Curlew Alternatives Eighth Property LP

Former Gamecock Public House, Booth Street West, Manchester

Updated Desk Study and Geoenvironmental Assessment

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EXECUTIVE SUMMARY

This report presents the findings of the desk study and ground investigation works undertaken at the site to determine ground conditions and establish if there are any geoenvironmental or geotechnical risks associated with the proposed redevelopment of the site. Pertinent information and conclusions are summarised below.

SITE BACKGROUND INFORMATION	• Site comprises the former 'Gamecock' public house, situated off Booth Street West in the centre of Manchester. Site currently vacant with the external areas currently utilised as a car park. • Site reported to be underlain by Glaciofluvial Sheet Deposits, a Secondary A Aquifer which in turn is reported to be underlain by the Chester Formation (sandstone), a Principal Aquifer.
INVESTIGATION RATIONALE	To provide information on land contamination risk and constraints associated with the site with regard to the proposed residential development.
GROUND CONDITIONS	• Made ground recorded to depths of >0.5m and 3.2mbgl. • Superficial Glaciofluvial Sheet Deposits were recorded as typically cohesive, underlain locally by granular deposit to depths >2.2m and 5.2mbgl. • Chester Formation was recorded from >5.0m and >7.5mbgl to >17.0m and >19.5mbgl. • Perched water recorded locally at 2.8m and 3.0mbgl, with standing water recorded at 2.23m and 3.78mbgl during the monitoring undertaken at the site. • Groundwater levels recorded within the Chester Formation at 8.48m and 9.94mbgl.
GEOENVIRONMENTAL SUMMARY AND RECOMMENDATIONS	• No visual or olfactory evidence of significant gross contamination was recorded during the ground investigation or site reconnaissance surveys. • Exceedance of heavy metals (lead) and PAHs within encountered made ground when considering a residential site end use without homegrown produce. • Gas monitoring undertaking to date suggests the site may be Characteristic Situation 1, no ground gas protection measures required. • Remedial requirements, likely comprising cover system, recommended for the proposed development.
REFINED CONCEPTUAL MODEL	• Human Health - exposure to contaminants associated with encountered made ground on site and potential elevated contaminant concentrations associated with the current/historic use of the site and surrounding area, through the ingestion, inhalation and dermal contact pathways.

The above summary should not form the basis for key decisions associated with the proposed development and a full review of the information contained within this report is recommended.

1 INTRODUCTION

1.1 Terms of Reference

1.1.1 TEC has been appointed by Curlew Alternatives Eighth Property LP to undertake an updated Stage 1: Risk assessment of the former 'Gamecock' public house, located off Booth Street West, Manchester based upon updated commercial data, further site reconnaissance survey and reassessment of previous geoenvironmental data. All works were undertaken in accordance with our proposal letter dated 30 March 2026 and referenced CH.1909009.005_007.

1.2 Background

1.2.1 The site currently comprises a derelict two storey public house known as 'The Gamecock' with associated hardstanding and infrastructure, located off Booth Street West, within the centre of Manchester (Figure 1). The site comprises an area approximately 0.09 hectares in size, with the centre of the site situated at approximate National Grid Reference 384142, 396692. The nearest postcode is M15 6GE.

1.2.2 It is understood that the proposed development is to comprise the demolition of the existing structure, site clearance and the construction of a part 7, part 9-storey purpose-built student accommodation building comprising 146No. bed spaces with ancillary amenity space, a ground floor community hub and associated landscape works and infrastructure. The proposed development is presented within the Simpson Haugh 'Context Plan – Proposed – Site Plan' drawing.

1.2.3 Planning permission is understood to have been granted for the scheme by Manchester City Council (planning ref.: 130387/FO/2021). Planning Condition 9 of the planning permission relates to contaminated land issues and states the following:

> *a) Before the development hereby approved commences, a report (the Preliminary Risk Assessment) to identify and evaluate all potential sources and impacts of any ground contamination, groundwater contamination and/or ground gas relevant to the site shall be submitted to and approved in writing by the City Council as local planning authority. The Preliminary Risk Assessment shall conform to City Council's current guidance document (Planning Guidance in Relation to Ground Contamination).*
>
> *b) When the development within each phase commences, the development shall be carried out in accordance with the previously agreed Remediation Strategy and a Completion/Verification Report shall be submitted to and approved in writing by the City Council as local planning authority.*

1.2.4 Several previous assessments and reports have been prepared by TEC for the development, as detailed within the following reports:

- Preliminary Geoenvironmental Assessment Report - Former Gamecock Public House, Booth Street West, Manchester. Prepared for Curlew Alternatives Eighth Property LP, referenced 1909009.001.01, first issued September 2019;
- Ground Investigation Report - Former Gamecock Public House, Booth Street West, Manchester. Prepared for Curlew Alternatives Eighth Property LP, referenced 1909009.002.01, dated May 2022;
- Addendum Ground Gas Assessment – Former Gamecock Pub, Booth Street, Manchester. Prepared for Curlew Alternatives Eighth Property LP, referenced 1909009.003.01, November 2021.

1.2.5 Based upon our current understanding, it is understood that a new planning application will be submitted for the scheme and that given the date of the previous assessments prepared for the site, it was recommended than an updated report be prepared in relation to the proposed development.

1.2.6 This report has subsequently been prepared to detail the site setting, the proposed development and to reassess the previous reports in accordance with current guidance. The report will provide information on land contamination risk and constraints associated with the site based upon the previous assessment works undertaken to ensure that the site is suitable for the proposed redevelopment.

1.3 Site Objectives

1.3.1 The site objectives and subsequent scope of works undertaken as part of this report are presented below:

- **Tier 1: Preliminary Risk Assessment:** this phase of assessment involves development of an initial conceptual site model, based on desk study research and a site walkover/reconnaissance survey, in order to develop an initial conceptual site model, identify potential contaminant linkages and establish whether or not there are potentially unacceptable risks.
- **Tier 2: Generic Quantitative Risk Assessment - Evaluation of the risks:** This phase of assessment involves updating the initial site conceptual model developed as part of the Preliminary Risk Assessment based on the findings of the previous Geoenvironmental ground investigation undertaken at the site in 2021 and 2022. Generic assessment criteria taking account of different land uses and receptor sensitivities, are used to identify relevant contaminant linkages.

1.3.2 For ground engineering details, reference should be made to report reference 19091909009.002.01, dated May 2022.

1.3.3 The above scope of work has been undertaken in accordance with current guidance such as LCRM - Land contamination: risk management (Environment Agency, 2025), BS10175:2026, BS5930:2015+A1:2020 and, where appropriate, Eurocode 7 and NHBC Standards/ LABC Technical Manual.

1.3.4 From the outset, sustainability and the potential impact of climate change have been considered, to assist in identification of options to minimise the environmental, social, and economic impacts of the risk assessment approach, with reference to Sustainable Management Practices (SMPs) from Sustainable Remediation Forum UK (SuRF-UK).

2 TIER 1: PRELIMINARY RISK ASSESSMENT

2.1 Introduction

2.1.1 Information for this Tier 1: Preliminary Risk Assessment (PRA) has been obtained from a site reconnaissance survey and a review of a Groundsure® report obtained for the site (Appendix B and Appendix C), together with published available information where relevant.

2.2 Site Setting

2.2.1 A site reconnaissance survey was undertaken prior to commencement of the intrusive ground investigation, by a suitably experienced geoenvironmental consultant from TEC on 24 April 2026. A summary of the observations is presented in Table 2.1. Photographs taken during the site reconnaissance survey are presented in Appendix A.

Table 2.1: Site Details

Feature	Description	
Site Location and Current Use	Site comprises a derelict two storey public house known as 'The Gamecock' with associated hardstanding and infrastructure, located off Booth Street West, within the centre of Manchester. The existing structure is located within the central and southern area of the site, with an area of existing car parking located to the north.	
Site Context	The site is located with a mixed residential and commercial area.	
Site Boundary Features	North	Residential properties (multi-storey flats) and some commercial premises along Booth Street West
	East	Cornbrook Medial Practice located off Higher Cambridge Street
	South	Residential properties (multi-storey flats) along Camelford Close, with Trinity High School located off Boundary Lane
	West	Residential properties located off Boundary Lane
Site Topography	The site is noted to be relatively flat with available OS mapping indicating the site is situated approximately ~36mAOD (Above Ordnance Datum)	
Hard and Soft Landscaping	The majority of the site is occupied by the existing structure and associated car parking areas, lain to tarmac. An area of soft landscaping is noted to the north of the existing structure, noted to be overgrown with vegetation, as well as a small section of soft landscaping along the western perimeter of the site.	
Trees	Several mature trees are present along the eastern and western boundaries of the site.	
Fuel, Hazardous Chemicals and Waste Materials Storage	No evidence of aboveground or underground storage tanks was noted during the site reconnaissance. In addition, no evidence of hazardous chemicals or waste material storage was noted within the existing car parking area of the site. Although it should be noted that no access to the rear of the site (west) was available during the site reconnaissance.	
Asbestos Containing Materials (ACM)	No evidence of ACM was observed on the ground surface of the site during the site reconnaissance. However, given the age of the existing structure onsite, the presence of ACM within the fabric of the building cannot be discounted.	
Site Drainage	Evidence of several manhole covers were noted within the existing car parking area; with surface water drains also noted within the south-eastern corner of the site. No areas of standing water were observed during the site reconnaissance.	
Evidence of Potential Contamination	No visual or olfactory evidence of contamination was noted on the ground surface during the site reconnaissance.	
Ground Stability Hazards	No visual evidence of ground subsidence or movement was observed during the site reconnaissance.	
General	No access to the rear of the existing structure (western site area) was possible during the site reconnaissance.	

2.3 Site History

2.3.1 Details of the history of the site and surrounding area, relevant to this preliminary risk assessment, have been obtained through the review of historical Ordnance Survey (OS) mapping. A summary of potentially significant features is recorded in Table 2.2, which should be read in conjunction with the full map extracts contained within Appendix B.

Table 2.2: Historical Features Summary

On Site Features			OS Dates
Earliest available mapping indicates the site forms part of an area of undeveloped land located off Booth Street West.			1845 - 1851
From 1891 mapping, the site is recorded as comprising part of an existing residential housing development located off Booth Street West to the north and Edensor Place to the south.			1891 - 1965
By 1972, the site is depicted as a vacant parcel of land and by 1976, mapping indicates the presence of an existing structure located within the centre of the site, depicted as 'The Gamecock' public house, with the layout similar to that present on 2025 mapping.			1972 - 2025
Surrounding Features	**Distance**	**Direction**	**OS Dates**
Coal yard	~25m	North-west	1851
Timber yard	~75m	North-west	1851
Brewery (Crown Brewery, later Heineken UK)	~90m	South-west	1889 - 2025
Works (Chocolate Works), later Aluminium Foundry	~250m	North-east	1908 - 1932
Garage	~200m	South-west	1955
Substation	~150m	South-west	1976 - 2025

2.4 Potential for Unexploded Ordnance

2.4.1 Review of available and updated Zetica UXO online mapping indicates the site is situated within a 'moderate' risk area. Whilst not undertaken as part of this current updated assessment for the site, it is considered prudent to undertake a Preliminary UXO Assessment as part of the proposed development works.

2.5 Geology

2.5.1 A summary of available geological information for the area is provided in Table 2.3.

Table 2.3: Geological Setting

BGS Geological Mapping (Ref. Solid and Drift 1:50,000 map – Manchester, Sheet 85)		
Geological Unit	**Thickness**	**BGS Description**
Made Ground	Unknown	Not recorded on geological mapping but may be present on-site
Superficial Deposits: Glaciofluvial Sheet Deposits	Unknown	Coarse-grained sediments (i.e. sand and gravel) with some finer-grained layers (i.e. clay and silt). Sand and gravel, locally with lenses of silt, clay or organic material.
Solid Geology: Chester Formation	Up to 300m	Coarse-grained, typically well-cemented proximal facies to a fine-grained, less well-cemented distal facies and brown, horizontally-bedded conglomerate with subordinate lenticular beds of trough cross-bedded pebbly sand and sand.

BGS Borehole Records			
BGS Reference	**Distance/ Direction**	**Depth (mbgl)**	**Recorded Strata**
SJ89NW19 - 21	~105m north	0.0 – 0.31 0.31 – 0.61 0.61 – 0.91 0.91 – 1.52 1.52 – 2.29 2.29 – 5.18 5.18 – 14.17	Made ground Loam Dark blue clay Loam Gravel Stiff loam clay Red sandstone
		0.0 – 0.91 0.91 – 2.74 2.74 – 7.01 7.01 – 9.75 9.75 – 10.97 10.97 – 14.02	Soil Gravelly clay Stony clay Gravelly clay Soft red mark Soft red rock
		0.0 – 0.31 0.31 – 2.74 2.74 – 3.35 3.35 – 8.53 8.53 – 12.04 12.04 – 12.50	Made ground Gravelly clay Gravel Stiff loam clay Boulder clay Red sandstone

BGS Estimated Soil Chemistry (Background)		
Element	**Estimated Concentration**	**Bioaccessible Concentration**
Arsenic	25 – 25 mg/kg	-
Cadmium	1.8 mg/kg	-
Chromium	60 – 90 mg/kg	-
Lead	100 – 200 mg/kg	60 – 120 mg/kg
Nickel	30 – 45 mg/kg	-

BGS Estimated Soil Chemistry (Urban)		
Element	**Estimated Concentration**	**Bioaccessible Concentration**
Arsenic	29 – 30 mg/kg	5.1 – 5.3 mg/kg
Cadmium	0.5 mg/kg	-
Chromium	64 - 65 mg/kg	-
Lead	69 - 84 mg/kg	47 – 58 mg/kg
Nickel	26 mg/kg	-
Copper	38 – 40 mg/kg	-
Tin	11 mg/kg	

Radon	
Radon Potential	**Radon Protection Requirement**
Lower Probability Radon Area (less than 1% of homes are estimated to be at or above the Action Level)	None reported to be required

2.6 Hydrogeology

2.6.1 The Groundsure® report and Environment Agency information records the following hydrogeological setting of the site.

Table 2.4: Hydrogeological Setting

Aquifer Status			
Geological Unit	**Groundwater Vulnerability/ Aquifer Designation**	**Environment Agency Aquifer Classification**	**Potential Hydraulic Gradient Direction**
Superficial Deposits: Glaciofluvial Sheet Deposits	Low Vulnerability/ Secondary A Aquifer	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.	South-west (following local topography)
Bedrock Deposits: Chester Formation	Low Vulnerability / Principal Aquifer	Layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifers.	-

Source Protection Zones	
1No. recorded within 1km	
Type	**Distance/ Direction from Site**
Zone 3 – Total Catchment	On site

WFD Groundwater Bodies		
Location / Type	**Quality / Information**	**Distance/ Direction from Site**
Manchester and East Cheshire Sandstone Aquifer (waterbody ID: GB41201G101100)	Overall rating: poor Chemical rating: poor Quantitative: poor Year: 2019	Onsite

Groundwater Abstractions		
8No. recorded within 500m		
Details	**Abstraction Use**	**Distance/ Direction**
Borehole 1 at Lower Chatham Street	General use relating to secondary category (2No.); and heat pump (2No.)	~380m north
Borehole AB1 at Manchester Metropolitan University	Heat pump	~380m north
Borehole at Manchester Metropolitan University	General use relating to secondary category; and heat pump (2No.)	~415m north

Discharge Consents to Groundwater		
6No. recorded within 500m		
Receiving Water	**Effluent Type**	**Distance/ Direction from Site**
Unknown	Sewage discharges – sewer storm overflow (water company)	~375m north-west, ~450m west
Groundwaters (via Borehole)	Trade discharges – cooling water	~405m north, ~455m north, ~460m north, ~495m west

BGS Groundwater Flooding Susceptibility	
On site	**Off site (50m)**
Moderate to high	High

2.7 Hydrology

2.7.1 The hydrological setting of the site is summarised in Table 2.5.

Table 2.5: Hydrological Setting

Nearest Surface Water Features		
Feature	**River Quality (GQA Grade)**	**Distance/ Direction from Site**
Corn Brook	-	~160m south-east
WFD Surface Water Bodies and Catchments		
1No. recorded within 500m		
Location / Type	**Quality / Information**	**Distance/ Direction from Site**
Irwell / Manchester Ship Canal (waterbody ID: GB112069061452)	Operational catchment – Croal Irwell Management catchment - Irwell	Onsite
Surface Water Abstractions		
None recorded within 1km		
Pollution Incidents		
None recorded within 1km		
Flooding from Rivers or Seas		
On Site Designation	**Off Site Areas of Flooding**	
Flood Zone 2	None within 50m	
Surface Water Flooding		
Highest Risk On Site	**Highest Risk within 50m**	
Negligible	Negligible	

2.8 Environmental Data

2.8.1 Additional relevant environmental data from the Groundsure® report for the site is summarised in Table 2.6.

Table 2.6: Additional Environmental Data Summary

Landfill Sites		
No current or historical landfills recorded within 500m		
Waste Exemption		
4No. recorded within 200m		
Details	**Category**	**Distance/ Direction from Site**
59 Booth Street	Sorting and de-naturing of controlled drugs for disposal	~65m east
33 Epping Street	Use of waste in the construction of entertainment/ educational installations etc.	~140m west
12 Higher Chatham Street	Use of waste in construction	~190m north
Oxford Court	Use of waste in construction	~205m north-west
Commercial/ Industrial Land Use (Active Contemporary Trade Directories)		
No significant land uses identified within 250m		
Hazardous Substances (Authorisations, Consents, Incidents)		
None recorded within 250m		
Sensitive Land Uses		
None recorded within 500m		

2.9 Engineering Considerations

2.9.1 Engineering considerations identified from the Groundsure® report for the site are summarised in Table 2.7.

Table 2.7: Engineering Considerations

Ground Stability Hazards						
Hazard	**Hazard Potential**					
	No Hazard	**Negligible**	**Very Low**	**Low**	**Moderate**	**High**
Collapsible ground			X			
Compressible ground		X				
Ground dissolution	X					
Landslide			X			
Running sand			X			
Shrink/swell clays		X				
Coal mining	Reported to be located within a Coal Mining Reporting Area					
Non-coal mining	X					
BGS Recorded Mineral Sites						
None recorded within 1km						

2.10 Desk Based Coal Mining Risk Assessment

2.10.1 A Coal Mining report (ref. 51003134533001) was obtained for the site from the Coal Authority (now known as The Mining Remediation Authority) as part of the previous phases of ground investigation works undertaken by TEC. The Report was obtained for the site area to provide information on possible historic/current coal mining on-site and in the surrounding area. The report is presented in Appendix D and summarised below in Table 2.8:

Table 2.8: Coal Mining Report Summary

The Coal Authority / The Mining Remediation Authority	• The Coal Authority report that there is no past underground mining recorded, no probable unrecorded shallow workings, and no spine roadways recorded at shallow depth; • It is reported that there is no mine entries recorded within 100m of the site boundary and no outcrops have been recorded; • There are no geological faults, fissures or breaklines recorded within proximity to the site; • There are no opencast mines or Coal Authority tips reported within 500m of the site boundary; • The Coal Authority report that there are no previous site investigations, remediated sites or coal mining subsidence within 50m of the site boundary; • There are no reported mine gas or mine water treatment schemes within 500m of the site boundary; and • The Coal Authority report that there are no future underground mining, coal mining licensing, court orders or Section 46 notices recorded within 200m of the site boundary.

2.10.2 The risk from coal mining at the site has been considered low and therefore is not considered further within this assessment.

2.11 Regulatory Consultations

2.11.1 Regulatory consultations were undertaken with the relevant departments at Manchester City Council with respect to possible environmental issues and ground conditions on-site and in the surrounding area. A summary of the responses is provided below in Table 2.9. The full response is presented in Appendix E.

Table 2.9: Regulatory Consultations Summary

Environmental Protection – Manchester City Council	• The Council have no specific information relating to ground contamination at the site. • There are no reported former landfill sites, Part 2A determined land or permitted processes, or Part 2B permitted processes within 250m of the site. • There are currently no water supplies registered with the Council within 2km of the site.

2.12 Initial Conceptual Model

2.12.1 In accordance with the Environment Agency Land Contamination: Risk Management Guidance (LCRM), potential source-pathway-receptor contaminant linkages identified from the preliminary risk assessment phase are summarised in the following sections.

2.13 Potential Sources

2.13.1 The source is defined as a contaminant or pollutant that is in, on or under the land and that has the potential to cause harm or pollution. The source can potentially be present on the site or within influence of the site in the case of an off site source.

2.13.2 Potential sources of contamination identified on and within the vicinity of the site are summarised below:

Potential On Site Sources

- Made ground of unknown chemical composition;

Potential off Site Sources

- Potentially contaminative historic land uses including former coal and timer yard, brewery and works.

2.14 Potential Receptors

2.14.1 Receptors are defined as the entity (e.g. human, animal, water, vegetation, building services etc) which has the potential to experience adverse effects from direct or indirect exposure to potentially hazardous contaminants.

2.14.2 Potential receptors identified in relation to the proposed development as part of this preliminary risk assessment are:

- Current/future site users (most sensitive receptor being an adult of college / university age);
- Construction and maintenance workers;
- Controlled waters (Secondary A and Principal Aquifers); and
- Proposed development/ structures (below ground structures, services and concrete, proposed buildings on site).

2.15 Potential Pathways

2.15.1 Pathways are defined as the route contaminants take from a source to an exposed receptor. The exposure pathways can be direct or indirect transport from one medium to another.

2.15.2 Potential contaminant pathways relevant to the anticipated contaminants, ground conditions and proposed end use (receptors) include:

Human Health

- Dermal contact – Direct skin contact with contaminated soil, dust, or water. Certain contaminants can also be absorbed into the body through skin, or enter directly through open cuts or abrasions;
- Ingestion – Ingestion of fugitive dust from surfaces etc; and

- Inhalation – inhalation of soil, dust, gases, or vapours which have migrated through the unsaturated zone which may result in short term acute risks of asphyxiation or toxicity, and/or long term chronic risks to human health.

Controlled Waters

- Infiltration and percolation of contaminants resulting in migration through permeable strata such as the unsaturated zone to the underlying groundwater.
- Migration of mobile/leachable contaminants (e.g. surface spillages) by diffusion, advection, dispersion and capillary transport vertically down through any near surface unsaturated zone until meeting the groundwater table below, after which free/dissolved phase contaminants may potentially migrate beyond the site boundaries and impact off site receptors; and
- Horizontal migration of leachate causing a potential impact or below the ground along preferential pathways such as drainage pipe bedding or discontinuities and fractures within the underlying strata.

Ground Gases

- Vertical migration of gaseous contaminants through the unsaturated zone within permeable strata, or vertical and horizontal migration through preferential pathways such as fractures and discontinuities within the underlying solid geology.
- Migration of hazardous gases to indoor air through soil and building foundations.

Building Materials/Services

- Contaminated ground: Building materials (such as membranes) can be damaged by direct contact with contaminated ground, especially if mobile groundwater is present;
- Permeation of contaminants: Contamination within soil and groundwater can permeate through water supplies; and
- Explosive risk: Potential risk of fire and/or explosion within structures (both existing and proposed) caused by hazardous gases (for example – methane).

2.16 Hazard Assessment and Risk Estimation

2.16.1 As part of the risk assessment process, it is necessary to establish the potential risk from the probability and consequence of the event. Firstly, the magnitude of the probability is considered, and then the extent of the probability is considered. The combination of the consequence and probability is the resulting level of risk.

2.16.2 Potential contaminant linkages identified as part of this preliminary risk assessment are summarised in the Initial Site Conceptual Model presented in Table 2.10. References to risk estimations are made in accordance with the methodology presented in CIRIA publication C552 (2001) titled *'Contaminated Land Risk Assessment: A Guide to Good Practice'* and summarised in Appendix F.

Table 2.10: Initial Conceptual Model

Potential Source Location	Potential Hazard/ Source	Potential Receptor	Potential Pathway to Receptors	Potential Consequence of Contaminant Linkage	Potential Probability of Contaminant Linkage	Risk Classification (Risk = Probability x Consequence)
On site	Made ground	Current and future site users and construction workers	Exposure to potential contaminants through ingestion, inhalation and dermal contact.	Medium	**Low Likelihood to Likely**: Given the development history recorded on site, and observations made during the site reconnaissance, the presence of made ground of unknown thickness and chemical composition, or shallow contaminants on site cannot be discounted at this stage.	**Low to Moderate Risk**
		Controlled waters (Principal and Secondary Aquifers)	Leaching of potential contaminants from made ground and vertical and lateral migration through the saturated zone to controlled waters.	Medium	**Low Likelihood**: Given the potential presence of made ground of unknown chemical composition and the recorded aquifer status of the underlying strata (Secondary A and Principal Aquifers), a potential risk to controlled waters, whilst likely to be low, cannot be fully discounted. However, a significant extent/thickness of made ground is not anticipated, and the underlying ground materials are anticipated to have a significant cohesive component (Glaciofluvial Sheet Deposits) based upon nearby BGS borehole records, which will limit the potential vertical and lateral migration of contaminants into the underlying aquifer. Furthermore, the presence of hardstanding across the majority of the proposed development area will likely limit the potential for infiltration and subsequent contaminant migration.	**Moderate/Low Risk**
		Current and future site users, construction workers and proposed development	Migration, ingress and accumulation of ground gasses.	Severe	**Unlikely to Low Likelihood**: Made ground, if present at a significant thickness and composition, may act as a potential source of ground gas. Notwithstanding this, given the development history and observations made during the reconnaissance survey, the likelihood of made ground to provide a potential ground gas source is considered to be low.	**Moderate Risk**
On site	Aggressive / contaminated ground	Buildings, materials and services	Contact with potentially aggressive / contaminated materials present within the underlying ground materials	Medium	**Low Likelihood to Likely:** The potential for aggressive ground associated with sulphate concentrations within the underlying ground materials and/ or the presence of hydrocarbon impacted material cannot be discounted at this stage.	**Moderate/Low Risk**
Off site	Potentially contaminative historic land uses	Current and future site users and construction workers, Controlled waters and proposed structures	Potential on-site migration of contaminants and ground gases from off-site sources	Medium	**Unlikely to Low Likelihood:** While potentially contaminative land uses have been identified in proximity to the site, given the age, distance and scale of such features, significant migration is considered to be low. In addition, Manchester City Council indicate they are not aware of any contamination issues within the general site area.	**Moderate/Low Risk**

3 GROUND INVESTIGATION METHODOLOGY

3.1 Background

3.1.1 The ground investigation was undertaken across two phases of works and was designed to provide information on the ground conditions to aid with the design of the development; and to investigate the potential contaminant linkages identified as part of the Tier 1: Preliminary Risk Assessment (Tier 2 Assessment).

3.1.2 All site works were undertaken, following completion of the original desk-based review and site reconnaissance survey. Where potential on site hazards were identified during the site reconnaissance survey, the proposed exploratory hole locations were adjusted, using a targeted investigation approach to evaluate the risks. Tier 2 assessment works were undertaken in accordance with the relevant guidance at the time of the works (i.e. BS5930:2015+A1:2020, BS10175+A2:2017 and, where appropriate, Eurocode 7). Works were supervised by a suitably experienced geoenvironmental consultant from TEC.

3.2 Methodology

3.2.1 A summary of the ground investigation works undertaken and the rationale for each location is provided in in Table 3.1, as follows:

Table 3.1: Summary of Ground Investigation Works

Investigation Method	Location	Dates	Location Rationale	Purpose
Window Sample Borehole (Dando Terrier)	WS1 - WS3	17.09.2019	Positioned in accessible areas to provide spatial coverage across the site	Characterisation of shallow ground conditions Collection of geochemical and geotechnical samples for analysis Installation of combined ground gas and groundwater monitoring wells
Hand Dug Pit	HDP1 and HDP2	17.09.2019	Positioned in accessible soft landscaped areas	Collection of geochemical samples for analysis
Trial Pitting (JCB 3CX)	TP01 and TP02	12.04.2022	Positioned within locations specified by the Client in advance of the works (proposed attenuation areas)	Characterisation of shallow ground conditions Collection of geochemical and geotechnical samples for analysis Soakage testing in general accordance with BRE 365
Rotary Boreholes	BH1 – BH3	04. – 13.04.2022	Positioned within footprint of proposed building and to provide spatial coverage across the site	Characterisation of deeper ground conditions for piled foundation information Collection of geochemical and geotechnical samples for analysis Installation of groundwater monitoring well
Hand Dug Foundation Exposures	HDP01 and HDP02	13.04.2022	Positioned within locations specified by the Client in advance of the works	Characterisation of shallow ground conditions Exposure of foundation type and depth of existing structure

3.2.2 Exploratory hole locations are presented on Figure 2 and detailed descriptions of encountered ground conditions are shown on exploratory hole logs presented in Appendix G.

3.3 Limitations

3.3.1 The previous phases of works undertaken by TEC at the site were limited to the existing car parking area and soft landscaping located along the perimeter of the site.

3.4 Field Testing

3.4.1 A summary of in situ field testing undertaken as part of the ground investigation works is provided in Table 3.2.

Table 3.2: Summary of Field Testing

Field Test	Purpose
Hand Shear Vane (HSV)	Estimation of undrained shear strengths of cohesive strata
Standard Penetration Test (SPT)	Provision of strength profile of underlying ground conditions Provision of in situ densities of granular deposits

3.5 Monitoring Works

3.5.1 A summary of the monitoring works completed at the site to date is provided below in Table 3.3.

Table 3.3: Summary of Monitoring Works

Monitoring	Instrument/ Kit	No. of Rounds	Dates
Ground Gas	GFM 430/436 Landfill Gas Monitor	4	17.09.2019 07.07.2021 12.08.2021 21.10.2021
Groundwater sampling	Bailers	1	17.09.2019
Groundwater level gauging	Dip meter	1	13.04.2022

3.6 Chemical Testing

3.6.1 Laboratory testing was scheduled on the basis of the potential contaminants identified within the Tier 1: Preliminary Risk Assessment and field observations.

3.6.2 Representative soil samples were collected and chemically tested at i2 Analytical Ltd a UKAS/MCERTS accredited laboratory, for a selection of the following parameters:

Soils (Totals, Leachate, Water)

- Heavy metals and metalloids;
- Total Organic Carbon (TOC);
- Phenols (monohydric);
- Total Cyanide;
- Sulphate, sulphide, elemental sulphur and pH;
- Speciated Polyaromatic Hydrocarbons (PAH);
- Total Petroleum Hydrocarbons (TPH-CWG), including BTEX and MTBE;
- Asbestos Screen; and
- Basic Characterisation including WAC.

3.6.3 Geochemical certificates of analysis are presented within Appendix H.

3.7 General Sampling

3.7.1 Samples were collected in accordance with the following guidance;

- BS5930:2015+A1:2020 – Code of practice for ground investigations;
- BS ISO 10175:2026 - Investigation of potentially contaminated sites – Code of practice;
- BS ISO 18400-105:2017 Soil quality – Sampling - Packaging, transport, storage and preservation of samples; and
- BS ISO 18400-106:2017 Soil quality – Sampling - Quality control and quality assurance.

4 GROUND INVESTIGATION FINDINGS

4.1 Introduction

4.1.1 The fieldwork was undertaken on 17 September 2019 and between 04 and 13 April 2022, with ground gas and groundwater monitoring undertaken between September 2019 and April 2022. The depths of the exploratory holes, descriptions of strata encountered and comments on the groundwater conditions are summarised below while detailed descriptions are shown on exploratory hole logs presented in Appendix G. The locations of the exploratory holes are shown on Figure 2.

4.1.2 Photographs of the materials encountered during the site works are presented within Appendix A.

4.2 Generalised Ground Profile

Made Ground

4.2.1 Made ground was recorded across the site area to a maximum observed depth of 3.2mbgl (BH2), typically comprising black mottled grey tarmacadam underlain by brown mottled reddish brown and grey slightly silty clayey gravelly sand. The gravel component of these materials typically comprised brick, concrete, granite, sandstone, mudstone and rare ceramic. Occasional cobbles of mudstone, granite and brick were observed throughout the material.

Superficial Deposits (Glaciofluvial Sheet Deposits)

4.2.2 Superficial deposits were recorded across the site from depths of between 2.0m and 3.2mbgl and were recorded to depths of between 5.0m and 5.2mbgl, typically comprising firm to stiff, becoming very stiff medium to high strength brown mottled reddish brown slightly sandy slightly gravelly clay. In several locations across the site, medium dense reddish brown mottled brown clayey gravelly fine to coarse sand was recorded between depths of 2.0m and 3.2mbgl.

4.2.3 The gravel component of the superficial deposits recorded on site typically comprised angular to subrounded fine and medium sandstone, mudstone and flint. Locally cobbles of sandstone were observed within this material.

Solid Geology (Chester Formation)

4.2.4 Materials considered representative of the Chester Formation were recorded from depths of between 5.0m and 5.2mbgl across the site to depths in excess of 19.5mbgl, typically comprising extremely weak becoming weak to medium-strong, reddish brown locally mottled grey sandstone with quartzite and sandstone lithorelicts.

4.2.5 The general ground profile encountered at the site is summarised in Table 4.1 below.

Table 4.1: Recorded Ground Profile

Recorded Base of Strata (mbgl)	WS1	WS2	WS3	HDP1	HDP2	TP01	TP02	BH1	BH2	BH3	HDP 01	HDP 02
Made Ground	2.4	0.7	2.8	>0.6	>0.5	>3.2	1.6	3.2	2.0	2.0	>1.2	>1.2
Glaciofluvial Sheet Deposits	4.85	>4.0	>4.0	-	-	-	>2.2	5.2	5.0	5.0	-	-
Chester Formation (weathered)	>5.0	-	-	-	-	-	-	7.5	6.5	6.0	-	-
Chester Formation (sandstone)	-	-	-	-	-	-	-	>19.5	>18.5	>17.0	-	-

4.3 Groundwater

4.3.1 Groundwater observations recorded during the ground investigation works and standing depths within the boreholes recorded as part of subsequent monitoring visits are summarised in Table 4.2 below. Groundwater strikes/ observations are also shown on the exploratory hole logs in Appendix G.

Table 4.2: Summary of Groundwater Conditions

Location	Groundwater Strike (mbgl)	Standing Depths (mbgl)					Strata
	17.09.2019	17.09.2019	07.07.2021	12.08.2021	21.10.2021	13.04.2022	
WS1	3.0	2.67	2.88	-	2.23	-	Made Ground
WS2	2.8	-	-	-	-	-	Made Ground
WS3	-	-	3.78	2.61	2.43	-	Made Ground
BH1	-	-	-	-	-	9.94	Chester Formation
BH2	-	-	-	-	-	8.48	Chester Formation

4.3.2 It should be noted that groundwater strikes were not recorded during the rotary borehole advanced in April 2022 due to the water flush methods utilised during the drilling process.

4.3.3 It should be further noted that groundwater conditions recorded during the investigation may not be representative of long-term conditions and that groundwater levels may vary in response to meteorological/ seasonal changes.

4.4 Contamination Observations

4.4.1 No visual or olfactory evidence of potentially gross contamination has been recorded during the ground investigation and site reconnaissance survey works undertaken to date. Screening of soil samples with a PID recorded concentrations of volatile organic compounds (VOCs) to be less than the instrument level of detection (i.e 0.0ppm).

5 TIER 2: GENERIC QUANTITATIVE RISK ASSESSMENT

5.1 Introduction

5.1.1 The site reconnaissance survey undertaken by TEC in April 2026 did not highlight any potential contaminative sources that had not previously been assessed by TEC. Therefore, the below Tier 2 Generic Quantitative Risk Assessment comprises an updated review of the data obtained as part of the ground investigation works undertaken at the site in 2019, and a review of the monitoring works completed between 2019 and 2022, in accordance with current guidance.

5.2 Human Health

5.2.1 The generic quantitative risk assessment comprises a screening of potential contaminants identified within the Tier 1: Preliminary Risk Assessment against carefully selected generic assessment criteria (GAC) that are appropriate to the site setting and the receptors concerned.

5.2.2 GAC's are screening criteria which are derived using a standard set of generic assumptions. They are designed to be broadly applicable to a wide range of site conditions and exposure scenarios. For this site GAC's relevant to Human Health have been selected.

Methodology

5.2.3 Detailed information on the background legislation and selection of the GAC used within this assessment for human health is presented in Appendix J.

5.2.4 TEC have referenced the Environment Agency SGV's, Defra Category 4 Screening Levels (C4SLs) and LQM/CIEH S4ULs for Human Health Risk Assessment '*Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3126. All rights reserved.'.*

5.2.5 The standard land use for the site, for use in this generic assessment, has been defined as "*residential without homegrown produce*" based on the proposed development and in accordance with current guidance.

5.2.6 All GAC's used within the assessment are based on a sandy loam as defined in SR3 (Environment Agency, 2009) and Soil Organic Matter (SOM) of 1% where applicable, which is considered the most conservative initial screening approach.

5.2.7 As the site investigation methodology involved targeted sampling, statistical analysis has not been undertaken, and the results have been directly compared to the GAC.

5.2.8 No visual or olfactory evidence of gross contamination was identified within the natural ground during the site investigation undertaken in 2019. Therefore, 5No. soil samples were collected from the made ground, at depths that end users may come into contact with via the dermal contact, ingestion and inhalation pathways. Certificates of analysis for samples are contained within Appendix H.

Summary of Results

5.2.9 The full human health generic quantitative risk assessment is presented in Appendix J.

Made Ground

5.2.10 The results of the assessment recorded exceedances of the GAC and therefore the following contaminants of potential concern (CoPC) have been identified within the made ground;

- *Heavy metals – lead (WS2 at 0.3-0.7mbgl)*
- *PAHs – benzo(a)anthracene (WS3 at 0.4-0.7mbgl, benzo(b)fluoranthene (WS3 at 0.4-0.7mbgl) benzo(a)pyrene (WS3 at 0.4-0.7mbgl) dibenz(a,h)anthracene (WS3 at 0.4-0.7mbgl and HDP2 at 0.1-0.3mbgl)*

Asbestos

5.2.11 An asbestos screen completed on samples of the made ground/ shallow soils at the laboratory recorded no suspected asbestos containing material or detectable asbestos fibres.

5.3 Controlled Waters

Methodology

5.3.1 Detailed information on the background legislation and selection of the GAC used within this assessment is presented in Appendix K.

Methodology – Leachate Testing

5.3.2 Due to the presence of elevated total concentrations of CoPC within the encountered made ground materials, leachate analysis was undertaken on a single sample of made ground encountered as part of the 2019 ground investigation works (WS3) to determine the likely risk to identified controlled water receptors.

5.3.3 With regards to controlled waters receptors (Secondary A and Principal Aquifer), a conservative preliminary risk assessment has been undertaken by comparing the soil leachate analytical results to published Drinking Water Standards where available.

Summary of Results

5.3.4 The controlled waters generic quantitative risk assessment is presented in Appendix K.

5.3.5 The results of the assessment recorded marginal exceedances of the GAC and therefore the following leachable contaminants of potential concern (CoPC) have been identified at the site;

- *Heavy metals – arsenic (12ug/l) compared to a GAC of 10ug/l, and lead (13ug/l) compared to a GAC of 10ug/l.*

Methodology – Perched Water Sampling

5.3.6 Furthermore, sampling and analysis was undertaken from a single monitoring location (WS1) with response zones targeting the underlying made ground.

5.3.7 Based on the conceptual understanding, the nearest significant controlled waters receptor is considered to be the underlying Secondary A and Principal Aquifers. Therefore, an initial assessment of the potential risk to controlled waters has been undertaken by comparing the perched water analytical results to published Drinking Water Standards where available. In the absence of DWS values, Environmental Quality Standards have been utilised.

Summary of Results

5.3.8 The controlled waters generic quantitative risk assessment is presented in Appendix K.

5.3.9 The results of the assessment recorded no exceedances of the GAC and therefore no contaminants of potential concern (CoPC) have been identified within the shallow perched water.

Discussion

5.3.10 Whilst it is acknowledged that marginally elevated concentrations of heavy metals (arsenic and lead) have been recorded within the leachate analysis completed on a single sample of the made ground encountered as part of the works, shallow perched water sample obtained from a borehole installation onsite recorded no exceedances of the relevant conservative screening criteria for groundwater. Furthermore, the marginal elevated concentrations of heavy metals (arsenic and lead) are not considered to be present at concentrations that may propose a significant risk to controlled water receptors.

5.3.11 The underlying Glaciofluvial superficial deposits have predominantly been recorded as cohesive which would limit any migration of any potential leachable contaminants to the underlying Principal Aquifer and groundwater. In addition, the majority of the will be occupied by the building footprint or areas of hardstanding which would also limit any migration of any potential leachable contaminants.

5.3.12 Based upon the above, no risk to controlled waters has been identified from the underlying ground materials as part of these works and therefore, has not been considered further within this assessment.

5.4 Ground Gas

5.4.1 Toxic, asphyxiating and flammable potentially explosive ground gas can enter buildings and other structures on and below the ground. These gases can potentially pose risks to occupants and other site end users, and to the structures themselves.

Methodology – Characterisation with gas monitoring data: empirical, semi-quantitative approach

5.4.2 A variety of gases might be present in the ground naturally or arising from contamination of the ground and or buried waste materials. In addition to the main components of air (nitrogen and oxygen) ground gas can contain other gases (e.g. methane, carbon dioxide, carbon monoxide, hydrogen sulfide, ammonia, radon etc.). It can also contain volatile organic compounds (VOCs) or inorganic vapours (mercury/hydrogen cyanide).

5.4.3 The following potential sources of ground gas have been identified:

On Site Ground Gas Sources

- *Made ground generally recorded between depths of >0.5m and 3.2mbgl, with localised evidence of organic plan remains noted within WS1 (between 2.0-2.4mbgl)*

5.4.4 The primary sources of ground gas considered to present a potential risk on this site include methane (flammable and asphyxiant) and carbon dioxide (toxic and asphyxiant).

5.4.5 The risks to the development from ground gases have been assessed in accordance with the empirical, semi-quantitative approach as outlined in BS8485:2015+A1:2019 (BS8485). This process includes combining the qualitative assessment of risk and all available lines of evidence (using the CSM) with ground investigation and monitoring data, to derive a Characteristic Situation for the site.

Ground Gas Monitoring Results

5.4.6 All gas monitoring was undertaken using a calibrated GFM 430/436 infra-red gas analyser fitted with an internal flow pod as part of the previous phases of works completed for the site. The monitoring results are presented in Appendix I and summarised in Table 5.1.

Table 5.1: Summary of Ground Gas Monitoring Data

Borehole	Response Zone/Strata	Potential source of ground gas	No. of monitoring occasions	Maximum Methane (%)	Maximum (Steady State) Carbon dioxide (%)	Minimum (Steady State) Oxygen (%)	Maximum (Steady State) Flow Rate (l/hr)	Water levels (mbgl)	Range of atmospheric pressure (mb)
WS1	Made ground	Made ground	3	0.0 (0.0)	2.2 (1.8)	17.5	0.0 (0.0)	2.23 – 2.88	996 – 1002
WS3			4	0.0 (0.0)	2.4 (1.9)	17.3	0.0 (0.0)	2.43 – 3.78	996 – 1002

5.4.7 Monitoring has been undertaken during variable temporal conditions, including worst case low and falling atmospheric pressures.

Borehole Hazardous Gas Flow Rate (Q_{hg})

5.4.8 A hazardous gas flow rate (Q_{hg}) for each borehole on each individual monitoring event has been calculated in accordance with BS8485:2015. Following an assessment of all the Q_{hg} data for each borehole in conjunction with the conceptual site model, a representative Gas Screening Value (GSV) for each borehole has been presented below, together with the resulting implied maximum Characteristic Situation (CS) for each borehole location, and summarised in Table 5.2.

Table 5.2: Borehole Hazardous Gas Flow Rates

Borehole	Date	Methane - Hazardous Flow Rate CH_4 Q_{hg} (l/hr)(1)	Carbon Dioxide – Hazardous Flow Rate CO_2 Q_{hg}(l/hr)(1)	Implied CH_4 - CS	Implied CO_2 CS	Borehole specific Gas Screening Value (GSV) Q_{hg}(l/hr)
WS1	17/09/2019	0.0001	0.0004	1	1	0.022
	07/07/2021	0.0001	0.0018	1	1	
	21/10/2021	0.0001	0.0022	1	1	
WS3	17/09/2019	0.0001	0.0014	1	1	0.024
	07/07/2021	0.0001	0.0014	1	1	
	12/08/2021	0.0001	0.0019	1	1	
	21/10/2021	0.0001	0.0024	1	1	

Note 1: Where flow rates of <0.1l/hr or concentrations of <0.1% have been recorded, a value of 0.1 (limit of detection of the instrument) has been assumed to calculate the Q_{hg}

Worst Case Check

5.4.9 The plausible worst case condition Gas Screening Value (GSV) has also been calculated for each gas by multiplying the maximum recorded flow and gas concentration (for standpipes located in the same strata and zones at the site), to provide the worst-case implied CS, as summarised in Table 5.3.

Table 5.3: Worst Case Check – Ground Gas

Boreholes	Response Zone/ Strata	Max. Flow Rate (l/hr)(1)	Max. Methane Conc. (%))(1)	Max. Carbon Dioxide Conc. (%))(1)	Maximum Methane - Hazardous Flow Rate CH_4 GSV (l/hr) Q_{hgs}	Maximum Carbon Dioxide – Hazardous Flow Rate CO_2 GSV (l/hr) Q_{hgs}	Plausible worst case CH_4 CS	Plausible worst case CO_2 CS
WS1, WS3	Made Ground	0.1	0.1	2.4	0.0001	0.0024	1	1

Note 1: Where flow rates of <0.1l/hr or concentrations of <0.1% have been recorded, a value of 0.1 (limit of detection of the instrument) has been assumed to calculate the Q_{hg}

Gas Screening Values (GSVs)

5.4.10 On the basis of the conceptual site model and gas monitoring completed to date, it is considered that the data is adequate to characterise the site.

5.4.11 Therefore, the site GSV is taken to be 0.0024l/hr, which is the plausible worst case for methane and carbon dioxide. This GSV lies within the range of values designated for a Characteristic Situation 1 (CS1) site, <0.0007l/h and is close to the lower end of this range. Therefore, no specific ground gas protection measures are considered necessary with proposed buildings.

Discussion

5.4.12 On the basis of the assessment detailed above, no risk to human health has been identified from the underlying ground materials as part of these works and therefore, has not been considered further within this assessment.

5.5 Updated Conceptual Model

5.5.1 The findings of the site investigation and the GQRA have been used to update the conceptual model and confirm the relevant contaminant linkages associated with the proposed development.

5.6 Identified Sources

5.6.1 Sources of contamination/ ground gas identified on and within the vicinity of the site are summarised below:

Identified On Site Sources

- Made ground encountered to depths of up to 3.2mbgl

5.7 Identified Receptors

5.7.1 Receptors identified as part of this updated conceptual model are:

- Current/future site users;
- Construction and maintenance workers; and
- Proposed development/ structures (below ground structures, services and concrete, proposed buildings on site).

5.8 Identified Pathways

5.8.1 Identified contaminant pathways relating to the identified receptors and contaminants of concern include:

Human Health

- Dermal contact – Direct skin contact with soil, dust, or water. Certain contaminants can also be absorbed into the body through skin, or enter directly through cuts or abrasions; and
- Ingestion - ingestion of soil by eating with unwashed hands causing cross contamination, or ingestion of fugitive dust from surfaces; and
- Inhalation – inhalation of soil, dust, gases or vapours which have migrated through the unsaturated zone which may result in short term acute risks of asphyxiation of toxicity, and /or long-term chronic risks to human health.

Building Materials/Services

- Aggressive attack: building materials can be damaged by direct contact with aggressive/contaminated ground, especially if mobile groundwater is present, for example sulphate attack on concrete or the aggressive contaminants coming into direct contact with membranes used within the structures; and

5.8.2 The updated conceptual model is presented in Table 5.4. References to risk estimations are made in accordance with the methodology presented in CIRIA publication C552 (2001) titled *'Contaminated Land Risk Assessment: A Guide to Good Practice'* and summarised in Appendix F.

Table 5.4: Updated Conceptual Model (Hazard Assessment and Risk Estimation)

Potential Source Location	Identified Hazard/ Source	Identified Receptor	Identified Pathway	Potential Consequence of Contaminant Linkage	Potential Probability for Contaminant Linkage	Risk Classification (Risk = Probability x Consequence)
On site	Made ground	Current and future site users and construction workers	Exposure to potential contaminants through ingestion, inhalation and dermal contact.	Medium	**Low Likelihood to Likely:** Made ground has been encountered across the site to a maximum observed depth of 3.2mbgl. Whilst no visual of olfactory evidence of gross contamination was noted within the made ground encountered as part of the site works, laboratory analysis of the made ground recorded elevated concentrations of heavy metals (lead) and PAHs in excess of the relevant assessment criteria for a residential site end use without home grown produce. Whilst the majority of the site will be covered by the building footprint and areas of hard landscaping, where soft landscaping is proposed and made ground remains after finished site levels have been achieved, exposure to potential contaminations cannot be discounted.	**Moderate/Low Risk**
		Current and future site users, construction workers and proposed development	Migration, ingress and accumulation of ground gasses.	Severe	**Unlikely**: Whilst a thickness of locally organic made ground has been recorded onsite, based upon the ground gas monitoring undertaken to date, the site would be classified in accordance with Characteristic Situation 1, and no ground gas protection measures are considered necessary. In addition, no radon protection measures area considered necessary within the construction of new dwellings.	**Moderate/Low Risk**
On site	Contaminated ground	Buildings, materials and services	Contact with potentially contaminated materials present within the underlying ground materials	Medium	**Low Likelihood to Likely:** Elevated water-soluble sulphate concentrations have been recorded within the made ground, requiring an upgraded design sulphate class of DS-2 in terms of buried concrete. An ACEC class od AC-1, requiring DS-1 is considered appropriate for the underlying natural materials. Reference should be made to the Ground Engineering chapter of TEC report referenced 1909009.002.01 for full details. Due to the presence of elevated contaminant concentrations within the underlying ground materials, consideration to appropriate water supply pipes should be undertaken.	**Moderate/Low Risk**
Off site	Potentially contaminative historic land uses	Current and future site users and construction workers, Controlled waters and proposed structures	Potential on-site migration of contaminants and ground gases from off-site sources	Medium	**Unlikely:** No visual or olfactory evidence of potential contaminant migration from off-site sources has been recorded as part of the investigation works undertaken to date.	**Low Risk**

6 LAND CONTAMINATION - CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

6.1.1 Laboratory analytical results of the encountered made ground recorded exceedances of the GACs for lead and a number of PAH's when considered a residential site end use without homegrown produce as part of the previous assessment works undertaken at the site.

6.1.2 Based on the ground gas monitoring undertaken to-date together with the conceptual site model, it is possible that the site may potentially be considered as Characteristic Situation 1 and no radon protective measures are considered necessary within the construction of new homes.

6.1.3 No risk to controlled waters has been identified.

6.2 Preliminary Remediation Options

6.2.1 Localised contaminants of potential concern (CoPC) have been recorded within the made ground when considering a residential site end use (without home grown produce).

6.2.2 Therefore, where soft landscaping is proposed in such areas and where made ground remains after finished site levels have been achieved, localised exposure to potential contaminants cannot be discounted and a suitable cover system may be required within areas of soft landscaping.

6.2.3 It is recommended that a full Stage 2: Options Appraisal and Stage 3: Remediation Strategy is prepared to set out the remediation and monitoring objectives and criteria to track the performance of the identified remediation measures and to specify the verification plan. Once the Remediation Strategy has been agreed and the remediation works undertaken, a verification report or reports will be required.

6.3 General Considerations

6.3.1 Given the presence of general made ground, good brownfield site working practices should be adopted by construction workers to mitigate against potential risks.

6.3.2 Should water supply pipes be placed within the made ground encountered at the site, due consideration would need to be given to the UK Water Industry Research Ltd (UKWIR) guidance.

6.3.3 Based on our conceptual understanding of the site to-date, it would be anticipated that similar ground conditions to those encountered as part of this assessment exist across the site areas where access has been possible. However, should significant thicknesses of made ground be encountered, or visual or olfactory evidence of potentially significant contamination be identified during the development works, further investigation and assessment may be required.

TEC

Figures and Drawings

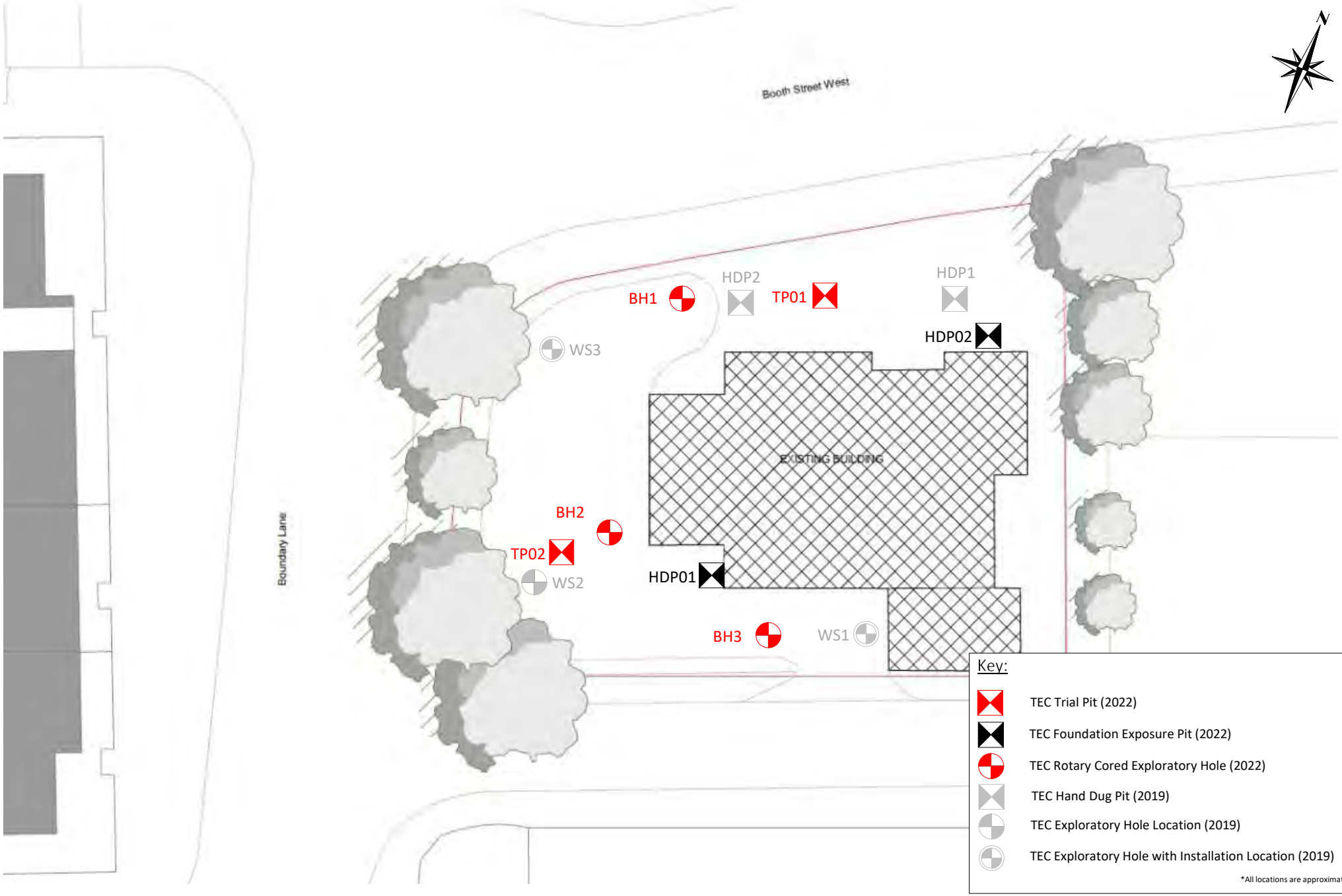


Approximate Site Location:

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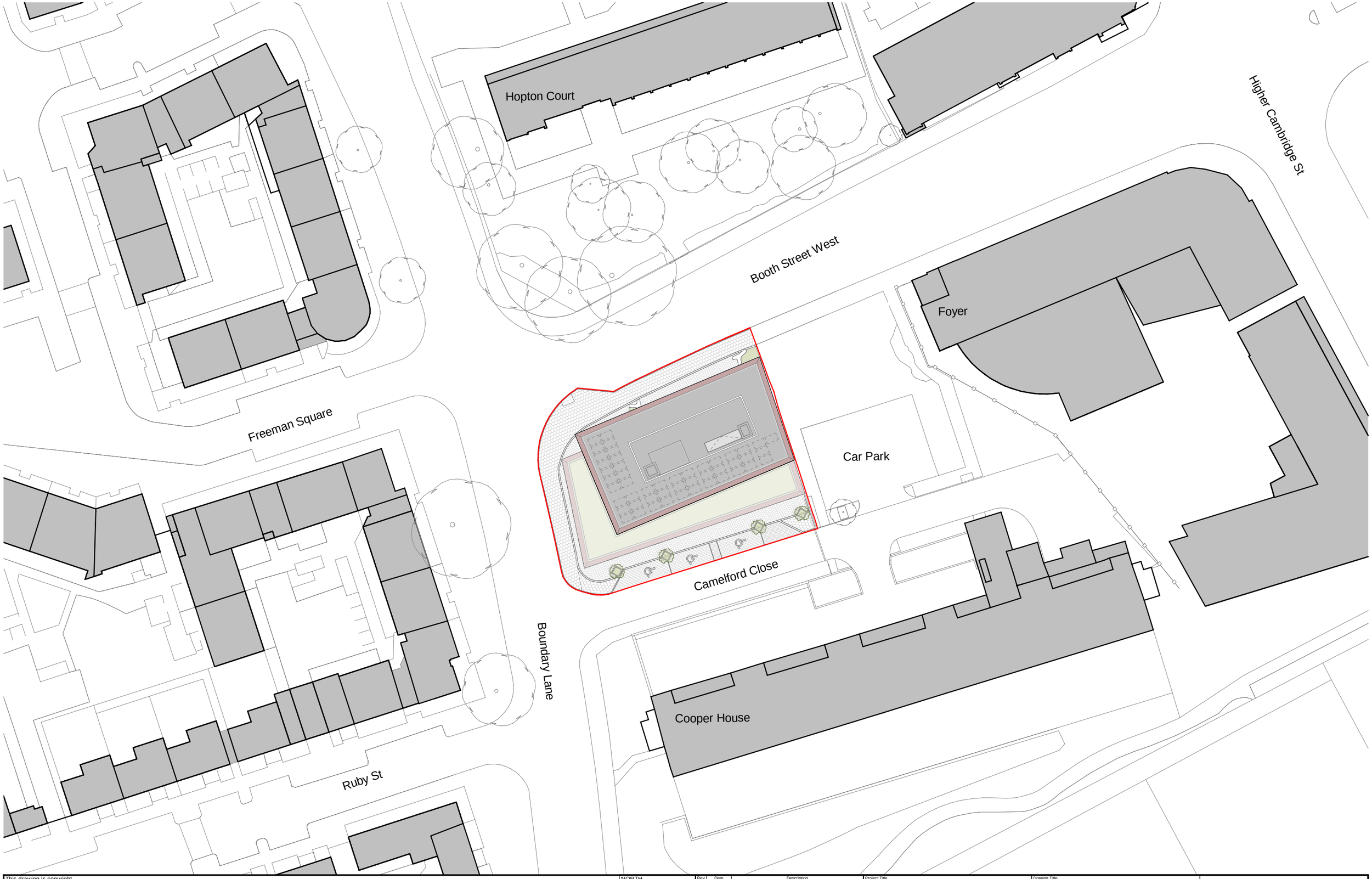
tec	TEC Unit B Rail Crossing Yard Dyehouse Lane Glastonbury, Somerset BA6 9LZ	Tel: 01458 555148 Email: info@tecon.co.uk Web: www.tecon.co.uk	Site Name: Former Gamecock Public House, Booth Street West, Manchester	Drawing Name: Site Location Plan	Client Name: Curlew Alternatives Eighth Property LP	Project No: 1909009.005	Figure No: 1	Date: April 2026	Scale: NTS



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Site Name:	Drawing Name:	Client Name:	Project No:	Figure No:	Date:	Scale:
Former Gamecock Public House, Booth Street West, Manchester	Exploratory Hole Location Plan	Curlew Alternatives Eighth Property LP	1909009.005	2	April 2026	NTS



This drawing is copyright
Do not scale off dimensions.

All dimensions to be checked on site by contractor.

Contractor to report any dimensional discrepancies, errors or omissions prior to commencing on site.

Planning Application Boundary

NORTH

Rev	Date	Description
00	2021-05-07	Planning Application
01	16-05-2022	Planning Application - Update
02	16-08-2022	Planning Application - August 2022 Update
03	23-06-2023	Planning Application - June 2023 Update

Project Title
Gamecock
Booth Street West,
Manchester

Drawing Title
Context Plan - Proposed - Site Plan

Job No
10224

Scale
1 : 500 @ A3

Status
For Planning Approval

SHP Drawing Code *Project Zone Role Uniclass 1.4 Type Location Series*
10224-Z0-A-B5D8-G000-PL-XX-001

Revision
03

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Appendix A

Site Photographs (2019, 2022 and 2026)



Photograph 1: View of the front of the public house, facing east.



Photograph 2: View of the back of the public house, facing south-west.



Photograph 3: View of the south-eastern corner of the site, facing east.



Photograph 4: View of the western site area, facing north.



Photograph 5: Arisings from WS1 (1-4mbgl)



Photograph 6: Arisings from WS1 (4-5mbgl)



Photograph 7:Arisings from WS2 (1-4mbgl)



Photograph 8:Arisings from WS3 (1-4mbgl)



Photograph 1: General site conditions, looking northeast.



Photograph 2: General site conditions, looking southwest.



Photograph 3: Overgrown area with no access in north-western part of site.



Photograph 4: Fly tipping present across site, photo showing south-western area.



Photograph 5: BH01 0.0 – 1.5mbgl. Recovered materials.



Photograph 6: BH01 1.5 – 4.5mbgl. Recovered materials.



Photograph 7: BH01 4.5 – 7.5mbgl. Recovered materials.



Photograph 8: BH01 7.5 – 10.5mbgl. Recovered materials.



Photograph 9: BH01. Close up of sandstone, recovered from 7.5 – 9.0mbgl.



Photograph 10: BH01 10.5 – 13.5mbgl. Recovered materials.



Photograph 11: BH01. Close up of lithorelicts within sandstone.



Photograph 12: BH01 13.5 – 15.5mbgl. Recovered materials.



Photograph 13: BH01 15.5 – 18.5mbgl. Recovered materials.



Photograph 14: BH01. Evidence of vertical fracture within sandstone.



Photograph 15: BH02 1.5 – 4.5mbgl. Recovered materials.



Photograph 16: BH02 6.0 – 7.5mbgl recovered materials.



Photograph 17: BH02 7.5 – 10.5mbgl. Recovered materials.



Photograph 18: BH02 13.5 – 16.5mbgl. Recovered materials.



Photograph 19: BH03 0.0 – 3.0mbgl. Recovered materials.



Photograph 20: BH03 4.5 – 7.5mbgl. Recovered materials.



Photograph 21: BH03 9.0 – 15.0mbgl. Recovered materials.



Photograph 22: TP01 excavation - 0.0 3.2mbgl (pit collapse below 2.5m).



Photograph 23: TP02 excavation - 0.0 – 1.8mbgl.



Photograph 24: TP02 0.0 – 1.8mbgl. Encountered ground materials.



Photograph 1: Existing structure, former 'Gamecock' public house, facing north-east from Camelford Close.



Photograph 2: Existing frontage of 'Gamecock' public house, facing east.



Photograph 3: View of existing soft landscaping located to the north of the structure, facing south-east.



Photograph 4: Car parking area associated with the former public house, facing north from Camelford Close.



Photograph 5: View of car parking and current access into the site from Camelford Close, facing east.

Appendix B

Historical Maps



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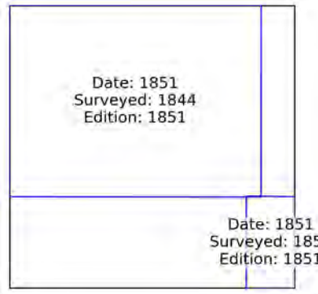
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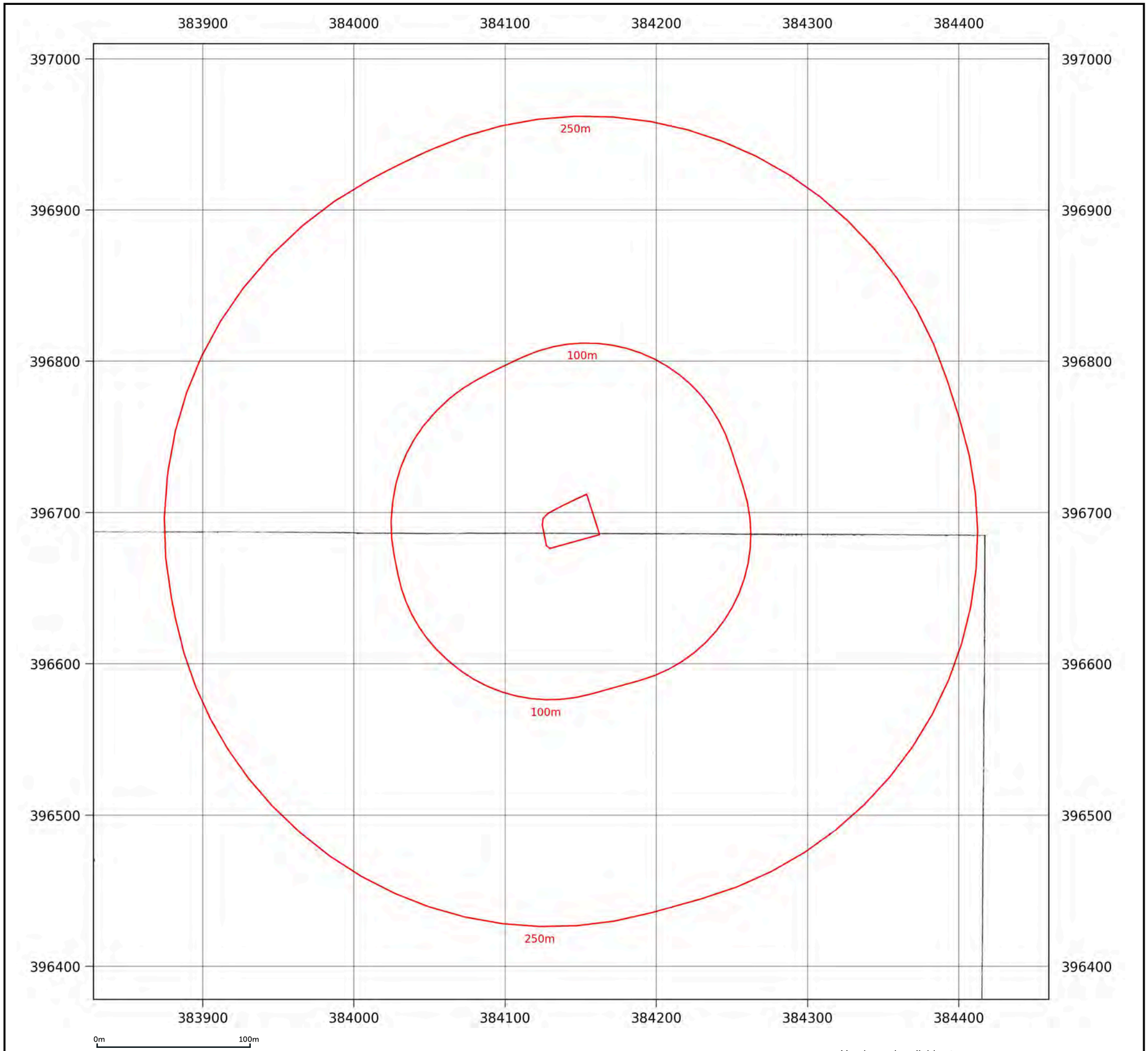
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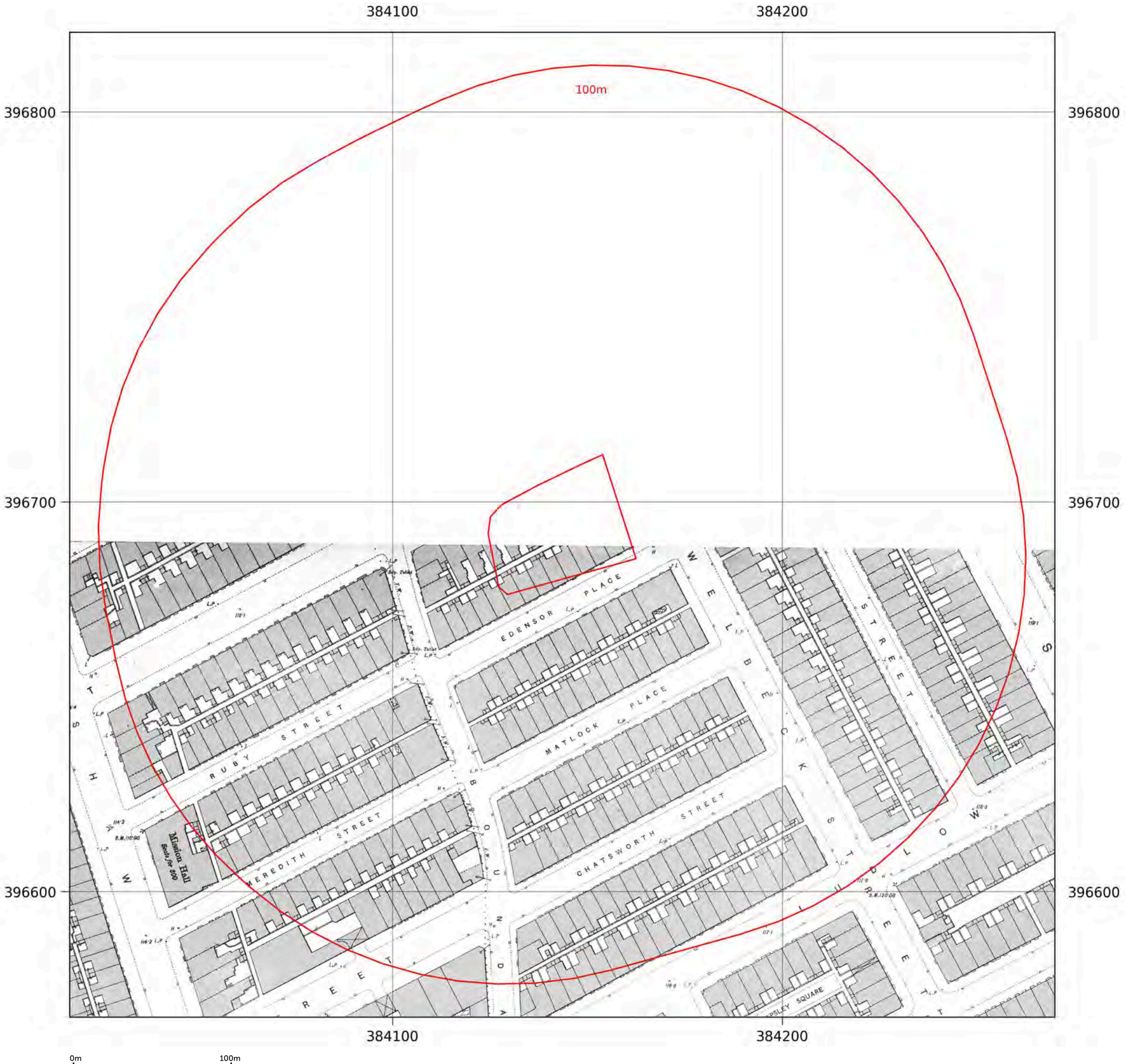
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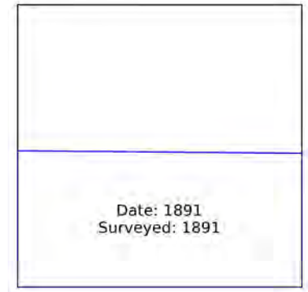
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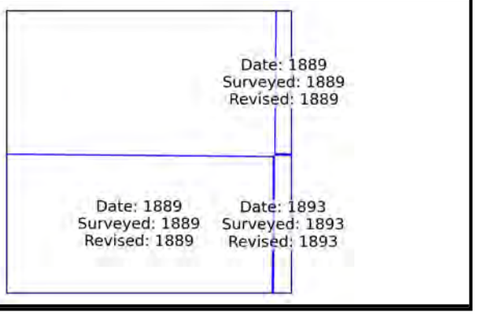
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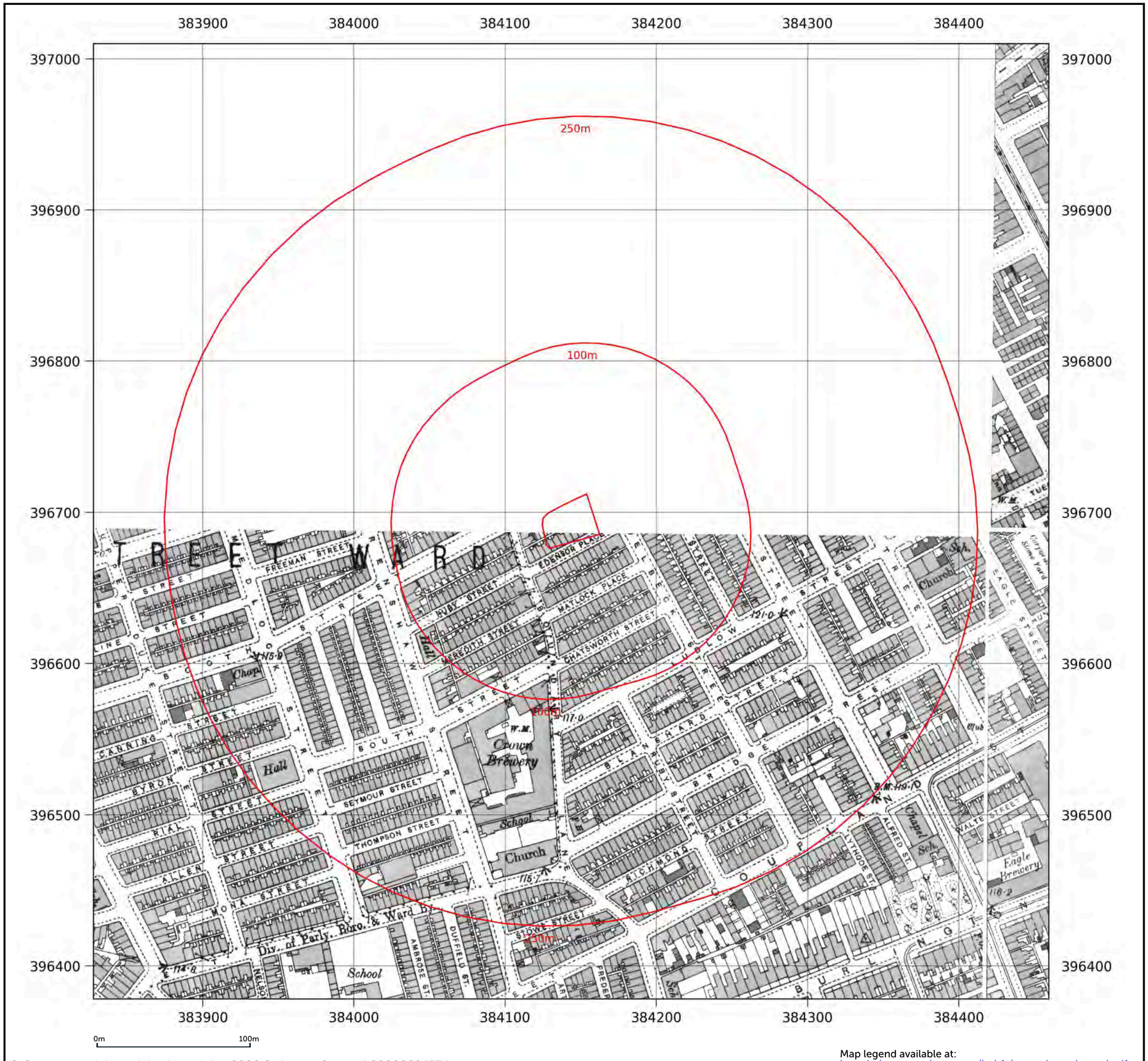
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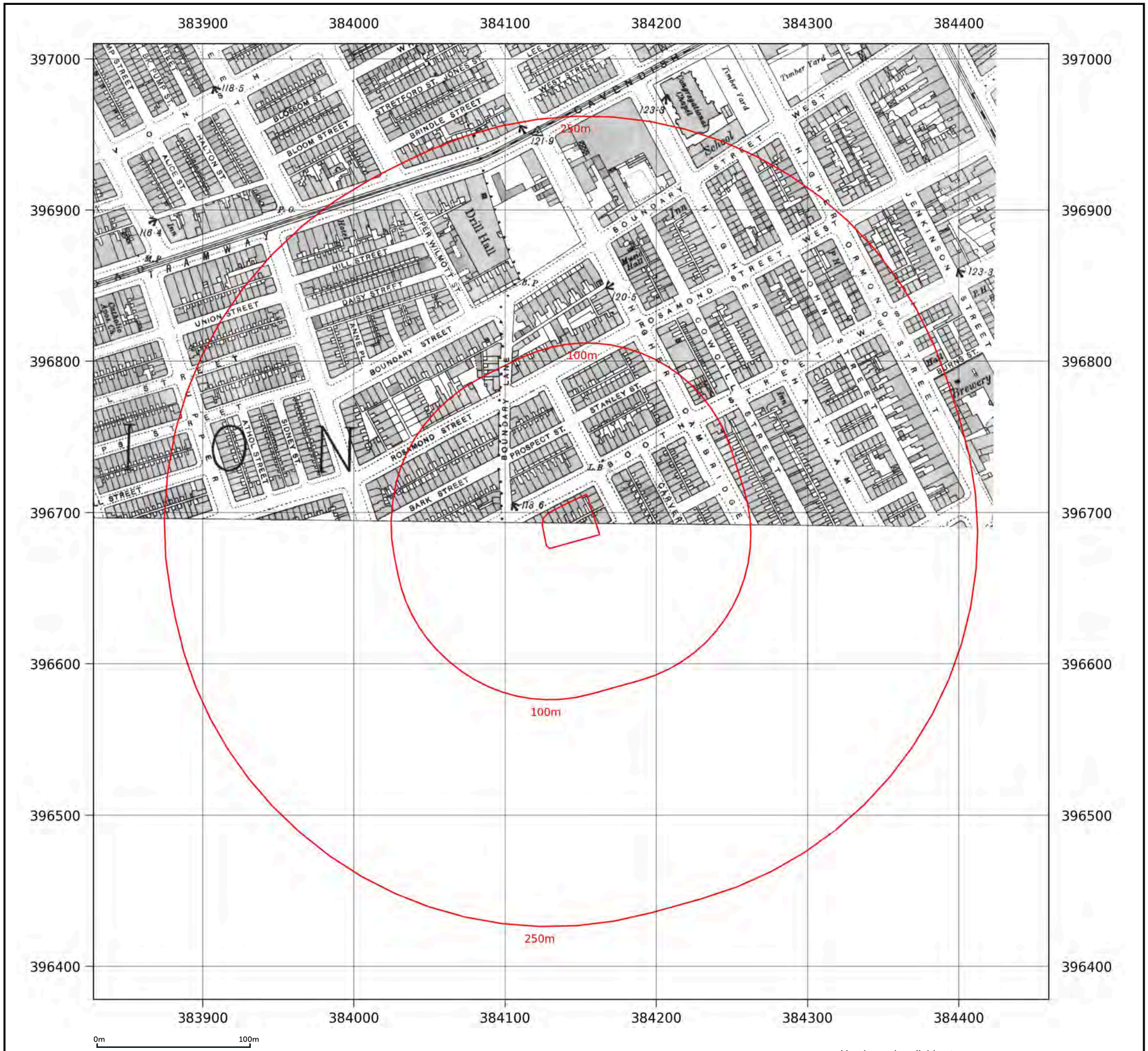


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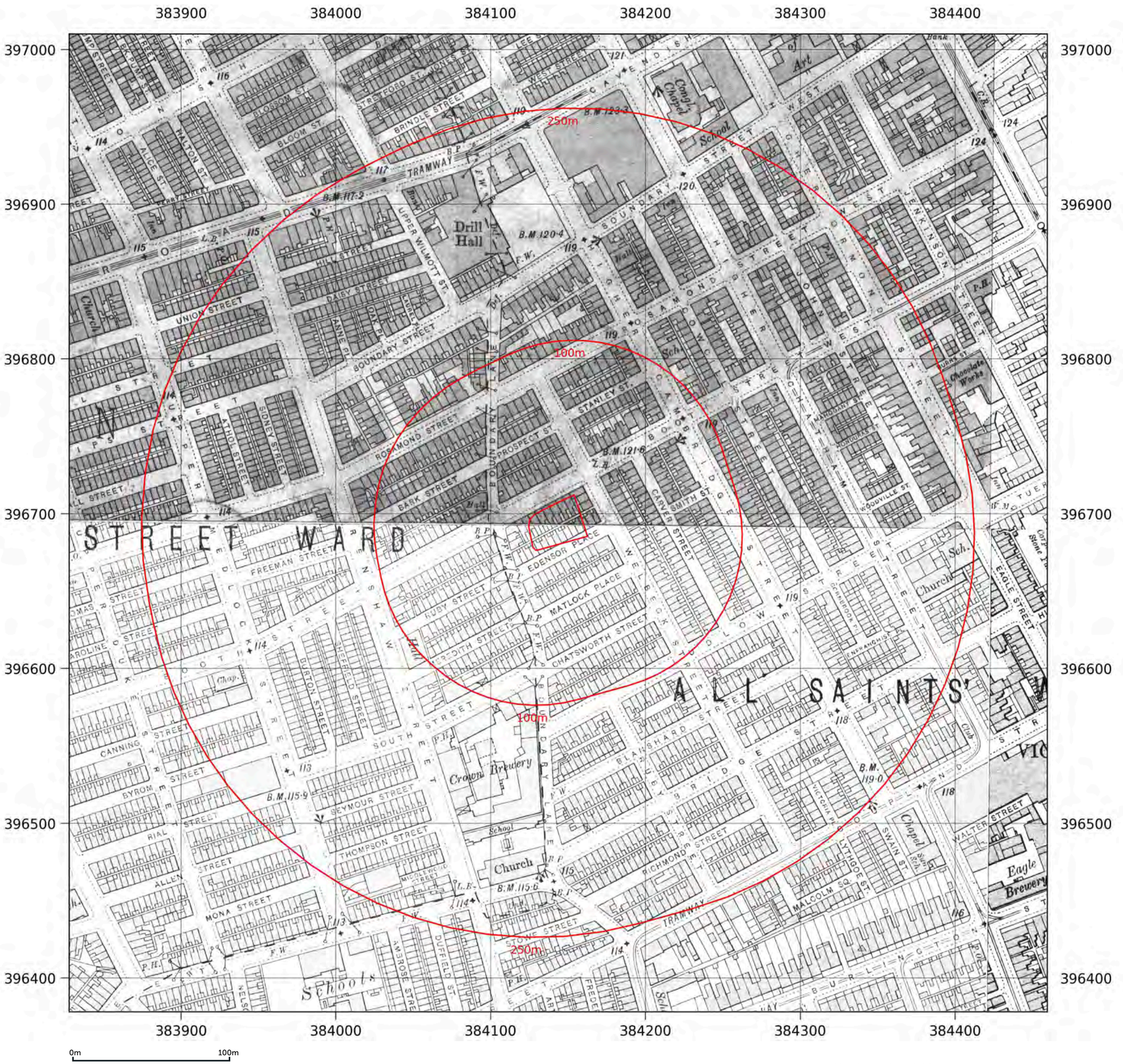
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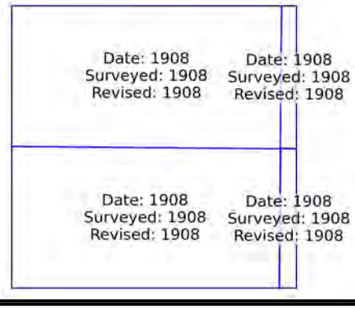
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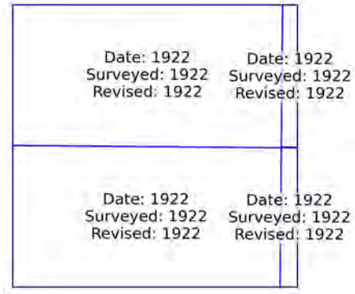
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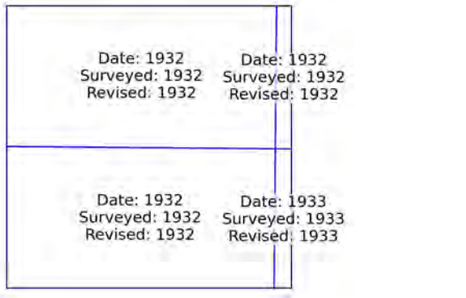
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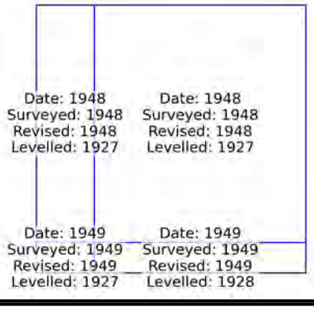
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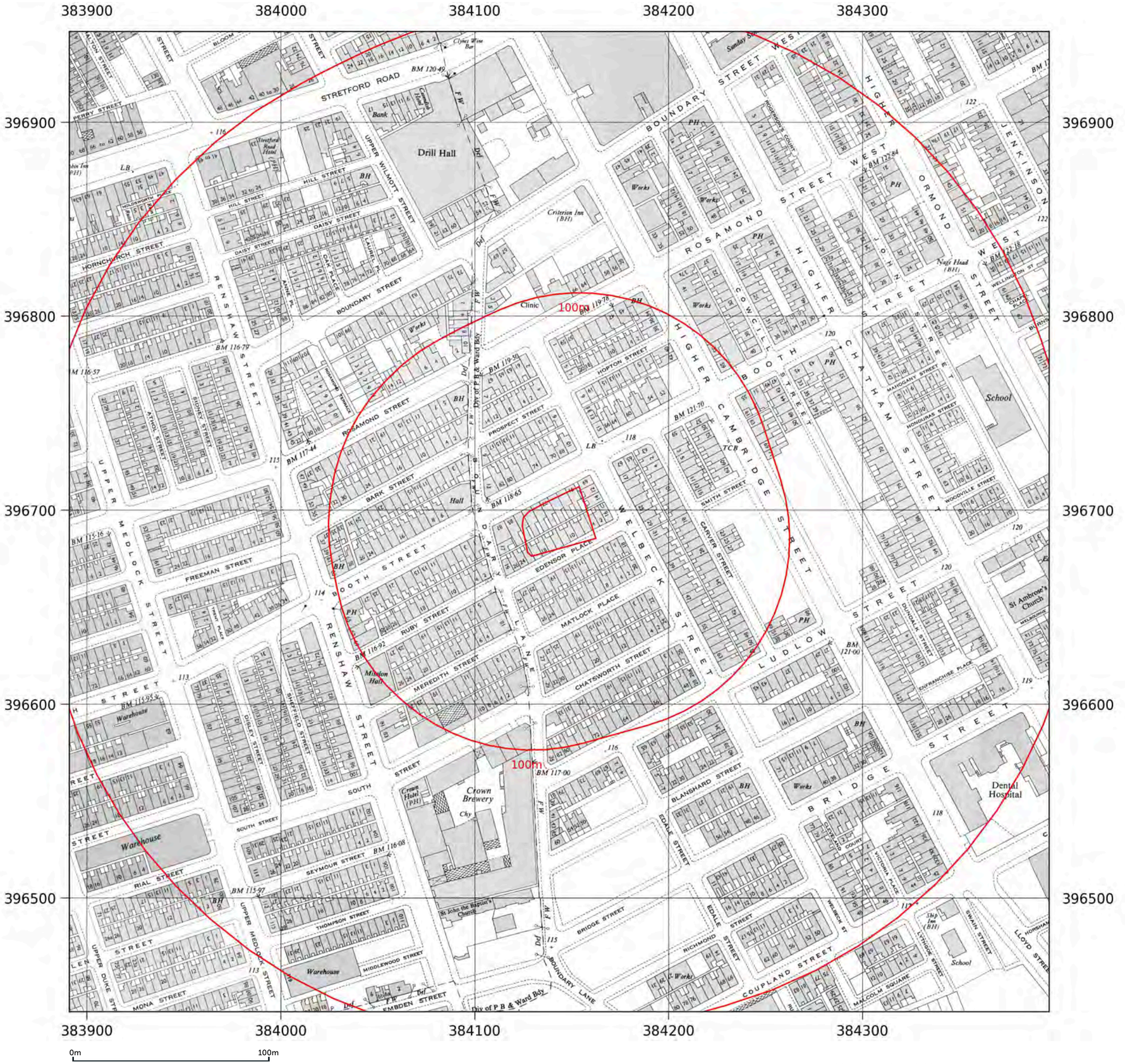
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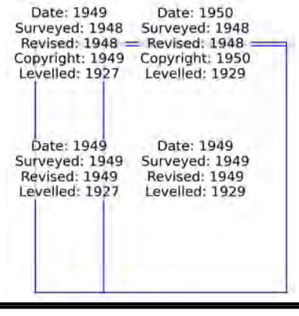
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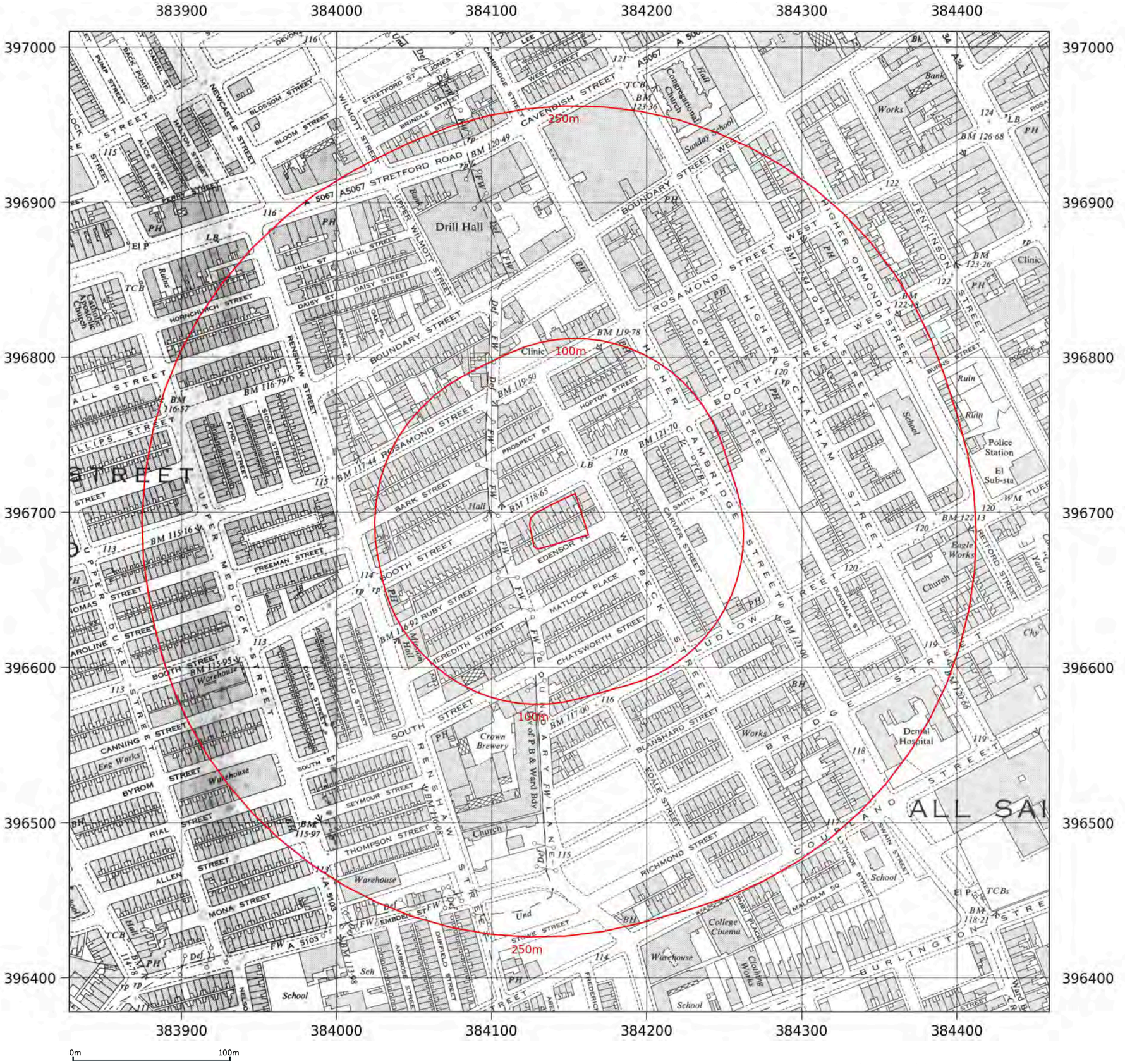
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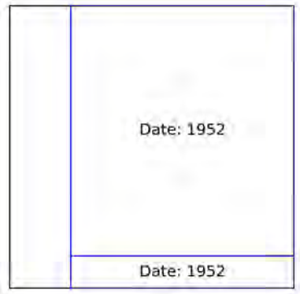
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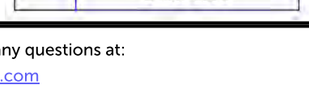
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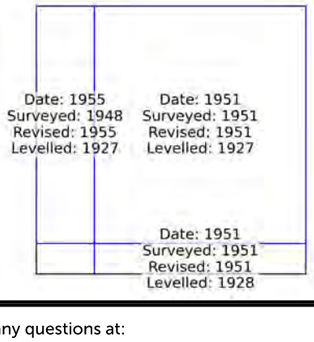
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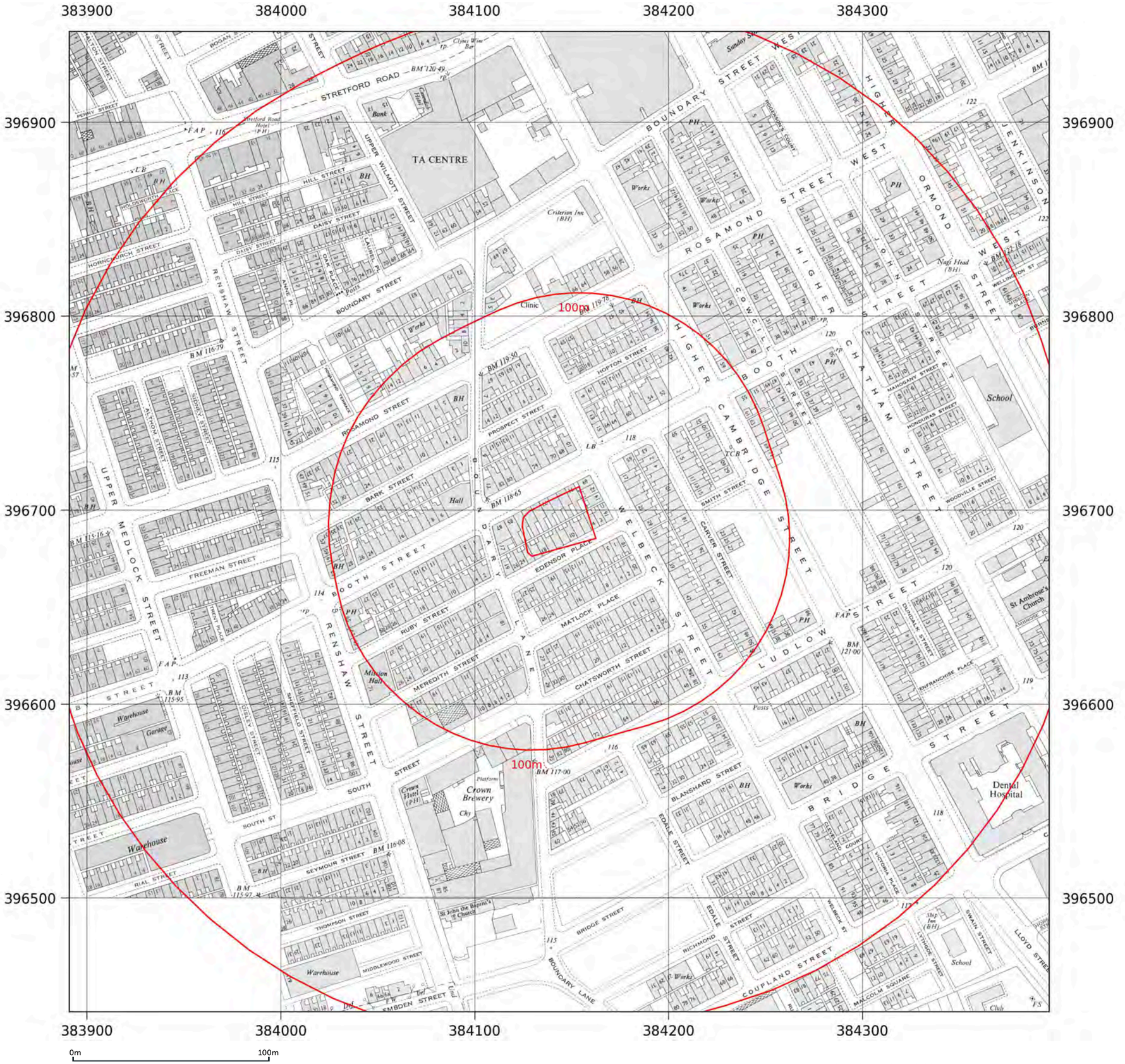
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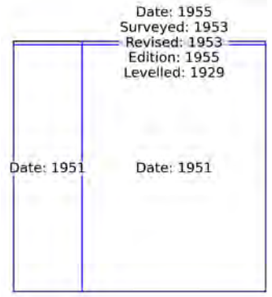
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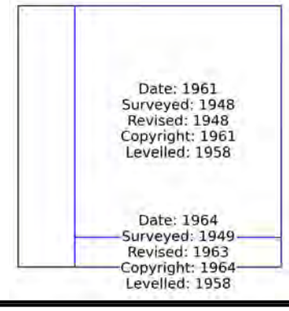
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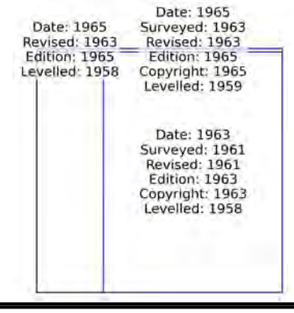
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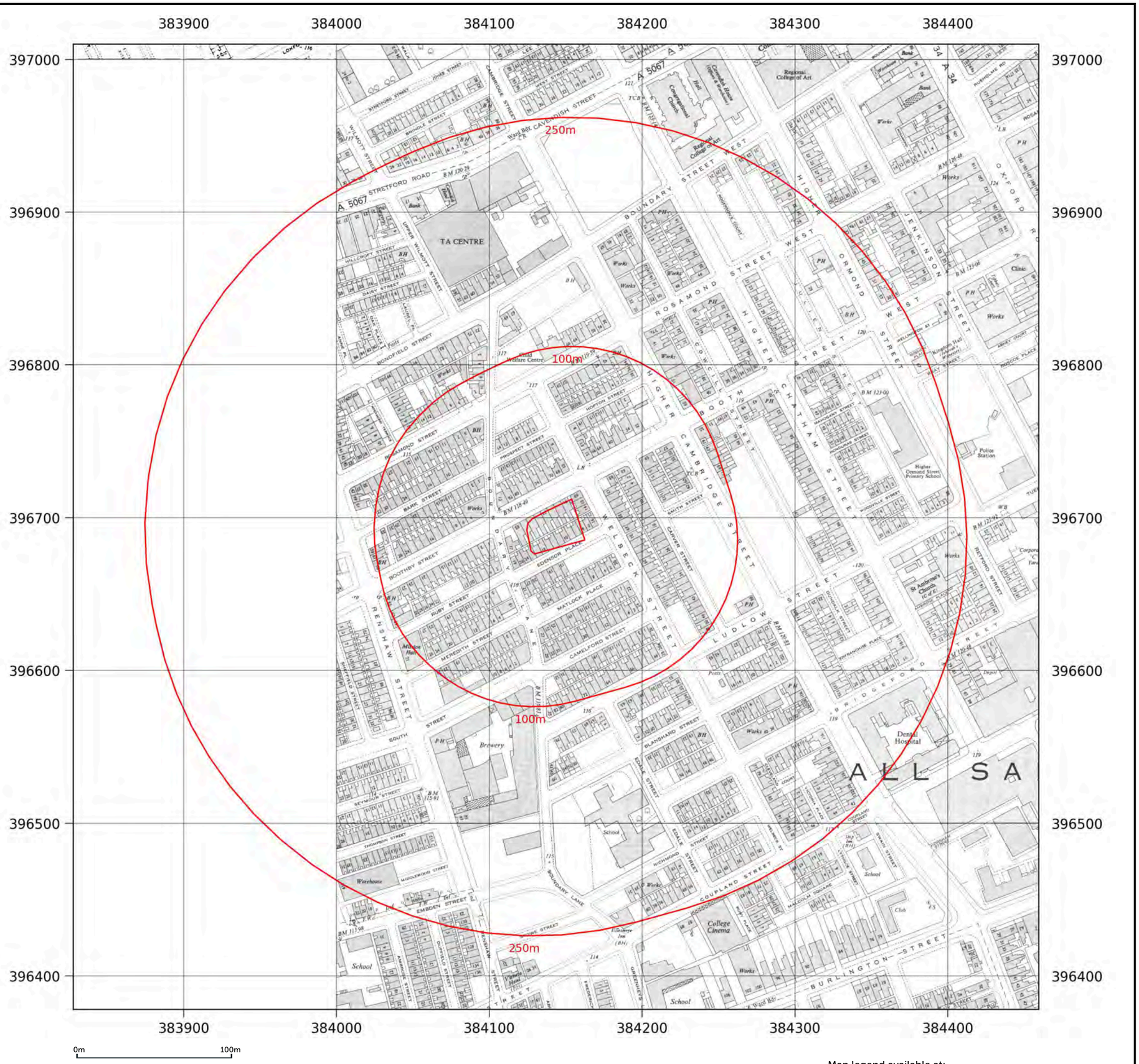
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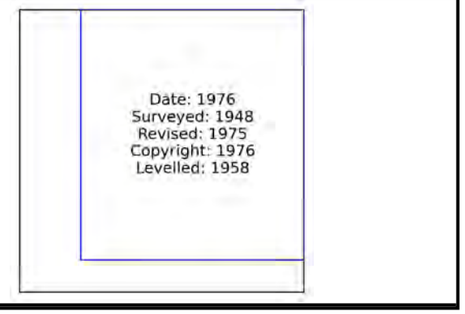
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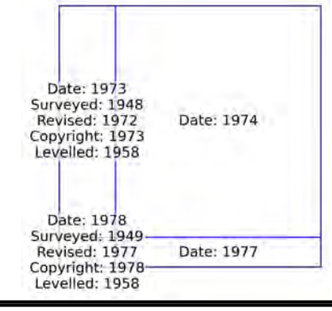
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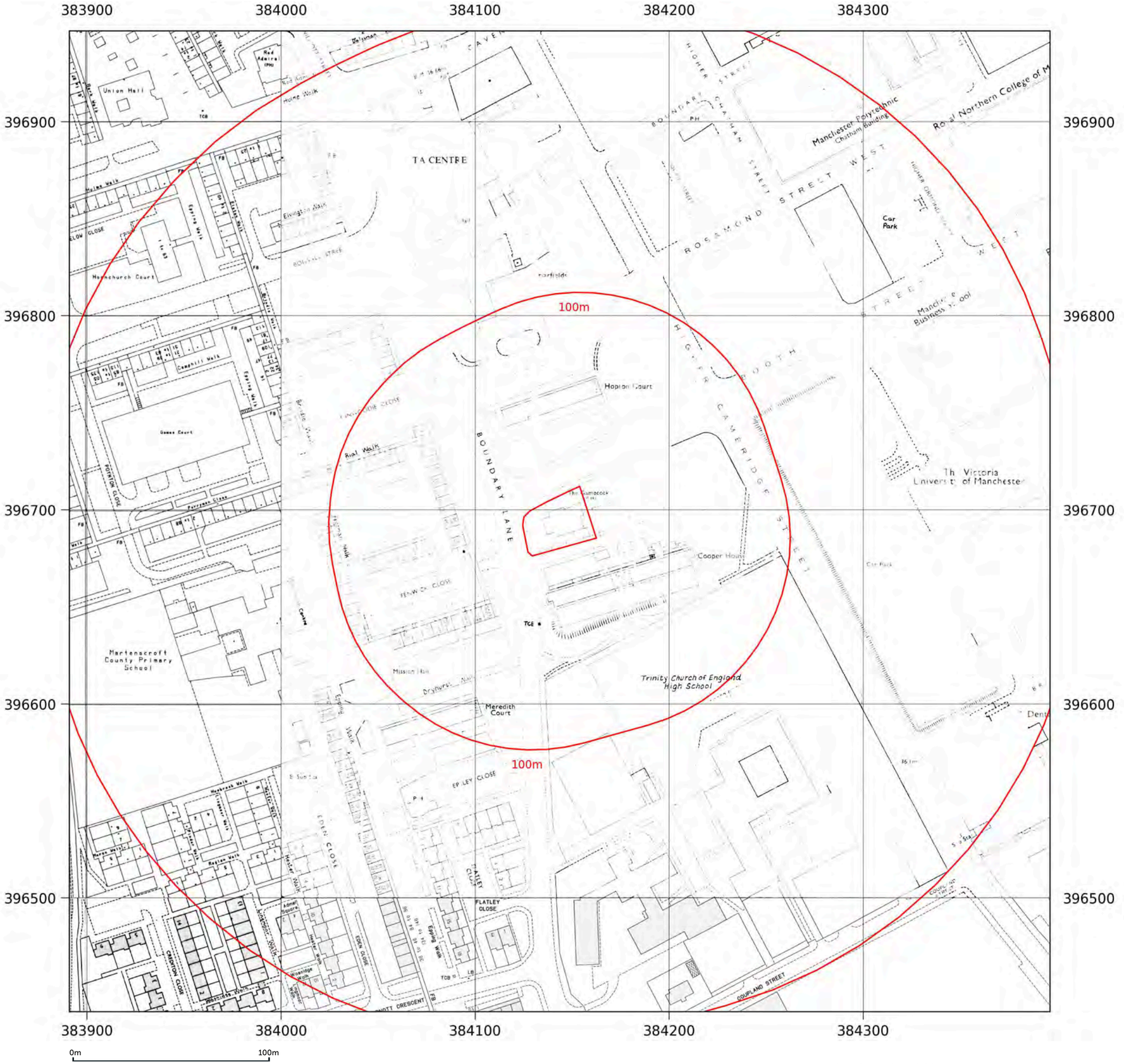
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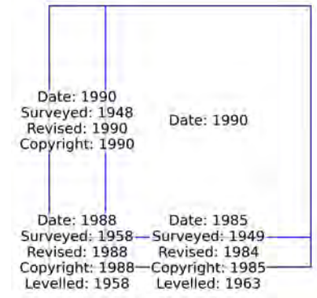
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Map Insight

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Client ref:	1909009.005 - Booth Street West, Manchester
Report ref:	GS-YAH-X8T-PLW-67K
Grid ref:	384142.85, 396692.78
Production date:	16 April 2026

Map name:	National Grid
Map date:	1985-1990
Scale:	1:1,250
Printed at:	1:2,000

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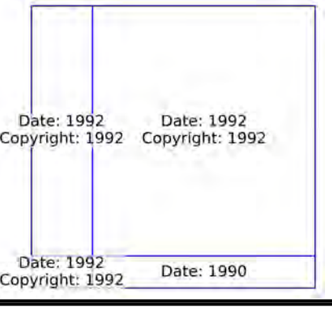
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Map Insight

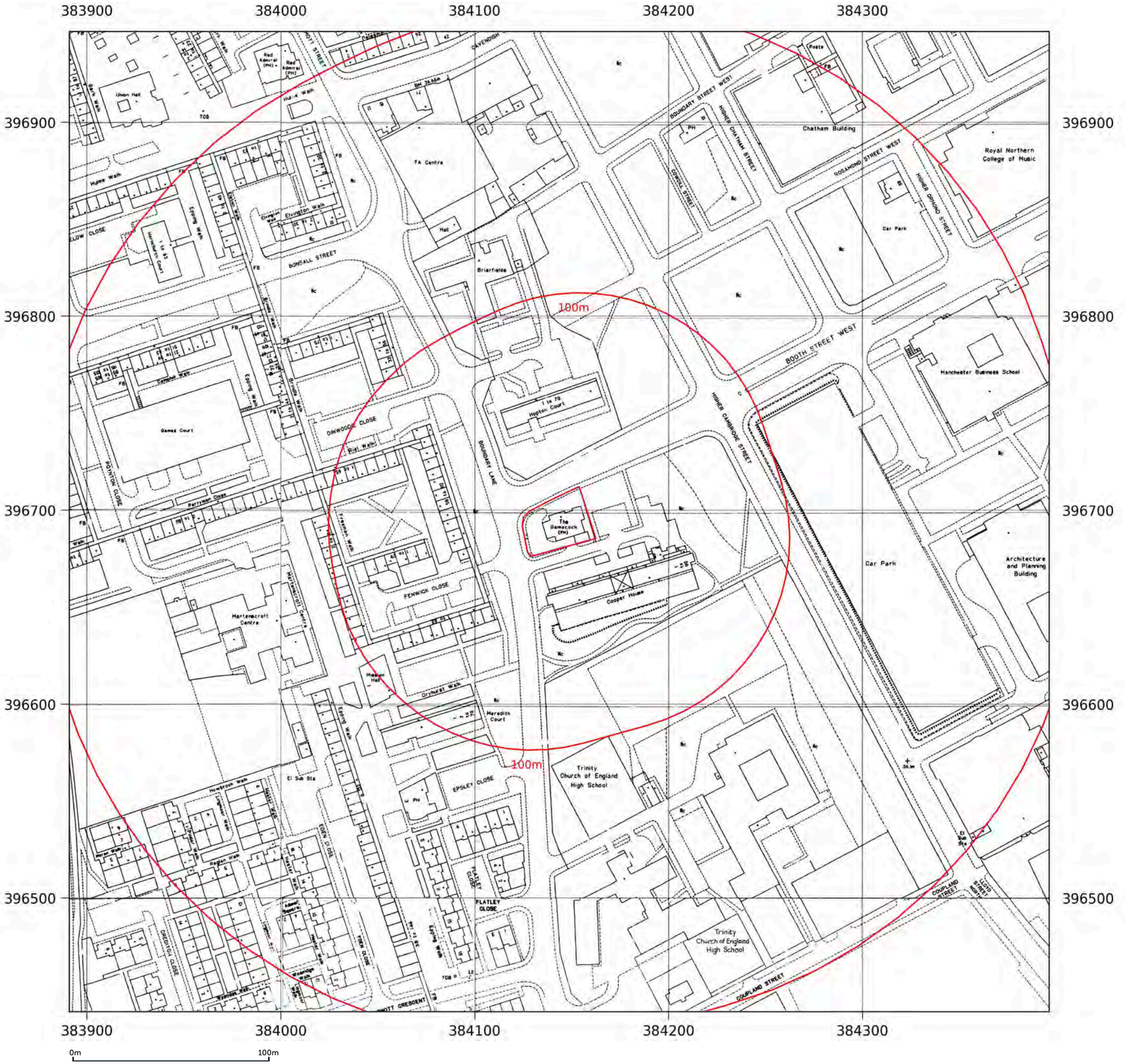
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Production date:	16 April 2026

Map name:	National Grid
Map date:	1990-1992
Scale:	1:1,250
Printed at:	1:2,000

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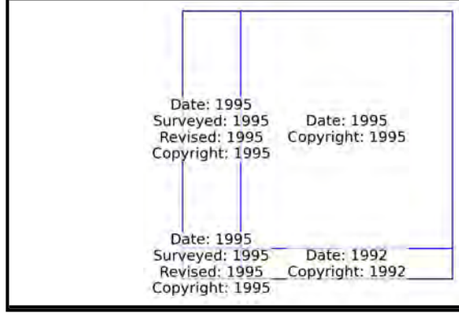
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Client ref:	1909009.005 - Booth Street West, Manchester
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Production date:	16 April 2026

Map name:	National Grid
Map date:	1992-1995
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Printed at:	1:2,000



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Client ref:	1909009.005 - Booth Street West, Manchester
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Production date:	16 April 2026

Map name:	National Grid
Map date:	1993-1995
Scale:	1:1,250
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Client ref:	1909009.005 - Booth Street West, Manchester
Report ref:	GS-YAH-X8T-PLW-67K
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Map name:	LandLine
Map date:	2003
Scale:	1:1,250
Printed at:	1:1,250

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384000 384100 384200 384300

396800 396700 396600

Briarfield Hall
Victoria Halls
Hopton Court
Gamecock (PH)
Cooper House
Trinity Church of England High School
Mission Hall
Manchester Centre
MANCHESTER
HULME WARD
100m
100m
TC8's
0m 50m

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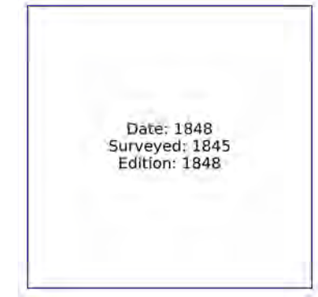
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Map Insight

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Production date:	16 April 2026

Map name:	County Series
Map date:	1848
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383000 383500 384000 384500 385000

398000 397500 397000 396500 396000 395500

0m 500m

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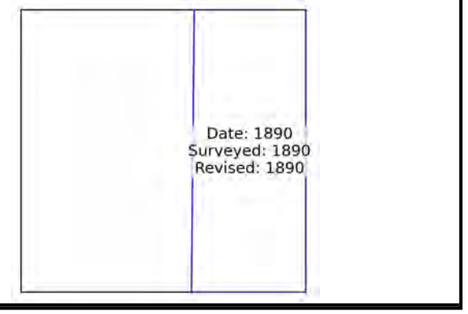
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Map Insight

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Production date:	16 April 2026

Map name:	County Series
Map date:	1890
Scale:	1:10,560
Printed at:	1:10,560

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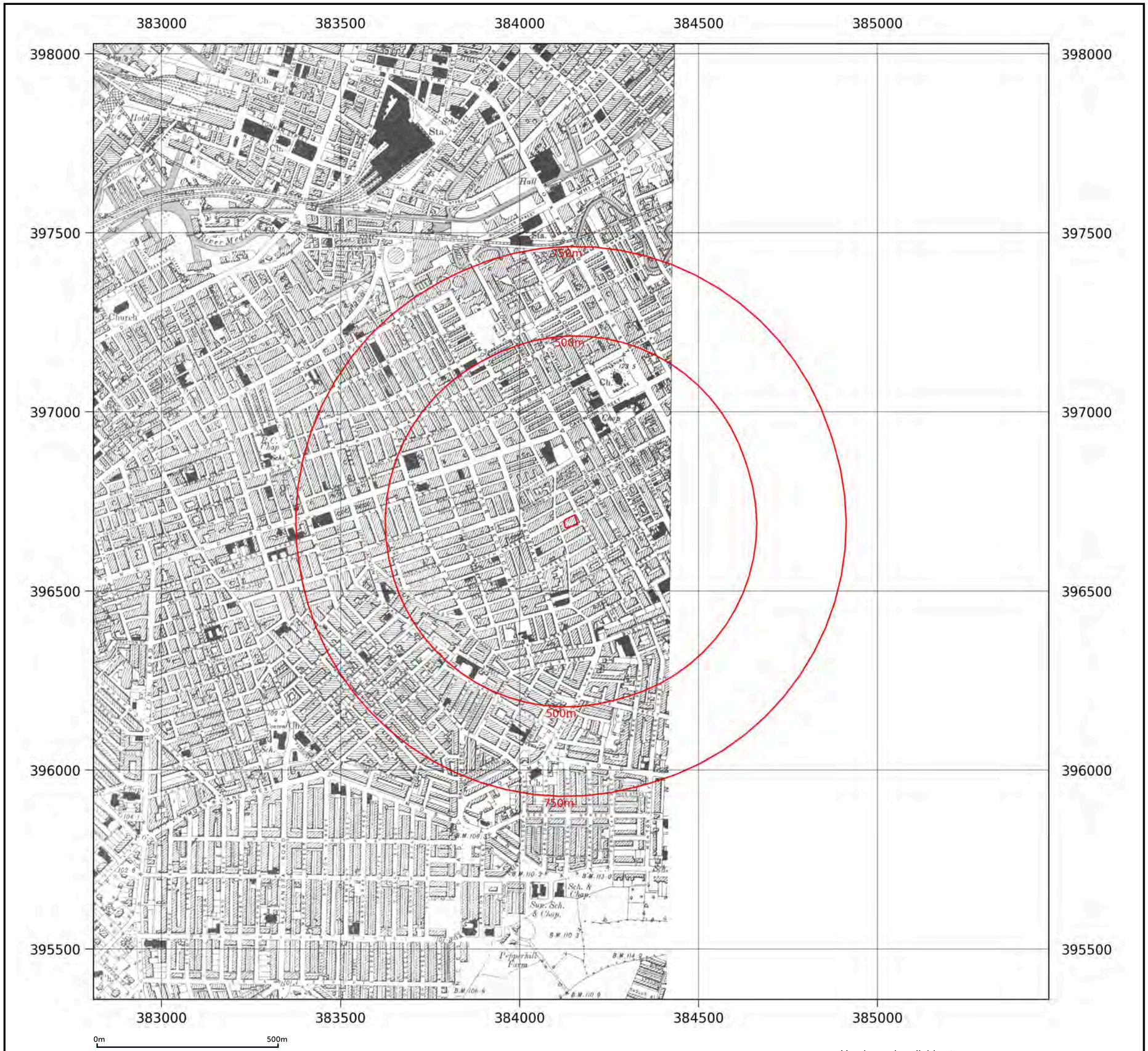
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Client ref:	1909009.005 - Booth Street West, Manchester
Report ref:	GS-YAH-X8T-PLW-67K
Grid ref:	384142.85, 396692.78
Production date:	16 April 2026

Map name:	County Series
Map date:	1896
Scale:	1:10,560
Printed at:	1:10,560

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Client ref:	1909009.005 - Booth Street West, Manchester
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Grid ref:	384142.85, 396692.78
Production date:	16 April 2026

Map name:	County Series
Map date:	1905
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750m

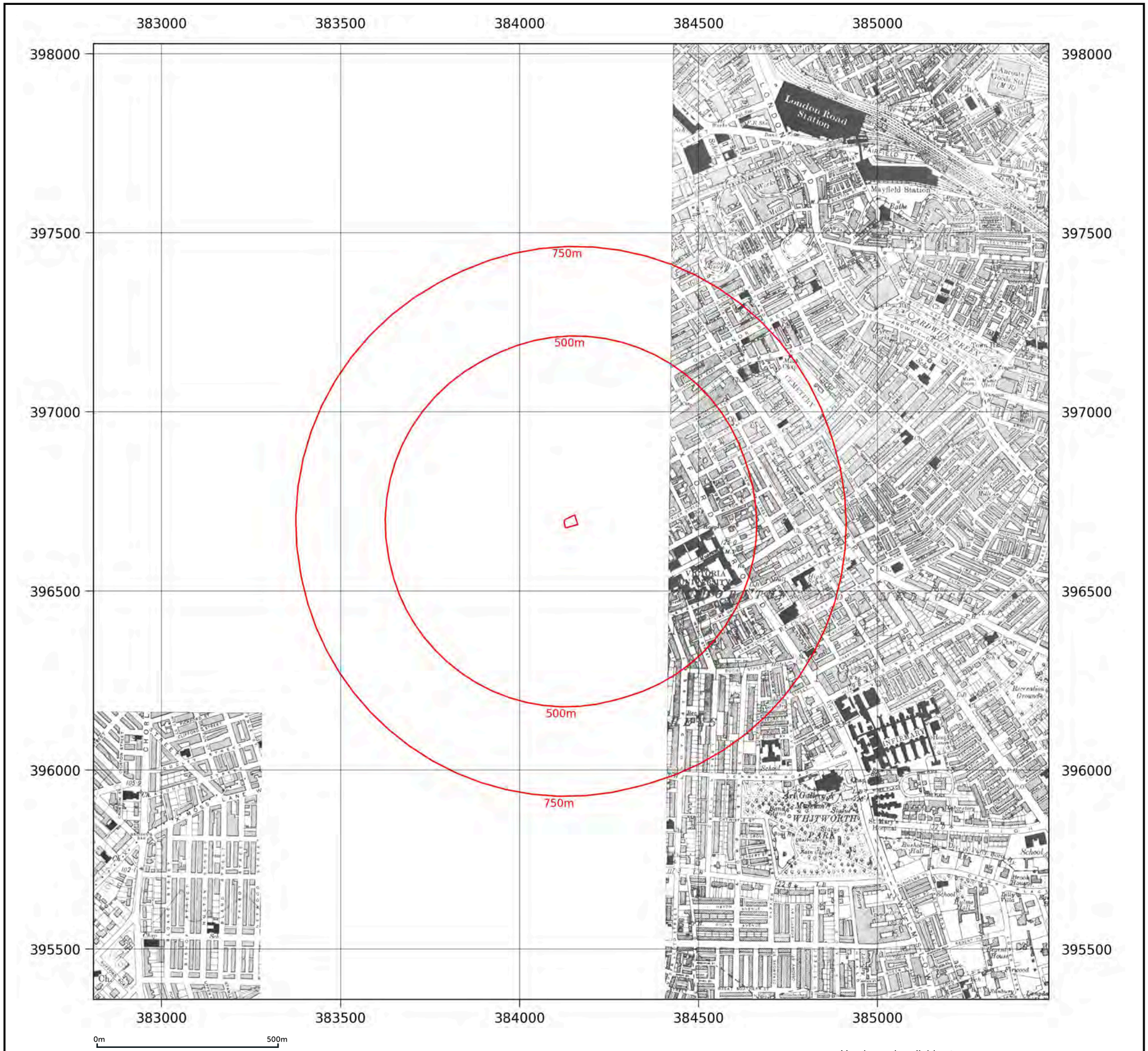
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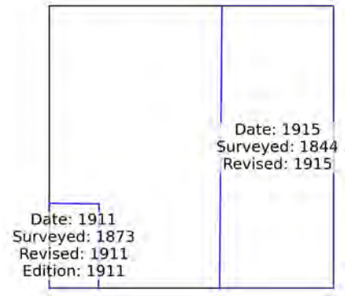
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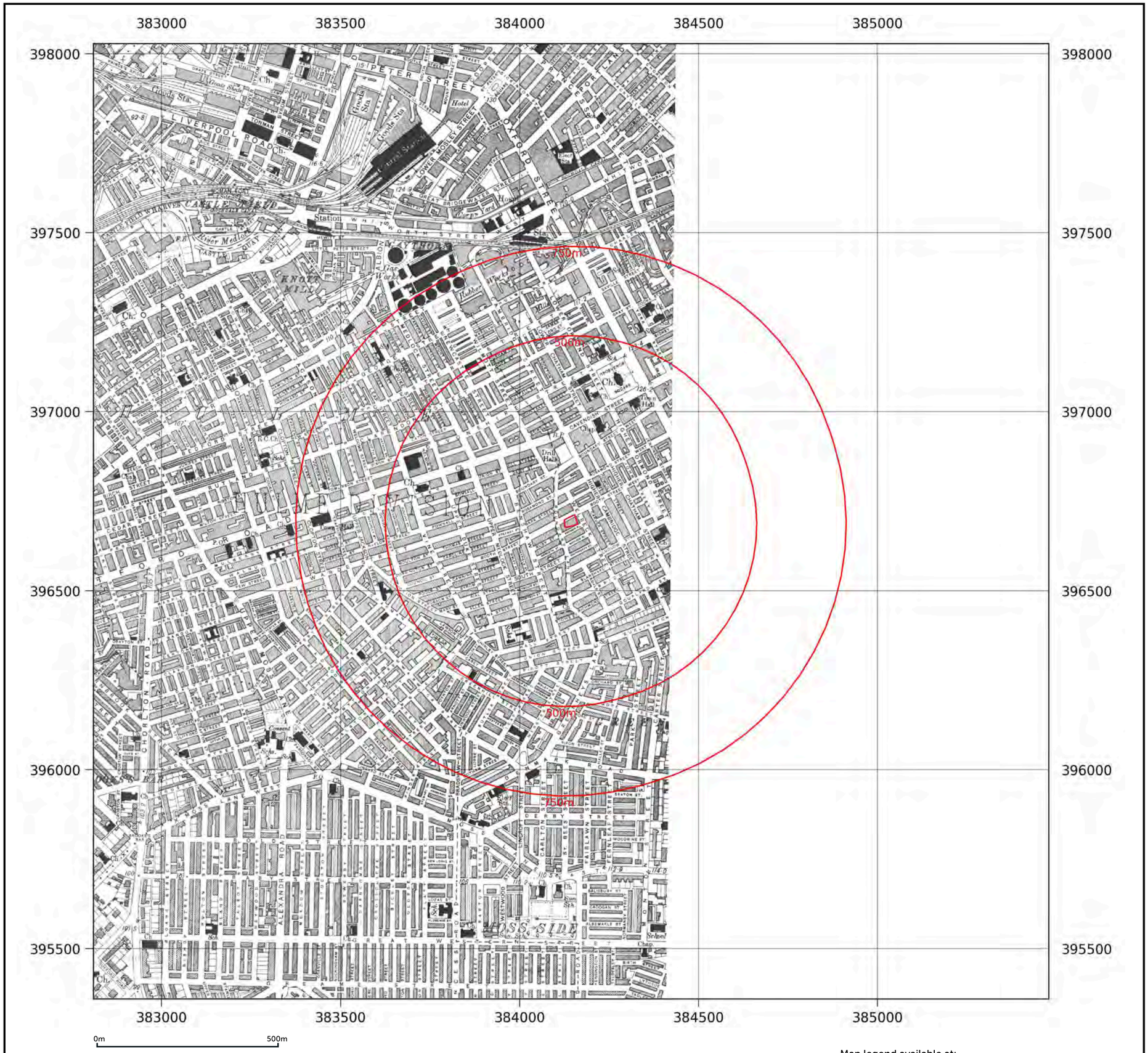
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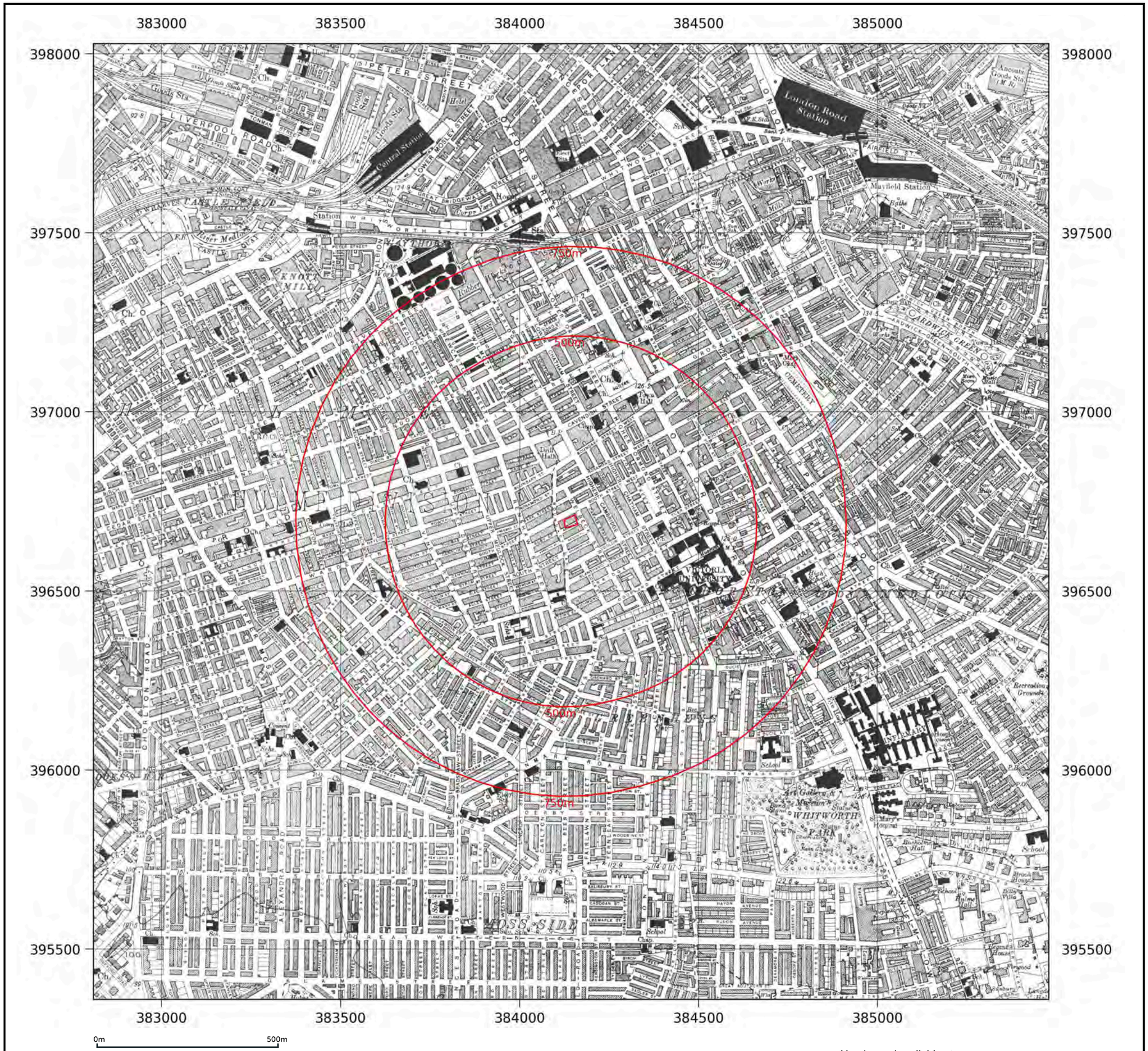
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Report ref:	GS-YAH-X8T-PLW-67K
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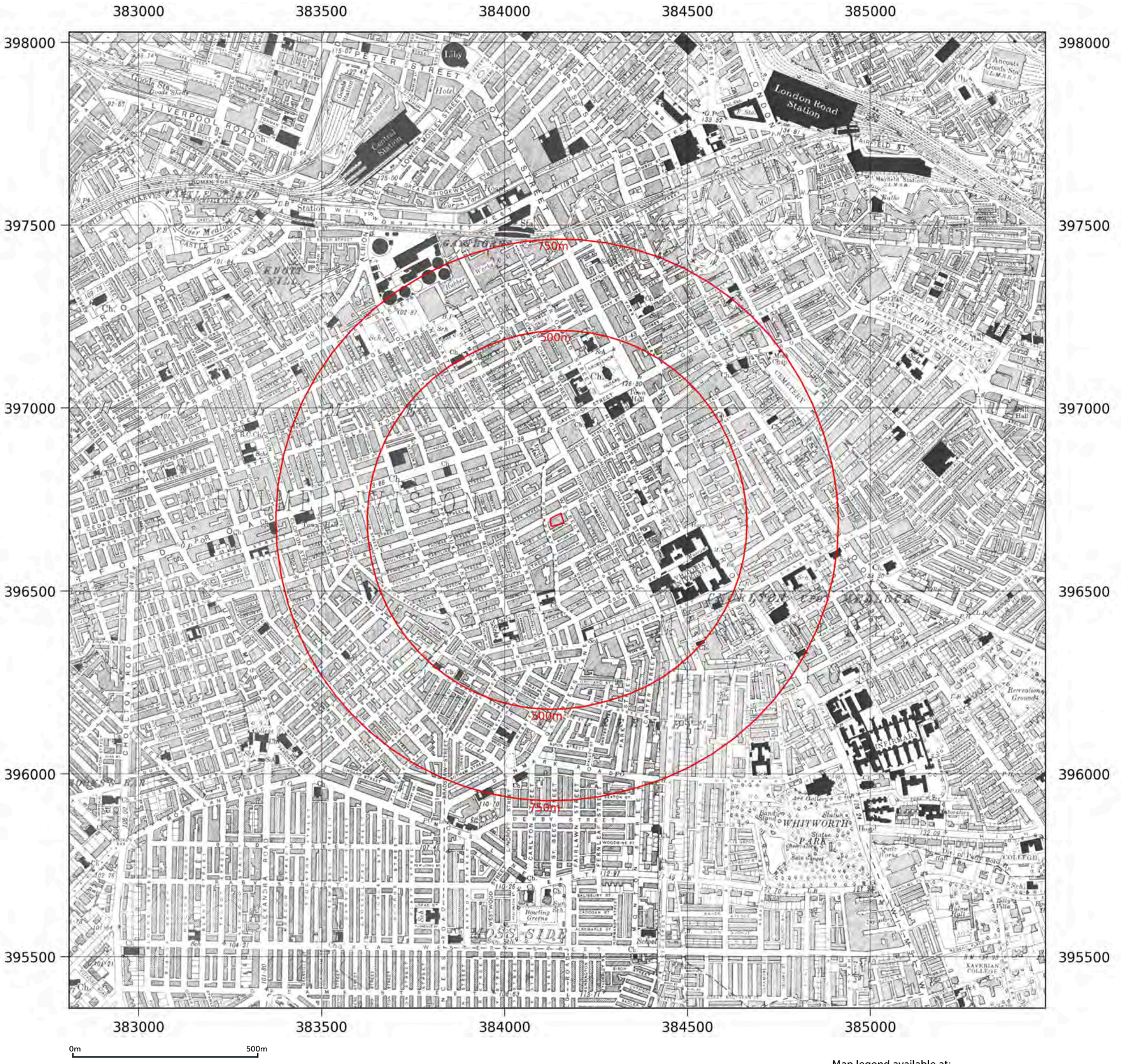
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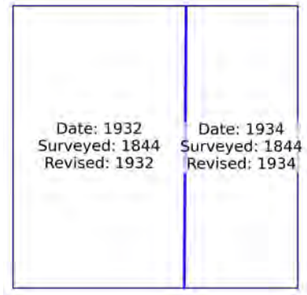
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Grid ref:	384142.85, 396692.78
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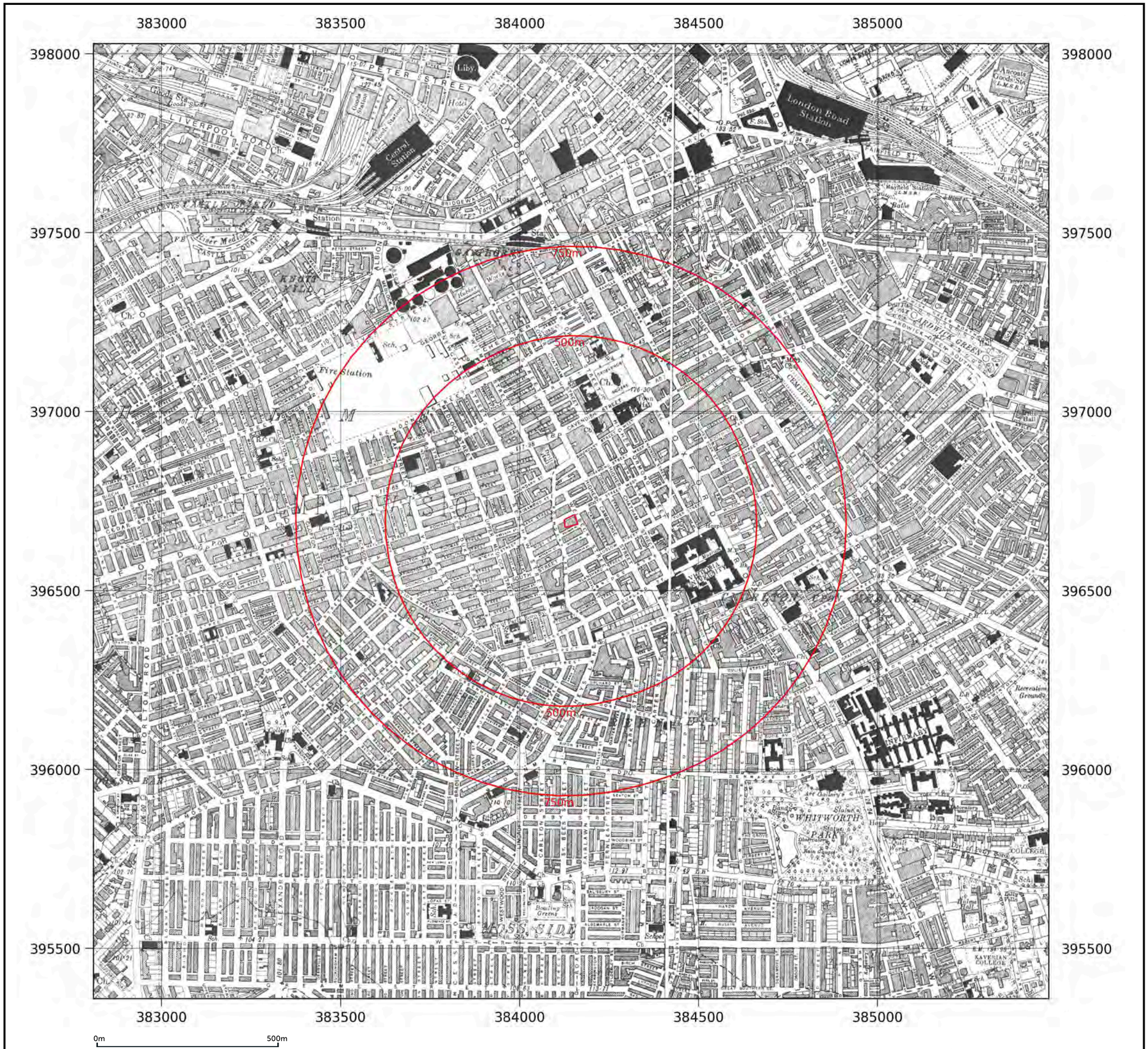
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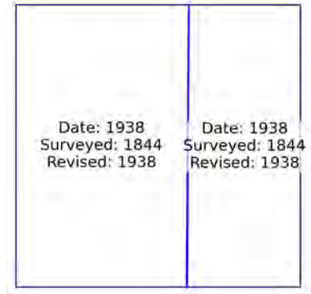
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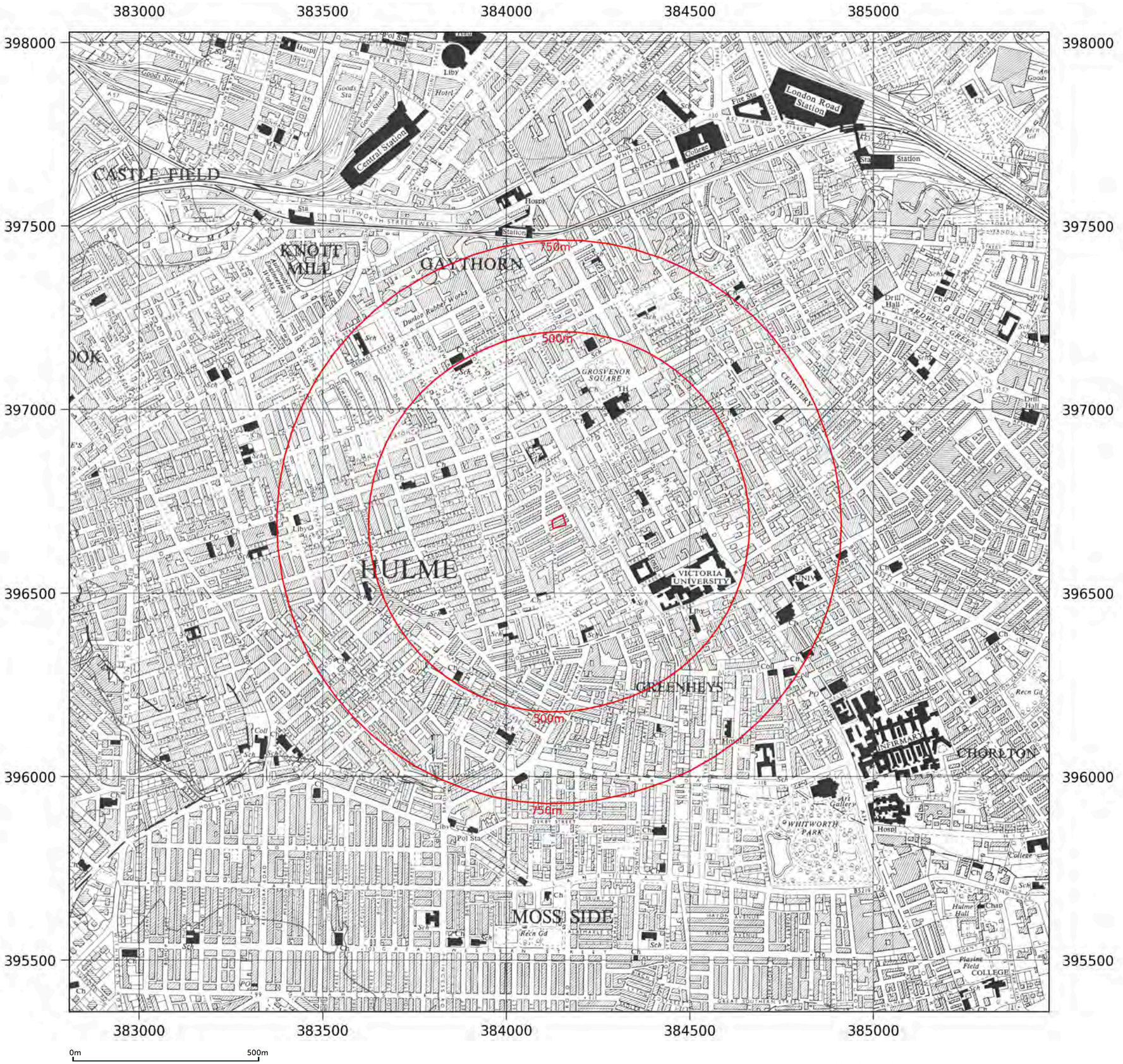
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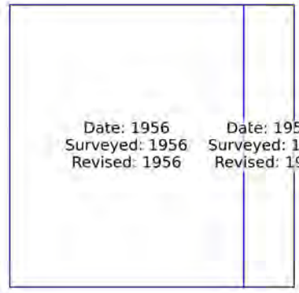
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Map Insight

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Client ref:	1909009.005 - Booth Street West, Manchester
Report ref:	GS-YAH-X8T-PLW-67K
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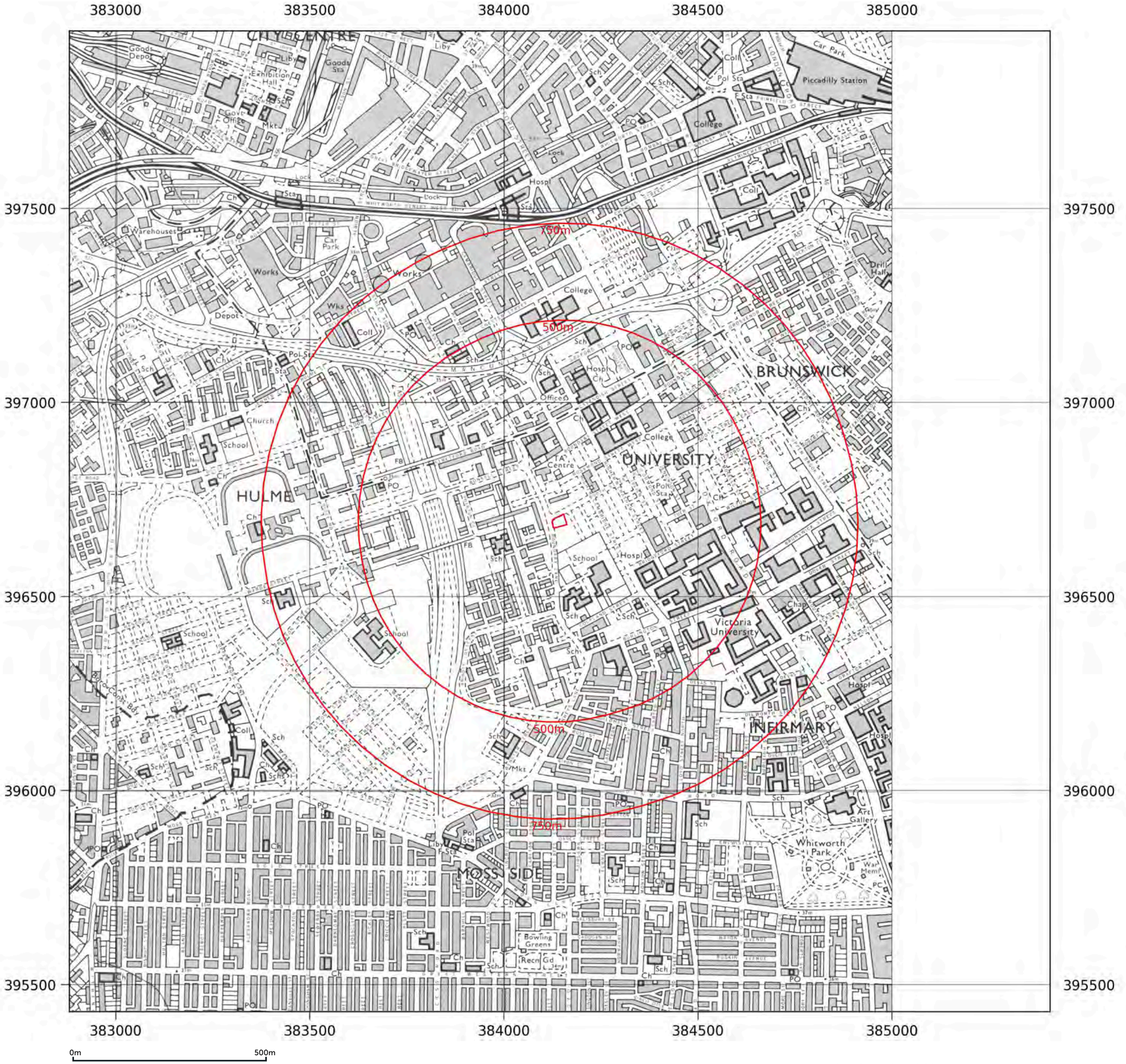
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Client ref:	1909009.005 - Booth Street West, Manchester
Report ref:	GS-YAH-X8T-PLW-67K
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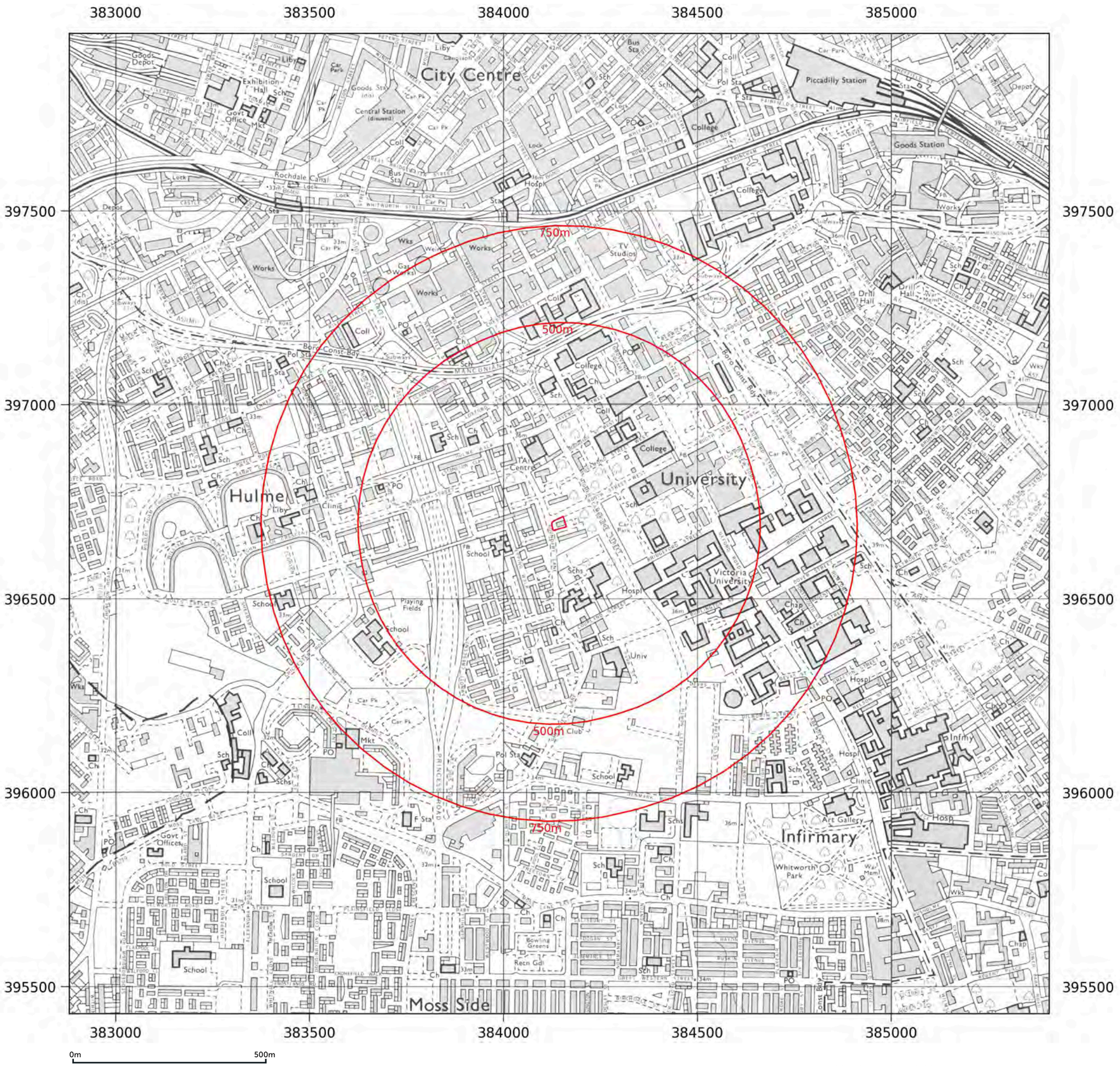
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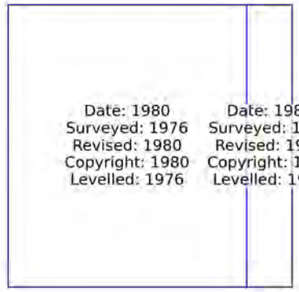
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Grid ref:	384142.85, 396692.78
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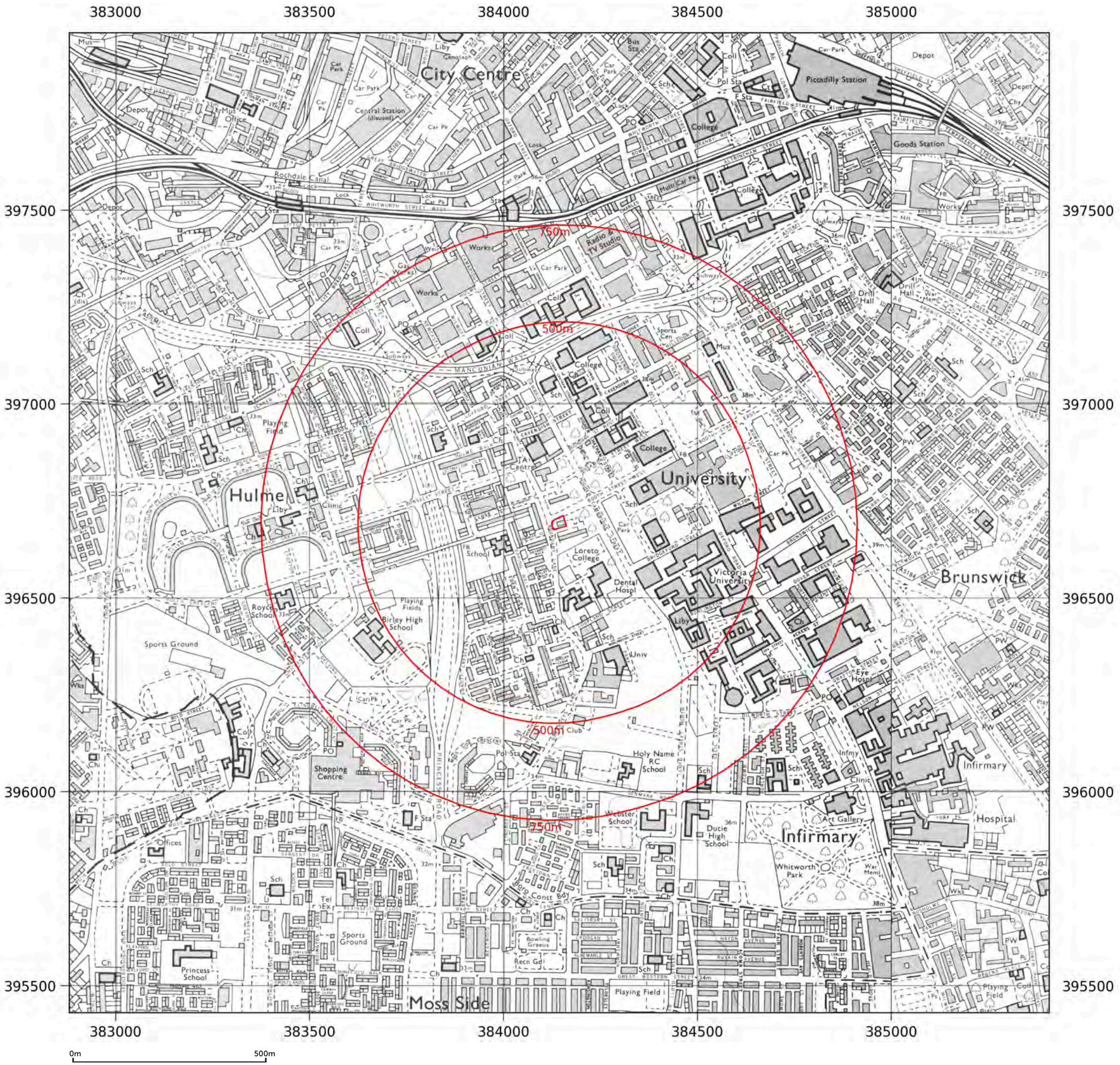
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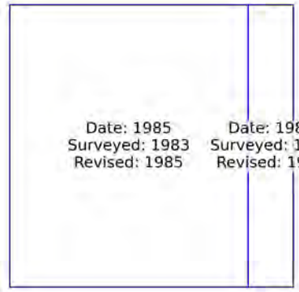
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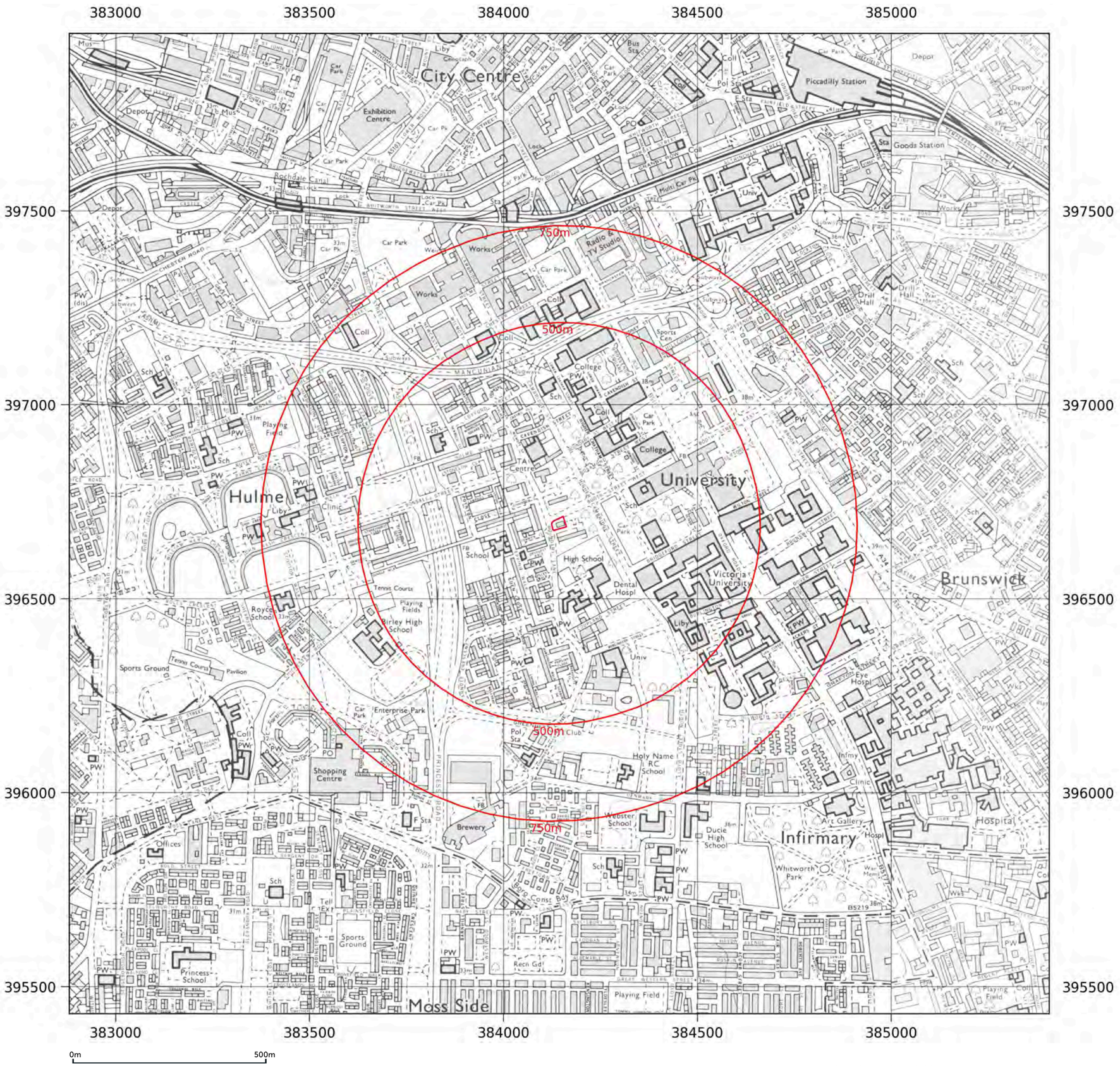
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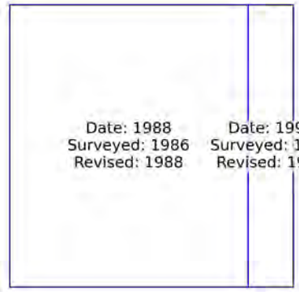
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Map Insight

Site details:	FORMER GAMECOCK, BOOTH STREET WEST, MANCHESTER, M15 6FD
Client ref:	1909009.005 - Booth Street West, Manchester
Report ref:	GS-YAH-X8T-PLW-67K
Grid ref:	384142.85, 396692.78
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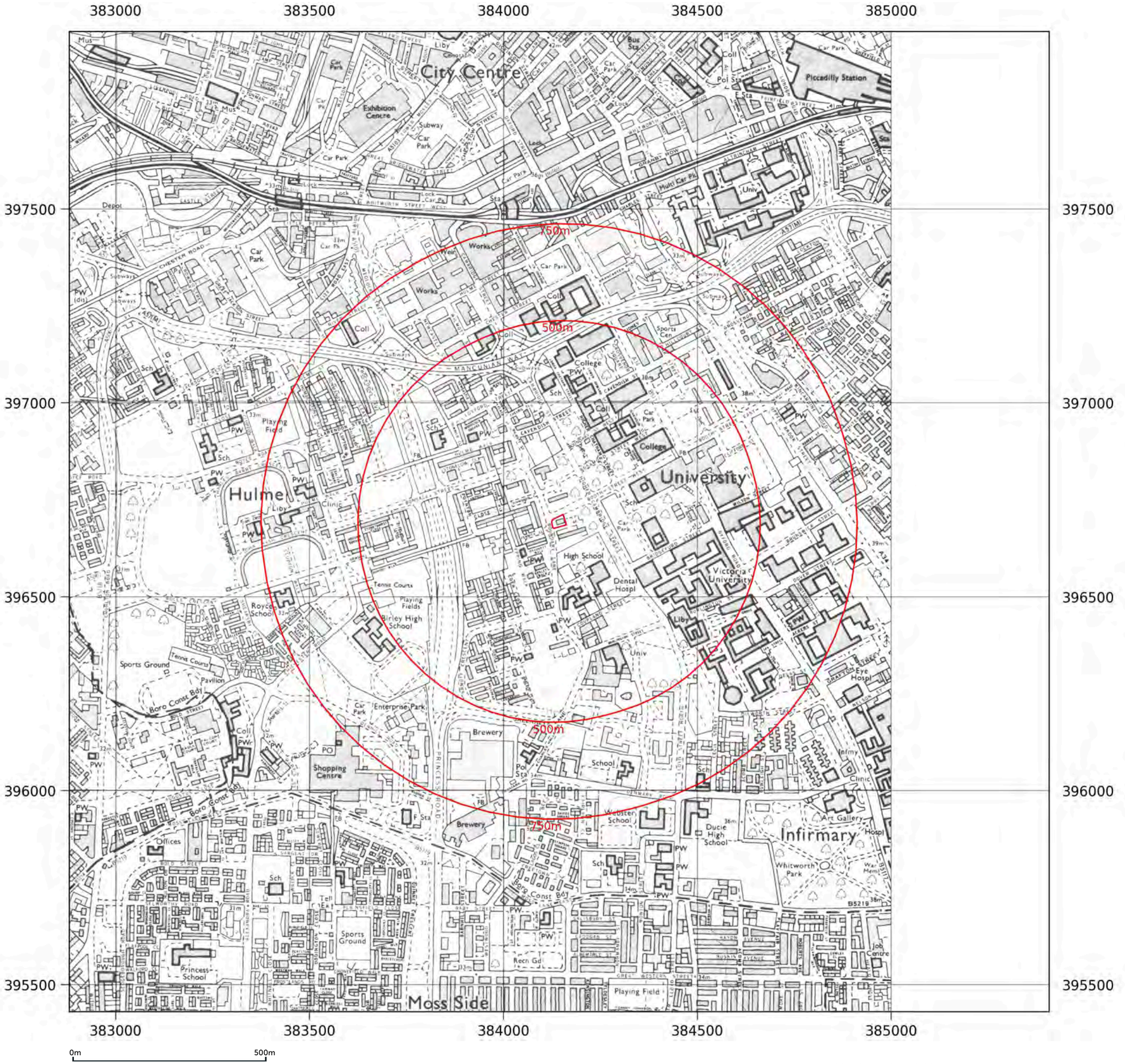
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Grid ref:	384142.85, 396692.78
Production date:	16 April 2026

Map name:	National Grid
Map date:	1994
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Map Insight

Site details:	FORMER GAMECOCK, BOOTH STREET WEST, MANCHESTER, M15 6FD
Client ref:	1909009.005 - Booth Street West, Manchester
Report ref:	GS-YAH-X8T-PLW-67K
Grid ref:	384142.85, 396692.78
Production date:	16 April 2026

Map name:	National Grid
Map date:	2001
Scale:	1:10,000
Printed at:	1:10,000

N W E S



Contact us with any questions at:
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01273 257 755

383000 383500 384000 384500 385000

397500 397000 396500 396000 395500

0m 500m

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Map legend available at:
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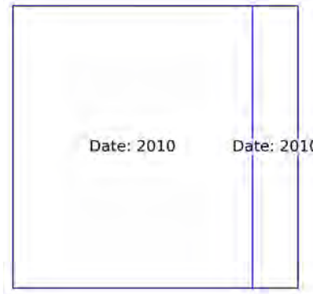
Map legend available at:
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Map Insight

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Production date:	16 April 2026

Map name:	National Grid
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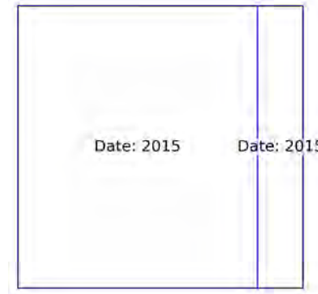
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Map Insight

Site details:	FORMER GAMECOCK, BOOTH STREET WEST, MANCHESTER, M15 6FD
Client ref:	1909009.005 - Booth Street West, Manchester
Report ref:	GS-YAH-X8T-PLW-67K
Grid ref:	384142.85, 396692.78
Production date:	16 April 2026

Map name:	National Grid
Map date:	2015
Scale:	1:10,000
Printed at:	1:10,000

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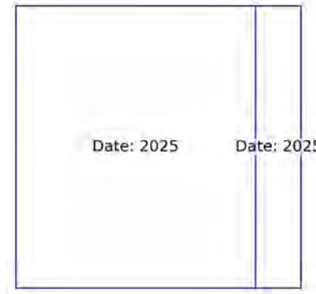
Map legend available at:
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Map Insight

Site details:	FORMER GAMECOCK, BOOTH STREET WEST, MANCHESTER, M15 6FD
Client ref:	1909009.005 - Booth Street West, Manchester
Report ref:	GS-YAH-X8T-PLW-67K
Grid ref:	384142.85, 396692.78
Production date:	16 April 2026

Map name:	National Grid
Map date:	2025
Scale:	1:10,000
Printed at:	1:10,000

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Appendix C

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Enviro+Geo Insight

FORMER GAMECOCK, BOOTH STREET WEST, MANCHESTER, M15 6FD

Order Details

Date: 16/04/2026

Your ref: 1909009.005 - Booth Street West, Manchester

Our Ref: GS-8IF-1D2-FT9-VON

Site Details

Location: 384142 396692

Area: 0.09 ha

Authority: Manchester City Council ↗

Site plan



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Quick Links

Summary of findings p. 2 >

OS MasterMap site plan p.14 >

Aerial image p. 9 >

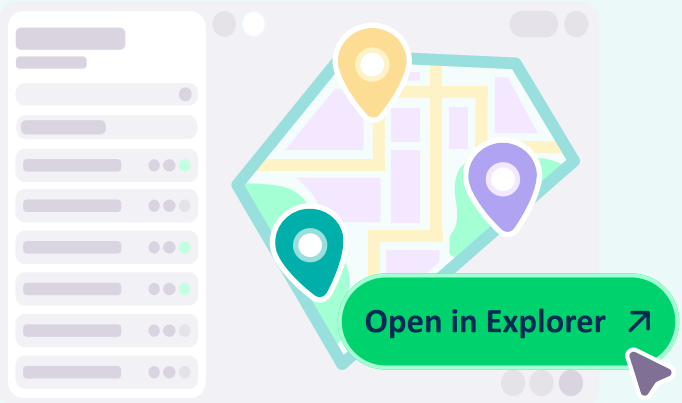
Insight User Guide ↗

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Access the data now in our interactive workspace.

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- Generate insights and visuals quickly
- Revisit and collaborate with your team

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Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	0	0	7	5	-
16 >	1.2 >	Historical tanks >	0	0	3	4	-
17 >	1.3 >	Historical energy features >	0	0	6	16	-
18	1.4	Historical petrol stations	0	0	0	0	-
18 >	1.5 >	Historical garages >	0	0	1	10	-
19	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
20 >	2.1 >	Historical industrial land uses >	0	0	11	6	-
21 >	2.2 >	Historical tanks >	0	0	3	5	-
22 >	2.3 >	Historical energy features >	0	0	6	30	-
23	2.4	Historical petrol stations	0	0	0	0	-
24 >	2.5 >	Historical garages >	0	0	1	22	-
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	0	0	-
27	3.5	Historical waste sites	0	0	0	0	-
27	3.6	Licensed waste sites	0	0	0	0	-
27 >	3.7 >	Waste exemptions >	0	0	17	32	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
32 >	4.1 >	Recent industrial land uses >	0	0	10	-	-
33 >	4.2 >	National Geographic Database (NGD) - Current or recent tanks >	0	0	1	-	-
33	4.3	Current or recent petrol stations	0	0	0	0	-
34	4.4	Electricity cables	0	0	0	0	-
34	4.5	Gas pipelines	0	0	0	0	-

34	4.6	Sites determined as Contaminated Land	0	0	0	0	-
34	4.7	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
34	4.8	Regulated explosive sites	0	0	0	0	-
35	4.9	Hazardous substance storage/usage	0	0	0	0	-
35	4.10	Historical licensed industrial activities (IPC)	0	0	0	0	-
35 >	**4.11 >**	**Licensed industrial activities (Part A(1)) >**	0	0	0	1	-
35	4.12	Licensed pollutant release (Part A(2)/B)	0	0	0	0	-
36 >	**4.13 >**	**Radioactive Substance Authorisations >**	0	0	0	18	-
39 >	**4.14 >**	**Licensed Discharges to controlled waters >**	0	0	0	12	-
40	4.15	Pollutant release to surface waters (Red List)	0	0	0	0	-
41	4.16	Pollutant release to public sewer	0	0	0	0	-
41	4.17	List 1 Dangerous Substances	0	0	0	0	-
41	4.18	List 2 Dangerous Substances	0	0	0	0	-
41	4.19	Pollution Incidents (EA/NRW)	0	0	0	0	-
41	4.20	Pollution inventory substances	0	0	0	0	-
42	4.21	Pollution inventory waste transfers	0	0	0	0	-
42 >	**4.22 >**	**Pollution inventory radioactive waste >**	0	0	0	1	-

Page	Section	**Hydrogeology >**	On site	0-50m	50-250m	250-500m	500-2000m
43 >	**5.1 >**	**Superficial aquifer >**	Identified (within 500m)				
45 >	**5.2 >**	**Bedrock aquifer >**	Identified (within 500m)				
47 >	**5.3 >**	**Groundwater vulnerability >**	Identified (within 50m)				
48	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
48	5.5	Groundwater vulnerability- local information	None (within 0m)				
49 >	**5.6 >**	**Groundwater abstractions >**	0	0	0	8	39
61 >	**5.7 >**	**Surface water abstractions >**	0	0	0	0	2
62	5.8	Potable abstractions	0	0	0	0	0
62 >	**5.9 >**	**Source Protection Zones >**	1	0	0	0	-
62	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	**Hydrology >**	On site	0-50m	50-250m	250-500m	500-2000m

63 >	6.1 >	Water Network (OS NGD) >	0	0	1	-	-
64	6.2	Surface water features	0	0	0	-	-
64 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
64 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
65 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
66 >	7.1 >	Risk of flooding from rivers and the sea >	Low (within 50m)				
67	7.2	Historical Flood Events	0	0	0	-	-
67	7.3	Flood Defences	0	0	0	-	-
67	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
67	7.5	Flood Storage Areas	0	0	0	-	-
68 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
69	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
70 >	8.1 >	Surface water flooding >	1 in 100 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
72 >	9.1 >	Groundwater flooding >	High (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
73	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
73	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
73	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
73	10.4	Special Protection Areas (SPA)	0	0	0	0	0
74	10.5	National Nature Reserves (NNR)	0	0	0	0	0
74	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
74	10.7	Designated Ancient Woodland	0	0	0	0	0
74	10.8	Biosphere Reserves	0	0	0	0	0
75	10.9	Forest Parks	0	0	0	0	0
75	10.10	Marine Conservation Zones	0	0	0	0	0
75	10.11	Green Belt	0	0	0	0	0

75	10.12	Proposed Ramsar sites	0	0	0	0	0
75	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
76	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
76	10.15	Nitrate Sensitive Areas	0	0	0	0	0
76 >	10.16 >	Nitrate Vulnerable Zones >	0	0	0	0	2
77 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
78	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
79	11.1	World Heritage Sites	0	0	0	-	-
79	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
79	11.3	National Parks	0	0	0	-	-
79	11.4	Listed Buildings	0	0	0	-	-
80	11.5	Conservation Areas	0	0	0	-	-
80	11.6	Scheduled Ancient Monuments	0	0	0	-	-
80	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
81 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
82	12.2	Open Access Land	0	0	0	-	-
82	12.3	Tree Felling Licences	0	0	0	-	-
82	12.4	Environmental Stewardship Schemes	0	0	0	-	-
82	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
83	13.1	Priority Habitat Inventory	0	0	0	-	-
83	13.2	Habitat Networks	0	0	0	-	-
83	13.3	Open Mosaic Habitat	0	0	0	-	-
83	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
84 >	14.1 >	10k Availability >	Identified (within 500m)				
85 >	14.2 >	Artificial and made ground (10k) >	0	0	0	4	-

87 >	14.3 >	Superficial geology (10k) >	1	0	1	2	-
88	14.4	Landslip (10k)	0	0	0	0	-
89 >	14.5 >	Bedrock geology (10k) >	1	0	0	2	-
90 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	0	1	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
91 >	15.1 >	50k Availability >	Identified (within 500m)				
92	15.2	Artificial and made ground (50k)	0	0	0	0	-
92	15.3	Artificial ground permeability (50k)	0	0	-	-	-
93 >	15.4 >	Superficial geology (50k) >	1	0	1	2	-
94 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
94	15.6	Landslip (50k)	0	0	0	0	-
94	15.7	Landslip permeability (50k)	None (within 50m)				
95 >	15.8 >	Bedrock geology (50k) >	1	0	0	1	-
96 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
96 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	0	1	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
97 >	16.1 >	BGS Boreholes >	0	0	8	-	-
Page	Section	Natural ground subsidence >					
99 >	17.1 >	Shrink swell clays >	Negligible (within 50m)				
100 >	17.2 >	Running sands >	Very low (within 50m)				
101 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
102 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
103 >	17.5 >	Landslides >	Very low (within 50m)				
104 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings	On site	0-50m	50-250m	250-500m	500-2000m
106	18.1	BritPits	0	0	0	0	-
106	18.2	Surface ground workings	0	0	0	-	-
106	18.3	Underground workings	0	0	0	0	0
106	18.4	Underground mining extents	0	0	0	0	-

107	18.5	Historical Mineral Planning Areas	0	0	0	0	-
107	18.6	Non-coal mining	0	0	0	0	0
107 >	**18.7 >**	**JPB mining areas >**	Identified (within 0m)				
107	18.8	The Coal Authority non-coal mining	0	0	0	0	-
108	18.9	Researched mining	0	0	0	0	-
108	18.10	Mining record office plans	0	0	0	0	-
108	18.11	BGS mine plans	0	0	0	0	-
108 >	**18.12 >**	**Coal mining >**	Identified (within 0m)				
109	18.13	Brine areas	None (within 0m)				
109	18.14	Gypsum areas	None (within 0m)				
109	18.15	Tin mining	None (within 0m)				
109	18.16	Clay mining	None (within 0m)				
Page	Section	**Ground cavities and sinkholes >**	On site	0-50m	50-250m	250-500m	500-2000m
110	19.1	Natural cavities	0	0	0	0	-
111 >	**19.2 >**	**Mining cavities >**	0	0	0	0	1
111	19.3	Reported recent incidents	0	0	0	0	-
111	19.4	Historical incidents	0	0	0	0	-
Page	Section	**Radon >**					
113 >	**20.1 >**	**Radon >**	Less than 1% (within 0m)				
Page	Section	**Soil chemistry >**	On site	0-50m	50-250m	250-500m	500-2000m
115 >	**21.1 >**	**BGS Estimated Background Soil Chemistry >**	1	0	-	-	-
115 >	**21.2 >**	**BGS Estimated Urban Soil Chemistry >**	2	4	-	-	-
116	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
117	22.1	Underground railways (London)	0	0	0	-	-
117	22.2	Underground railways (Non-London)	0	0	0	-	-
117	22.3	Railway tunnels	0	0	0	-	-
117	22.4	Historical railway and tunnel features	0	0	0	-	-
117	22.5	Royal Mail tunnels	0	0	0	-	-

118	22.6	Historical railways	0	0	0	-	-
118	22.7	Railways	0	0	0	-	-
118	22.8	Crossrail 2	0	0	0	0	-
118	22.9	HS2	0	0	0	0	-

Recent aerial photograph



Capture Date: 07/04/2023

Site Area: 0.09ha

Recent site history - 2022 aerial photograph



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Capture Date: 18/10/2022

Site Area: 0.09ha

Recent site history - 2015 aerial photograph



Capture Date: 11/06/2015

Site Area: 0.09ha

Recent site history - 2009 aerial photograph



Capture Date: 02/06/2009

Site Area: 0.09ha

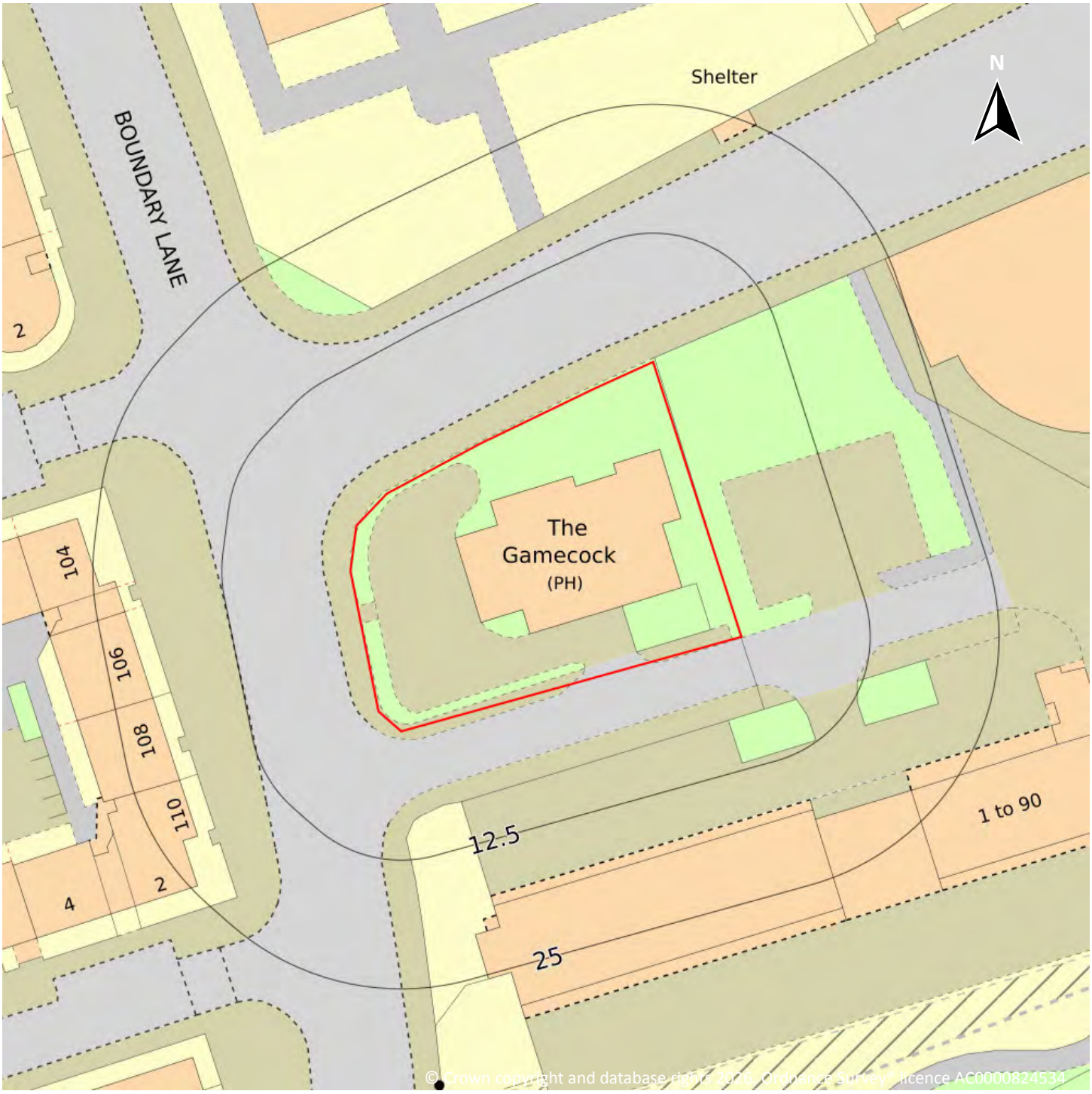
Recent site history - 2000 aerial photograph



Capture Date: 27/06/2000

Site Area: 0.09ha

OS MasterMap site plan



Site Area: 0.09ha

1 Past land use



1.1 Historical industrial land uses

Records within 500m	12

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 15 >**

ID	Location	Land use	Dates present	Group ID
B	204m SE	Hospital	1985 - 1994	880437

ID	Location	Land use	Dates present	Group ID
B	204m SE	Hospital	1980	896413
B	204m SE	Hospital	1956 - 1972	913242
C	241m E	Unspecified Works	1916	834958
C	249m E	Police Station	1972	858799
D	250m E	Corporation Yard	1934 - 1938	903501
D	250m E	Corporation Yard	1915	975730
D	254m E	Corporation Yard	1923	889227
E	287m N	Hospital	1972	852919
F	305m E	Hospital	1934 - 1938	863071
G	310m SE	Brewery	1923	808325
F	316m E	Hospital	1915	911149

This data is sourced from Ordnance Survey® / Groundsure.

1.2 Historical tanks

Records within 500m	**7**

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 15 >**

ID	Location	Land use	Dates present	Group ID
1	152m S	Unspecified Tank	1891	115707
B	221m SE	Unspecified Tank	1891	115129
3	249m SW	Unspecified Tank	1891	115708
I	345m SE	Unspecified Tank	1949	115113
I	354m SE	Unspecified Tank	1948	131212
I	354m SE	Unspecified Tank	1951	155173
G	360m SE	Unspecified Tank	1964 - 1977	135402

This data is sourced from Ordnance Survey® / Groundsure.

1.3 Historical energy features

Records within 500m	22

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 15 >**

ID	Location	Land use	Dates present	Group ID
A	140m SW	Electricity Substation	1976	83870
A	149m SW	Electricity Substation	1995	70843
A	149m SW	Electricity Substation	1997	75125
B	245m SE	Electricity Substation	1995	73417
B	245m SE	Electricity Substation	1997	75094
B	246m SE	Electricity Substation	1976	85410
4	270m S	Electricity Substation	1977 - 1993	87317
C	275m E	Electricity Substation	1948 - 1951	85102
5	278m E	Electricity Substation	1976 - 1997	75515
H	330m S	Electricity Substation	1985	79093
H	331m S	Electricity Substation	1985 - 1998	80610
J	348m SW	Electricity Substation	1978	69955
J	348m SW	Electricity Substation	1988 - 1990	76555
J	348m SW	Electricity Substation	1995 - 1996	88870
K	349m NW	Electricity Substation	1973	78909
K	350m NW	Electricity Substation	1995 - 1997	86061
K	350m NW	Electricity Substation	1990	72684
L	412m NE	Electricity Substation	1995 - 1998	72444
L	413m NE	Electricity Substation	1990	66731
M	455m E	Electricity Substation	1987	89212

ID	Location	Land use	Dates present	Group ID
M	457m E	Electricity Substation	1989	87185
M	457m E	Electricity Substation	1992	82347

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	11

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 15 >**

ID	Location	Land use	Dates present	Group ID
2	204m SW	Garage	1955	22502
E	298m N	Garage	1965	27960
E	299m N	Garage	1962	28911
E	304m N	Garage	1948	26397
E	305m N	Garage	1953	24511
E	305m N	Garage	1955	30641
6	335m S	Garage	1985 - 1998	25604
7	384m S	Garage	1951 - 1963	30026
8	393m SE	Garage	1949 - 1951	30252

ID	Location	Land use	Dates present	Group ID
9	414m NE	Garage	1962 - 1965	30209
10	428m SE	Garage	1951 - 1963	25176

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



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2.1 Historical industrial land uses

Records within 500m	17

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 20 >**

ID	Location	Land Use	Date	Group ID
B	204m SE	Hospital	1972	913242
B	204m SE	Hospital	1956	913242
B	204m SE	Hospital	1988	880437

ID	Location	Land Use	Date	Group ID
B	204m SE	Hospital	1980	896413
B	204m SE	Hospital	1985	880437
B	204m SE	Hospital	1994	880437
C	241m E	Unspecified Works	1916	834958
C	249m E	Police Station	1972	858799
D	250m E	Corporation Yard	1938	903501
D	250m E	Corporation Yard	1934	903501
D	250m E	Corporation Yard	1915	975730
D	254m E	Corporation Yard	1923	889227
G	287m N	Hospital	1972	852919
H	305m E	Hospital	1938	863071
H	305m E	Hospital	1934	863071
I	310m SE	Brewery	1923	808325
H	316m E	Hospital	1915	911149

This data is sourced from Ordnance Survey® / Groundsure.

2.2 Historical tanks

Records within 500m	**8**

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 20 >**

ID	Location	Land Use	Date	Group ID
1	152m S	Unspecified Tank	1891	115707
B	221m SE	Unspecified Tank	1891	115129
3	249m SW	Unspecified Tank	1891	115708
L	345m SE	Unspecified Tank	1949	115113
L	354m SE	Unspecified Tank	1948	131212
L	354m SE	Unspecified Tank	1951	155173

ID	Location	Land Use	Date	Group ID
I	360m SE	Unspecified Tank	1964	135402
I	360m SE	Unspecified Tank	1977	135402

This data is sourced from Ordnance Survey® / Groundsure.

2.3 Historical energy features

Records within 500m	**36**

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 20 >**

ID	Location	Land Use	Date	Group ID
A	140m SW	Electricity Substation	1976	83870
A	149m SW	Electricity Substation	1995	70843
A	149m SW	Electricity Substation	1997	75125
B	245m SE	Electricity Substation	1995	73417
B	245m SE	Electricity Substation	1997	75094
B	246m SE	Electricity Substation	1976	85410
E	270m S	Electricity Substation	1977	87317
E	270m S	Electricity Substation	1985	87317
E	270m S	Electricity Substation	1985	87317
E	271m S	Electricity Substation	1993	87317
C	275m E	Electricity Substation	1949	85102
C	276m E	Electricity Substation	1948	85102
C	276m E	Electricity Substation	1951	85102
F	278m E	Electricity Substation	1995	75515
F	278m E	Electricity Substation	1997	75515
F	278m E	Electricity Substation	1976	75515
J	330m S	Electricity Substation	1985	79093
J	331m S	Electricity Substation	1998	80610

ID	Location	Land Use	Date	Group ID
J	331m S	Electricity Substation	1995	80610
J	331m S	Electricity Substation	1993	80610
J	331m S	Electricity Substation	1985	80610
M	348m SW	Electricity Substation	1978	69955
M	348m SW	Electricity Substation	1988	76555
M	348m SW	Electricity Substation	1990	76555
M	348m SW	Electricity Substation	1995	88870
M	348m SW	Electricity Substation	1996	88870
N	349m NW	Electricity Substation	1973	78909
N	350m NW	Electricity Substation	1995	86061
N	350m NW	Electricity Substation	1997	86061
N	350m NW	Electricity Substation	1990	72684
Q	412m NE	Electricity Substation	1995	72444
Q	412m NE	Electricity Substation	1998	72444
Q	413m NE	Electricity Substation	1990	66731
T	455m E	Electricity Substation	1987	89212
T	457m E	Electricity Substation	1989	87185
T	457m E	Electricity Substation	1992	82347

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	23

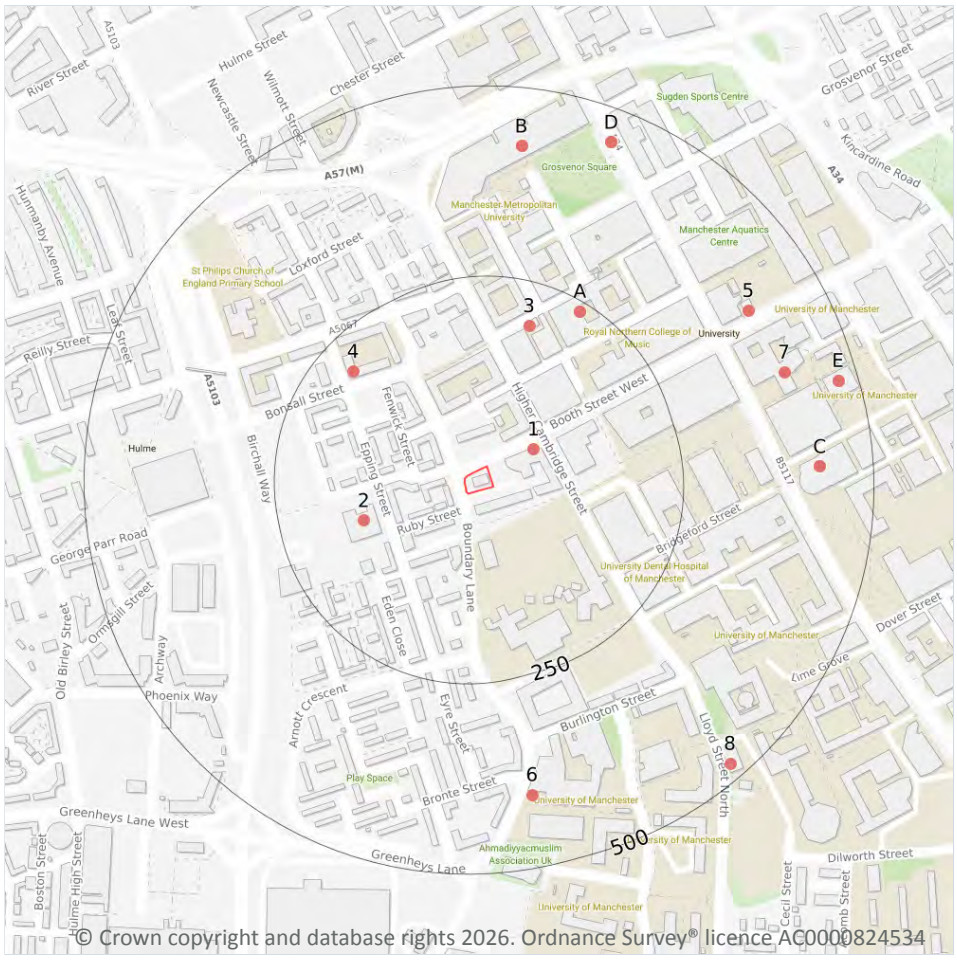
Garages digitised from historical Ordnance Survey® mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 20 >**

ID	Location	Land Use	Date	Group ID
2	204m SW	Garage	1955	22502
G	298m N	Garage	1965	27960
G	298m N	Garage	1965	27960
G	299m N	Garage	1962	28911
G	304m N	Garage	1948	26397
G	305m N	Garage	1953	24511
G	305m N	Garage	1955	30641
G	305m N	Garage	1955	30641
K	335m S	Garage	1985	25604
K	336m S	Garage	1998	25604
K	336m S	Garage	1995	25604
K	336m S	Garage	1993	25604
K	336m S	Garage	1985	25604
O	384m S	Garage	1963	30026
O	385m S	Garage	1951	30026
P	393m SE	Garage	1949	30252
P	393m SE	Garage	1949	30252
P	393m SE	Garage	1951	30252
R	414m NE	Garage	1962	30209
R	415m NE	Garage	1965	30209
R	415m NE	Garage	1965	30209
S	428m SE	Garage	1963	25176
S	429m SE	Garage	1951	25176

This data is sourced from Ordnance Survey® / Groundsure.

3 Waste and landfill



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Site Outline

Search buffers in metres (m)

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	49

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

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

ID	Location	Site	Reference	Category	Sub-Category	Description
1	65m E	59, Booth Street West, Manchester, M15 6pq	WEX423562	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

ID	Location	Site	Reference	Category	Sub-Category	Description
2	141m W	33, Epping Street, Manchester, M15 6pa	WEX398525	Using waste exemption	Not on a farm	Use of waste in the construction of entertainment or educational installations etc
3	192m N	12, Higher Chatham Street, Manchester, M15 6ed	WEX196171	Using waste exemption	Not on a farm	Use of waste in construction
4	203m NW	Oxford Court, Flat D1, 2, Bonsall Street, Manchester, M15 6dg	WEX163913	Using waste exemption	Not on a farm	Use of waste in construction
A	237m NE	-	WEX480113	Using waste exemption	Not on a farm	Use of waste to manufacture finished goods
A	237m NE	-	WEX479885	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
A	237m NE	-	WEX479885	Using waste exemption	Not on a farm	Spreading waste on non-agricultural land to confer benefit
A	237m NE	-	WEX479885	Treating waste exemption	Not on a farm	Aerobic composting and associated prior treatment
A	237m NE	-	WEX479885	Using waste exemption	Not on a farm	Use of mulch
A	237m NE	-	WEX479885	Disposing of waste exemption	Not on a farm	Depositing samples of waste for the purposes of testing or analysing them
A	237m NE	-	WEX479885	Using waste exemption	Not on a farm	Spreading of plant matter to confer benefit
A	237m NE	-	WEX479885	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	237m NE	-	WEX356610	Using waste exemption	Not on a farm	Spreading of plant matter to confer benefit
A	237m NE	-	WEX356610	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
A	237m NE	-	WEX356610	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising

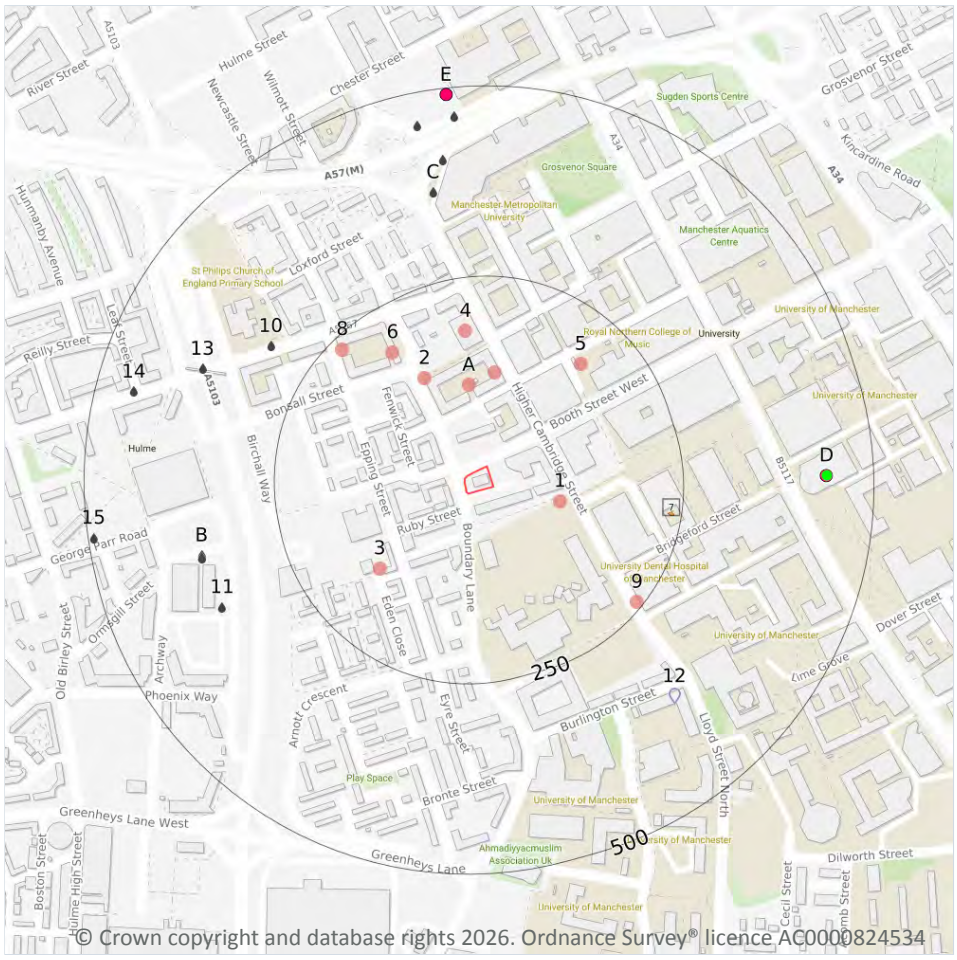
ID	Location	Site	Reference	Category	Sub-Category	Description
A	237m NE	-	WEX356610	Using waste exemption	Not on a farm	Use of mulch
A	237m NE	-	WEX356610	Disposing of waste exemption	Not on a farm	Depositing samples of waste for the purposes of testing or analysing them
5	399m NE	National Graphene Institute Booth Street East Manchester M13 9ss	EPR/GE5751RU/A001	Using waste exemption	Non-agricultural waste only	Use of waste in construction
6	405m S	-	WEX400505	Using waste exemption	Not on a farm	Use of waste in construction
7	409m E	Oxford Road, Manchester, M13 9gh	WEX281629	Treating waste exemption	Not on a farm	Aerobic composting and associated prior treatment
B	422m N	All Saints, Grosvenor Square, Manchester, M15 6bh	WEX228932	Disposing of waste exemption	Not on a farm	Depositing samples of waste for the purposes of testing or analysing them
B	422m N	All Saints, Grosvenor Square, Manchester, M15 6bh	WEX083555	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
B	422m N	All Saints, Grosvenor Square, Manchester, M15 6bh	WEX083555	Disposing of waste exemption	Not on a farm	Depositing samples of waste for the purposes of testing or analysing them
B	422m N	All Saints, Grosvenor Square, Manchester, M15 6bh	WEX228932	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
C	429m E	Oxford Road, Manchester, M13 9pl	WEX167792	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
C	429m E	Oxford Road, Manchester, M13 9pl	WEX167831	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
C	429m E	Oxford Road, Manchester, M13 9pl	WEX167918	Storing waste exemption	Not on a farm	Storage of waste in a secure place
C	429m E	Oxford Road, Manchester, M13 9pl	WEX301809	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
C	429m E	Oxford Road, Manchester, M13 9pl	WEX301817	Storing waste exemption	Not on a farm	Storage of waste in a secure place

ID	Location	Site	Reference	Category	Sub-Category	Description
C	429m E	Oxford Road, Manchester, M13 9pl	WEX301824	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
C	429m E	Oxford Road, Manchester, M13 9pl	WEX431356	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
C	429m E	Oxford Road, Manchester, M13 9pl	WEX431360	Storing waste exemption	Not on a farm	Storage of waste in a secure place
C	429m E	Oxford Road, Manchester, M13 9pl	WEX431343	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
D	455m N	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Storing waste exemption	Both agricultural and non-agricultural waste	Storage of waste in secure containers
D	455m N	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Storing waste exemption	Both agricultural and non-agricultural waste	Storage of waste in a secure place
D	455m N	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Treating waste exemption	Both agricultural and non-agricultural waste	Preparatory treatments (baling, sorting, shredding etc)
D	455m N	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Treating waste exemption	Both agricultural and non-agricultural waste	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
D	455m N	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Treating waste exemption	Both agricultural and non-agricultural waste	Mechanical treatment of end-of-life tyres
D	455m N	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Treating waste exemption	Both agricultural and non-agricultural waste	Recovery of scrap metal

ID	Location	Site	Reference	Category	Sub-Category	Description
D	455m N	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP/A001	Treating waste exemption	Non-agricultural waste only	Manual treatment of waste
E	473m E	Michael Smith Building Oxford Road Manchester M13 9pl	EPR/XE5784LB/A001	Treating waste exemption	Non-agricultural waste only	Treatment of kitchen waste in a wormery
E	473m E	Michael Smith Building Oxford Road Manchester M13 9pl	EPR/XE5784LB/A001	Using waste exemption	Non-agricultural waste only	Spreading waste on non-agricultural land to confer benefit
E	473m E	Oxford Road, Manchester, M13 9pl	WEX034895	Using waste exemption	Not on a farm	Use of waste in construction
E	473m E	Oxford Road Manchester M13 9pl	WEX006036	Storing waste exemption	Not on a farm	Storage of waste in a secure place
E	473m E	Oxford Road Manchester M13 9pl	WEX006029	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
E	473m E	Oxford Road Manchester M13 9pl	WEX006497	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
E	473m E	Michael Smith Building, Oxford Road, Manchester, M13 9pl	WEX029843	Treating waste exemption	Not on a farm	Treatment of kitchen waste in a wormery
E	473m E	Michael Smith Building, Oxford Road, Manchester, M13 9pl	WEX029843	Using waste exemption	Not on a farm	Spreading waste on non-agricultural land to confer benefit
8	479m SE	Esu Depot Off Upper Lloyd Street Manchester M15 6hs	EPR/DH0971NU/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place

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

4 Current industrial land use



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4.1 Recent industrial land uses

Records within 250m	10

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 32 >**

ID	Location	Company	Address	Activity	Category
1	89m E	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
A	110m N	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
A	124m N	Muprint	28, Higher Cambridge Street, Manchester, Greater Manchester, M15 6AD	Published Goods	Industrial Products

ID	Location	Company	Address	Activity	Category
2	140m NW	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
3	152m SW	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
4	180m N	Territorial Army Centre	Trainning Core University Barracks, Boundary Lane, Manchester, Greater Manchester, M15 6DH	Armed Services	Central and Local Government
5	182m NE	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
6	190m NW	Crane	Greater Manchester, M15	Travelling Cranes and Gantries	Industrial Features
8	234m NW	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
9	242m SE	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey®.

4.2 National Geographic Database (NGD) - Current or recent tanks

Records within 250m	**1**

Current or recent tanks identified from the Ordnance Survey® NGD.

Features are displayed on the Current industrial land use map on **page 32 >**

ID	Location	Tank description	Activity	Date first identified
7	232m E	Open Storage Tank	Commercial Activity: Distribution Or Storage	06/03/2014

This data is sourced from Ordnance Survey®.

4.3 Current or recent petrol stations

Records within 500m	**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.4 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.5 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.6 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.

4.7 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.

4.8 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.

4.9 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.

4.10 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.

4.11 Licensed industrial activities (Part A(1))

Records within 500m	1

Records of Part A(1) 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 32 >**

ID	Location	Details	
12	364m SE	Operator: EQUINIX (UK) LIMITED Installation Name: MA1 Process: MCP Permit Number: WE9618AA Original Permit Number: WE9618AA	EPR Reference: EPR/WE9618AA Issue Date: 06/01/2021 Effective Date: 06/01/2021 Last date noted as effective: 07/01/2026 Status: Effective

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

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

Records within 500m	0

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.

This data is sourced from Local Authority records.

4.13 Radioactive Substance Authorisations

Records within 500m	18

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

Features are displayed on the Current industrial land use map on **page 32 >**

ID	Location	Address	Details	
D	438m E	University Of Manchester, South Campus,oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: BX8556 Date of approval: 27/01/2006	Effective from: 27/01/2006 Last date of update: 06/04/2006 Status: Effective
D	438m E	University Of Manchester, South Campus,oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: BX8556 Date of approval: 22/08/2006	Effective from: 22/08/2006 Last date of update: 01/10/2006 Status: Effective
D	438m E	University Of Manchester, Oxford Road, Manchester, Greater Manchester, M13 9PL	Operator: University Of Manchester Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AD0155 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Revoked/cancelled
D	438m E	Victoria University Of Manchester,oxford Road, Manchester, Greater Manchester, M13 9PL	Operator: Victoria University Of Manchester Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AP8713 Date of approval: 16/08/1999	Effective from: 16/08/1999 Last date of update: 01/01/2015 Status: Superseded By Variation
D	438m E	Central Manchester University Hospitals Nhs Foundation Trust, Radiological Protection Service,327 Oxford Road, Manchester, M13 9PL	Operator: Central Manchester University Hospitals Nhs Foundation Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AP9353 Date of approval: 06/03/1998	Effective from: 06/03/1998 Last date of update: 01/01/2015 Status: Superseded By Variation

ID	Location	Address	Details	
D	438m E	Central Manchester University Hospitals Nhs Foundation Trust, Radiological Protection Service,327 Oxford Road, Manchester, M13 9PL	Operator: Central Manchester University Hospitals Nhs Foundation Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AP9353 Date of approval: 19/11/2001	Effective from: 19/11/2001 Last date of update: 01/01/2015 Status: Superseded By Variation
D	438m E	Central Manchester University Hospitals Nhs Foundation Trust, Radiological Protection Service,327 Oxford Road, Manchester, M13 9PL	Operator: Central Manchester University Hospitals Nhs Foundation Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AP9353 Date of approval: 19/09/2005	Effective from: 19/09/2005 Last date of update: 01/01/2015 Status: Superseded By Variation
D	438m E	Central Manchester University Hospitals Nhs Foundation Trust, Radiological Protection Service,327 Oxford Road, Manchester, M13 9PL	Operator: Central Manchester University Hospitals Nhs Foundation Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AP9353 Date of approval: 26/10/2006	Effective from: 26/10/2006 Last date of update: 01/01/2015 Status: Superseded By Variation
D	438m E	University Of Manchester, South Campus,oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: BX8548 Date of approval: 01/10/2004	Effective from: 01/10/2004 Last date of update: 01/01/2015 Status: Effective
D	438m E	University Of Manchester, South Campus, Oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: BX8564 Date of approval: 02/09/2004	Effective from: 01/10/2004 Last date of update: 01/01/2015 Status: Superseded By Variation
D	438m E	University Of Manchester, South Campus, Oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: BX8564 Date of approval: 28/06/2005	Effective from: 22/07/2005 Last date of update: 01/01/2015 Status: Superseded By Variation
D	438m E	University Of Manchester, South Campus, Oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: BX8564 Date of approval: 08/12/2006	Effective from: 03/12/2007 Last date of update: 01/01/2015 Status: Effective

ID	Location	Address	Details	
E	491m N	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester, Greater Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AC9688 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Superseded By Variation
E	491m N	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester, Greater Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AC9688 Date of approval: 16/10/1994	Effective from: 16/10/1994 Last date of update: 01/01/2015 Status: Superseded By Variation
E	491m N	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester, Greater Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AC9688 Date of approval: 09/03/1995	Effective from: 09/04/1995 Last date of update: 01/01/2015 Status: Superseded By Variation
E	491m N	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester, Greater Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AC9688 Date of approval: 01/12/2003	Effective from: 01/01/2004 Last date of update: 01/01/2015 Status: Superseded By Variation
E	491m N	John Dalton Building, Chester Street, Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: CA1464 Date of approval: 17/02/2006	Effective from: 17/03/2006 Last date of update: 01/01/2020 Status: Issued
E	491m N	John Dalton Building, Chester Street, Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: BL0324 Date of approval: 23/05/2001	Effective from: 23/05/2001 Last date of update: 01/01/2020 Status: Issued

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

4.14 Licensed Discharges to controlled waters

Records within 500m	12

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 32 >**

ID	Location	Address	Details	
10	309m NW	HULME WALK, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0362 Permit Version: 1 Receiving Water: -	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: -
11	355m SW	MANCHESTER METROPOLITAN UNIVERSITY, BIRLEY FIELDS CAMPUS, HULME, MANCHESTER, M15 6BH	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRUB3936AX Permit Version: 2 Receiving Water: GROUNDWATER VIA A BOREHOLE	Status: VARIED UNDER EPR 2010 Issue date: 14/08/2013 Effective Date: 14/11/2024 Revocation Date: -
B	358m W	MANCHESTER METROPOLITAN UNIVERSITY, BIRLEY FIELDS CAMPUS, HULME, MANCHESTER, M15 6BH	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRUB3936AX Permit Version: 2 Receiving Water: GROUNDWATER VIA A BOREHOLE	Status: VARIED UNDER EPR 2010 Issue date: 14/08/2013 Effective Date: 14/11/2024 Revocation Date: -
B	359m W	MANCHESTER METROPOLITAN UNIVERSITY, BIRLEY FIELDS CAMPUS, HULME, MANCHESTER, M15 6BH	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRUB3936AX Permit Version: 1 Receiving Water: GROUNDWATER VIA A BOREHOLE	Status: NEW ISSUED UNDER EPR 2010 Issue date: 14/08/2013 Effective Date: 14/08/2013 Revocation Date: 14/11/2024
B	359m W	MANCHESTER METROPOLITAN UNIVERSITY, BIRLEY FIELDS CAMPUS, HULME, MANCHESTER, M15 6BH	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRUB3936AX Permit Version: 1 Receiving Water: GROUNDWATER VIA A BOREHOLE	Status: NEW ISSUED UNDER EPR 2010 Issue date: 14/08/2013 Effective Date: 14/08/2013 Revocation Date: 14/11/2024
C	367m N	GSHP AT MANCHESTER METROPOLITAN UNI, MANCHESTER METROPOLITAN UNI, LOWER CHATHAM STREET, MANCHESTER, M15 6BH	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRDP3526GN Permit Version: 1 Receiving Water: GROUNDWATERS	Status: NEW ISSUED UNDER EPR 2010 Issue date: 23/08/2010 Effective Date: 01/04/2011 Revocation Date: -

ID	Location	Address	Details	
13	374m NW	HULME WALK/PRINCESS RD, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0363 Permit Version: 1 Receiving Water: -	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: -
C	406m N	GSHP AT MANCHESTER METROPOLITAN UNI, MANCHESTER METROPOLITAN UNI, LOWER CHATHAM STREET, MANCHESTER, M15 6BH	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRDP3526GN Permit Version: 1 Receiving Water: GROUNDWATERS	Status: NEW ISSUED UNDER EPR 2010 Issue date: 23/08/2010 Effective Date: 01/04/2011 Revocation Date: -
14	450m W	HULME WALK/LEAF STREET, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0364 Permit Version: 1 Receiving Water: -	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: -
E	456m N	SCIENCE AND ENGINEERING BUILDING, MANCHESTER METROPOLITAN UNI, CHESTER STREET, MANCHESTER, M1 5GD	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRKP3429SZ Permit Version: 1 Receiving Water: GROUNDWATERS	Status: NEW ISSUED UNDER EPR 2010 Issue date: 22/05/2024 Effective Date: 22/05/2024 Revocation Date: -
E	462m N	SCIENCE AND ENGINEERING BUILDING, MANCHESTER METROPOLITAN UNI, CHESTER STREET, MANCHESTER, M1 5GD	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRKP3429SZ Permit Version: 1 Receiving Water: GROUNDWATERS	Status: NEW ISSUED UNDER EPR 2010 Issue date: 22/05/2024 Effective Date: 22/05/2024 Revocation Date: -
15	493m W	MANCHESTER METROPOLITAN UNIVERSITY, BIRLEY FIELDS CAMPUS, HULME, MANCHESTER, M15 6BH	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRUB3936AX Permit Version: 2 Receiving Water: GROUNDWATER VIA A BOREHOLE	Status: VARIED UNDER EPR 2010 Issue date: 14/08/2013 Effective Date: 14/11/2024 Revocation Date: -

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

4.15 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.

4.16 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.

4.17 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.

4.18 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.

4.19 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.

4.20 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.

4.21 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.

4.22 Pollution inventory radioactive waste

Records within 500m	1

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.

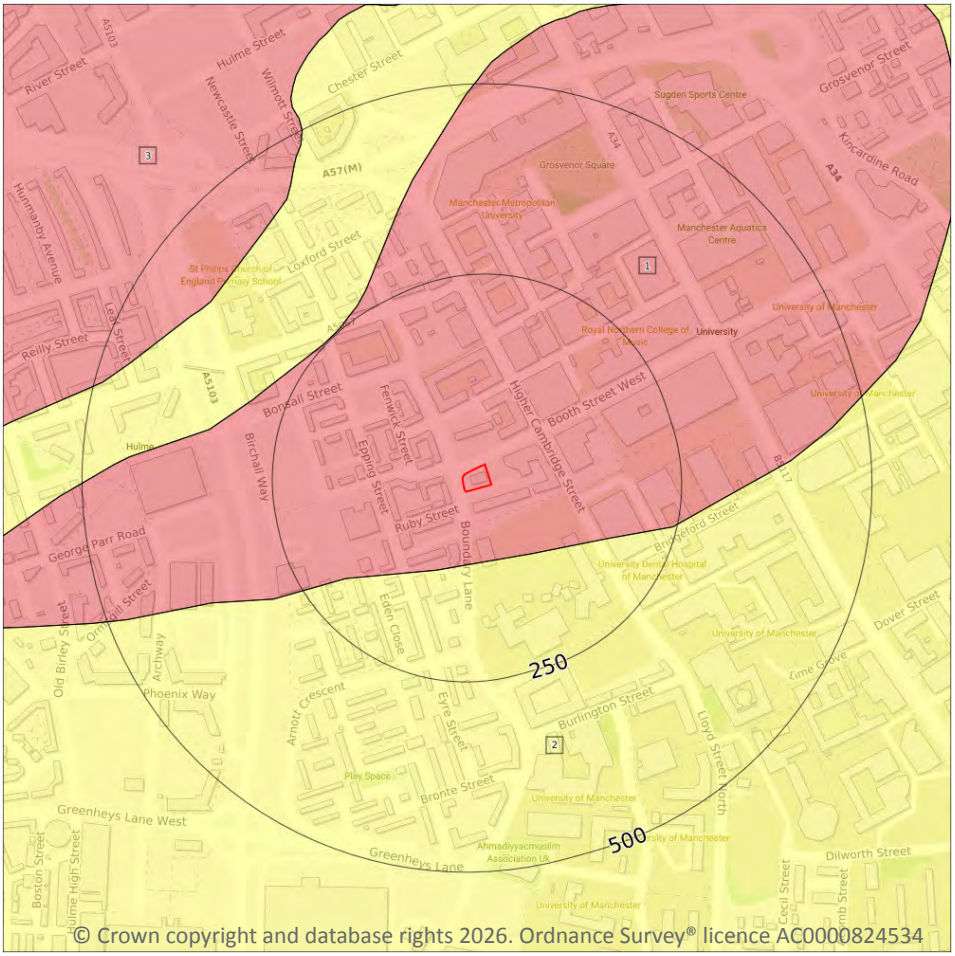
Features are displayed on the Current industrial land use map on **page 32 >**

ID: D, Location: 438m E, Permit: BX8564
Operator: UNIVERSITY OF MANCHESTER
Address: SOUTH CAMPUS OXFORD ROAD MANCHESTER M13 9PL
Releases:

Route	Substance	Quantity released
Wastewater	Tritium	- -
Wastewater	Carbon 14	- -
Air	Tritium	- -
Wastewater	Phosphorus 32	- -
Air	Carbon 14	- -
Wastewater	Sulphur 35	- -
Wastewater	Total Beta/Gamma (Excl Tritium)	- -

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

5 Hydrogeology - Superficial aquifer



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Site Outline

Search buffers in metres (m)

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

5.1 Superficial aquifer

Records within 500m	3

Aquifer status of groundwater held within superficial geology.

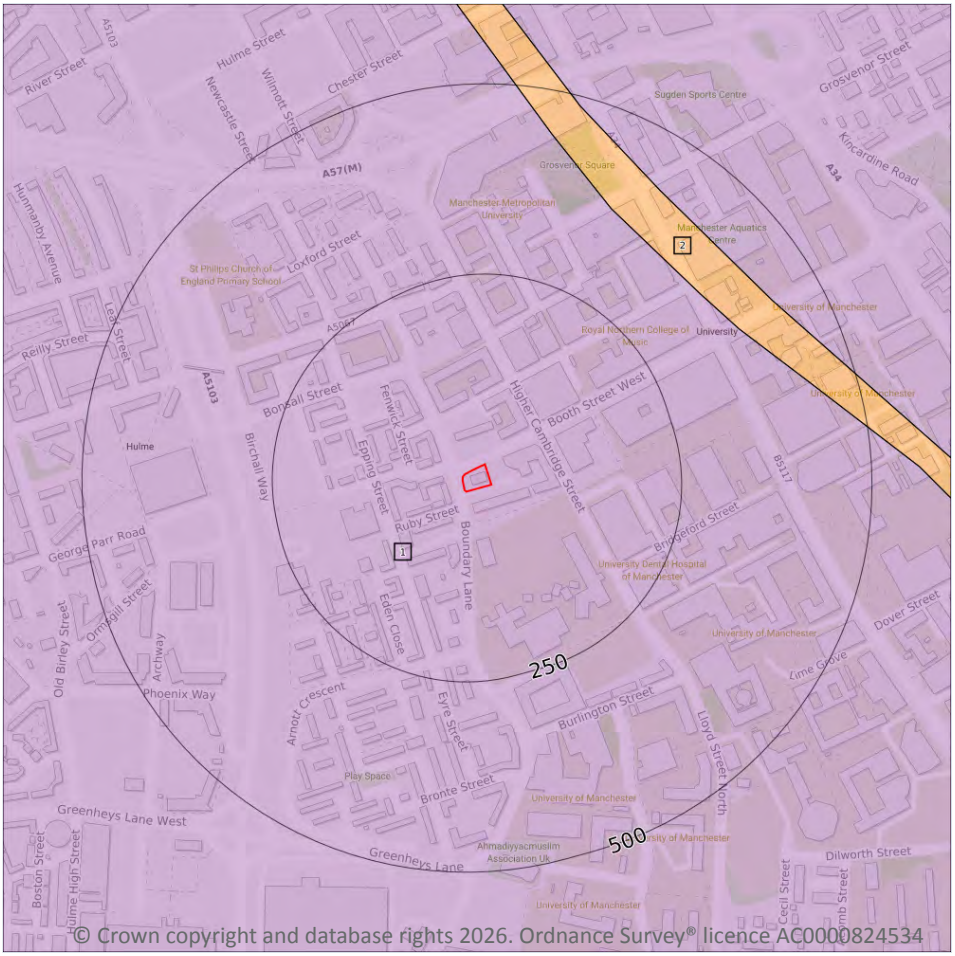
Features are displayed on the Hydrogeology map on **page 43 >**

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	95m S	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

ID	Location	Designation	Description
3	403m NW	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Bedrock aquifer



5.2 Bedrock aquifer

Records within 500m	2

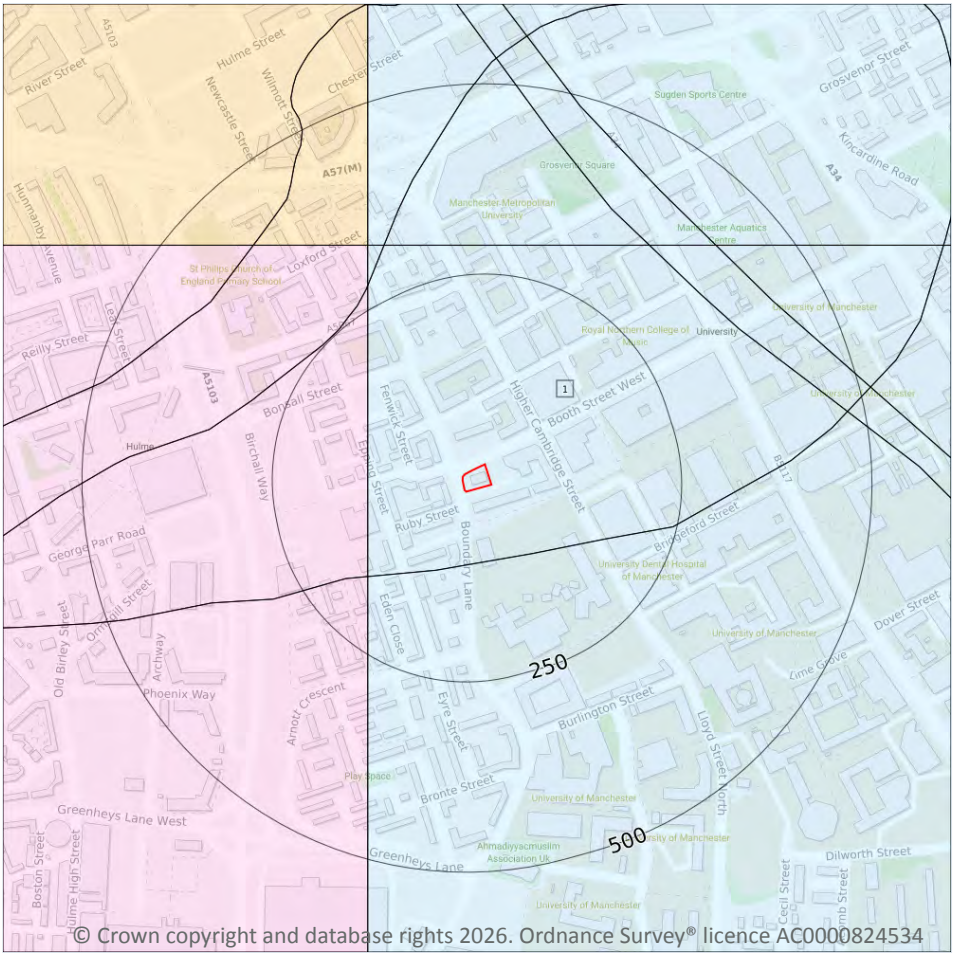
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 45 >**

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**
2	358m NE	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

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

Groundwater vulnerability



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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 47 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	**Summary Classification: Secondary superficial aquifer - Low Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: Low Infiltration value: <40% Dilution value: 300-550mm/year**	**Vulnerability: Low Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**

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.

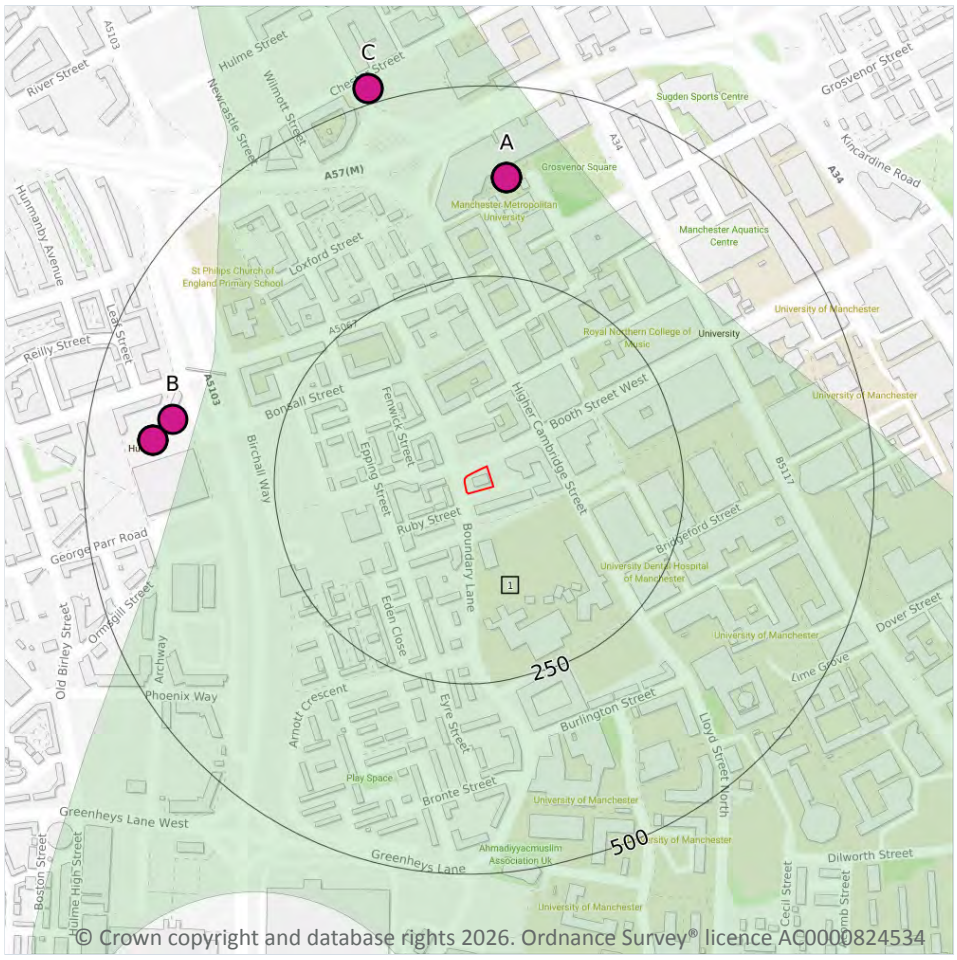
5.5 Groundwater vulnerability- local information

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



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- 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	47

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 49 >**

ID	Location	Details	
A	380m N	Status: Active Licence No: NW/069/0006/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University Easting: 384180 Northing: 397091	Annual Volume (m^3): 283240 Max Daily Volume (m^3): 1532 Original Application No: NPS/WR/015264 Original Start Date: 01/04/2010 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date: -
A	380m N	Status: Active Licence No: NW/069/0006/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University Easting: 384180 Northing: 397091	Annual Volume (m^3): 283240 Max Daily Volume (m^3): 1532 Original Application No: NPS/WR/015264 Original Start Date: 01/04/2010 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date: -
A	380m N	Status: Historical Licence No: NW/069/0006/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University Easting: 384180 Northing: 397091	Annual Volume (m^3): 283240 Max Daily Volume (m^3): 1532 Original Application No: NPS/WR/015264 Original Start Date: 04/04/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date: -
A	380m N	Status: Historical Licence No: NW/069/0006/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University Easting: 384180 Northing: 397091	Annual Volume (m^3): 283240 Max Daily Volume (m^3): 1532 Original Application No: NPS/WR/015264 Original Start Date: 04/04/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date: -
B	392m W	Status: Active Licence No: NW/069/0004/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE AB1 AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University Easting: 383741 Northing: 396774	Annual Volume (m^3): 615183 Max Daily Volume (m^3): 2760 Original Application No: NPS/WR/037062 Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 29/11/2024 Version End Date: -

ID	Location	Details	
B	413m W	Status: Active Licence No: NW/069/0004/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University Easting: 383715 Northing: 396746	Annual Volume (m^3): 615183 Max Daily Volume (m^3): 2760 Original Application No: NPS/WR/037062 Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 29/11/2024 Version End Date: -
B	413m W	Status: Historical Licence No: NW/069/0004/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University Easting: 383715 Northing: 396746	Annual Volume (m^3): 274115 Max Daily Volume (m^3): 751 Original Application No: NPS/WR/008077 Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/01/2015 Version End Date: -
B	413m W	Status: Historical Licence No: NW/069/0004/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University Easting: 383715 Northing: 396746	Annual Volume (m^3): 274115 Max Daily Volume (m^3): 751 Original Application No: NPS/WR/008077 Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/01/2015 Version End Date: -
C	521m N	Status: Active Licence No: NW/069/0006/009 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BH1, SCIENCE AND ENGINEERING BUILDING Data Type: Point Name: Manchester Metropolitan University Easting: 383998 Northing: 397209	Annual Volume (m^3): 176000 Max Daily Volume (m^3): 908 Original Application No: NPS/WR/033653 Original Start Date: 22/05/2024 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 22/05/2024 Version End Date: -

ID	Location	Details	
C	521m N	Status: Active Licence No: NW/069/0006/009 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BH1, SCIENCE AND ENGINEERING BUILDING Data Type: Point Name: Manchester Metropolitan University Easting: 383998 Northing: 397209	Annual Volume (m^3): 176000 Max Daily Volume (m^3): 908 Original Application No: NPS/WR/033653 Original Start Date: 22/05/2024 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 22/05/2024 Version End Date: -
-	809m S	Status: Historical Licence No: 2569007007 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER" Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/08/1995 Version End Date: -
-	809m S	Status: Historical Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER" Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/08/1995 Version End Date: -
-	809m S	Status: Historical Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/12/2003 Version End Date: -

ID	Location	Details	
-	809m S	Status: Historical Licence No: 2569007007 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/12/2003 Version End Date: -
-	809m S	Status: Historical Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383900 Northing: 395900	Annual Volume (m^3): 227000 Max Daily Volume (m^3): 900 Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 23/11/2009 Version End Date: -
-	809m S	Status: Historical Licence No: 2569007007 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383900 Northing: 395900	Annual Volume (m^3): 227000 Max Daily Volume (m^3): 900 Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 23/11/2009 Version End Date: -
-	812m S	Status: Active Licence No: 2569007007 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383865 Northing: 395909	Annual Volume (m^3): 227000 Max Daily Volume (m^3): 900 Original Application No: NPS/WR/015793 Original Start Date: 15/02/1966 Expiry Date: - Issue No: 103 Version Start Date: 08/05/2014 Version End Date: -

ID	Location	Details	
-	812m S	Status: Active Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383865 Northing: 395909	Annual Volume (m^3): 227000 Max Daily Volume (m^3): 900 Original Application No: NPS/WR/015793 Original Start Date: 15/02/1966 Expiry Date: - Issue No: 103 Version Start Date: 08/05/2014 Version End Date: -
-	1045m NW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW8 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383224 Northing: 397225	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1045m N	Status: Historical Licence No: NW0690006001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLES AT ORIGIN DEVELOPMENTS, MANCHESTER Data Type: Point Name: West Contracting Easting: 384378 Northing: 397733	Annual Volume (m^3): 139128 Max Daily Volume (m^3): 1010 Original Application No: - Original Start Date: 19/01/2009 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 19/01/2009 Version End Date: -
-	1045m N	Status: Historical Licence No: NW/069/0006/001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLES AT ORIGIN DEVELOPMENTS, MANCHESTER Data Type: Point Name: West Contracting Easting: 384378 Northing: 397733	Annual Volume (m^3): 139128 Max Daily Volume (m^3): 1010 Original Application No: - Original Start Date: 19/01/2009 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 19/01/2009 Version End Date: -

ID	Location	Details	
-	1060m NW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW9 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383223 Northing: 397253	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1069m NW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW7 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383184 Northing: 397203	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1074m NW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW5 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383193 Northing: 397230	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1083m NW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW10 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383211 Northing: 397276	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -

ID	Location	Details	
-	1094m NW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW4 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383159 Northing: 397210	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1100m NW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW11 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383204 Northing: 397298	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1114m NW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW3 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383140 Northing: 397217	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1116m NW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW6 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383171 Northing: 397275	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -

ID	Location	Details	
-	1144m NW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW2 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383113 Northing: 397230	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1178m NW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW1 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383085 Northing: 397249	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1228m SW	Status: Historical Licence No: 2569007009 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER" Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -
-	1228m SW	Status: Historical Licence No: 2569007009 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER" Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -

ID	Location	Details	
-	1228m SW	Status: Historical Licence No: 2569007009 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m^3): 66826.2 Max Daily Volume (m^3): 372.772 Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -
-	1228m SW	Status: Historical Licence No: 2569007009 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m^3): 66826.2 Max Daily Volume (m^3): 372.772 Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 103 Version Start Date: 19/07/2018 Version End Date: -
-	1289m N	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT GEORGE ST, MANCHESTER" Data Type: Point Name: BRITISH TELECOM Easting: 384100 Northing: 398000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/01/1971 Version End Date: -
-	1289m N	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT GEORGE ST, MANCHESTER Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC Easting: 384100 Northing: 398000	Annual Volume (m^3): 1100 Max Daily Volume (m^3): 860 Original Application No: - Original Start Date: 01/04/1984 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date: -

ID	Location	Details	
-	1366m NE	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, BROADIE ST, ARDWICK, MANCHESTER" Data Type: Point Name: MOSELEY RUBBER CO LTD Easting: 385240 Northing: 397540	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 08/02/1966 Version End Date: -
-	1366m NE	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, BROADIE ST, ARDWICK, MANCHESTER Data Type: Point Name: MOSELEY RUBBER CO LTD Easting: 385240 Northing: 397540	Annual Volume (m^3): 331858 Max Daily Volume (m^3): 909.2 Original Application No: - Original Start Date: 08/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 08/02/1966 Version End Date: -
-	1463m NW	Status: Active Licence No: NW/069/0004/021/R01 Details: Heat Pump Direct Source: Ground Water - North West Region Point: CHESTER FORMATION AT SCIENCE MUSEUM (A) Data Type: Point Name: Science Museum Group Easting: 383198 Northing: 397829	Annual Volume (m^3): 346000 Max Daily Volume (m^3): 1728 Original Application No: NPS/WR/040753 Original Start Date: 04/04/2024 Expiry Date: 31/03/2026 Issue No: 1 Version Start Date: 04/04/2024 Version End Date: -
-	1463m NW	Status: Historical Licence No: NW/069/0004/021 Details: Heat Pump Direct Source: Ground Water - North West Region Point: CHESTER FORMATION AT SCIENCE MUSEUM (A) Data Type: Point Name: Science Museum Group Easting: 383198 Northing: 397829	Annual Volume (m^3): 346000 Max Daily Volume (m^3): 1728 Original Application No: NPS/WR/035329 Original Start Date: 31/03/2023 Expiry Date: 31/03/2024 Issue No: 1 Version Start Date: 31/03/2023 Version End Date: -

ID	Location	Details	
-	1511m NW	Status: Active Licence No: NW/069/0004/021/R01 Details: Heat Pump Direct Source: Ground Water - North West Region Point: CHESTER FORMATION AT SCIENCE MUSEUM (B) Data Type: Point Name: Science Museum Group Easting: 383143 Northing: 397845	Annual Volume (m^3): 346000 Max Daily Volume (m^3): 1728 Original Application No: NPS/WR/040753 Original Start Date: 04/04/2024 Expiry Date: 31/03/2026 Issue No: 1 Version Start Date: 04/04/2024 Version End Date: -
-	1511m NW	Status: Historical Licence No: NW/069/0004/021 Details: Heat Pump Direct Source: Ground Water - North West Region Point: CHESTER FORMATION AT SCIENCE MUSEUM (B) Data Type: Point Name: Science Museum Group Easting: 383143 Northing: 397845	Annual Volume (m^3): 346000 Max Daily Volume (m^3): 1728 Original Application No: NPS/WR/035329 Original Start Date: 31/03/2023 Expiry Date: 31/03/2024 Issue No: 1 Version Start Date: 31/03/2023 Version End Date: -
-	1552m E	Status: Historical Licence No: NW/069/0004/005 Details: Heat Pump Direct Source: Ground Water - North West Region Point: AREA OF ABSTRACTION - LOWER CARBONIFEROUS LIMESTONE Data Type: Poly4 Name: G T Energy UK Limited Easting: 385729 Northing: 396778	Annual Volume (m^3): 2049840 Max Daily Volume (m^3): 8640 Original Application No: - Original Start Date: 17/01/2013 Expiry Date: 16/01/2037 Issue No: 2 Version Start Date: 11/06/2013 Version End Date: -
-	1649m NW	Status: Historical Licence No: NW/069/0004/019 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: Ground Water - North West Region Point: ST JOHNS MANCHESTER Data Type: Poly4 Name: Manchester Quays Development (MGY) Ltd Easting: 383094 Northing: 398099	Annual Volume (m^3): 543120 Max Daily Volume (m^3): 1488 Original Application No: - Original Start Date: 13/09/2019 Expiry Date: 31/12/2020 Issue No: 1 Version Start Date: 13/09/2019 Version End Date: -
-	1693m NW	Status: Historical Licence No: 2569007089 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: 2 BOREHOLES AT GARTSIDE STREET MANCHESTER Data Type: Line Name: HER MAJESTY'S COURT SERVICE Easting: 383335 Northing: 398310	Annual Volume (m^3): 200000 Max Daily Volume (m^3): 1179 Original Application No: - Original Start Date: 26/01/2005 Expiry Date: 31/03/2011 Issue No: 2 Version Start Date: 10/07/2008 Version End Date: -

ID	Location	Details	
-	1716m NW	Status: Historical Licence No: NW/069/0004/022 Details: Dewatering Direct Source: Ground Water - North West Region Point: ABSTRACTION AREA AT TRINITY ISLANDS, MANCHESTER Data Type: Poly4 Name: Renaker Build Ltd Easting: 382705 Northing: 397822	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: NPS/WR/036441 Original Start Date: 05/09/2023 Expiry Date: 31/10/2024 Issue No: 1 Version Start Date: 05/09/2023 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m **2**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 49 >**

ID	Location	Details	
-	1771m NW	Status: Historical Licence No: 2569007053 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "R IRWELL AT IRWELL WORKS, ORDSALL LANE, SALFORD" Data Type: Point Name: CDS COMPUTER DESIGN SYSTEMS LTD Easting: 382500 Northing: 397400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 22/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1987 Version End Date: -
-	1771m NW	Status: Historical Licence No: 2569007053 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: R IRWELL AT IRWELL WORKS, ORDSALL LANE, SALFORD Data Type: Point Name: CDS COMPUTER DESIGN SYSTEMS LTD Easting: 382500 Northing: 397400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 22/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1987 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	0

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

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

5.9 Source Protection Zones

Records within 500m	1

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 49 >**

ID	Location	Type	Description
1	**On site**	**3**	**Total catchment**

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



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- Site Outline

Search buffers in metres (m)

- Water Network (OS NGD)
- 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 NGD)

Records within 250m	1

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 63 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
2	160m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Corn Brook

This data is sourced from the Ordnance Survey®.

6.2 Surface water features

Records within 250m	0

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

This data is sourced from the Ordnance Survey®.

6.3 WFD Surface water body catchments

Records on site	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 63 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River**	**Irwell / Manchester Ship Canal (Irk to confluence with Upper Mersey)**	**GB112069061452**	**Croal Irwell**	**Irwell**

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 63 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1736m NW	River	Irwell / Manchester Ship Canal (Irk to confluence with Upper Mersey)	GB112069061452 ↗	No longer applicable	Does not require assessment	Moderate	2022

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

6.5 WFD Groundwater bodies

Records on site	1

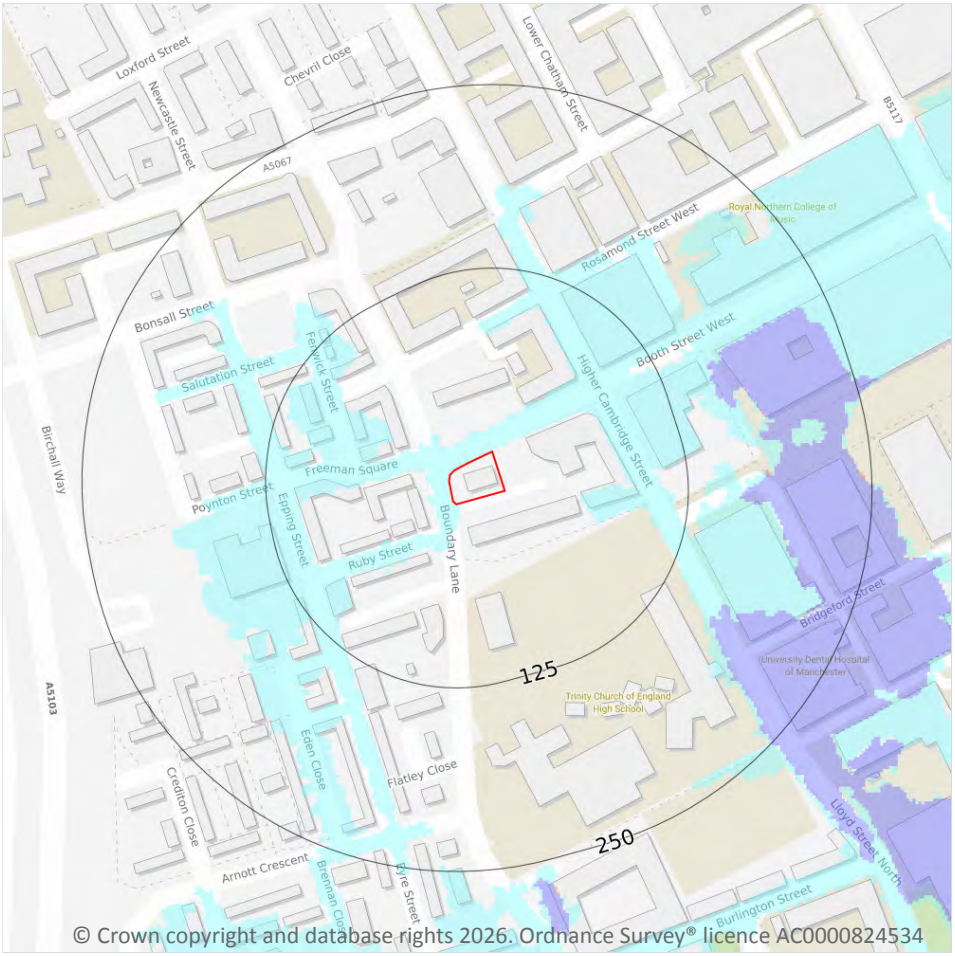
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 63 >**

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

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).

Features are displayed on the River and coastal flooding map on **page 66 >**

Distance	Flood risk category
On site	**Low**
0 - 50m	Low

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

7.2 Historical Flood Events

Records within 250m	**0**

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

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

7.3 Flood Defences

Records within 250m	**0**

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	**0**

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

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

7.5 Flood Storage Areas

Records within 250m	**0**

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

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

River and coastal flooding - Flood Zones



Site Outline

Search buffers in metres (m)

Flood zone 2

Flood zone 3

7.6 Flood Zone 2

Records within 50m	1

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.

Features are displayed on the River and coastal flooding map on **page 66 >**

Location	Type
On site	**Zone 2 - (Fluvial /Tidal Models)**

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

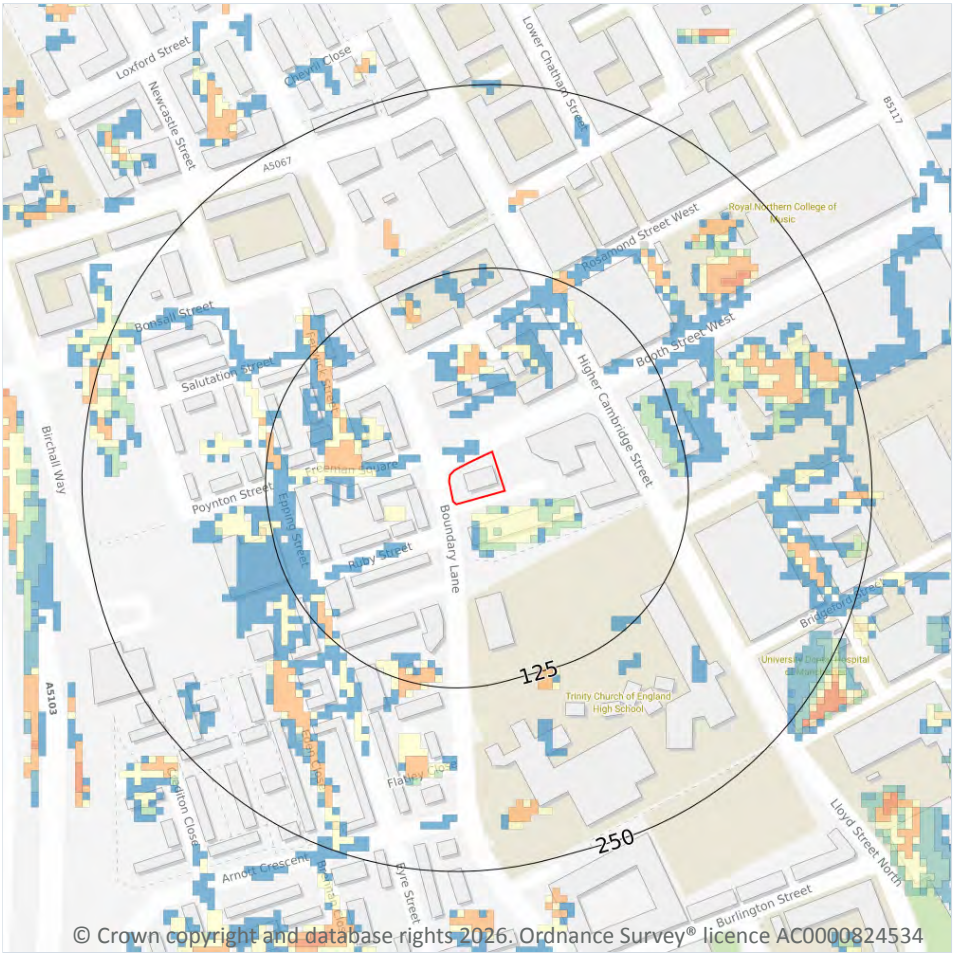
7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding



Site Outline

Search buffers in metres (m)

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

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

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

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

8.1 Surface water flooding

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

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

Features are displayed on the Surface water flooding map on **page 70 >**

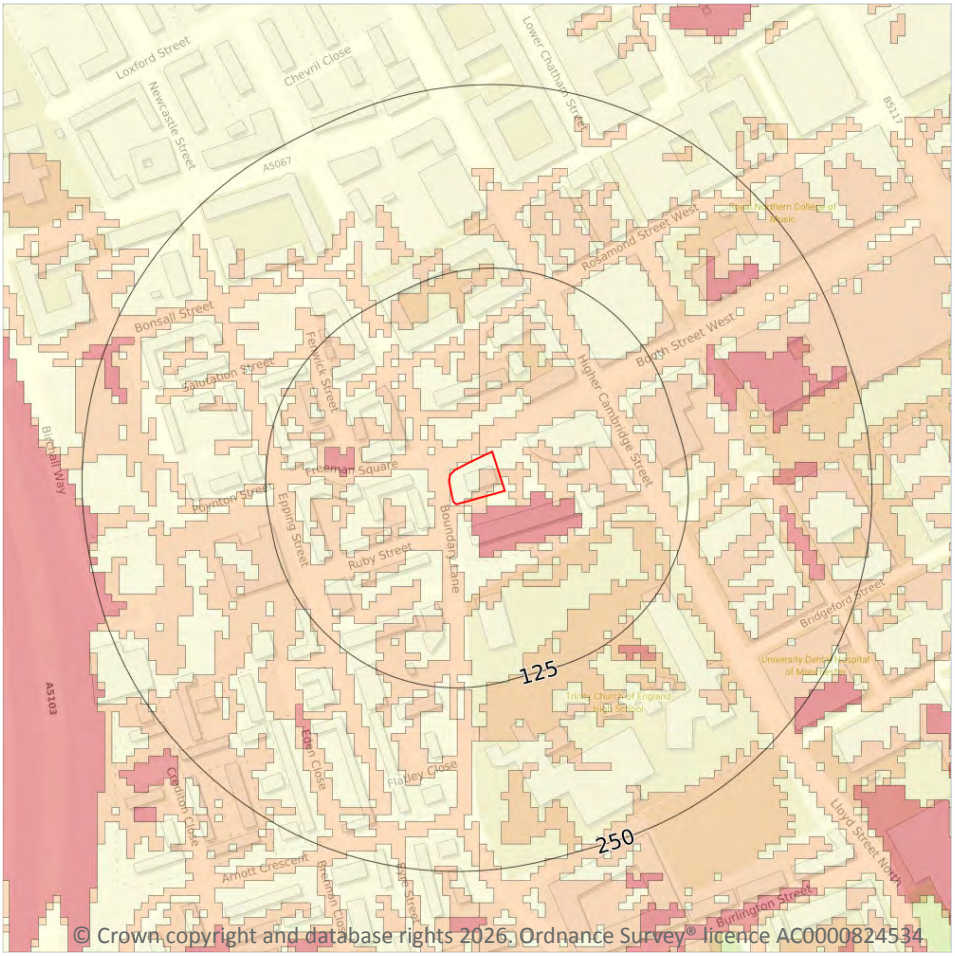
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

Highest risk on site	**Moderate-High**
Highest risk within 50m	**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 72 >**

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	0

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.

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	0

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

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

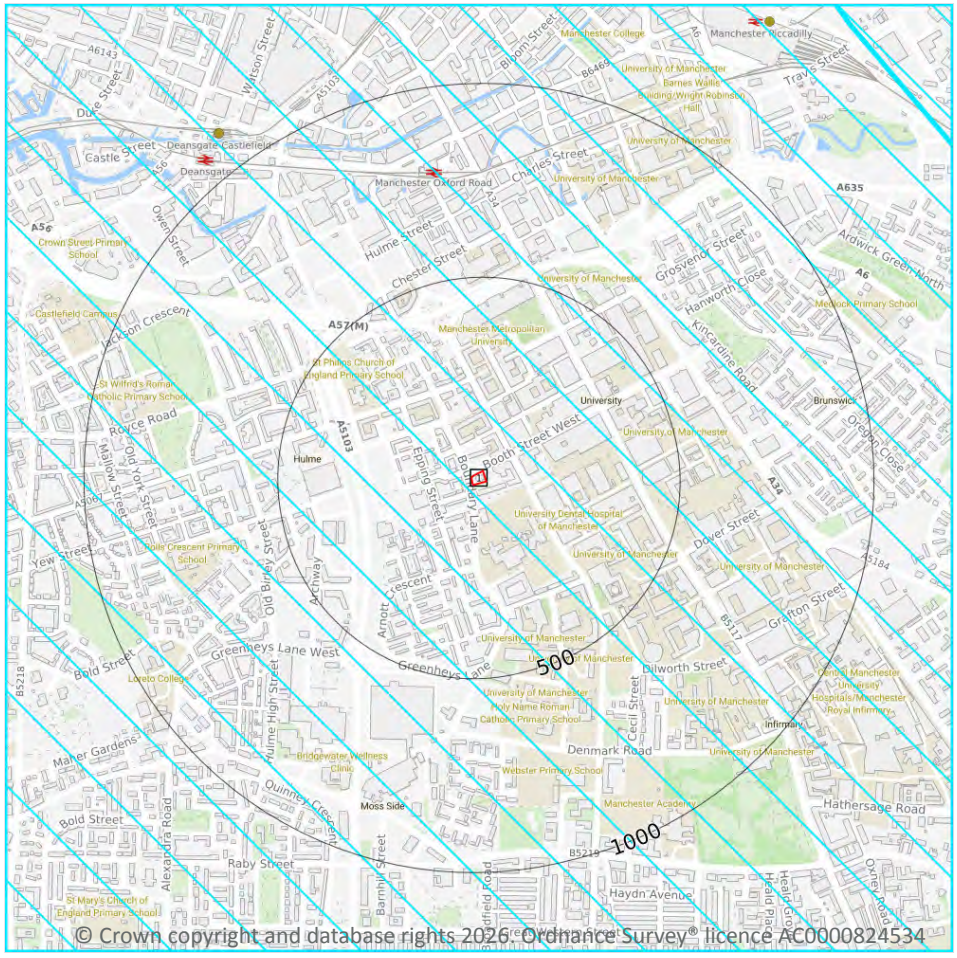
Records within 2000m	2

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.

Location	Name	Type	NVZ ID	Status
1694m N	River Irk (Moston Brook to River Irwell) NVZ	Surface Water	638	Existing
1889m N	River Irk (Moston Brook to River Irwell) NVZ	Surface Water	638	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site	1

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.

Features are displayed on the SSSI Impact Zones and Units map on **page 77 >**

ID	Location	Type of developments requiring consultation
1	**On site**	**https://irz.geodata.org.uk/IRZ/step2.html?irzcode=0000000630000&notes=&location=383272,400229%20(IRZ%20polygon%20centre)**

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

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	0

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.

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.

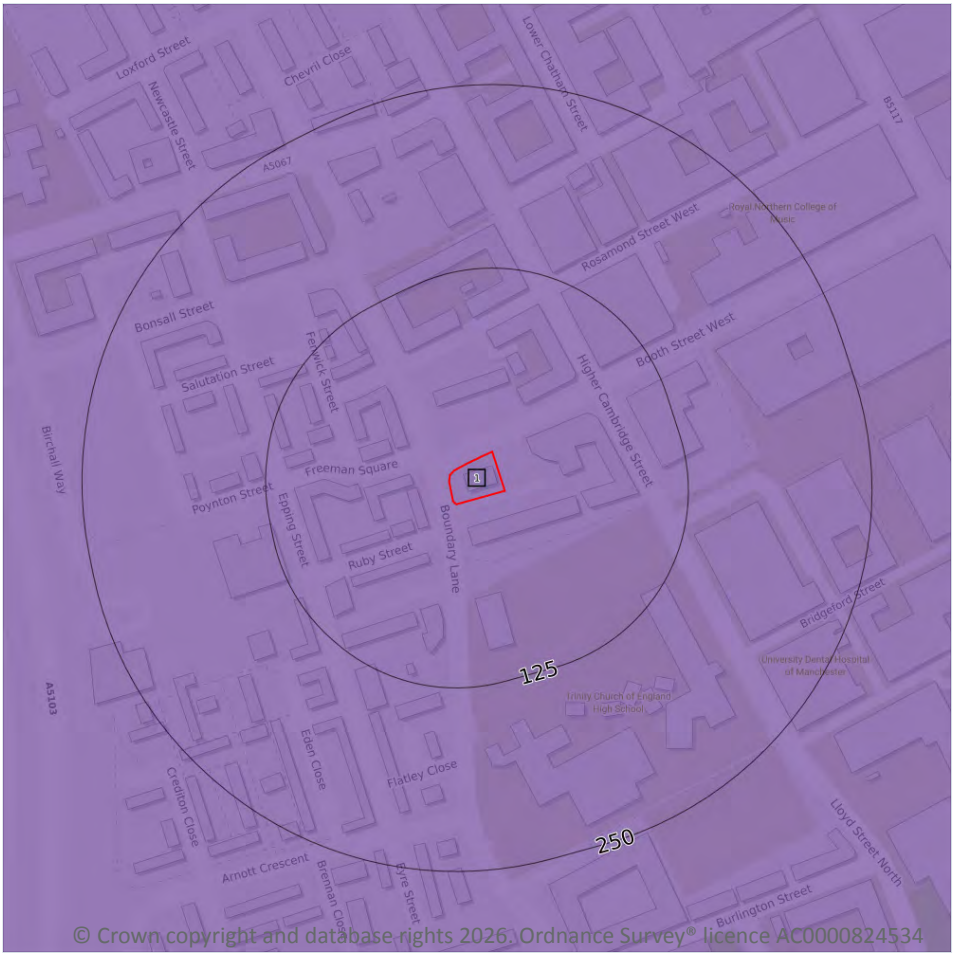
11.7 Registered Parks and Gardens

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 81 >**

ID	Location	Classification	Description
1	**On site**	**Urban**	**Non-agricultural/no quality assigned**

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

13.1 Priority Habitat Inventory

Records within 250m	0

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

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

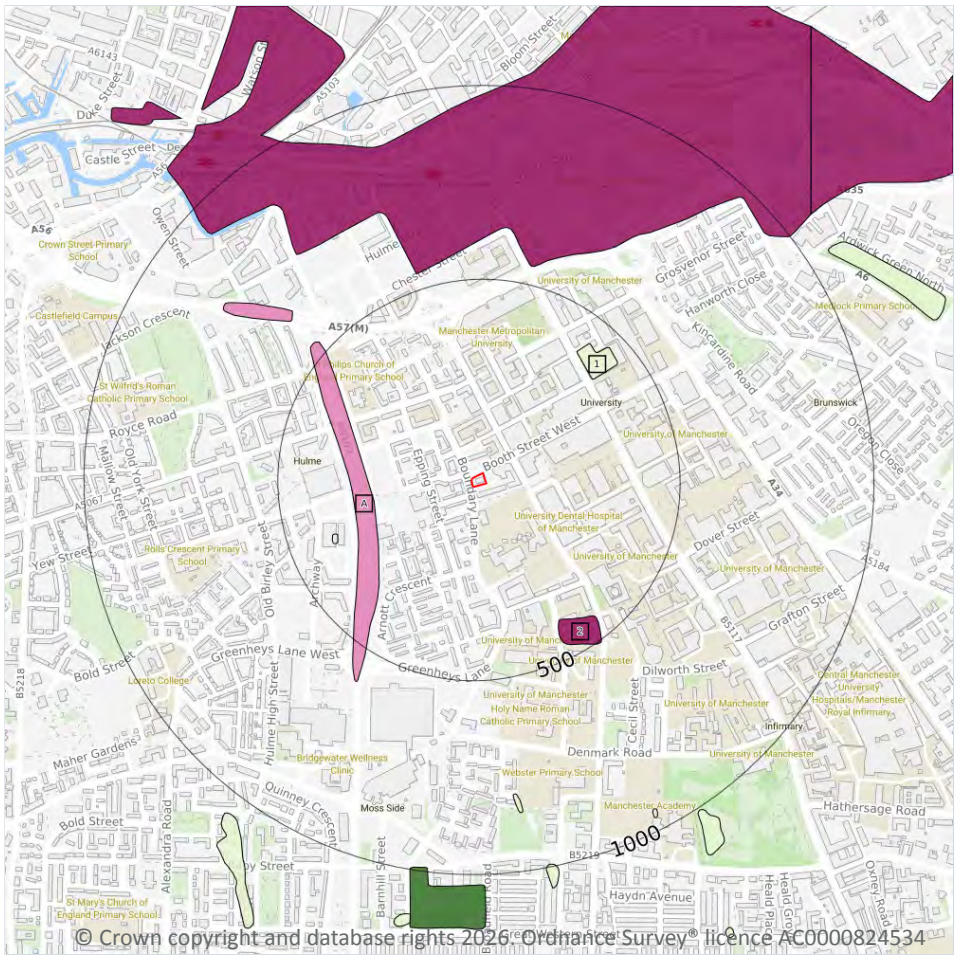
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 84 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**No coverage**	**SJ89NW**

This data is sourced from the British Geological Survey.

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



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14.2 Artificial and made ground (10k)

Records within 500m	4

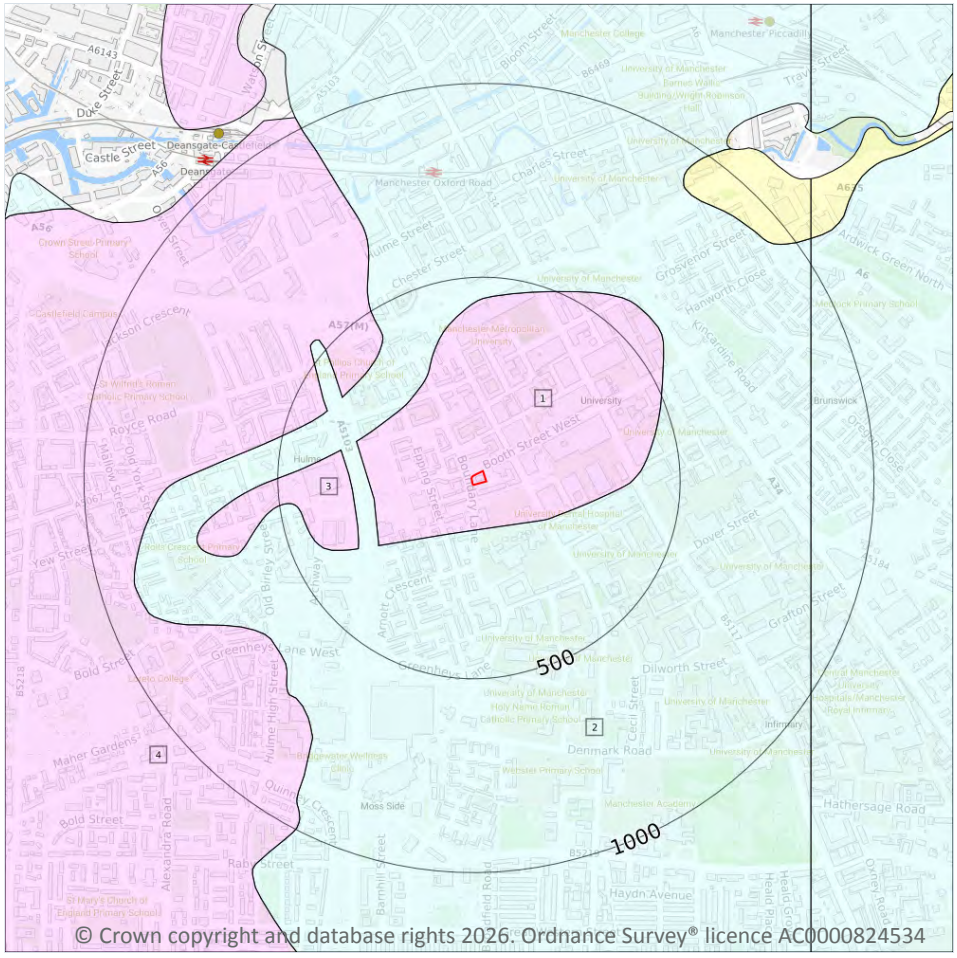
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 85 >**

ID	Location	LEX Code	Description	Rock description
A	257m W	WGR-VOID	Worked Ground (Undivided)	Void
A	370m W	WMGR-ARTDP	Infilled Ground	Artificial deposit
1	372m NE	WMGR-ARTDP	Infilled Ground	Artificial deposit
2	400m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



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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 87 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**GFSDD-XSV**	**Glaciofluvial Sheet Deposits, Devensian-Sand And Gravel**	**Sand and gravel**
2	116m S	TILLD-DMTN	Till, Devensian-Diamicton	Diamicton
3	308m W	GFSDD-XSV	Glaciofluvial Sheet Deposits, Devensian-Sand And Gravel	Sand and gravel
4	382m NW	GFSDD-XSV	Glaciofluvial Sheet Deposits, Devensian-Sand And Gravel	Sand and gravel

This data is sourced from the British Geological Survey.

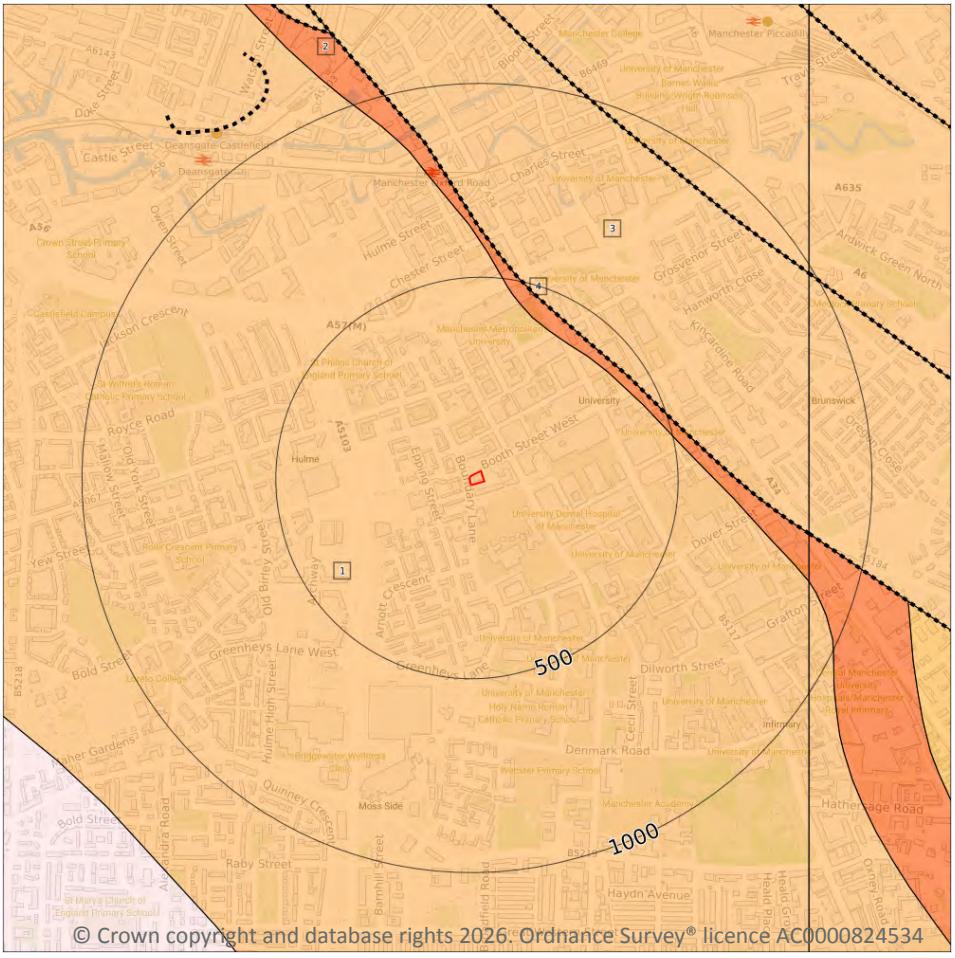
14.4 Landslip (10k)

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 **3**

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 89 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**CHES-PESST**	**Chester Formation-Pebbly (Gravelly) Sandstone**	**Olenekian**
2	398m NE	MM-MDST	Manchester Marls Formation-Mudstone	Not Defined
3	433m NE	CHES-PESST	Chester Formation-Pebbly (Gravelly) Sandstone	Olenekian

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	1

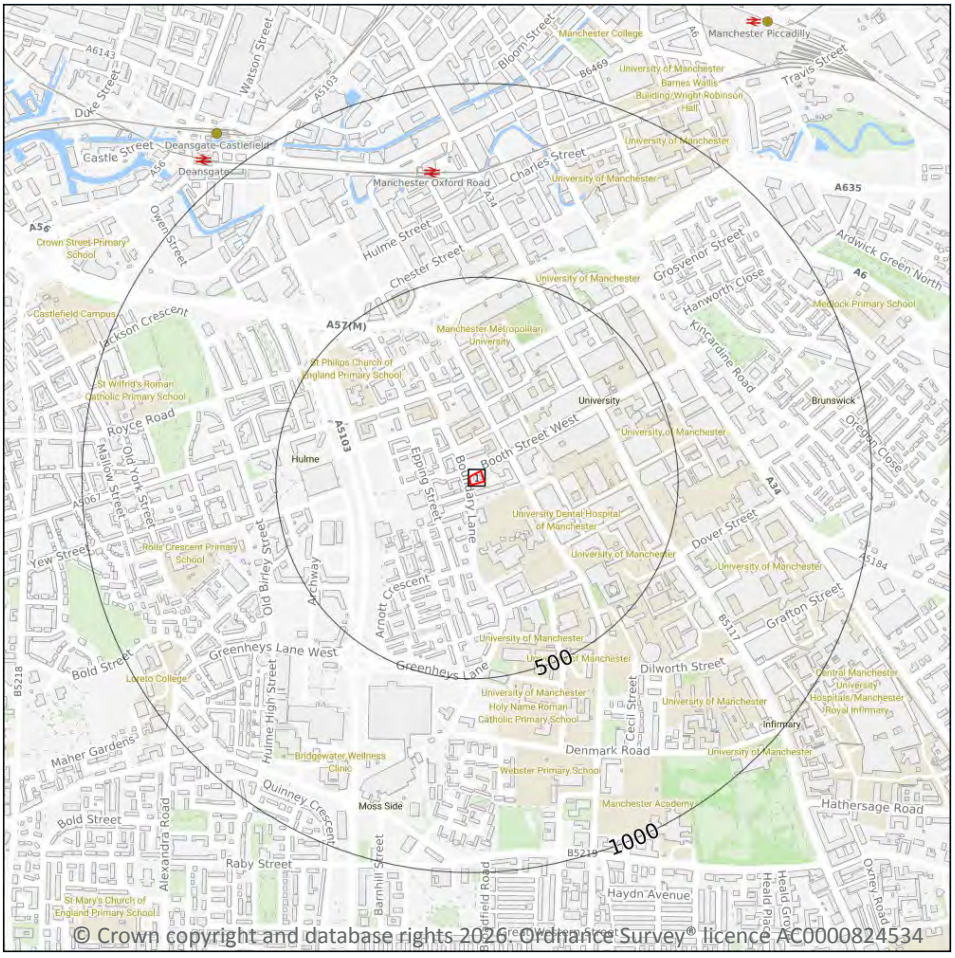
Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 89 >**

ID	Location	Category	Description
4	433m NE	FAULT	Fault, inferred, displacement unknown

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



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Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 91 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**Full**	**Full**	**No coverage**	**EW085_manchester_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.

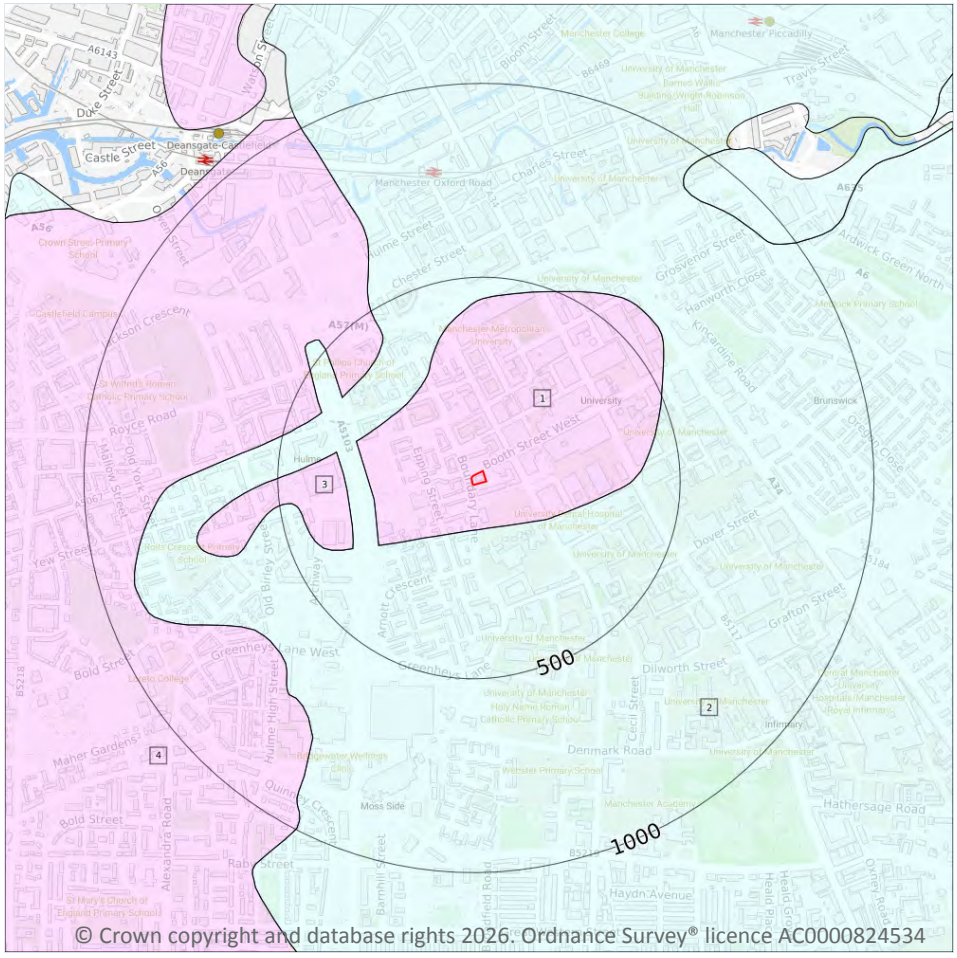
15.3 Artificial ground permeability (50k)

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 **4**

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 93 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**GFSDD-XSV**	**Glaciofluvial sheet deposits, Devensian**	**Sand and gravel**
2	116m S	TILLD-DMTN	Till, Devensian	Diamicton
3	322m W	GFSDD-XSV	Glaciofluvial sheet deposits, Devensian	Sand and gravel
4	382m NW	GFSDD-XSV	Glaciofluvial sheet deposits, Devensian	Sand and gravel

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

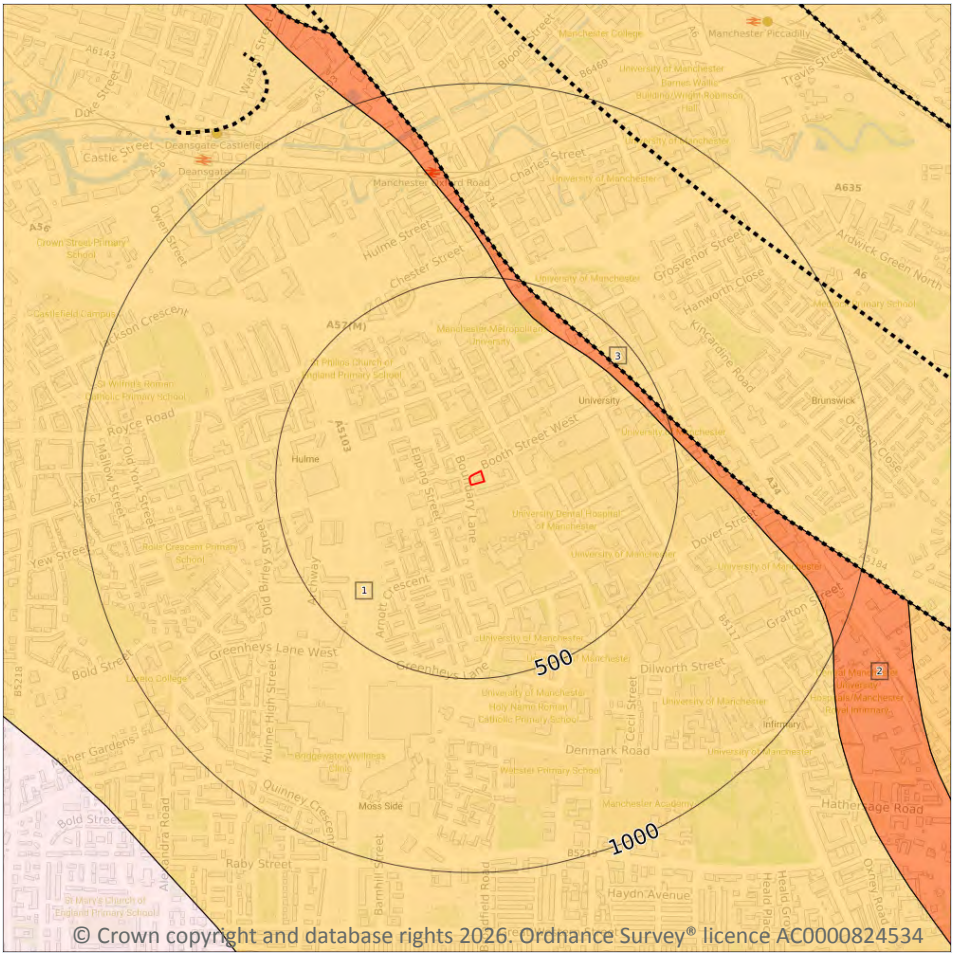
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



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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 95 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**CHES-SDST**	**Chester Formation-Sandstone**	**Olenekian**
2	398m NE	MM-MDST	Manchester Marls Formation-Mudstone	Not Defined

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	**Mixed**	**High**	**Moderate**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	1

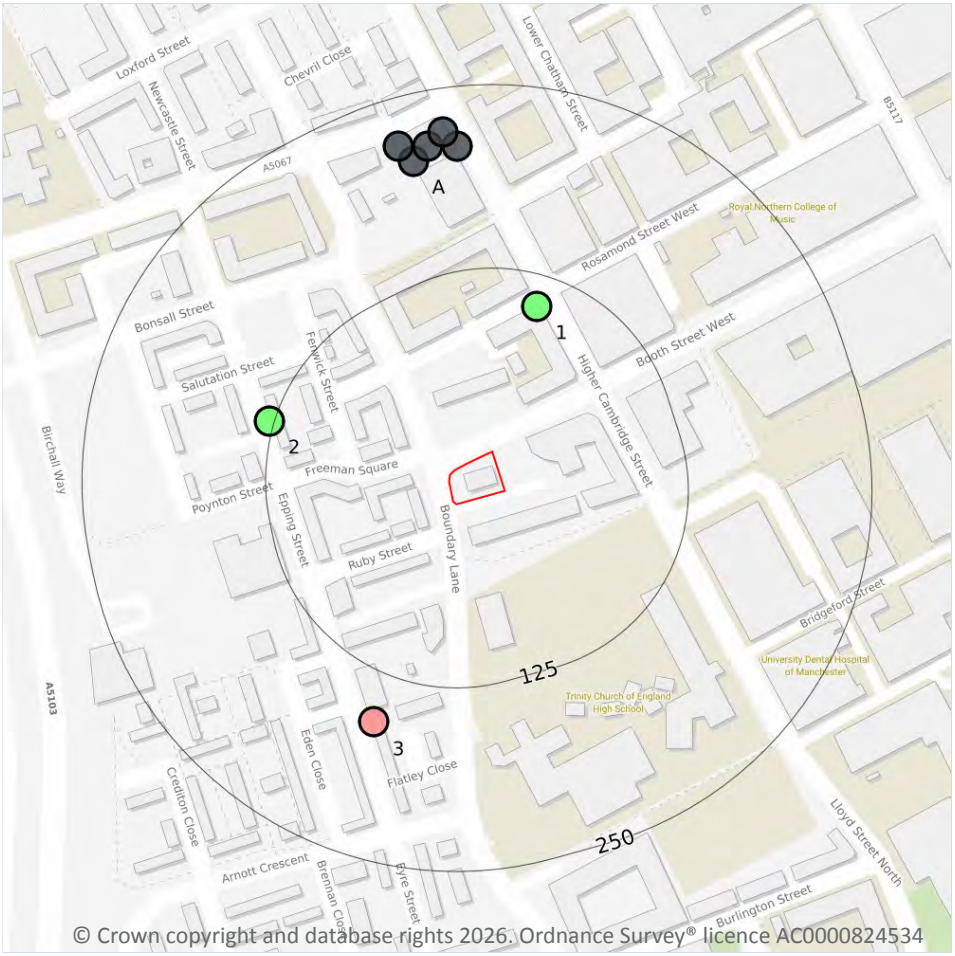
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 95 >**

ID	Location	Category	Description
3	433m NE	FAULT	Fault, inferred, crossmark on downthrow side, throw in metres

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	8

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.

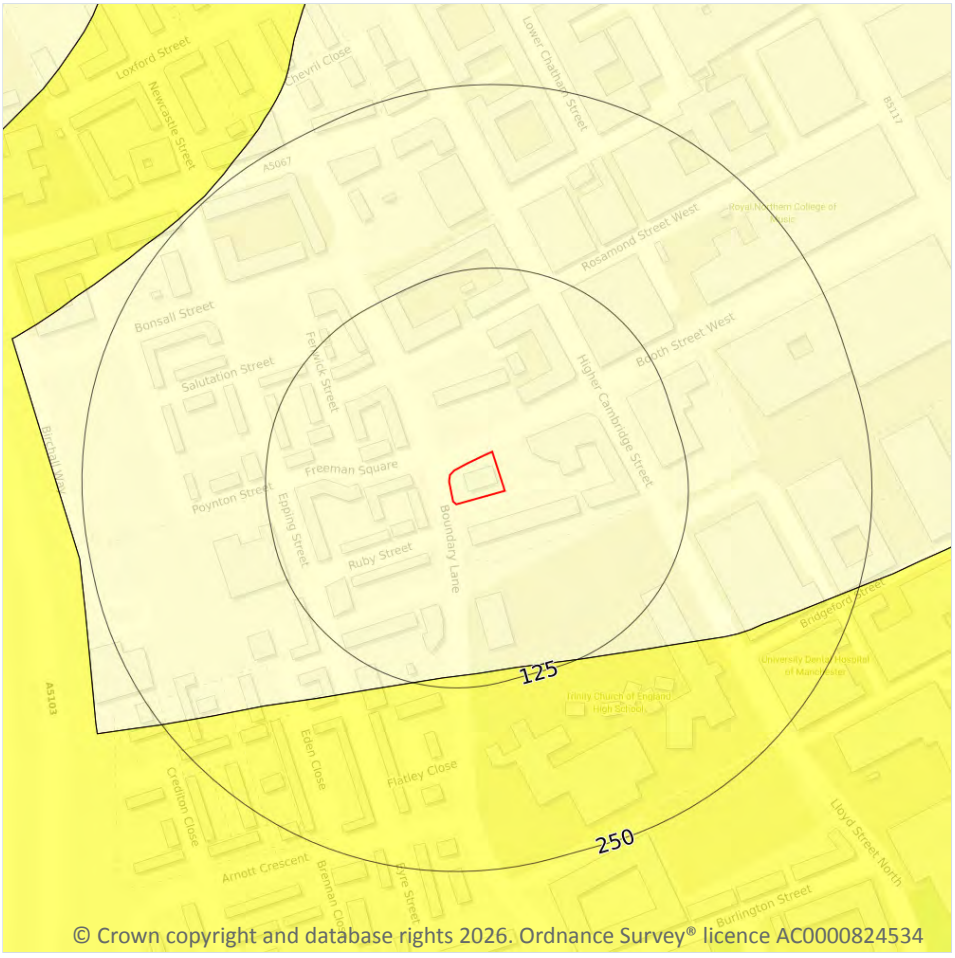
Features are displayed on the Boreholes map on **page 97 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	103m N	384184 396811	MANCHESTER CORP. SEWER WORKS NO.4, HULME	14.17	N	1042161 ↗
2	129m W	384002 396733	MANCHESTER CORP. SEWER WORKS NO.4, HULME	14.02	N	1042162 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
3	159m S	384073 396528	HARDY'S CROWN BREWERY RENSHAW STREET	141.73	N	1042406 ↗
A	205m N	384100 396910	HIGHER CAMBRIDGE ST MANCHESTER TP 3	-	Y	N/A
A	209m N	384130 396920	HIGHER CAMBRIDGE ST MANCHESTER TP 4	-	Y	N/A
A	213m N	384110 396920	HIGHER CAMBRIDGE ST MANCHESTER TP 5	-	Y	N/A
A	218m N	384090 396920	HIGHER CAMBRIDGE ST MANCHESTER TP 2	-	Y	N/A
A	221m N	384120 396930	HIGHER CAMBRIDGE ST MANCHESTER TP 1	-	Y	N/A

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	1

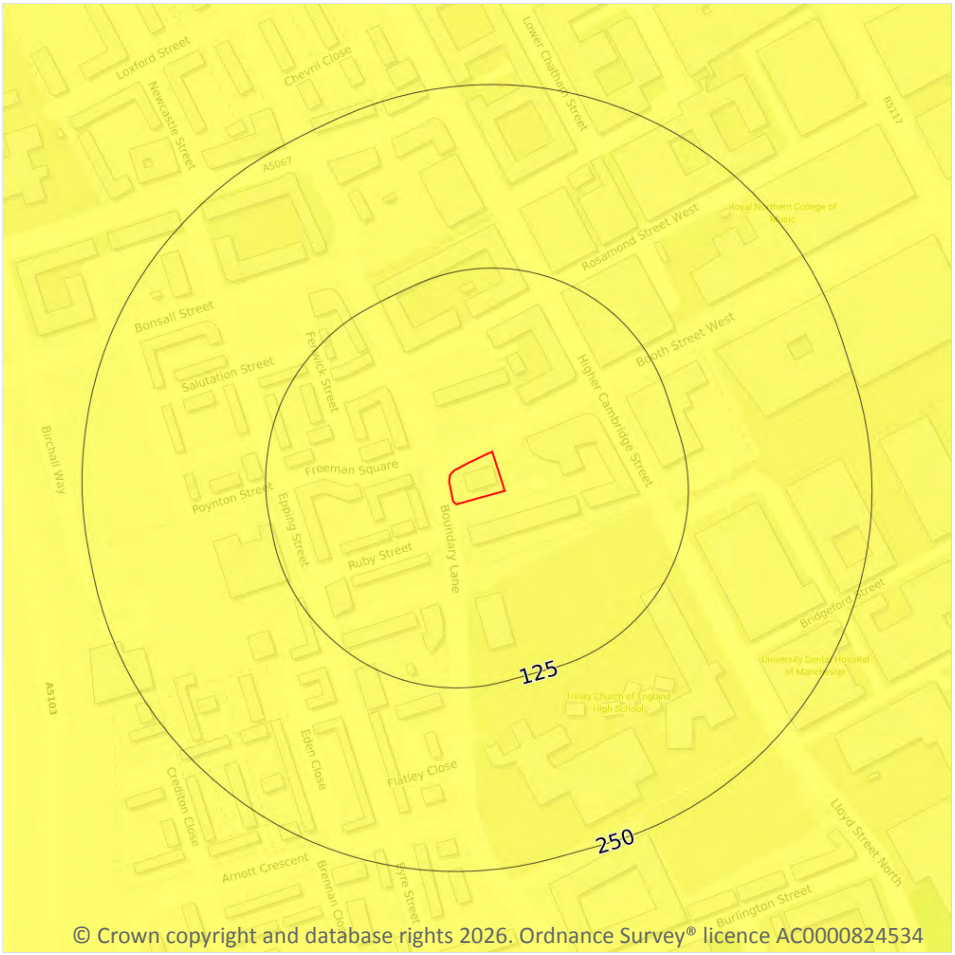
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 99 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

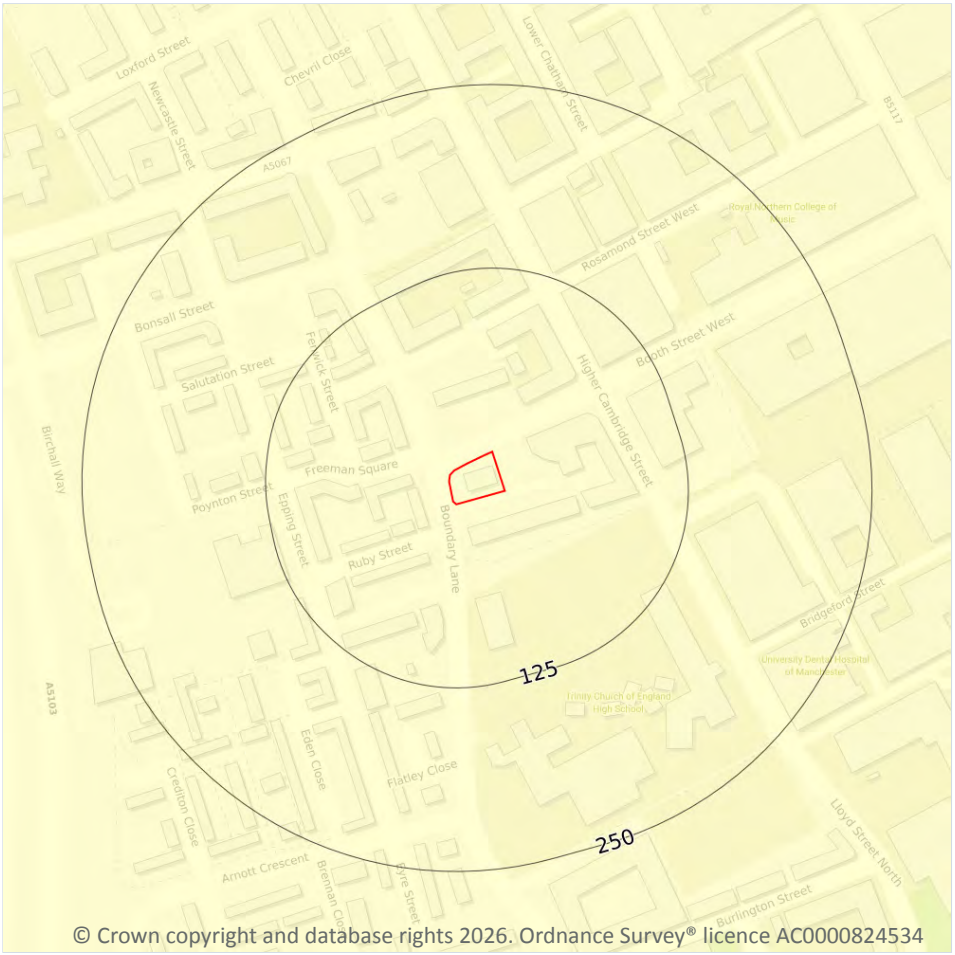
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 100 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

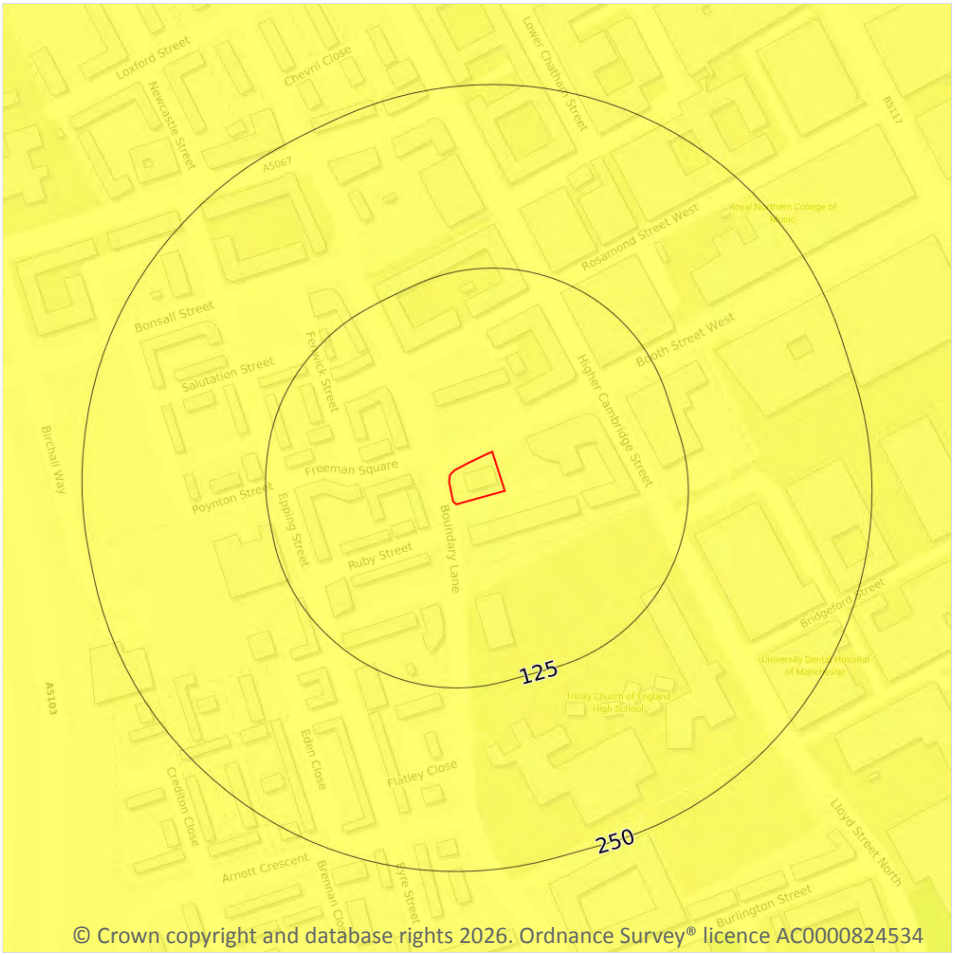
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 101 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

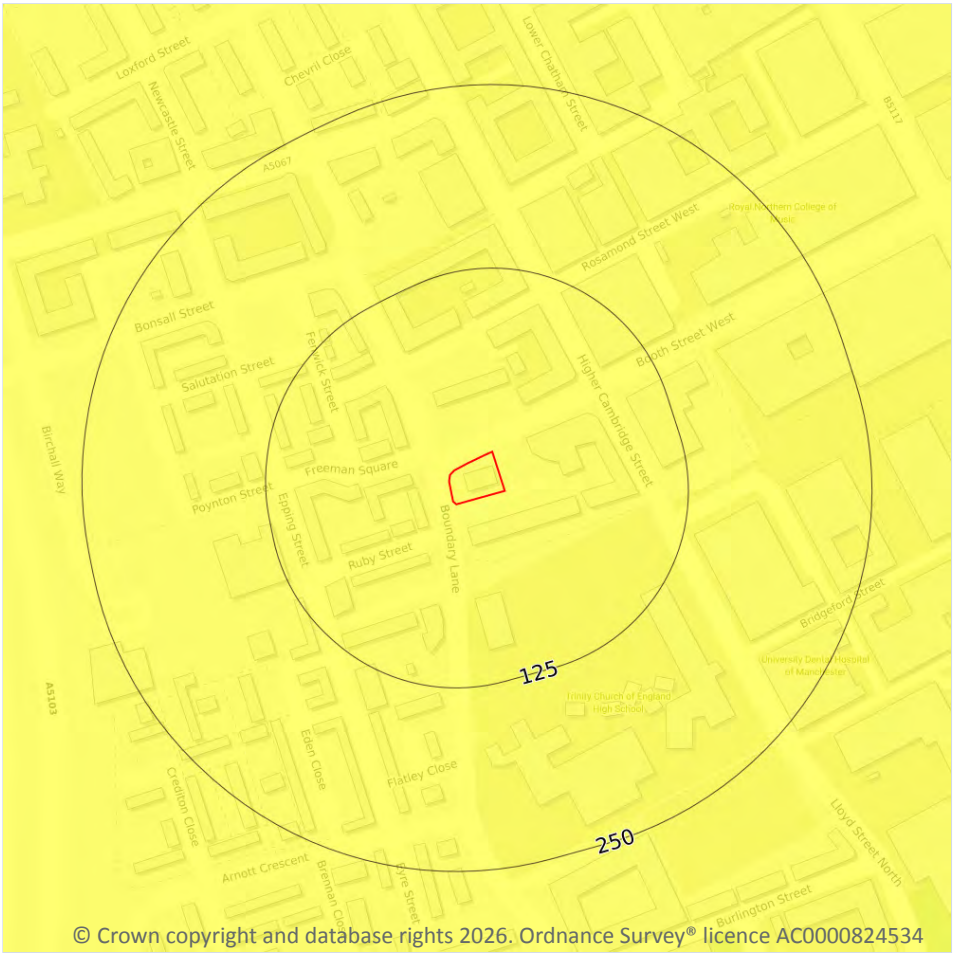
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 102 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

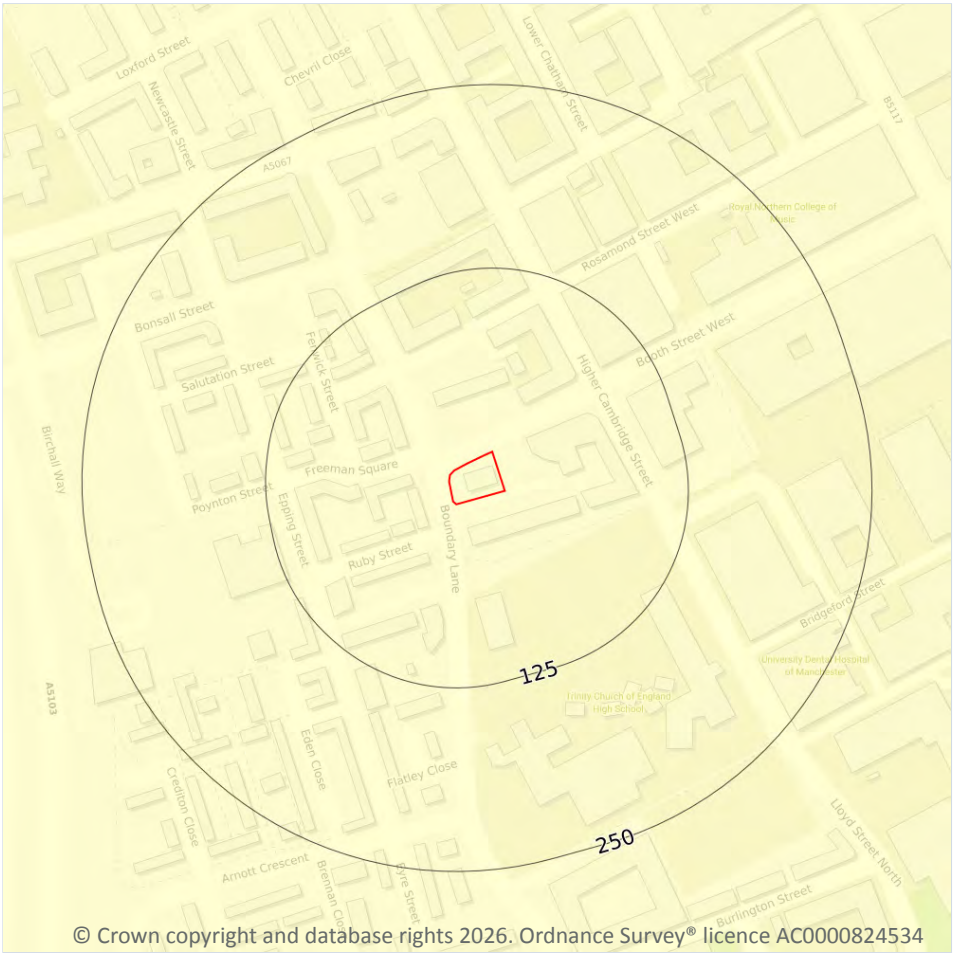
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 103 >**

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 104 >**

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

This data is sourced from the British Geological Survey.

18 Mining and ground workings

18.1 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	0

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.

This is data is sourced from Ordnance Survey®/Groundsure.

18.3 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey®/Groundsure.

18.4 Underground mining extents

Records within 500m	0

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

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	1

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

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

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

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	0

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

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	1

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

Location	Details
On site	**The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site. This can be ordered directly through Groundsure or your preferred search provider.**

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0

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

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

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

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

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

19 Ground cavities and sinkholes



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Site Outline

Search buffers in metres (m)

- Natural cavities (Area)
- Natural cavities (Point)
- Mining cavities
- Reported recent incidents
- Historical incidents

19.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	1

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.

Features are displayed on the Ground cavities and sinkholes map on **page 110 >**

ID	Location	Mine Address	Mineral
-	841m NE	Manchester, Greater Manchester	Firestone, Freestone, Hearthstone, Honestone, Ragstone, Sandstone, Scythestone, Silver Sand, Whetstone

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

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

This data is sourced from Groundsure.

19.4 Historical incidents

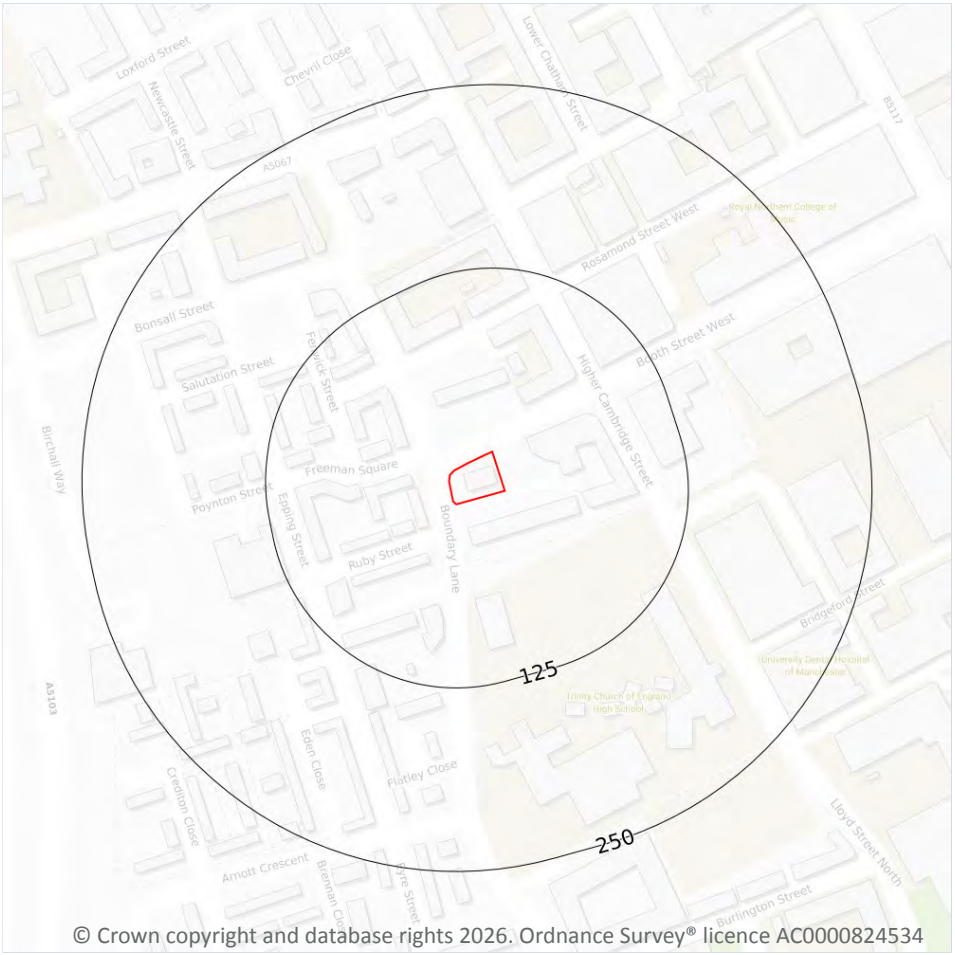
Records within 500m	0

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

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

This data is sourced from Groundsure.

20 Radon



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20.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 113 >**

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

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

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m	1

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**

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	6

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).

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	**29**	**5.1**	**69**	**47**	**0.5**	**65**	**38**	**26**	**11**
On site	**30**	**5.3**	**84**	**58**	**0.5**	**64**	**40**	**26**	**11**
25m W	23	4	83	57	0.5	55	25	21	7
25m W	22	3.8	75	52	0.4	56	24	21	7
38m E	31	5.4	217	149	0.7	63	62	27	16
40m E	31	5.4	295	203	0.8	66	72	27	19

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey® mapping.

This data is sourced from the Ordnance Survey®.

22.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey®/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey® and OpenStreetMap.

22.8 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

22.9 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: www.groundsure.com/terms-conditions-april-2026/ ↗.

Appendix D

The Coal Authority – Consultants Coal Mining Report

The Coal Authority

Consultants

Coal Mining Report

The Gamecock
Boundary Lane
Manchester
M15 6GE

Date of enquiry:	**16 May 2022**
Date enquiry received:	**16 May 2022**
Issue date:	**16 May 2022**
Our reference:	**51003134533001**
Your reference:	**1909009**



Consultants
Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

TWEEDIE EVANS CONSULTING LTD

Enquiry address

The Gamecock
Boundary Lane
Manchester
M15 6GE



Approximate position of property

Map data

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/thecoalauthority

Section 1 – Mining activity and geology

Past underground mining
No past mining recorded.

Probable unrecorded shallow workings
None.

Spine roadways at shallow depth
No spine roadway recorded at shallow depth.

Mine entries
None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers
None available.

Outcrops
No outcrops recorded.

Geological faults, fissures and breaklines
No faults, fissures or breaklines recorded.

Opencast mines
None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips
None recorded within 500 metres of the enquiry boundary.

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Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations
None recorded within 50 metres of the enquiry boundary.

Remediated sites
None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence
The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas
None recorded within 500 metres of the enquiry boundary.

Mine water treatment schemes
None recorded within 500 metres of the enquiry boundary.

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Section 3 – Licensing and future mining activity

Future underground mining
None recorded.

Coal mining licensing
None recorded within 200 metres of the enquiry boundary.

Court orders
None recorded.

Section 46 notices
No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices
The property is not in an area where a notice to withdraw support has been given.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land
The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

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Section 4 – Further information

Based on the responses in this report, no further information has been highlighted.

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Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk.**

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

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Opencast mines
Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips
Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations
Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites
Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence
Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas
Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission.

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Mine water treatment schemes
Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining
Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing
Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders
Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices
Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

Withdrawal of support notices
Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

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The Coal Authority

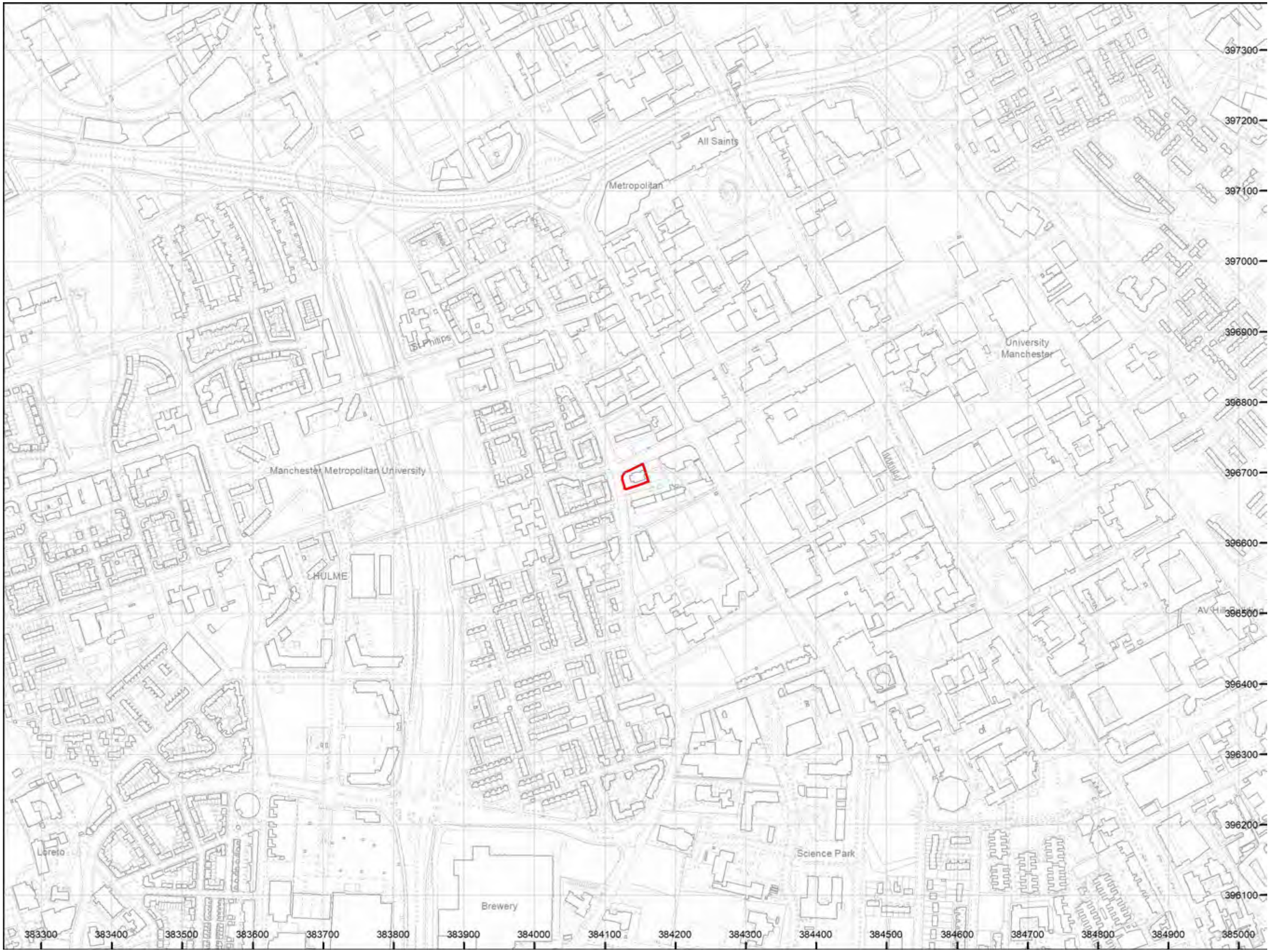
Summary of findings

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The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

Approximate position of the enquiry boundary shown



How to contact us
0345 762 6848 (UK)
+44 (0)1623 637 000 (International)
www.groundstability.com

Appendix E

Regulatory Correspondence

MANCHESTER CITY COUNCIL

Environmental Information Data

Site: Land off Booth Street West / Boundary Lane, Manchester

Site Centre Coordinates (British National Grid): 384143-396693
Approx. area of search feature: 833 m^2
Buffer Search Radius: 25, 250, 2000 metres

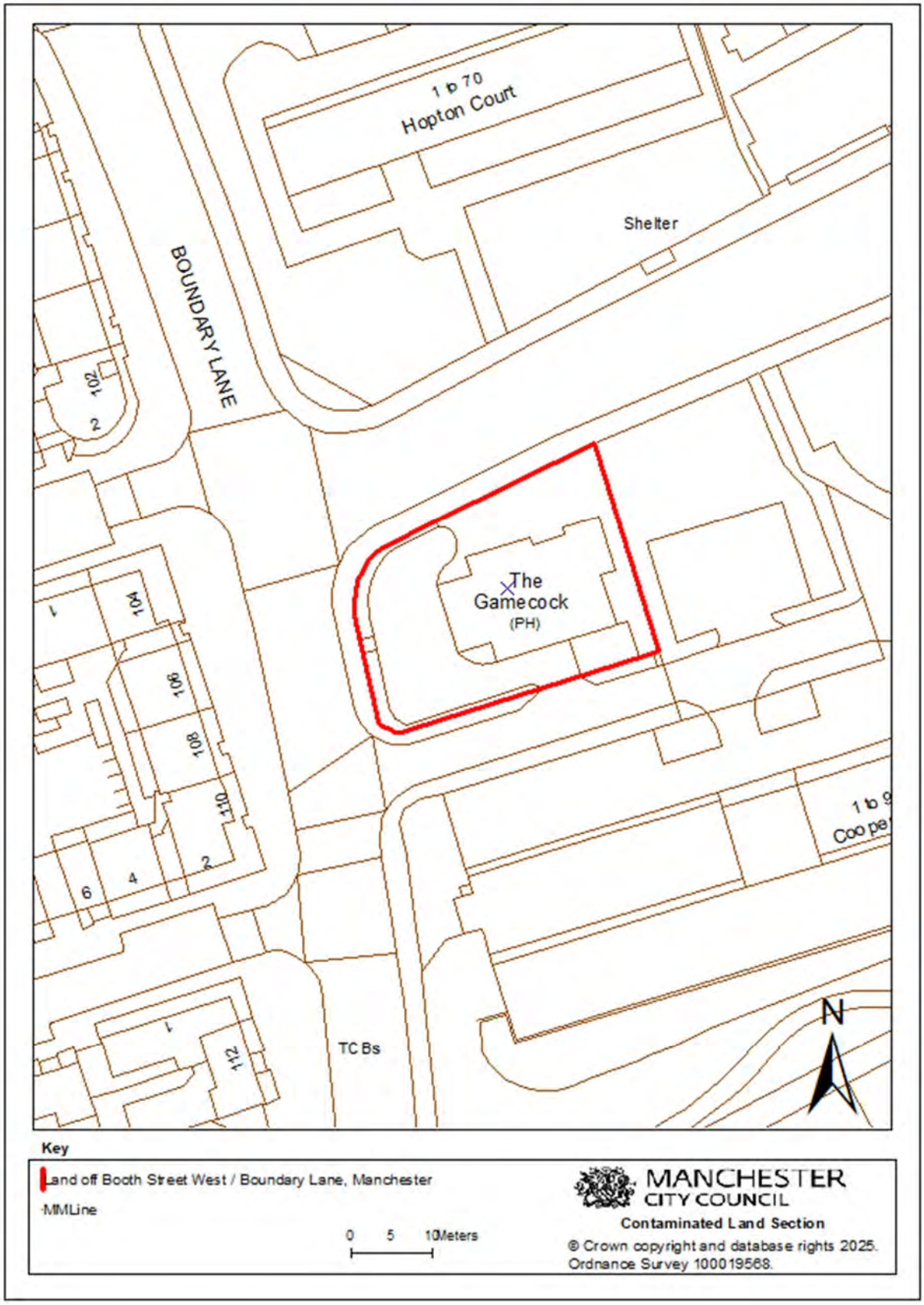
Our Reference: PR202604-1743275
Date: 10 April 2026

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3. **Contaminated Land Planning Conditions (2006-2024)** 3
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9. **Private Water Supplies** 4

MANCHESTER CITY COUNCIL

1. Site Location Map



2. Contaminated Land Planning Conditions (2024 – Present)

The Environmental Protection Team has no specific information relating to ground contamination at the site, but the absence of such information is no guarantee that the site is free from problems. The Environmental Protection Team is currently inspecting the city as part of our Contaminated Land Strategy and at present the information we hold is not comprehensive for the whole City.

3. Contaminated Land Planning Conditions (2006-2024)

The Environmental Protection Team has no specific information relating to ground contamination at the site, but the absence of such information is no guarantee that the site is free from problems. The Contaminated Land Section is currently inspecting the city as part of our Contaminated Land Strategy and at present the information we hold is not comprehensive for the whole City.

4. Former Landfill Sites

The enquiry site is not within 250 metres of any officially designated licensed or pre-licence landfill site within the Manchester City Council boundary.

5. Part 2A Determined Land

No records were identified within 250m

The council have not identified the site or surrounding area as being contaminated land as defined under the Environmental Protection Act 1990, Part 2A. The council have not assigned a risk rating to the site and have no current proposals to investigate the site under the Environmental Protection Act 1990, Part 2A.

Manchester City Councils contaminated land inspection strategy can be found at the following link.

https://secure.manchester.gov.uk/info/100006/environmental_problems/2366/contaminated_land_and_environmental_searches/5

6. Notices

For information on notices please register your enquiry via our webpage or email contact@manchester.gov.uk

7. Part A(2) Permitted Processes

To our knowledge, there are no PPC Part A(2) process registrations within 250 metres of the site.

8. Part B Permitted Processes

To our knowledge, there are no Part B process registrations within 250 metres of the site.

9. Private Water Supplies

There are currently no water supplies registered with MCC under the Private Water Supplies Regulations 1991, within a 2 km radius of the enquiry site within the MCC boundary.

Details of most abstractions, of which the Local Authority need not be notified, are held by the Environment Agency.

End of Report.

Appendix F

Risk Methodologies and Evaluation

Risk Evaluation

The qualitative assessment methodology presented in CIRIA publication C552 (2001) titled *'Contaminated Land Risk Assessment: A Guide to Good Practice'* has been used by TEC for the basis of evaluating potential risk.

The method requires an assessment of the:

- magnitude of the probability or likelihood of the risk occurring (Table 1); and
- magnitude of the potential consequence or severity of the risk occurring (Table 2)

Table 1. Classification of Probability

Classification	Definition
High likelihood	There is a pollution linkage and an event that either 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 that it is probable that an event will occur. Circumstances are such that an 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 that even over a longer period such an 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 that an event would occur even in the very long-term.

Table 2. Classification of Consequence

Classification	Definition	Examples
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 resource. (Note: Water Resources Act contains no scope for considering significance of pollution). Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organisation forming part of such ecosystem (note: the definitions of ecological systems within the draft circular on Contaminated Land, DETR, 2000).	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Explosion, causing building collapse (can also equate to a short-term human health risk if buildings are occupied).
Medium	Chronic damage to human health ("significant harm" as defined in DETR, 2000). Pollution of sensitive water resources. (Note: Water Resources Act contains no scope for considering significance of pollution). A significant change in a particular ecosystem, or organism forming part of such ecosystem, (note: the definitions of ecological systems within draft circular on Contaminated Land, DETR, 2000).	Concentration of a contaminant from site exceeding the generic or site-specific assessment criteria. Leaching of contaminants from a site to a major or minor aquifer. Death of a 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 the draft circular on Contaminated Land, DETR, 2000). Damage to sensitive buildings/structures/services or the environment.	Pollution of non-classified groundwater. Damage to building rendering it unsafe to occupy (for example foundation damage resulting in instability).
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc), easily repairable effects of damage to buildings, structures and services.	The presence of contaminants at such concentrations that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discolouration of concrete.

The combination of the two factors is determined using Table 3 and the resulting level of risk is described in Table 4. The evaluation can be applied to each of the scenarios identified in the risk model and the overall risk assessed.

Table 3. Combination of Consequence with Probability

		Consequence			
		Severe	Medium	Mild	Minor
Probability	High Likelihood	**Very High Risk**	**High Risk**	**Moderate Risk**	**Moderate/Low Risk**
	Likely	**High Risk**	**Moderate Risk**	**Moderate/Low Risk**	**Low Risk**
	Low Likelihood	**Moderate Risk**	**Moderate/Low Risk**	**Low Risk**	**Very Low Risk**
	Unlikely	**Moderate/Low Risk**	**Low Risk**	**Very Low Risk**	**Very Low Risk**

Table 4. Description of risks and likely action required

Very High Risk	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 to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High Risk	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 (if not undertaken already) is required and remedial works may be necessary in the short-term and are likely over the longer-term.
Moderate Risk	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 is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the long-term.
Low Risk	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 Risk	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.

Using the risk model the pollutant linkages are identified and a preliminary estimate of risk undertaken. If there is no pollutant linkage identified, then there is no risk. If the estimate of risk for all the linkages and exposure scenarios is very low at this stage then it is likely that no further assessment will be required.

Appendix G

Exploratory Hole Logs

DYNAMIC SAMPLING RECORD

Project Title: Booth Street West, Manchester	**Borehole:** WS1
Project No: 1909009.001	**Dates:** 17th September 2019
Client: Curlew Opportunities	

TWEEDIE EVANS CONSULTING
www.tecon.co.uk
info@tecon.co.uk

Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results: Blow Count	SPT Results: N Value	Remarks/ Data	Installation
	Ground Surface			0.0				
0.70	MADE GROUND Tarmacadam over brown sandy gravel and cobbles of brick and mixed lithology. Rare fragments of plastic and slate noted.		A					
2.00	MADE GROUND Sandy gravel and cobbles of brick and rare sandstone. Localised pockets of light brown sand noted.			1.0				
2.40	MADE GROUND Dark brown locally sandy gravelly cobbly clay. Gravel and cobble of brick, sandstone and clay pipe. Rare organic plant remains and wood fragments noted.		A	2.0				
2.85	Firm orange-brown sandy gravelly CLAY. Gravel of fine to coarse sub-angular to rounded chert and sandstone.							
4.40	(Loose to medium dense) grey clayey sandy GRAVEL of sub-angular to rounded chert and sandstone with rare black organic fragments (wood).			3.0 4.0				
4.85	Stiff brown slightly gravelly slightly sandy slightly silty CLAY. Gravel of mudstone and sandstone.							
5.00	(Dense) red-brown slightly gravelly slightly clayey fine SAND. Gravel of medium sub-angular sandstone.			5.0				
	Borehole Terminated							

Installation: Concrete; Bentonite; Pea Gravel; Slotted Pipe

Notes:

A:	250ml and 60ml Amber Glass Jars
T:	Plastic Tub (1Kg)
B:	Bulk Sample
C:	Core Sample
SPT:	Standard Penetration Test
HSV:	Hand Shear Vane (kPa)
PP:	Pocket Penetrometer (kg/cm²)
PID:	Photo-Ionisation Detector (ppm)

Plant: Dando Terrier

Water observations:
Water entry at approx. 3.0mbgl, rising to 2.67mbgl.

General remarks: Hand dug to 1.2mbgl.

Logged by: ML	Checked by: ET	Approved by: RE

DYNAMIC SAMPLING RECORD

Project Title: Booth Street West, Manchester	**Borehole:** WS2
Project No: 1909009.001	**Dates:** 17th September 2019
Client: Curlew Opportunities	

TWEEDIE EVANS CONSULTING
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info@tecon.co.uk

Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results: Blow Count	SPT Results: N Value	Remarks/ Data	Installation
	Ground Surface			0.0				
0.30	MADE GROUND Tarmacadam over grey and brown sandy gravel of mixed lithology.							
0.70	MADE GROUND Dark brown slightly clayey gravelly sand. Gravel of brick, concrete, slate, glass and mixed lithology.		A					
1.20	Firm orange-brown and grey slightly sandy gravelly silty CLAY. Gravel of sandstone and chert. ...Becoming orange-brown sandy and slightly gravelly at 1.0mbgl.			1.0				
1.40	(Medium dense) orange-brown slightly clayey slightly gravelly medium to coarse SAND. Gravel of chert and sandstone.							
3.20	(Loose to medium dense) light grey with orange-brown mottling slightly clayey gravelly SAND. Gravel of sub-rounded to rounded chert and sub-angular sandstone. ...Becoming orange-brown with localised light grey and red-brown mottling below 2.0mbgl. ...Clay content noted to decrease with depth. ...Much cobbles of sub-rounded to rounded chert noted below 2.6mbgl.			2.0 3.0				
4.00	Very stiff brown slightly gravelly slightly silty CLAY. Gravel of fine to medium sub-angular mudstone.			4.0				
	Borehole Terminated			5.0				

Notes:

A:	250ml and 60ml Amber Glass Jars
T:	Plastic Tub (1Kg)
B:	Bulk Sample
C:	Core Sample
SPT:	Standard Penetration Test
HSV:	Hand Shear Vane (kPa)
PP:	Pocket Penetrometer (kg/cm²)
PID:	Photo-Ionisation Detector (ppm)

Plant: Dando Terrier

Water observations:
Water entry at approx. 2.8mbgl. Water level at 2.78mbgl upon completion.

General remarks: Hand dug to 1.2mbgl.

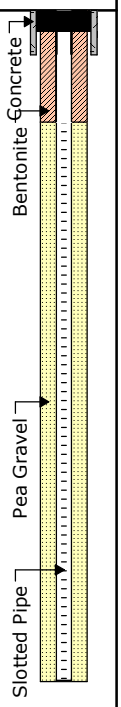
Logged by: ML	Checked by: ET	Approved by: RE

DYNAMIC SAMPLING RECORD

Project Title: Booth Street West, Manchester	**Borehole:** WS3
Project No: 1909009.001	**Dates:** 17th September 2019
Client: Curlew Opportunities	

TWEEDIE EVANS CONSULTING
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info@tecon.co.uk

Depth (m)	Description	Legend	Sample Details	Depth (m)	SPT Results: Blow Count	SPT Results: N Value	Remarks/ Data	Installation
	Ground Surface			0.0				
	MADE GROUND Tarmacadam over light brown slightly gravelly sand. Gravel of mixed lithology.							
0.40	MADE GROUND Dark brown slightly clayey gravelly sand with low cobble content. Gravel of brick, chert, slate, glass, plastic and wood. Cobble of sandstone. ...Sand becoming orange-brown at 1.5mbgl. Low recovery between 2.0-2.8mbgl.		A	1.0				
			A	2.0				
2.80	Low recovery. (Medium dense) brown sandy GRAVEL of rounded to sub-rounded chert and sub-angular sandstone.							
3.05	Stiff brown slightly gravelly slightly sandy slightly silty CLAY. Gravel of fine siltstone/mudstone/sandstone.			3.0				
4.00	Borehole Terminated			4.0				
				5.0				



Notes:

A:	250ml and 60ml Amber Glass Jars
T:	Plastic Tub (1Kg)
B:	Bulk Sample
C:	Core Sample
SPT:	Standard Penetration Test
HSV:	Hand Shear Vane (kPa)
PP:	Pocket Penetrometer (kg/cm²)
PID:	Photo-Ionisation Detector (ppm)

Plant: Dando Terrier

Water observations:
No groundwater encountered.

General remarks: Hand dug to 1.2mbgl.

Logged by: ML	Checked by: ET	Approved by: RE

HAND DUG PIT RECORD

Project Title: Booth Street West, Manchester	**Location:** HDP1
Project No: 1909009.001	**Dates:** 17th September 2019
Client: Curlew Opportunities	

TWEEDIE EVANS CONSULTING
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info@tecon.co.uk

Depth (m)	Description	Legend	Depth (m)	Sample Details	Remarks
0.00	Ground Surface				
	MADE GROUND Dark brown slightly sandy slightly gravelly clay. Gravel of brick, chert, cinder, conglomerate and wood fragments. Rare roots and rootlets noted. Brick cobbles encountered at 0.6mbgl.		0.00	A	
0.60	Hand Dug Pit Terminated				

Notes and Remarks:

A - 250ml and 60ml Glass Jars
T - 1kg Plastic Tub
B - Bulk Sample
HSV - Hand Shear Vane (kPa)
PP - Pocket Penetrometer (kg/cm^2)

Water Observation: No groundwater/perched water encountered.

Logged by: ML	Checked by: ET	Approved by: RE

HAND DUG PIT RECORD

Project Title: Booth Street West, Manchester	**Location:** HDP2
Project No: 1909009.001	**Dates:** 17th September 2019
Client: Curlew Opportunities	

TWEEDIE EVANS CONSULTING
www.tecon.co.uk
info@tecon.co.uk

Depth (m)	Description	Legend	Depth (m)	Sample Details	Remarks
0.00	Ground Surface				
	MADE GROUND Dark brown slightly sandy slightly gravelly clay. Gravel of brick, chert, plastic, chert and wood fragments. Rare roots and rootlets noted. Brick cobbles encountered at 0.5mbgl.		0.00	A	
0.50	Hand Dug Pit Terminated				

Notes and Remarks:

A - 250ml and 60ml Glass Jars
T - 1kg Plastic Tub
B - Bulk Sample
HSV - Hand Shear Vane (kPa)
PP - Pocket Penetrometer (kg/cm^2)

Water Observation: No groundwater/perched water encountered.

Logged by: ML	Checked by: ET	Approved by: RE

Rotary Core Log

Borehole No. **BH1** FINAL Sheet 1 of 4

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384134.00 - 396707.00
Location:	Booth Street West, Manchester	Level: mbgl	Orientation: ° Inclination: °
Client:	Curlew Alternatives Eighth Property LP	Dates: 04/04/2022 - 06/04/2022	Hole Type RC; Scale 1:25; Logged By JN

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description
								0.15			MADE GROUND: Black mottled grey tarmacadam with clasts of mudstone and sandstone.
											MADE GROUND: Brown mottled reddish brown and grey slightly silty clayey gravelly sand with low granite and brick cobble content. Gravel of brick, concrete, granite, sandstone, mudstone and rare ceramic.
											Poor recovery.
		0.90 - 1.00	16ES								
		1.50	S				N=1 (3,3/0,0,1,0)				
		3.00	S				N=27 (2,3/6,5,7,9)				
								3.20			GLACIOFLUVIAL DEPOSITS: Stiff medium to high strength brown to reddish brown slightly sandy gravelly CLAY with low sandstone cobble content and localised sandy pockets (3 - 5mm). Gravel of subrounded to rounded fine to coarse sandstone and mudstone.
		3.5	HV				45kPa				
		3.5	HV				50kPa				
		3.5	HV				50kPa				
		4.0	1D				70kPa				
		4.0	HV				75kPa				
		4.0	HV				75kPa				
		4.00 - 4.20	HV								
		4.50	S				N=25 (3,3/4,5,7,9)				
		4.5	HV				80kPa				
		4.5	HV				80kPa				
		4.5	HV				85kPa	4.70			GLACIOFLUVIAL DEPOSITS: Very stiff high strength brown becoming reddish brown sandy slightly gravelly CLAY.
		5.0	2D				100kPa				

Continued on next sheet

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Rotary Core Log

Borehole No. **BH1** FINAL Sheet 2 of 4

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384134.00 - 396707.00
Location:	Booth Street West, Manchester	Level: mbgl	Orientation: ° Inclination: °
Client:	Curlew Alternatives Eighth Property LP	Dates: 04/04/2022 - 06/04/2022	Hole Type RC; Scale 1:25; Logged By JN

Well	Water Strikes	Depth (m)	Type / Fl	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description
		5.0 5.0 5.00 - 5.10	HV HV HV				100kPa 95kPa				Gravel of angular to subrounded fine and medium sandstone.
								5.20			CHESTER FORMATION: Extremely weak reddish brown SANDSTONE, recovered as slightly gravelly sand.
		6.00	S				N=50 (25 for 75mm/50 for 35mm)				
		6.00 - 7.50		85	50	33					
		7.50	C				N=50 (25 for 100mm/50 for 40mm)	7.50			CHESTER FORMATION: Extremely weak becoming very weak reddish brown SANDSTONE with rare sandstone and quartzite lithorelicts. Fractures are very closely spaced (5/15/40) undulating rough with rare reddish brown silt infill.
		7.50 - 9.00		90	70	45					
								8.70			CHESTER FORMATION: Very weak reddish brown locally mottled light bluish grey SANDSTONE with rare sandstone lithorelicts. Fractures are very closely spaced (0/10/60) undulating rough infilled with fine and medium red sand.
		8.90 - 9.00	3C								
		9.00	C				N=50 (25 for 85mm/50 for 25mm)				
		9.30 - 9.40	4C								
								9.40			CHESTER FORMATION: Very weak to weak reddish brown locally pinkish brown SANDSTONE with rare sandstone and quartzite lithorelicts. Fractures are extremely closely to closely spaced (5/44/200) undulating rough with rare dark grey sand infill.
		9.00 - 10.50		95	93	54					

Continued on next sheet

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Rotary Core Log

Borehole No. **BH1** FINAL Sheet 3 of 4

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384134.00 - 396707.00
Location:	Booth Street West, Manchester	Level: mbgl	Orientation: ° Inclination: °
Client:	Curlew Alternatives Eighth Property LP	Dates: 04/04/2022 - 06/04/2022	Hole Type RC; Scale 1:25; Logged By JN

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description
		10.10 - 10.25	5C								
		~~10.50~~	C				N=50 (25 for 75mm/50 for 25mm)				
		10.70 - 11.00	6C								
		10.50 - 12.00		90	88	74					
		11.70 - 12.00	7C								
		~~12.00~~	C				N=50 (25 for 100mm/50 for 40mm)				
		12.40 - 12.60	8C								
		12.00 - 13.50		95	94	74					
		13.20 - 13.50	9C								
		~~13.50~~	C				N=50 (25 for 40mm/50 for 40mm)				
		13.50 - 15.00		95	95	78		14.00			CHESTER FORMATION: Weak reddish brown SANDSTONE with rare sandstone and rare quartzite lithorelicts. Fractures are very closely to medium spaced (25/50/220) undulating rough with rare dark grey sand infill.
		~~15.00~~	C								

Continued on next sheet

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Rotary Core Log

Borehole No. **BH1** FINAL Sheet 4 of 4

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384134.00 - 396707.00
Location:	Booth Street West, Manchester	Level: mbgl	Orientation: ° Inclination: °
Client:	Curlew Alternatives Eighth Property LP	Dates: 04/04/2022 - 06/04/2022	Hole Type RC; Scale 1:25; Logged By JN

Well	Water Strikes	Depth (m)	Type / Fl	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description
		15.30 - 15.50	10C				N=50 (25 for 20mm/50 for 20mm)				
		15.70 - 15.90 15.00 - 16.50	11C	100	100	80					
								16.00			
		16.20 - 16.40	12C								CHESTER FORMATION: Weak reddish brown SANDSTONE. Fractures are extremely closely to medium spaced (10/60/250) undulating rough with rare dark grey and reddish brown sand infill.
		16.50	C				N=50 (25 for 35mm/50 for 15mm)				
		17.00 - 17.20	13C								
		16.50 - 18.00		97	97	85					
		17.50 - 18.00	14C								
		18.00	C				N=50 (25 for 40mm/50 for 15mm)				
		18.00 - 19.50 18.80 - 19.00	15C	100	100	90					
								19.50			End of borehole at 19.5 m

16 17 18 19 20

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Rotary Core Log

Borehole No. **BH2** FINAL Sheet 1 of 4

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384131.00 - 396695.00
Location:	Booth Street West, Manchester	Level: mbgl	Orientation: ° Inclination: °
Client:	Curlew Alternatives Eighth Property LP	Dates: 06/04/2022 - 08/04/2022	Hole Type RC; Scale 1:25; Logged By JN

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description
								0.15			MADE GROUND: Black mottled grey tarmacadam with clasts of mudstone and sandstone.
								0.30			MADE GROUND: Grey mottled dark grey and brown slightly sandy gravel of igneous lithologies, sandstone and mudstone.
		0.70 - 0.80	1ES								MADE GROUND: Brown mottled reddish brown and dark grey clayey gravelly sand with low mudstone cobble content. Gravel of mudstone, igneous lithologies, sandstone and rare flint.
		1.50	S				N=19 (3,3/3,5,5,6)				
								2.00			GLACIOFLUVIAL DEPOSITS: Medium-dense brown mottled reddish brown clayey gravelly fine to coarse SAND. Gravel of angular to subrounded fine to coarse mudstone, sandstone and flint.
		3.00	2D				N=20 (5,6/4,5,5,6)				
		3.00 - 3.45	S								
		3.20 - 3.40	3D					3.20			GLACIOFLUVIAL DEPOSITS: Stiff high strength with localised medium strength pockets brown becoming dark reddish brown slightly sandy gravelly CLAY with low sandstone cobble content. Gravel of angular to subrounded fine and medium sandstone and flint.
		3.5	HV				75kPa				
		3.5	HV				75kPa				
		3.5	HV				80kPa				
		3.80 - 4.00	4D					3.80			GLACIOFLUVIAL DEPOSITS: Stiff to very stiff high strength brown to dark reddish brown slightly sandy slightly gravelly CLAY with low sandstone cobble content. Gravel of angular to subrounded fine to coarse sandstone and flint.
		4.0	HV				100kPa				
		4.0	HV				100kPa				
		4.0	HV				90kPa				
		4.50	5D				N=13 (3,3/3,3,3,4)				
		4.5	S				100kPa				
		4.5	HV				112kPa				
		4.5	HV				112kPa				
		4.50 - 4.95	HV								
		4.90 - 5.00	6D					5.00			
											Continued on next sheet

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Rotary Core Log

Borehole No. **BH2** FINAL Sheet 2 of 4

Project Name: Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384131.00 - 396695.00	Hole Type RC
Location: Booth Street West, Manchester		Level: mbgl Orientation: ° Inclination: °	Scale 1:25
Client: Curlew Alternatives Eighth Property LP		Dates: 06/04/2022 - 08/04/2022	Logged By JN

Well	Water Strikes	Depth (m)	Type / Fl	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description	
											CHESTER FORMATION: Extremely weak reddish brown SANDSTONE, recovered as slightly gravelly sand.	6
		5.50-6.00	C	80	56	32	N=50 (7,13/50 for 150mm)	6.50			CHESTER FORMATION: Extremely weak becoming very weak reddish brown SANDSTONE with rare sandstone lithorelicts. Fractures are extremely closely to closely spaced (5/10/80) undulating rough with rare reddish brown silt and sand infill.	7
		7.10 - 7.30	7C									
		6.50 - 8.00		86	80	62						
		7.50	C				N=50 (25 for 75mm/50 for 55mm)					
		7.80 - 8.00	8C									
		8.00	C				N=50 (25 for 50mm/50 for 20mm)	8.00			CHESTER FORMATION: Very weak to weak reddish brown SANDSTONE with rare sandstone and limestone lithorelicts. Fractures are very closely to closely spaced (20/65/200) undulating rough with reddish brown and grey sand infill.	8
		8.50 - 8.70	9C									
		8.00 - 9.50		84	84	73						9
		9.20 - 9.50	10C									
		9.50	C				N=50 (25 for 45mm/50 for 15mm)					
		10.00 - 10.50	11C									10

Continued on next sheet

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Rotary Core Log

Borehole No. **BH2** FINAL Sheet 3 of 4

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384131.00 - 396695.00
Location:	Booth Street West, Manchester	Level: mbgl	Orientation: ° Inclination: °
Client:	Curlew Alternatives Eighth Property LP	Dates: 06/04/2022 - 08/04/2022	Hole Type RC / Scale 1:25 / Logged By JN

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description
		9.50 - 11.00		93	91	82					
		10.70 - 10.90	12C								
		~~11.00~~	C				N=50 (25 for 50mm/50 for 20mm)				
		11.50 - 11.80	13C								
		11.00 - 12.50		97	96	75		11.70			
		12.00 - 12.30	14C								CHESTER FORMATION: Weak reddish brown SANDSTONE. Fractures are very closely to closely spaced (25/55/190) undulating rough with rare dark grey and reddish brown sandy silt infill.
		~~12.50~~	C				N=50 (25 for 40mm/50 for 10mm)				
		12.80 - 13.00	15C								
		12.50 - 14.00		100	94	81					
		13.50 - 13.90	16C								
		~~14.00~~	C				N=50 (25 for 40mm/50 for 10mm)	13.90			CHESTER FORMATION: Weak reddish brown SANDSTONE. Fractures are closely to medium spaced (60/80/250) undulating rough with rare dark grey sandy silt infill.
		14.30 - 14.50	17C								
		14.00 - 15.50		98	98	83					
		15.00 - 15.30	18C					15.00			

Continued on next sheet

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Rotary Core Log

Borehole No. **BH2** FINAL Sheet 4 of 4

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384131.00 - 396695.00
Location:	Booth Street West, Manchester	Level: mbgl	Orientation: ° Inclination: °
Client:	Curlew Alternatives Eighth Property LP	Dates: 06/04/2022 - 08/04/2022	Hole Type RC / Scale 1:25 / Logged By JN

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description
		15.50	C				N=50 (25 for 40mm/50 for 30mm)				CHESTER FORMATION: Weak reddish brown SANDSTONE. Fractures are very closely to medium spaced (30/70/300) undulating rough with rare dark grey and reddish brown sand infill.
		16.20 - 16.30 15.50 - 17.00	19C	100	100	85					
		17.00	C				N=50 (25 for 20mm/50 for 10mm)				
		17.40 - 17.70	20C								
		17.00 - 18.50		100	100	92		18.50			End of borehole at 18.5 m

16 17 18 19 20

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Rotary Core Log

Borehole No. **BH3** FINAL Sheet 1 of 4

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384140.00 - 396683.00
Location:	Booth Street West, Manchester	Level: mbgl	Orientation: ° Inclination: °
Client:	Curlew Alternatives Eighth Property LP	Dates: 11/04/2022 - 13/04/2022	Hole Type RC; Scale 1:25; Logged By JN

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description
								0.15			MADE GROUND: Black mottled grey tarmacadam with clasts of mudstone and sandstone.
		0.40 - 0.50	1ES					0.50			MADE GROUND: Dark grey mottled brown slightly clayey slightly sandy gravel of igneous lithologies, sandstone, brick and rare mudstone.
								0.60			MADE GROUND: Dark grey mottled dark brown slightly sandy gravelly clay. Gravel of mudstone, sandstone, brick and concrete.
											MADE GROUND: Dark brown mottled grey and orangish brown sandy slightly gravelly clay. Gravel of mudstone, sandstone, flint, brick and concrete.
								1.40			MADE GROUND: Orangish brown mottled brown and dark grey slightly clayey gravelly sand. Gravel of sandstone, rare brick and rare concrete.
		2.00	S				N=19 (4,4/4,5,4,6)	2.00			GLACIOFLUVIAL DEPOSITS: Medium-dense orangish brown mottled brown and locally reddish brown clayey gravelly fine and medium SAND. Gravel of subangular to rounded fine and medium sandstone, mudstone and rare flint.
								2.40			GLACIOFLUVIAL DEPOSITS: Medium-dense slightly clayey gravelly fine to coarse SAND. Gravel of subangular to rounded fine and medium sandstone, mudstone and rare flint.
								3.00			GLACIOFLUVIAL DEPOSITS: Stiff high to very high strength brown mottled reddish brown sandy slightly gravelly CLAY with low sandstone cobble content. Gravel of subangular to rounded fine to coarse sandstone, flint and rare limestone.
		3.50	S				N=21 (26 for 110mm/8,4,5,4)				
		3.5	HV				80kPa				
		3.5	HV				80kPa				
		3.5	HV				90kPa				
		4.10 - 4.30	2D								
		4.5	HV				125kPa				
		4.5	HV				125kPa				
		4.5	HV				150kPa				
		4.80 - 5.00	3D								
		5.00	4D					5.00			

Continued on next sheet

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Rotary Core Log

Borehole No. **BH3** FINAL Sheet 2 of 4

Project Name: Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384140.00 - 396683.00	Hole Type RC
Location: Booth Street West, Manchester		Level: mbgl Orientation: ° Inclination: °	Scale 1:25
Client: Curlew Alternatives Eighth Property LP		Dates: 11/04/2022 - 13/04/2022	Logged By JN

Well	Water Strikes	Depth (m)	Type / Fl	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description
		5.00 - 5.45	S				N=45 (4,5/7,10,13,15)				CHESTER FORMATION: Extremely weak reddish brown SANDSTONE recovered as gravelly fine to coarse sand.
		5.40 - 5.60	5D								
		5.00 - 6.50		95	80	68					
		6.10 - 6.40	6D					6.00			CHESTER FORMATION: Very weak becoming weak reddish brown SANDSTONE with rare sandstone and quartzite lithorelicts. Fractures are very closely to medium spaced (15/40/210) undulating rough with dark grey sandy silt infill.
		~~6.50~~	C				N=50 (25 for 75mm/50 for 25mm)				
		6.50 - 8.00		100	95	73					
		7.40 - 7.50	7C								
		~~8.00~~	8C				N=50 (25 for 125mm/50 for 35mm)	8.00			CHESTER FORMATION: Weak reddish brown SANDSTONE with rare quartzite lithorelicts. Fractures are very closely to medium spaced (20/75/240) undulating rough with dark grey and reddish brown sandy silt infill.
		8.00 - 8.10	C								
		8.00 - 9.50		96	92	80					
		9.10 - 9.20	9C								
		~~9.50~~	C				N=50 (25 for 30mm/50 for 20mm)				

Continued on next sheet

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Rotary Core Log

Borehole No. **BH3** FINAL Sheet 3 of 4

Project Name: Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384140.00 - 396683.00	Hole Type RC
Location: Booth Street West, Manchester		Level: mbgl Orientation: ° Inclination: °	Scale 1:25
Client: Curlew Alternatives Eighth Property LP		Dates: 11/04/2022 - 13/04/2022	Logged By JN

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description
		9.50 - 11.00		94	93	83					
		~~11.00~~	C				N=50 (25 for 50mm/50 for 70mm)				
								11.50			CHESTER FORMATION: Weak reddish brown SANDSTONE with rare sandstone and quartzite lithorelicts. Fractures are closely spaced (60/70/200) undulating rough with dark grey and reddish brown silty sand infill.
		11.70 - 12.00 11.00 - 12.50	10C	98	94	85					
		~~12.50~~	11C				N=50 (25 for 25mm/50 for 5mm)				
		12.50 - 12.80	C								
		12.50 - 14.00		100	98	93					
		13.80 - 14.00	12C								
		~~14.00~~	C				N=50 (25 for 40mm/50 for 10mm)				
		14.00 - 15.50		99	99	90					
		15.00 - 15.30	13C					15.00			

Continued on next sheet

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Rotary Core Log

Borehole No. **BH3** FINAL Sheet 4 of 4

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384140.00 - 396683.00
Location:	Booth Street West, Manchester	Level: mbgl	Orientation: ° Inclination: °
Client:	Curlew Alternatives Eighth Property LP	Dates: 11/04/2022 - 13/04/2022	Hole Type RC / Scale 1:25 / Logged By JN

Well	Water Strikes	Depth (m)	Type / FI	Coring TCR	Coring SCR	Coring RQD	Results & Information	Depth (m)	Level (m)	Legend	Stratum Description
		~~15.50~~	C				N=50 (25 for 75mm/50 for 15mm)				CHESTER FORMATION: Weak to medium-strong reddish brown SANDSTONE with rare sandstone lithorelicts. Fractures are closely to medium spaced (70/75/260) undulating rough with dark grey and reddish brown sand infill.
		15.50 - 17.00		100	97	89					
		16.50 - 16.80	14C								
		16.80 - 17.00	15C								
								17.00			End of borehole at 17.0 m

16 17 18 19 20

Remarks
Terminated at 10m below competent rock level.
Groundwater strikes/ seepages not recorded due to water flush drilling methods utilised during investigation.

Trial Pit Log

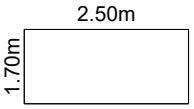
Trialpit No **TP01** FINAL Sheet 1 of 1

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384140.00 - 396709.00 Level: mbgl
Location:	Booth Street West, Manchester		Dimensions: Inclination: ° Orientation: ° Depth: 3.2m
Client:	Curlew Alternatives Eighth Property LP		

Date 12/04/2022

Scale 1:25

Logged JN



Water Strike	Samples and In Situ Testing: Depth	Type	Results	Information	Depth (m)	Level (m)	Legend	Stratum Description
					0.30			MADE GROUND: Dark brown and dark grey slightly sandy gravelly silt with medium brick and concrete cobble content and frequent rootlets. Gravel of brick, concrete, plastic, ceramic, glass fragments and sandstone.
								MADE GROUND: Brown mottled grey and reddish brown slightly sandy gravelly to very gravelly silt with medium brick cobble content. Gravel of brick, concrete, sandstone, rare plastic and rare flint.
					3.20			End of pit at 3.2 m

1 2 3 4 5

Remarks: Terminated due to pit instability and collapse below 2.5mbgl for soakage test. Groundwater not encountered.

Stability: Stable until 2.50mbgl

AGS

Trial Pit Log

Trialpit No **TP02** FINAL Sheet 1 of 1

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384134.00 - 396689.00 Level: mbgl
Location:	Booth Street West, Manchester		Dimensions: Inclination: ° Orientation: ° Depth: 2.2m
Client:	Curlew Alternatives Eighth Property LP		

Date 12/04/2022

Scale 1:25

Logged JN

2.00m

0.70m

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Information	Depth (m)	Level (m)	Legend	Stratum Description
					0.15			MADE GROUND: Black mottled grey tarmacadam with clasts of mudstone and sandstone.
					0.40			MADE GROUND: Dark grey mottled dark brown slightly sandy very gravelly silt with rare rootlets. Gravel of concrete, brick, mudstone, metal, ceramic and rare glass fragments.
	0.50 - 0.60	1ES						MADE GROUND: Brown mottled dark brown and dark grey slightly gravelly to gravelly clayey sand with low concrete cobble content. Gravel of brick, concrete, mudstone, sandstone and rare glass fragments.
	1.6	HV	45kPa		1.60			Firm to sitff medium strength brown mottled brownish grey sightly gravelly sandy CLAY. Gravel of subangular to subrounded fine and medium sandstone and flint. Sand is fine to coarse.
	1.6	HV	45kPa					
	1.6	HV	45kPa		1.80			[Medium-dense] brown mottled brownish grey very clayey slightly gravelly fine to coarse SAND. Gravel of subangular to subrounded fine and medium sandstone and flint.
	1.60 - 1.80	2B						
	1.90 - 2.00	3B			2.20			End of pit at 2.2 m

Remarks: Terminated for soakage test.
Groundwater not encountered.
Densities based on field observation only.

Stability: Stable

Trial Pit Log

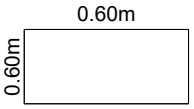
Trialpit No **HDP01** FINAL Sheet 1 of 1

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384139.00 - 396688.00 Level: mbgl
Location:	Booth Street West, Manchester		Dimensions: Inclination: ° Orientation: ° Depth: 1.2m
Client:	Curlew Alternatives Eighth Property LP		

Date 13/04/2022

Scale 1:25

Logged JN



Water Strike	Samples and In Situ Testing: Depth	Type	Results	Information	Depth (m)	Level (m)	Legend	Stratum Description
					0.10			MADE GROUND: Black mottled grey tarmacadam with clasts of mudstone and sandstone.
					0.30			MADE GROUND: Dark grey mottled dark brown slightly sandy very gravelly silt with rare rootlets. Gravel of concrete, brick, mudstone, metal, ceramic and rare glass fragments.
								MADE GROUND: Brown mottled dark brown and dark grey slightly gravelly to gravelly clayey sand with low concrete cobble content. Gravel of brick, concrete, mudstone, sandstone and rare glass fragments.
					1.20			End of pit at 1.2 m

Remarks: Terminated below base of foundations.
Groundwater not encountered.

Stability: Stable

Trial Pit Log

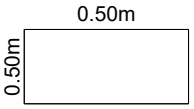
Trialpit No **HDP02** FINAL Sheet 1 of 1

Project Name:	Former Gamecock Public House, Booth Street West, Manchester	Project No. 1909009.002	Co-ords: 384141.00 - 396706.00 Level: mbgl
Location:	Booth Street West, Manchester		Dimensions: Inclination: ° Orientation: ° Depth: 1.2m
Client:	Curlew Alternatives Eighth Property LP		

Date 13/04/2022

Scale 1:25

Logged JN



Water Strike	Samples and In Situ Testing: Depth	Type	Results	Information	Depth (m)	Level (m)	Legend	Stratum Description
					0.15			MADE GROUND: Paving slab.
					0.60			MADE GROUND: Dark brown slightly sandy gravelly silt with frequent rootlets. Gravel of brick, concrete, plastic, ceramic, glass fragments and sandstone.
					1.20			MADE GROUND: Brown mottled grey and reddish brown slightly sandy gravelly to very gravelly silt. Gravel of brick, concrete, sandstone, rare plastic and rare flint.
								End of pit at 1.2 m

Remarks: Terminated below base of foundations.
Groundwater not encountered.

Stability: Stable

Appendix H

Geochemical Certificates of Analysis

Mari Langreiter
Tweedie Evans Consulting Ltd
The Old Chapel
35a Southover
Wells
Somerset
BA5 1UH

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f: 01749 679 345
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i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 19-60328

Project / Site name:	Booth Street West, Manchester	**Samples received on:**	19/09/2019
Your job number:	1909009.001	**Samples instructed on:**	19/09/2019
Your order number:		**Analysis completed by:**	24/09/2019
Report Issue Number:	1	**Report issued on:**	24/09/2019
Samples Analysed:	1 leachate sample - 5 soil samples - 1 water sample		

Signed: Karoline Marek

Karolina Marek
Technical Reviewer (Reporting Team)
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement. Application of uncertainty of measurement would provide a range within which the true result lies. An estimate of measurement uncertainty can be provided on request.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 19-60328

Project / Site name: Booth Street West, Manchester

Lab Sample Number				1319523	1319524	1319525	1319526	1319527
Sample Reference				WS1	WS2	WS3	HDP1	HDP2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.40	0.30-0.70	0.40-0.70	0.10-0.50	0.10-0.30
Date Sampled				17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	39	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	3.6	9.2	10	20	19
Total mass of sample received	kg	0.001	NONE	0.46	0.46	0.46	0.43	0.44
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	9.0	8.7	8.7	8.2	8.1
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	50	MCERTS	410	1000	560	550	560
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.016	0.022	0.019	0.016	0.030
Sulphide	mg/kg	1	MCERTS	24	< 1.0	5.0	< 1.0	< 1.0
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.2	0.7	1.0	2.3	2.5
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	0.35	1.9	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	1.0	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.22	0.69	1.8	< 0.05	0.59
Fluorene	mg/kg	0.05	MCERTS	< 0.05	0.61	2.9	< 0.05	0.36
Phenanthrene	mg/kg	0.05	MCERTS	0.82	4.3	18	1.2	4.0
Anthracene	mg/kg	0.05	MCERTS	0.21	0.91	3.7	0.21	0.86
Fluoranthene	mg/kg	0.05	MCERTS	2.0	4.5	20	2.0	6.4
Pyrene	mg/kg	0.05	MCERTS	2.2	4.2	19	1.8	6.2
Benzo(a)anthracene	mg/kg	0.05	MCERTS	1.2	2.1	12	1.1	3.5
Chrysene	mg/kg	0.05	MCERTS	1.3	2.0	8.0	1.1	2.9
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	2.1	1.8	9.4	1.2	2.9
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.97	0.79	3.8	0.57	1.9
Benzo(a)pyrene	mg/kg	0.05	MCERTS	2.2	1.8	8.6	0.93	3.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	1.1	0.80	4.1	0.74	1.8
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	0.29	0.28	1.3	0.22	0.45
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	1.3	1.1	5.4	0.79	2.1
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	15.9	26.1	121	11.8	37.0
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7.9	< 1.0	4.3	18	12
Barium (aqua regia extractable)	mg/kg	1	MCERTS	140	420	300	98	120
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.19	0.48	0.58	0.91	0.75
Boron (water soluble)	mg/kg	0.2	MCERTS	0.3	0.3	0.2	0.6	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	1.0	0.5	0.5	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	12	17	19	33	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	19	43	34	60	32
Lead (aqua regia extractable)	mg/kg	1	MCERTS	70	480	120	86	74
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	9.1	1.9
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	10	11	15	19	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	11	21	18	28	29
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	70	87	85	65	70

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Analytical Report Number: 19-60328

Project / Site name: Booth Street West, Manchester

Lab Sample Number				1319523	1319524	1319525	1319526	1319527
Sample Reference				WS1	WS2	WS3	HDP1	HDP2
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.30-0.40	0.30-0.70	0.40-0.70	0.10-0.50	0.10-0.30
Date Sampled				17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Petroleum Hydrocarbons								
TPH C10 - C40	mg/kg	10	MCERTS	400	55	630	12	64
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	< 2.0	5.8	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	< 8.0	12	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	< 8.0	86	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	< 10	100	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	< 1.0	1.2	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	2.2	5.9	26	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	35	18	160	< 10	20
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	200	31	260	< 10	32
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	240	55	440	12	53

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Analytical Report Number: 19-60328

Project / Site name: Booth Street West, Manchester

Lab Sample Number				1319529				
Sample Reference				WS1				
Sample Number				None Supplied				
Depth (m)				None Supplied				
Date Sampled				17/09/2019				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.3				
Total Cyanide	µg/l	10	ISO 17025	< 10				
Sulphate as SO_4	mg/l	0.045	ISO 17025	179				
Sulphide	µg/l	5	NONE	< 5.0				
Total Organic Carbon (TOC)	mg/l	0.1	ISO 17025	7.66				
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10				
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01				
Fluorene	µg/l	0.01	ISO 17025	< 0.01				
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Pyrene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Chrysene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Dibenz(a,h)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	ISO 17025	< 0.01				
Total PAH								
Total EPA-16 PAHs	µg/l	0.16	ISO 17025	< 0.16				
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	0.15	ISO 17025	1.74				
Barium (dissolved)	µg/l	0.06	ISO 17025	78				
Beryllium (dissolved)	µg/l	0.1	ISO 17025	< 0.1				
Boron (dissolved)	µg/l	10	ISO 17025	220				
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02				
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0				
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2				
Copper (dissolved)	µg/l	0.5	ISO 17025	< 0.5				
Lead (dissolved)	µg/l	0.2	ISO 17025	0.4				
Mercury (dissolved)	µg/l	0.05	ISO 17025	< 0.05				
Nickel (dissolved)	µg/l	0.5	ISO 17025	2.9				
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.4				
Vanadium (dissolved)	µg/l	0.2	ISO 17025	< 0.2				
Zinc (dissolved)	µg/l	0.5	ISO 17025	1.4				

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Analytical Report Number: 19-60328

Project / Site name: Booth Street West, Manchester

Lab Sample Number				1319529				
Sample Reference				WS1				
Sample Number				None Supplied				
Depth (m)				None Supplied				
Date Sampled				17/09/2019				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Monoaromatics & Oxygenates								
Benzene	µg/l	1	ISO 17025	< 1.0				
Toluene	µg/l	1	ISO 17025	< 1.0				
Ethylbenzene	µg/l	1	ISO 17025	< 1.0				
p & m-xylene	µg/l	1	ISO 17025	< 1.0				
o-xylene	µg/l	1	ISO 17025	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	µg/l	1	ISO 17025	< 1.0				
Petroleum Hydrocarbons								
TPH1 (C10 - C40)	µg/l	10	ISO 17025	< 10				
TPH-CWG - Aliphatic >C5 - C6	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aliphatic >C6 - C8	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aliphatic >C8 - C10	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aliphatic >C10 - C12	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C12 - C16	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C16 - C21	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic >C21 - C35	µg/l	10	NONE	< 10				
TPH-CWG - Aliphatic (C5 - C35)	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C5 - C7	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aromatic >C7 - C8	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aromatic >C8 - C10	µg/l	1	ISO 17025	< 1.0				
TPH-CWG - Aromatic >C10 - C12	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C12 - C16	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C16 - C21	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic >C21 - C35	µg/l	10	NONE	< 10				
TPH-CWG - Aromatic (C5 - C35)	µg/l	10	NONE	< 10				

U/S = Unsuitable Sample I/S = Insufficient Sample

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Analytical Report Number: 19-60328

Project / Site name: Booth Street West, Manchester

Lab Sample Number				1319528				
Sample Reference				WS3				
Sample Number				None Supplied				
Depth (m)				0.40-0.70				
Date Sampled				17/09/2019				
Time Taken				None Supplied				
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.8				
Total Cyanide	µg/l	10	ISO 17025	< 10				
Sulphate as SO_4	mg/l	0.1	ISO 17025	2.9				
Sulphide	µg/l	5	NONE	< 5.0				
Total Organic Carbon (TOC)	mg/l	0.1	NONE	4.26				
Total Phenols								
Total Phenols (monohydric)	µg/l	10	ISO 17025	< 10				
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01				
Acenaphthene	µg/l	0.01	ISO 17025	3.4				
Fluorene	µg/l	0.01	ISO 17025	1.5				
Phenanthrene	µg/l	0.01	ISO 17025	1.0				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Pyrene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01				
Chrysene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01				
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01				
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01				
Total PAH								
Total EPA-16 PAHs	µg/l	0.2	NONE	5.9				
Heavy Metals / Metalloids								
Arsenic (dissolved)	µg/l	1.1	ISO 17025	12				
Barium (dissolved)	µg/l	0.05	ISO 17025	72				
Beryllium (dissolved)	µg/l	0.2	ISO 17025	< 0.2				
Boron (dissolved)	µg/l	10	ISO 17025	< 10				
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08				
Chromium (dissolved)	µg/l	0.4	ISO 17025	2.5				
Copper (dissolved)	µg/l	0.7	ISO 17025	8.9				
Lead (dissolved)	µg/l	1	ISO 17025	13				
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5				
Nickel (dissolved)	µg/l	0.3	ISO 17025	1.2				
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0				
Vanadium (dissolved)	µg/l	1.7	ISO 17025	9.1				
Zinc (dissolved)	µg/l	0.4	ISO 17025	8.6				

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Project / Site name: Booth Street West, Manchester

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
1319523	WS1	None Supplied	0.30-0.40	Grey clay and sand with gravel and stones.
1319524	WS2	None Supplied	0.30-0.70	Brown clay and sand with gravel.
1319525	WS3	None Supplied	0.40-0.70	Brown clay and sand with gravel.
1319526	HDP1	None Supplied	0.10-0.50	Brown clay and loam with vegetation.
1319527	HDP2	None Supplied	0.10-0.30	Brown clay and loam with vegetation.

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Project / Site name: Booth Street West, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron in leachate	Determination of boron in leachate. Sample acidified and followed by ICP-OES.	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in water (Monoaromatics)	Determination of BTEX and MTBE in water by headspace GC-MS. Accredited matrices: SW PW GW	In-house method based on USEPA8260	L073B-PL	W	ISO 17025
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Metals in water by ICP-MS (dissolved)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in leachate	Determination of phenols in leachate by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Monohydric phenols in water	Determination of phenols in water by continuous flow analyser. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	ISO 17025
NRA Leachate Prep	10:1 extract with de-ionised water shaken for 24 hours then filtered.	In-house method based on National Rivers Authority	L020-PL	W	NONE
pH at 20oC in leachate	Determination of pH in leachate by electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L005-PL	W	ISO 17025

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Project / Site name: Booth Street West, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L102B-PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in leachates	Determination of sulphate in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 1986 Methods for the Determination of Metals in Soil""	L039-PL	W	ISO 17025
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphide in leachate	Determination of sulphide in leachate by ion selective electrode.	In-house method	L010-PL	W	NONE
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Sulphide in water	Determination of sulphide in water by ion selective electrode.	In-house method	L029-PL	W	NONE
Total cyanide in leachate	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
Total organic carbon in leachate	Determination of dissolved organic carbon in leachate by TOC/DOC NDIR analyser.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	NONE
Total organic carbon in water	Determination of dissolved organic carbon in water by TOC/DOC NDIR analyser. Accredited matrices: SW PW GW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L037-PL	W	ISO 17025

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Analytical Report Number : 19-60328

Project / Site name: Booth Street West, Manchester

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
TPH Banding in Soil by FID	Determination of hexane extractable hydrocarbons in soil by GC-FID.	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	W	MCERTS
TPH1 (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS.	In-house method	L070-PL	W	ISO 17025
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
TPHCWG (Waters)	Determination of dichloromethane extractable hydrocarbons in water by GC-MS, speciation by interpretation.	In-house method	L070-PL	W	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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The results included within the report are representative of the samples submitted for analysis.

Appendix I

Ground Gas Monitoring Results

Ground Gas Monitoring Data Sheet

Name of Site:	Booth Street West, Manchester				
Project Code:	1909009				
Date: 17th September 2019	***Equipment***		***Last Three Days***		
Completed by: ML	**Gas Analyser:**	GFM 430	**Atmospheric Trend:**	Rising (1022-1036mbar)	
Authorised by: ET	**Condition:**	Good	**Temperature Range:**	11-20°c	
	Dipmeter:	Red (30m)	**Rainfall:**	2.9mm	
	Condition:	Good			

On-site Weather Conditions: Cold, sunny

General Site Conditions / Ground Conditions / On site Activities: Dry ground, no activities.

GAS MONITORING TO BE UNDERTAKEN IN ACCORDANCE WITH TEC METHOD STATEMENT

Borehole Information	Time (seconds)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	LEL (%)	H_2S (ppm)	CO (ppm)			
BH ref: WS1	0	0.0	0.0	0.0	0.1	20.4	0.0	-	-			
Time: 16:35	15	0.0	0.0	0.0	0.2	20.4	0.0	0.0	0.0			
Atmospheric Pressure (mb)	30	0.0	0.0	0.0	0.2	20.2	0.0	0.0	0.0			
Before: 1021	45	0.0	0.0	0.0	0.2	20.1	0.0	0.0	0.0			
After: 1021	60	0.0	0.0	0.0	0.3	20.0	0.0	0.0	0.0			
Well Condition: Good	120	0.0	0.0	0.0	0.4	19.8	0.0	0.0	0.0			
	180	0.0	0.0	0.0	0.4	19.7	0.0	0.0	0.0			
Well Diameter: 50mm	240			0.0	0.4	19.7	0.0	0.0	0.0			
	300									2.67	4.21	

Borehole Information	Time (seconds)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	LEL (%)	H_2S (ppm)	CO (ppm)			
BH ref: WS3	0	0.0	0.0	0.0	0.0	20.2	0	-	-			
Time: 16:20	15	0.0	0.0	0.0	0.0	20.6	0	0	0			
Atmospheric Pressure (mb)	30	0.0	0.0	0.0	0.0	20.4	0	0	0			
Before: 1021	45	0.0	0.0	0.0	0.0	20.4	0	0	0			
After: 1021	60	0.0	0.0	0.0	0.0	20.4	0	0	0			
Well Condition: Good	120	0.0	0.0	0.0	0.1	20.3	0	0	0			
	180	0.0	0.0	0.0	0.4	20.1	0	0	0			
Well Diameter: 50mm	240			0.0	0.7	19.8	0	0	0			
	300			0.0	1.2	19.4	0	0	0			
	360			0.0	1.4	19.1	0	0	0			
	620			0.0	1.4	19.1	0	0	0	Dry	3.22	

Borehole Information	Time (seconds)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH_4 (%v/v)	CO_2 (%v/v)	O_2 (%v/v)	LEL (%)	H_2S (ppm)	CO (ppm)			
BH ref:	0											
Time:	15											
Atmospheric Pressure (mb)	30											
Before:	45											
After:	60											
Well Condition: Good	120											
	180											
Well Diameter: 50mm	240											
	300											

Ground Gas Monitoring Results

Project:	Booth Street, Manchester	Gas analyser:	GFM 436	Preceding Weather Conditions		On-site weather conditions	General Site Conditions / Ground Conditions / On-site Activities
Project Number:	1909009.003	Condition:	Calibrated	Atmospheric trend:	992 - 1009mbar (falling)	Dry, clear and sligthtly windy	Disused former pub and car park.
Location:	Manchester	Dipmeter:	15m Green	Temperature range:	6 - 20 °C		
Test Date:	07/07/2021	Operator:	JN	Rainfall:	41.5mm		

GAS MONITORING TO BE UNDERTAKEN IN ACCORDANCE WITH TEC METHOD STATEMENT

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS1	**0**	0.0	0	0.0	1.5	19.2	0.0	0	0	2.88 mbgl	3.01 mbgl	
	30	0.0	0	0.0	1.6	19.0	0.0	0	0			
Time: 11:00	**60**	0.0	0	0.0	1.7	18.4	0.0	0	0			
	90	0.0	0	0.0	1.7	18.2	0.0	0	0			
Atmospheric pressure (mb) before: 1002	**120**	0.0	0	0.0	1.8	18.2	0.0	0	0			
	150	0.0	0	0.0	1.8	18.1	0.0	0	0			
	180	0.0	0	0.0	1.8	18.1	0.0	0	0			
Atmospheric preassure (mb) after: 1002	**210**	0.0	0	0.0	1.8	18.1	0.0	0	0			
	240	0.0	0	0.0	1.8	18.1	0.0	0	0			
Well Condition: Moderate												
Well Diameter: 50mm												

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS3	**0**	0.0	0	0.0	1.4	18.4	0.0	0	0	3.78 mbgl	4.16 mbgl	
	30	0.0	0	0.0	0.7	19.1	0.0	0	0			
Time: 09:45	**60**	0.0	0	0.0	0.7	19.3	0.0	0	0			
	90	0.0	0	0.0	0.6	19.4	0.0	0	0			
Atmospheric pressure (mb) before: 1001	**120**	0.0	0	0.0	0.6	19.4	0.0	0	0			
	150	0.0	0	0.0	0.6	19.5	0.0	0	0			
	180	0.0	0	0.0	0.5	19.5	0.0	0	0			
Atmospheric preassure (mb) after: 1002	**210**	0.0	0	0.0	0.5	19.6	0.0	0	0			
Well Condition: Moderate												
Well Diameter: 50mm												

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref:												
Time:												
Atmospheric pressure (mb) before:												
Atmospheric preassure (mb) after:												
Well Condition:												
Well Diameter:												

Ground Gas Monitoring Results

Project:	Booth Street, Manchester	Gas analyser:	GFM 430	Preceding Weather Conditions		On-site weather conditions	General Site Conditions / Ground Conditions / On-site Activities
Project Number:	1909009.003	Condition:	Calibrated	Atmospheric trend:	1007- 1016mbar	Dry, windy	Disused former pub and car park.
Location:	Manchester	Dipmeter:	15m Green	Temperature range:	19 - 21 °c		
Test Date:	12/08/2021	Operator:	ST	Rainfall:	0.5 mm		

GAS MONITORING TO BE UNDERTAKEN IN ACCORDANCE WITH TEC METHOD STATEMENT

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS1												No access due to parked vechicle
Time:												
Atmospheric pressure (mb) before:												
Atmospheric preassure (mb) after:												
Well Condition:												
Well Diameter:												

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS3	**0**	0.0	0	0.0	0.0	20.0	0.0	0	0	2.61 mbgl	3.03 mbgl	
	15	0.0	0	0.0	0.6	19.4	0.0	0	0			
Time: 15:16	**30**	0.0	0	0.0	0.6	19.1	0.0	0	0			
	45	0.0	0	0.0	0.6	19.0	0.0	0	0			
Atmospheric pressure (mb) before: 1000	**60**	0.0	0	0.0	0.7	18.9	0.0	0	0			
	120	0.0	0	0.0	0.9	18.6	0.0	0	0			
	180	0.0	0	0.0	1.2	18.3	0.0	0	0			
Atmospheric preassure (mb) after: 1000	**240**	0.0	0	0.0	1.7	17.8	0.0	0	0			
	300	0.0	0	0.0	1.8	17.8	0.0	0	0			
	360	0.0	0	0.0	1.8	17.8	0.0	0	0			
Well Condition:	**420**	0.0	0	0.0	1.9	17.8	0.0	0	0			
	480	0.0	0	0.0	1.9	17.7	0.0	0	0			
Well Diameter:	**540**	0.0	0	0.0	1.9	17.7	0.0	0	0			
	600	0.0	0	0.0	1.9	17.7	0.0	0	0			

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref:												
Time:												
Atmospheric pressure (mb) before:												
Atmospheric preassure (mb) after:												
Well Condition:												
Well Diameter:												

Ground Gas Monitoring Results

Project:	Booth Street, Manchester	Gas analyser:	GFM 430	Preceding Weather Conditions		On-site weather conditions	General Site Conditions / Ground Conditions / On-site Activities
Project Number:	1909009.003	Condition:	Calibrated	Atmospheric trend:	986 - 995 ,bar	Wet, windy, grey	Disused former pub and car park.
Location:	Manchester	Dipmeter:	15m Green	Temperature range:	8 - 15 °C		
Test Date:	21/10/2021	Operator:	JN	Rainfall:	14.2 mm		

GAS MONITORING TO BE UNDERTAKEN IN ACCORDANCE WITH TEC METHOD STATEMENT

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS1	**0**	0.0	0.0	0.0	1.1	19.0	0.0	0.0	0.0	2.23 mgbl	3.01 mbgl	
	15	0.0	0.0	0.0	1.3	18.8	0.0	0.0	0.0			
Time: 09:20	**30**	0.0	0.0	0.0	1.4	18.6	0.0	0.0	0.0			
	45	0.0	0.0	0.0	1.6	18.3	0.0	0.0	0.0			
Atmospheric pressure (mb) before: 996	**60**	0.0	0.0	0.0	1.9	18.0	0.0	0.0	0.0			
	120	0.0	0.0	0.0	2.0	17.9	0.0	0.0	0.0			
	180	0.0	0.0	0.0	2.1	17.6	0.0	0.0	0.0			
Atmospheric preassure (mb) after: 996	**240**	0.0	0.0	0.0	2.1	17.5	0.0	0.0	0.0			
	300	0.0	0.0	0.0	2.2	17.5	0.0	0.0	0.0			
Well Condition: Average												
Well Diameter: 50mm												

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref: WS3	**0**	0.0	0.0	0.0	0.0	19.7	0.0	0.0	0.0	2.43 mbgl	3.03 mbgl	
	15	0.0	0.0	0.0	0.8	19.1	0.0	0.0	0.0			
Time: 09:00	**30**	0.0	0.0	0.0	1.4	18.6	0.0	0.0	0.0			
	45	0.0	0.0	0.0	1.5	18.0	0.0	0.0	0.0			
Atmospheric pressure (mb) before: 995	**60**	0.0	0.0	0.0	1.6	17.6	0.0	0.0	0.0			
	120	0.0	0.0	0.0	1.8	17.4	0.0	0.0	0.0			
	180	0.0	0.0	0.0	2.3	17.4	0.0	0.0	0.0			
Atmospheric preassure (mb) after: 995	**240**	0.0	0.0	0.0	2.4	17.3	0.0	0.0	0.0			
	300											
Well Condition: Average												
Well Diameter: 50mm												

Borehole Information	Time (s)	Borehole Flow Rate (l/hr)	DP (Pa)	Gas Concentrations						Groundwater Level	Borehole Depth	Comments
				CH4 (%v/v)	CO2 (%v/v)	O2 (%v/v)	LEL (%)	CO (ppm)	H2S (ppm)			
BH ref:												
Time:												
Atmospheric pressure (mb) before:												
Atmospheric preassure (mb) after:												
Well Condition:												
Well Diameter:												

Appendix J

Generic Quantitative Risk Assessment: Human Health

Project Number: 1909009.005		Lab Sample Number	1319523	1319524	1319525	1319526	1319527				
Project Name: Booth Street West, Manchester (2019 data)		Sample Reference	WS1	WS2	WS3	HDP1	HDP2				
Site End Use:	GAC (mg/kg)	Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied				
Residential without homegrown produce		Depth (m)	0.30-0.40	0.30-0.70	0.40-0.70	0.10-0.50	0.10-0.30				
		Date Sampled	17/09/2019	17/09/2019	17/09/2019	17/09/2019	17/09/2019				
Determinand			1	2	3	4	5				
Arsenic	40[1]	mg/kg	7.9	< 1.0	4.3	18	12				
Boron	11000[3]	mg/kg	0.3	0.3	0.2	0.6	0.5				
Cadmium	150[1]	mg/kg	1.0	0.5	0.5	< 0.2	< 0.2				
Chromium (total)	910[3]	mg/kg	12	17	19	33	20				
Chromium (VI)	21[1]	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2				
Copper	7100[3]	mg/kg	19	43	34	60	32				
Lead	310[1]	mg/kg	70	480	120	86	74				
Mercury	40[2,6]	mg/kg	< 0.3	< 0.3	< 0.3	9.1	1.9				
Nickel	130[2,6]	mg/kg	10	11	15	19	15				
Selenium	350[2,6]	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Zinc	40000[3]	mg/kg	70	87	85	65	70				
Beryllium	1.7[3]	mg/kg	0.19	0.48	0.58	0.91	0.75				
Vanadium	1200[3]	mg/kg	11	21	18	28	29				
Barium	1300[4]	mg/kg	140	420	300	98	120				
Cyanide (Total)	20[5]	mg/kg	< 1	< 1	< 1	< 1	< 1				
Phenol (Monohydric)	440[3]	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Sulphide	-	mg/kg	24	< 1.0	5.0	< 1.0	< 1.0				
Total Organic Carbon (TOC)	-	%	1.2	0.7	1.0	2.3	2.5				
Naphthalene	2.3[3]	mg/kg	< 0.05	0.35	1.9	< 0.05	< 0.05				
Acenaphthylene	2900[3]	mg/kg	< 0.05	< 0.05	1.0	< 0.05	< 0.05				
Acenaphthene	3000[3]	mg/kg	0.22	0.69	1.8	< 0.05	0.59				
Fluorene	2800[3]	mg/kg	< 0.05	0.61	2.9	< 0.05	0.36				
Phenanthrene	1300[3]	mg/kg	0.82	4.3	18	1.2	4.0				
Anthracene	31000[3]	mg/kg	0.21	0.91	3.7	0.21	0.86				
Fluoranthene	1500[3]	mg/kg	2.0	4.5	20	2.0	6.4				
Pyrene	3700[3]	mg/kg	2.2	4.2	19	1.8	6.2				
Benzo(a)anthracene	11[3]	mg/kg	1.2	2.1	12	1.1	3.5				
Chrysene	30[3]	mg/kg	1.3	2.0	8.0	1.1	2.9				
Benzo(b)fluoranthene	3.9[3]	mg/kg	2.1	1.8	9.4	1.2	2.9				
Benzo(k)fluoranthene	110[3]	mg/kg	0.97	0.79	3.8	0.57	1.9				
Benzo(a)pyrene	3.2[3]	mg/kg	2.2	1.8	8.6	0.93	3.2				
Indeno(1,2,3-cd)pyrene	45[3]	mg/kg	1.1	0.80	4.1	0.74	1.8				
Dibenz(a,h)anthracene	0.31[3]	mg/kg	0.29	0.28	1.3	0.22	0.45				
Benzo(ghi)perylene	360[3]	mg/kg	1.3	1.1	5.4	0.79	2.1				
Speciated Total EPA-16 PAHs	-	mg/kg	15.9	26.1	121	11.8	37.0				
Benzene	0.38[3]	µg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Toluene	880[3]	µg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
Ethylbenzene	83[3]	µg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
p & m-xylene	79[3]	µg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
o-xylene	88[3]	µg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
MTBE (Methyl Tertiary Butyl Ether)	73[4]	µg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
TPH Aliphatic C5 - C6	42[3]	mg/kg	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001				
TPH Aliphatic C6 - C8	100[3]	mg/kg	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001				
TPH Aliphatic C8 - C10	27[3]	mg/kg	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001				
TPH Aliphatic C10 - C12	130[3]	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0				
TPH Aliphatic C12 - C16	1100[3]	mg/kg	< 2.0	< 2.0	5.8	< 2.0	< 2.0				
TPH Aliphatic C16 - C21	65000[3]	mg/kg	< 8.0	< 8.0	12	< 8.0	< 8.0				
TPH Aliphatic C21 - C35	65000[3]	mg/kg	< 8.0	< 8.0	86	< 8.0	< 8.0				
TPH Aromatic C5 - C7	370[3]	mg/kg	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001				
TPH Aromatic C7 - C8	860[3]	mg/kg	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001				
TPH Aromatic C8 - C10	47[3]	mg/kg	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001				
TPH Aromatic C10 - C12	250[3]	mg/kg	< 1.0	< 1.0	1.2	< 1.0	< 1.0				
TPH Aromatic C12 - C16	1800[3]	mg/kg	2.2	5.9	26	< 2.0	< 2.0				
TPH Aromatic C16 - C21	1900[3]	mg/kg	35	18	160	< 10	20				
TPH Aromatic C21 - C35	1900[3]	mg/kg	200	31	260	< 10	32				

Notes:

[1] DEFRA C4SLs (2014)

[2] Environment Agency SGVs (2009)

[3] LQM/CIEH S4ULs (2015) *'Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3126. All rights reserved.'.*

[4] CL:AIRE, AGS & EIS (2009)

[5] Dutch Intervention Value for free cyanide (VROM 2000)

*All GACs based on a sandy soil and Soil Organic Matter (SOM) of 1% where applicable.

Concentration does not exceed GAC

Concentration exceeds GAC

No set GAC

Appendix K

Generic Quantitative Risk Assessment: Controlled Waters

Made Ground Leachability and Groundwater Analysis – Secondary A and Principal Aquifers

Contaminant	Leachate WS3 at 0.4-0.7mbgl (µg/l)	Groundwater WS1 (µg/l)	GAC (µg/l)	No. of Exceedances
Arsenic	12	1.74	10[1]	1
Boron	<10[5]	78	1000[2]	0
Cadmium	<0.08[5]	<0.02[5]	5.0[1]	0
Chromium (III)	2.5	<0.2[5]	50[1]	0
Chromium (VI)	-	<5.0[5,6]	3.4[3]	-
Copper	8.9	<0.5[5]	2000[1]	0
Lead	13	0.4	10[1]	1
Mercury	<0.5[5]	<0.05[5]	1.0[1]	0
Nickel	1.2	2.9	20[1]	0
Zinc	8.6	1.4	10.9[3]	0
Beryllium	<0.2[5]	<0.1[5]	12[2]	0
Selenium	<4.0[5]	1.4	10[1]	0
Vanadium	9.1	<0.2[5]	20[3]	0
Barium	72	78	700[2]	0
Cyanide (Total)	<10[5]	<10[5]	50[1]	0
Total Phenol (Monohydric)	<10[5,6]	<10[5,6]	7.7[1]	0
Sulphate	2900	179000	250000[1]	0
Sulphide	<5.0[5]	<5.0[5]	-	-
pH	7.8	7.3	-	-
Naphthalene	<0.01[5]	<0.01[5]	4[3]	0
Acenaphthylene	<0.01[5]	<0.01[5]	-	-
Acenaphthene	3.4	<0.01[5]	-	-
Fluorene	1.5	<0.01[5]	-	-
Phenanthrene	1.0	<0.01[5]	-	-
Anthracene	<0.01[5]	<0.01[5]	0.1[3]	0
Fluoranthene	<0.01[5]	<0.01[5]	0.0063[1]	0
Pyrene	<0.01[5]	<0.01[5]	-	-
Benzo(a)anthracene	<0.01[5]	<0.01[5]	-	-
Chrysene	<0.01[5]	<0.01[5]	-	-
Benzo(b)fluoranthene	<0.01[5]	<0.01[5]	0.10[3]	0
Benzo(k)fluoranthene	<0.01[5]	<0.01[5]	0.10[3]	0
Benzo(a)pyrene	<0.01[5,6]	<0.01[5,6]	0.00017[3]	0
Indeno(1,2,3-cd)pyrene	<0.01[5]	<0.01[5]	0.10[3]	0
Benzo(g,h,i)perylene	<0.01[5]	<0.01[5]	-	-
Dibenz(a,h)anthracene	<0.01[5]	<0.01[5]	-	-
Total PAH	<0.16[5]	<0.16[5]	-	-

Notes:

1 Water Supply (Water Quality) Regulations 2018 – Drinking Water Standards (DWS)
2 WHO Guidelines for Drinking Water Quality (2008)
3 EQS, Annual Average (AA) – Freshwaters
4 EQS, Maximum Allowable Concentrations (MAC) – Freshwaters
5 Laboratory Limit of Detection
6 Laboratory Limit of Detection greater than SSV