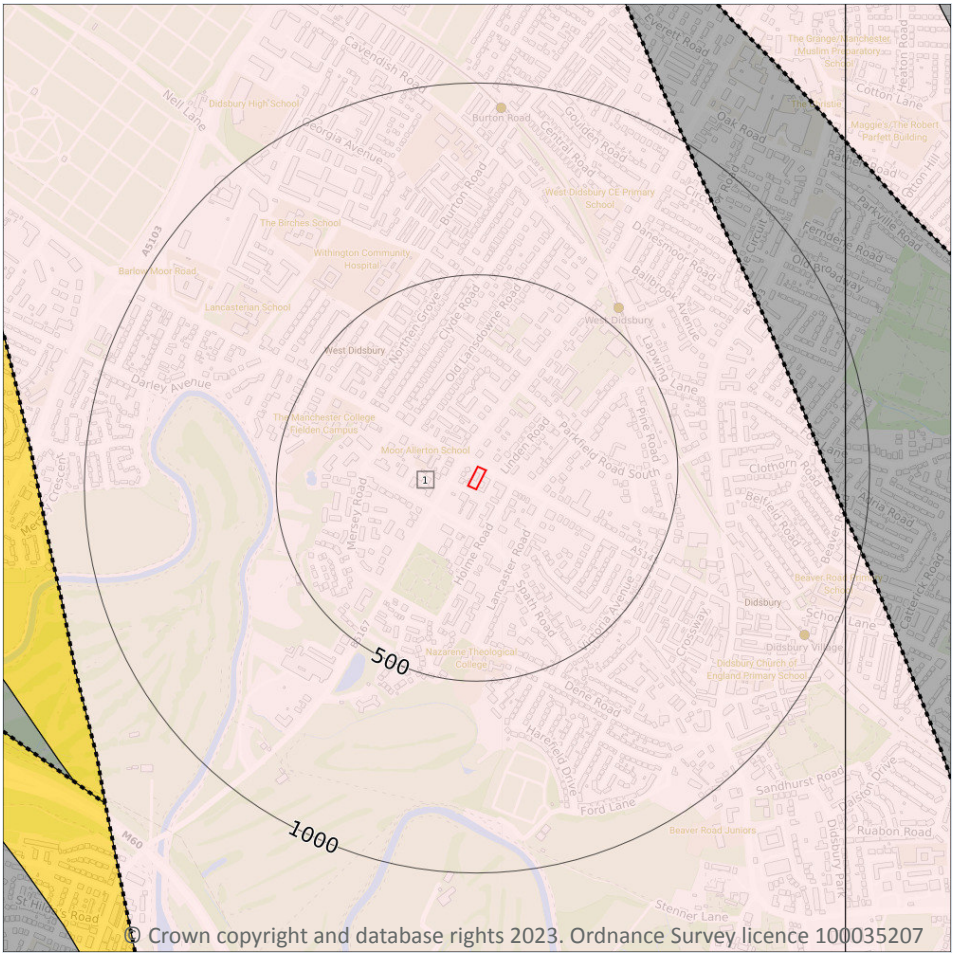
14.4 Landslip (10k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m	1

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 68 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**WLSF-SDST**	**Wilmslow Sandstone Formation - Sandstone**	**Early Triassic Epoch**

This data is sourced from the British Geological Survey.

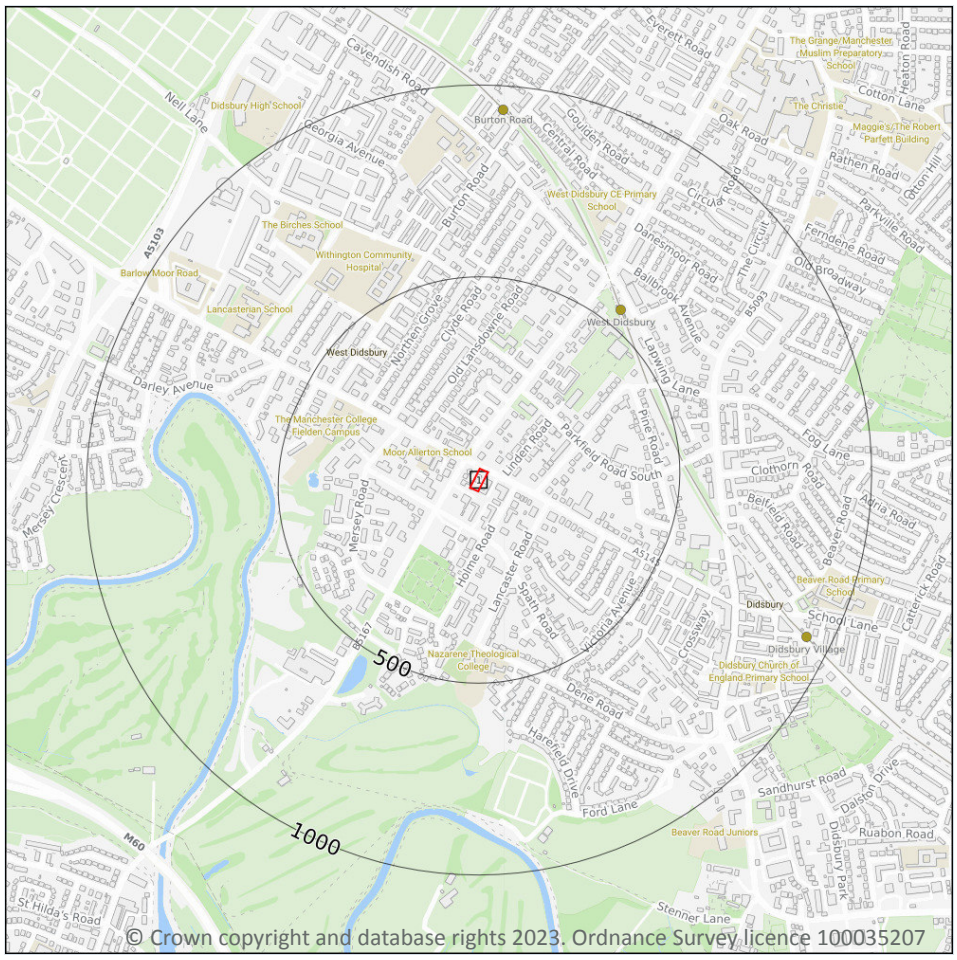
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



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Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 70 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**Full**	**Full**	**Full**	**EW098_stockport_v4**

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground

15.2 Artificial and made ground (50k)

Records within 500m	0

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

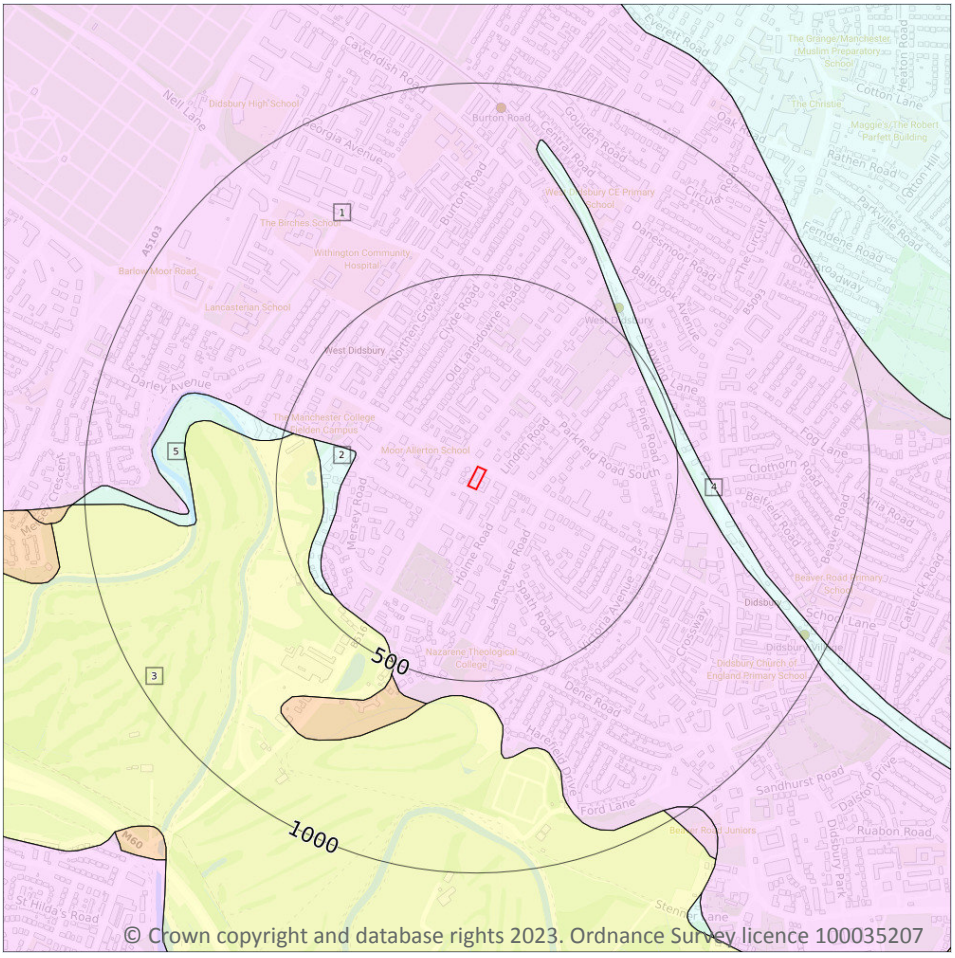
15.3 Artificial ground permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m **5**

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 72 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**GFSDD-XSV**	**GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN**	**SAND AND GRAVEL**
2	304m W	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
3	379m W	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
4	473m NE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

ID	Location	LEX Code	Description	Rock description
5	475m W	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**Very High**	**High**

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

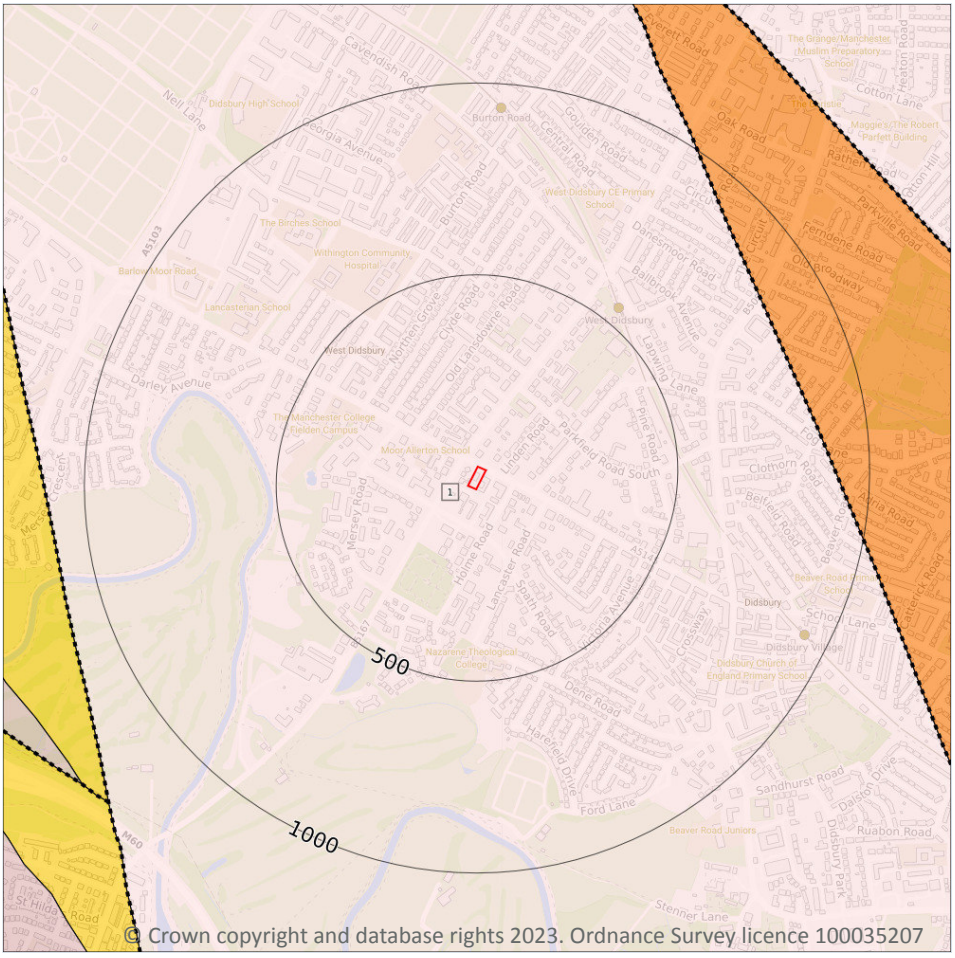
15.7 Landslip permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m	1

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 74 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**WLSF-SDST**	**WILMSLOW SANDSTONE FORMATION - SANDSTONE**	**-**

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**High**	**High**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	10

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

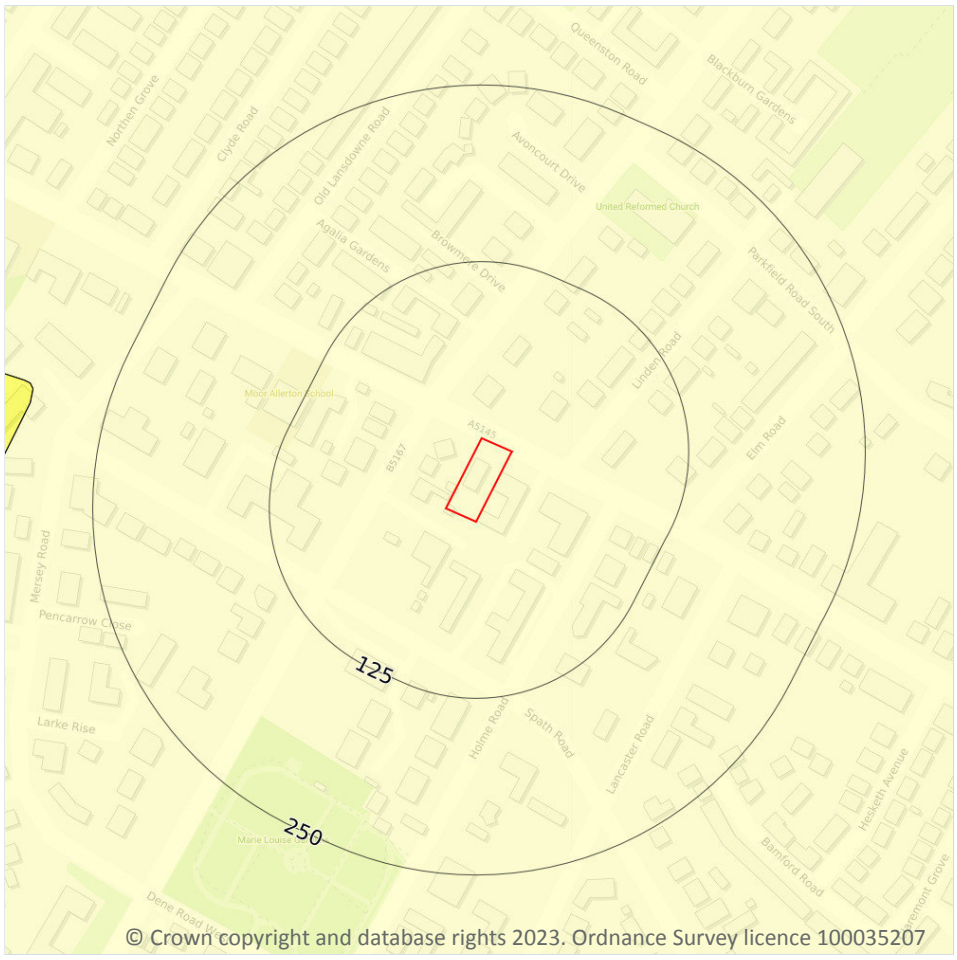
Features are displayed on the Boreholes map on **page 76 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	51m NW	384010 391620	DIDSBURY NO.50	14.02	N	865492 ↗
2	114m SW	383920 391470	PALATINE ROAD 8	-	Y	N/A
3	114m E	384160 391510	FOG LANE MAIN DRAINAGE 1	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
4	158m E	384220 391550	FOG LANE MAIN DRAINAGE 2	-	Y	N/A
A	161m W	383860 391570	BARFIELD HOUSE DIDSBURY 4	-	Y	N/A
5	167m W	383850 391540	BARFIELD HOUSE DIDSBURY 1	-	Y	N/A
A	174m W	383850 391580	BARFIELD HOUSE DIDSBURY 3	-	Y	N/A
6	189m W	383830 391560	BARFIELD HOUSE DIDSBURY 2	-	Y	N/A
7	196m SW	383880 391390	PALATINE ROAD 7	-	Y	N/A
8	244m NE	384290 391660	FOG LANE MAIN DRAINAGE STAGE II 1	-	Y	N/A

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.1 Shrink swell clays

Records within 50m	1

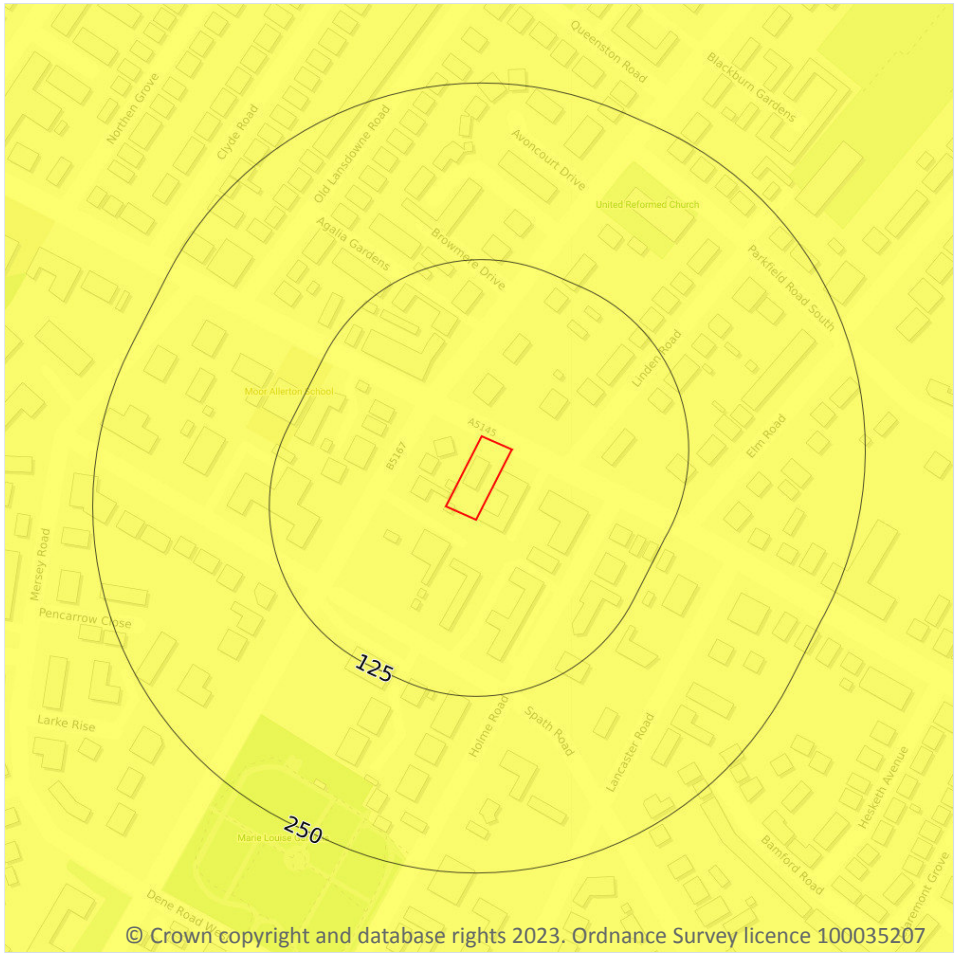
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 78 >**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	1

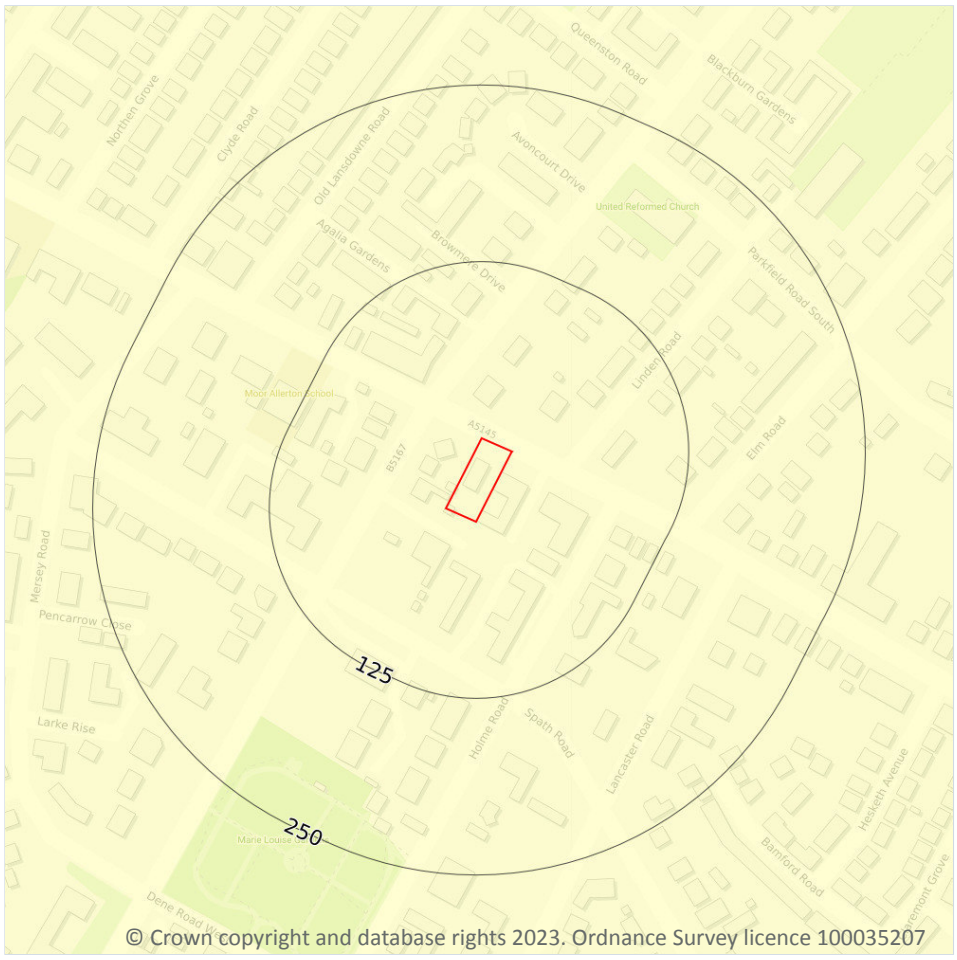
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 79 >**

Location	Hazard rating	Details
On site	**Very low**	**Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



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17.3 Compressible deposits

Records within 50m	1

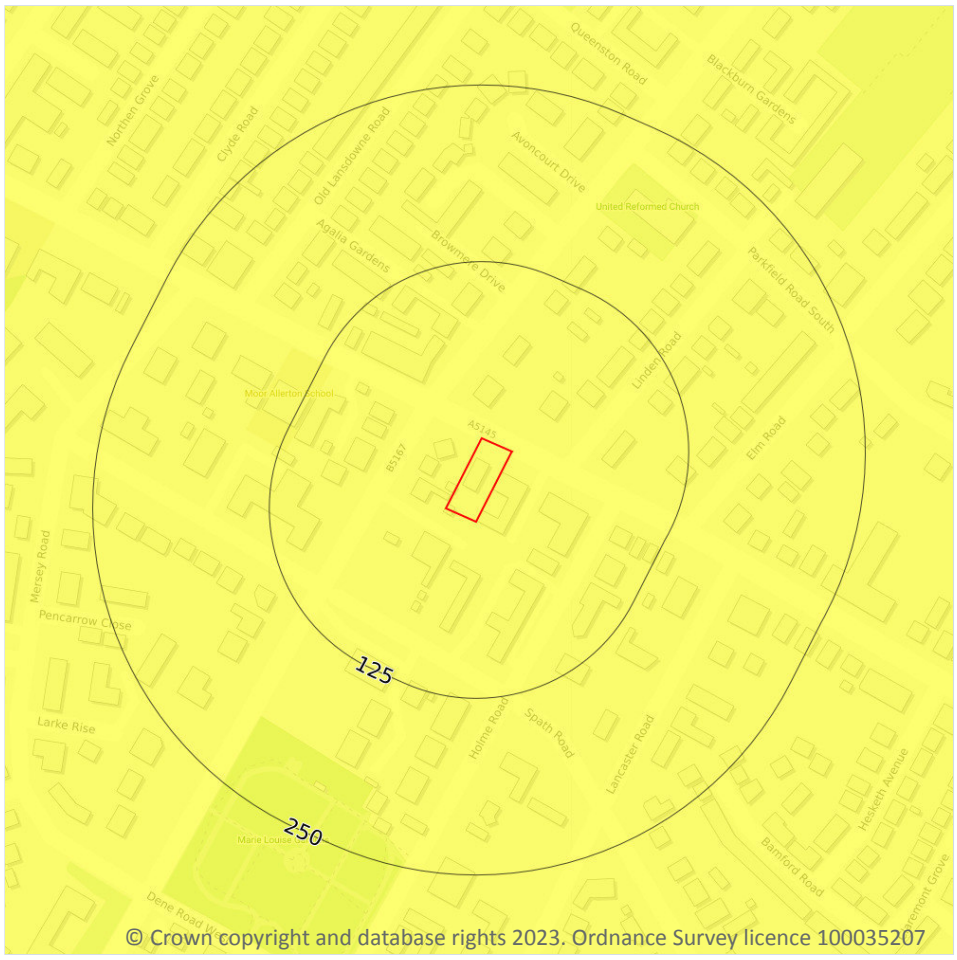
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 80 >**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	1

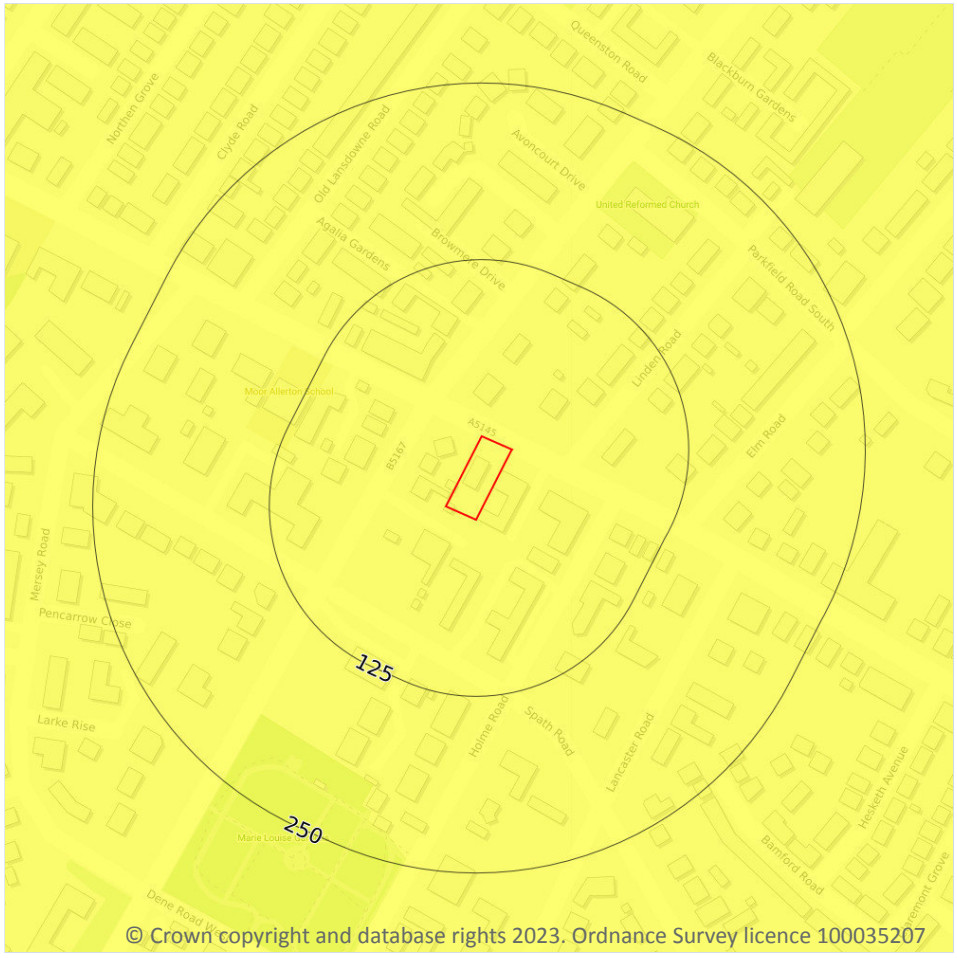
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 81 >**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	1

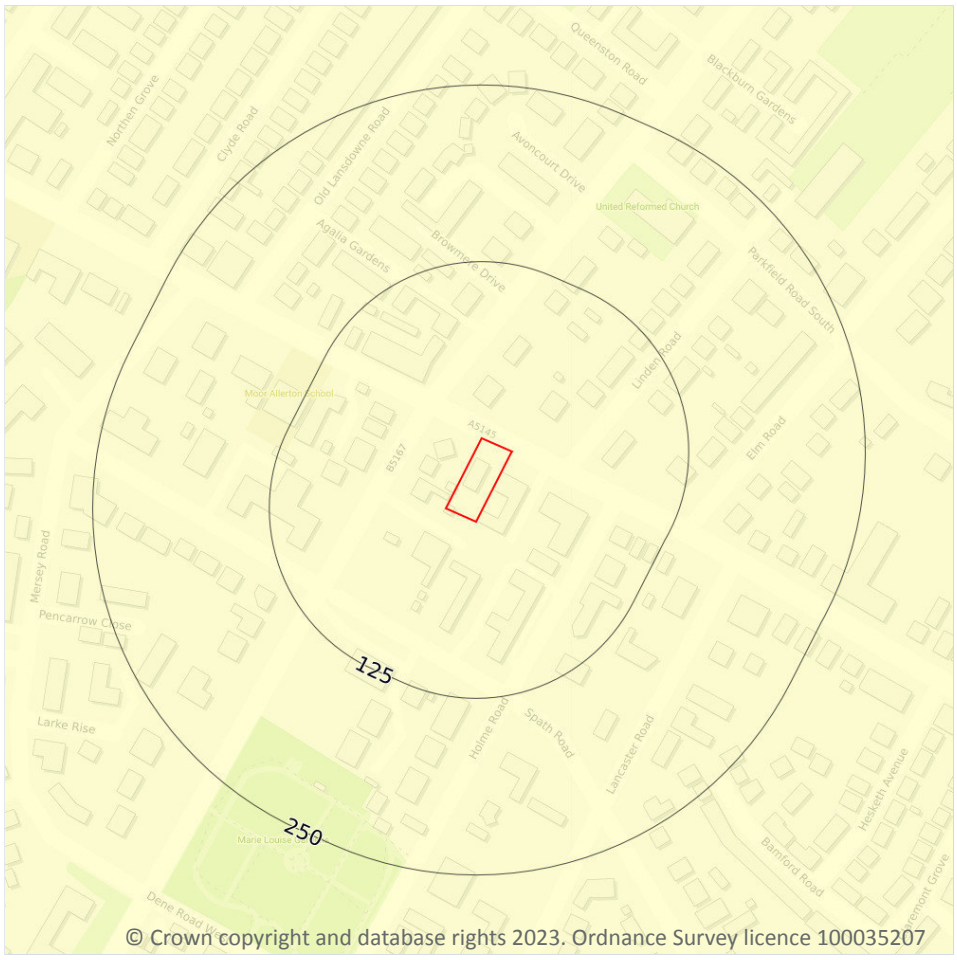
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 82 >**

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	1

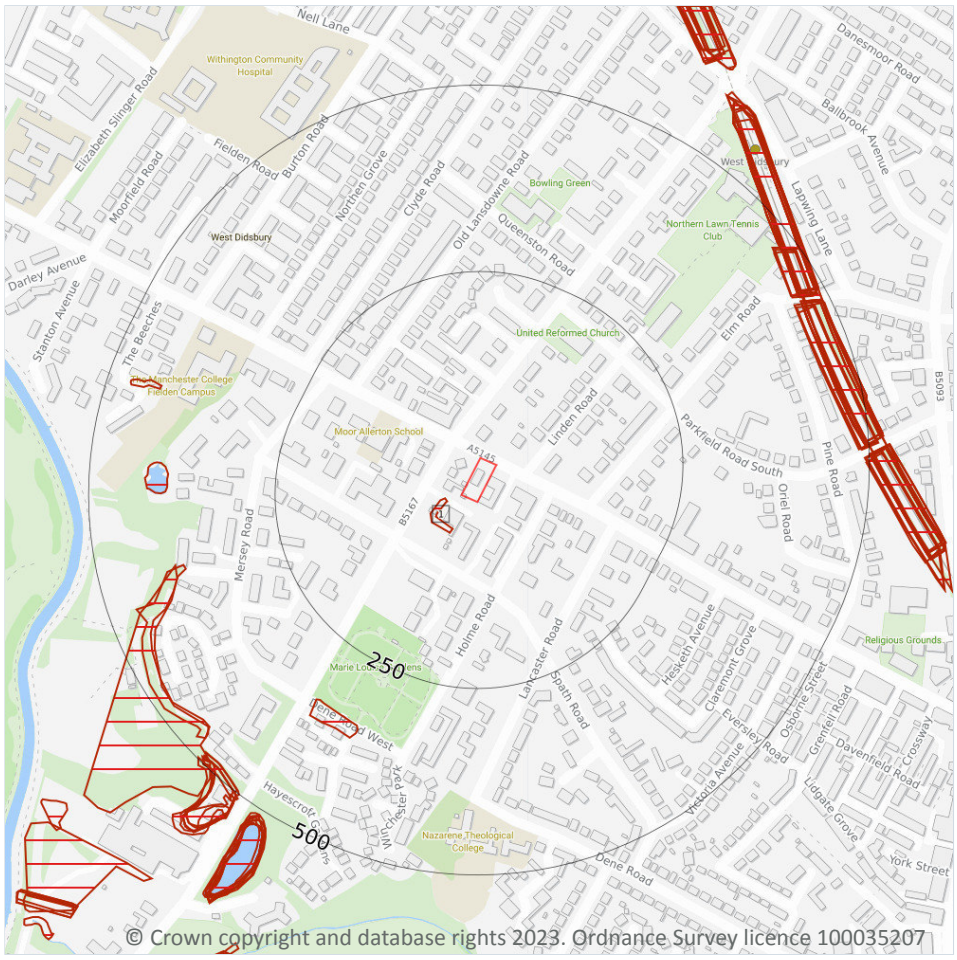
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 83 >**

Location	Hazard rating	Details
On site	**Negligible**	**Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.**

This data is sourced from the British Geological Survey.

18 Mining and ground workings



Site Outline

Search buffers in metres (m)

- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m	0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	1

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on **page 85 >**

ID	Location	Land Use	Year of mapping	Mapping scale
1	21m SW	Unspecified Ground Workings	1955	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	0

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m	0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	1

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

Location	Details
On site	**Whilst outside of an area where The Coal Authority have information on coal mining activities, Johnson Poole & Bloomer (JPB) may have information such as mining plans and maps held within their archive that have occurred within 1km of this property. Please note, the plans held by JPB may also relate to non-mining records. Further details and a quote for services (if appropriate) can be obtained by emailing this report to enquiries.gs@jpb.co.uk ↗.**

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of

risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m	0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.

This data is sourced from Groundsure.

19.5 National karst database

Records within 500m	0

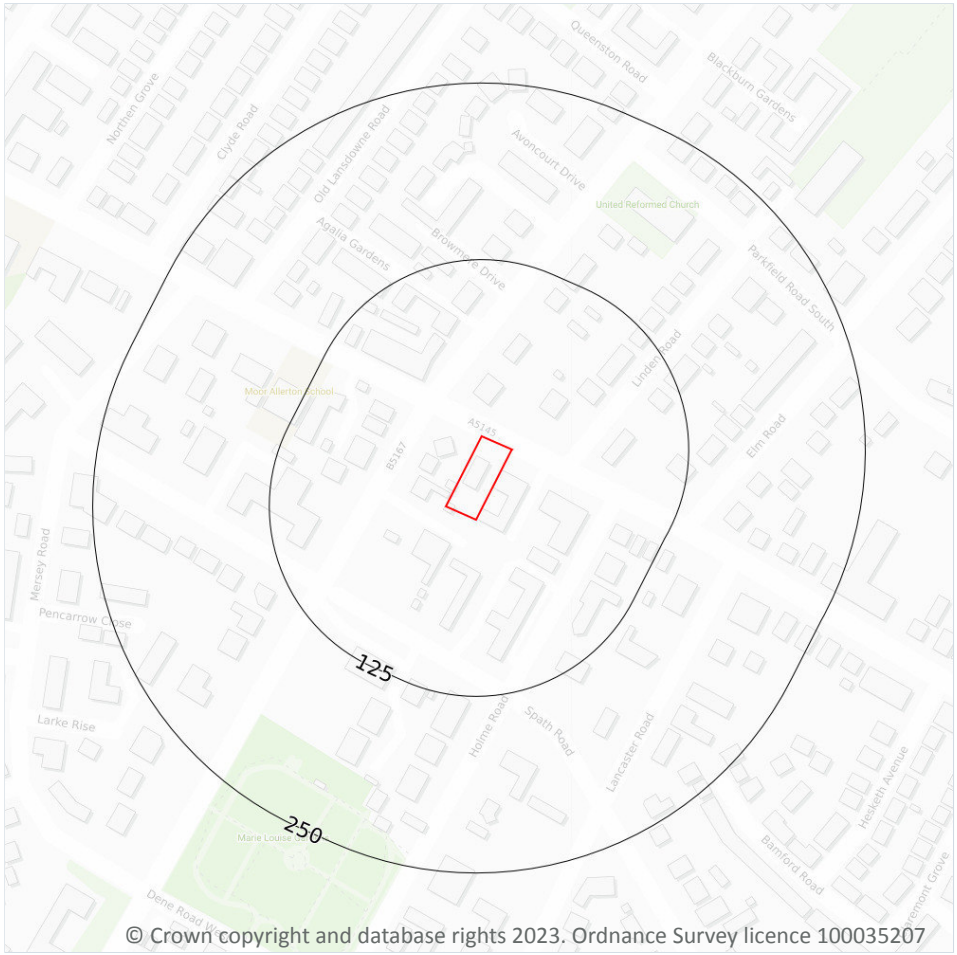
This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.

20 Radon



Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site	1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on **page 92 >**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Less than 1%**	**None**

This data is sourced from the British Geological Survey and UK Health Security Agency.

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m	6

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km^2. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km^2; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
16m SW	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
16m SW	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
21m S	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
34m SW	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
34m SW	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

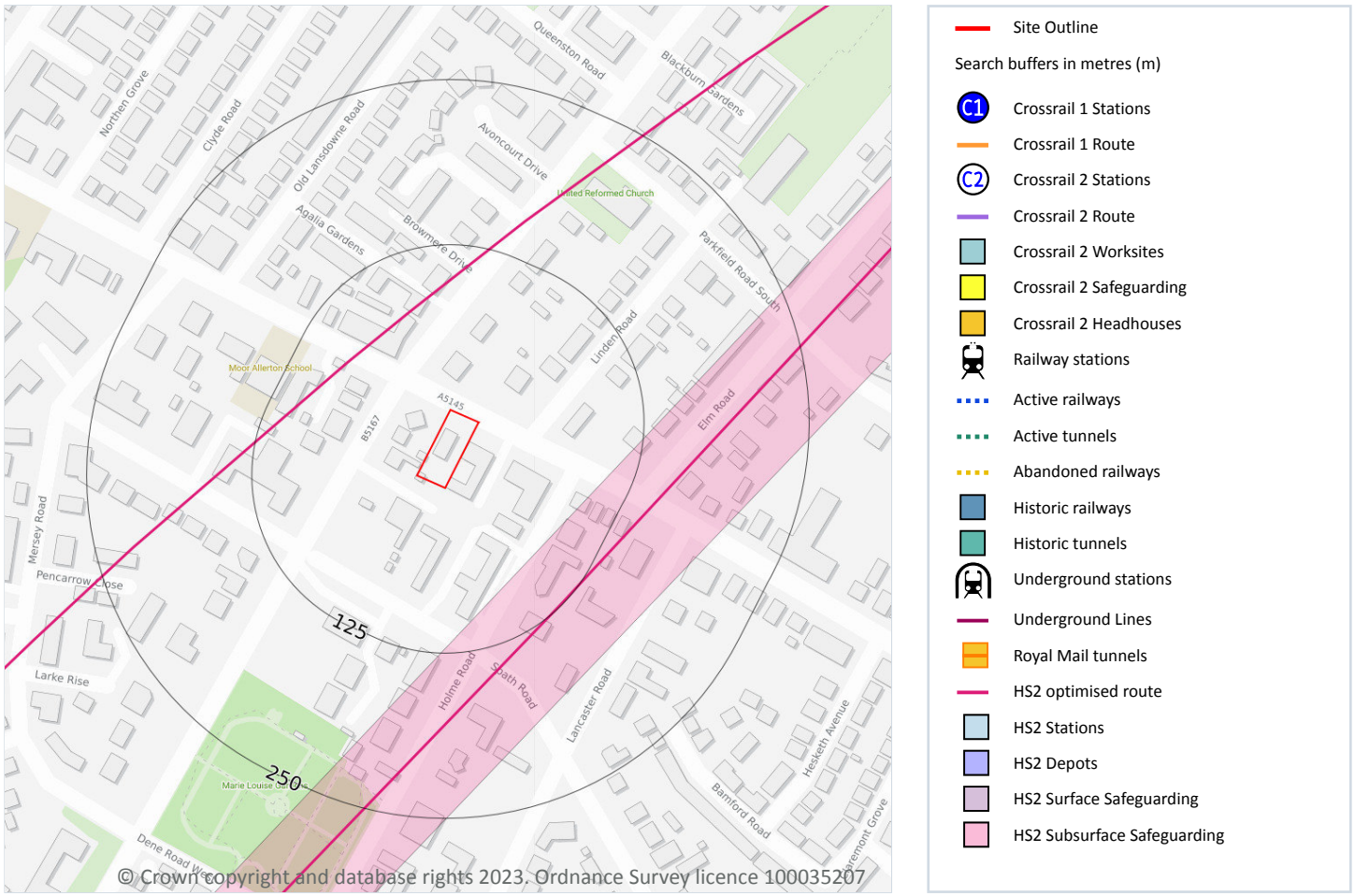
21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects



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22.1 Underground railways (London)

Records within 250m	0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	0

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m	0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m	0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m	2

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

Features are displayed on the Railway infrastructure and projects map on **page 96 >**

Location	Track Type	Speed (mph)	Speed (km/h)	Status
77m NW	Tunnel	143mph	230kph	Section is scheduled for cancellation
124m SE	Tunnel	143mph	230kph	Section is scheduled for cancellation

This data is sourced from HS2 ltd.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference ↗.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-and-conditions-april-2023/ ↗.

APPENDIX 5 - CIRIA Risk Assessment Methodology

Contaminated Land Risk Assessment

Contaminated Land Risk Assessment is a technique that identifies and considers the associated risk, determines whether the risks are significant and whether action needs to be taken. The four main stages of risk assessment are:

Hazard Identification ⇨ Hazard Assessment ⇨ Risk Estimation ⇨ Risk Evaluation

LCRM outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. The starting point of the risk assessment is to identify the context of the problem and the objectives of the process.

Formulating and developing a conceptual model for the site is an important requirement of risk assessment, this supports the identification and assessment of pollutant linkages. Development of the conceptual model forms the main part of preliminary risk assessment, and the model is subsequently refined or revised as more information and understanding is obtained through the risk assessment process.

Risk is a combination of the likelihood of an event occurring and the magnitude of its consequences. Therefore, both the likelihood and the consequences of an event must be taken into account when assessing risk.

The risk assessment process needs to take into account the degree of confidence required in decisions. Identification of uncertainties is an essential step in risk assessment.

The likelihood of an event is classified on a four-point system using the following terms and definitions from CIRIA C552:

- High likelihood: There is a pollution linkage and an event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution;

- Likely: There is a pollution linkage and all the elements are present and in the right place, which means it is probable that an event will occur. Circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term;

- Low likelihood: There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain even over a longer period such event would take place, and is less likely in the short term;

- Unlikely: There is a pollution linkage but circumstances are such that it is improbable the event would occur even in the long term.

The severity is also classified using a system based on CIRIA C552. The terms and definitions are:

- Severe: Short term (acute) risk to human health likely to result in 'significant harm' as defined by the Environment Protection Act 1990, Part IIA. Short-term risk of pollution of sensitive water resources. Catastrophic damage to buildings or property. A short-term risk to a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);
  Examples – High concentrations of contaminant on surface of recreation area, major spillage of contaminants from site into controlled waters, explosion causing building to collapse;

- Medium: Chronic damage to human health ('significant harm' as defined in DETR 2000). Pollution of sensitive water resources. A significant change in a particular ecosystem or organism forming part of that ecosystem (note definition of ecosystem in 'Draft Circular on Contaminated Land', DETR 2000);
  Examples - Concentrations of contaminants exceed the generic assessment criteria, leaching of contaminants from a site to a Principal or Secondary Aquifer, death of species within a designated nature reserve;

- Mild: Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in 'Draft Circular on Contaminated Land', DETR 2000). Damage to sensitive buildings, structures, services or the environment;
  Examples – Pollution of non-classified groundwater or damage to buildings rendering it unsafe to occupy.

- Minor: harm, not necessarily significant harm, which may result in financial loss or expenditure to resolve. Non-permanent health effects to human health (easily prevented by use of personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.
  Examples – Presence of contaminants at such concentrations PPE is required during site work, loss of plants in landscaping scheme or discolouration of concrete.

Once the likelihood and severity have been determined, a risk category can be assigned using the table below.

		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very Low	Very low

Definitions of the risk categories obtained from the above table are as follows together with an assessment of the further work that might be required:

- Very high: There is a high probability that severe harm could arise to a designated receptor from an identified hazard or there is evidence that severe harm is currently happening. This risk, if realised, could result in substantial liability. Urgent investigation and remediation are likely to be required;

- High: Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation is required and remedial works may be necessary in the short term and are likely over the longer term;

- Moderate: It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either relatively unlikely that any such harm would be severe, or if any harm were to occur it would be more likely to be relatively mild. Investigation is normally required to clarify the risk and determine the liability. Some remedial works may be required in the longer term;

- Low: It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild;

- Very Low: There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

APPENDIX 6 - Exploratory Hole Logs

GROUNDTECH CONSULTING

Trial Pit Log

Trialpit No
SUDS01
Sheet 1 of 1

Project Name: 123 BARLOW MOOR ROAD	Project No. 23382	Co-ords: - Level:	Date 16/01/2024
Location: DIDSBURY		Dimensions (m): Depth 1.55 (1.8 × 0.7)	Scale 1:25
Client: TAHIR AHMED			Logged HM

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 0.15	ES D		0.15			MADE GROUND: Grey tarmac.
	0.40	ES					MADE GROUND: Brown gravelly fine to coarse sand. Gravel is angular to subangular fine to coarse of brick, ceramic and sandstone. Rootlets also present.
	1.20 1.30	ES D		1.05			Yellowish brown clayey gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone.
				1.55			*Fragmented slate gravel encountered at 1.5m bgl.* End of pit at 1.55 m

1
2
3
4
5

Remarks: 1. Location cleared of services using hand held CAT scanner. 2. Groundwater not encountered. 3. Soil percolation test undertaken at 1.55m. 4. Backfilled with arisings.

Stability: Stable.

GROUNDTECH CONSULTING

Borehole Log

Borehole No. **WS01** Sheet 1 of 1

Project Name: 123 BARLOW MOOR ROAD	Project No. 23382	Co-ords: -	Hole Type WS
Location: DIDSBURY		Level:	Scale 1:25
Client: TAHIR AHMED		Dates: 16/01/2024 - 16/01/2024	Logged By HM

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			Dark brown sandy TOSPOIL with occasional rootlets. Sand is fine to coarse.
		0.50	ES					Brown gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone.
		1.00	D					
		1.20		N=20 (5,5/5,5,5,5)	1.20			
		1.60	ES					Medium dense yellowish brown slightly clayey gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone.
		2.00 2.00	D	N=18 (4,4/4,4,5,5)				
		3.00 3.00	D	N=19 (4,4/4,5,5,5)				
		4.00 4.00	D	N=50 (11,12/50 for 255mm)	4.00			End of borehole at 4.00 m

Remarks

1. Location cleared of services using hand held CAT scanner. 2. Hand excavated inspection pit to 1.2m bgl. 3. No groundwater encountered. 4. Borehole terminated at 4.00m bgl due to SPT refusal. 5. Backfilled with arisings.

GROUNDTECH CONSULTING

Borehole Log

Borehole No. **WS02**

Sheet 1 of 1

Project Name: 123 BARLOW MOOR ROAD	Project No. 23382	Co-ords: -	Hole Type WS
Location: DIDSBURY		Level:	Scale 1:25
Client: TAHIR AHMED		Dates: 16/01/2024 - 16/01/2024	Logged By HM

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.15			MADE GROUND: Grey tarmac.	
		0.40	ES					MADE GROUND: Brown sandy angular to subangular fine to coarse gravel of mixed lithologies including brick and sandstone. Sand is fine to coarse.	
		1.00	D		1.00				1
		1.20		N=19 (3,4/4,5,5,5)				Medium dense yellowish grey slightly clayey gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone.	
		1.40	ES						
		2.00	D						2
		2.00		N=20 (5,5/6,5,5,4)					
		3.00	D						3
		3.00		N=17 (4,4/4,4,4,5)					
		4.00	D		4.00			End of borehole at 4.00 m	4
		4.00		N=50 (25 for 145mm/50 for 265mm)					
									5

Remarks

1. Location cleared of services using hand held CAT scanner. 2. Hand excavated inspection pit to 1.2m bgl. 3. No groundwater encountered. 4. Borehole terminated at 4.00m bgl due to SPT refusal . 5. Backfilled with arisings.

GROUNDTECH CONSULTING

Borehole Log

Borehole No. **WS03**

Sheet 1 of 1

Project Name: 123 BARLOW MOOR ROAD	Project No. 23382	Co-ords: -	Hole Type WS
Location: DIDSBURY		Level:	Scale 1:25
Client: TAHIR AHMED		Dates: 16/01/2024 - 16/01/2024	Logged By HM

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.15			MADE GROUND: Grey tarmac.	
		0.40	ES					MADE GROUND: Brown sandy angular to subangular fine to coarse gravel of mixed lithologies including brick and sandstone. Sand is fine to coarse.	1
		1.00	D						
		1.10	ES						
		1.20		N=7 (1,1/1,2,2,2)					
					1.35			Medium dense greyish brown clayey gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone.	
		2.00	D						2
		2.00		N=21 (5,5/5,5,5,6)					
		3.00	D						3
		3.00		N=16 (5,5/4,4,4,4)					
		4.00	D		4.00			End of borehole at 4.00 m	4
		4.00		N=50 (10,12/50 for 265mm)					
									5

Remarks

1. Location cleared of services using hand held CAT scanner. 2. Hand excavated inspection pit to 1.2m bgl. 3. No groundwater encountered. 4. Borehole terminated at 4.00m bgl due to SPT refusal. 5. Backfilled with arisings.

GROUNDTECH CONSULTING

Borehole Log

Borehole No. **WS04**

Sheet 1 of 2

Project Name: 123 BARLOW MOOR ROAD	Project No. 23382	Co-ords: -	Hole Type WS
Location: DIDSBURY		Level:	Scale 1:25
Client: TAHIR AHMED		Dates: 16/01/2024 - 16/01/2024	Logged By HM

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.15			MADE GROUND: Grey tarmac.
		0.20	ES		0.30			MADE GROUND: brown gravelly fine to coarse sand. Gravel is angular to subangular medium to coarse of tarmac and brick.
								Medium dense yellowish grey slightly clayey gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone.
		1.00	D					
		1.20		N=10 (2,2/2,2,3,3)				
		1.70	ES					
		2.00	D					
		2.00		N=15 (4,4/4,4,3,4)				
		3.00	D					
		3.00		N=24 (5,5/6,6,6,6)				
		4.00	D					
		4.00		N=12 (3,3/3,3,3,3)				
		5.00	D		5.00			Continued on next sheet

1 2 3 4 5

Remarks

1. Location cleared of services using hand held CAT scanner. 2. Hand excavated inspection pit to 1.2m bgl. 3. No groundwater encountered. 4. Borehole terminated at 5.00m bgl. 5. Backfilled with arisings.

GROUNDTECH CONSULTING

Borehole Log

Borehole No. **WS04**

Sheet 2 of 2

Project Name: 123 BARLOW MOOR ROAD	Project No. 23382	Co-ords: -	Hole Type WS
Location: DIDSBURY		Level:	Scale 1:25
Client: TAHIR AHMED		Dates: 16/01/2024 - 16/01/2024	Logged By HM

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		5.00		N=37 (5,7/9,9,9,10)				End of borehole at 5.00 m

6
7
8
9
10

Remarks

1. Location cleared of services using hand held CAT scanner. 2. Hand excavated inspection pit to 1.2m bgl. 3. No groundwater encountered. 4. Borehole terminated at 5.00m bgl. 5. Backfilled with arisings.

GROUNDTECH CONSULTING

Borehole Log

Borehole No. **WS05** Sheet 1 of 2

Project Name: 123 BARLOW MOOR ROAD	Project No. 23382	Co-ords: -	Hole Type WS
Location: DIDSBURY		Level:	Scale 1:25
Client: TAHIR AHMED		Dates: 16/01/2024 - 16/01/2024	Logged By HM

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.50	ES		0.60			Brown sandy TOPSOIL. Sand is fine to coarse.	
		1.00	D					Loose greyish brown clayey gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone.	1
		1.20		N=8 (2,2/2,2,2,2)					
		1.50	ES						
		2.00 2.00	D	N=16 (3,3/3,4,4,5)				*Becoming medium dense at 2.0m bgl.*	2
		3.00 3.00	D	N=20 (4,5/5,5,5,5)					3
		4.00 4.00	D	N=11 (4,4/3,3,2,3)					4
		5.00	D		5.00				5

Continued on next sheet

Remarks

1. Location cleared of services using hand held CAT scanner. 2. Hand excavated inspection pit to 1.2m bgl. 3. No groundwater encountered. 4. Borehole terminated at 5.00m bgl. 5. Borehole backfilled with arisings.

GROUNDTECH CONSULTING

Borehole Log

Borehole No. **WS05** Sheet 2 of 2

Project Name: 123 BARLOW MOOR ROAD	Project No. 23382	Co-ords: -	Hole Type WS
Location: DIDSBURY		Level:	Scale 1:25
Client: TAHIR AHMED		Dates: 16/01/2024 - 16/01/2024	Logged By HM

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		5.00		N=50 (10,13/50 for 275mm)				End of borehole at 5.00 m

6
7
8
9
10

Remarks
1. Location cleared of services using hand held CAT scanner. 2. Hand excavated inspection pit to 1.2m bgl. 3. No groundwater encountered. 4. Borehole terminated at 5.00m bgl. 5. Borehole backfilled with arisings.

GROUNDTECH CONSULTING

Borehole Log

Borehole No. **WS06**

Sheet 1 of 1

Project Name: 123 BARLOW MOOR ROAD	Project No. 23382	Co-ords: -	Hole Type WS
Location: DIDSBURY		Level:	Scale 1:25
Client: TAHIR AHMED		Dates: 16/01/2024 - 16/01/2024	Logged By HM

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	ES		0.20			Brown sandy TOPSOIL. Sand is fine to coarse.
		1.00 1.00	D ES					Medium dense yellowish brown clayey gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone.
		1.20		N=16 (2,2/4,4,4,4)				
		2.00 2.00	D	N=20 (4,4/5,5,5,5)				
		3.00 3.00	D	N=37 (5,7/7,10,10,10)				*Becoming dense at 3.0m bgl.*
		4.00 4.00	D	N=40 (7,8/9,10,10,11)	4.00			End of borehole at 4.00 m

Remarks

1. Location cleared of services using hand held CAT scanner. 2. Hand excavated inspection pit to 1.2m bgl. 3. No groundwater encountered. 4. Borehole terminated at 4.00m bgl due to SPT refusal. 5. Borehole backfilled with arisings.

APPENDIX 7 - Geo-Environmental Testing Results

Element Materials Technology
Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

P: +44 (0) 1244 833780
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W: www.element.com

Groundtech Consulting Limited
PO Box 499
Manchester
United Kingdom
M28 8EE

Attention :	Hugo Mackdermott
Date :	5th February, 2024
Your reference :	23382
Our reference :	Test Report 24/812 Batch 1
Location :	123 Barlow Moor Road
Date samples received :	18th January, 2024
Status :	Final Report
Issue :	202402051132

Nineteen samples were received for analysis on 18th January, 2024 of which seven were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

The greenhouse gas emissions generated (in Carbon – Co2e) to obtain the results in this report are estimated as:

Scope 1&2 emissions - 11.656 kg of CO2

Scope 1&2&3 emissions - 27.547 kg of CO2

Authorised By:

Bruce Leslie
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: Groundtech Consulting Limited
Reference: 23382
Location: 123 Barlow Moor Road
Contact: Hugo Mackdermott
EMT Job No: 24/812

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

EMT Sample No.	1-3	7-9	16-18	20-22	23-25	30-32	34-36				LOD/LOR	Units	Method No.
Sample ID	WS01	WS02	WS03	WS04	WS04	WS05	WS06						
Depth	0.50	0.40	1.50	0.20	1.70	1.50	0.10						
COC No / misc													
Containers	V J T	V J T	V J T	V J T	V J T	V J T	V J T						
Sample Date	16/01/2024	16/01/2024	16/01/2024	16/01/2024	16/01/2024	16/01/2024	16/01/2024						
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil						
Batch Number	1	1	1	1	1	1	1						
Date of Receipt	18/01/2024	18/01/2024	18/01/2024	18/01/2024	18/01/2024	18/01/2024	18/01/2024						
Arsenic #	-	12.3	9.8	16.8	-	-	14.1				<0.5	mg/kg	TM30/PM15
Cadmium #	-	0.2	<0.1	0.5	-	-	0.2				<0.1	mg/kg	TM30/PM15
Chromium #	-	32.8	39.7	38.1	-	-	35.1				<0.5	mg/kg	TM30/PM15
Copper #	-	27	12	38	-	-	32				<1	mg/kg	TM30/PM15
Lead #	-	87	108	274	-	-	251				<5	mg/kg	TM30/PM15
Mercury #	-	0.2	<0.1	0.2	-	-	0.2				<0.1	mg/kg	TM30/PM15
Nickel #	-	11.3	5.3	15.4	-	-	10.4				<0.7	mg/kg	TM30/PM15
Selenium #	-	<1	<1	<1	-	-	<1				<1	mg/kg	TM30/PM15
Zinc #	-	94	75	258	-	-	95				<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	-	1.16	<0.04	0.13	-	-	0.07				<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	0.10	0.10	0.17	-	-	0.12				<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	0.24	<0.05	0.24	-	-	0.15				<0.05	mg/kg	TM4/PM8
Fluorene #	-	0.16	0.07	0.15	-	-	0.10				<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	1.73	0.82	2.26	-	-	1.50				<0.03	mg/kg	TM4/PM8
Anthracene #	-	0.42	0.19	0.52	-	-	0.40				<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	3.31	1.52	4.83	-	-	3.46				<0.03	mg/kg	TM4/PM8
Pyrene #	-	3.08	1.32	4.30	-	-	3.18				<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	1.61	0.60	2.01	-	-	1.65				<0.06	mg/kg	TM4/PM8
Chrysene #	-	1.82	0.62	2.46	-	-	1.85				<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	2.91	0.94	4.05	-	-	2.83				<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	1.84	0.58	2.33	-	-	1.71				<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-	1.12	0.34	1.61	-	-	1.12				<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	0.23	0.08	0.31	-	-	0.24				<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	1.10	0.33	1.49	-	-	1.11				<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	20.8	7.5	26.9	-	-	19.5				<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	2.10	0.68	2.92	-	-	2.04				<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	0.81	0.26	1.13	-	-	0.79				<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	92	94	94	-	-	97				<0	%	TM4/PM8
Natural Moisture Content	-	13.3	10.6	15.3	-	-	15.6				<0.1	%	PM4/PM0
Hexavalent Chromium #	-	<0.3	<0.3	<0.3	-	-	<0.3				<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	<0.0015	0.0747	0.0540	0.0066	0.0048	<0.0015	<0.0015				<0.0015	g/l	TM38/PM20
Organic Matter	-	5.2	1.6	6.4	-	-	4.0				<0.2	%	TM21/PM24
pH #	7.20	9.10	8.39	8.08	7.95	7.84	7.62				<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Client Name: Groundtech Consulting Limited
Reference: 23382
Location: 123 Barlow Moor Road
Contact: Hugo Mackdermott

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Asbestos sub-samples are retained for not less than 6 months from the date of analysis unless specifically requested.

The LOQ of the Asbestos Quantification is 0.001% dry fibre of dry mass of sample.

Where the sample is not taken by a Element Materials Technology consultant, Element Materials Technology cannot be responsible for inaccurate or unrepresentative sampling.

Where trace asbestos is reported the amount of asbestos will be <0.1%.

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analyst Name	Date Of Analysis	Analysis	Result
24/812	1	WS02	0.40	9	Anthony Carman	05/02/2024	**General Description (Bulk Analysis)**	Brown Soil/Stones/Debris
					Anthony Carman	05/02/2024	**Asbestos Fibres**	NAD
					Anthony Carman	05/02/2024	**Asbestos ACM**	NAD
					Anthony Carman	05/02/2024	**Asbestos Type**	NAD
24/812	1	WS03	1.50	18	Anthony Carman	05/02/2024	**General Description (Bulk Analysis)**	Brown Soil/Stones/Debris
					Anthony Carman	05/02/2024	**Asbestos Fibres**	NAD
					Anthony Carman	05/02/2024	**Asbestos ACM**	NAD
					Anthony Carman	05/02/2024	**Asbestos Type**	NAD
24/812	1	WS04	0.20	22	Anthony Carman	05/02/2024	**General Description (Bulk Analysis)**	Brown Soil/Stones
					Anthony Carman	05/02/2024	**Asbestos Fibres**	NAD
					Anthony Carman	05/02/2024	**Asbestos ACM**	NAD
					Anthony Carman	05/02/2024	**Asbestos Type**	NAD
24/812	1	WS06	0.10	36	Anthony Carman	05/02/2024	**General Description (Bulk Analysis)**	Brown Soil/Stones
					Anthony Carman	05/02/2024	**Asbestos Fibres**	NAD
					Anthony Carman	05/02/2024	**Asbestos ACM**	NAD
					Anthony Carman	05/02/2024	**Asbestos Type**	NAD

Client Name: Groundtech Consulting Limited
Reference: 23382
Location: 123 Barlow Moor Road
Contact: Hugo Mackdermott

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 24/812						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating. Only analyses which are accredited are recorded as deviating if set criteria are not met.
It is a requirement under ISO 17025 that we inform clients if samples are deviating i.e. outside what is expected. A deviating sample indicates that the sample 'may' be compromised but not necessarily will be compromised. The result is still accredited and our analytical reports will still show accreditation on the relevant analytes.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

EMT Job No.: 24/812

SOILS and ASH

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary. Asbestos samples are retained for 6 months.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C. Ash samples are dried at 37°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

STACK EMISSIONS

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation for Dioxins and Furans and Dioxin like PCBs has been performed on XAD-2 Resin, only samples which use this resin will be within our MCERTS scope.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a requirement of our Accreditation Body for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.
Laboratory records are kept for a period of no less than 6 years.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

Customer Provided Information

Sample ID and depth is information provided by the customer.

Age of Diesel

The age of release estimation is based on the nC17/pristane ratio only as prescribed by Christensen and Larsen (1993) and Kaplan, Galperin, Alimi et al., (1996).
Age estimation should be treated with caution as it can be influenced by site specific factors of which the laboratory are not aware.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above quantitative calibration range. The result should be considered the minimum value and is indicative only. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

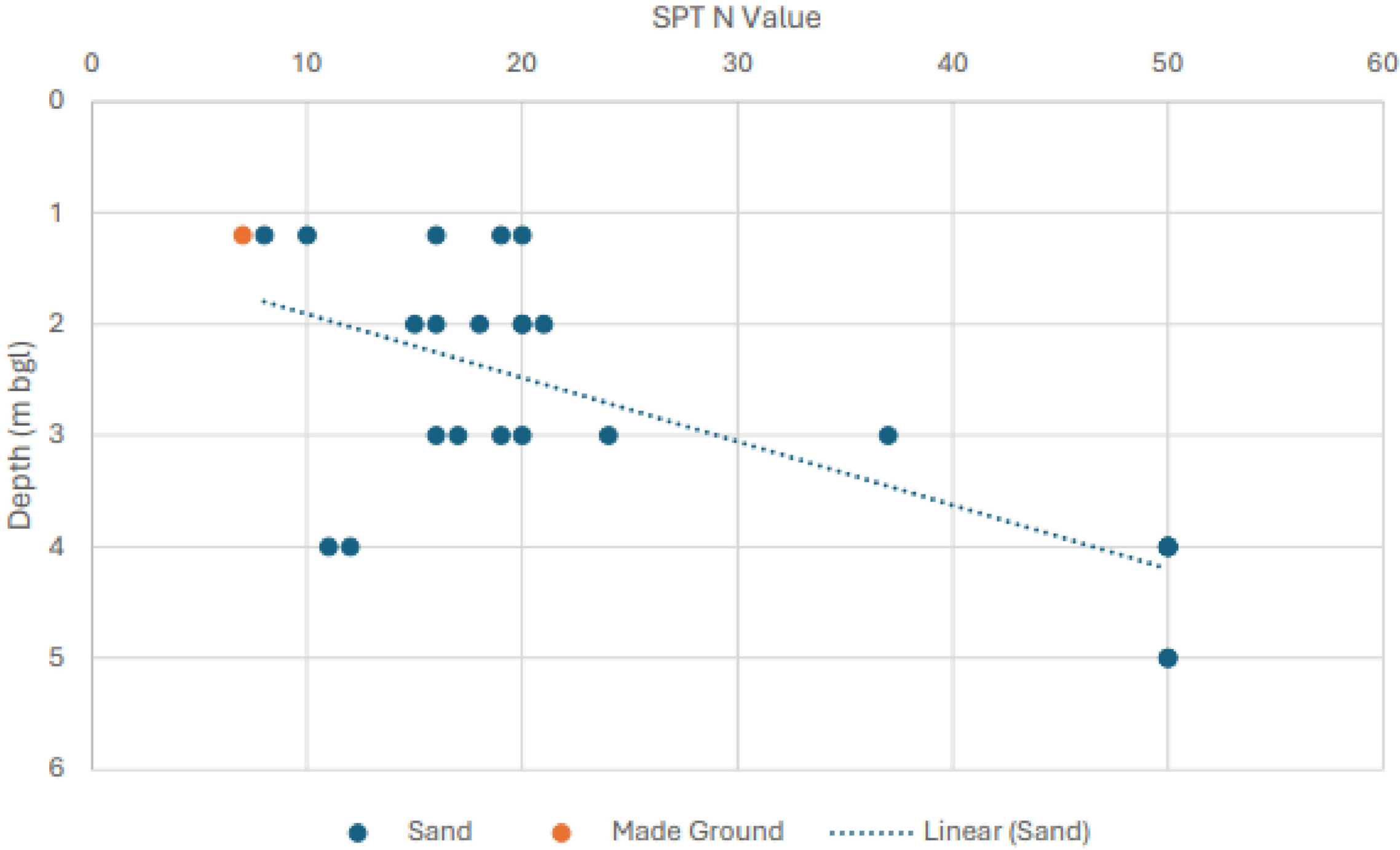
HWOL ACRONYMS AND OPERATORS USED

HS	Headspace Analysis.
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent.
CU	Clean-up - e.g. by florisil, silica gel.
1D	GC - Single coil gas chromatography.
Total	Aliphatics & Aromatics.
AL	Aliphatics only.
AR	Aromatics only.
2D	GC-GC - Double coil gas chromatography.
#1	EH_Total but with humics mathematically subtracted
#2	EU_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +).
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry.

EMT Job No: 24/812

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465:1993(E) and BS1377-2:1990.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270D v5:2014 method for the solvent extraction and determination of PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM21	Modified BS 7755-3:1995, ISO10694:1995 Determination of Total Organic Carbon or Total Carbon by combustion in an Eltra TOC furnace/analyser in the presence of oxygen. The CO2 generated is quantified using infra-red detection. Organic Matter (SOM) calculated as per EA MCERTS Chemical Testing of Soil, March 2012 v4.	PM24	Preparation of Soil and Marine Sediment Samples for Total Organic Carbon.			AD	Yes
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013I	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248 Second edition (2021)	PM42	Modified SCA Blue Book V.12 draft 2017 and WM3 1st Edition v1.1:2018. Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No

APPENDIX 8 - Generalised Ground Model



GROUNDTECH CONSULTING

CLIENT	TAHIR AHMED
PROJECT TITLE	123 BARLOW MOOR ROAD, DIDSBURY
PLAN TITLE	GENERALISED GROUND MODEL

DATE	MARCH 2024
SCALE	NTS
PLAN NUMBER	GRO-23382-P05

Rev.	Details	Date

Status	
Preliminary	
Draft	
Issued	●
For Comment	
Approved	

Notes

APPENDIX 9 - Soil Percolation Testing Results

123 Barlow Moor Road
GRO-23382
Brennan Consulting

SOIL PERCOLATION TEST

GROUNDTECH CONSULTING

Sheet 1 of 2

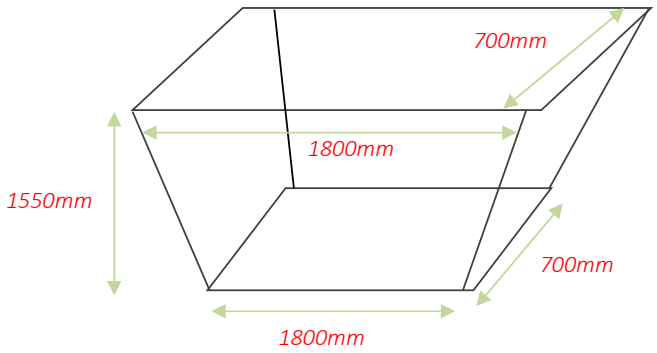
Date of Test: 16/01/2024

POSITION: SuDS1
TEST 1

Weather: Snowy, clear

Engineer: *H Mackdermott*
Checked: *R Rowlinson*

Trial Pit Measurements



Pit Depth (mm):	1550
Pit Details:	Open with no stone filling
Groundwater Level:	NGW

Test Data

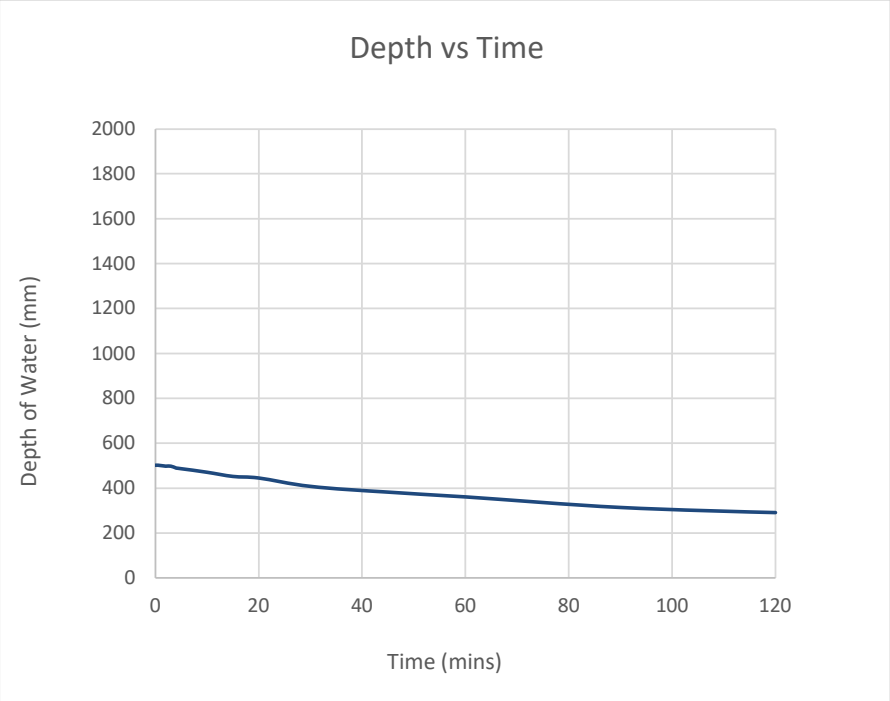
Time Elapsed (mins)	Depth to Water Level (mm)
0	1048
1	1049
2	1052
3	1052
4	1060
5	1063
10	1079
15	1098
20	1105
30	1142
45	1168
60	1189
90	1236
120	1259

123 Barlow Moor Road
GRO-23382
Brennan Consulting

Sheet 2 of 2

SOIL PERCOLATION TEST

POSITION: SuDS1
TEST 1



Volume of Pit (m^3)	1.953
Void Ratio of Infill	1
Volume of Infill (m^3)	N/A
Volume of Water in Pit (m^3)	0.63252

Compliancy Check:

Water Level at 75% effective depth (mm)	376.5
Water Level at 25% effective depth (mm)	125.5

Test not BRE 365 compliant with BRE 365 - insufficient time to drain past 25% effective depth

Soil Infiltration Rate Calculation

Water Level 1	502
Water Level 2	291
Time to Drain from Level 1 to Level 2 (mins)	120
Volume of water discharged (m^3)	0.26586
Discharge Area (m^2)	3.2425
Soil Infiltration Rate (m/min)	0.0006833
Soil Infiltration Rate (m/sec)	***1.14E-05***

123 Barlow Moor Road
GRO-23382
Brennan Consulting

SOIL PERCOLATION TEST

GROUNDTECH CONSULTING

Sheet 1 of 2

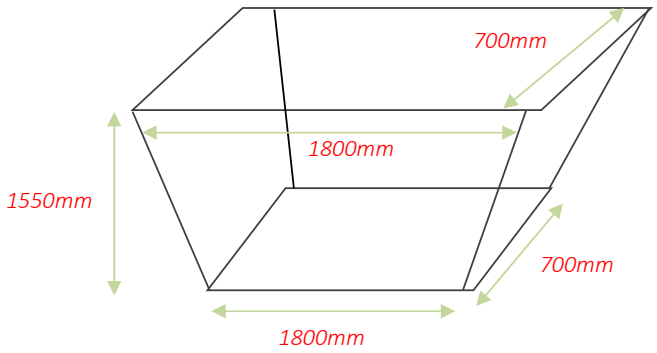
Date of Test: 16/01/2024

POSITION: SuDS1
TEST 2

Weather: Snowy, clear

Engineer: *H Mackdermott*
Checked: *R Rowlinson*

Trial Pit Measurements



Test Data

Time Elapsed (mins)	Depth to Water Level (mm)
0	1259
30	1312
60	1338
90	1361
120	1380

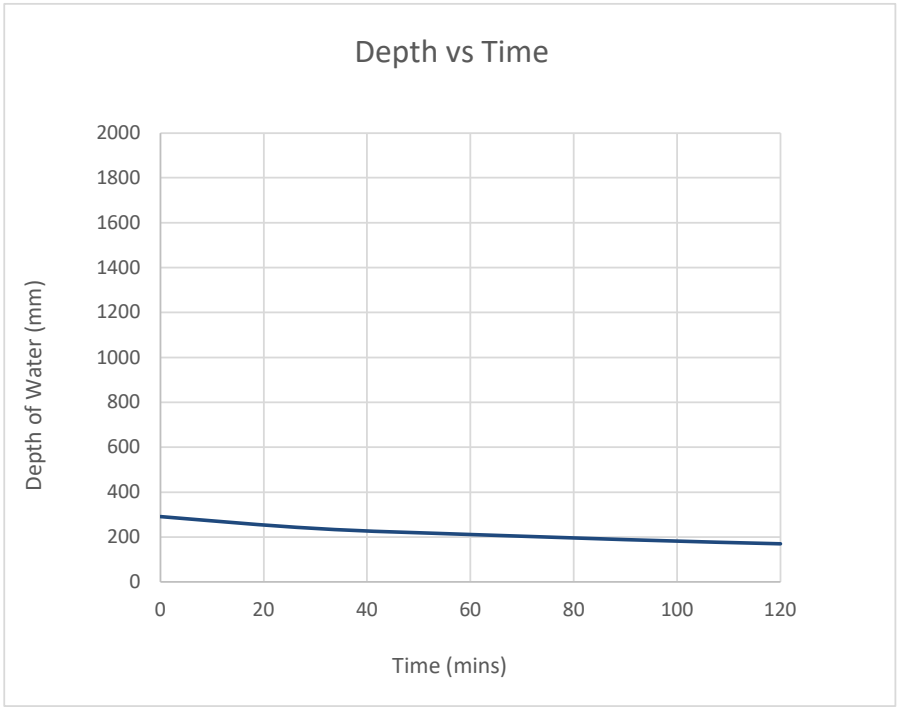
Pit Depth (mm):	1550
Pit Details:	Open with no stone filling
Groundwater Level:	NGW

123 Barlow Moor Road
GRO-23382
Brennan Consulting

SOIL PERCOLATION TEST

Sheet 2 of 2

POSITION: SuDS1
TEST 2



Volume of Pit (m^3)	1.953
Void Ratio of Infill	1
Volume of Infill (m^3)	N/A
Volume of Water in Pit (m^3)	0.36666

Compliancy Check:

Water Level at 75% effective depth (mm)	218.25
Water Level at 25% effective depth (mm)	72.75

Test not BRE 365 compliant with BRE 365 - insufficient time to drain past 25% effective depth

Soil Infiltration Rate Calculation

Water Level 1	291
Water Level 2	170
Time to Drain from Level 1 to Level 2 (mins)	120
Volume of water discharged (m^3)	0.15246
Discharge Area (m^2)	2.4125
Soil Infiltration Rate (m/min)	0.0005266
Soil Infiltration Rate (m/sec)	***8.78E-06***

123 Barlow Moor Road
GRO-23382
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SOIL PERCOLATION TEST

GROUNDTECH CONSULTING

Sheet 1 of 2

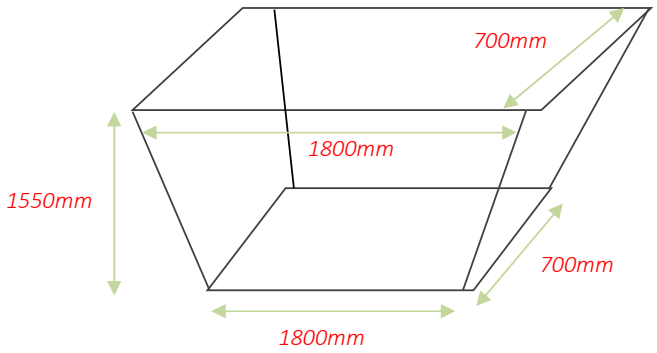
Date of Test: 16/01/2024

POSITION: SuDS1
TEST 3

Weather: Snowy, clear

Engineer: *H Mackdermott*
Checked: *R Rowlinson*

Trial Pit Measurements



Test Data

Time Elapsed (mins)	Depth to Water Level (mm)
0	1380
30	1388
60	1395
90	1411
120	1425

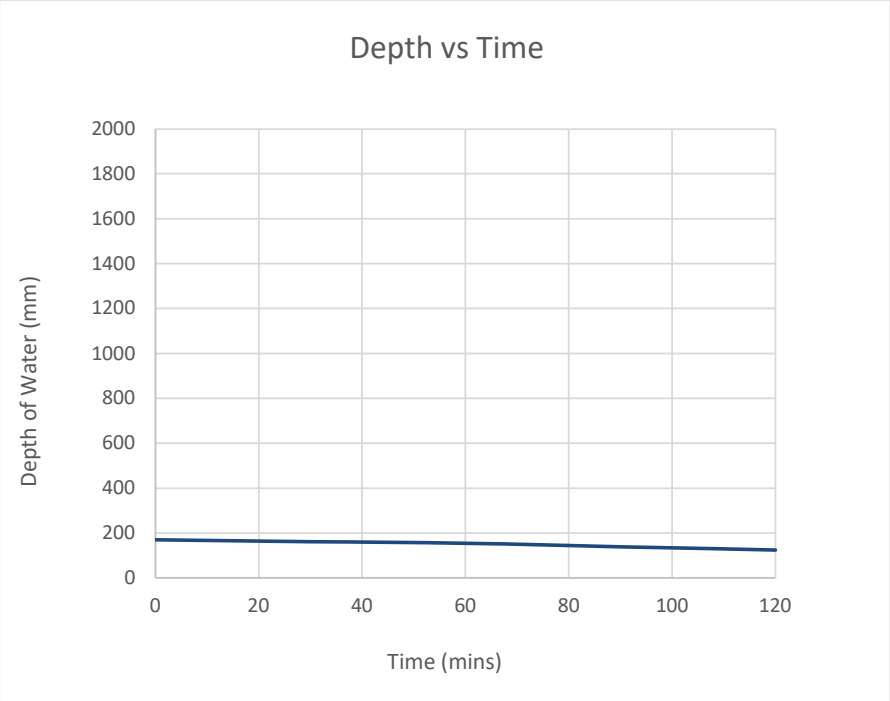
Pit Depth (mm):	1550
Pit Details:	Open with no stone filling
Groundwater Level:	NGW

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Sheet 2 of 2

SOIL PERCOLATION TEST

POSITION: SuDS1
TEST 3



Volume of Pit (m^3)	1.953
Void Ratio of Infill	1
Volume of Infill (m^3)	N/A
Volume of Water in Pit (m^3)	0.2142

Compliancy Check:

Water Level at 75% effective depth (mm)	127.5
Water Level at 25% effective depth (mm)	42.5

Test not BRE 365 compliant with BRE 365 - insufficient time to drain past 25% effective depth

Soil Infiltration Rate Calculation

Water Level 1	170
Water Level 2	125
Time to Drain from Level 1 to Level 2 (mins)	120
Volume of water discharged (m^3)	0.0567
Discharge Area (m^2)	1.9975
Soil Infiltration Rate (m/min)	0.0002365
Soil Infiltration Rate (m/sec)	***3.94E-06***

APPENDIX 10 - Generic Screening Values (Residential End Use)

Generic Assessment Criteria (GAC)

GROUNDTECH CONSULTING

Proposed End Use	Unit	Residential with Plant Uptake			Commercial			Source
SOM	%	1	2.5	6	1	2.5	6	
Arsenic	mg/kg	37	37	37	640	640	640	LQM S4ULs
Beryllium	mg/kg	1.7	1.7	1.7	12	12	12	LQM S4ULs
Boron (water soluble)	mg/kg	290	290	290	240000	240000	240000	LQM S4ULs
Cadmium	mg/kg	11	11	11	190	190	190	LQM S4ULs
Chromium (Total)	mg/kg	910	910	910	8600	8600	8600	LQM S4ULs
Chromium (VI)	mg/kg	6	6	6	33	33	33	LQM S4ULs
Copper	mg/kg	2400	2400	2400	68000	68000	68000	LQM S4ULs
Lead	mg/kg	200	200	200	2300	2300	2300	DEFRA C4SLs
Organic Mercury	mg/kg	1.2	1.2	1.2	26	26	26	LQM S4ULs
Nickel	mg/kg	130	130	130	980	980	980	LQM S4ULs
Selenium	mg/kg	250	250	250	12000	12000	12000	LQM S4ULs
Vanadium	mg/kg	410	410	410	9000	9000	9000	LQM S4ULs
Zinc	mg/kg	3700	3700	3700	730000	730000	730000	LQM S4ULs
Aliphatic EC 5 - 6	mg/kg	42	78	160	3200 (304) sol	5900 (558) sol	12000 (1150) sol	LQM S4ULs
Aliphatic EC 6 - 8	mg/kg	100	230	530	7800 (144) sol	17000 (322) sol	40000 (736) sol	LQM S4ULs
Aliphatic EC 8 - 10	mg/kg	27	65	150	2000 (78) sol	4800 (190) sol	11000 (451) vap	LQM S4ULs
Aliphatic EC 10 - 12	mg/kg	130 (48) vap	330 (118) vap	760 (283) vap	9700 (48) sol	23000 (118) vap	47000 (283) vap	LQM S4ULs
Aliphatic EC 12 - 16	mg/kg	1100 (24) sol	2400 (59) sol	4300 (142) sol	59000 (24) sol	82000 (59) sol	90000 (142) sol	LQM S4ULs
Aliphatic EC 16 - 35	mg/kg	65000 (8.48) f,sol	92000 (21) f,sol	110000 f	1600000 f	1700000 f	1800000 f	LQM S4ULs
Aliphatic EC 35 - 44	mg/kg	65000 (8.48) f,sol	92000 (21) f,sol	110000 f	1600000 f	1700000 f	1800000 f	LQM S4ULs
Aromatic EC 5 - 7	mg/kg	70	140	300	26000 (1220) sol	46000 (2260) sol	86000 (4710) sol	LQM S4ULs
Aromatic EC 7 - 8	mg/kg	130	290	660	56000 (869) vap	110000 (1920)	180000 (4360)	LQM S4ULs
Aromatic EC 8 - 10	mg/kg	34	83	190	3500 (613) vap	8100 (1500) vap	17000 (3580)	LQM S4ULs
Aromatic EC 10 - 12	mg/kg	74	180	380	16000 (364) sol	28000 (899) sol	34000 (2150) sol	LQM S4ULs
Aromatic EC 12 -16	mg/kg	140	330	660	36000 (169) sol	37000	38000	LQM S4ULs
Aromatic EC 16 - 21	mg/kg	260 f	540 f	930 f	28000 f	28000 f	28000 f	LQM S4ULs
Aromatic EC 21 - 35	mg/kg	1100 f	1500 f	1700 f	28000 f	28000 f	28000 f	LQM S4ULs
Aromatic EC 35 - 44	mg/kg	1100 f	1500 f	1700 f	28000 f	28000 f	28000 f	LQM S4ULs
Benzene	mg/kg	0.087	0.17	0.37	27	47	90	LQM S4ULs
Toluene	mg/kg	130	130	130	56000 (869)	110000 (1920)	180000 (4360)	LQM S4ULs
Ethyl Benzene	mg/kg	47	110	260	5700	13000	27000	LQM S4ULs
Xylene - o	mg/kg	60	140	330	6600	15000	33000	LQM S4ULs
Xylene - m	mg/kg	59	140	320	6200	14000	31000	LQM S4ULs
Xylene - p	mg/kg	56	130	310	5900	14000	30000	LQM S4ULs
MTBE (methyl tert-butyl ether)	mg/kg	49	84	160	7900	13000	24000	CL:AIRE 2010
Acenaphthene	mg/kg	210	510	1100	84000 (57) sol	97000 (141) sol	100000	LQM SAULs
Acenaphthylene	mg/kg	170	420	920	83000 (86.1) sol	97000 (212) sol	100000	LQM S4ULs
Anthracene	mg/kg	2400	5400	11000	520000	540000	540000	LQM S4ULs
Benz(a)anthracene	mg/kg	7.2	11	13	170	170	180	LQM S4ULs
Benzo(a)pyrene	mg/kg	2.2	2.7	3	35	35	36	LQM S4ULs
Benzo(b)fluoranthene	mg/kg	2.6	3.3	3.7	44	44	45	LQM S4ULs
Benzo(ghi)perylene	mg/kg	320	340	350	3900	4000	4000	LQM S4ULs
Benzo(k)fluoranthene	mg/kg	77	93	100	1200	1200	1200	LQM S4ULs
Chrysene	mg/kg	15	22	27	350	350	350	LQM S4ULs
Dibenz(ah)anthracene	mg/kg	0.24	0.28	0.3	3.5	3.6	3.6	LQM S4ULs
Fluoranthene	mg/kg	280	560	890	23000	23000	23000	LQM S4ULs
Fluorene	mg/kg	170	400	860	63000 (30.9) sol	68000	71000	LQM S4ULs
Indeno(123-cd)pyrene	mg/kg	27	36	41	500	510	510	LQM S4ULs
Naphthalene	mg/kg	2.3 f	5.6 f	13 f	190 f (76.4) sol	460 f (183) sol	1100 f (432) sol	LQM S4ULs
Phenanthrene	mg/kg	95	220	440	22000	22000	23000	LQM S4ULs
Pyrene	mg/kg	620	1200	2000	54000	54000	54000	LQM S4ULs

Generic Assessment Criteria (GAC)

GROUNDTECH CONSULTING

Proposed End Use	Unit	Residential with Plant Uptake			Commercial			Source
SOM	%	1	2.5	6	1	2.5	6	
Phenol	*mg/kg*	*120*	*200*	*380*	*440*	*690*	*1300*	*LQM S4ULs*
Chlorophenols	*mg/kg*	*0.87* [g]	*2*	*4.5*	*3500*	*4000*	*4300*	*LQM S4ULs*
Pentachlorophenol	*mg/kg*	*0.22*	*0.52*	*1.2*	*400*	*400*	*400*	*LQM S4ULs*
Carbon disulphide	*mg/kg*	*0.14*	*0.29*	*0.62*	*11*	*22*	*47*	*LQM S4ULs*
Hexachlorobutadiene	*mg/kg*	*0.29*	*0.7*	*1.6*	*31*	*66*	*120*	*LQM S4ULs*
1,1,1,2 Tetrachloroethane	*mg/kg*	*1.6*	*3.4*	*7.5*	*270*	*550*	*1100*	*LQM S4ULs*
1,1,1 Trichloroethane	*mg/kg*	*8.8*	*18*	*39*	*660*	*1300*	*3000*	*LQM S4ULs*
Trichloroethene	*mg/kg*	*0.016*	*0.034*	*0.075*	*1.2*	*2.6*	*5.7*	*LQM S4ULs*
Tetrachoromethane (Carbon Tetrachloride)	*mg/kg*	*0.026*	*0.056*	*0.13*	*2.9*	*6.3*	*14*	*LQM S4ULs*
1,2-Dichloroethane	*mg/kg*	*0.0071*	*0.011*	*0.019*	*0.67*	*0.97*	*1.7*	*LQM S4ULs*
Chloroethene (Vinyl chloride)	*mg/kg*	*0.00064*	*0.00087*	*0.0014*	*0.059*	*0.077*	*0.12*	*LQM S4ULs*
Trichloromethane (Chloroform)	*mg/kg*	*0.91*	*1.7*	*3.4*	*99*	*170*	*350*	*LQM S4ULs*
Tetrachloroethene	*mg/kg*	*0.18*	*0.39*	*0.9*	*19*	*42*	*95*	*LQM S4ULs*
Hexachlorobenzene	*mg/kg*	*1.8 (0.2)* [vap]	*3.3 (0.5)* [vap]	*4.9*	*110 (0.2)* [vap]	*120*	*120*	*LQM S4ULs*
Pentachlorobenzene	*mg/kg*	*5.8*	*12*	*22*	*640 (43)* [sol]	*770 (107)* [sol]	*830*	*LQM S4ULs*
1,2,4,5-Tetrachlorobenzene	*mg/kg*	*0.33*	*0.77*	*1.6*	*42 (19.7)* [sol]	*72 (49.1)* [sol]	*96*	*LQM S4ULs*
1,2,3,5-Tetrachlorobenzene	*mg/kg*	*0.66*	*1.69*	*3.7*	*49 (39.4)* [vap]	*120 (98.1)* [vap]	*240 (235)* [vap]	*LQM S4ULs*
1,2,3,4-Tetrachlorobenzene	*mg/kg*	*15*	*36*	*78*	*1700 (122)* [vap]	*3080 (304)* [vap]	*4400 (728)* [vap]	*LQM S4ULs*
1,3,5-Trichlorobenzene	*mg/kg*	*0.33*	*0.81*	*1.9*	*23*	*55*	*130*	*LQM S4ULs*
1,2,4-Trichlorobenzene	*mg/kg*	*2.6*	*6.4*	*15*	*220*	*530*	*1300*	*LQM S4ULs*
1,2,3-Trichlorobenzene	*mg/kg*	*1.5*	*3.6*	*8.6*	*102*	*250*	*590*	*LQM S4ULs*
1,4-dichlorobenzene	*mg/kg*	*61* [f]	*150* [f]	*350* [f]	*4400* [f] *(224)* [vap]	*10000* [f] *(540)*	*25000* [f] *(1280)*	*LQM S4ULs*
1,3-dichlorobenzene	*mg/kg*	*0.4*	*1*	*2.3*	*30*	*73*	*170*	*LQM S4ULs*
1,2-Dichlorobenzene	*mg/kg*	*23*	*55*	*130*	*2000 (571)* [sol]	*4800 (1370)* [sol]	*11000 (3240)* [sol]	*LQM S4ULs*
Chlorobenzene	*mg/kg*	*0.46*	*1*	*2.4*	*56*	*130*	*290*	*LQM S4ULs*
Gamma-Hexachlorocyclohexane	*mg/kg*	*0.06*	*0.14*	*0.33*	*67*	*69*	*70*	*LQM S4ULs*
Beta-Hexachlorocyclohexane	*mg/kg*	*0.085*	*0.2*	*0.46*	*65*	*65*	*65*	*LQM S4ULs*
Alpha -Hexachlorocyclohexane	*mg/kg*	*0.23*	*0.55*	*1.2*	*170*	*180*	*180*	*LQM S4ULs*
Beta -Endosulfan	*mg/kg*	*7*	*17*	*39*	*6300 (0.00007)*	*7800 (0.0002)*	*8700*	*LQM S4ULs*
Alpha-Endosulfan	*mg/kg*	*7.4*	*18*	*41*	*5600 (0.003)* [vap]	*7400 (0.007)* [vap]	*8400 (0.016)* [vap]	*LQM S4ULs*
Dichlorvos	*mg/kg*	*0.032*	*0.066*	*0.14*	*140*	*140*	*140*	*LQM S4ULs*
Atrazine	*mg/kg*	*3.3*	*7.6*	*17.4*	*9300*	*9400*	*9400*	*LQM S4ULs*
Dieldrin	*mg/kg*	*0.97*	*2*	*3.5*	*170*	*170*	*170*	*LQM S4ULs*
Aldrin	*mg/kg*	*5.7*	*6.6*	*7.1*	*170*	*170*	*170*	*LQM S4ULs*
HMX	*mg/kg*	*5.7*	*13*	*26*	*110000*	*110000*	*110000*	*LQM S4ULs*
2,4,6-Trinitrotoulene	*mg/kg*	*1.6*	*3.7*	*8.1*	*1000*	*1000*	*1000*	*LQM S4ULs*
RDX	*mg/kg*	*120*	*250*	*540*	*210000*	*210000*	*210000*	*LQM S4ULs*

[sol] S4UL exceeds the solubility saturation limit (which is presented in brackets)

[vap] S4ULS presented exceeds the vapour saturation limit, which is presented in brackets

[f] For naphthalene, the S4UL is based on a comparison of inhalation exposure with the TDI_{inhal} for localised affects

[f] S4UL based on comparison of inhalation exposure with inhalation TDI for localised effects

[dir] S4ULs based on a threshold protecive direct skin contact with phenol (guideline in brackets based on health effects following long term exposure provided for illustation only

APPENDIX 11 - Waste Classification Report

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

H6W2I-XSRJM-JK2Y2

Job name

EMT-24-812-Batch-1-202402051132

Description/Comments

Project

Site

Classified by

Name:
Connor Hastings
Date:
08 Mar 2024 17:15 GMT
Telephone:

Company:
Groundtech Consulting Limited
First Floor, Lloyd House, Orford Court,
Greenfold Way, WN7 3XJ

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: -

Course	Date
Hazardous Waste Classification	-

Purpose of classification

4 - Classification of Waste Products

Address of the waste

Post Code

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Description of the specific process, sub-process and/or activity that created the waste

Description of the waste

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS01-16/01/2024-0.50m		Non Hazardous		3
2	WS02-16/01/2024-0.40m		Non Hazardous		4
3	WS03-16/01/2024-1.10m		Non Hazardous		6
4	WS04-16/01/2024-0.20m		Non Hazardous		8
5	WS04-16/01/2024-1.70m		Non Hazardous		10
6	WS05-16/01/2024-1.50m		Non Hazardous		11
7	WS06-16/01/2024-0.10m		Non Hazardous		12

Related documents

#	Name	Description
1	EMT-24-812-Batch-1-202402051132.HWOL	Element .hwol file used to populate the Job

Report

Created by: Connor Hastings

Created date: 08 Mar 2024 17:15 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	14
Appendix B: Rationale for selection of metal species	14
Appendix C: Version	15

Classification of sample: WS01-16/01/2024-0.50m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS01-16/01/2024-0.50m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1	•	pH		PH		7.2 pH		7.2 pH	7.2 pH		
								Total:	0%		

Key

	User supplied data
•	Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: WS02-16/01/2024-0.40m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS02-16/01/2024-0.40m
Moisture content:
13.3%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13.3% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.1 pH		9.1 pH	9.1 pH		
2	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		12.3 mg/kg	1.534	16.652 mg/kg	0.00167 %	✓	
3	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	0.2 mg/kg		0.177 mg/kg	0.0000177 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		27 mg/kg	1.126	26.831 mg/kg	0.00268 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	87 mg/kg		76.787 mg/kg	0.00768 %	✓	
6	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.2 mg/kg		0.177 mg/kg	0.0000177 %	✓	
7	nickel { nickel diiodide }	028-029-00-4	236-666-6	13462-90-3		11.3 mg/kg	5.324	53.102 mg/kg	0.00531 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		94 mg/kg	1.245	103.268 mg/kg	0.0103 %	✓	
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
11	benzo[bk]fluoranthene		[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9		2.91 mg/kg		2.568 mg/kg	0.000257 %	✓	
12	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		32.8 mg/kg	1.462	42.312 mg/kg	0.00423 %	✓	
								Total:	0.0325 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
	This determinand is defined in the EU CLP Table 3
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS03-16/01/2024-1.10m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS03-16/01/2024-1.10m
Moisture content:
10.6%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 10.6% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.39 pH		8.39 pH	8.39 pH		
2	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		9.8 mg/kg	1.534	13.591 mg/kg	0.00136 %	✓	
3	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		12 mg/kg	1.126	12.216 mg/kg	0.00122 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	108 mg/kg		97.649 mg/kg	0.00976 %	✓	
6	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	nickel { nickel diiodide }	028-029-00-4	236-666-6	13462-90-3		5.3 mg/kg	5.324	25.514 mg/kg	0.00255 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		75 mg/kg	1.245	84.406 mg/kg	0.00844 %	✓	
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
11	benzo[bk]fluoranthene		[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9		0.94 mg/kg		0.85 mg/kg	0.000085 %	✓	
12	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		39.7 mg/kg	1.462	52.463 mg/kg	0.00525 %	✓	
								Total:	0.029 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
	This determinand is defined in the EU CLP Table 3
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS04-16/01/2024-0.20m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS04-16/01/2024-0.20m
Moisture content:
15.3%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15.3% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.08 pH		8.08 pH	8.08 pH		
2	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		16.8 mg/kg	1.534	22.35 mg/kg	0.00223 %	✓	
3	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	0.5 mg/kg		0.434 mg/kg	0.0000434 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		38 mg/kg	1.126	37.106 mg/kg	0.00371 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	274 mg/kg		237.641 mg/kg	0.0238 %	✓	
6	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.2 mg/kg		0.173 mg/kg	0.0000173 %	✓	
7	nickel { nickel diiodide }	028-029-00-4	236-666-6	13462-90-3		15.4 mg/kg	5.324	71.114 mg/kg	0.00711 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<**LOD**
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		258 mg/kg	1.245	278.522 mg/kg	0.0279 %	✓	
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<**LOD**
11	benzo[bk]fluoranthene		[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9		4.05 mg/kg		3.513 mg/kg	0.000351 %	✓	
12	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		38.1 mg/kg	1.462	48.296 mg/kg	0.00483 %	✓	
								Total:	0.0702 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
	This determinand is defined in the EU CLP Table 3
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS04-16/01/2024-1.70m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS04-16/01/2024-1.70m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1	•	pH				7.95 pH		7.95 pH	7.95 pH		
				PH							
								Total:	0%		

Key

	User supplied data
•	Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: WS05-16/01/2024-1.50m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS05-16/01/2024-1.50m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1	●	pH				7.84 pH		7.84 pH	7.84 pH		
				PH							
								Total:	0%		

Key

	User supplied data
●	Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: WS06-16/01/2024-0.10m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS06-16/01/2024-0.10m
Moisture content:
15.6%
(dry weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15.6% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.62 pH		7.62 pH	7.62 pH		
2	arsenic { arsenic pentoxide }	033-004-00-6	215-116-9	1303-28-2		14.1 mg/kg	1.534	18.709 mg/kg	0.00187 %	✓	
3	cadmium { cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex }	048-001-00-5			1	0.2 mg/kg		0.173 mg/kg	0.0000173 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		32 mg/kg	1.126	31.166 mg/kg	0.00312 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	251 mg/kg		217.128 mg/kg	0.0217 %	✓	
6	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.2 mg/kg		0.173 mg/kg	0.0000173 %	✓	
7	nickel { nickel diiodide }	028-029-00-4	236-666-6	13462-90-3		10.4 mg/kg	5.324	47.9 mg/kg	0.00479 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD
9	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		95 mg/kg	1.245	102.291 mg/kg	0.0102 %	✓	
10	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.3 mg/kg	1.923	<0.577 mg/kg	<0.0000577 %		<LOD
11	benzo[bk]fluoranthene		[1] 205-911-9 [2] 205-916-6	[1] 205-99-2 [2] 207-08-9		2.83 mg/kg		2.448 mg/kg	0.000245 %	✓	
12	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		35.1 mg/kg	1.462	44.378 mg/kg	0.00444 %	✓	
								Total:	0.0467 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
	This determinand is defined in the EU CLP Table 3
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex

EU CLP index number: 048-001-00-5
Description/Comments: Worst Case: IARC considers cadmium compounds Group 1; Carcinogenic to humans
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
)
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H312 , Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Carc. 1A; H350
Reason for additional Hazards Statement(s):
29 Sep 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

lead compounds with the exception of those specified elsewhere in this Annex (worst case)

EU CLP index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
)
Hazard Statements: Repr. 1A; H360Df , Acute Tox. 4; H332 , Acute Tox. 4; H302 , STOT RE 2; H373 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Repr. 2; H361f >= 2.5 % , STOT RE 2; H373 >= 0.5 % , Carc. 1A; H350
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

zinc oxide (EC Number: 215-222-5, CAS Number: 1314-13-2)

EU CLP index number: 030-013-00-7
Description/Comments:
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
)
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

chromium(VI) oxide (EC Number: 215-607-8, CAS Number: 1333-82-0)

EU CLP index number: 024-001-00-0
Description/Comments:
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
)
Hazard Statements: Ox. Sol. 1; H271 , Carc. 1A; H350 , Muta. 1B; H340 , Repr. 2; H361f , Acute Tox. 2; H330 , Acute Tox. 3; H311 , Acute Tox. 3; H301 , STOT RE 1; H372 , Skin Corr. 1A; H314 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , STOT SE 3; H335 >= 1 %

benzo[bk]fluoranthene (EC Number: [1] 205-911-9 [2] 205-916-6, CAS Number: [1] 205-99-2 [2] 207-08-9)

Description/Comments: Combined data from harmonised entries in CLP for benzo[b] and benzo[k]fluoranthene; C&L Inventory Database
Data source: https://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 02 Mar 2017
Hazard Statements: Carc. 1B; H350 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

Appendix B: Rationale for selection of metal species

arsenic {arsenic pentoxide}

Worst case

cadmium {cadmium compounds, with the exception of cadmium sulphoselenide (xCdS.yCdSe), reaction mass of cadmium sulphide with zinc sulphide (xCdS.yZnS), reaction mass of cadmium sulphide with mercury sulphide (xCdS.yHgS), and those specified elsewhere in this Annex}

Cadmium results not speciated.

copper {dicopper oxide; copper (I) oxide}

Copper results not speciated.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Lead results not speciated.

mercury {mercury}

Worst case

nickel {nickel diiodide}

Worst case

selenium {nickel selenate}

Worst case

zinc {zinc oxide}

Zinc results not speciated.

chromium in chromium(VI) compounds {chromium(VI) oxide}

Chromium(VI) compounds not speciated.

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Chromium (III) compounds not speciated.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2024.30.5942.10989 (30 Jan 2024)
HazWasteOnline Database: 2024.26.5938.10982 (26 Jan 2024)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023

APPENDIX 12 - Contaminated Land Legislative Background

Legislative Background

Environmental liabilities and risks have been evaluated in terms of a source -pathway - target relationship in accordance with the approach set out in:

- The 1995 Environment Act;
- The Contaminated Land (England) Regulations 2000;
- The DETR circular 02/2000 Environmental Protection Act 1990: Part IIA Contaminated Land.

Contaminated land is defined within the legislative framework as land which is in such condition by reason of substances in, on or under the land that:

1) Significant harm is being caused or there is a significant possibility of such harm being caused;
2) Significant pollution of controlled waters is being or is likely to be caused.

The potential for harm is based on the presence of three factors:

- **Source** - substances that are potential contaminants or pollutants that may cause harm;
- **Pathway** - a potential route by which contaminants can move from the source to the receptor;
- **Receptor** - a receptor that may be harmed, for example the water environment, humans and water.

Where a source, pathway and target are all present a pollutant linkage exists and there is potential for harm to be caused. The presence of a source 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 are site specific and will vary according to the intended end use of the site, its characteristics and its surroundings.

The key principle which supports the SPR approach is 'suitable for use' criteria. This requires remedial action only where contamination is considered to pose unacceptable actual or potential risks to health or the environment and, taking into account the proposed use of the site.

Relevant Guidance Documents

This report has been prepared in accordance with the list of guidance below however the list is not exhaustive:

- LCRM – Model Procedures;
- Contamination and Environmental Matters - Their implications for Property Professionals (2nd Edition RICS Nov 2003);
- Brownfields – Managing the development of previously developed land – A client's guide, CIRIA 2002;
- DEFRA and Environment Agency publications CLR7 – 10, supported by the TOX guides and SGV guides, dated March 2002;
- DETR Circular 02/2000, Contaminated Land: Implementation of Part IIA of the Environmental Protection Act 1990;
- Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the EPA1990, May 2002;

Relevant Legislative Documents

The following is a non-exhaustive list of legislative framework documents that has been considered in the production of this report:

- The Environment Act (1995);
- The Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (2012);
- The Environment Protection Act (1990);
- The Contaminated Land (England) Act (2000);
- Contaminated Land (England) Regulations (2012);
- The Water Resources Act (1991);
- The Pollution Prevention and Control (England and Wales) Regulations (2000);
- The Landfill Regulations (England and Wales) Regulations (2002);
- The Landfill (England and Wales) (Amendment) Regulations (2004);
- Health and Safety at Work Act;

APPENDIX 13 - Limitations

Limitations

This report (Report) forms part of the Services and if applicable Additional Services undertaken by Groundtech Consulting Ltd pursuant to a written contract (Agreement) which contains detailed provisions including express limitations of the liability of Groundtech Consulting Ltd.

This Report was prepared using reasonable skill and care as stated in the Agreement for the purpose including intended end use stated by the Client (Purpose) and the liability of Groundtech Consulting Ltd in respect of the form and content of this Report is no greater than its liability under the Agreement. All records, measurements notes, or any other data (Data) obtained by or for the benefit of the Consultant were obtained at a specific point in time and it may not be assumed by the Client or any person relying on this Report that the Data will remain unaffected by the passage of time, the seasons, weather conditions, changes in the water table or the carrying out and completion of works at the Site.

Unless otherwise agreed this Report has been prepared exclusively for the use and reliance of the Client and may not be relied upon, by any other party except as provided for in the Agreement. A third party who relies on this Report, does so at their own and sole risk and Groundtech Consulting Ltd has no liability to such parties.

Groundtech Consulting Ltd that this Report is to be used for the Purpose. The Purpose was instrumental in determining the scope and of the Services provided. If the Purpose should change, the Client may not be able to rely on the Report without the separate agreement of Groundtech Consulting Ltd.

Since the Report was written, later changes in legislation, statutory requirements and industry best practices have not been considered and this should be allowed for. Ground conditions can also change (see below) and should be investigated if there is any significant delay in acting on the findings of this Report. The period of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions in this Report should not be relied upon in the future without written confirmation from Groundtech Consulting Ltd that it is safe to do so.

The observations and conclusions outlined in this Report are based exclusively on the services that were provided as set out in the agreement between the client and Groundtech Consulting Ltd.

Groundtech Consulting Ltd is not liable for the existence of any condition, the discovery of which would require additional investigation outside the agreed scope of works or core competency. The Report is based upon Groundtech Consulting Ltd's observations of existing physical conditions at the Site gained from site reconnaissance together with interpretation of information including documentation, obtained from third parties and from the Client on the history and usage of the Site. The findings and recommendations contained in this Report are based in part upon information provided by third parties, and Groundtech Consulting Ltd have relied upon such information assuming it to be correct.

Groundtech Consulting Ltd accepts no responsibility for errors or inaccuracies in third party information presented in this Report. Groundtech Consulting Ltd was not authorised to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services or Additional Services. Groundtech Consulting Ltd is not liable for any inaccurate information, misrepresentation of data or conclusions, which may inform the scope of investigation undertaken by Groundtech Consulting Ltd and forms the contract with the client.

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions may also vary due to the ground's heterogeneous properties and because investigation exploratory locations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this Report, particularly between exploratory holes. The extent of the limited area depends on the soil and groundwater conditions, together with other constraints such as the position of any existing structures and underground utilities. If so stipulated in the Agreement, geo-environmental testing was carried out for a limited number of parameters based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

Any groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The groundwater level often has not had time to reach equilibrium and a monitoring period is required. Furthermore, groundwater levels are subject to seasonal variation or changes in local drainage conditions and groundwater levels may occur at other times of the year which are higher than were recorded during this investigation.

Any site drawings provided in this Report are preliminary and used to present the general relative locations of features on, and surrounding, the Site.

