BROWNFIELD SOLUTIONS LTD

GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

LIDL GB LTD

Lowry House, Chorlton

Phase I Geo-Environmental Assessment Report

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PROJECT QUALITY CONTROL DATA SHEET

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DRAWINGS

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Appendix	**Title**
Photographs	Site Walkover Photographs
Appendix A	BSL Methodology and Guidance
Appendix B	Historical Maps
Appendix C	Geo-Environmental Data Report
Appendix D	BGS Exploratory Hole Records
Appendix E	UXO Screening Map

1.0 INTRODUCTION

1.1 Context

This report describes a desk-based Phase I Geo-Environmental Assessment Report carried out by Brownfield Solutions Limited (BSL) for Lidl GB Ltd on a site off Mauldeth Road West, Chorlton and has been completed in general accordance with the following guidance:

- Environment Agency guidance - Land Contamination: Risk Management (LCRM).
- BS 10175:2011+A2:2017 Investigation of Potentially Contaminated Sites.
- BS5930: 2015+A1:2020 Code of Practice for Ground Investigations.
- BS EN 1997-1:2004+A1:2013 Eurocode 7. Geotechnical design. General rules plus UK National Annex.
- BS EN 1997-2:2007 Eurocode 7 Geotechnical design. Ground investigation and testing plus UK National Annex.

Definitions of terms and acronyms used within this report is presented in Section 8.0.

1.2 Proposed Development

The proposed development is for commercial end use comprising the demolition of the existing structure on site and the construction of a steel framed Lidl retail building with associated car park and soft landscaping areas. A detailed proposed layout plan was not made available at this stage.

1.3 Objectives and Scope

The objectives of this assessment were to determine the environmental setting and ground conditions of the site, highlighting potential areas of concern that may govern the redevelopment.

The scope of works comprises a Phase I Assessment and site walk-over, with a review of the site, surroundings, historical uses and environmental setting in order to develop a preliminary Conceptual Site Model (CSM).

This report is intended to meet the requirements of a Preliminary Investigation as defined in BS10175:2011+A2:2017 and has been produced in general accordance with the recommendations for a Tier 1 Preliminary Risk Assessment as described in LCRM guidance.

1.4 Limitations

This Phase 1 Geo-Environmental Assessment Report has been prepared in accordance with the relevant legislative framework, guidance and risk assessment methodology as outlined in Appendix A.

The findings and opinions conveyed via this assessment are based on information obtained from a number of sources as detailed within this report, BSL have assumed this information is correct and reliable. Nevertheless, BSL cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

BSL have used reasonable skill, care and diligence in the production of this report. There may be other conditions prevailing on the site which are outside the scope of work and have not been highlighted by this assessment and therefore have not been taken into account by this report. Responsibility cannot be accepted for such site conditions not revealed by the assessment.

This report has been prepared for the sole use and reliance of the Client, Lidl GB Ltd. No other third party may rely upon or reproduce the contents of this report without the written permission of

Brownfield Solutions Ltd (BSL); a charge may be levied against such approval. If any unauthorised third party comes into possession of this report, then they rely on it at their own risk and BSL do not owe them any Duty of Care.

Any recommendations made in this report should be confirmed with the Regulatory Authorities prior to implementation to ensure compliance.

This assessment has been based on the proposed planning layouts provided. Any subsequent change to the planning layout may have an impact on the validity of recommendations made within this report. Furthermore, new information, changed practices or new legislation may necessitate revised interpretation of the report after the date of its submission.

The site plans enclosed in this report should not be scaled off. Any site boundary line depicted on plans does not imply legal ownership of land.

Notwithstanding site observations concerning the presence or otherwise of archaeological issues, asbestos-containing materials (ACM) or invasive weeds (e.g. Japanese knotweed), this report does not constitute a formal survey of these potential issues and specialist advice should be sought.

2.0 THE SITE

2.1 Location

The site is located off Moss Lane, Cadishead, CD15 2XN, centred on National Grid Reference 382509, 393220 as shown on the Site Location Plan, Drawing No. C5061/01.

2.2 Site Description

A site reconnaissance survey was carried out at the site on 14th April 2022 The main site features and potential issues identified during this survey are detailed below. A selection of photographs from the site walkover are presented to the rear of this report.

Feature	Description
Site Area	Approximately 0.7 hectares.
Site Access	Access to the site is gained off Nell Lane to the southwest.
Current Land Use and Site Features	The site comprises an existing four storey office building appearing of brick masonry/concrete frame construction with associated hardstanding car park and soft landscaping areas. A large sewer is known to traverse through the site. Additional underground services appear to be present associated with the onsite office building including lighting and drainage for the car park, withs several manhole covers noted. A potential borehole standpipe cover was also noted at one location, potentially suggestive that a third party may have carried out intrusive ground investigations at the site at some point in the recent past.
Potential Sources of Gross Contamination	There are no apparent potential sources of gross contamination. However, given the apparent age of the building, it may contain ACMs.
Vegetation	There is an area of soft landscaping of grass with occasional hedges and semi/mature trees along the north-eastern, eastern and southern site boundary. An area of grass is present on the western boundary.
Topography	The site is generally flat. However, the car parking area to the south is raised above street level to maintain the level across the site.
Site Boundaries	The site is bound to the north, east, south and west by panel form wire mesh security fencing. The only exceptions to this are on the eastern boundary to Mauldeth Road West where there is a masonry wall with a gate topped with panel form wire mesh security fencing and additional semi/mature trees to the northeast, and at the north of the western boundary where the wall of the onsite office building makes up the boundary.
Surrounding Area	The site is set within a predominantly residential area, bordered by Chorlton High School to the north, residential properties to the east, south and northwest. Chorlton park is present to the southwest of the site.

3.0 GEO-ENVIRONMENTAL SETTING

3.1 Historical Setting

A review of the available historical Ordnance Survey Maps and satellite imagery has been conducted, with the pertinent issues that may have affected the site, or its environs, summarised below. The Historical Maps are presented in Appendix B. A review of the historical industrial data within the geo-environmental data report has also been undertaken below, the report is presented in Appendix C.

Notable features on site, and potentially contaminative or geotechnically relevant features within 100m of the site boundary have been presented. Any features that have potentially been infilled will be considered up to 250m from the site boundary.

Feature	Distance (m) & Direction	Years Present	Description
Houghend Hall Buildings	Onsite	1849 - 1966	The site appears to make up the grounds of Houghend Hall, with multiple small buildings present within the southern half, an area of landscaped garden to the north and a road entering from the northwest. These associated buildings remain present until the 1966 map. Following maps show the site to be occupied by an office building and associated car park.
Potentially infilled pond	Onsite – SE	1876 - 1923	A pond was present predominantly offsite but encroaching the SE of the site on the earliest available large scale historic map from 1876. The pond is last shown on the map dated 1923 and the consequent map from 1933 shows Mauldeth Road West to be in the place of the pond offsite and the onsite section of pond to no longer present. It is believed to have been infilled prior to this date.
Open air swimming pool / paddling pool	95m SW	1933 - 1955	An open air swimming pool and associated paddling pool are shown to be present 95m SW of the site as part of a wider park area. They are last seen on 1955 map, recorded as disused, and are assumed to have been infilled prior to subsequent mapping. The consequent map of 1973 shows it to be a playground.
Electricity Substation	100m S	1972 – Present day.	An electricity substation can be seen on the 1972 map and remains to present day.
Potentially Infilled ponds	110m SW 150m SW 150m SW 180m NW	1876 - 1894 1849 only 1876 - 1922 1849 - 1922	Several small ponds were identified predominantly to the NW and SW of the site. All of these are no longer present on the map of 1933 and they are presumed to have been infilled with unknown materials.
Refuse Destructor	200m S	1905 - 1911	A refuse heap can be seen on the 1905 to 1911 maps. The area is named as a refuse destructor on small scale mapping suggesting the area may represent a refuse heap for incineration rather than a landfill and is therefore not considered further within this report.

In summary, the map evidence indicates that the site has undergone limited development, once being the grounds with associated outbuildings and a pond of Houghend Hall from earliest available mapping until 1955. Subsequent mapping to present day shows the site to be occupied by an office building with an associated hardstanding carpark.

Historical land use in the surrounding area has been predominantly rural with cottages until the 1933 map on which the surrounding area becomes developed with residential houses, a park and a high school. Potential contaminative sources predominantly result from infilling of features including ponds, and an open water swimming pool. An electricity substation is also present 100m south.

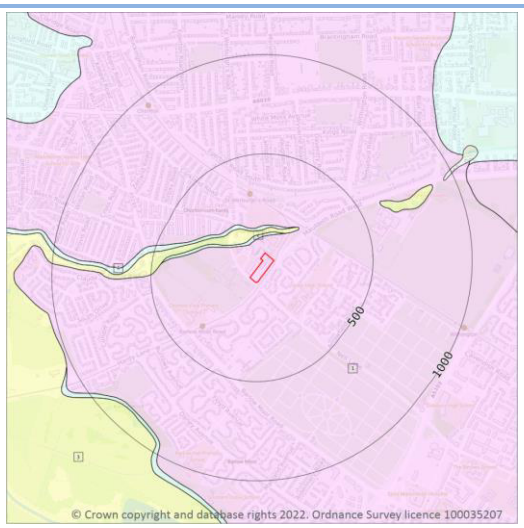
3.2 Published Geology

The following publications of the British Geological Survey (BGS) were examined in respect of the geology underlying the site:

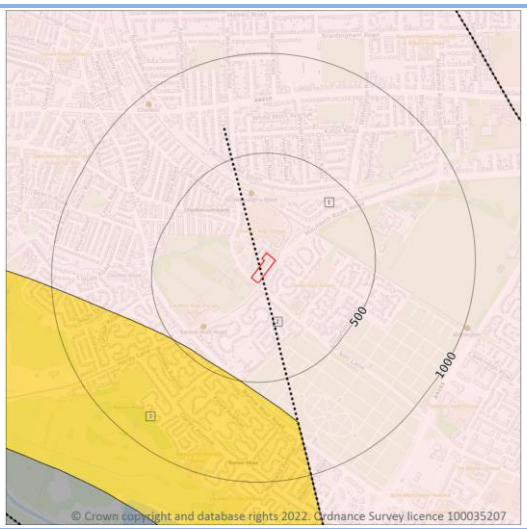
- British Geological Survey (BGS) 1:50,000 Scale Geological Map Sheet 98 Stockport. Solid Edition.
- British Geological Survey (BGS) 1:50,000 Scale Geological Map Sheet 98 Stockport. Drift Edition.
- BGS GeoIndex Onshore.
- Coal Authority Interactive Map.
- Geo-Environmental Data Report.

Extracts of the 1:10,000 geological mapping from the Geo-Environmental Data Report are presented below for reference:

BGS 1:10 000 Superficial Geology



BGS 1:10 000 Solid Geology



Made Ground
BGS mapping does not display any made ground deposits on site, however based on the historical mapping and the development that has taken place, made ground deposits are highly likely to be present. Information from the Geo-Environmental Data Report presented in Appendix C also indicates there to be made ground deposits from 12m NE of the site associated with the road that was previously there.

Superficial Deposits
The site is indicated to be underlain by Glaciofluvial Sheet Deposits. This stratum typically comprises sands and gravels.

Solid Geology
The deeper solid geology is indicated to be part of the Wilmslow Sandstone Formation which typically comprises sandstone.

A fault is shown to traverse the site in a north to south direction, downthrown to the west. However, any movements associated with this fault should now have stopped.

3.3 BGS Exploratory Hole Records

There are six BGS exploratory hole records within a relevant distance of the site (assumed as an approximate 125m radius).

Two of the six boreholes are confidential. A summary of the ground conditions of the four available boreholes are presented in the table below.

Reference	Distance from Site (m) and Direction	Depth Made Ground (m)	Depth Superficial Deposits (m)	Depth Solid Geology (m)
SJ89SW923	16m SE	GL – 0.90m bgl – sand and gravel including ash, clinker, brick, ceramic and glass.	0.90 – 2.80 – slightly silty sand. 2.80 – 6.65 – slightly sandy slightly gravelly clay.	Not encountered.
SJ89SW956	53m NE	GL – 1.60 - sand and gravel including ash, clinker, brick, pottery and glass.	1.60 – 4.80 - slightly silty sand. 4.80 – 6.20 - slightly sandy slightly gravelly clay.	Not encountered.
SJ89SW957	62m S	GL – 1.90 - sand and gravel including ash, clinker, brick, ceramic and glass.	1.90 – 2.50 - slightly silty sand. 2.50 – 6.20 – slightly sandy slightly gravelly clay.	Not encountered.
SJ89SW876	89m NE	GL – 1.20 – slightly gravelly sand. Gravel is of mixed lithology including brick.	1.20 – 3.70 – slightly silty slightly gravelly sand. 3.70 – 15.00 slightly sandy slightly gravelly clay.	15.00 - 18.31 – extremely weak sandstone recovered as sand.

The BGS Borehole Logs are presented in Appendix D.

3.4 Mining and Mineral Extraction

The site is outside the area of a designated coalfield or brine extraction area and no further consideration of coal mining/brine related risks is required.

3.5 Hydrogeology

Based on the inferred geology, a summary of the Environment Agency aquifer designations is presented in the table below:

Stratum	Coverage	Aquifer Designation
Superficial	Full Site	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.
Bedrock	Full Site	Principal Aquifer. This is 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.

A summary of the pertinent hydrogeological features within the Geo-Environmental Data Report are provided below:

Feature	Distance (m) & Direction	Details
Nearest Active Groundwater Abstraction	1075m S	Status: Active Licence No: 2569015015 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT CHORLTON-CUM-HARDY GOLFCLUB Annual Volume (m3): 8,500 Max Daily Volume (m3): 70

Feature	Distance (m) & Direction	Details
		Version Start Date: 01/04/2019
Nearest Active Potable Groundwater Abstraction	-	None active, nor historical, within 2000m.
Source Protection Zones	-	None within 500m.

3.6 Hydrology

A summary of the pertinent hydrological aspects within the Geo-Environmental Data Report are provided below:

Feature	Distance (m) & Direction	Details
Nearest Watercourse	99m N	Chorlton Brook. E to W flow.
Nearest Surface Water Abstraction	-	None within 2000m.
Closest Active Licenced Discharge Consent	180m NW	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0232 Permit Version: 4 Receiving Water: CHORLTON BROOK Status: VARIED UNDER EPR 2010 Issue date: 20/02/2020.

Information obtained from the Environment Agency (EA) Risk of Flooding from Rivers and the Sea (RoFRaS) database indicates that there is no risk of flooding from rivers and the sea within 50m of the site.

The site is not indicated to lie within an EA designated Zone 2 or Zone 3 flood plain.

The British Geological Survey indicate there is a potential for groundwater flooding at the subject site, with a high-risk rating.

No further consideration of flood risk is undertaken in this report. Specialist flood risk advice should be sought with regards to drainage and flooding.

3.7 Landfill and Waste Management Sites

There are no active, nor recently closed landfill sites recorded within 500m.

There is one recorded historic landfill within 500m, it is located 181m SE at Nell Lane accepting Environmental Permitting Regulations Waste. No further information is supplied. It is considered that this is related to the refuse destructor identified on historical mapping; it does not appear to be a feature that has been infilled.

There are no current waste management sites recorded within 250m of the site.

There are no historical waste management sites recorded within 250m of the site.

3.8 Environmental Regulatory Data

A summary of the relevant environmental aspects, both on site and within 250m of the site contained in the Geo-Environmental Data Report, are presented in the table below:

Entry	On-site	0 – 50m	50 – 250m	Details
Recent Industrial Land Uses	0	0	4	The closest record is located 68m southeast of the site for AIS Alarms for the production of electrical equipment.
Current or Recent Fuel Stations	0	0	0	
Licensed Industrial Activities (Part A(1))	0	0	0	
Licensed Pollutant Release (Part A(2)/B)	0	0	0	
Radioactive Substances	0	0	0	
Pollution Incidents (EA/NRW)	0	0	0	

In regard to the entries identified above, based on the uses listed, alongside distances and ages, none are considered to be of significant relevance to be carried forward to the preliminary CSM and have not been considered further.

3.9 Radon

Information from the environmental database report indicates the property is in an area where <1% of properties are above the Action Level for radon, and therefore radon protective measures are not required in accordance with BRE Report 211 'Radon – Guidance on protective measures for new dwellings' 2015 Edition.

3.10 UXO Risk

In accordance with CIRIA Report C681, BSL have reviewed non-specialist UXO data for the site using the online Zetica Bomb Risk Mapping data.

There is no indication of former military use from the Phase I Assessment. The map indicates the site to be in an area where the bomb risk is moderate. A copy of the map is presented in Appendix E.

Since the site is considered to be at moderate bomb risk, in order to determine if and what further action may be required to mitigate the risk, the next stage would be to follow the recommended process set out in CIRIA Report C681 and carry out a preliminary risk assessment or undertake a full detailed risk assessment. Intrusive works on site may also require supervision by a UXO specialist.

4.0 PHASE 1 SUMMARY AND RISK ASSESSMENT

4.1 Introduction

The risk posed by any contaminants in soil or groundwater will depend on the nature and level of the source, the probability of exposure occurring, the potential pollution pathway and the likely 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 through which a receptor could be exposed to the contaminant.

The following sections discuss the identified potential on-site and off-site sources, and any pollution that could impact receptors via the pathways associated with the proposed development. Pollution linkages are assessed which may represent a risk to human health and/or controlled water receptors from the information gained from the Phase I Assessment searches. The assessment has been carried out on a qualitative basis and aims to produce a complete and comprehensive Preliminary Conceptual Site Model.

Three potential impacts exist for any given site and all three need to be considered in the qualitative risk assessment, these are:

- On-site impacts.
- The site impacting its surroundings.
- Off-site sources impacting the subject site.

4.2 Potential Contaminative Sources

On-Site
From the information obtained, the following sources have been identified which may affect the redevelopment of the site for commercial end use:

- Made ground associated with the limited former onsite development.
- Ground gas from infilled pond.

Off-Site
The following off-site sources have been identified which may affect the redevelopment of the site:

- Infilled Features (Ponds, Outdoor Swimming Pool) (from 95m SW).
- Electricity Substation (100m S).

Given the scale of the source, the distance from the site and the low mobility of associated contaminants the electricity substation is not considered to be a viable source and is therefore not considered further.

In addition, the historical landfill off site 181m south is shown on mapping as a refuse destructor, with no infilled ground displayed. Given the distance from site and nature of the feature, it is not considered to be a viable source and is therefore not considered further.

Associated Contaminants
The contaminants commonly associated with the potential sources of contamination identified are tabulated below:

Contaminative Sources	Department of the Environment Industry Profile or Other Source	Commonly Associated Contaminants
On Site		
Made Ground	AGS Guides, CIRIA C665	Heavy metals, polycyclic aromatic hydrocarbons (PAHs), asbestos, ground gases (carbon dioxide and methane).
Infilled Pond	AGS Guides, CIRIA C665	Heavy metals, polycyclic aromatic hydrocarbons (PAHs), asbestos ground gases (carbon dioxide, methane, carbon monoxide and hydrogen sulphide).
Off Site		
Infilled Features (ponds/ outdoor swimming pool)	CIRIA C665	Ground gases (carbon dioxide, methane, carbon monoxide).

4.3 Pathways

A pathway is defined as a medium by which a contaminant comes into contact with, or otherwise impacts a receptor.

At this stage the potential contaminants identified above are considered to present potential risks to site end users and controlled waters through the following pathways:

Potential Pathways	
Pathways in respect to Human Health	• Dermal contact with contamination. • Inhalation of dusts. • Inhalation of gases or vapours in both indoor and outdoor air.
Pathways in respect to Controlled Waters – Surface water	• Surface run-off /over land flow. • Drainage discharge. • Base flow from groundwater.
Pathways in respect to Controlled Waters – Groundwater	• Leaching of mobile contamination into groundwater via the unsaturated zone. • Migration of perched groundwater in any permeable soils or along existing or proposed service runs. • Migration into the saturated zone and flow through the aquifers underlying the site.
Pathways in respect to Property/structures/water pipes	• Direct contact with substances deleterious to building materials and potable water supply pipelines. • Migration of ground gases (methane) into confined spaces (explosion and damage to property).

4.4 Receptors

The identified receptors are listed below:

- Commercial end users (human health).
- Structures/Property/Potable water supply pipes.
- Nearest watercourse. Chorlton Brook 99m N flowing east to west (Controlled waters).
- Superficial Aquifer. Glaciofluvial Sheet Deposits (Controlled waters).
- Bedrock Aquifer. Wilmslow Sandstone Formation (Controlled waters).

Under current UK health and safety legislation, employers are required to carry out their own appropriate site-specific risk assessments and mitigation to protect employees. It has been assumed

that any future construction works onsite will be undertaken in compliance with these requirements. Therefore, construction workers have not been specifically considered as part of this assessment.

4.5 Preliminary Conceptual Site Model (CSM)

The information obtained in the previous sections has been used to compile a Preliminary CSM. The identified potential contaminants and receptors have been assessed in the table below as to whether a plausible source-pathway-receptor pollutant linkage for the proposed end use of the site exists. The risk classification has been estimated in accordance with information in the BSL Guidance and Methodology in Appendix A.

The Preliminary CSM's are presented in the tables overleaf, any assessed risk above moderate will possibly require further action:

Human Health						
Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk	Justification
On site Made Ground Metals, PAH's, asbestos	Root uptake, ingestion, direct contact, inhalation of dusts	End-users	Low likelihood	Medium	Moderate / Low	The site has been subject to limited development throughout its history. Therefore, the presence of made ground is considered likely. However, made ground deposits are not anticipated to be substantial in thickness, nor have any significant contaminative processes been identified on site. The presence of hardstanding across the majority of the development will break the pathway to site end users therefore the likelihood of any impact is considered low. However, given the likely presence of areas of soft landscaping within the development the overall risk is considered to be moderate to low. Further investigation and assessment will be required to confirm the risk.
On site Made Ground Metals and organic contamination	Migration into/chemical attack of water supply pipelines	Water Pipelines / End users	Unlikely	Medium	Low	Contaminants within the soil/groundwater could potentially attack the clean potable water supply pipe, contaminants should be assessed to determine the correct pipe material and level of precautions required.
On site Made Ground Ground Gas (carbon dioxide and methane)	Migration into confined spaces, inhalation and asphyxiation/ explosion	End-users / property / structures	Unlikely	Medium to severe	Moderate / Low	It is anticipated that the made ground is likely to consist of material which is not putrescible, and the gas generation potential of which is considered to be very low. The made ground is not anticipated to be of substantial thickness. The risk is considered to be moderate / low; investigation is required to confirm the risk.
On site Infilled Pond Ground Gas (carbon dioxide and methane)	Migration into confined spaces, inhalation and asphyxiation/ explosion	End-users / property / structures	Low likelihood	Medium to severe	Moderate	It is anticipated infill material is likely to have a very low/ low gas generation potential. A moderate risk is considered to exist. Further investigation is required to confirm the risk.
Off site Infilled Features Ground Gas (carbon dioxide and methane)	Migration into confined spaces	End-users/ Buildings	Unlikely	Severe	Moderate / Low	Given the distance of these infilled features from the site, and the propensity for ground gas to migrate upwards there is considered unlikely for any ground gas associated with the infilled features to negatively impact the site. However, the risk is considered moderate/low at this stage and further assessment is required.

Controlled Waters						
Potential Source	**Potential Pathway**	**Potential Receptor**	**Likelihood**	**Severity**	**Level of Risk**	**Justification**
Made Ground PAHs, Metals	Overland flow, / migration through saturated zone	Chorlton Brook 99m away (Surface waters)	Unlikely	Medium	Low	It is considered contaminants associated with the made ground are unlikely to impact the Chorlton Brook. This is due to the lack of any identified significant contaminative processes, and potential for contaminants to attenuate and degrade over this distance. Therefore, a low risk is posed to the brook from the made ground.
	Leaching through unsaturated zone / Migration through saturated zone	Secondary A Aquifer (Groundwater)	Unlikely	Medium	Low	Made ground associated with the previous development is not anticipated to be substantial in thickness and no significant sources of contamination have been identified from the known current and previous site uses. In addition, the site is currently surfaced in hardstanding and will remain so in the majority, with a new surface water drainage system installed which will further reduce the risk to controlled waters.
	Migration through saturated zone	Principal Aquifer (Groundwater)	Unlikely	Medium	Low	Made ground associated with the previous developments is not anticipated to be substantial in thickness and no significant sources of contamination have been identified from the known current and previous site uses. There are no groundwater abstraction licences within 500m of the site, additionally, clays are noted to be underlying the area in all BGS logs surrounding the site, this relatively impermeable material would help break the pathway between any contaminants and the Principal Aquifer. Furthermore, as stated above, the site is currently surfaced in hardstanding and will remain so in the majority, with a new surface water drainage system installed which will further reduce the risk to controlled waters.

Human Health Risk – Soils Contamination Summary
Based on the preliminary CSM and the current use of the site, the overall risk from land contamination at the site is considered to be **low to moderate** for a redeveloped site. This would need to be confirmed by appropriate intrusive investigation, testing and assessment.

Human Health Risk – Ground Gas Summary
A potential on-site gas source has been identified associated with the made ground and potentially infilled pond. Off site potential sources include additional infilled features. Potentially viable linkages are considered to exist and the preliminary CSM considers these sources to be of low to moderate risk.

In accordance with BS8576 and CIRIA C665 as set out in Appendix A of this report, the gas generation potential is considered to be very low to low. The sensitivity of the development is low on account of the proposed commercial use.

In line with current guidance, it is recommended that ground gas monitoring should comprise four visits over a one to two month period.

Controlled Waters Risk - Summary
Based on the preliminary CSM, BSL believes the overall risk to controlled waters at the site is **low**.

The above assessed level of risk will need to be confirmed by intrusive investigation and quantitative risk assessment.

5.0 PRELIMINARY GEOTECHNICAL ASSESSMENT

5.1 Hazard Identification

A preliminary geotechnical hazard identification exercise has been undertaken in general accordance with the Highways England document CD 622, 'Managing geotechnical risk'. Potential geotechnical hazards based on the expected ground conditions are listed below:

- Made ground of unknown nature; if placed in a non-engineered manner may cause excessive settlement of foundations, highways and infrastructure.
- Possible presence of obstructions in the ground from historical developments (e.g relict foundations) causing difficulties with excavations or penetrative works.
- Attack of buried concrete by aggressive ground conditions; the site may contain unknown made ground and potentially sulphate bearing soils.
- Running sands or loose materials leading to difficulty with excavation due to trench collapse.
- Loose nature of Glaciofluvial Sheet Deposits, potentially requiring a deeper foundation solution.
- Shallow groundwater/groundwater rise causing resulting in difficulties with excavations due to trench collapse.
- UXO; the site lies within an area at moderate risk from unexploded ordnance.

The above identified geotechnical hazards will need to be considered as part of further investigations and assessments.

5.2 Foundation and Geotechnical Design

The proposed development will comprise a Lidl retail building and associated car park and soft landscaping areas. The type of foundation solution should be informed by an onsite intrusive investigation to confirm ground conditions and obtain geotechnical parameters for preliminary foundation and floor slab design. Intrusive investigation should also obtain data to allow appropriate concrete classification in accordance with BRE SD1 and for preliminary highways/pavement design.

5.3 Sustainable Drainage Systems (SuDS)

Drainage to SuDS is a potentially viable option for the site, given the indicated presence of permeable Glaciofluvial Sheet Deposits, subject to the depth to the groundwater and test results.

This would need to be confirmed by an onsite intrusive investigation to confirm ground conditions and infiltration rates. Testing should be carried out in general accordance with BRE Digest 365 “Soakaway design” and CIRIA C753 “The SuDS Manual”.

6.0 OTHER DEVELOPMENT CONSTRAINTS

6.1 Constraint Identification

A formal survey of asbestos within structures is not covered in this report. It should be noted that an asbestos demolition survey will be required prior to any demolition of structures. If asbestos is present in soils, these will need to be dealt with in accordance with the Control of Asbestos Regulations (CAR) 2012.

No invasive species have been noted during the walkover; however, it would be prudent to undertake a specialist survey prior to any works on site.

Notwithstanding any site observations concerning archaeological or ecological features, this report does not constitute a formal survey of these potential issues and specialist advice should be sought.

There are known services on site, these may need to be disconnected prior to any construction activities.

The preliminary risk assessment undertaken within this Phase I Assessment may identify potential risks to site demolition and construction workers. However, full consideration of occupational health and safety issues is beyond the scope of this report, with employers required to carry out their own site-specific risk assessments and mitigation as appropriate.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Geo-Environmental Summary

The site has had limited previous development including hosting some small buildings and a pond to an office building with associated hardstanding car parking and soft landscaping. However, based on the proposed commercial development, the overall risk to human health from on site soils contamination is considered to be moderate / low.

The risk from off-site sources of contamination is generally considered to be low with the exception of potential offsite ground gas sources that present a moderate / low risk.

The risk from permanent ground gases is considered to be moderate.

The overall risk to controlled waters is considered to be low.

Intrusive investigations will be required to confirm the above assessed levels of risks and determine remedial requirements, if any.

7.2 Geotechnical Summary

Intrusive investigations will be required to confirm the most suitable foundation solution and to obtain parameters for concrete classification, floor slab and highways design.

Drainage to SuDS is potentially viable for the site, subject to intrusive investigation and testing.

7.3 Further Work

To confirm the risks to the identified receptors and confirm the ground conditions in respect to the identified geotechnical and geo-environmental risks, an appropriate intrusive investigation will need to be undertaken. The following further works are recommended, although this list is not exhaustive and should be read in conjunction with any planning conditions that are applicable to the site:

- Topographical survey / utility mapping.
- Demolition Asbestos survey.
- Obtain Preliminary UXO Desk Study.
- Intrusive ground investigation comprising:
  - Windowless sampling, cable percussive drilling and light weight deflectometer testing.
  - Installation of standpipes in boreholes to allow gas concentrations and groundwater levels to be monitored.
  - The undertaking of soil infiltration rate testing in boreholes.
  - Geotechnical testing of soils.
  - Contamination analyses of soils and groundwater.
- Assessment and recommendations based on the above, including requirements for further work, if necessary.

8.0 ABBREVIATIONS AND DEFINITIONS

GLOSSARY	
Term / Abbreviation	**Definition**
AST	Above Ground Storage Tank.
B(a)P	Benzo (a) Pyrene.
BGS	British Geological Survey.
BRE	Building Research Establishment.
BS	British Standard.
BSL	Brownfield Solutions Ltd.
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes.
CBR	California Bearing Ratio (used in pavement/highways design).
CAR 2012	Control of Asbestos Regulations (2012).
CBCB	Cheshire Brine Compensation Board.
CBCD	Cheshire Brine Compensation District.
CBR	California Bearing Ratio.
CIEH	Chartered Institute of Environmental Health.
CIRIA	Construction Industry Research Association.
CL:AIRE	Contaminated Land: Applications in Real Environments.
CLEA	Contaminated Land Exposure Assessment.
CLO	Contaminated Land Officer.
COMAH	Control of Major Accident Hazards.
Contamination	Presence of a substance which is in, on or under land, and which has the potential to cause significant harm or to cause significant pollution of controlled water. There is no assumption in this definition that harm results from the presence of the contamination. Naturally enhanced concentrations of harmful substances can fall within this definition of contamination. Contamination may relate to soils, surface water, groundwater or ground gas.
Controlled Waters	Inland freshwater (any lake, pond or watercourse above the freshwater limit), water contained in underground strata and any coastal water between the limit of highest tide or the freshwater line to the three-mile limit of territorial waters.
CPT	Cone Penetration Test.
CSM	Conceptual Site Model. A schematic hypothesis of the nature and sources of contamination, potential migration pathways (including description of the ground and groundwater) and potential receptors, developed on the basis of the information from the preliminary investigation and refined during subsequent phases of investigation and which is an essential part of the risk assessment process. The conceptual site model is initially derived from the information obtained by the preliminary investigation (i.e. the Phase I Phase I Assessment). This conceptual model is used to focus subsequent investigations, where these are considered to be necessary, in order to meet the objectives of the investigations and the risk assessment. The results of intrusive investigations can provide additional data that can be used to further refine the conceptual site model.
DCP	Dynamic Cone Penetrometer.
DNAPL	Dense Non-Aqueous Phase Liquid.
DoWCoP	Definition of Waste Code of Practice.
DWS	Drinking Water Standard.
EA	Environment Agency.
EHO	Environmental health Officer.
EQS	Environmental Quality Standard.
GAC	Generic Assessment Criteria.

GLOSSARY	
Term / Abbreviation	**Definition**
GDR	Geotechnical Design Report.
GFR	Geotechnical Feedback Report.
GIR	Ground Investigation Report.
GSV	Gas Screening Value.
Harm	Adverse effect on the health of living organisms, or other interference with ecological systems of which they form part, and, in the case of human health, including property/structures and water supply pipelines.
Hazard	Inherently dangerous quality of a substance, procedure or event.
HDPE	High Density Polyethylene.
HSV	Hand Shear Vane.
K	Modulus of Subgrade Reaction.
LCRM	Land Contamination: Risk Management (EA guidance).
LNAPL	Light Non-Aqueous Phase Liquid (petrol, diesel, kerosene).
LOD	Limit of Detection (for particular method adopted).
MMP	Materials Management Plan.
Mv	Modulus of Volume of Compressibility.
ND	Not Detected.
NHBC	National House Building Council.
NR	Not Recorded.
OS	Ordnance Survey.
PAH	Polycyclic Aromatic Hydrocarbon.
Pathway	Mechanism or route by which a contaminant comes into contact with, or otherwise affects, a receptor.
PCB	Poly-Chlorinated Biphenyl.
PCSM	Preliminary Conceptual Site Model.
pH	Scale used to specify how acidic or basic a water-based solution is.
PHC	Petroleum Hydrocarbons.
PID	Photo Ionisation Detector.
PNEC	Predicted No-Effect Concentration.
Precision	Level of agreement within a series of measurements of a parameter.
PSD	Particle Size Distribution.
PVC	Polyvinyl Chloride.
Receptor	Human health, living organisms, ecological systems, controlled waters (surface waters and groundwater within aquifers), atmosphere, structures and utilities that could potentially be adversely affected by contaminant(s).
Risk	Probability of the occurrence, magnitude and consequences of an unwanted adverse effect on a receptor.
Risk Assessment	Process of establishing, to the extent possible, the existence, nature and significance of risk.
Sampling	Methods and techniques used to obtain a representative sample of the material under investigation.
SOM	Soil Organic Matter.
Source	Location from which contamination is, or was, derived. This could possibly be the location of the highest soil, groundwater or gas concentration of the contaminant(s).
SPT	Standard Penetration Test.
SVOCs	Semi Volatile Organic Compounds.
TOC	Total Organic Carbon.
TPH CWG	Total Petroleum Hydrocarbon (Criteria Working Group).

GLOSSARY	
Term / Abbreviation	**Definition**
TVOCs	Total volatile organic compounds.
UCS	Unconfined Compressive Strength.
Uncertainty	Parameter, associated with the result of a measurement that characterises the dispersion of the values that could reasonably be attributed to the measurement.
UST	Underground Storage Tank.
UXO	Unexploded Ordnance.
VCCs	Vibro Concrete Columns.
VSCs	Vibro Stone Columns
VOCs	Volatile Organic Compounds.
WAC	Waste Assessment Criteria.
WFD (in waste context)	Waste Framework Directive.
WFD (in water context)	Water Framework Directive.
Units	**Definition**
°	Degrees
Φ	Phi angle (in degrees)
g/l	Grams per Litre
Km	Kilometres
kPa	Kilo Pascal (Equivalent to kN/m^2)
$KN/m^2/mm$	Kilo Newton per metered squared per millimeter
kN/m^2	Kilo Newtons per metre squared
kPa	Kilo Pascal (Equivalent to kN/m^2)
l/hr	Litres per hour
MJ/kg	Mega joule per kilogram
MN	Mega Newton
M^2/MN	Mega Newton per metre squared
M	Metres
m bgl	Metres Below Ground Level
m OD	Metres Ordnance Datum (sea level)
µg/l	Micrograms per Litre (parts per billion)
µm	Micrometre
mb	Millibars (atmospheric pressure)
mg/kg	Milligrams per kilogram (parts per million)
mg/m^3	Milligram per metre cubed
mm	Millimetre
ppb	Parts Per Billion
Ppm	Parts Per Million

9.0 REFERENCES

BS 5930+A1:2020: 'Code of Practice for Site Investigations'. 2020.

BS 10175:2011+A2:2017 'Investigation of Potentially Contaminated sites - code of practice'. 2017.

BRE Report BR211, Scivyer, C. 'Radon – Guidance on protective measures for new buildings' 2015 Edition.

CIRIA C665 'Assessing Risks Posed by Hazardous Ground Gases to Buildings'. 2007.

CIRIA C681 'Unexploded Ordnance (UXO) A guide for the construction industry'. 2009.

CIRIA C753 'The SuDS Manual'. 2015.

CL:AIRE RB17 'A Pragmatic Approach to Ground Gas Risk Assessment'. 2012.

Department of the Environment. 'Industry Profiles' - 48 separate publications available from The Stationery Office, London. 1995.

DEFRA and the Environment Agency, CLR Report No 11 'Model Procedures for the Management of Contaminated Land'. 2004. [Withdrawn 2019.]

Environment Agency (EA) - Land Contamination Risk Management (LCRM). 2019.

Health and Safety Executive (HSE). Control of Asbestos Regulations (CAR). 2012.

Highways England. CD 622, 'Managing geotechnical risk'. 2020.

National Planning Policy Framework (NPPF). 2021.

National Planning Policy Framework - Technical Guidance. March 2012.

Water Framework Directive, 2000.

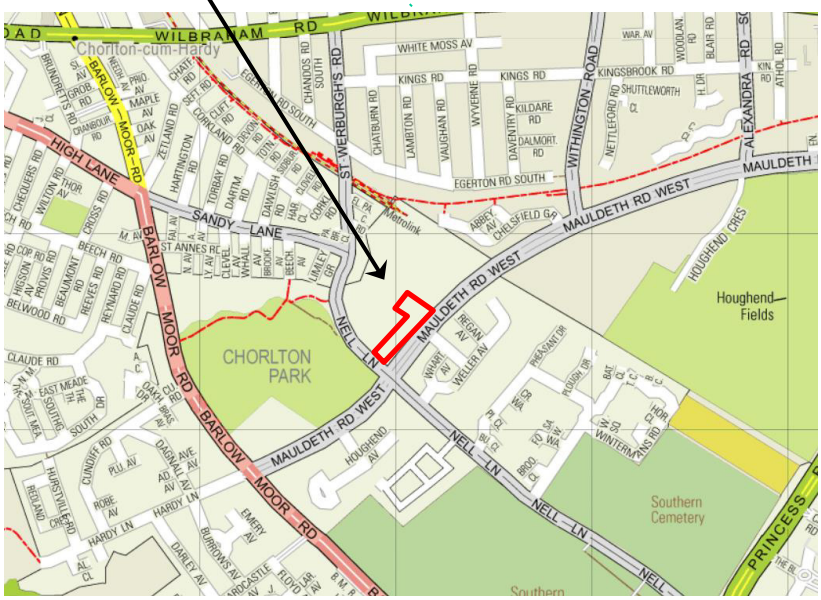
DRAWINGS



SITE LOCATION

NEAREST POSTCODE: M21 7AA

SITE ENTRANCE WHAT3WORDS: ///REAR.LEGEND.ROPES



REV	DATE	DESCRIPTION	BY	CKD

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CLIENT
LIDL GB LTD

PROJECT TITLE
LOWRY HOUSE, CHORLTON

DRAWING TITLE
SITE LOCATION PLAN

DRAWING No.	REVISION	SCALE	DATE
C5061/01	-	NTS	04/04/22

DRAWN BY	CHECKED BY
SD	JEM

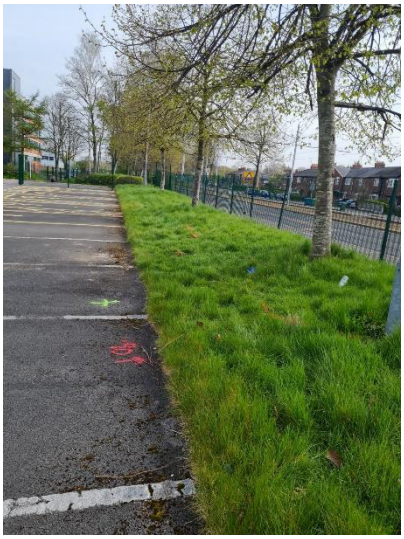
PHOTOGRAPHS



Photograph 1: Existing structure.



Photograph 2: Looking to north east.



Photograph 3: Soft landscaping present to south.



Photograph 4: Along northern boundary.



Photograph 5: Car park in north.



Photograph 6: Gated access.

APPENDIX A

BSL Methodology and Guidance

Contaminated Land - 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 DETR circular 02/2000 Environmental Protection Act 1990: Part IIA Contaminated Land.
- The Contaminated Land (England) Regulations 2000.
- Environment Agency (EA) - Land Contamination Risk Management (LCRM) 2019.

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:

- DETR: Circular 02/2000: Environmental Protection Act 1990: Part IIA: Contaminated land. 2012.
- Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the EPA1990, May 2002.
- BS 10175:2011+A2:2017.
- Environment Agency (EA) - Land Contamination Risk Management (LCRM). 2019.

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 Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (2012).
- The Environment Protection Act (1990).
- The Water Resources Act (1991).
- The Environment Act (1995).
- The Contaminated Land (England) Act (2000).
- 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).
- Contaminated Land (England) Regulations (2012).

- Health and Safety at Work Act.
- National Planning Policy Framework (NPPF) 2021.

Contaminated Land Risk Assessment Approach

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. Under LCRM, three tiers of risk assessment exist – Stage/Tier Preliminary Risk Assessment, Stage 2 Generic Quantitative and Stage 3 Detailed Quantitative.

Further information can be found at the below site:
https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

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
	No Linkage	Negligible			

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.

Some linkages may be identified which constitutes a theoretical connection between a source and a receptor, but professional judgement shows them not to be possible for some reason. These are labelled 'no linkage' in the summary table, which give rise to a **negligible** risk category and no further action is required.

Ground Gas Risk Assessment Guidance

BS8485:2015+A1:2019, BS 8576:2013, CIRIA C665 and CL:AIRE RB17 are the current guidance which gives up-to-date advice on all aspects of ground gas. They outline good practice in investigation, the collection of relevant data and monitoring programmes in a risk-based approach to ground gas contamination.

Within BS8485:2015+A1:2019, BS 8576:2013 and CIRIA C665, two semi-quantitative methods are set out for the assessment of risk:

1 For low rise housing with a ventilated under floor void at minimum 150 mm (Boyle and Witherington).
2 For all other development types (Wilson and Card).

Both methods use the concept of Gas Screening Values (GSVs) to identify levels of risk. The mitigation and management of potentially unacceptable risk is described with reference to both passive and active systems of gas. Source removal is also discussed as an option. A sperate approach is discussed under the RB17 header further below.

The aim of the guidance is for a consistent approach to decision making, particularly relating to the scope of protective design measures on a site-specific basis.

Legislative Framework
BS8485:2015+A1:2019, BS 8576:2013 and CIRIA C665 provides technical guidance, however they also recognise the context into which the guidance has to be employed. Government policy is based upon a "suitable for use approach", which is relevant to both the current and proposed future use of land. When considering the current use of land, Part IIA of the Environment Protection Act 1990 provides the regulatory regime. The presence of hazardous ground gases could provide the "source" in a "pollutant linkage" which could lead the regulator to determine that considerable harm or there is a significant possibility of such harm being caused. Under such circumstances, the regulator would determine the land to be "contaminated land" under the provisions of the Act, setting out the process of remediation as described in the DETR Circular 02/2000 *Statutory guidance on contaminated land.*

Generation Potential of Sources
BS 8576:2013 Figure 6 provides a basis for assessing the generation potential from sources identified as part of the Phase I Assessment. These are summarised below:

Generation Potential	Typical Sources
Very Low	• Natural carbonate soil and strata, e.g. chalk and limestone. • Natural soil strata with a low degradable organic content, e.g. alluvium, peat. • In-filled pond less than 15 m diameter, in-filled before 1930s to 1940s. • Made ground with low degradable organic content (e.g. up to 5% organic material such as pieces of wood, pieces of paper, rags, etc. with a high proportion of ash and no food or other easily degradable waste). • Mine workings shallow or shaft (where there is clear evidence that they are flooded). • Inert landfill sites.
Low	• Natural soil strata with a high degradable organic content (DOC). • Made ground with total organic carbon (TOC) up to 6% (e.g. dock silt, no food or other easily degradable waste). • Foundry sand (includes phenolic binders, rags and wood that decay, albeit at low rates). • Landfill 1945 to mid 1960s (see also Moderate below).

Generation Potential	Typical Sources
Moderate	• Sewage sludge. • Mine workings – unflooded, more than 50 years since last worked (gas is liberated from coal when mine workings are excavated; this continues for up to about 50 years). • Landfill 1945 to mid 1960s (this could also be "low" or, if disturbed, "high").
High	• Landfill mid 1960s to early 1990s. • Mine workings – unflooded – less than 50 years since last worked.
Very High	• Municipal landfill sites. • Landfill early 1990s onward.

Frequency and Duration of Monitoring

The monitoring period for a specific site covers the "worst case" scenario. A "worst case" scenario will typically occur during falling atmospheric pressure and, in particular, weather conditions such as rainfall, frost and dry weather.

The benefits of the additional information and whether it is likely to change the scope of gas protection should be considered, as are the consequences of failing to characterise adequately pollutant linkages. Investigations concerned with soil gas are required to provide monitoring data sufficient to allow prediction of worst case conditions enabling the confident assessment of risk and subsequent design of appropriate gas protection schemes. Monitoring programmes should not be an academic exercise in data collection. CL:AIRE publication TB17 "Ground Gas Monitoring and 'Worst-Case' Conditions" provides further guidance.

Below are matrices that will aid in determining an appropriate number of gas monitoring visits and the length of monitoring period.

Typical/idealised periods of monitoring

		Generation of Potential Source				
		Very Low	Low	Moderate	High	Very High
Sensitivity of Development	Low (Commercial)	1 month	2 months	3 months	6 months	12 months
	Moderate (Apartments)	2 months	3 months	6 months	12 months	24 months
	High (Low rise Residential)	3 months	6 months	6 months	12 months	24 months

Typical/idealised frequency of monitoring/Number of Visits Required

		Gas Generation of Potential Source				
		Very Low	Low	Moderate	High	Very High
Sensitivity of Development	Low (Commercial)	4	6	6	12	12
	Moderate (Apartments)	6	6	9	12	24
	High (Low rise Residential)	6	9	12	24	24

Note

1 NHBC guidance also recommends this period of monitoring (Boyle and Witherington, 2007).
2 Generation potential of sources based on descriptions within BS 8576:2013.
3 At least two sets of readings should be at low and falling atmospheric pressure (but not restricted to periods below <1000 mb) known as worst case conditions. Historical data can be used as part of the data set (Table 5.5b).

It is recommended that newly installed monitoring wells are left for 24 hours to allow the soil gas to reach equilibrium. It should be recognised, however, that some soil gas regimes could take considerably longer (up to seven days). Interpretation of any initial readings should take this equilibrium process into account.

RB17 Approach

CL:AIRE RB17 (Card et al 2012) is a pragmatic approach to ground gas risk assessment and was developed because gas concentration, pressure and flow rate measured in a well headspace may not be representative of the conditions in the surrounding formation.

In these low-risk situations, the approach is to use the conceptual site model and the estimation of the likely gas generation from a source to identify where or if gas monitoring is required to better define the risks.

Under this approach, for sites with natural soils only with no credible methane source, then no action is required (no monitoring or gas protection measures) as this represents Characteristic Situation 1 (CS1).

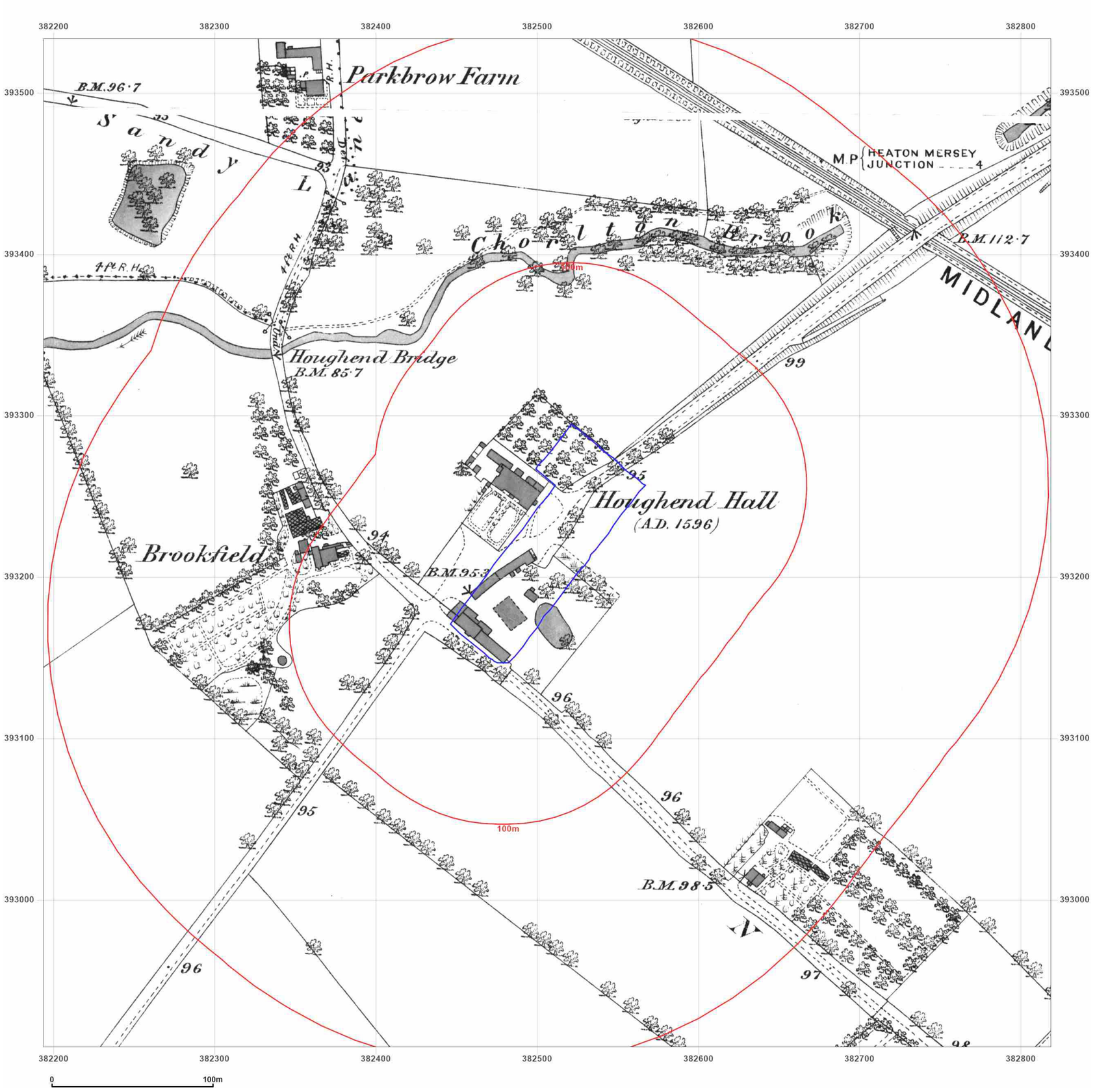
Unexploded Ordnance (UXO) Guidance

Clients have a legal duty under the CDM 2015 Regulations to provide designers and contractors with project-specific health and safety information needed to identify hazards and risks. This includes the possibility of unexploded ordnance (UXO) being encountered on the site. Further details are given in CIRIA report C681.

BSL carry out non-specialist UXO screening exercises by considering any evidence of UK defence activities on or near the site evident from gathered desk study information and the unexploded aerial delivered bomb (UXB) online risk maps produced by Zetica. Other data sources are available, but as a first stage screening exercise the freely available online Zetica maps have been used. The level of risk stated is that determined by Zetica, a company experienced and considered competent in the assessment of UXO.

APPENDIX B

Historical Maps



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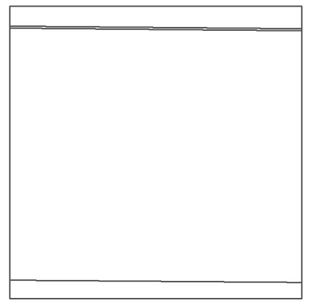
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N
W E
S

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Revised N/A
Edition 1881
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Levelled N/A



Surveyed 1876
Revised 1876
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Groundsure INSIGHTS

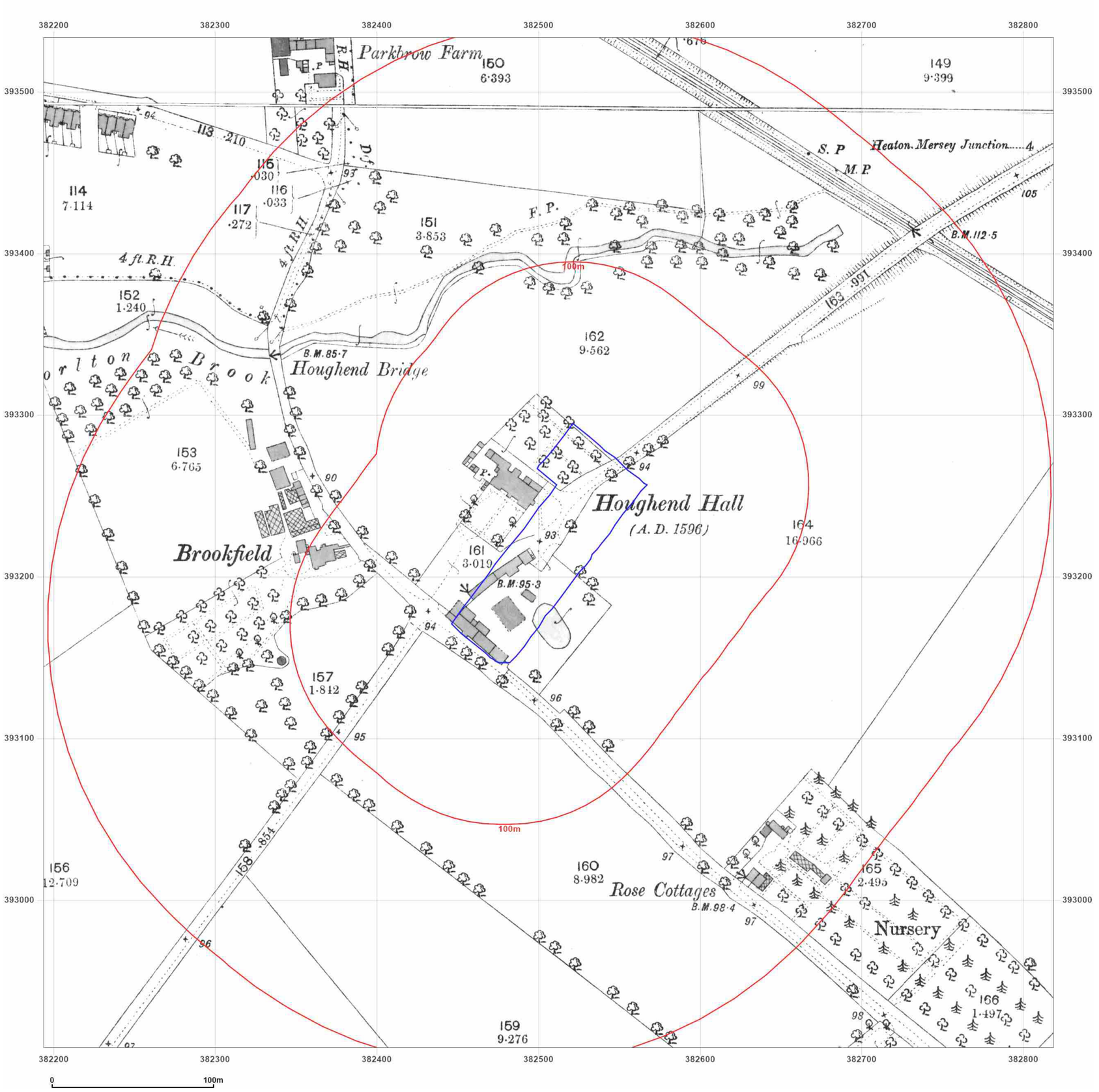
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Production date: 04 April 2022

Map legend available at:
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Site Details:

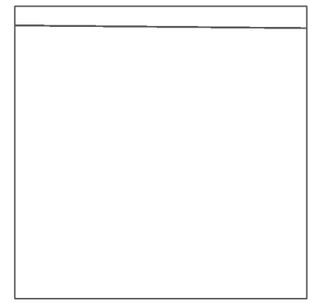
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MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

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



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

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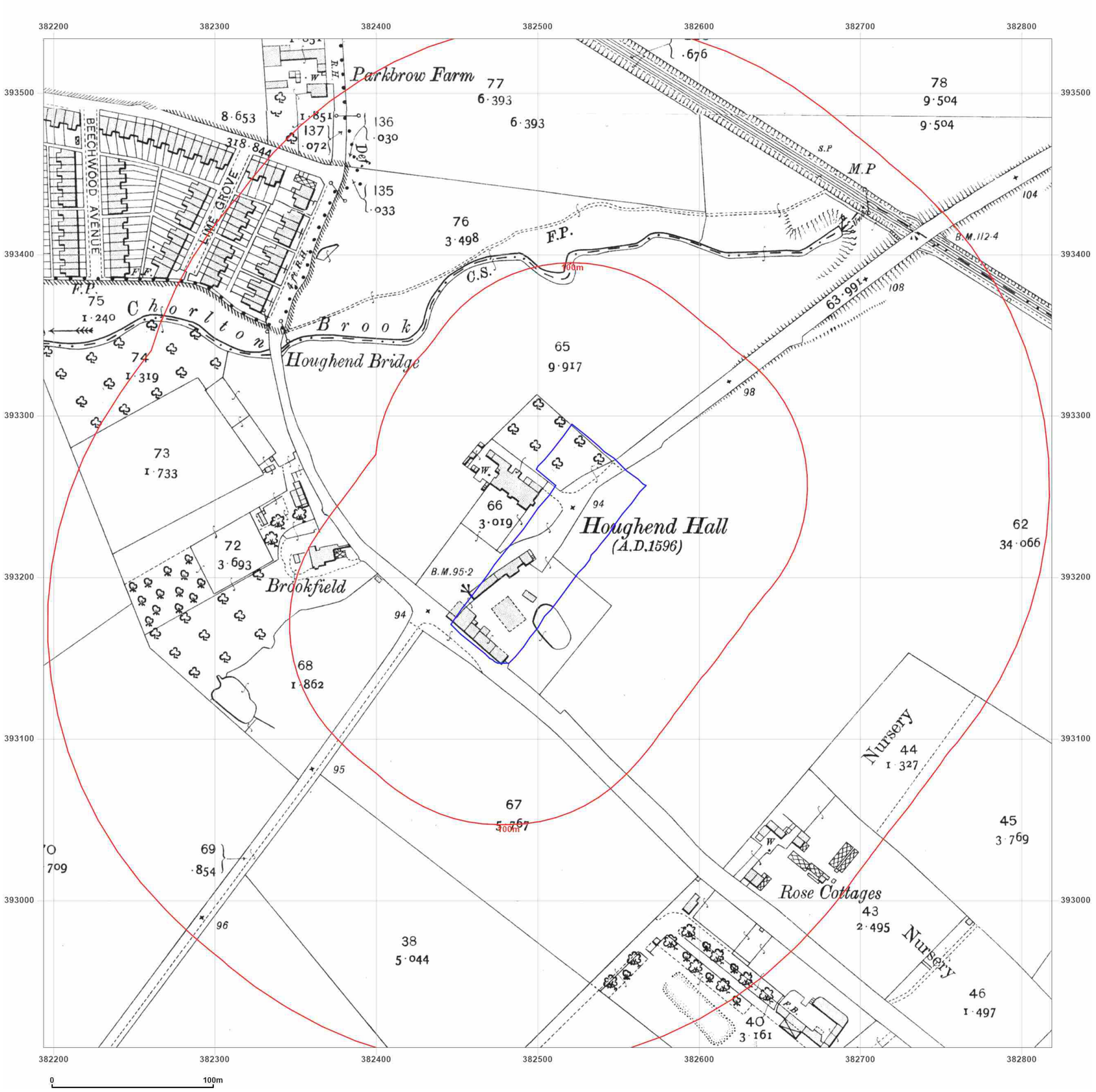
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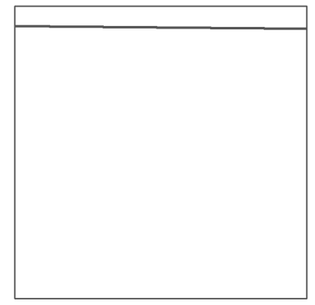
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MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series
Map date: **1907**
Scale: 1:2,500
Printed at: 1:2,500

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



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

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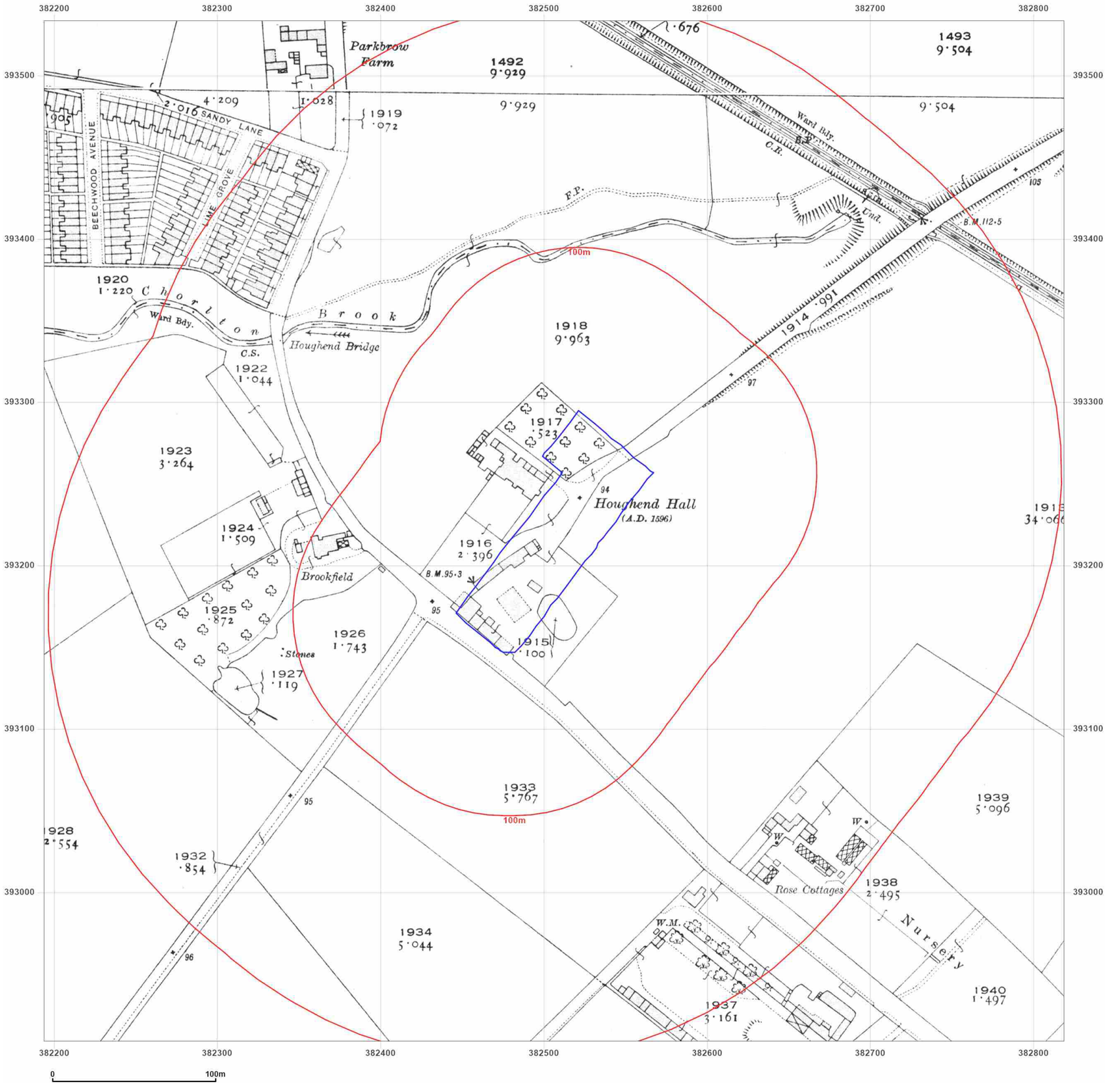
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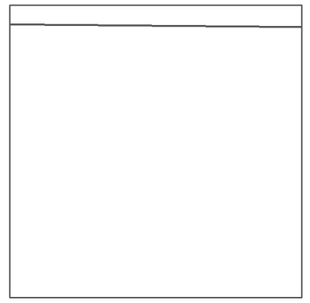
550, MAULDETH ROAD WEST,
MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series
Map date: **1922**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1922
Revised 1916
Edition 1922
Copyright N/A
Levelled 1915



Surveyed 1922
Revised 1916
Edition 1922
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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series

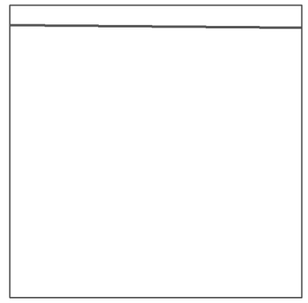
Map date: **1933**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1873
Revised 1933
Edition N/A
Copyright N/A
Levelled 1927



Surveyed 1873
Revised 1933
Edition N/A
Copyright N/A
Levelled 1927

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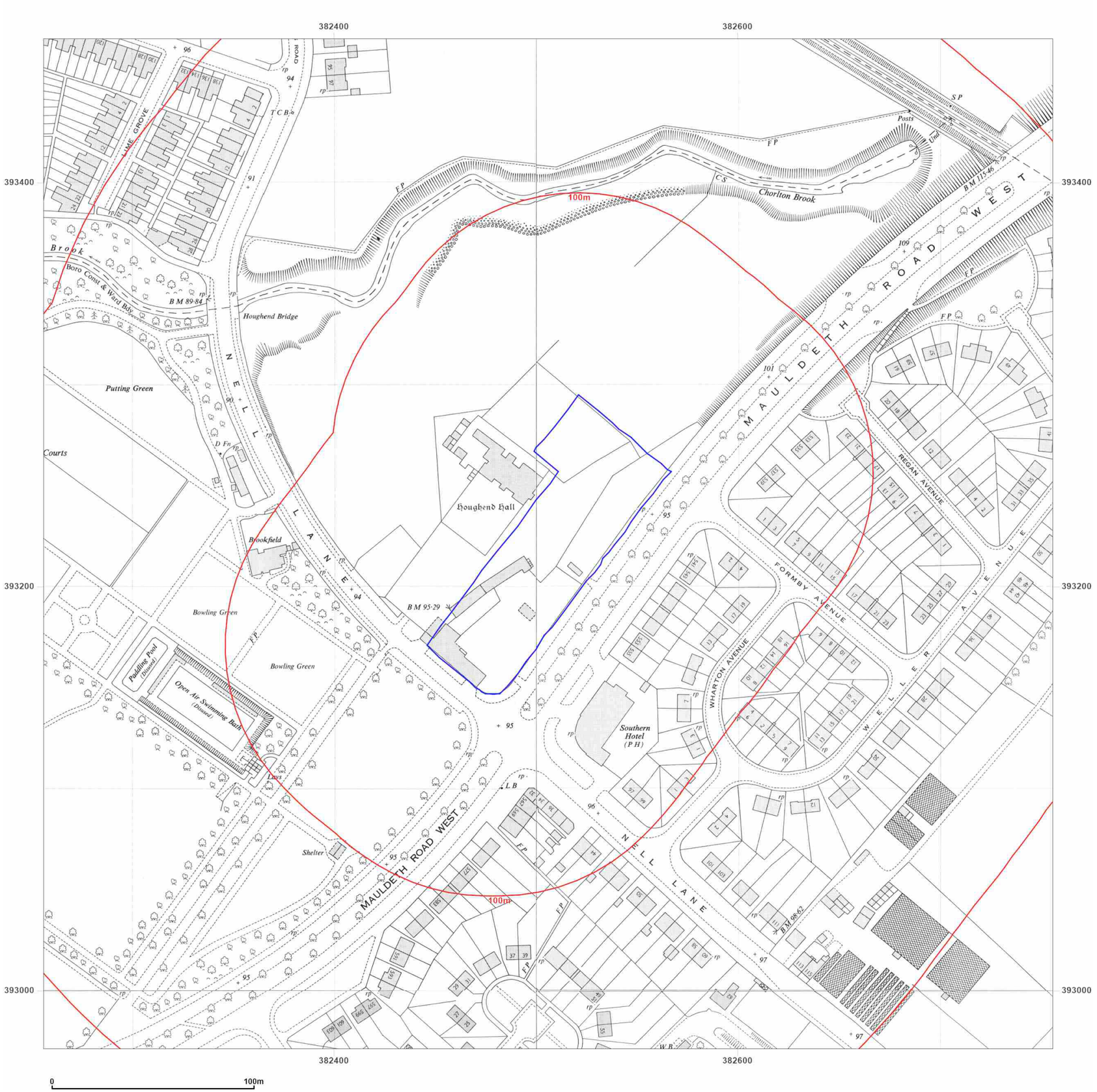
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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

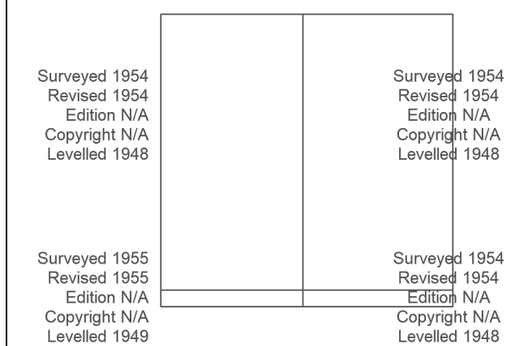
Map Name: National Grid

Map date: **1954-1955**

Scale: 1:1,250

Printed at: 1:2,000

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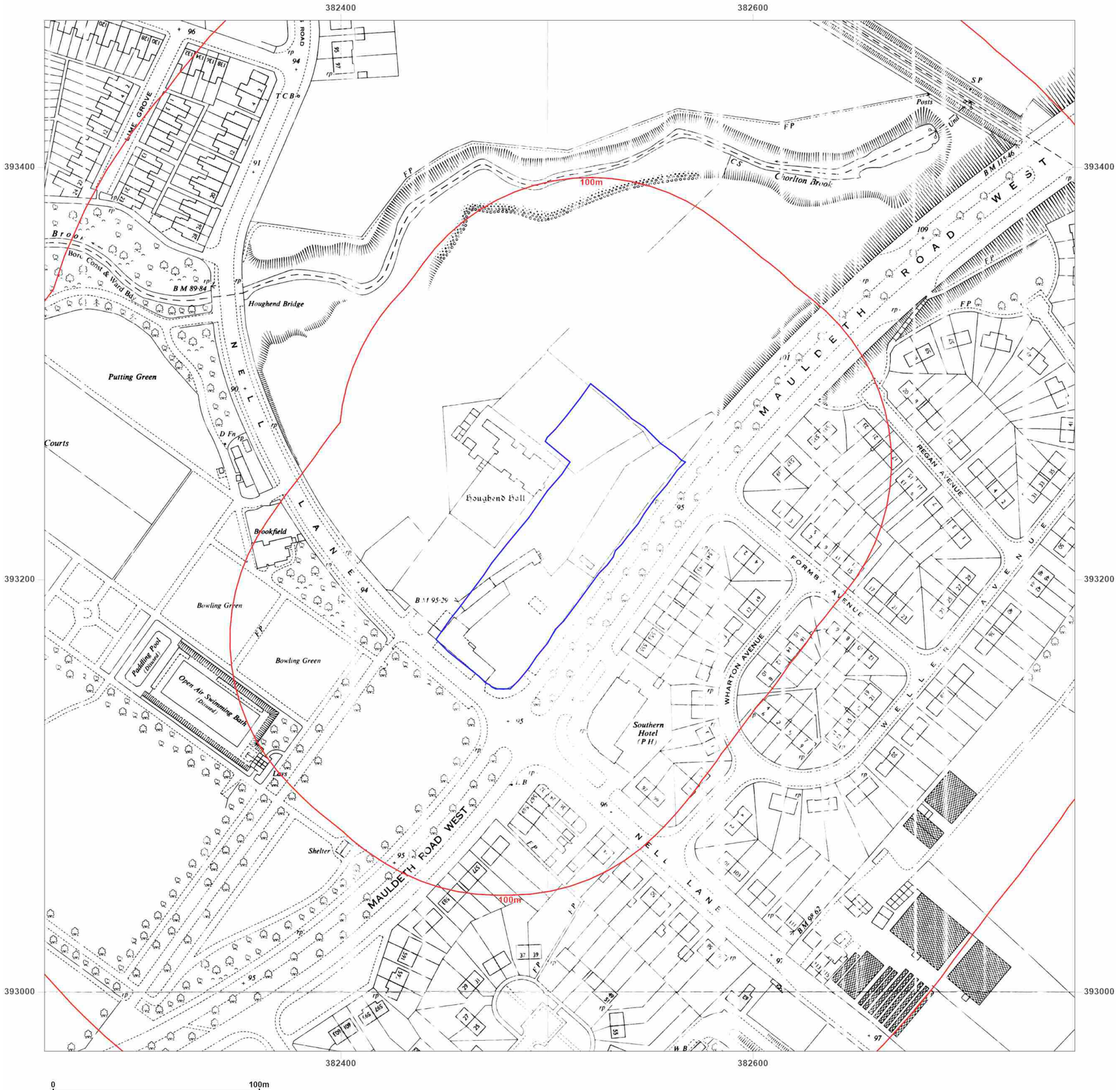
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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: National Grid
Map date: **1955-1956**
Scale: 1:1,250
Printed at: 1:2,000

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Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A		Surveyed N/A Revised N/A Edition N/A Copyright N/A Levelled N/A
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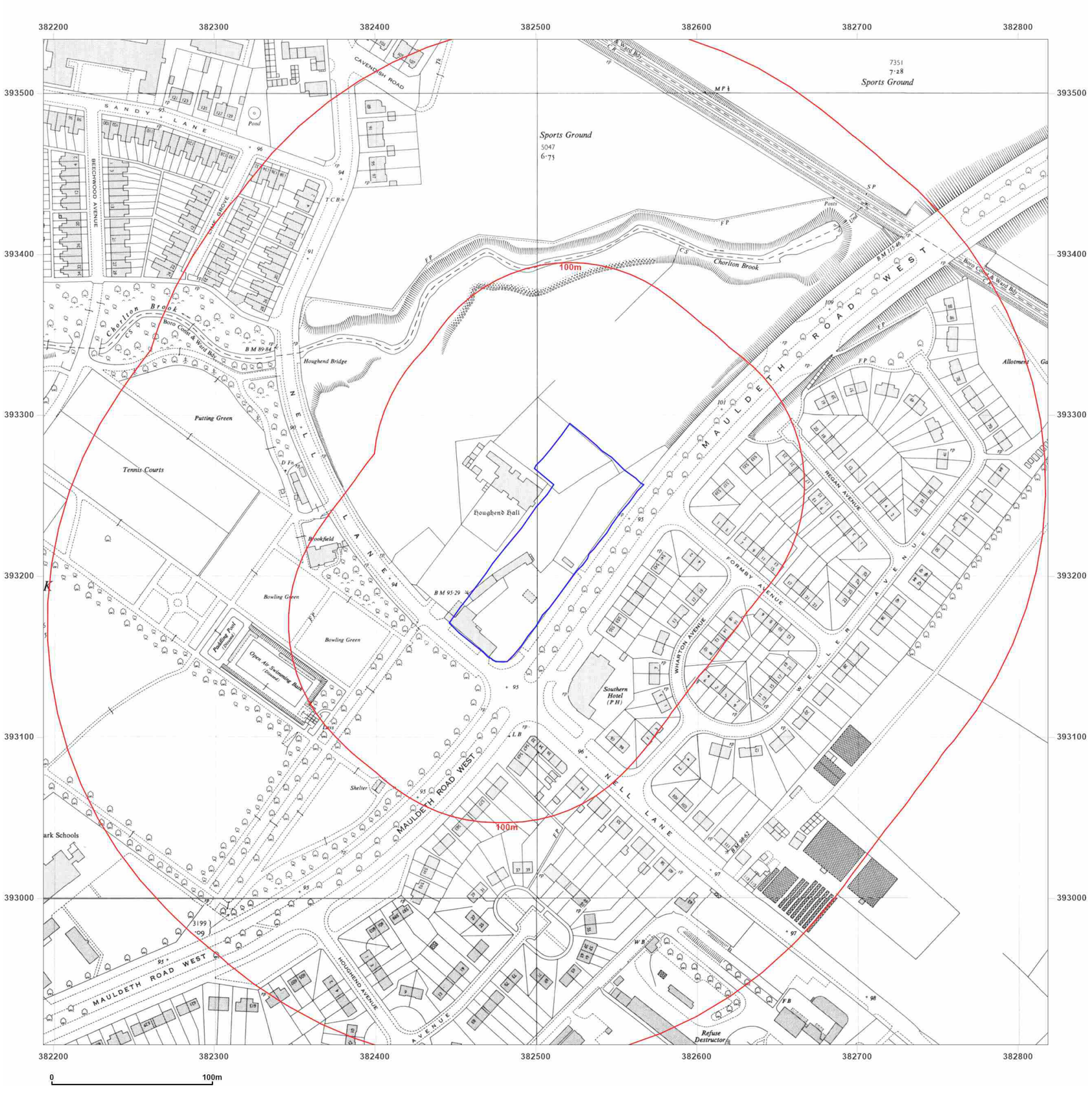
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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: National Grid

Map date: **1955-1956**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1954
Revised 1954
Edition 1955
Copyright N/A
Levelled 1948

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

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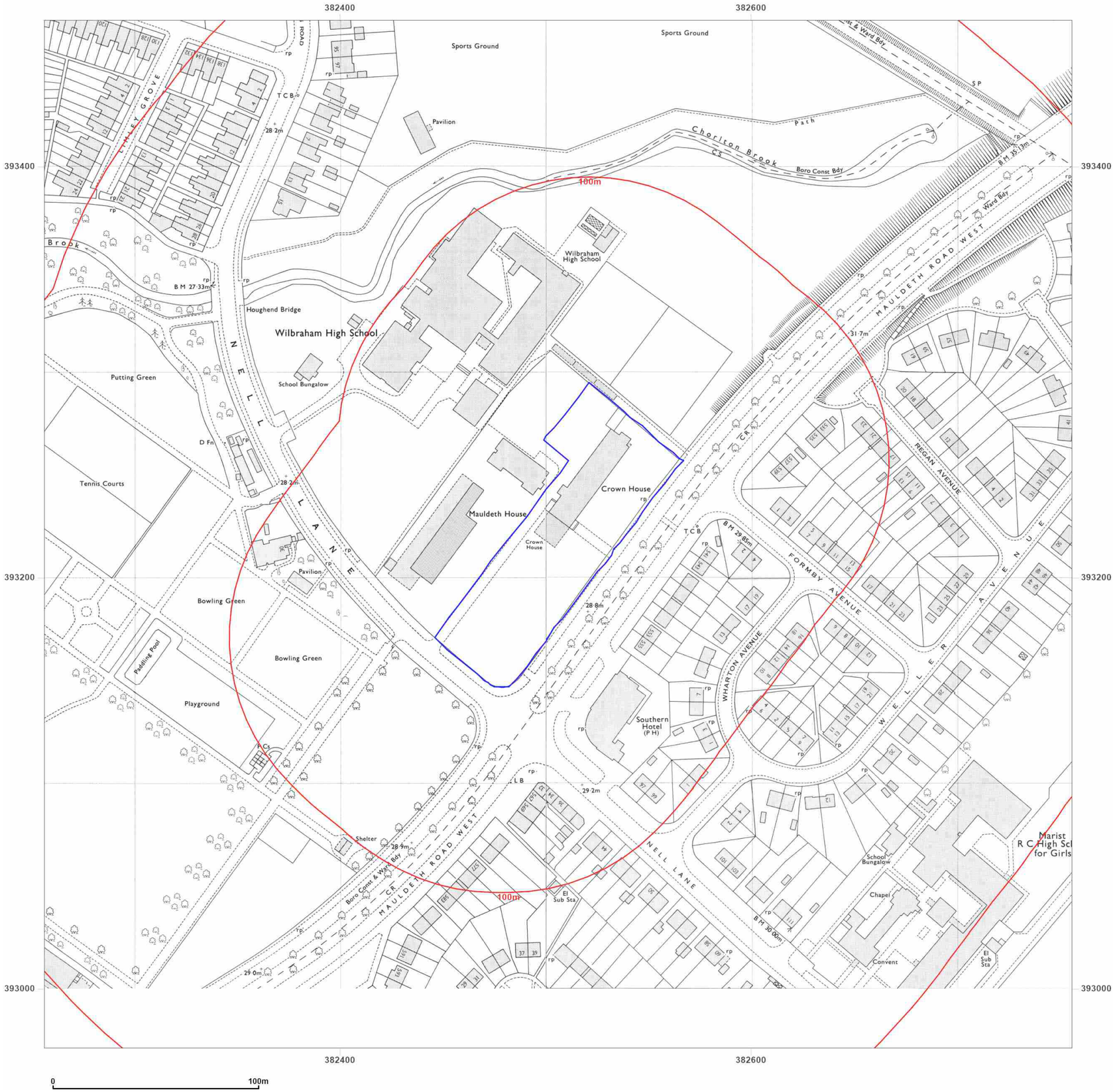
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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

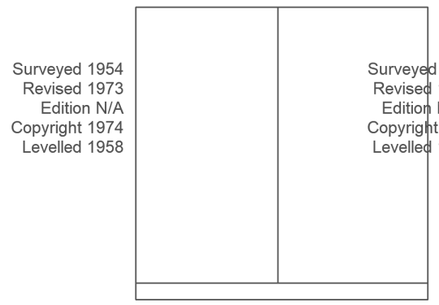
Map Name: National Grid

Map date: **1972-1974**

Scale: 1:1,250

Printed at: 1:2,000

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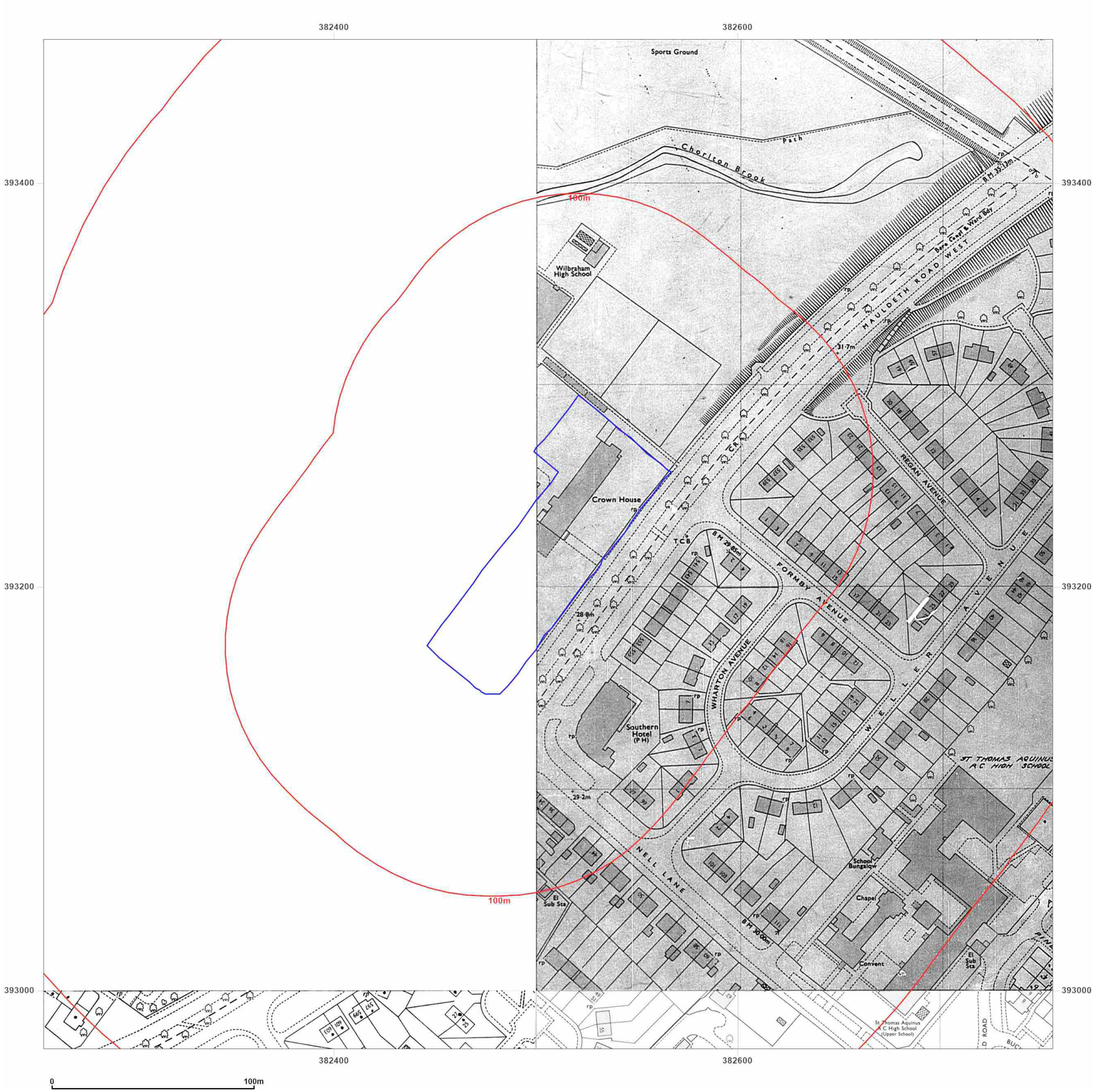
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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: National Grid

Map date: **1978-1984**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1956 Revised 1984 Edition N/A Copyright 1984 Levelled 1956		Surveyed 1955 Revised 1979 Edition N/A Copyright 1980 Levelled 1958

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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: National Grid

Map date: **1986**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1954
Revised 1985
Edition N/A
Copyright 1986
Levelled 1958

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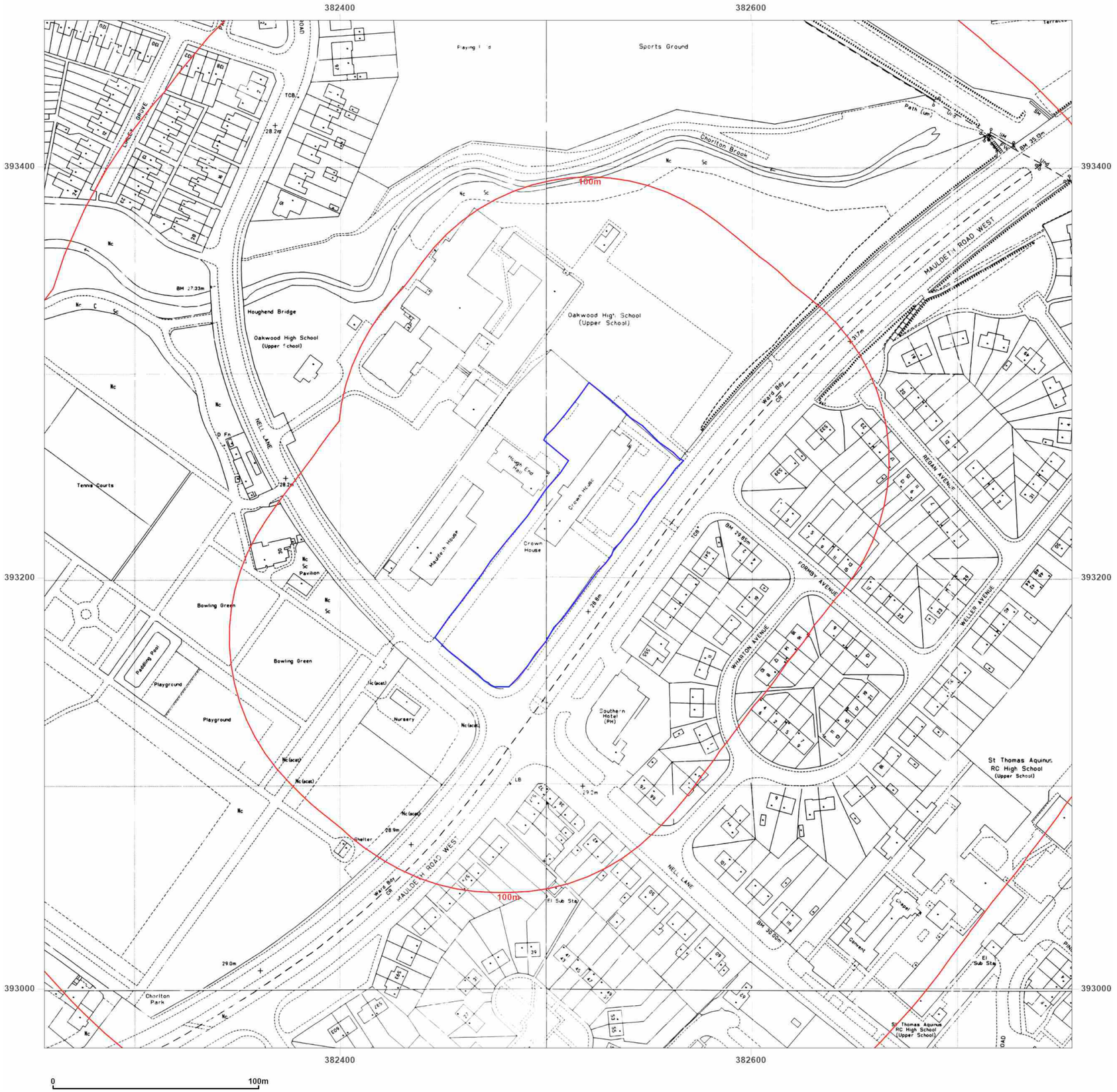
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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: National Grid

Map date: **1992**

Scale: 1:1,250

Printed at: 1:2,000

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

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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: National Grid

Map date: **1992**

Scale: 1:1,250

Printed at: 1:2,000

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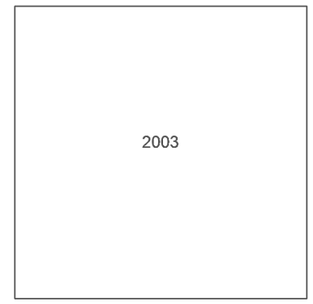
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MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

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

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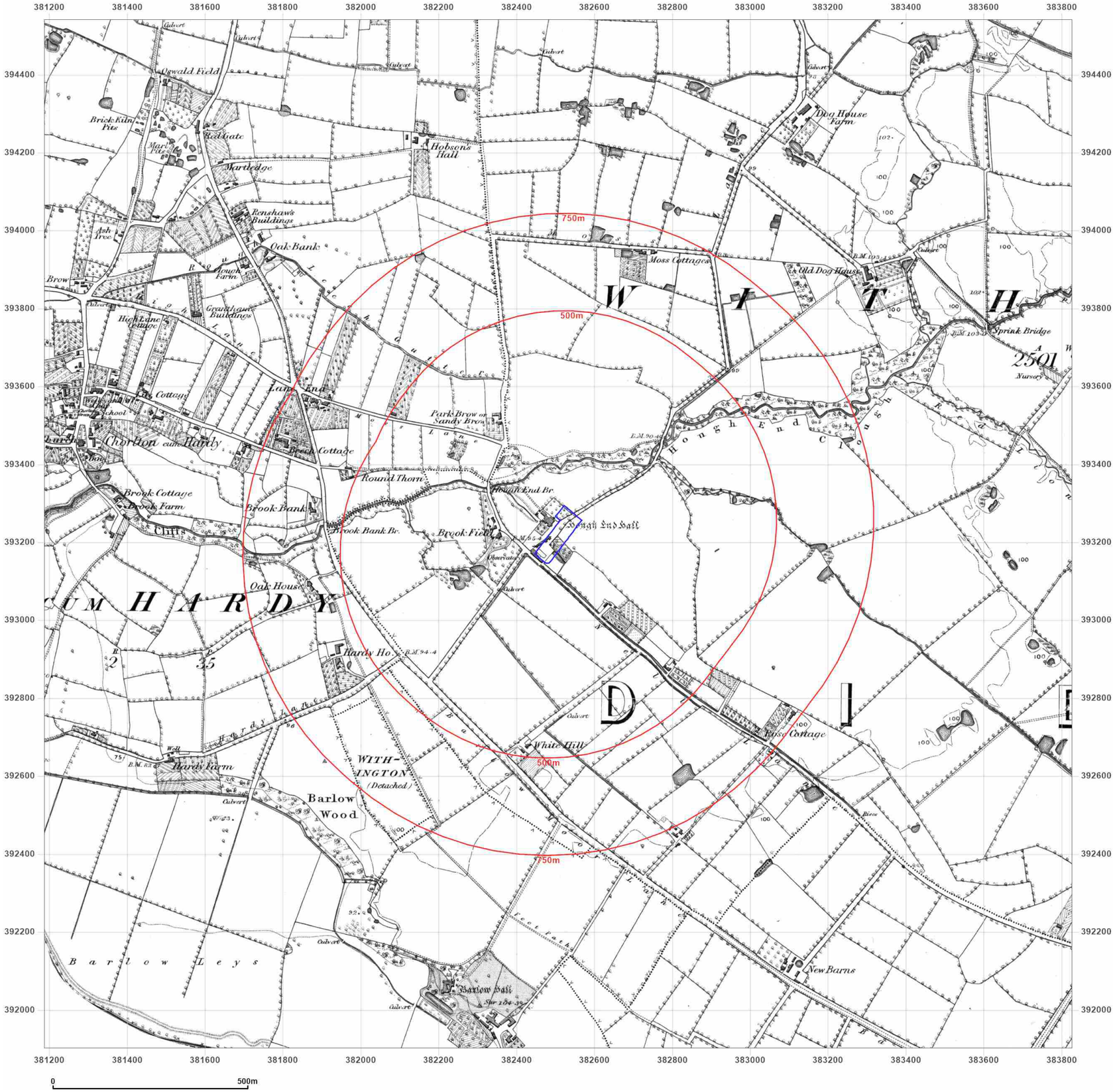
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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series

Map date: **1849**

Scale: 1:10,560

Printed at: 1:10,560

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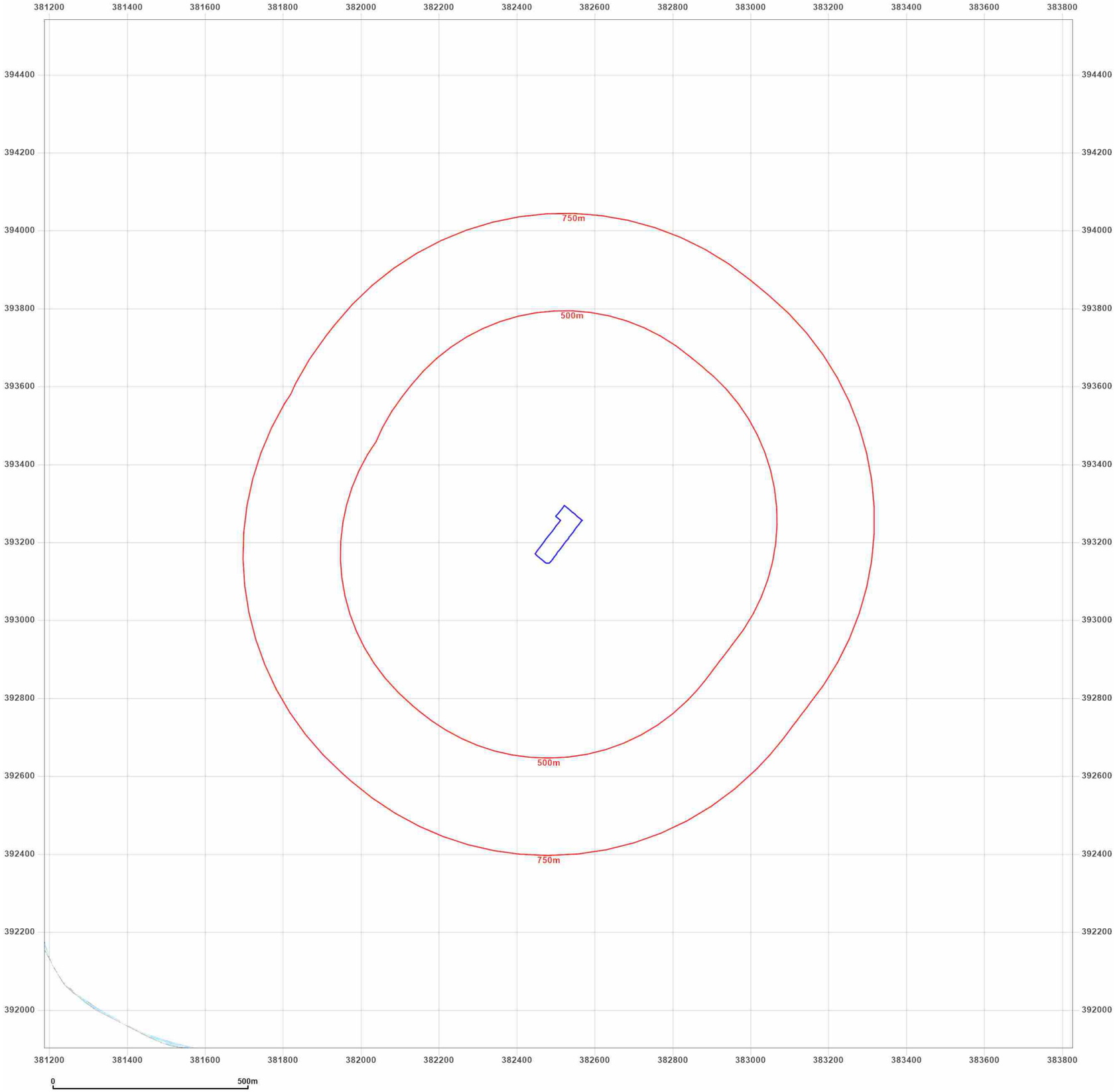
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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

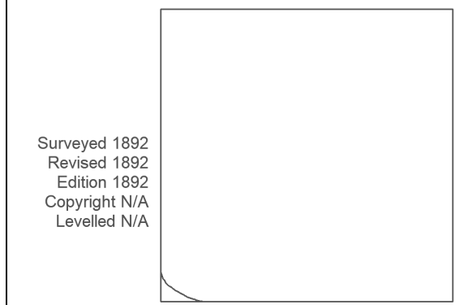
Map Name: County Series

Map date: **1892**

Scale: 1:10,560

Printed at: 1:10,560

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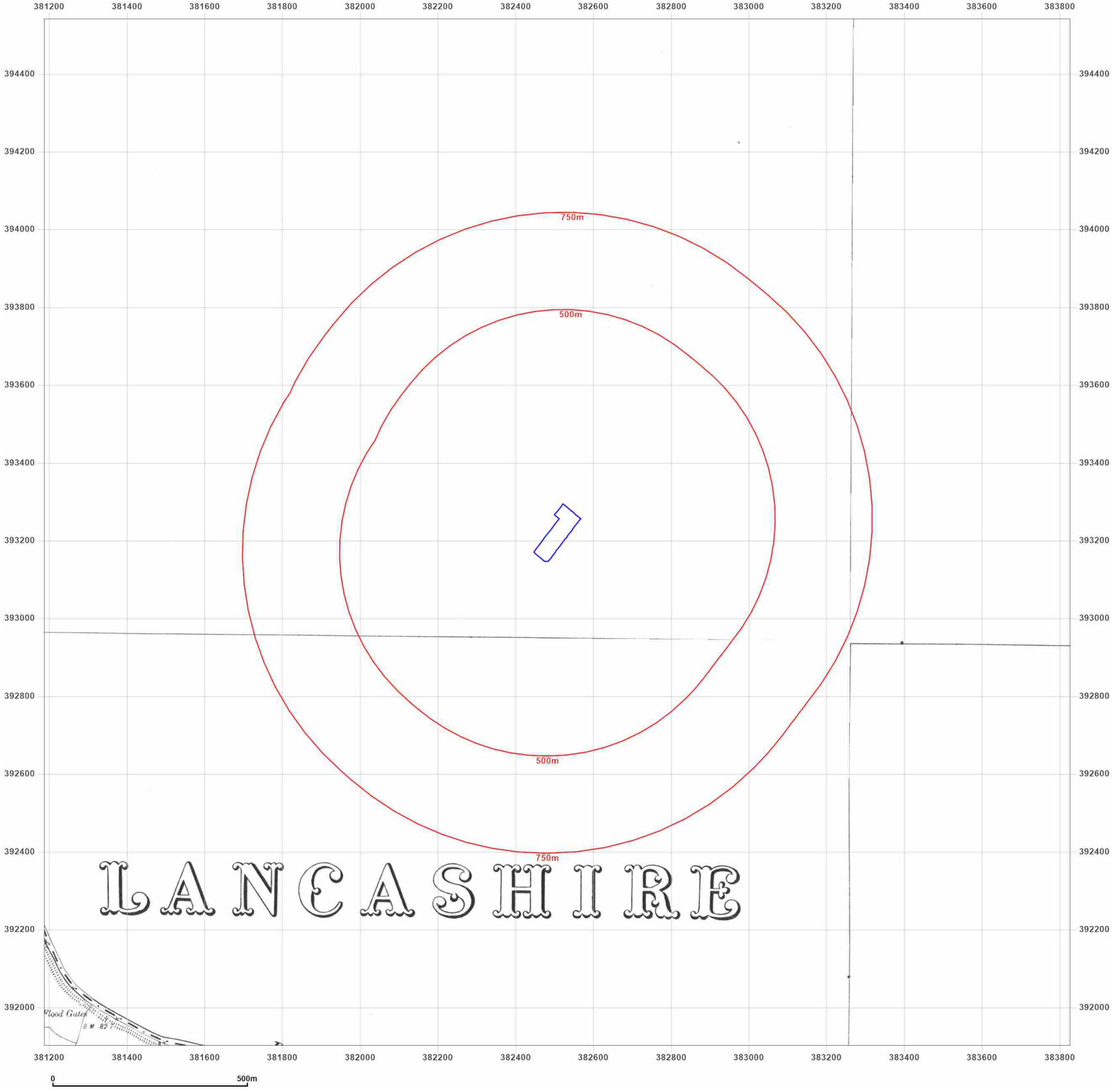
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Site Details:

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MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series

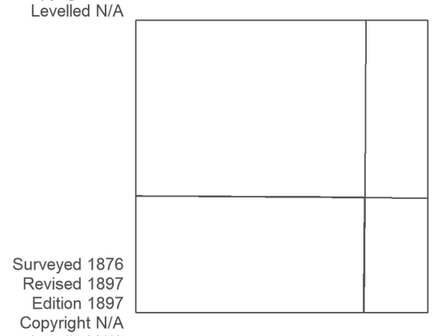
Map date: **1897**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1874
Revised 1897
Edition N/A
Copyright N/A
Levelled N/A



Surveyed 1876
Revised 1897
Edition 1897
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1897
Edition 1897
Copyright N/A
Levelled N/A

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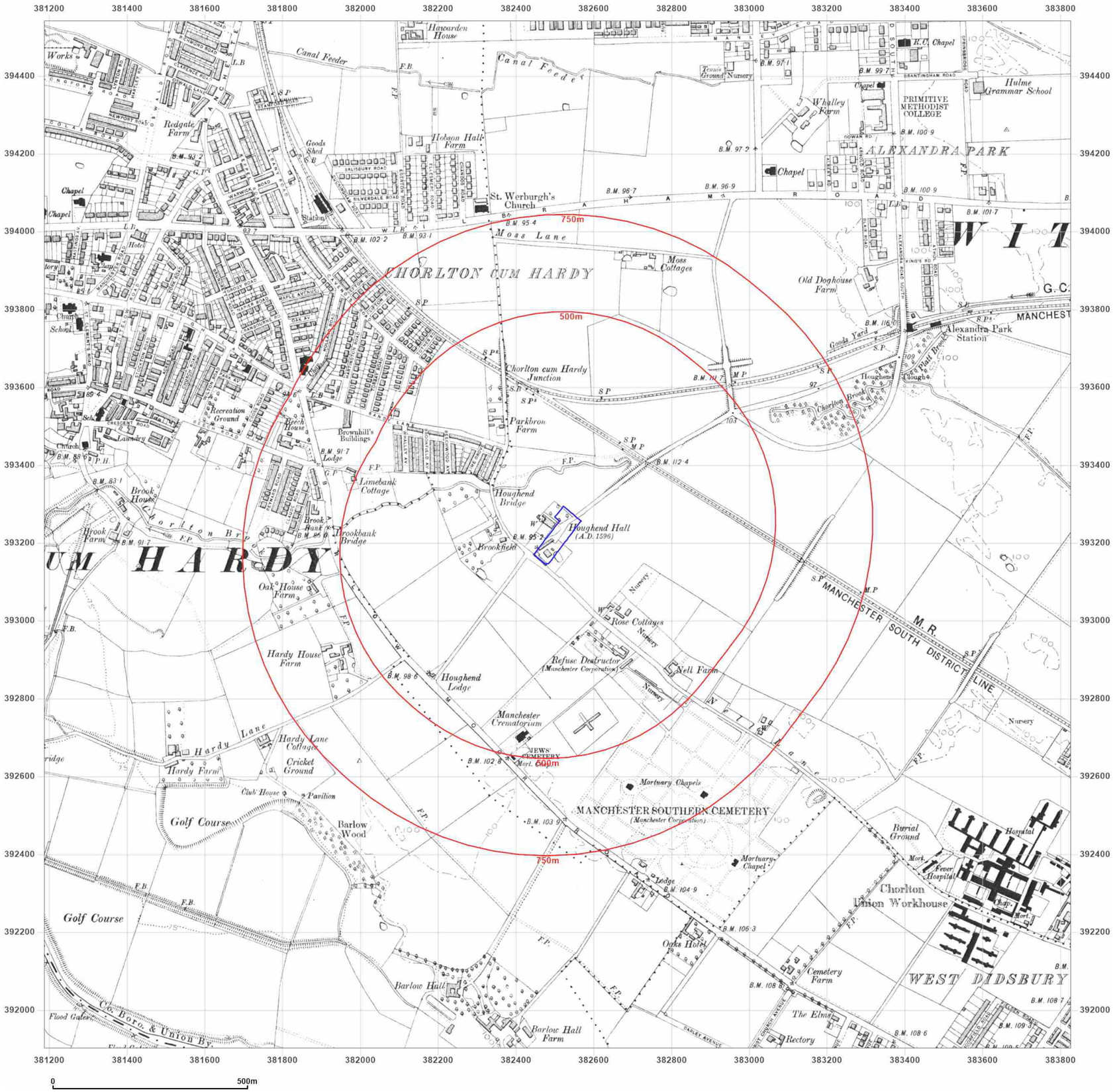
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MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series

Map date: **1905**

Scale: 1:10,560

Printed at: 1:10,560

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Edition 1905
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Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series

Map date: **1908-1911**

Scale: 1:10,560

Printed at: 1:10,560

N
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Revised 1911
Edition 1911
Copyright N/A
Levelled N/A

Surveyed 1873
Revised 1908
Edition 1908
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1908
Edition 1911
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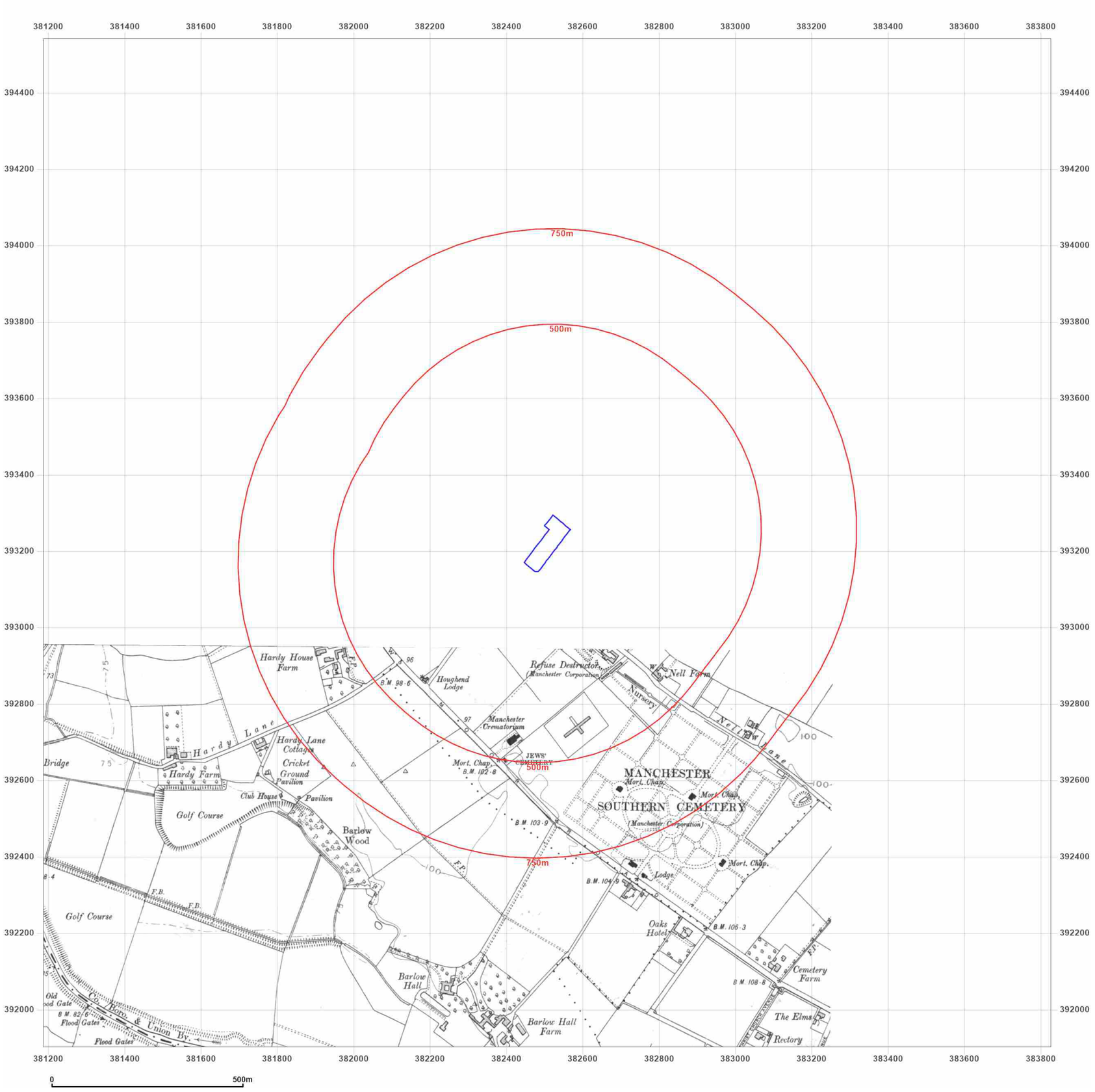
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Site Details:

550, MAULDETH ROAD WEST,
MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

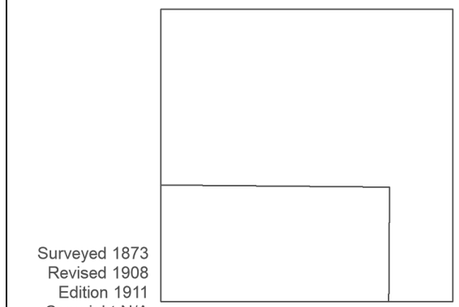
Map Name: County Series

Map date: **1911**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1873
Revised 1908
Edition 1911
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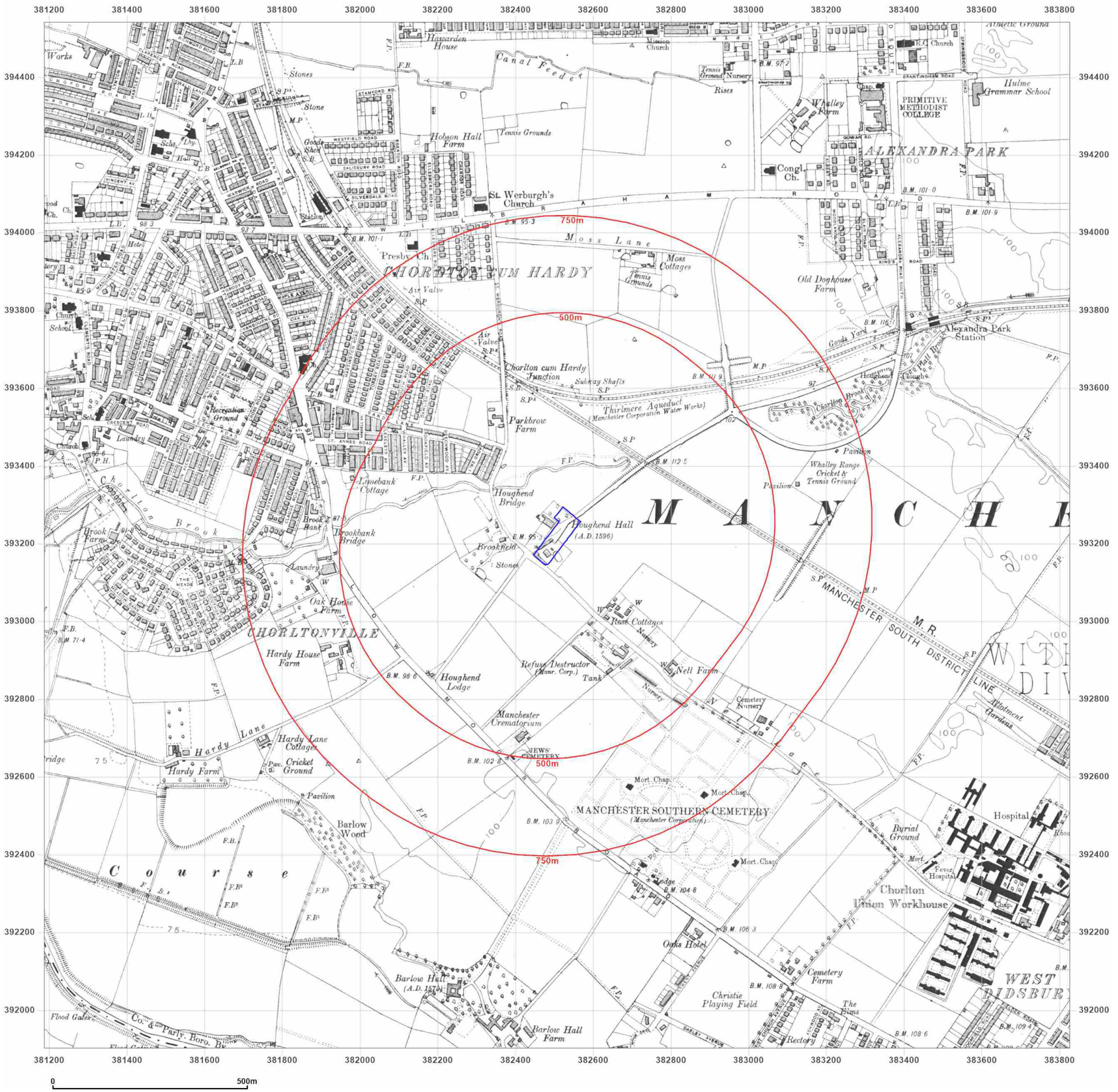
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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

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MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

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Site Details:

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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series

Map date: **1934**

Scale: 1:10,560

Printed at: 1:10,560

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Site Details:

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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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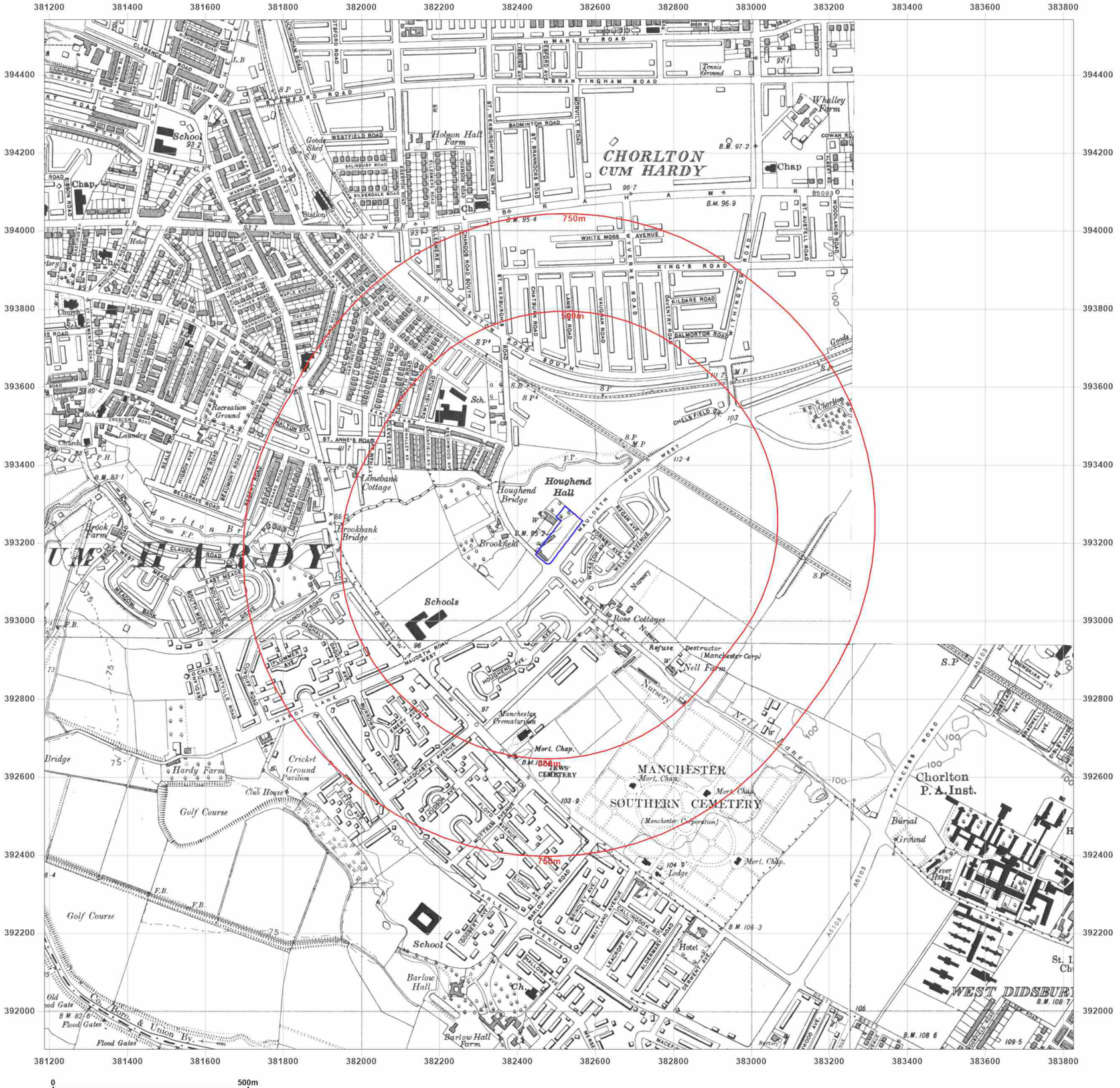
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Site Details:

550, MAULDETH ROAD WEST,
MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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

Surveyed 1873
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

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

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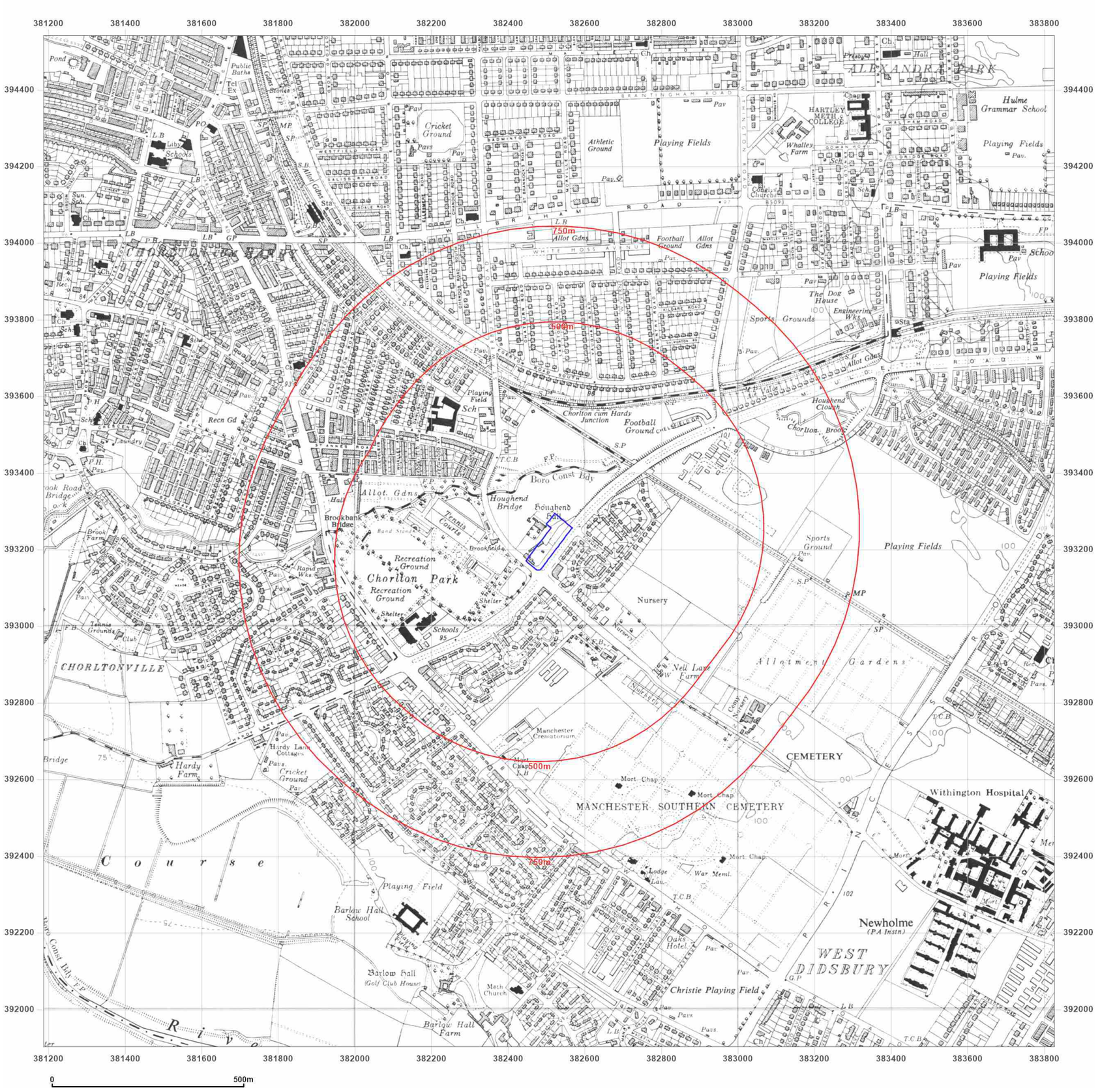
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Site Details:

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MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

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
Copyright 1955
Levelled N/A

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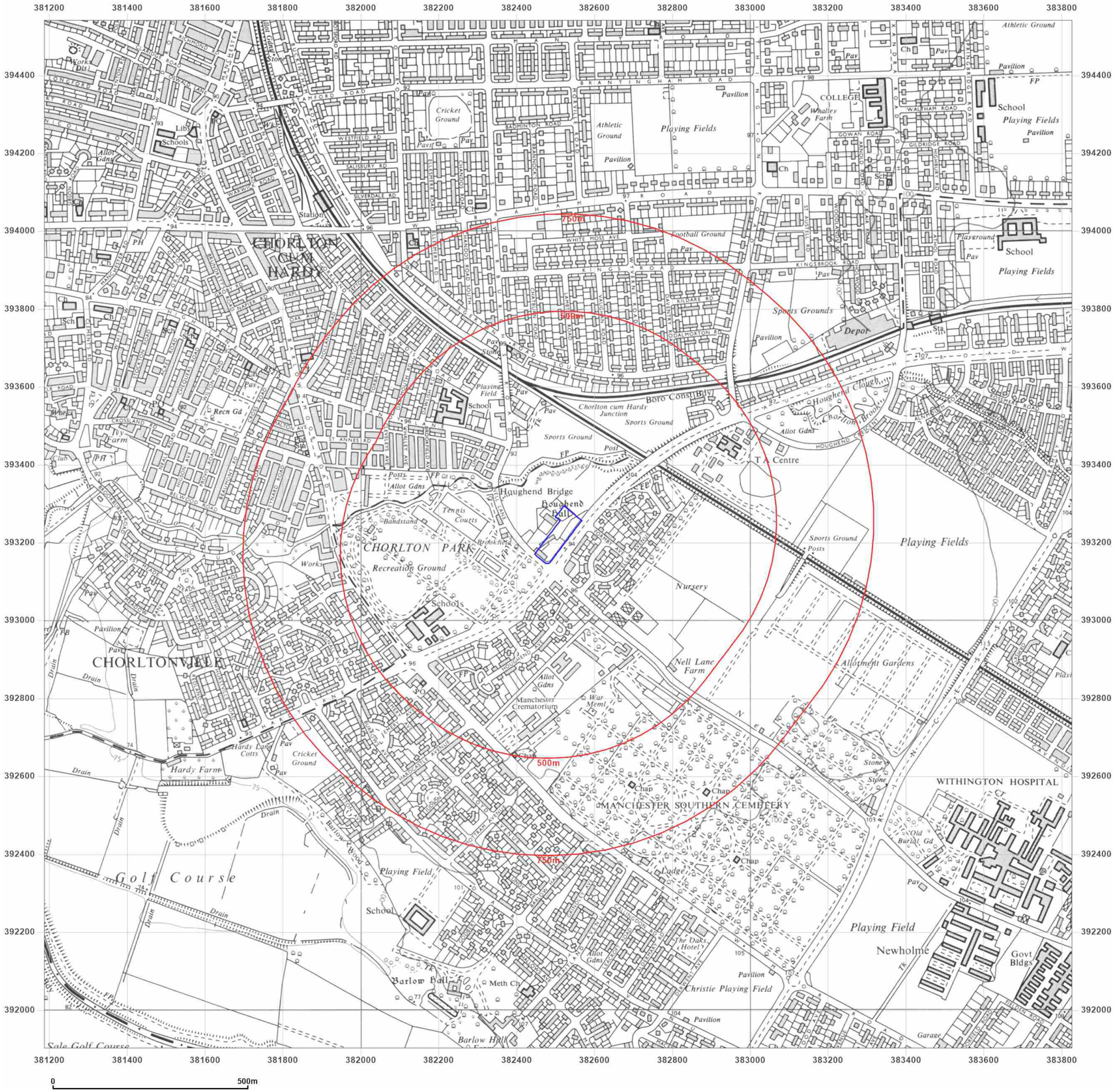
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Site Details:

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Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: Provisional
Map date: **1966**
Scale: 1:10,560
Printed at: 1:10,560

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

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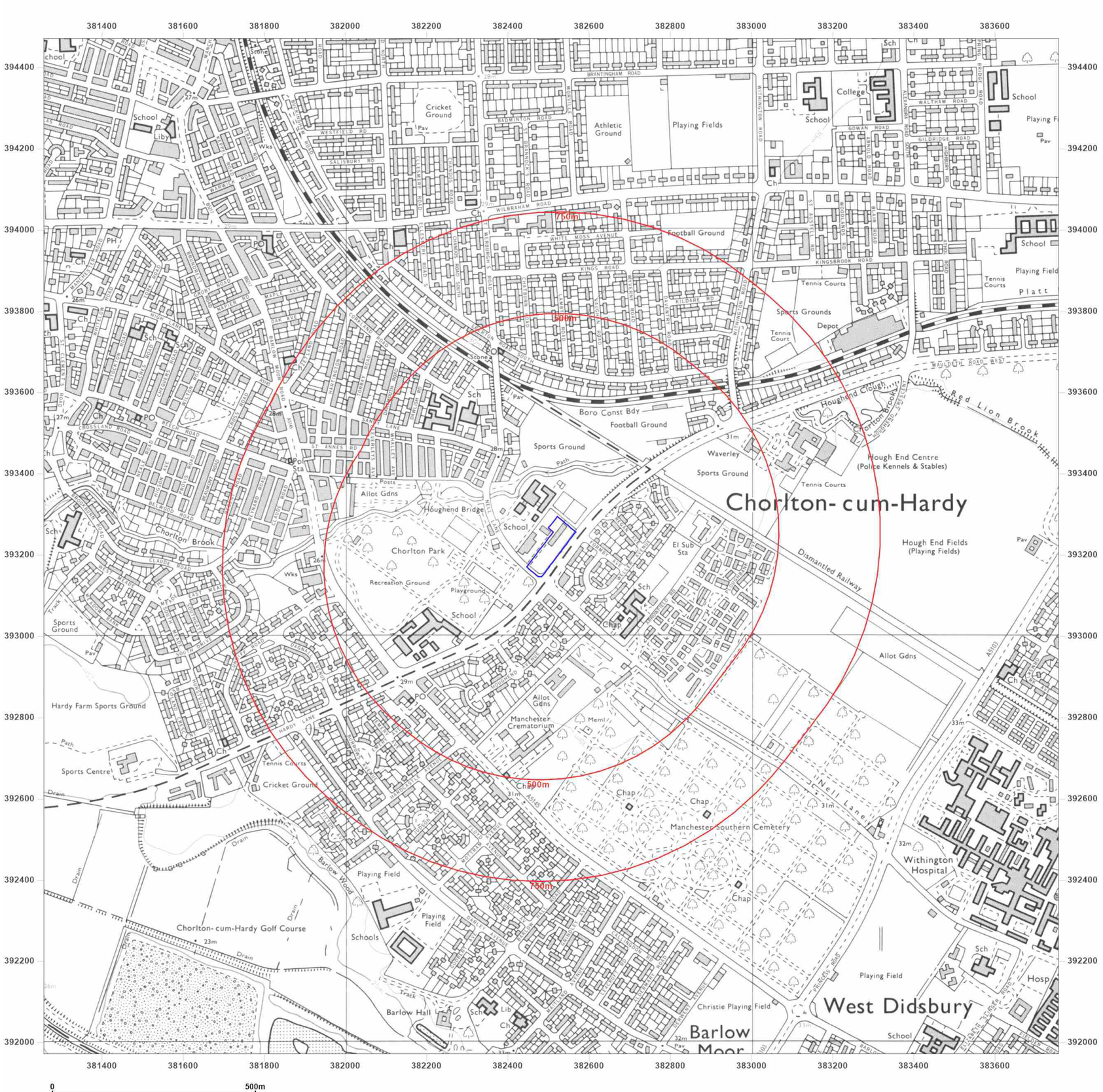
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Site Details:

550, MAULDETH ROAD WEST,
MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: National Grid

Map date: **1981**

Scale: 1:10,000

Printed at: 1:10,000

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

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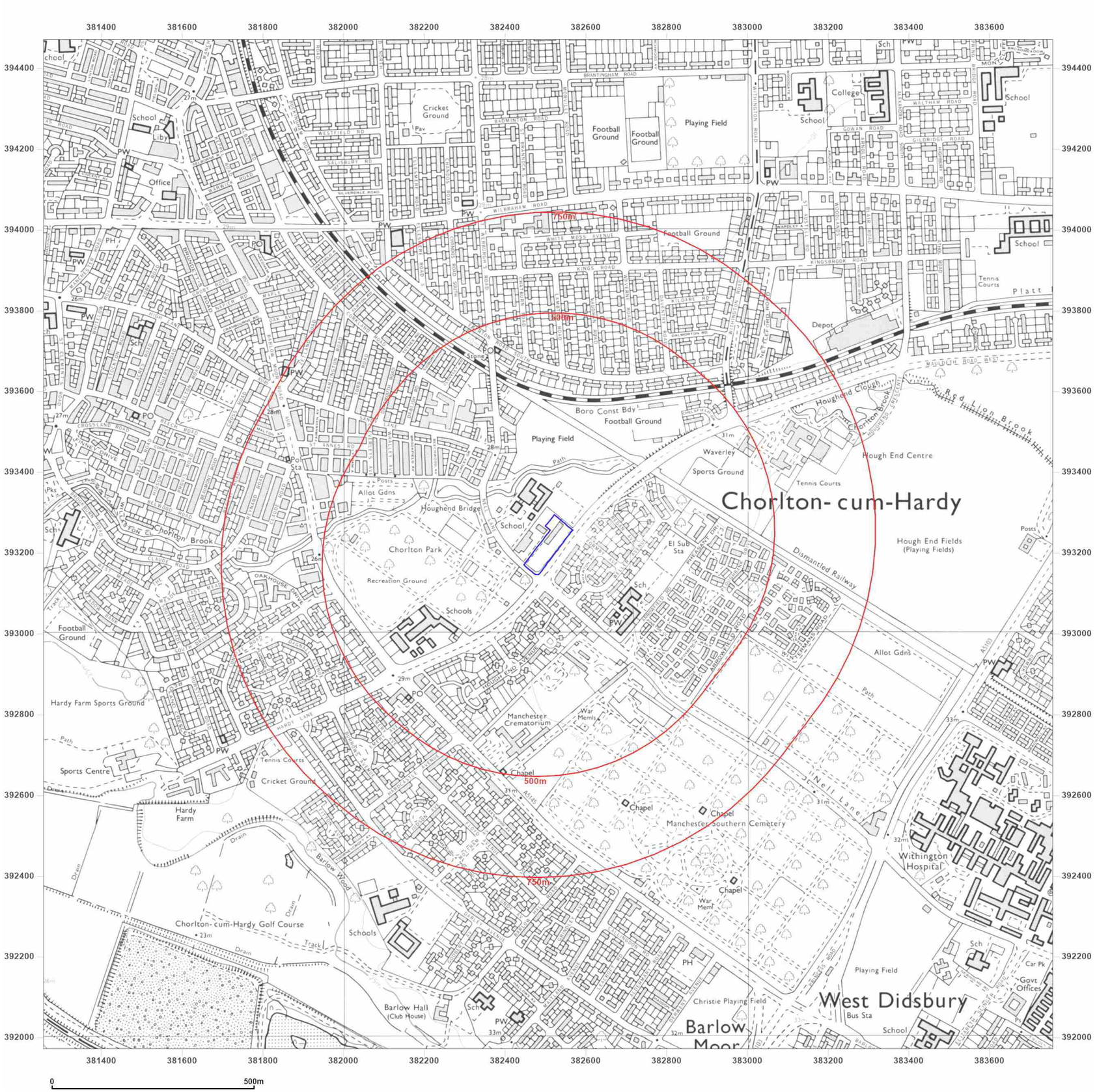
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Site Details:

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MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: National Grid

Map date: **1988**

Scale: 1:10,000

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N
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Site Details:

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MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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Site Details:

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MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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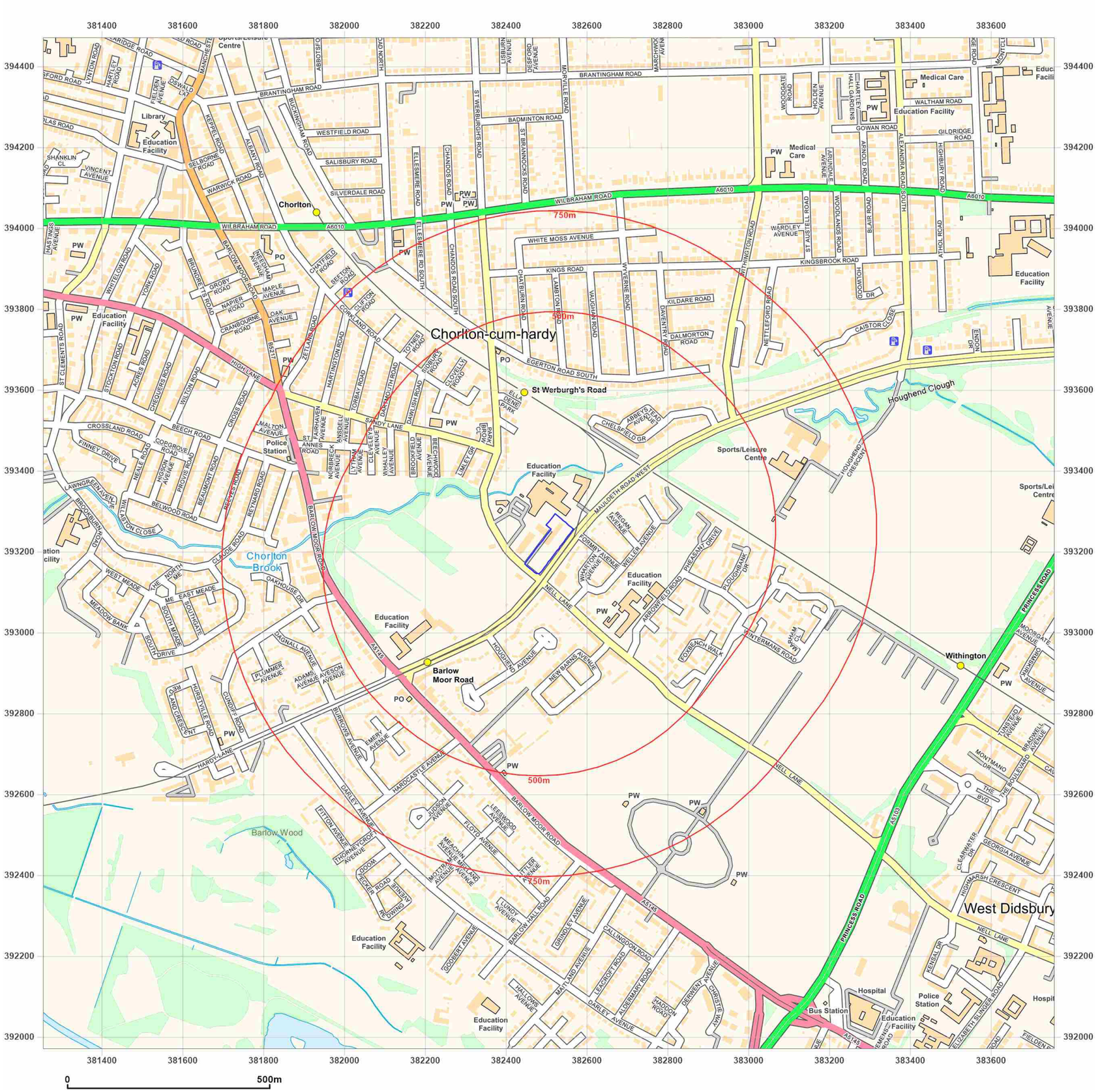
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Site Details:

550, MAULDETH ROAD WEST,
MANCHESTER, M21 7AA

Client Ref: C5061-3000-SD
Report Ref: BRO-8643654
Grid Ref: 382506, 393221

Map Name: National Grid

Map date: **2022**

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APPENDIX C

Geo-Environmental Data Report

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

550, MAULDETH ROAD WEST, MANCHESTER, M21 7AA

Order Details

Date: 04/04/2022

Your ref: C5061-3000-SD

Our Ref: BRO-8643655

Client: Stephanie Dixon

Site Details

Location: 382509 393220

Area: 0.69 ha

Authority: Manchester City Council



Summary of findings p. 2

OS MasterMap site plan p.12

Aerial image p. 8

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info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	0	0	28	49	-
16	1.2	Historical tanks	0	0	1	2	-
17	1.3	Historical energy features	0	0	3	9	-
18	1.4	Historical petrol stations	0	0	0	0	-
18	1.5	Historical garages	0	0	0	3	-
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	0	33	64	-
23	2.2	Historical tanks	0	0	1	2	-
23	2.3	Historical energy features	0	0	7	22	-
25	2.4	Historical petrol stations	0	0	0	0	-
25	2.5	Historical garages	0	0	0	5	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
26	3.1	Active or recent landfill	0	0	0	0	-
26	3.2	Historical landfill (BGS records)	0	0	0	0	-
27	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
27	3.4	Historical landfill (EA/NRW records)	0	0	1	0	-
27	3.5	Historical waste sites	0	0	13	0	-
29	3.6	Licensed waste sites	0	0	0	0	-
29	3.7	Waste exemptions	0	0	0	0	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
30	4.1	Recent industrial land uses	0	0	4	-	-
31	4.2	Current or recent petrol stations	0	0	0	2	-
31	4.3	Electricity cables	0	0	0	0	-
31	4.4	Gas pipelines	0	0	0	0	-
31	4.5	Sites determined as Contaminated Land	0	0	0	0	-

32	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
32	4.7	Regulated explosive sites	0	0	0	0	-
32	4.8	Hazardous substance storage/usage	0	0	0	0	-
32	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
32	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
33	**4.11**	**Licensed pollutant release (Part A(2)/B)**	0	0	0	1	-
33	4.12	Radioactive Substance Authorisations	0	0	0	0	-
33	**4.13**	**Licensed Discharges to controlled waters**	0	0	4	0	-
34	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
34	4.15	Pollutant release to public sewer	0	0	0	0	-
35	4.16	List 1 Dangerous Substances	0	0	0	0	-
35	4.17	List 2 Dangerous Substances	0	0	0	0	-
35	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
35	4.19	Pollution inventory substances	0	0	0	0	-
35	4.20	Pollution inventory waste transfers	0	0	0	0	-
36	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
37	**5.1**	**Superficial aquifer**	Identified (within 500m)				
39	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
40	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
41	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
41	5.5	Groundwater vulnerability- local information	None (within 0m)				
42	**5.6**	**Groundwater abstractions**	0	0	0	0	1
43	5.7	Surface water abstractions	0	0	0	0	0
43	5.8	Potable abstractions	0	0	0	0	0
43	5.9	Source Protection Zones	0	0	0	0	-
44	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
45	**6.1**	**Water Network (OS MasterMap)**	0	0	2	-	-

46	6.2	Surface water features	0	0	4	-	-
46	6.3	WFD Surface water body catchments	1	-	-	-	-
46	6.4	WFD Surface water bodies	0	0	1	-	-
47	6.5	WFD Groundwater bodies	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
48	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
49	7.2	Historical Flood Events	0	0	0	-	-
49	7.3	Flood Defences	0	0	2	-	-
49	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
49	7.5	Flood Storage Areas	0	0	0	-	-
50	7.6	Flood Zone 2	None (within 50m)				
50	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
51	8.1	Surface water flooding	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
53	9.1	Groundwater flooding	High (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
54	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
55	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
55	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
55	10.4	Special Protection Areas (SPA)	0	0	0	0	0
55	10.5	National Nature Reserves (NNR)	0	0	0	0	0
56	10.6	Local Nature Reserves (LNR)	0	0	0	0	2
56	10.7	Designated Ancient Woodland	0	0	0	0	0
56	10.8	Biosphere Reserves	0	0	0	0	0
56	10.9	Forest Parks	0	0	0	0	0
57	10.10	Marine Conservation Zones	0	0	0	0	0
57	10.11	Green Belt	0	0	0	0	2
57	10.12	Proposed Ramsar sites	0	0	0	0	0

57	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
58	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
58	10.15	Nitrate Sensitive Areas	0	0	0	0	0
58	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
59	10.17	SSSI Impact Risk Zones	0	-	-	-	-
59	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
60	11.1	World Heritage Sites	0	0	0	-	-
61	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
61	11.3	National Parks	0	0	0	-	-
61	**11.4**	**Listed Buildings**	0	1	0	-	-
62	11.5	Conservation Areas	0	0	0	-	-
62	11.6	Scheduled Ancient Monuments	0	0	0	-	-
62	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
63	**12.1**	**Agricultural Land Classification**	Urban (within 250m)				
64	12.2	Open Access Land	0	0	0	-	-
64	12.3	Tree Felling Licences	0	0	0	-	-
64	12.4	Environmental Stewardship Schemes	0	0	0	-	-
64	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
65	**13.1**	**Priority Habitat Inventory**	0	0	9	-	-
66	13.2	Habitat Networks	0	0	0	-	-
66	13.3	Open Mosaic Habitat	0	0	0	-	-
66	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
67	**14.1**	**10k Availability**	Identified (within 500m)				
68	**14.2**	**Artificial and made ground (10k)**	0	1	0	2	-
69	**14.3**	**Superficial geology (10k)**	1	0	3	0	-

70	14.4	Landslip (10k)	0	0	0	0	-
71	**14.5**	**Bedrock geology (10k)**	1	0	0	1	-
72	**14.6**	**Bedrock faults and other linear features (10k)**	1	0	0	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
73	**15.1**	**50k Availability**	Identified (within 500m)				
74	15.2	Artificial and made ground (50k)	0	0	0	0	-
74	15.3	Artificial ground permeability (50k)	0	0	-	-	-
75	**15.4**	**Superficial geology (50k)**	1	1	0	1	-
76	**15.5**	**Superficial permeability (50k)**	Identified (within 50m)				
76	15.6	Landslip (50k)	0	0	0	0	-
76	15.7	Landslip permeability (50k)	None (within 50m)				
77	**15.8**	**Bedrock geology (50k)**	1	0	0	1	-
78	**15.9**	**Bedrock permeability (50k)**	Identified (within 50m)				
78	**15.10**	**Bedrock faults and other linear features (50k)**	1	0	0	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
79	**16.1**	**BGS Boreholes**	0	3	21	-	-
Page	Section	Natural ground subsidence					
82	**17.1**	**Shrink swell clays**	Very low (within 50m)				
83	**17.2**	**Running sands**	Low (within 50m)				
85	**17.3**	**Compressible deposits**	Moderate (within 50m)				
87	**17.4**	**Collapsible deposits**	Very low (within 50m)				
88	**17.5**	**Landslides**	Very low (within 50m)				
89	**17.6**	**Ground dissolution of soluble rocks**	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
90	18.1	Natural cavities	0	0	0	0	-
91	18.2	BritPits	0	0	0	0	-
91	**18.3**	**Surface ground workings**	1	0	19	-	-
92	**18.4**	**Underground workings**	0	0	0	4	0
92	18.5	Historical Mineral Planning Areas	0	0	0	0	-

92	18.6	Non-coal mining	0	0	0	0	0
93	18.7	Mining cavities	0	0	0	0	0
93	**18.8**	**JPB mining areas**	Identified (within 0m)				
93	18.9	Coal mining	None (within 0m)				
93	18.10	Brine areas	None (within 0m)				
94	18.11	Gypsum areas	None (within 0m)				
94	18.12	Tin mining	None (within 0m)				
94	18.13	Clay mining	None (within 0m)				

Page	Section	Radon	
95	**19.1**	**Radon**	Less than 1% (within 0m)

Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
96	**20.1**	**BGS Estimated Background Soil Chemistry**	3	4	-	-	-
96	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
97	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-

Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
98	21.1	Underground railways (London)	0	0	0	-	-
98	21.2	Underground railways (Non-London)	0	0	0	-	-
99	21.3	Railway tunnels	0	0	0	-	-
99	**21.4**	**Historical railway and tunnel features**	0	0	1	-	-
99	21.5	Royal Mail tunnels	0	0	0	-	-
99	21.6	Historical railways	0	0	0	-	-
100	**21.7**	**Railways**	0	3	15	-	-
101	21.8	Crossrail 1	0	0	0	0	-
101	21.9	Crossrail 2	0	0	0	0	-
101	21.10	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 22/04/2019

Site Area: 0.69ha

Recent site history - 2015 aerial photograph



Capture Date: 11/06/2015

Site Area: 0.69ha

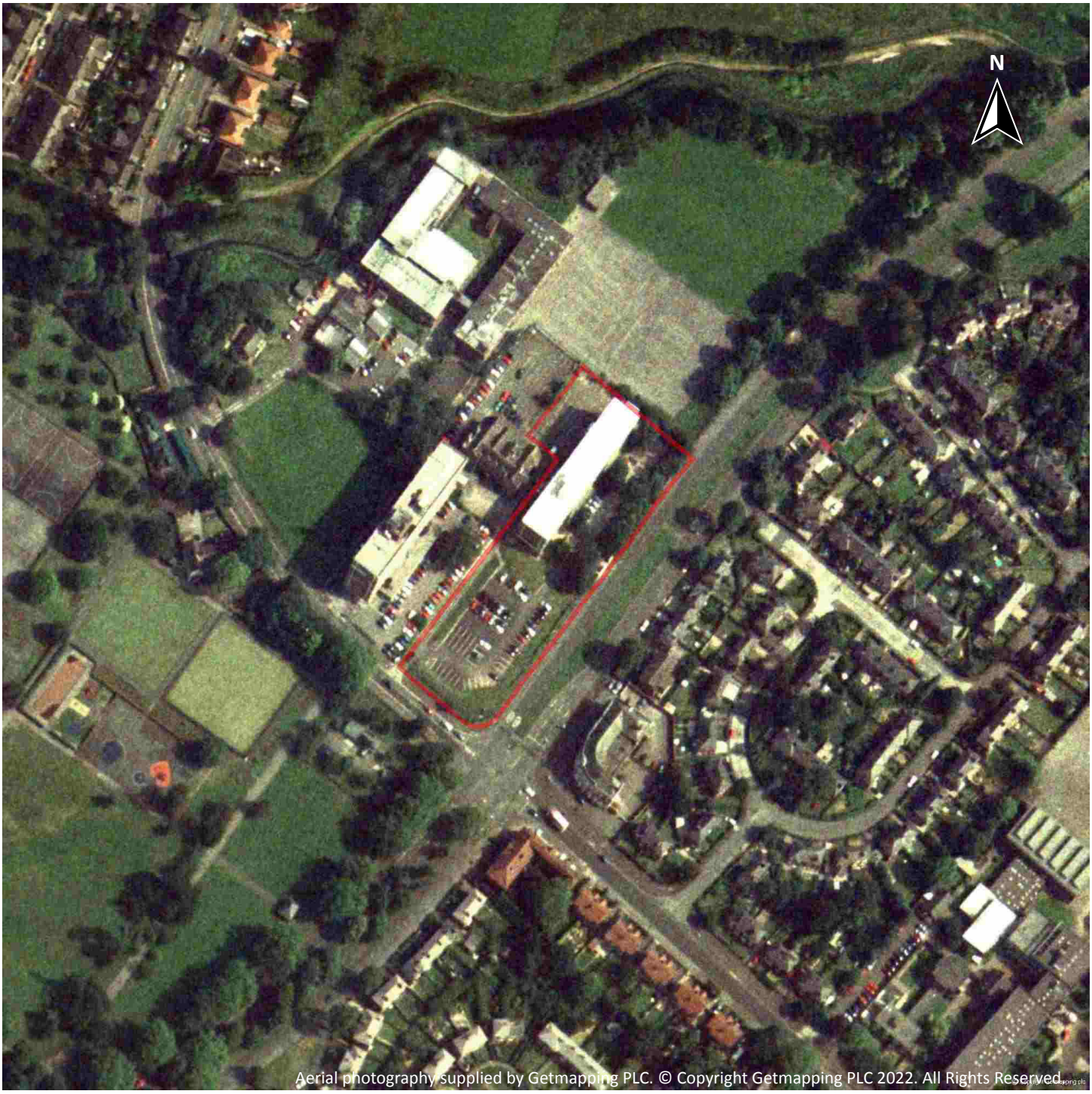
Recent site history - 2009 aerial photograph



Capture Date: 02/06/2009

Site Area: 0.69ha

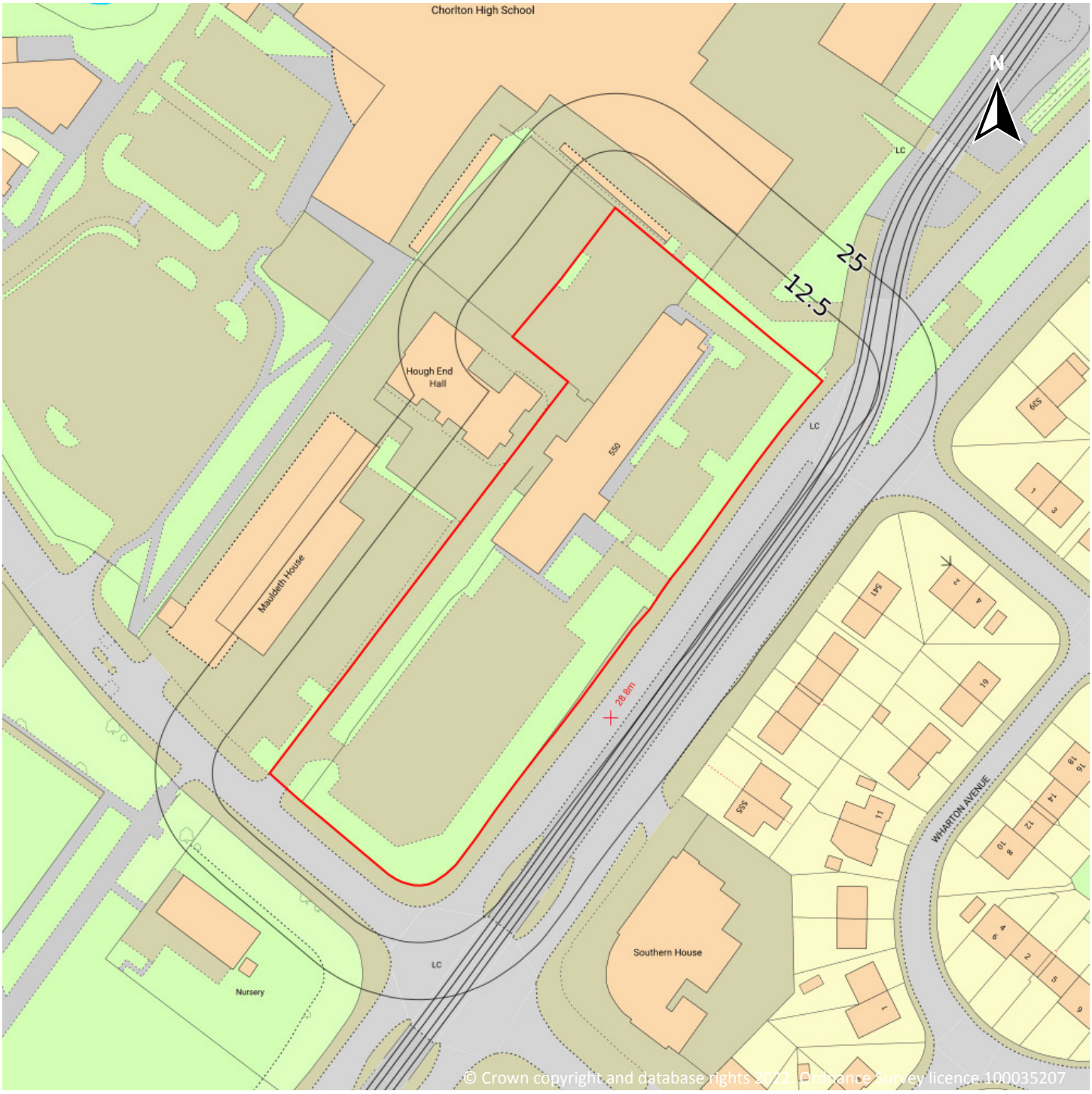
Recent site history - 2000 aerial photograph



Capture Date: 27/06/2000

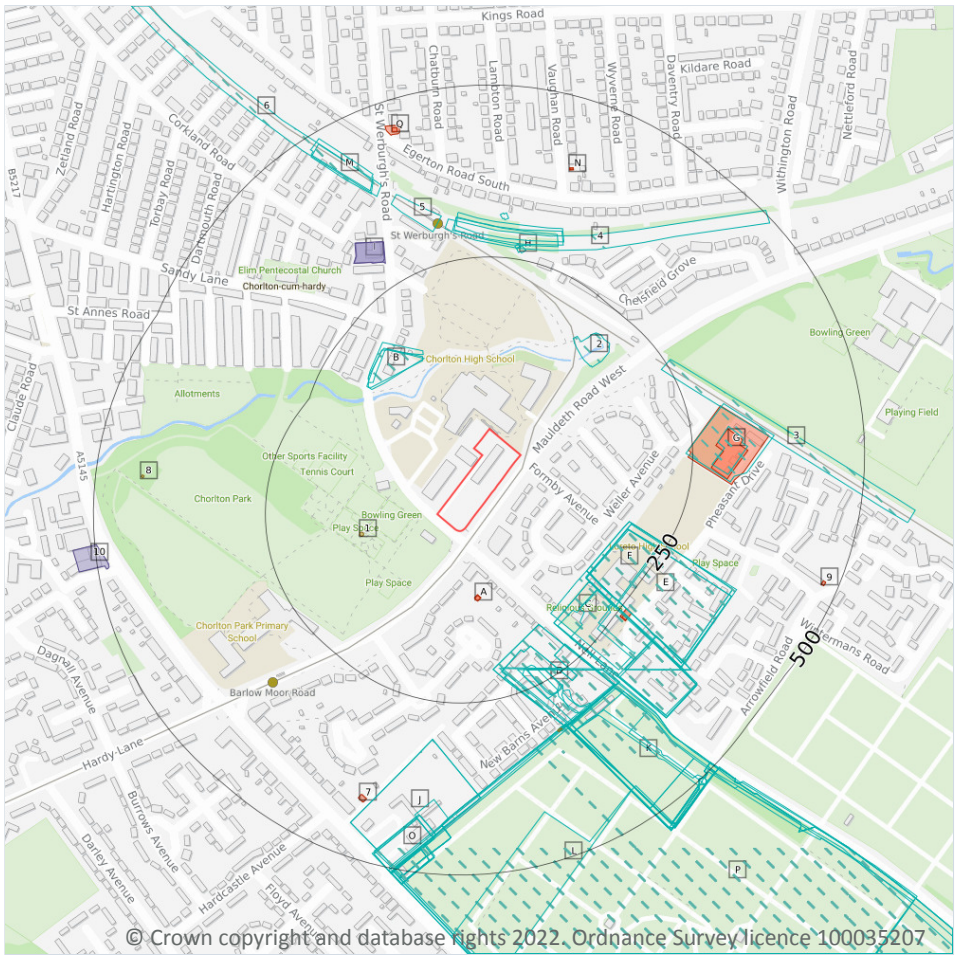
Site Area: 0.69ha

OS MasterMap site plan



Site Area: 0.69ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

1.1 Historical industrial land uses

Records within 500m	77

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 13**

ID	Location	Land use	Dates present	Group ID
B	139m NW	Unspecified Pit	1938	991507

ID	Location	Land use	Dates present	Group ID
B	140m NW	Unspecified Pit	1934	875240
B	145m NW	Unspecified Ground Workings	1955	800604
2	164m NE	Unspecified Pit	1938 - 1955	919849
C	175m SE	Nursery	1955	965745
D	176m SE	Refuse Destructor	1923	893902
D	176m SE	Refuse Destructor	1905	923361
E	178m SE	Nursery	1955	909201
E	178m SE	Nursery	1966	931852
E	183m SE	Nursery	1938	878692
E	184m SE	Nursery	1934	894537
F	184m SE	Nursery	1911	989351
F	184m SE	Nursery	1905	929887
E	185m SE	Nursery	1938	846747
C	187m SE	Nursery	1905	845566
C	187m SE	Nursery	1892	955528
D	193m SE	Refuse Destructor	1916	847638
D	193m SE	Refuse Destructor	1934	903486
C	195m SE	Nursery	1916 - 1934	919581
C	203m SE	Nursery	1938	910070
D	208m S	Corporation Destructor	1908	806705
D	208m S	Refuse Destructor	1911	936261
D	218m S	Refuse Destructor	1938	886554
D	220m SE	Sand Pit	1905	797581
D	222m SE	Refuse Heap	1911	918656
D	223m SE	Refuse Heap	1938	895612
3	239m NE	Cuttings	1966	795795
G	240m E	Electricity Substation	1978	837777
H	260m N	Unspecified Shafts	1916 - 1923	857739

ID	Location	Land use	Dates present	Group ID
D	264m SE	Unspecified Ground Workings	1923	800603
H	265m N	Junction Station	1938	811482
4	266m N	Cuttings	1892	936636
H	269m N	Cuttings	1934	988779
H	273m N	Cuttings	1938	974898
D	275m SE	Refuse Heap	1911	917595
H	278m N	Cuttings	1955	938713
G	279m E	Electric Substation	1988	834481
5	298m N	Cuttings	1892	795801
H	305m N	Unspecified Shafts	1916 - 1923	959605
J	305m S	Crematorium	1988	963373
J	305m S	Crematorium	1966 - 1978	968701
C	310m SE	Nursery	1938	875245
C	310m SE	Nursery	1911	961499
C	312m SE	Nursery	1923	973843
K	313m SE	Nursery	1934 - 1955	901845
K	314m SE	Nursery	1938	894380
K	315m SE	Nursery	1938	938164
K	316m SE	Nursery	1911	986255
K	319m SE	Nursery	1892	860471
L	319m SE	Cemetery	1988	891457
L	319m SE	Cemetery	1966	897524
L	319m SE	Cemetery	1978	929467
L	319m SE	Cemetery	1955	941906
D	319m SE	Unspecified Tank	1916 - 1923	869547
L	321m SE	Cemetery	1938	987175
L	322m SE	Cemetery	1905 - 1923	941904
L	326m SE	Cemetery	1892	947979

ID	Location	Land use	Dates present	Group ID
K	330m SE	Nursery	1916	900996
K	330m SE	Nursery	1905 - 1908	907970
K	333m SE	Nursery	1923	865388
6	376m NW	Cuttings	1892	858432
M	383m NW	Cuttings	1934	906387
M	387m NW	Cuttings	1938 - 1955	910917
J	392m S	Crematorium	1938	861261
O	416m S	Cemetery	1938	971245
O	417m S	Crematorium	1911 - 1934	932009
O	422m S	Crematorium	1905	965465
O	422m S	Crematorium	1892	913428
P	426m S	Cemetery	1934	974962
O	428m S	Crematorium	1955	847442
P	449m SE	Cemetery	1938	940156
O	457m S	Cemetery	1908	898448
O	460m S	Cemetery	1911	877706
O	464m S	Cemetery	1905	876162
O	464m S	Cemetery	1923	982055
O	465m S	Cemetery	1916	956664
O	497m S	Mortuary	1934	831593

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**3**

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 13**

ID	Location	Land use	Dates present	Group ID
1	111m W	Unspecified Tank	1894	115033
D	321m SE	Unspecified Tank	1922	115031
8	430m W	Unspecified Tank	1992	115038

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**12**

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 13**

ID	Location	Land use	Dates present	Group ID
A	96m S	Electricity Substation	1972 - 1992	85421
A	97m S	Electricity Substation	1978	85145
G	243m E	Electricity Substation	1992	69669
C	257m SE	Electricity Substation	1972 - 1992	73043
C	260m SE	Electricity Substation	1978	82512
G	278m E	Electricity Substation	1972 - 1986	67842
N	394m N	Electricity Substation	1992	62138
N	395m N	Electricity Transformer	1971	63758
7	408m S	Electricity Substation	1984 - 1992	77193
Q	449m N	Electricity Substation	1954 - 1995	75132
Q	453m N	Electricity Substation	1954 - 1975	83667
9	476m SE	Electricity Substation	1981 - 1992	76767

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	3

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 13**

ID	Location	Land use	Dates present	Group ID
I	284m NW	Garage	1992	22301
I	288m NW	Garage	1992 - 1995	25891
10	483m W	Garage	1955	25425

This data is sourced from Ordnance Survey / Groundsure.

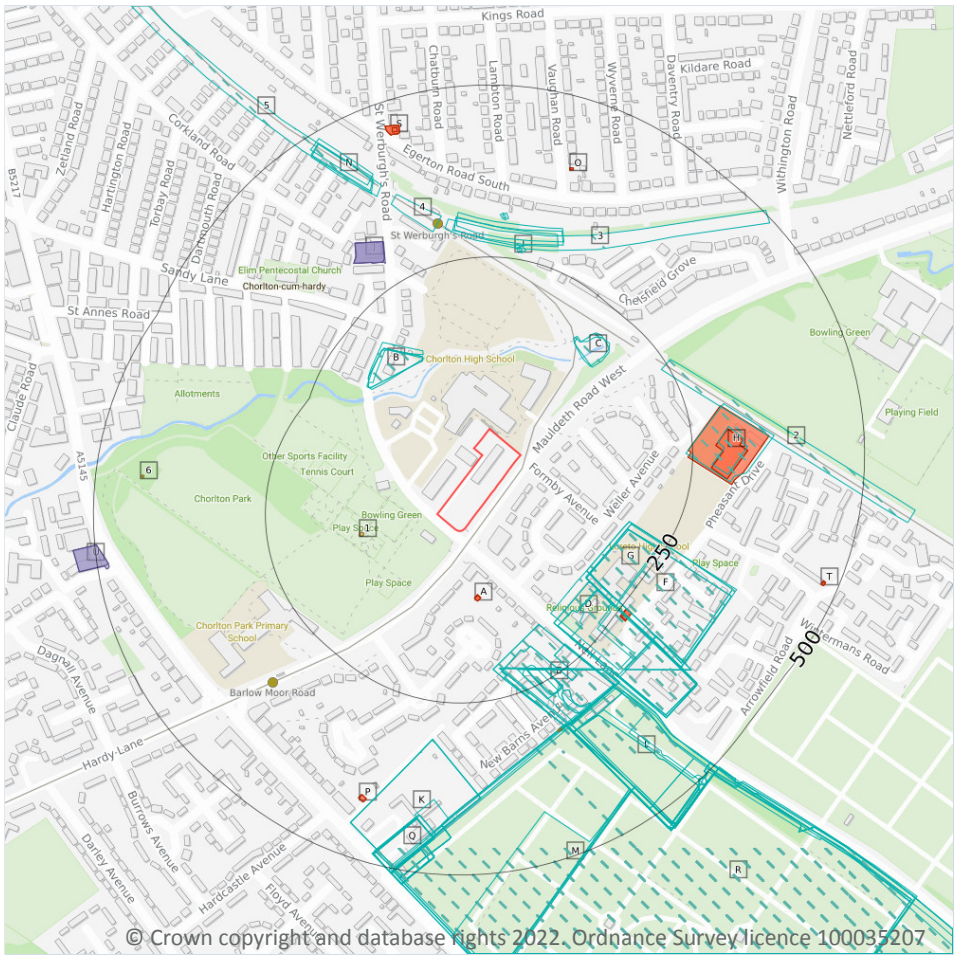
1.6 Historical military land

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



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

2.1 Historical industrial land uses

Records within 500m	97

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
B	139m NW	Unspecified Pit	1938	991507
B	139m NW	Unspecified Pit	1938	991507
B	140m NW	Unspecified Pit	1934	875240

ID	Location	Land Use	Date	Group ID
B	145m NW	Unspecified Ground Workings	1955	800604
C	164m NE	Unspecified Pit	1955	919849
C	165m NE	Unspecified Pit	1938	919849
D	175m SE	Nursery	1955	965745
E	176m SE	Refuse Destructor	1905	923361
E	176m SE	Refuse Destructor	1923	893902
F	178m SE	Nursery	1955	909201
F	178m SE	Nursery	1966	931852
F	183m SE	Nursery	1938	878692
F	184m SE	Nursery	1934	894537
G	184m SE	Nursery	1911	989351
G	184m SE	Nursery	1905	929887
F	185m SE	Nursery	1938	846747
D	187m SE	Nursery	1905	845566
D	187m SE	Nursery	1892	955528
E	193m SE	Refuse Destructor	1934	903486
E	193m SE	Refuse Destructor	1916	847638
D	195m SE	Nursery	1934	919581
D	195m SE	Nursery	1916	919581
D	203m SE	Nursery	1938	910070
E	208m S	Corporation Destructor	1908	806705
E	208m S	Refuse Destructor	1911	936261
E	208m S	Refuse Destructor	1911	936261
E	218m S	Refuse Destructor	1938	886554
E	220m SE	Sand Pit	1905	797581
E	222m SE	Refuse Heap	1911	918656
E	222m SE	Refuse Heap	1911	918656
E	223m SE	Refuse Heap	1938	895612

ID	Location	Land Use	Date	Group ID
2	239m NE	Cuttings	1966	795795
H	240m E	Electricity Substation	1978	837777
I	260m N	Unspecified Shafts	1916	857739
I	260m N	Unspecified Shafts	1923	857739
E	264m SE	Unspecified Ground Workings	1923	800603
I	265m N	Junction Station	1938	811482
3	266m N	Cuttings	1892	936636
I	269m N	Cuttings	1934	988779
I	273m N	Cuttings	1938	974898
E	275m SE	Refuse Heap	1911	917595
E	275m SE	Refuse Heap	1911	917595
I	278m N	Cuttings	1955	938713
H	279m E	Electric Substation	1988	834481
4	298m N	Cuttings	1892	795801
I	305m N	Unspecified Shafts	1923	959605
K	305m S	Crematorium	1978	968701
K	305m S	Crematorium	1966	968701
K	305m S	Crematorium	1988	963373
I	306m N	Unspecified Shafts	1916	959605
D	310m SE	Nursery	1938	875245
D	310m SE	Nursery	1911	961499
D	312m SE	Nursery	1923	973843
L	313m SE	Nursery	1955	901845
L	314m SE	Nursery	1938	894380
L	315m SE	Nursery	1938	938164
L	316m SE	Nursery	1911	986255
L	319m SE	Nursery	1892	860471
M	319m SE	Cemetery	1955	941906

ID	Location	Land Use	Date	Group ID
M	319m SE	Cemetery	1978	929467
M	319m SE	Cemetery	1966	897524
M	319m SE	Cemetery	1988	891457
E	319m SE	Unspecified Tank	1916	869547
E	321m SE	Unspecified Tank	1923	869547
M	321m SE	Cemetery	1938	987175
M	322m SE	Cemetery	1911	941904
M	326m SE	Cemetery	1892	947979
L	330m SE	Nursery	1934	901845
L	330m SE	Nursery	1916	900996
L	330m SE	Nursery	1908	907970
L	333m SE	Nursery	1905	907970
L	333m SE	Nursery	1923	865388
5	376m NW	Cuttings	1892	858432
N	383m NW	Cuttings	1934	906387
N	387m NW	Cuttings	1938	910917
K	392m S	Crematorium	1938	861261
N	396m NW	Cuttings	1955	910917
Q	416m S	Cemetery	1938	971245
Q	417m S	Crematorium	1911	932009
Q	421m S	Crematorium	1934	932009
Q	421m S	Crematorium	1916	932009
Q	422m S	Crematorium	1905	965465
Q	422m S	Crematorium	1892	913428
Q	423m S	Crematorium	1923	932009
R	426m S	Cemetery	1934	974962
Q	428m S	Crematorium	1955	847442
R	448m SE	Cemetery	1923	941904

ID	Location	Land Use	Date	Group ID
R	448m SE	Cemetery	1905	941904
R	449m SE	Cemetery	1908	941904
R	449m SE	Cemetery	1938	940156
R	450m SE	Cemetery	1916	941904
Q	457m S	Cemetery	1908	898448
Q	460m S	Cemetery	1911	877706
Q	464m S	Cemetery	1923	982055
Q	464m S	Cemetery	1905	876162
Q	465m S	Cemetery	1916	956664
Q	497m S	Mortuary	1934	831593

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**3**

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
1	111m W	Unspecified Tank	1894	115033
E	321m SE	Unspecified Tank	1922	115031
6	430m W	Unspecified Tank	1992	115038

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**29**

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
A	96m S	Electricity Substation	1992	85421
A	96m S	Electricity Substation	1992	85421
A	96m S	Electricity Substation	1986	85421
A	96m S	Electricity Substation	1972	85421
A	97m S	Electricity Substation	1978	85145
H	243m E	Electricity Substation	1992	69669
H	243m E	Electricity Substation	1992	69669
D	257m SE	Electricity Substation	1986	73043
D	257m SE	Electricity Substation	1972	73043
D	258m SE	Electricity Substation	1992	73043
D	258m SE	Electricity Substation	1992	73043
D	260m SE	Electricity Substation	1978	82512
H	278m E	Electricity Substation	1978	67842
H	278m E	Electricity Substation	1986	67842
H	278m E	Electricity Substation	1972	67842
O	394m N	Electricity Substation	1992	62138
O	395m N	Electricity Transformer	1971	63758
P	408m S	Electricity Substation	1984	77193
P	408m S	Electricity Substation	1992	77193
S	449m N	Electricity Substation	1954	75132
S	449m N	Electricity Substation	1992	75132
S	449m N	Electricity Substation	1995	75132
S	449m N	Electricity Substation	1992	75132
S	453m N	Electricity Substation	1954	83667
S	453m N	Electricity Substation	1975	83667
T	476m SE	Electricity Substation	1992	76767
T	476m SE	Electricity Substation	1992	76767

ID	Location	Land Use	Date	Group ID
T	476m SE	Electricity Substation	1983	76767
T	476m SE	Electricity Substation	1981	76767

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	**5**

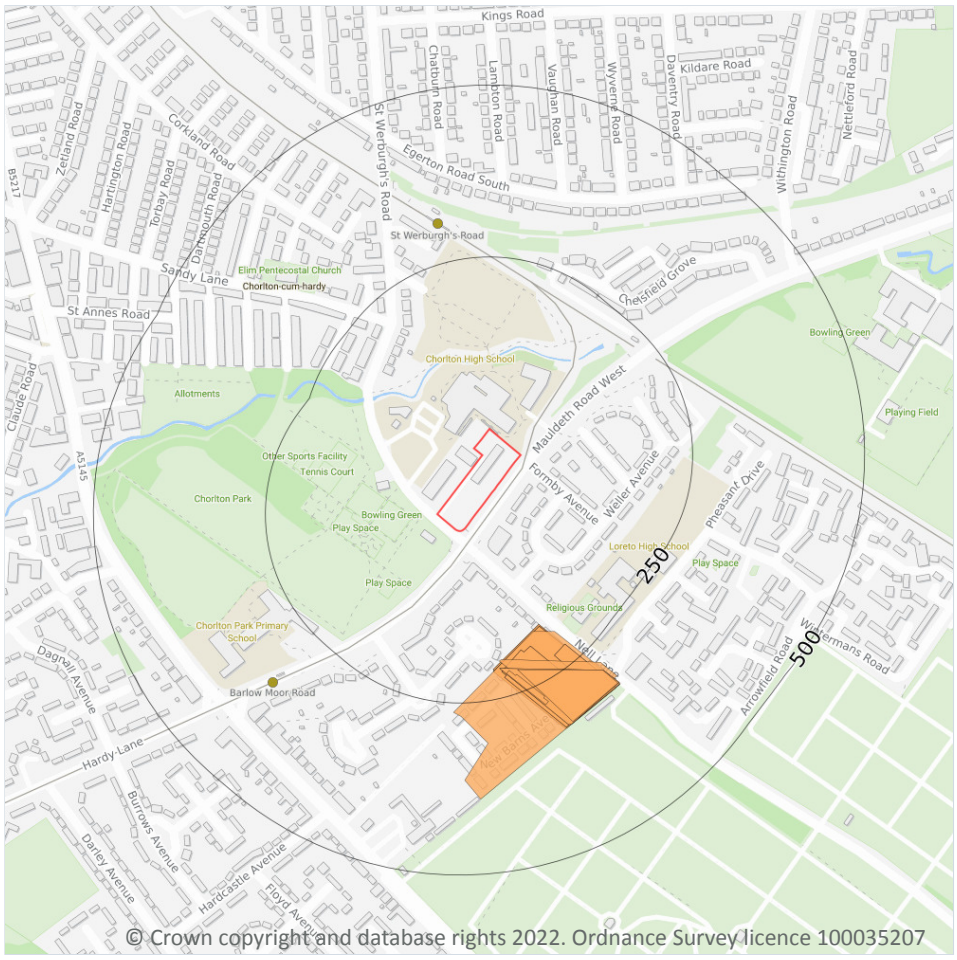
Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

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

ID	Location	Land Use	Date	Group ID
J	284m NW	Garage	1992	22301
J	288m NW	Garage	1995	25891
J	288m NW	Garage	1992	25891
U	483m W	Garage	1955	25425
U	483m W	Garage	1955	25425

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



Site Outline

Search buffers in metres (m)

Historical landfill (EA/NRW)

Historical waste sites

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	1

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.

Features are displayed on the Waste and landfill map on **page 26**

ID	Location	Details		
A	181m SE	Site Address: Nell Lane, Manchester Licence Holder Address: -	Waste Licence: - Site Reference: F042 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: - First Recorded - Last Recorded: -

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

3.5 Historical waste sites

Records within 500m	13

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

Features are displayed on the Waste and landfill map on **page 26**

ID	Location	Address	Further Details	Date
A	175m SE	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1905

ID	Location	Address	Further Details	Date
A	175m SE	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1923
A	178m SE	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1907
A	178m SE	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1922
A	178m SE	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1933
A	179m SE	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1955
A	193m SE	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1934
A	193m SE	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1916
A	195m S	Site Address: N/A	Type of Site: Corporation Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1910
A	207m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1908

ID	Location	Address	Further Details	Date
A	207m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1908
A	214m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1954
A	217m S	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1938

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.

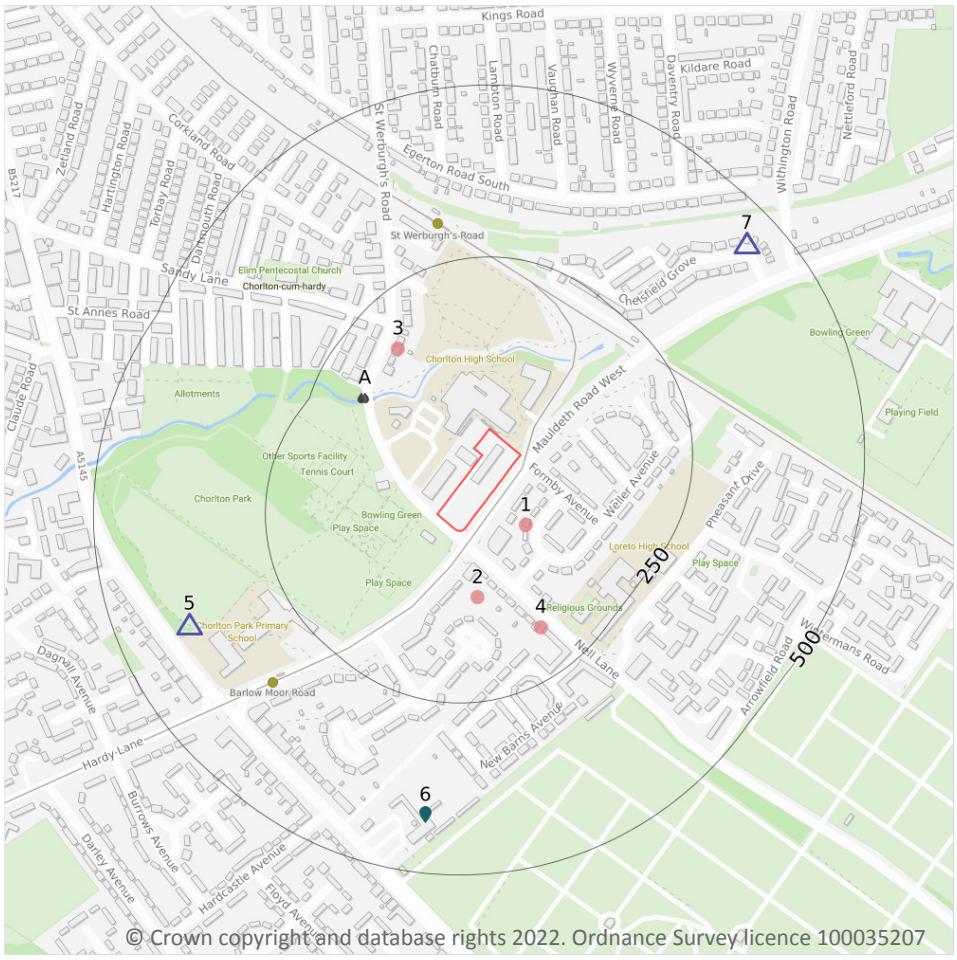
3.7 Waste exemptions

Records within 500m	0

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.

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

Current or recent petrol stations

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

Licensed Discharges to controlled waters

4.1 Recent industrial land uses

Records within 250m	4

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 30**

ID	Location	Company	Address	Activity	Category
1	68m SE	A I S Alarms	9, Wharton Avenue, Manchester, Greater Manchester, M21 7SQ	Electronic Equipment	Industrial Products
2	100m S	Electricity Sub Station	Greater Manchester, M21	Electrical Features	Infrastructure and Facilities
3	177m NW	Westroen	7, Nell Lane, Manchester, Greater Manchester, M21 8UE	Vehicle Repair, Testing and Servicing	Repair and Servicing

ID	Location	Company	Address	Activity	Category
4	181m SE	Electricity Sub Station	Greater Manchester, M21	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	**2**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 30**

ID	Location	Company	Address	LPG	Status
5	394m SW	OBSOLETE	417, Barlow Moor Road, Chorlton-Cum-Hardy, Manchester, Greater Manchester, M21 8JD	Not Applicable	Obsolete
7	450m NE	OBSOLETE	24A, Egerton Road South, Manchester, Greater Manchester, M21 0YN	Not Applicable	Obsolete

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 30**

ID	Location	Address	Details	
6	415m S	The Manchester Crematorium Ltd, Barlow Moor Road, Chorlton, M21 2GL	Process: Crematoria Processes Status: Current 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	4

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

Features are displayed on the Current industrial land use map on **page 30**

ID	Location	Address	Details	
A	174m NW	ST WERBURGHS RD CSO SITE 282T5, 138 SANDY LANE, CHORLTON-CUM-HARDY, MANCHESTER, GREATER MANCHESTER, M21 8TZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0232 Permit Version: 1 Receiving Water: CHORLTON BROOK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: 02/09/2010

ID	Location	Address	Details	
A	174m NW	ST WERBURGHS RD CSO SITE 282T5, 138 SANDY LANE, CHORLTON-CUM-HARDY, MANCHESTER, GREATER MANCHESTER, M21 8TZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0232 Permit Version: 2 Receiving Water: CHORLTON BROOK	Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 27/02/2019
A	179m NW	ST WERBURGHS RD CSO SITE 282T5, 138 SANDY LANE, CHORLTON-CUM-HARDY, MANCHESTER, GREATER MANCHESTER, M21 8TZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0232 Permit Version: 3 Receiving Water: CHORLTON BROOK	Status: VARIED UNDER EPR 2010 Issue date: 28/02/2019 Effective Date: 28/02/2019 Revocation Date: 19/02/2020
A	180m NW	ST WERBURGHS RD CSO SITE 282T5, 138 SANDY LANE, CHORLTON-CUM-HARDY, MANCHESTER, GREATER MANCHESTER, M21 8TZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0232 Permit Version: 4 Receiving Water: CHORLTON BROOK	Status: VARIED UNDER EPR 2010 Issue date: 20/02/2020 Effective Date: 20/02/2020 Revocation Date: -

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	0

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

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.

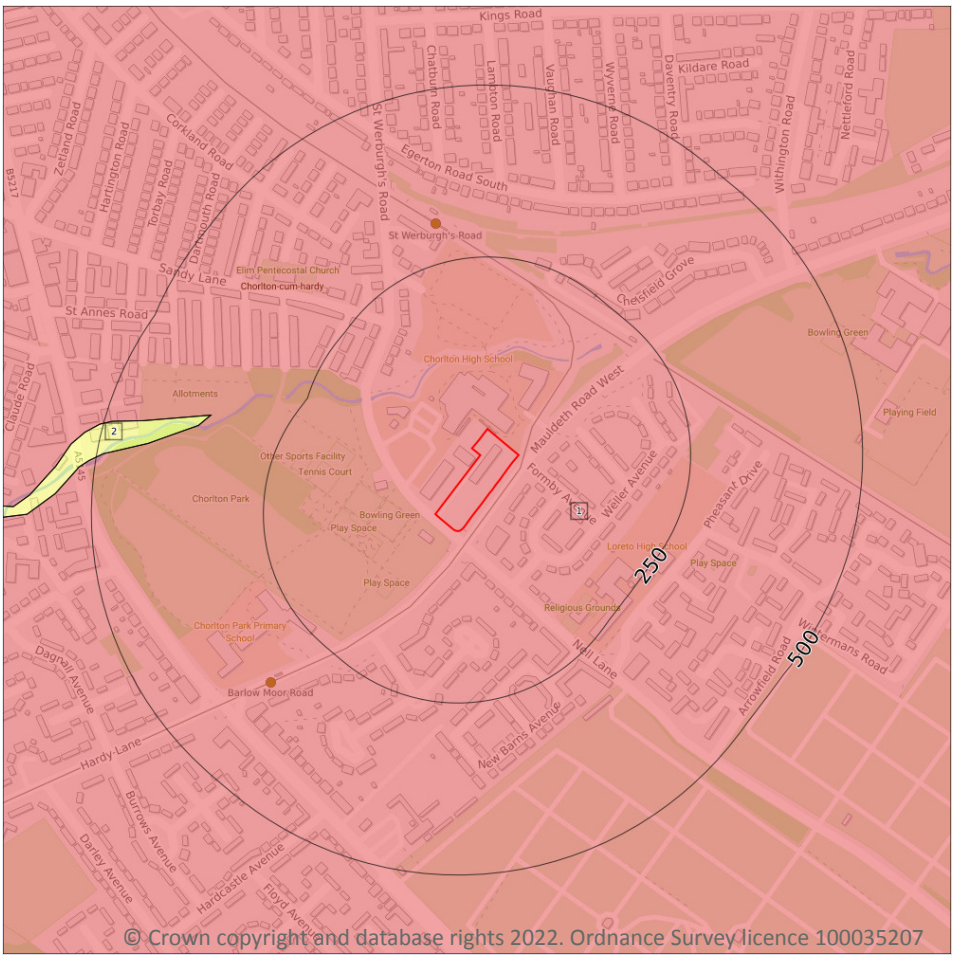
4.21 Pollution inventory radioactive waste

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	2

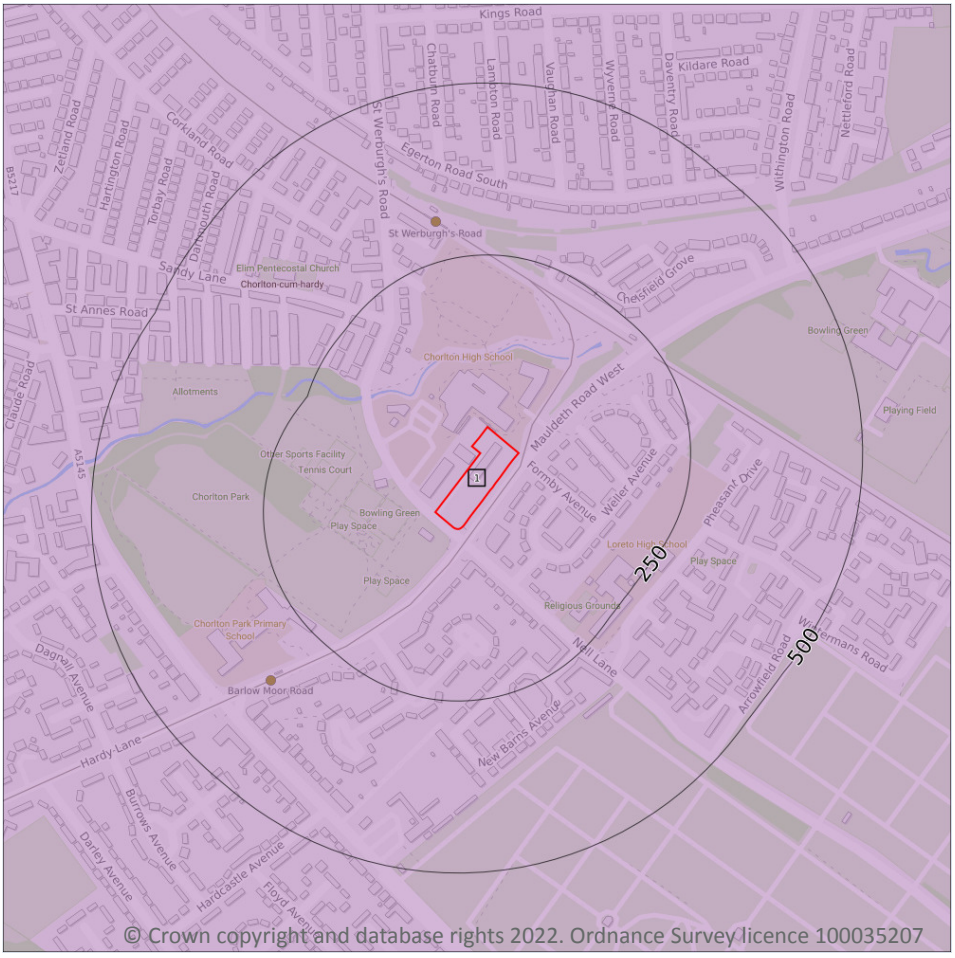
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 37**

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	357m NW	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

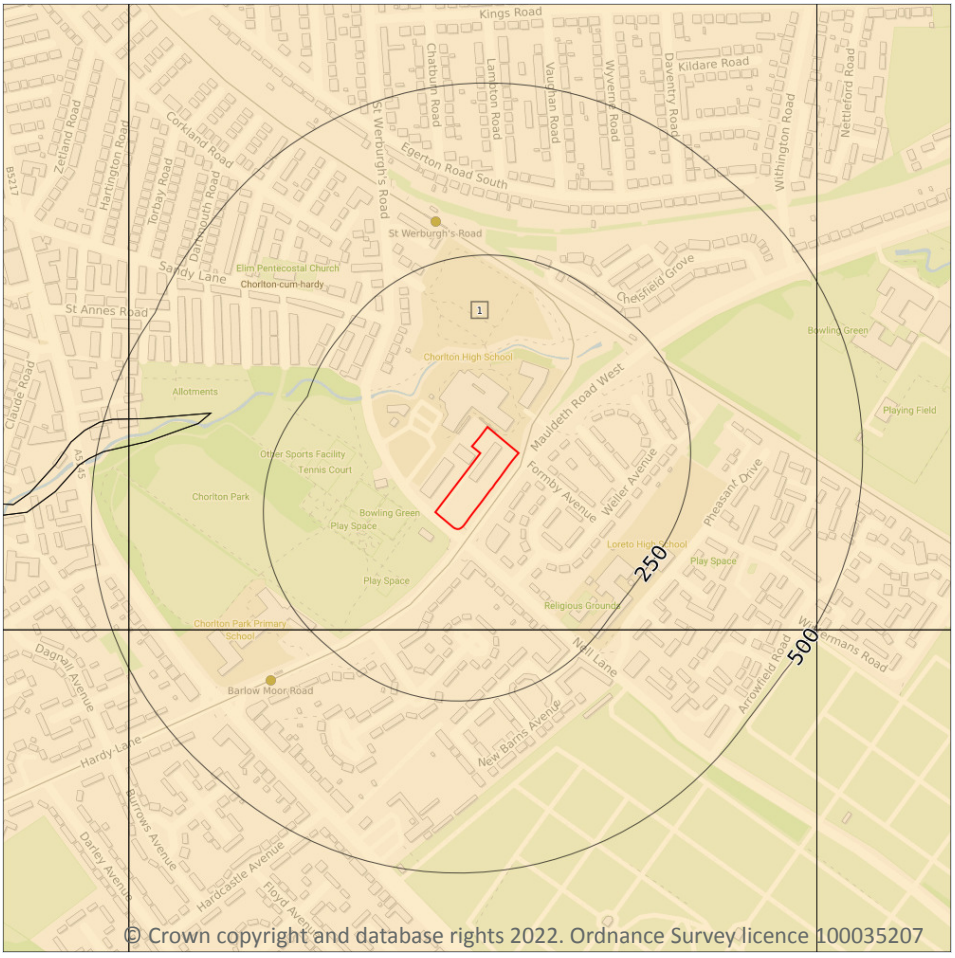
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 39**

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	1

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 40**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	**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: >10m Patchiness value: >90% Recharge potential: High**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Mixed**

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.

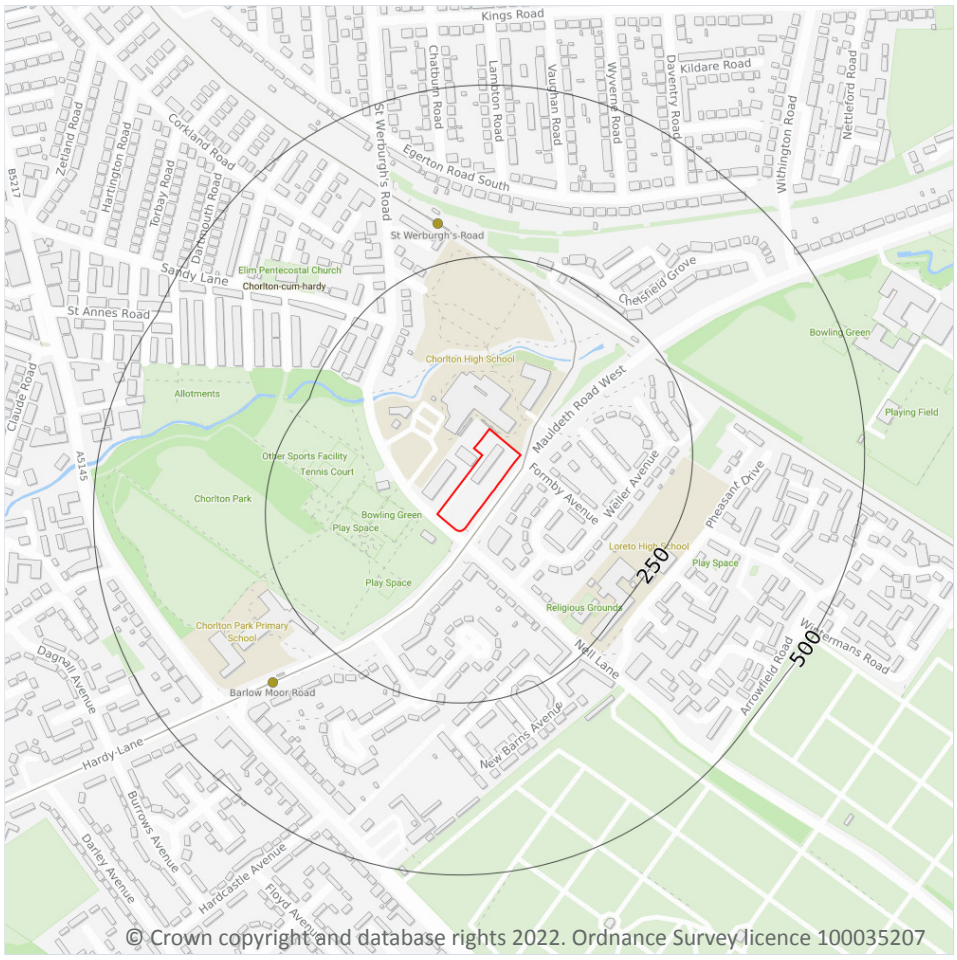
5.5 Groundwater vulnerability- local information

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	1

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 42**

ID	Location	Details	
-	1075m S	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): 8,500 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	0

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.

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.

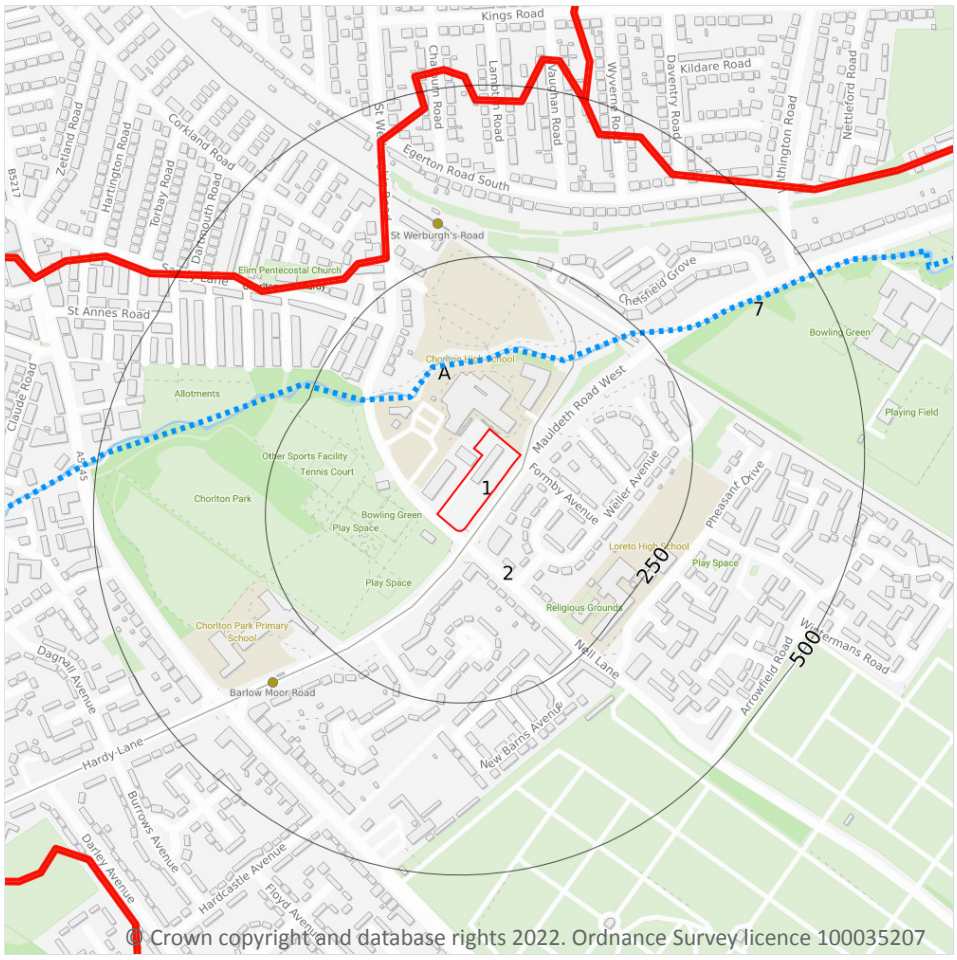
5.10 Source Protection Zones (confined aquifer)

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	**2**

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

Features are displayed on the Hydrology map on **page 45**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	99m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Chorlton Brook

ID	Location	Type of water feature	Ground level	Permanence	Name
7	199m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Chorlton Brook

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**4**

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.

Features are displayed on the Hydrology map on **page 45**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	**1**

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 45**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
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	**1**

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 45**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
3	101m 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**

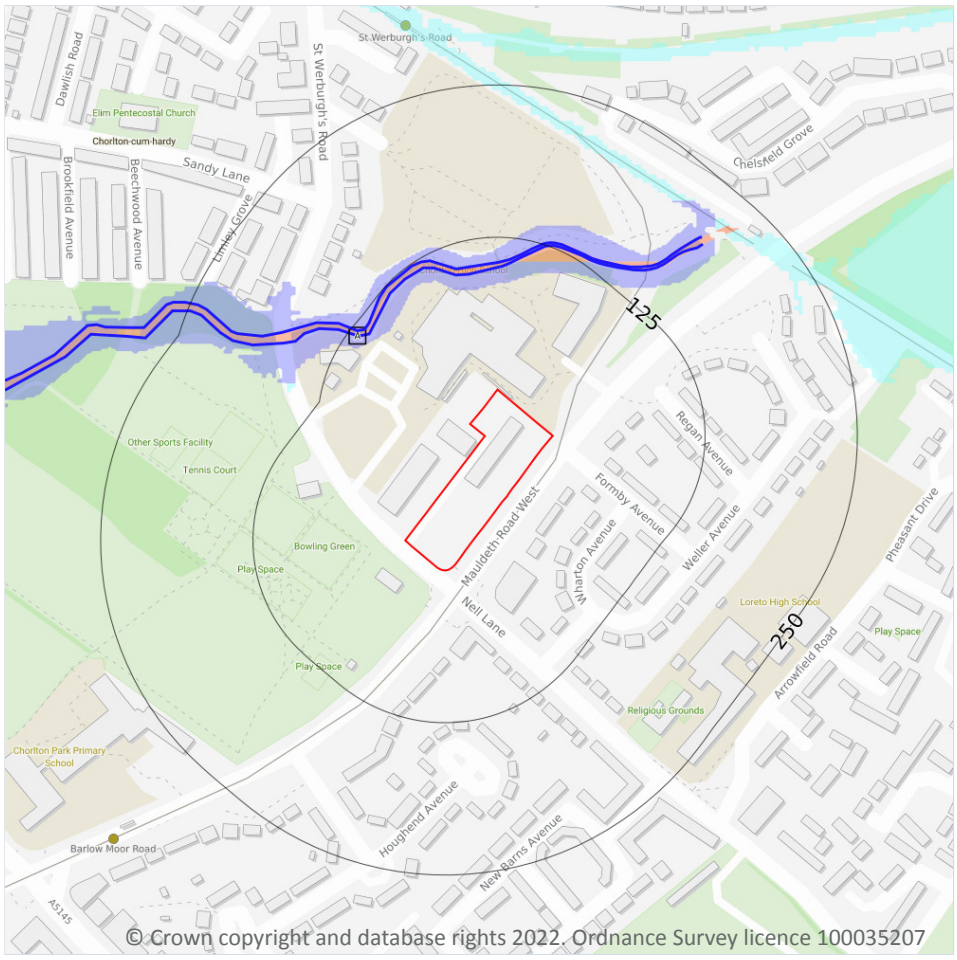
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 45**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
1	**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



Site Outline

Search buffers in metres (m)

River and coastal flooding:

- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

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	2

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.

Features are displayed on the River and coastal flooding map on **page 48**

ID	Location	Update
A	98m N	17/03/2022
A	103m N	17/03/2022

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	**1 in 30 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

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 51**

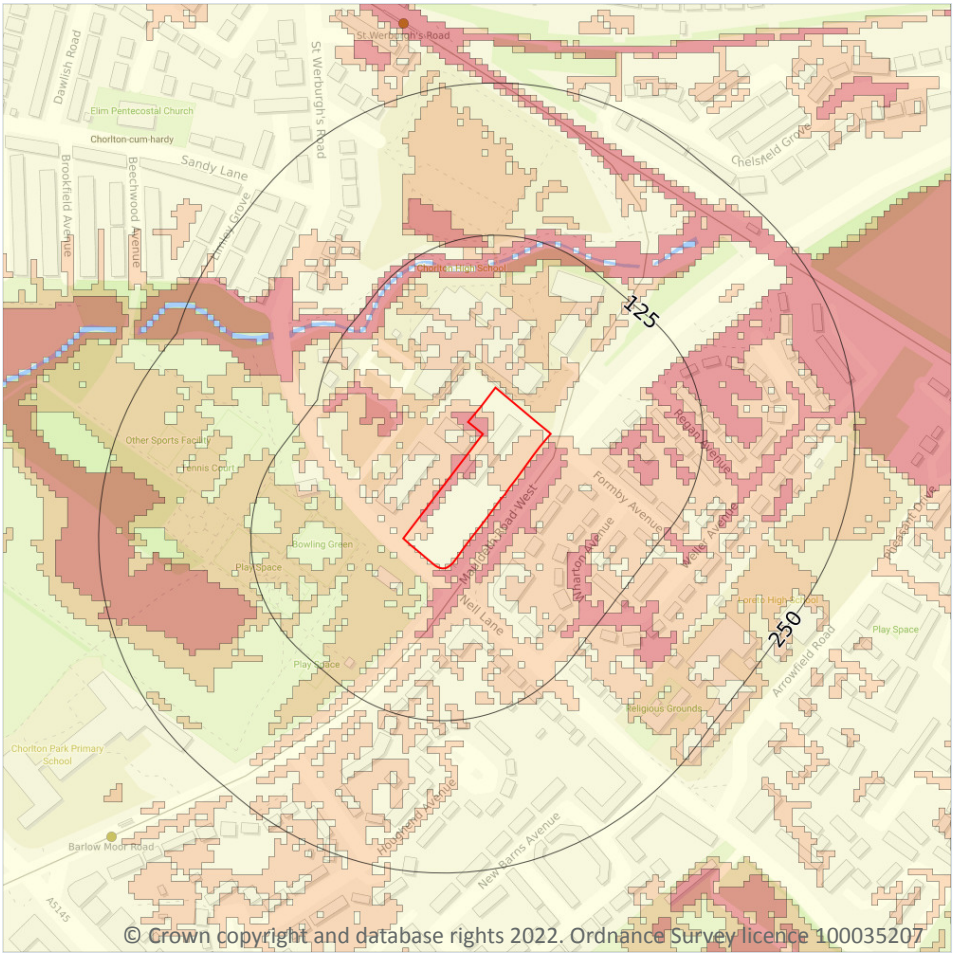
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

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

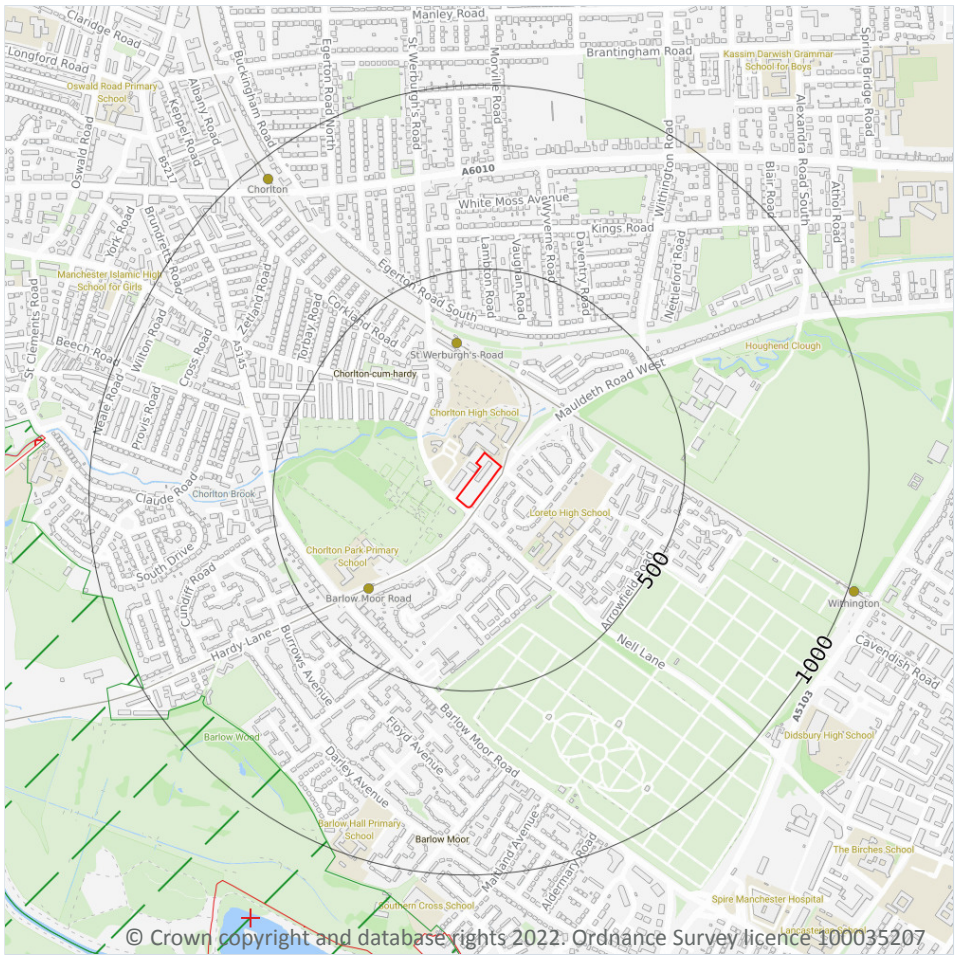
Highest risk on site	**High**
Highest risk within 50m	**High**

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 53**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



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 54**

ID	Location	Name	Data source
1	1131m W	Chorlton Ees & Ivy Green	Natural England
A	1158m S	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	2

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

Features are displayed on the Environmental designations map on **page 54**

ID	Location	Name	Local Authority name
A	858m SW	Merseyside and Greater Manchester	Manchester
2	1455m SW	Merseyside and Greater Manchester	Trafford

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	1

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 60**

ID	Location	Name	Grade	Reference Number	Listed date
1	8m NW	Hough End Hall, Chorlton Park, Manchester, M21	II*	1283002	25/02/1952

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

11.5 Conservation Areas

Records within 250m	0

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.

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.

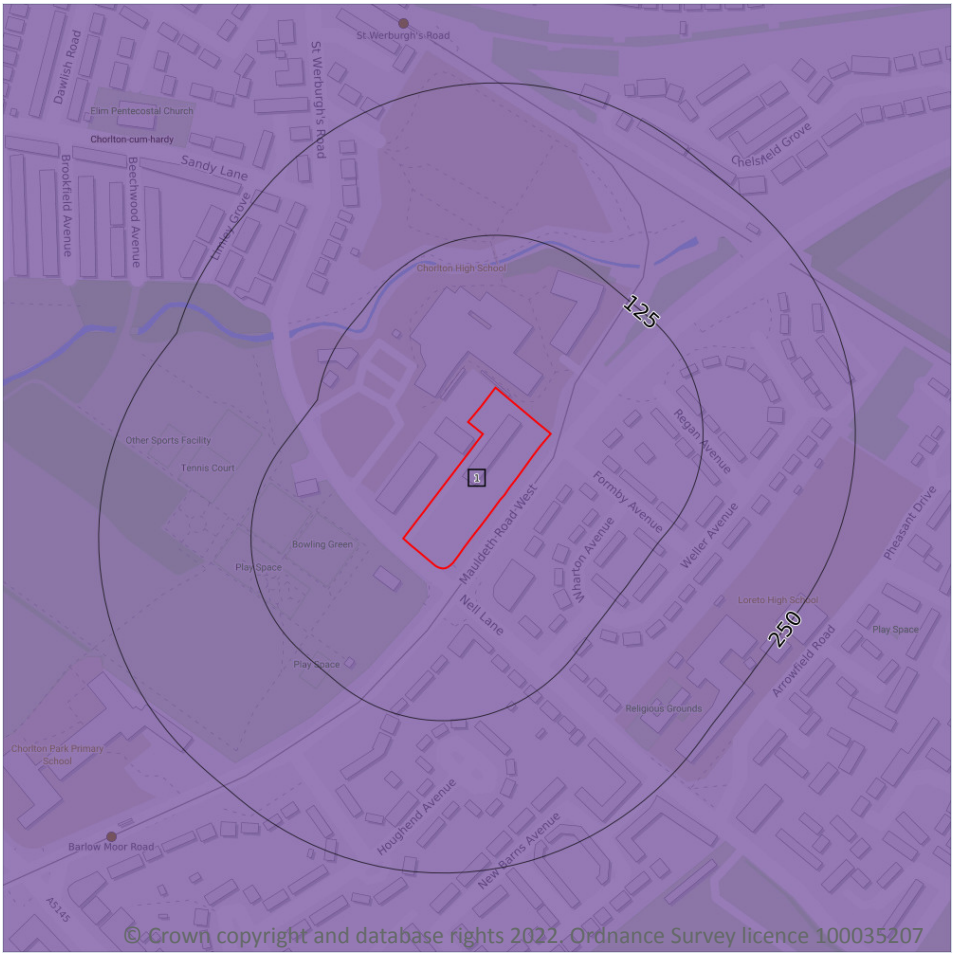
11.7 Registered Parks and Gardens

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



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

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 63**

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.

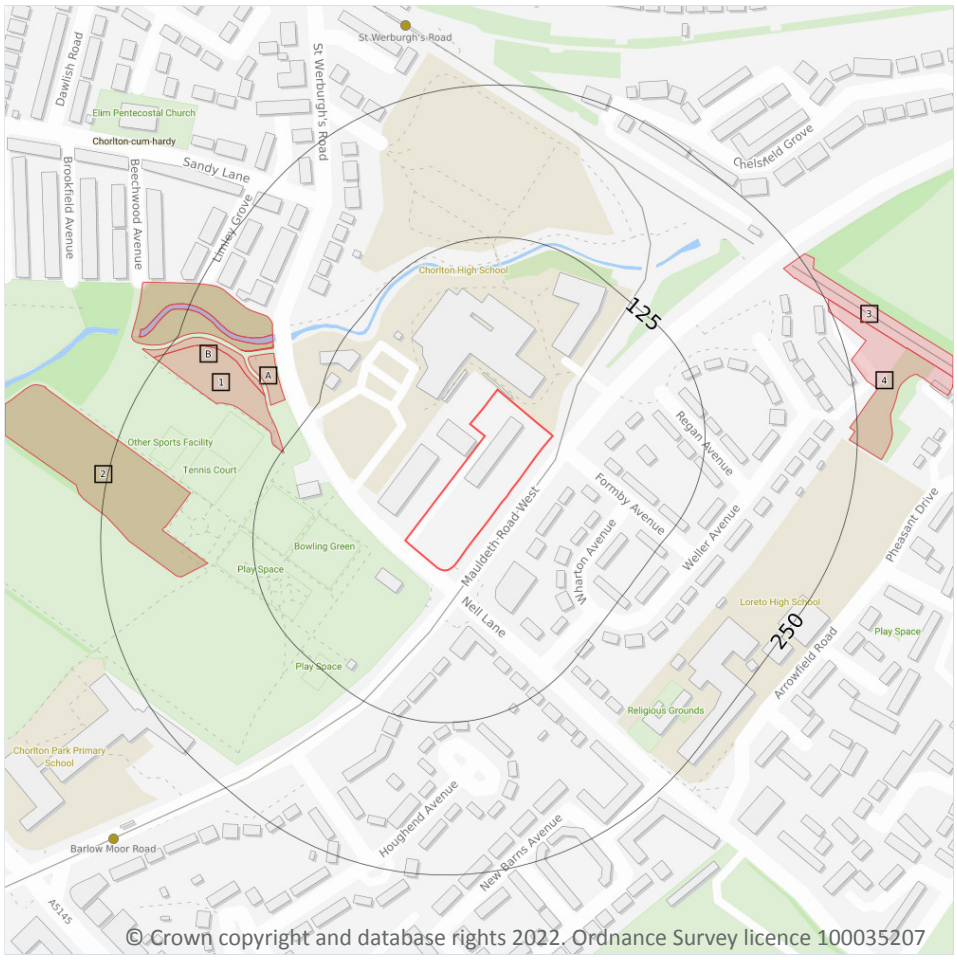
12.5 Countryside Stewardship Schemes

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	9

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 65**

ID	Location	Main Habitat	Other habitats
1	123m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	149m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	163m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	164m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

ID	Location	Main Habitat	Other habitats
A	173m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	174m W	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
B	175m NW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	234m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
4	243m E	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.

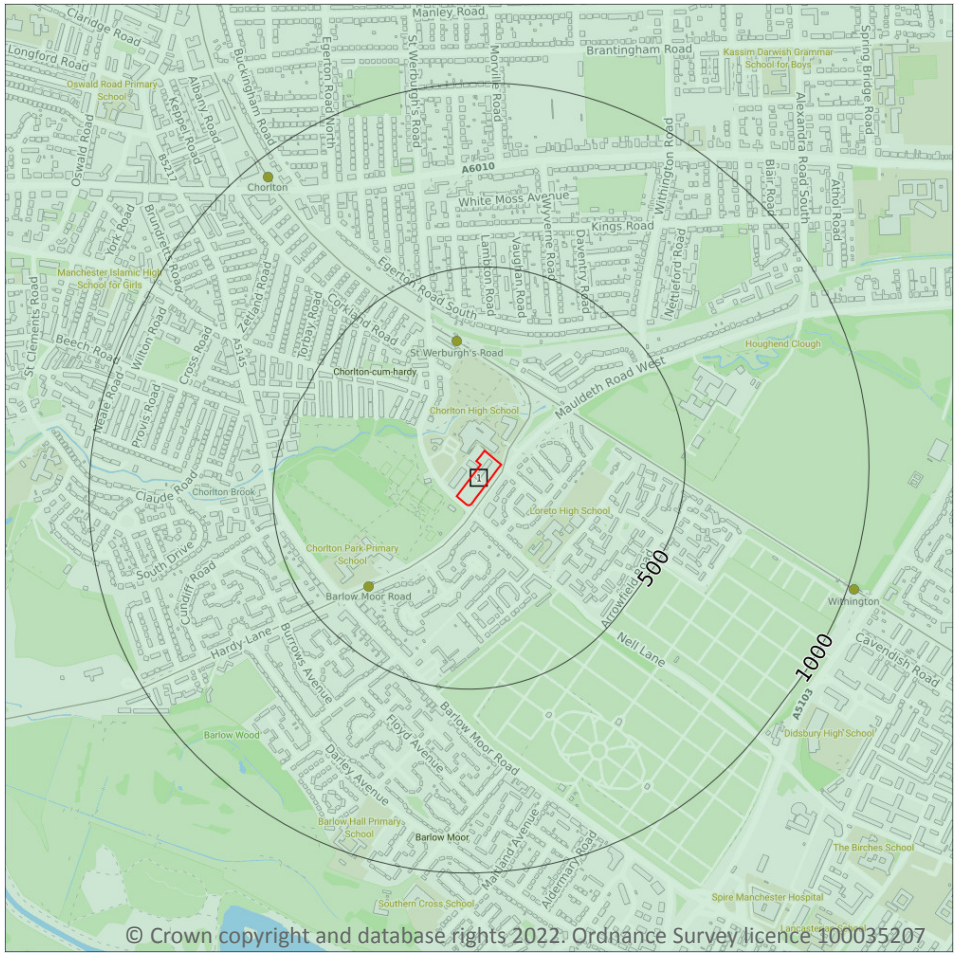
13.4 Limestone Pavement Orders

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

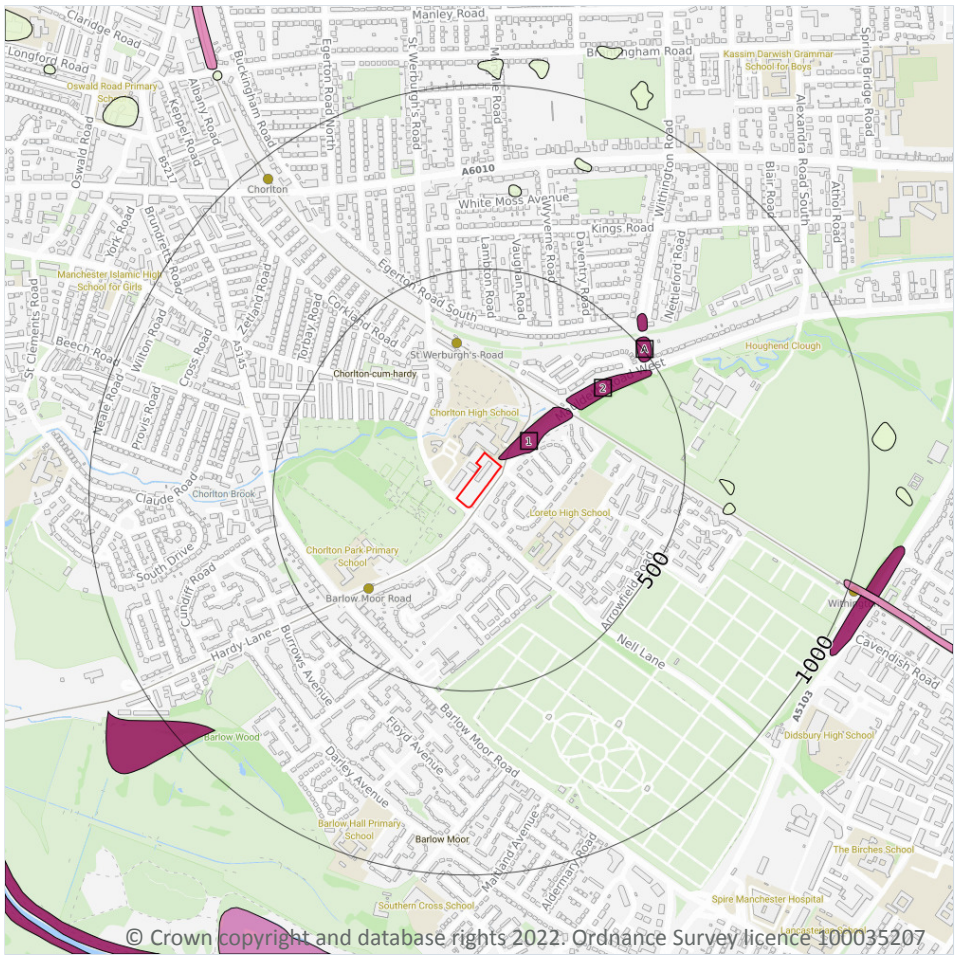
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 67**

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



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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	3

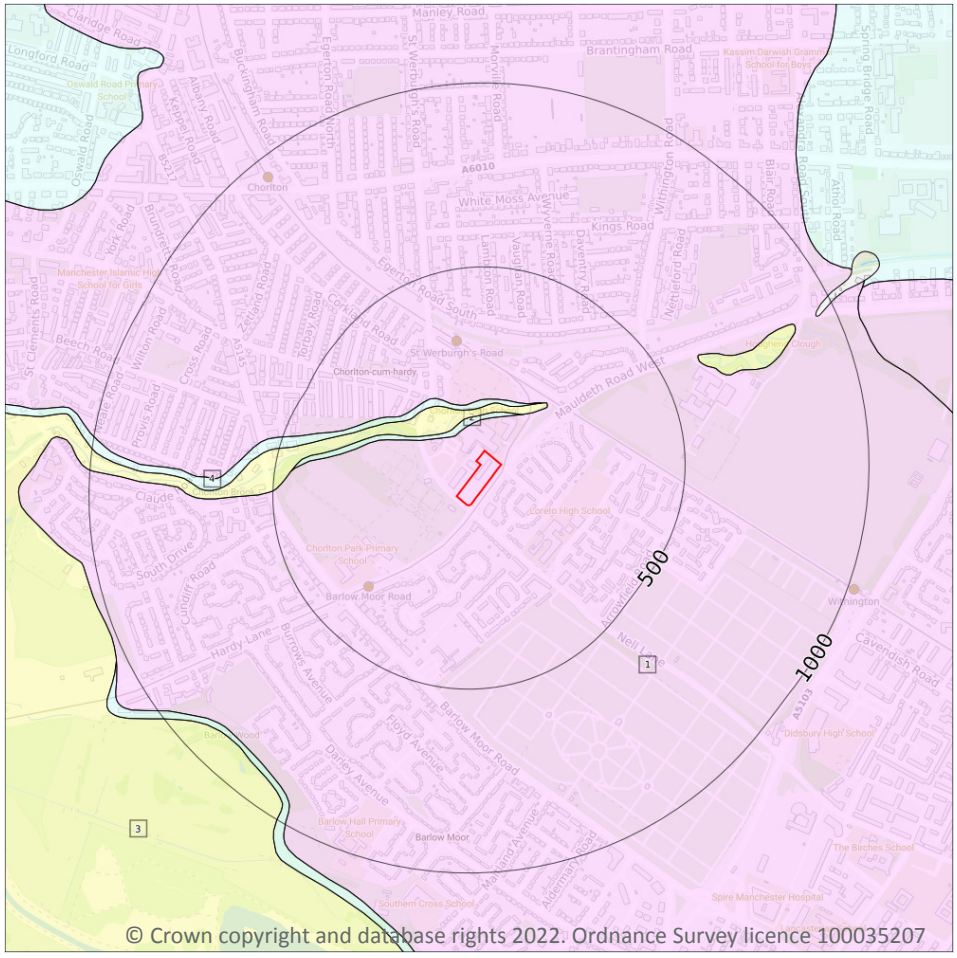
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 68**

ID	Location	LEX Code	Description	Rock description
1	12m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	252m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	475m NE	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 69**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**GFSDD-XSV**	**Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel**	**Sand And Gravel**
2	81m NW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
3	96m N	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
4	116m N	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

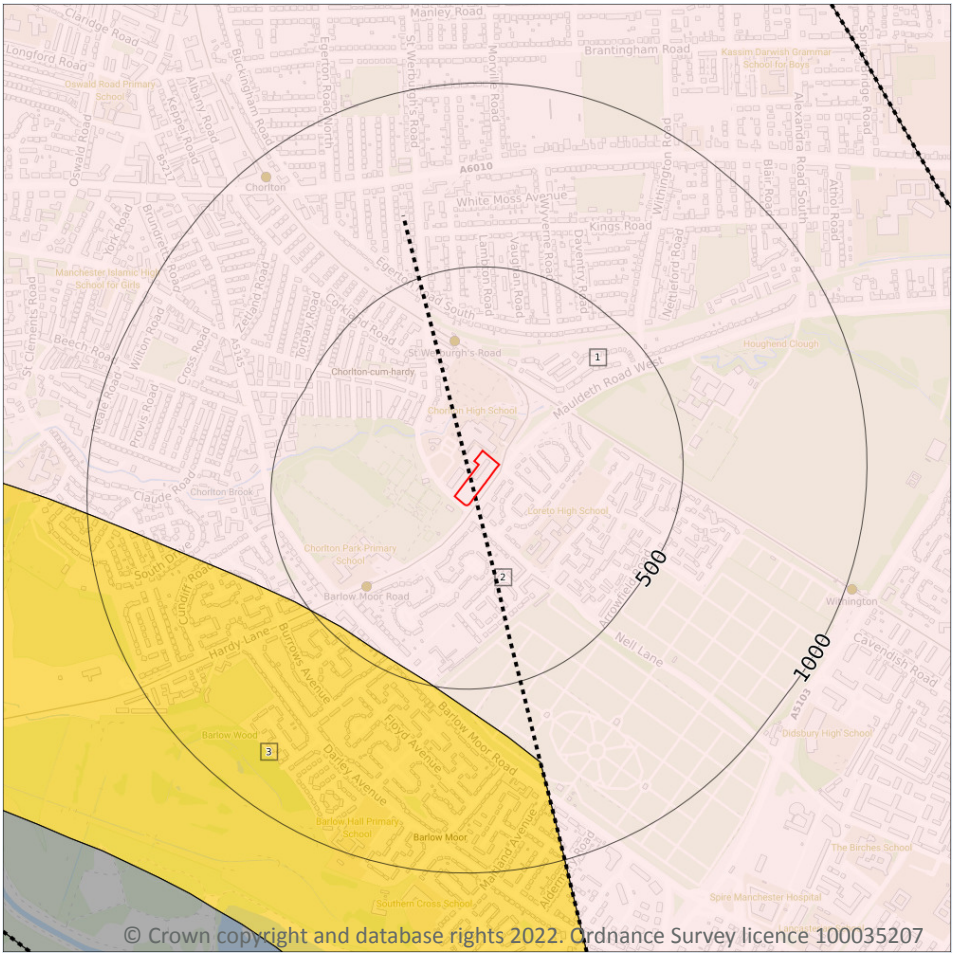
14.4 Landslip (10k)

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	2

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 71**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**WLSF-SDST**	**Wilmslow Sandstone Formation - Sandstone**	**Early Triassic Epoch**
3	463m SW	HEY-SDST	Helsby Sandstone Formation - Sandstone	Anisian Age - Early Triassic Epoch

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	1

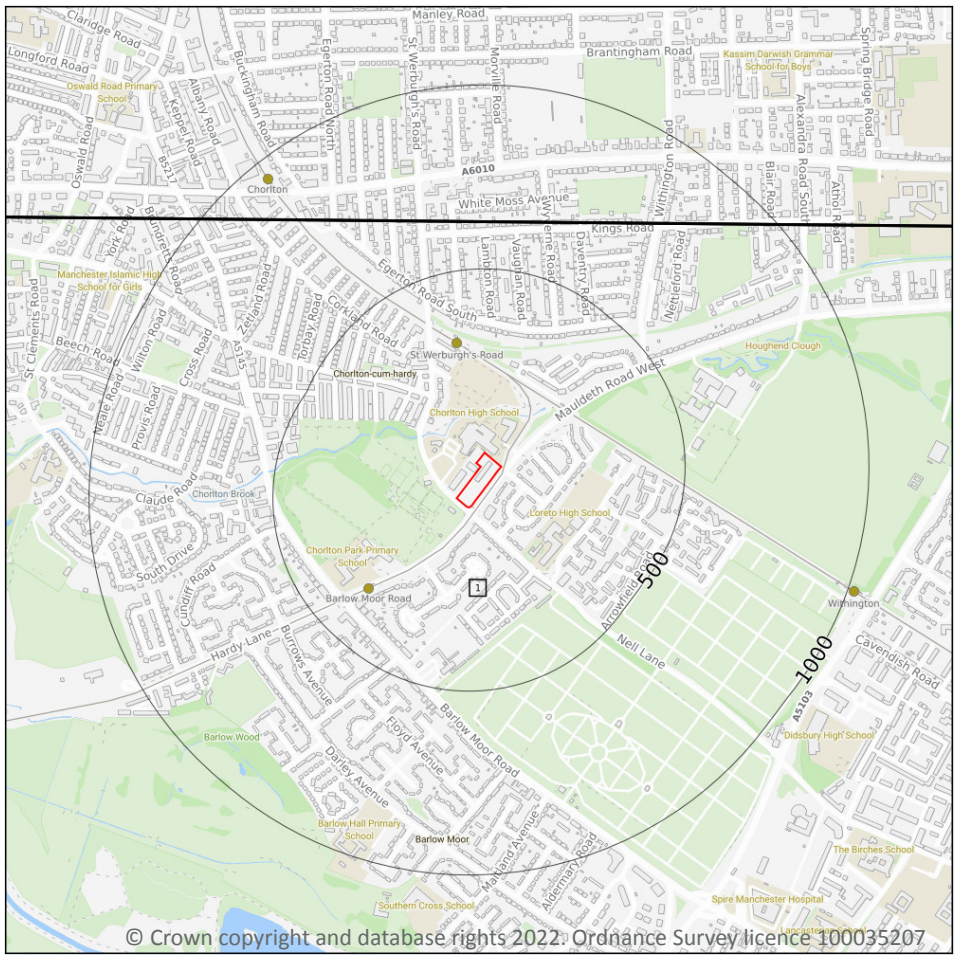
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 71**

ID	Location	Category	Description
2	**On site**	**FAULT**	**Normal fault, inferred; crossmarks on downthrow side**

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



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 73**

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.

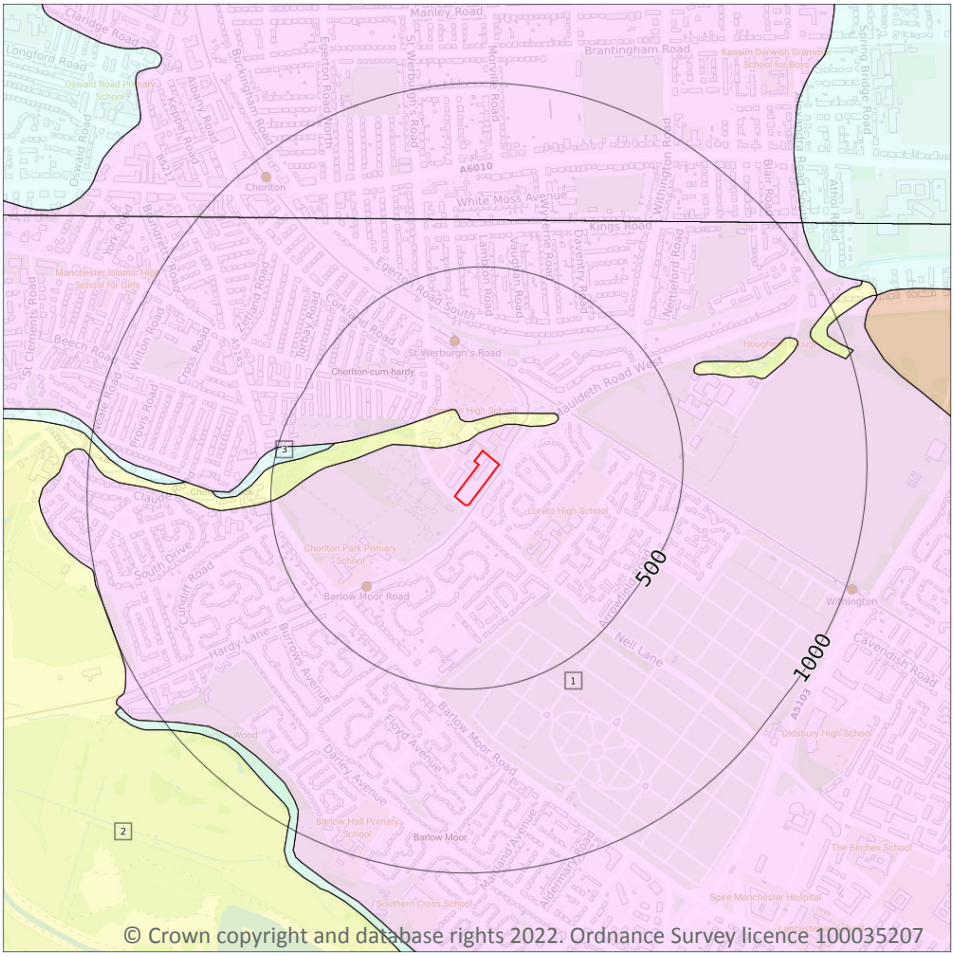
15.3 Artificial ground permeability (50k)

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 **3**

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 75**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**GFSDD-XSV**	**GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN**	**SAND AND GRAVEL**
2	45m NW	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	357m NW	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	2

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**
45m S	Intergranular	High	Very Low

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.

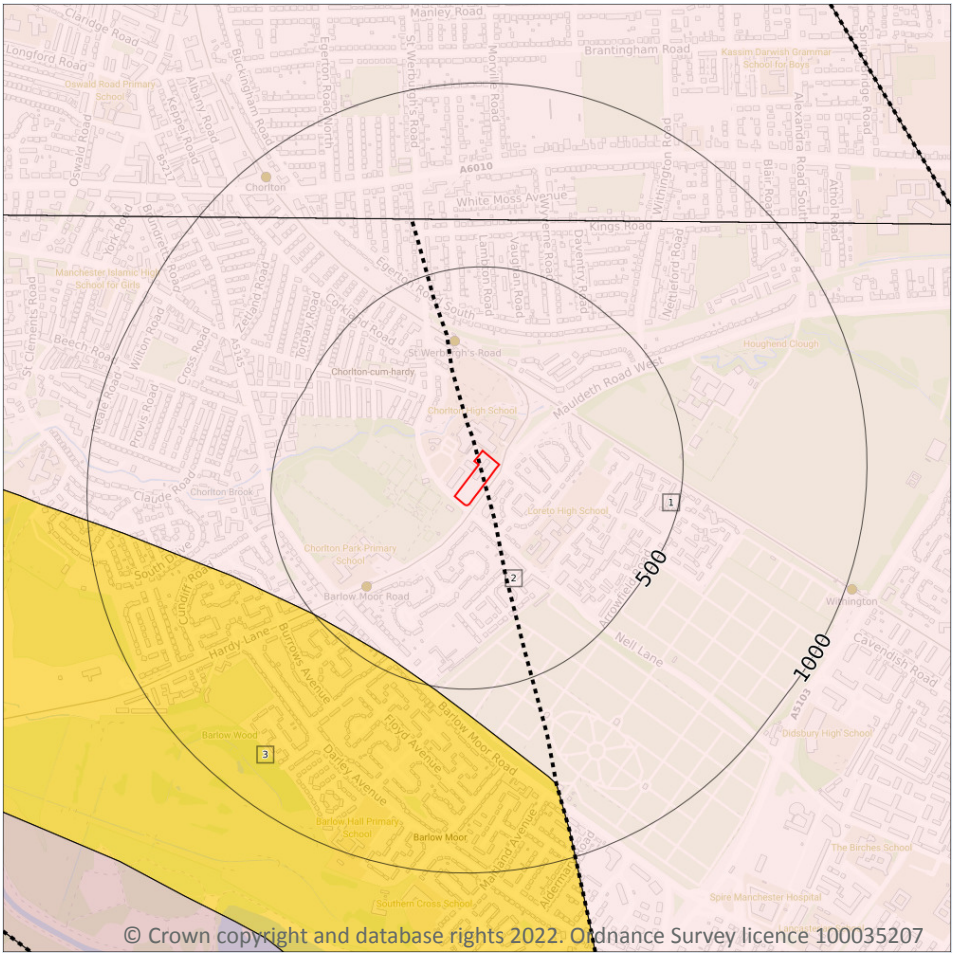
15.7 Landslip permeability (50k)

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	2

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 77**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**WLSF-SDST**	**WILMSLOW SANDSTONE FORMATION - SANDSTONE**	**-**
3	463m SW	HEY-PESST	HELSBY SANDSTONE FORMATION - SANDSTONE, PEBBLY (GRAVELLY)	ANISIAN

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	1

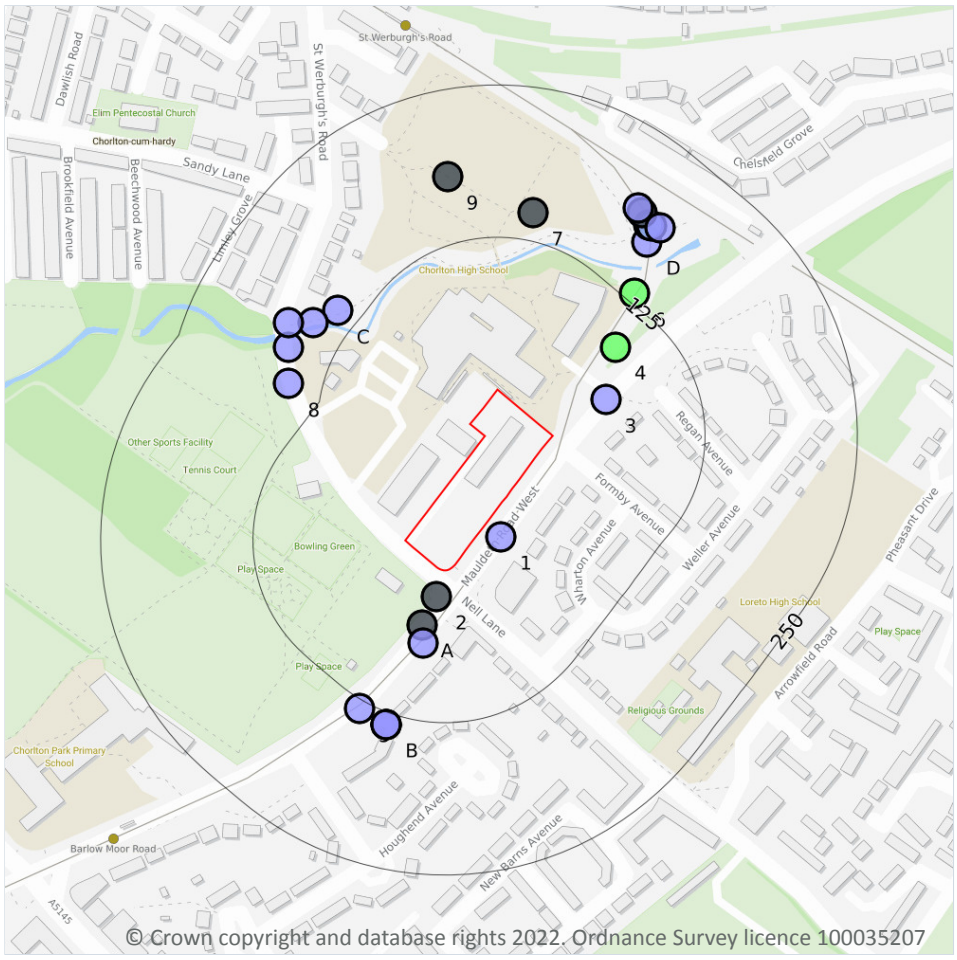
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 77**

ID	Location	Category	Description
2	**On site**	**FAULT**	**Fault, inferred**

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 **24**

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 79**

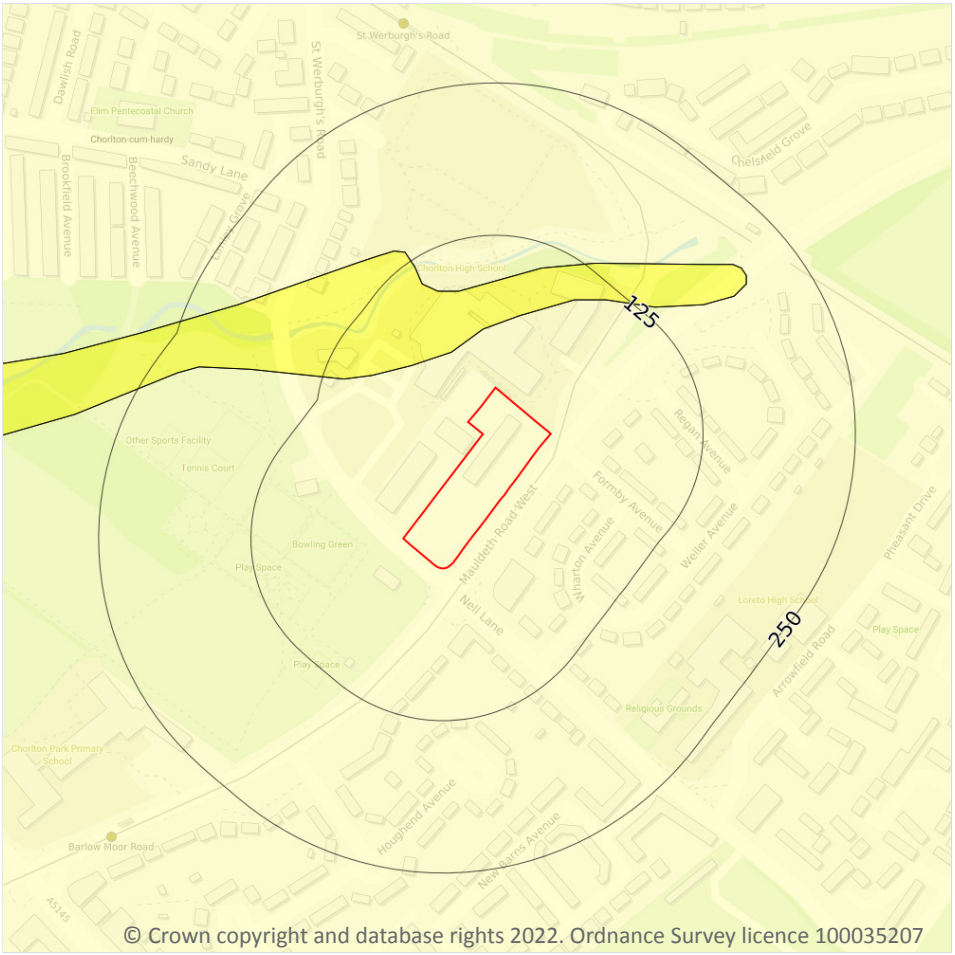
ID	Location	Grid reference	Name	Length	Confidential	Web link
1	16m SE	382524 393174	MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION WS01A_AIR	6.65	N	19329444
2	23m S	382471 393125	Metrolink 3B - Nonaccelerated Airport BH1404A	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	48m S	382459 393102	Metrolink 3B - Nonaccelerated Airport BH1404B	-	Y	N/A
3	53m NE	382610 393287	MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION WSTP05_AIR	6.2	N	19335047
A	62m S	382460 393087	MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION WSTP07_AIR	6.65	N	19335048
4	89m NE	382618 393330	MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION 2A_AIR	18.31	N	19329395
5	132m SW	382408 393033	MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION WS01B_AIR	6.2	N	19329445
6	133m NE	382634 393374	MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION 2_AIR	25.0	N	19413390
B	135m S	382430 393020	589 MAULDETH ROAD WEST, CHORLTON-CUM-HARDY TP A	0.8	N	13469212
B	135m S	382430 393020	589 MAULDETH ROAD WEST, CHORLTON-CUM-HARDY TP B	0.76	N	13469218
B	135m S	382430 393020	589 MAULDETH ROAD WEST, CHORLTON-CUM-HARDY 1	3.1	N	13469220
C	143m NW	382390 393360	CHORLTON BROOK TP 116	0.4	N	865283
7	148m N	382550 393440	ST WERBURGH'S ROAD CHORLTON 3	-	Y	N/A
8	152m W	382350 393300	CHORLTON BROOK TP 112	1.1	N	865279
C	153m NW	382370 393350	CHORLTON BROOK TP 114	2.2	N	865281
C	162m NW	382350 393330	CHORLTON BROOK TP 113	3.0	N	865280
C	171m NW	382350 393350	CHORLTON BROOK TP 115	1.2	N	865282
D	172m NE	382644 393416	MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION TP03_AIR	2.9	N	19335059
9	180m N	382480 393470	ST WERBURGH'S ROAD CHORLTON 2	-	Y	N/A
D	183m NE	382645 393430	MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION 1_AIR	25.6	N	19329394
D	184m NE	382648 393429	MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION WS01_AIR	6.45	N	19329443
D	188m NE	382640 393440	ST WERBURGH'S ROAD CHORLTON 4	-	Y	N/A
D	188m NE	382655 393428	MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION TP02_AIR	3.5	N	19335058

ID	Location	Grid reference	Name	Length	Confidential	Web link
D	189m NE	382637 393444	MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION TP01_AIR	3.2	N	19335057

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	2

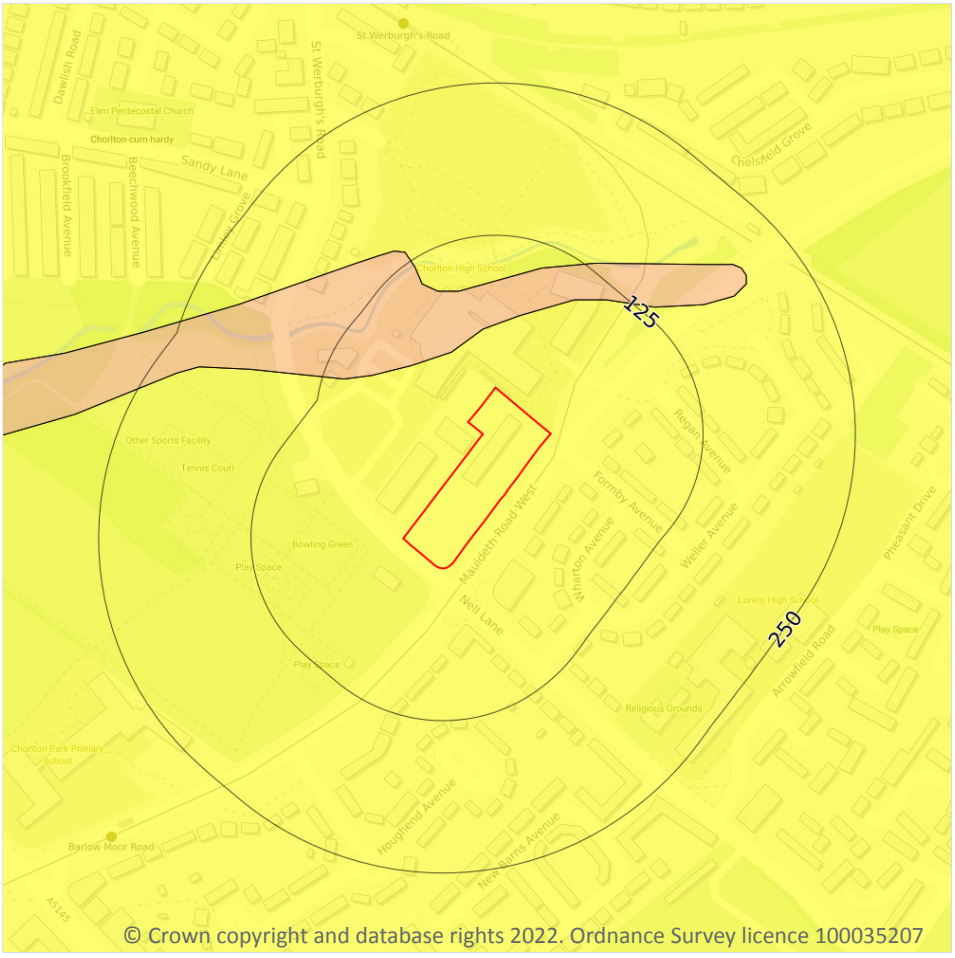
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 82**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**
45m NW	Very low	Ground conditions predominantly low plasticity.

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	2

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.

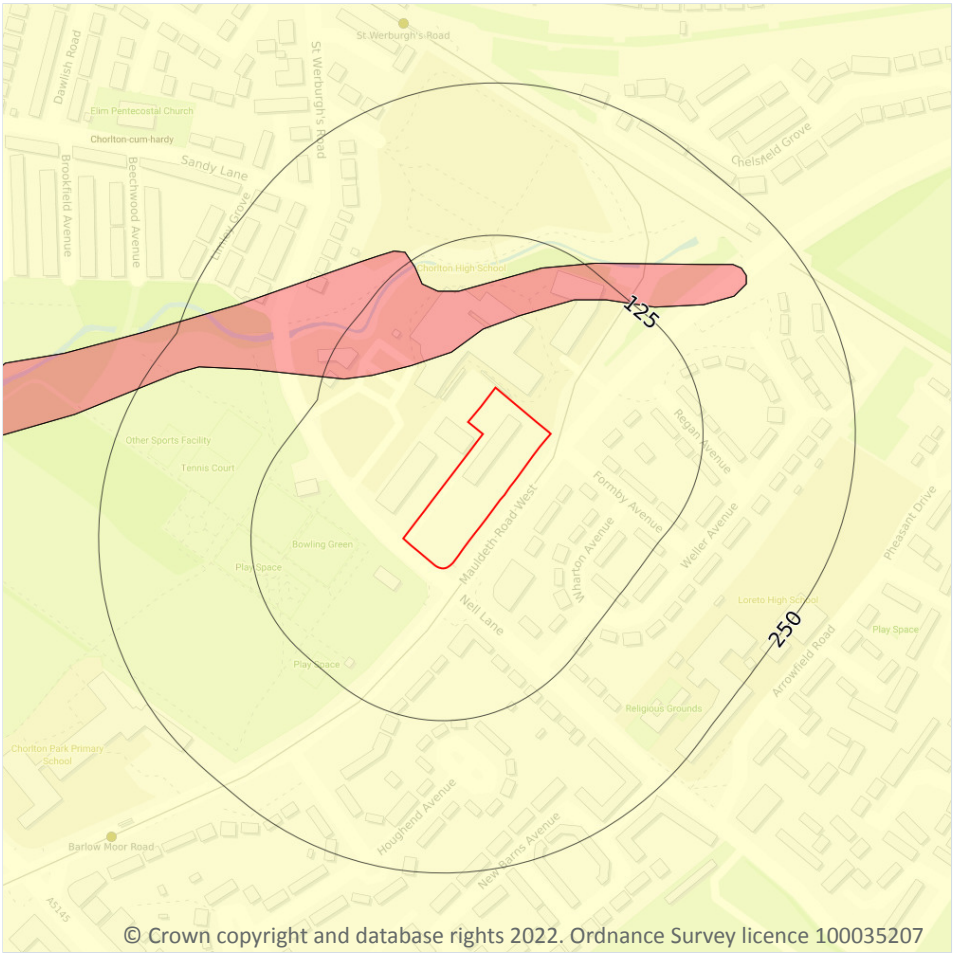
Features are displayed on the Natural ground subsidence - Running sands map on **page 83**

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.**

Location	Hazard rating	Details
45m NW	Low	Running sand conditions may be present. Constraints may apply to land uses involving excavation or the addition or removal of water.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	2

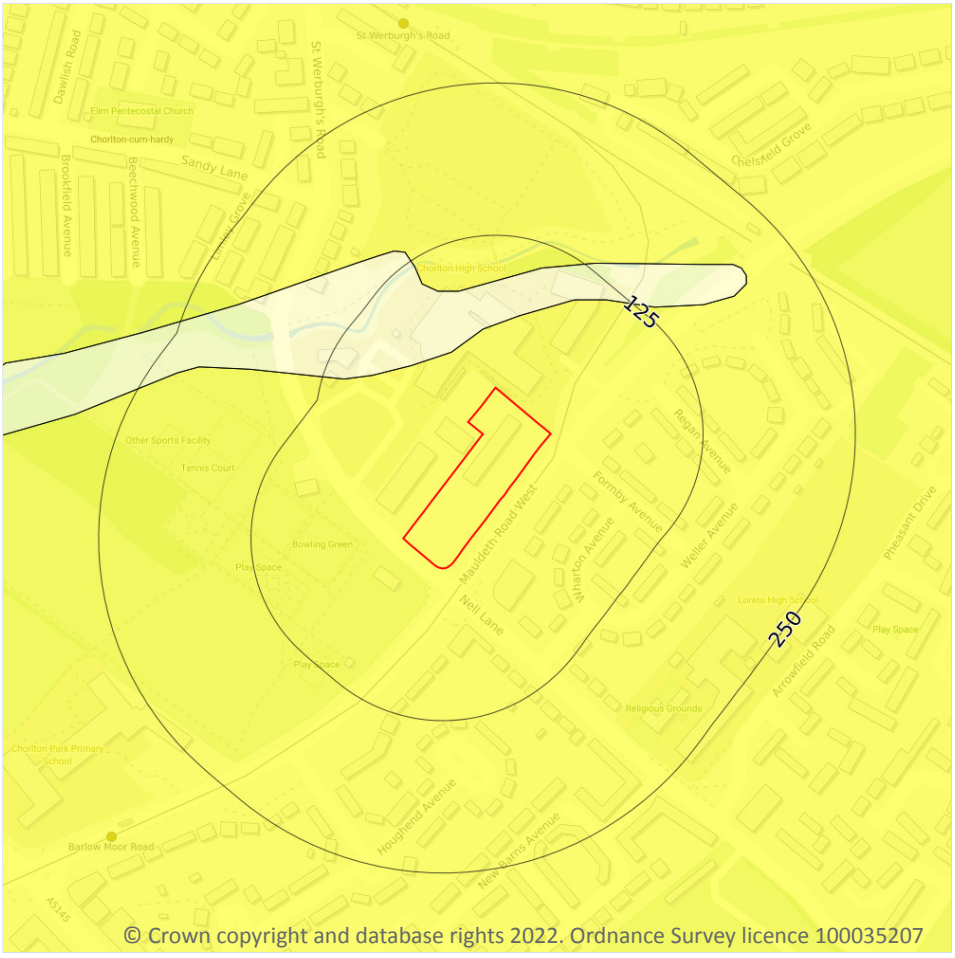
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 85**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**
45m NW	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.

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	2

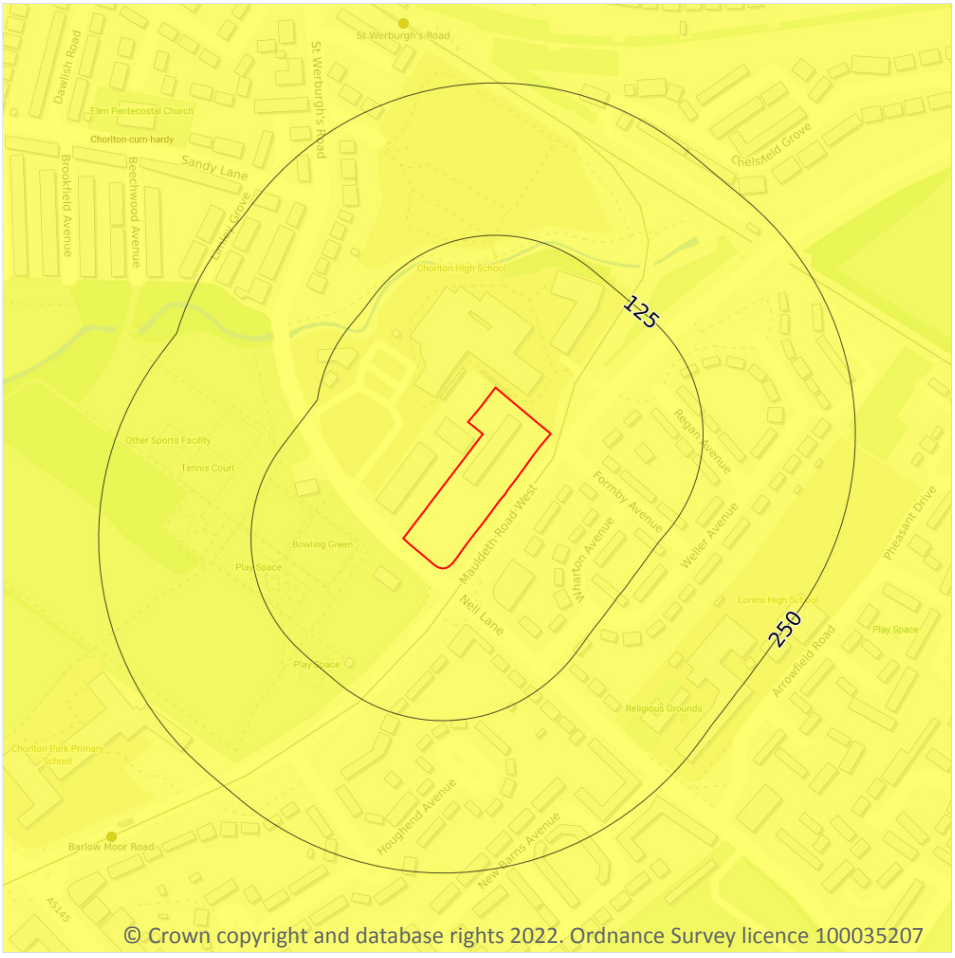
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 87**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**
45m NW	Negligible	Deposits with potential to collapse when loaded and saturated are believed not 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 88**

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

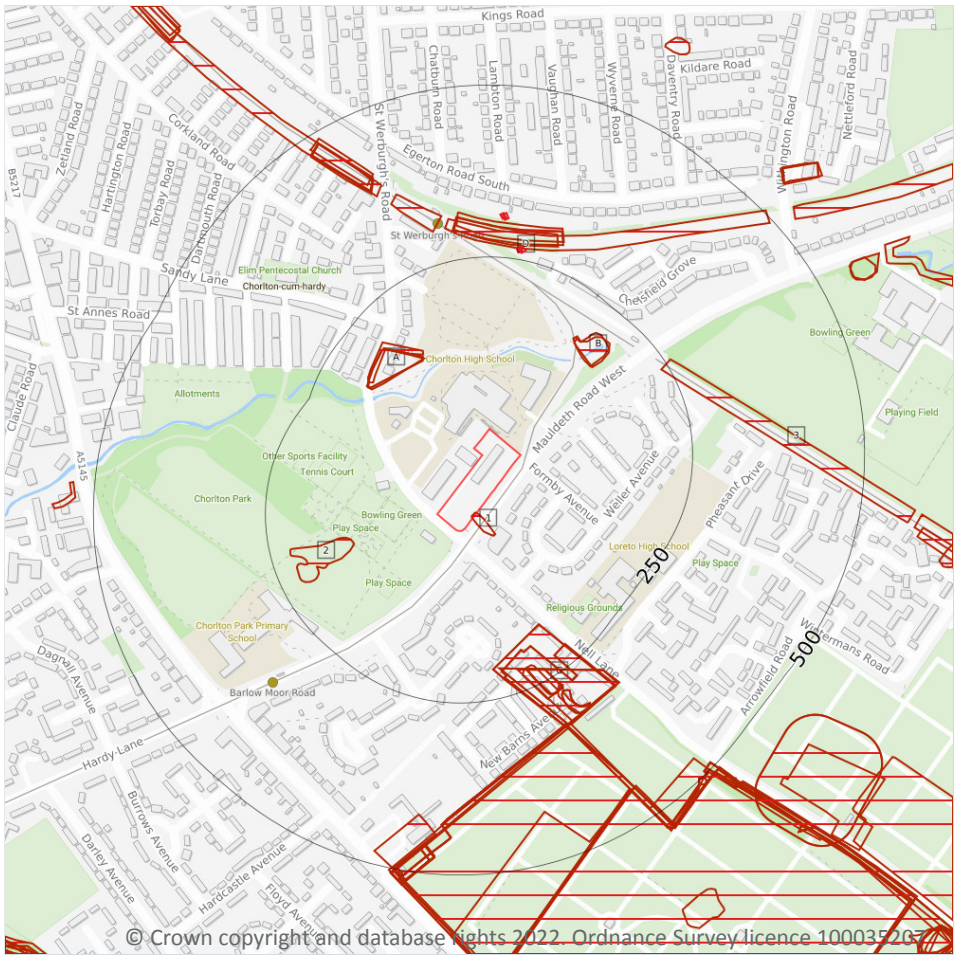
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 89**

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, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities

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 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.

18.2 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.

18.3 Surface ground workings

Records within 250m	20

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, ground workings and natural cavities map on **page 90**

ID	Location	Land Use	Year of mapping	Mapping scale
1	**On site**	**Pond**	**1851**	**1:10560**
2	129m W	Ponds	1851	1:10560
A	139m NW	Unspecified Pit	1938	1:10560
A	139m NW	Unspecified Pit	1938	1:10560
A	140m NW	Unspecified Pit	1934	1:10560
A	145m NW	Unspecified Ground Workings	1955	1:10560
B	164m NE	Unspecified Pit	1955	1:10560
B	165m NE	Unspecified Pit	1938	1:10560
C	176m SE	Refuse Destructor	1905	1:10560
C	176m SE	Refuse Destructor	1923	1:10560
C	193m SE	Refuse Destructor	1934	1:10560
C	193m SE	Refuse Destructor	1916	1:10560
C	208m S	Refuse Destructor	1911	1:10560
C	208m S	Refuse Destructor	1911	1:10560
C	218m S	Refuse Destructor	1938	1:10560
C	220m SE	Sand Pit	1905	1:10560
C	222m SE	Refuse Heap	1911	1:10560

ID	Location	Land Use	Year of mapping	Mapping scale
C	222m SE	Refuse Heap	1911	1:10560
C	223m SE	Refuse Heap	1938	1:10560
3	239m NE	Cuttings	1966	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	**4**

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 90**

ID	Location	Land Use	Year of mapping	Mapping scale
D	260m N	Unspecified Shafts	1916	1:10560
D	260m N	Unspecified Shafts	1923	1:10560
D	305m N	Unspecified Shafts	1923	1:10560
D	306m N	Unspecified Shafts	1916	1:10560

This is data is sourced from Ordnance Survey/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 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.

18.8 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.

18.9 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.

18.10 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.

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

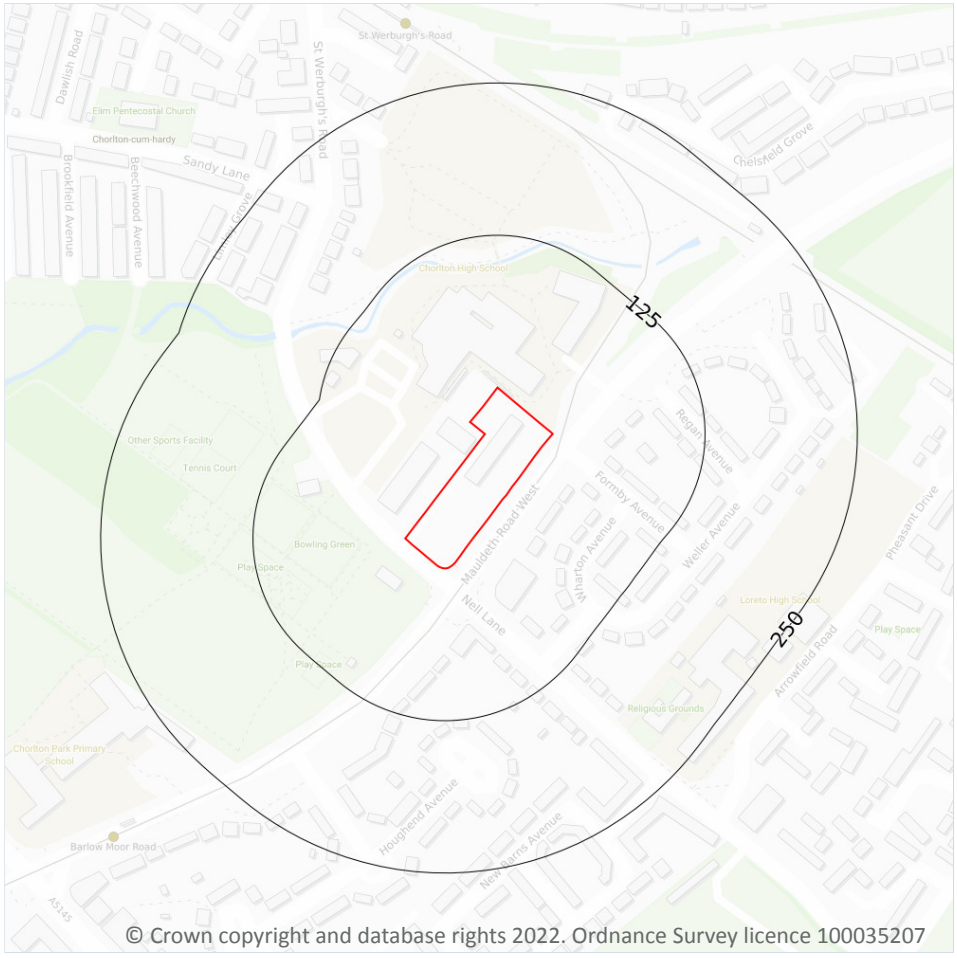
18.13 Clay mining

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 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%

19.1 Radon

Records on site	1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 95**

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

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m **7**

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**
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**
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**
25m N	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
45m N	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
45m NE	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
45m W	15 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

20.2 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.

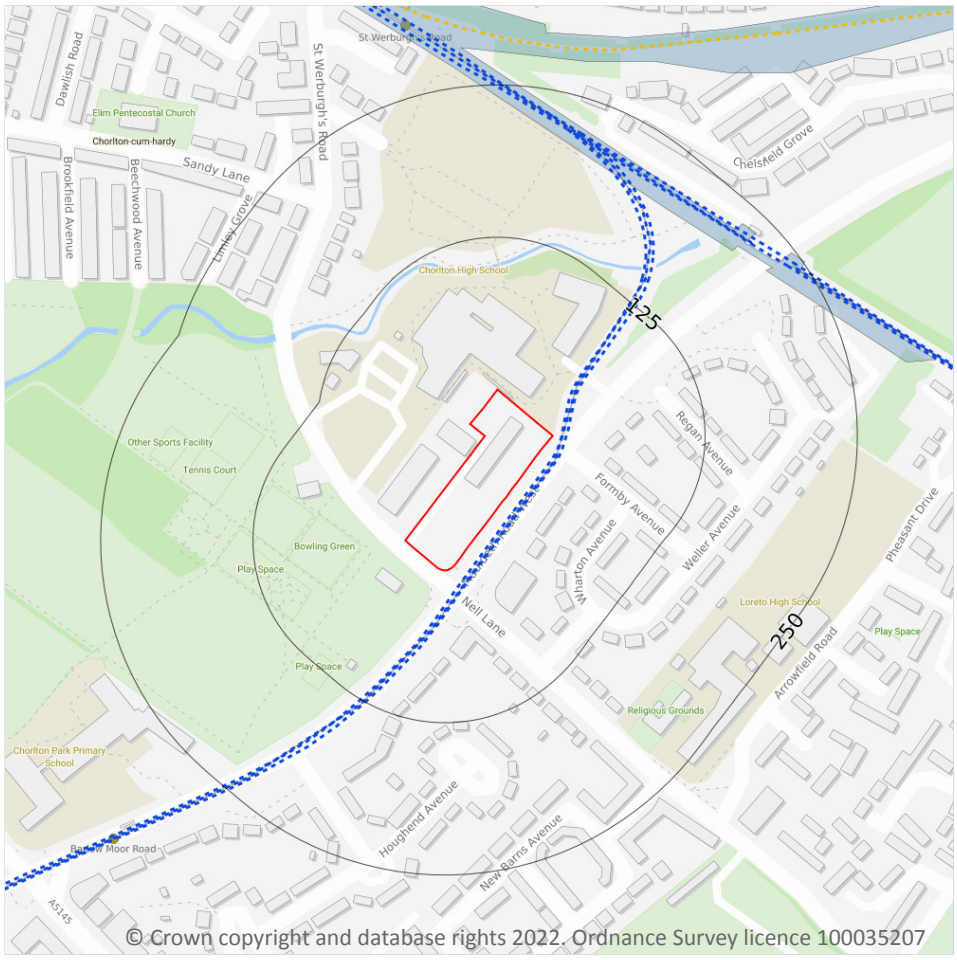
20.3 BGS Measured Urban Soil Chemistry

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.

21 Railway infrastructure and projects



Site Outline

Search buffers in metres (m)

- Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 1 Worksites
- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

21.1 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.

21.2 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.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	1

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.

Features are displayed on the Railway infrastructure and projects map on **page 98**

Location	Land Use	Year of mapping	Mapping scale
200m NE	Railway	1933	-

This data is sourced from Ordnance Survey/Groundsure.

21.5 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.

21.6 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.

21.7 Railways

Records within 250m	18

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

Features are displayed on the Railway infrastructure and projects map on **page 98**

Location	Name	Type
7m E	Metrolink	light_rail
8m E	Not given	Multi Track
11m E	Metrolink	light_rail
146m NE	Metrolink	light_rail
150m NE	Metrolink	light_rail
161m NE	Metrolink	light_rail
165m NE	Metrolink	light_rail
211m NE	Metrolink	light_rail
213m NE	Not given	Multi Track
215m NE	Metrolink	light_rail
221m N	Metrolink	light_rail
221m N	Metrolink	light_rail
227m NE		light_rail
229m N	Metrolink	light_rail
233m NE		light_rail
238m NE		light_rail
241m NE	Not given	Multi Track
243m NE		light_rail

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 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.

21.9 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.

21.10 HS2

Records within 500m	0

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.

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: https://www.groundsure.com/terms-and-conditions-jan-2020/.

APPENDIX D

BGS Exploratory Hole Records

British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Site	Borehole Number
MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION	BH02A_AIR

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion	150mm cased to 18.00m	29.05	JACOBS ENGINEERING UK LTD	PN102241
Location	**Dates**	**Engineer**	**Sheet**	
382618.92 E 393330.526 N	28/04/2010-30/04/2010	MPACT	2/2	

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.00 10.00-10.45	D UN2166			65 blows			At 10.00m, high strength		
11.05	D			Slow.(1) at 11.00m, no rise after 20 mins, sealed at 12.00m.					▼1
11.50	D						At 11.30m becoming sandy.		
12.00-12.45 12.00-12.45 12.00-12.50	SPT N=54 D B	12.00	10.50	4,7/9,14,15,16			At 12.00m, Locally very stiff		
13.00	D								
13.50-13.95 13.50-13.95 13.50-14.00	SPT N=39 D B	13.30	MOIST	3,4/5,9,12,13					
				29/04/2010:MOIST					
				29/04/2010: 29/04/2010:DRY					
14.50	D								
				30/04/2010:					
15.00-15.45 15.00-15.50	D B			Moderate.(2) at 15.00m, no rise after 20 mins.	14.05	15.00	Extremely weak reddish brown fine to medium grained SANDSTONE (recovered as sand).		▼*
15.00-15.45	SPT N=19	15.00	8.30	1,1/2,3,6,8					
16.00	D								
16.50-16.88 16.50-16.88 16.50-17.00	SPT 52/225 DN2166 B	16.50	8.90	4,6/9,18,25,0		(3.30)	At 16.50m becoming weak.		
17.50	D								
18.00-18.31 18.00-18.31	SPT 52/160 D	18.00	9.50	4,9/17,25,10,0					
				30/04/2010:8.30m	10.75	18.30	Complete at 18.31m		
				30/04/2010: 30/04/2010:12.10m					

Remarks

Scale (approx)	Logged By
1:50	KF

Figure No.

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British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Site	Borehole Number
MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION	BH02A_AIR

Boring Method	Casing Diameter	Ground Level (mOD)	Client	Job Number
Cable Percussion	150mm cased to 18.00m	29.05	JACOBS ENGINEERING UK LTD	PN102241
Location	**Dates**	**Engineer**		**Sheet**
382618.92 E 393330.526 N	28/04/2010-30/04/2010	MPACT		1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.30)	Grass over topsoil: Brown slightly silty slightly gravelly fine to medium sand. Gravel is fine to coarse angular to subangular (MADE GROUND)		
0.30	D				28.75	0.30			
0.50	E					(0.90)	MADE GROUND: Black slightly silty gravelly fine to medium sand. Gravel is fine to coarse angular of various lithologies and brick fragments.		
1.00	D								
1.20	D				27.85	1.20	Medium dense brown slightly silty slightly gravelly fine to coarse SAND. Gravel is fine subangular to subrounded of various lithologies.		
1.50-1.95	SPT N=13	1.30	DRY	1,1/3,3,3,4					
1.50	E								
1.50-1.95	DN2166								
1.50-2.00	BN2166								
							At 2.10m, becoming grey.		
2.20	D					(2.50)			
2.50-2.95	SPT N=20	2.50	MOIST	2,3/5,5,5,5					
2.50-2.95	D								
2.50-3.00	B								
				28/04/2010:DRY					
3.20	D			28/04/2010:					
				28/04/2010:					
3.50-3.95	D								
3.50-4.00	B			29/04/2010:	25.35	3.70			
3.50-3.95	SPT N=10	3.50	3.30	2,3/3,3,2,2			Firm brown slightly sandy slightly gravelly CLAY.		
4.20	DN2166								
4.50-4.95	UN2166			65 blows			At 4.50m, medium strength		
5.10	D								
5.50	D								
6.00-6.45	SPT N=12	5.50	DRY	2,2/3,3,3,3					
6.00-6.45	D								
6.00-6.50	B								
7.00	DN2166						At 7.00m, locally no gravel		
7.50-7.95	UN2166			60 blows					
8.10	D								
8.50	D								
9.00-9.45	SPT N=14	8.30	DRY	2,2/3,3,4,4			From 9.00m occasional bands of silt and sand. At 9.00m, locally no gravel.		
9.00-9.45	DN0216								
9.00-9.45	DN2166								
9.00-9.50	BN2166					(11.30)			
9.80	W								

Remarks

Scale (approx)	Logged By
1:50	KF

Figure No.

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British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Site	Number
MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION	WS01A_AIR

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		29.11	JACOBS ENGINEERING UK LTD	PN102241
Location		**Dates**	**Engineer**	**Sheet**
382524.281 E 393174.112 N		11/06/2010	MPACT	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				28.91	(0.20) 0.20	Grass over TOPSOIL.		
0.30-0.40	E					MADE GROUND: Dark brownish black silty sandy fine to coarse angular and subangular gravel including brick, glass, clinker, ceramics, sandstone and ash		
0.50	DN2251				(0.70)			
0.60-0.80	BN2252							
0.90-1.10	E			28.21	0.90	Loose orangish brown slightly silty fine to coarse SAND.		
1.10-1.20	D				(0.55)			
1.20-1.65	SPT N=5		1,0/1,1,2,1	27.66	1.45	Very loose to loose grey slightly silty fine to coarse SAND.		▽1
1.45-2.60	B		Moderate.(1) at 1.60m.					
					(1.35)			
2.20-2.65	SPT N=3		1,0/1,0,1,1					
				26.31	2.80	At 2.60m, becoming gravelly. Gravel is fine to coarse subrounded of various lithologies.		
3.00-3.20	D					Firm brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded of various lithologies.		
3.20-3.65	SPT N=10		1,2/2,2,3,3					
3.20-3.80	BN2251							
3.80-3.90	D							
3.90-4.20	U							
4.20-4.65	SPT N=9		1,1/2,2,2,3					
4.20-5.20	B				(3.40)			
5.20-5.65	SPT N=7		1,1/2,1,2,2					
5.50-6.20	D							
			11/06/2010:	22.91	6.20	Complete at 6.65m		
6.20-6.65	SPT N=6		11/06/2010: 1,1/1,1,2,2 11/06/2010:					

Remarks	Scale (approx)	Logged By
	1:50	MH
	Figure No.	

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British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Site	Number
MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION	WSTP05_AIR

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		30.64	JACOBS ENGINEERING UK LTD	PN102241
Location		**Dates**	**Engineer**	**Sheet**
382610.826 E 393287.3 N		11/06/2010	MPACT	1/1

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					(0.30)	Grass over TOPSOIL with a low cobble content of brick.		
				30.34	0.30	MADE GROUND: Loose brown slightly silty gravelly fine to coarse sand with a low to medium cobble content of brick and clinker. Gravel is fine to coarse angular to subrounded of brick, glass, pottery, clinker and ash.		
0.40-0.50	E							
0.50	D							
0.50-0.70	BN2253							
					(1.30)	At 0.90m, becoming very gravelly.		
1.20-1.65	SPT N=7		1,1/1,2,1,3					
				29.04	1.60	Brown silty fine to medium SAND (possible relic topsoil).		
1.70-2.20	E							
					(0.80)			
2.20-2.65	SPT N=7		1,0/1,1,2,3					
2.40-3.20	B			28.24	2.40	Loose to medium dense light orangish brown slightly silty fine to coarse SAND.		
								▽1
3.20-4.20	B		Moderate (1) at 3.20m.					
3.20-3.65	SPT N=23		3,4/5,6,6,6					
					(2.40)			
4.20-4.65	SPT N=7		2,2/2,3,1,1			At 4.20m, locally loose.		
4.30-4.80	DN2252							
4.80-5.00	D			25.84	4.80	Firm to stiff brown slightly sandy slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded of various lithologies.		
5.00-5.20	U							
5.20-5.65	SPT N=20		2,3/4,5,5,6					
5.20-5.60	D				(1.40)			
			11/06/2010:	24.44	6.20	Complete at 6.20m		
			11/06/2010:					

Remarks	Scale (approx)	Logged By
	1:50	MH
	Figure No.	

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British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

Site	Number
MANCHESTER METROLINK PHASE 3B - AIRPORT EXTENSION	WSTP07_AIR

Excavation Method	Dimensions	Ground Level (mOD)	Client	Job Number
Drive-in Window Sampler		29.28	JACOBS ENGINEERING UK LTD	PN102241
Location		**Dates**	**Engineer**	**Sheet**
382460.581 E 393087.449 N		10/06/2010	MPACT	1/2

Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
				29.08	(0.20) 0.20	Grass over TOPSOIL: Dark brown slightly gravelly sandy silt with rootlets. Gravel is fine subangular to subrounded of various lithologies.		
0.30-0.40	E				(0.50)			
0.50	DN2251					MADE GROUND: Dark brownish black slightly silty gravelly fine to coarse sand. Gravel is fine to coarse angular to subangular including brick, glass, clinker, ceramics, sandstone and ash		
0.50-0.70	BN2251			28.58	0.70			
0.80-0.90	E							
1.00	B61376							
1.00-1.20	BN2251					MADE GROUND:Medium dense orangish brown slightly silty gravelly fine to coarse sand At 1.20m: Becoming fine to coarse.		
1.20-1.65	SPT N=11		2,2/3,3,2,3		(1.20)			
1.20-1.65	D							
1.20-1.90	B							
1.90-2.20	E			27.38	1.90	Very loose greyish brown slightly silty fine to coarse SAND		▽1
2.20-2.65	D		Moderate flow (1) at 2.10m.		(0.60)			
2.20-2.65	SPT N=3		1,0/0,1,0,2			At 2.30m: Becoming slightly gravelly. Gravel is fine to coarse and subrounded of various lithologies.		
				26.78	2.50			
2.70-2.90	D					Firm brown slightly sandy slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded of various lithologies At 3.00m, becomes stiff At 3.00m, high strength		
3.00-3.20	UN2251							
3.20-3.65	SPT N=10		1,1/2,2,3,3					
3.20-3.65	DN2251							
3.20-3.80	B							
3.80-3.90	D							
3.90-4.20	U							
4.20-4.65	SPT N=9		1,2/2,2,2,3		(3.70)			
4.20-4.65	D							
4.60-4.90	D							
4.80-5.20	U							
5.20-5.65	SPT N=9		1,1/2,2,2,3					
5.20-5.65	D							
5.40-6.20	D							
				23.08	6.20			
6.20-6.65	D		10/06/2010:2.10m			Complete at 14.30m		
6.20-6.65	SPT N=10		10/06/2010: 1,2/2,2,3,3					

Remarks

Scale (approx)	Logged By
1:50	MH

Figure No.

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APPENDIX E

UXO Screening Map

UNEXPLODED BOMB RISK MAP

zeticauxo

SITE LOCATION

Location: M21 7AA,
Map Centre: 382506,393227



LEGEND

High: Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.

Moderate: Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.

Low: Areas indicated as having 15 bombs per 1000acre or less.

miltary | **industry** | **UXO find**

transport | **dock** | **Luftwaffe targets**

utilities | **Bombing decoy** | **other**

How to use your Unexploded Bomb (UXB) risk map?

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

What do I do if my site is in a moderate or high risk area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites in a moderate or high UXB risk area.

Similarly, if your site is near to a designated Luftwaffe target or bombing decoy then additional detailed research is recommended.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirms that there is a low potential for UXO to be present on your site then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

tel: **+44 (0) 1993 886682**

email: **uxo@zetica.com**

web: **www.zeticauxo.com**

The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: **(https://zeticauxo.com/downloads-and-resources/risk-maps/)**

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It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.

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