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Geotechnical Engineering | Geoenvironmental Consultants

PRELIMINARY GEOENVIRONMENTAL APPRAISAL

of land at

PLOT H, SISTER

Prepared on behalf of RGRE Limited, ID Manchester Limited and The University of Manchester

Report 7356/1D

November 2025

FOREWORD (Preliminary Geoenvironmental Investigation Report)

This report has been prepared for the sole use and reliance of RGRE Limited, ID Manchester Limited and The University of Manchester and cannot be relied upon by any other parties without the express written authorisation of Calabrian Limited (Calabrian). Any unauthorized third party relies on this report at their own risk and the authors owe them no duty of care.

The report presents observations and factual data obtained during our site investigation and provides an assessment of geoenvironmental issues with respect to information provided by RG regarding the proposed development. Further advice should be sought from Calabrian prior to significant revision of the development proposals at Plot H, Sister.

The report should be read in its entirety, including all associated drawings and appendices. Calabrian cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context

The findings and opinions conveyed in any Desk Study section of the report (including review of any third-party reports) are based on information obtained from the sources listed, which Calabrian understands are reliable. All reasonable skill, care and diligence has been applied in examining the information obtained. However, Calabrian accept no responsibility for inaccuracies in the data supplied or for opinions based on any such inaccurate data.

Where the report refers to the potential presence of invasive weeds such as Japanese Knotweed, or the presence of asbestos containing materials, it should be noted that the observations are for information only and should be verified by a suitably qualified expert.

Calabrian reserve the right to amend their conclusions and recommendations in the light of further information that may become available.

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1 INTRODUCTION

1.1 THE COMMISSION AND SCOPE

Calabrian Limited (Calabrian), were commissioned by RGRE Limited, ID Manchester Limited and The University of Manchester (the Client) to carry out a preliminary geoenvironmental appraisal of land at Plot H, Sister.

The agreed scope for this report is summarised below with full details of Calabrian's appointment included in Appendix A:

- A review of third party reports;
- a site walkover and inspection;
- an assessment of the land use history;
- determination of the site's environmental setting;
- assessment of anticipated ground conditions, including potential contaminants;
- assessment of anticipated foundation and engineering issues associated with redevelopment; and,
- provision of recommendations for an appropriate ground investigation.

This preliminary appraisal comprised inspection of historical and geological maps and data provided by the British Geological Survey and Landmark along with additional information provided by the Coal Authority, and ZeticaUXO. In addition, a site walkover survey has been carried out by Calabrian.

1.2 OBJECTIVES

To identify salient geoenvironmental issues affecting the site to enable the Client to obtain budget costs for the necessary site preparatory and remediation works, and to support the initial submission of a planning application to the local authority.

1.3 DEVELOPMENT PROPOSALS

It is understood that consideration is being given to redevelopment of the site with three towers ranging from eight to approximately thirty-eight storeys of Sui generis (Purpose Built Student Accommodation), with ground level flexible use Class E Commercial, business and service, excluding hot food and external landscaping and amenity areas. A proposed site layout has been provided by LNT and is copied as Drawing 7356/2.

1.4 LIMITATIONS

General notes and limitations relevant to all Calabrian preliminary investigations are described in the Foreword and should be read in conjunction with this report. The text of the report draws specific attention to any modification to these procedures and to any other special techniques employed.

2 SITE DESCRIPTION

2.1 GENERAL

Details of the site are given below:

- Location: 400m south-west of Manchester Piccadilly Train Station
- National Grid Reference: 38444, 39757 (SJ 8444 9757)
- Nearest Postcode: M1 7AR
- Area: 0.742 hectares

The site in Manchester City Centre is bounded by Charles Street (south), the Manchester South Junction and Altrincham Railway Viaduct and Granby Row (north), Sackville Street (east), and Princess Street (west). The site currently comprises a vacant multi-storey car park (closed October 2024) and three vacant retail units (last occupied June 2025).

The car park and retail units are no longer fit for purpose and are subject to a planning application (referenced 143741/FO/2025, submitted August 2025) for demolition. If successful demolition is likely to commence in early 2026.

2.2 SITE FEATURES

Calabrian completed a walkover survey of the site on 2nd July 2025.

The site is elongate in shape and is predominately occupied by a concrete framed vacant four-storey car park. The eastern end of the structure most recently housed a two-storey public house and coffee shop with offices above.

The wedge-shaped western end of the site is occupied by a number of mature trees with grass beneath.

A narrow strip of land runs between the car park and the railway viaduct to the north. The eastern section of this is secured by a palisade fence with the western end being open and providing a footpath beneath the viaduct running along the extreme west of the site.

The site has no external physical boundaries. The railway viaduct lies immediately north with commercial properties beyond. To the south runs Charles Street with multi-storey residential student accommodation beyond. To the east lies Sackville Street with university buildings further east. West is the junction of Charles Street and Princess Street with further commercial properties beyond.

Existing salient features, at the time of the walkover are presented on Drawing No. 7356/3. A selection of site photographs are included on Drawing 7356/4.

3 SITE HISTORY

In order to investigate the development history and previous land uses at the site and immediate surrounding land, site centred extracts from Ordnance Survey (OS) plans dating back to 1848 have been examined. These plans are presented in Appendix B.

Dates	On Site Features	Off Site Feature
1848	The site appears to be undeveloped.	
1851	**Charles Street** is shown running roughly centrally through the site. The site appears to be generally devoid of development with unknown buildings being located in the far west and sporadically in the south.	The railway viaduct marks the sites northern boundary. '**Timber Yard**'s are located immediately to the south-west, north-west and east with a 'Rope Walk' to the south. The River Medlock meanders towards the site from the south.
1908	Further un-named buildings have been constructed to the north of Charles Street with two '**Saw Mill**' and a 'Box Works' in the south	
1928/39 (could be 1960s)	A detailed survey shows the buildings north of Charles Street to comprise a number of small-scale enterprises including stores and a number of **garages** that extended under the viaduct arches. The central garage is noted to have a '**Petrol Tank'**. At this time land to the south of Charles Street hosted a car park and **saw mill**.	Surrounding land was mainly occupied with warehouses.
1948	The entire site is developed north and south of Charles Street.	
1970/72	The land south of Charles Street has been cleared. By 1972 land to the north has also been cleared.	The River Medlock has been culverted under land south of the site.
1985	The site has been cleared, and the current car park and open space is detailed on site.	Charles Street has been moved to its current location immediately south of the site.
1992		Land to the south has now been redeveloped with the existing Weston Buildings.

It is not the intention of this report to describe in detail all the changes that have occurred on or adjacent to the site. Significant former uses/operations are highlighted in bold text for ease of reference.

4 ENVIRONMENTAL SETTING

4.1 GENERAL

Information supplied by the Coal Authority, the BGS, ZeticaUXO and Landmark is summarised in the table below and presented in Appendix C.

Issue Data Reviewed	Remark
Geology 1:50,000 BGS map 1:10,000 BGS Map (SD89NW) Borehole Data	Superficial – Made Ground and Till (likely stiff gravelly clay) Solid - Chester Formation (sandstone), formerly Chester Pebble Beds. Shallowest coal seam – Bradford Four Foot Coal at ~200m beneath base of Chester Formation. Strata Dip – Not recorded. Faults – The north-west to south-east trending, north-east downthrowing East Manchester Fault runs immediately east of the site. Nearby BGS archive boreholes suggest that made ground, soft clay and possibly gravel extend to around 7m depth with sandstone below.
Mining Coal Authority BGS maps	The site is located within a Coal Mining Reporting Area (within the defined coalfield, but no known defined risks have been recorded by the Coal Authority; there may still be unrecorded issues). Past and present workings – None within 500m. Opencast – None within 500m. Mine entries – None within 100m.
Quarrying Landmark Report Historical OS Plans	None within 500m
Radon UKHSA Map Landmark	No protective measures required. The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level).
Hydrogeology Landmark Report Groundwater Vulnerability map	Source Protection Zone? No. Aquifers: Secondary (Superficial); Secondary (Bedrock). Groundwater abstractions? Nearest 162m north. Pollution incidents? None relating to the site.
Hydrology Landmark Report	Nearest watercourse(s) – Noted to be on site, likely a culverted former tributary of the River Medlock. Water quality – Not recorded. Pollution incidents? None relating to the site. Abstractions? None within 1.8km. Discharge consents? None relating to the site.
Landfill Sites Landmark Report	None within 250m. Four areas of potentially infilled land within 250m.

4.2 SHOOTERS BROOK

Liaison has been undertaken with the LLFA (and the EA) over the presence of the Shooters Brook which is culverted beneath the existing carpark on the site. Investigations have been undertaken into the potential to divert this watercourse but options for doing so have been discounted and the proposed scheme is to be built over this.

Foundations and floor slabs of the proposed new structures are to bridge over the culvert into piles which found into the bedrock at depth, thus avoiding any load being placed onto the pipe. Roscoe document 25415-ROS-XX-XX-R-C-0150 (submitted with this planning application under separate cover) has been prepared and submitted to the LLFA which covers these options and outline approval granted to build-over the watercourse.

4.3 Preliminary Mining Risk Assessment

This Section provides the necessary preliminary mining risk assessment required by the proposed planning application.

The site is located within a Coal Mining Reporting Area (within the defined coalfield, but no known defined risks have been recorded by the Coal Authority).

Geological maps suggest that the shallowest coal seam beneath the site is the Bradford Four Foot Coal at 200m beneath base of Chester Formation.

A Coal Authority (CA) mining report states that:

- The property is not within the zone of likely physical influence on the surface from past or present underground workings. This means there are no known shallow mineworkings;
- there are no known mine entries within, or within 100 metres of, the boundary of the property;
- there are no plans to extract coal beneath the site:
- the Authority is not aware of any evidence of damage arising due to geological faults or other lines of weakness that have been affected by coal mining. This confirms the absence of any known significant geological faults below the site;
- the property is not within 500 metres of the boundary of an opencast site for which the Coal Authority is determining whether to grant a licence to remove coal by opencast methods; and,
- there is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.

The mechanism of roof collapse involves progressive upward migration of a void until it is either choked by the spalled roof debris or reaches the surface as a crown hole. The progress of upward migration is influenced by the nature of the overlying strata and the presence of joints\faults.

The vertical distance through which a mining related void can migrate is difficult to assess. Superficial deposits are considered to have no inherent strength, and the assumption is generally made that if a void reaches the base of these formations, it will reach the surface. CIRIA C758D[1] suggests a thickness of solid rock through which a void can migrate as 7h to 10h above the roof of the workings, where h is the height of the workings (generally assumed to be similar to the seam thickness). The lower end of this range (7h), is generally only applicable where the overlying strata are predominantly thickly bedded sandstones.

[1] CIRIA C758D - *Abandoned mine workings manual, 2019*

Given the thickness of competent rock cover over the Bradford Four Foot Coal seam the risks posed by potential mineworkings beneath the site are negligible.

4.4 Unexploded Ordnance (UXO) Risk Assessment

Military activities including those conducted as part of both the First and Second World Wars have resulted in a legacy of unexploded ordnance (UXO) being present within the shallow soils of the UK.

UXO result from various sources including both allied (military training) and German (bombing raids) with a guide figure of approximately 10% of all munitions failing to function as designed.

The likelihood of UXO being encountered on a development site is influenced by several factors including: the proximity to strategic targets; the nature of the development works being undertaken; and evidence of local damage in the post-war periods amongst others. To determine the likelihood of UXO being present on a site, a stepwise risk assessment process is followed. This process is outlined within CIRIA C681[2].

An initial UXO threat assessment has been undertaken using the ZeticaUXO risk map. The site is located in a medium-risk area and a Detailed Unexploded Ordnance (UXO) Threat Assessment should be carried out prior to any intrusive works below ground level.

In April 2022 1St Line Defence Limited undertook a Detailed Unexploded Ordnance (UXO) Risk Assessment (report referenced DA14968-00, submitted with this planning application under separate cover) for the site and wider proposed redevelopment area. This concluded that the site itself was within a UXO low risk area although an area with medium risk did exist to the south-east.

5 PREVIOUS INVESTIGATIONS

5.1 General

Calabrian have been provided with copies of the following reports (submitted with this planning application under separate cover). In each case the reports covered a larger proposed redevelopment area extending to the east and north-east:

1. Ground Conditions Desk Study, University of Manchester North Campus. Report prepared by Ove Arup and Partners Limited on behalf of the University of Manchester. Report referenced UNMC-ARUP-ZZ-XX-RP-CG-0001, dated 5th November 2019;
2. Preliminary Ground Investigation Interpretive Report, ID Manchester. Report prepared by Ove Arup and Partners Limited on behalf of the University of Manchester. Report referenced UNMC-ARUP-ZZ-XX-RP-CG-0004, dated 16th April 2020.

Report 1: Provides a desk based assessment of the wider site in line with the findings of this report.

[2] CIRIA C681 Unexploded Ordnance: A Guide for the Construction Industry.

Report 2: The report includes some limited ground investigation data for the site base on two boreholes (ARP-BH013 and ARP-BH014, see Drawing 7356/6P).

ARP-BH013 found made ground comprising a mix of granular and cohesive materials to 5.3m depth with medium dense gravelly sand (Alluvium) beneath. At 8.0m very dense sand was encountered (Weathered Sherwood Sandstone) which was cored below 10.5m and recovered as extremely weak to weak sandstone to the boreholes full depth at 16.5m.

Within ARP-BH014 similar ground conditions were found with made ground to 5.8m and granular Alluvium to 9.4m where again weathered sandstone and sand was found.

Groundwater samples from ARP-BH013 appeared to be 'clean'. Samples of made ground from both boreholes found some slightly elevated concentrations of PAH compounds.

Groundwater monitoring within ARP-BH013 found groundwater at around 5.4m depth on six occasions. No significant concentrations or flows of hazardous gas were encountered.

6 Land Contamination - Part IIA & Planning

Local Authorities have responsibilities with respect to land contamination in the context both of Part IIA of the Environmental Protection Act 1990, and Planning.

The contaminated land regime in Part IIA was introduced specifically to address the historical legacy of land contamination. It applies where there is unacceptable risk, assessed on the basis of the current use and the relevant circumstances of the land. It is not directed to assessing risks in relation to a future use of the land that would require a specific grant of planning permission. This is primarily a task for the planning system, which aims to control development and land use in the future.

Planning

With respect to contamination and site investigation the Planning Policy Framework (NPPF) states that:

- 'Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner.

Planning policies and decisions should ensure that:

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

Annex 2 of the NPPF states that 'all investigations of land potentially affected by contamination should be carried out in accordance with established procedures (such as BS10175 - 2011, Code of Practice for the Investigation of Potentially Contaminated Sites)'.

This Site

Given the presence of secondary aquifers below the site and the culverted watercourse beneath it, the environmental setting of the site is considered to be of moderate sensitivity. Former uses may have given rise to some ground and groundwater contamination.

7 GROUND INVESTIGATION DESIGN

7.1 ANTICIPATED GROUND CONDITIONS

Based on the environmental setting and previous land use data (reviewed in Sections 3 to 5 above) anticipated ground conditions are expected to comprise:

- **Made Ground** - possibly up to 6m in thickness comprising a mixture of natural soils with anthropogenic clasts.
- **Natural Soils** - possible stiff gravelly clay or gravel.
- **Bedrock –** sandstone likely at around 7m depth.
- **Mineworkings –** no shallow workings anticipated.
- **Groundwater –** possible within made ground and deeper in the sandstone.

7.2 POTENTIAL ISSUES

Based on the data above and that in Sections 2 (Site Description) and 3 (History), potential ground-related issues associated with this site are likely to include:

Potential on-site contamination sources:

1. Made ground associated with previous phases of development.
2. Possible small-scale petrol and oil storage associated with garages.

Potential off-site contamination sources:

1. Made ground (hazardous gas only).

Potential geotechnical hazards:

1. Deep made ground.

Other potential constraints:

1. Railway viaduct including its foundations.
2. Culverted watercourse beneath the site.

7.3 PRELIMINARY CONCEPTUAL SITE MODEL

The historical plans show that the site has been occupied by small-scale industries and commercial properties including garages all of which are considered to have the potential to have caused ground contamination.

An assessment of potential contaminants associated with the former uses has been undertaken including reference to the following DETR Industry Profiles:

- Road vehicle fuelling, service and repair - garages and filling stations;

- Road vehicle fuelling, service and repair - transport and haulage centres;
- Timber products manufacturing works;
- Timber treatment works.

Because of this assessment, anticipated potential contaminants, within soil and/or groundwater include:

- pH, and total metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc);
- asbestos;
- calorific Value (CV) within any ashy material;
- Speciated Poly Aromatic Hydrocarbons (sPAH);
- Volatile and Semi-Volatile Organic Compounds (VOC and sVOC);
- Speciated Total Petroleum Hydrocarbons (sTPH) by TPHCWG method including BTEX; and,
- Ammonia and Ammoniacal Nitrogen (groundwater only).

Potential pollutant linkages are shown on a preliminary conceptual site model, presented as Drawing No 7356/6 with a summary of the possible source-pathway-receptor linkages and risk definitions provided in the table on page 10 below. Clearly the conceptual model will be subject to modification in light of data arising from the proposed intrusive ground investigation.

Preliminary Conceptual Site Model – the table below summarises the possible source-pathway-receptor linkages with risk definitions in accordance with CIRIA C552[3].

Source	Exposure Pathway	Potential Receptor	Probability of Exposure	Consequence of Exposure	Discussion of Pollutant Linkage	Risk
Made Ground associated with previous development, And small-scale industries including garages (heavy metals, PAHs, asbestos, and fuel / oil hydrocarbons).	Inhalation, Ingestion and Dermal Contact	Humans – future users of site infrastructure	Likely	Medium (dependent on contaminants someone is exposed to).	Site users could come into contact with made ground if near surface in garden or landscaped areas.	Moderate Risk
		Humans - construction & maintenance workers	Low (with appropriate use of PPE / RPE)	Medium (dependent on the types of contaminants someone is exposed to).	Potential for construction and maintenance workers to encounter contaminated soil / asbestos fibres. Exposure times likely to be limited and risks should be reduced by wearing appropriate personnel protective equipment (PPE/RPE).	Low to Moderate Risk
	Leaching and migration	Groundwater – underlying Secondary Aquifer (superficial).	Low Likelihood	Medium	Potential for mobile contaminants on site.	Low to Moderate Risk
		underlying secondary Aquifer (bedrock).				
		Surface water – Culverted watercourse	Low Likelihood	Medium	Potential for mobile contaminants on site that could migrate.	Low to Moderate Risk
	Direct contact	Foundation	Likely	Mild	Potential for contaminants posing risk to new foundations and underground structures.	Moderate Risk
Hazardous ground gases from made ground.	Migration towards surface.	Humans – site users, construction & maintenance workers	Unlikely	Severe	Potential for hazardous gas migration into new structures.	Low to Moderate Risk
		Risk of explosion with future buildings and infrastructure				

[3] *Contaminated land risk assessment. A guide to good practice (C552), 2001.*

7.4 Ground Investigation Strategy and Design

The preliminary conceptual site model has used as a basis for design of an appropriate ground investigation, the scope of which is summarised below:

Exploratory Hole Type	Purpose
Ten Trail Pits (Machine Excavated) to around 2.5m depth.	To determine the general nature of soils underlying the site, including the: • Nature, distribution, and thickness of made ground; • nature, degree, and extent of contamination; • proportion of undesirable elements eg biodegradable matter, foundations etc; and, • suitability of the ground for founding structures and pavements.
Four Cable Percussion with Rotary Core Boreholes to 25m depth. Two additional Cable Percussion boreholes to around 6m depth for installation of shallow monitoring wells.	To retrieve geotechnical data from depth and install monitoring wells across the site in order to: • Monitor for hazardous gas; • determine groundwater levels and assess flow direction; and, • retrieve representative groundwater samples, to determine water quality.

Two boreholes (ARP-BH013 and ARP-BH014) where drilled on site during the 2020 investigation (see Section 5 above and Drawing 7356/7P).

Proposed exploratory hole locations should be selected to provide a representative view of the strata beneath the site and to target potential areas of interest identified in Section 7.3 above. A nominal 30m grid spacing should be appropriate, with additional exploratory locations scheduled as necessary in light of the ground conditions actually encountered; proposed exploratory hole locations are provided on Drawing 7256/7P.

The number of soil samples taken should be reflective of the geological complexity actually encountered, but in general about three samples should be taken from most exploratory holes for environmental assessment with further geotechnical sampling. Environmental analysis suites are discussed in Section 7.3 above.

The hazardous gas generation potential at the site is considered likely to be low with a moderate sensitivity end-use. Therefore, in accordance with Table 4.2 of CIRIA Report C665[4] and Table 5.1 within the Ground Gas Handbook[5]:

- An initial well spacing of 60m (wide) has been selected given that the on-site made ground likely has limited degradable material or organic clays and is generally of limited thickness.
- initially six monitoring visits are recommended over a three-month period.

A hazardous gas risk assessment should be prepared on completion of monitoring.

Groundwater monitoring should be undertaken in order to determine the gradient and flow direction of groundwater this is likely to be undertaken monthly over a six month period. Groundwater sampling, analysis and risk assessment should also be undertaken on at least two occasions from the four boreholes targeting both up and down hydraulic gradient within the site.

[4] CIRIA Report C665. Assessing risks posed by hazardous ground gases to buildings. 2007.
[5] Ground Gas Handbook. Whittles Publishing. Steve Wilson, Geoff Card and Sarah Haines, 2009.

8 CONCLUSIONS & RECOMMENDATIONS

8.1 GENERAL

Consideration is being given to redevelopment of the site with three towers ranging from eight to approximately thirty-seven storeys of student accommodation, with ground level amenity and commercial space, a part basement and external landscaping and amenity areas.

8.2 HISTORY

The site was undeveloped until around 1850 when Charles Street was constructed through its centre. By 1908 some minor development including saw mills and a box works along with other unknown building had been constructed north and south of Charles Street. Mid-20th Century buildings to the north of Charles Street included small garages including a petrol tank. The area was substantially cleared of development by the early 1970's with the current car park existing on site by 1985 including the realignment of Charles Street to the south.

8.3 MINING AND QUARRYING

This site is located within a Coal Mining Reporting Area (within the defined coalfield, but no known defined risks have been recorded by the Coal Authority; there may still be unrecorded issues).

Geological maps suggest that the shallowest coal seam beneath the site is the Bradford Four Foot Coal at 200m beneath base of Chester Formation. Therefore, the risks posed by mineworkings beneath the site are negligible.

There are no quarries within 500m of the site.

8.4 HAZARDOUS GAS

Information from historical OS plans, Landmark indicates that there are no known former landfill sites at or within 250m of the site. As such it is unlikely that the site will be affected by landfill gas. The site is not underlain by shallow mineworkings nor located in an area considered susceptible to mines gas emissions.

The site and surrounding land may be underlain by a moderate thickness of made ground that presents a potential source of hazardous gas generation. Previous limited gas monitoring in 2019 did not yield any significant issues. An appropriate period of gas monitoring and risk assessment may be required dependent upon ground conditions encountered.

BRE Report BR211 (2015 Edition) indicates that radon protection measures are not required for new dwellings at the site. Information from Landmark confirms that the site is in an area where less than 1% of homes are estimated to be above the action level, and that radon protection measures are therefore not required.

8.5 Foundations

At present, no geotechnical ground investigation data is available and consequently it is only possible to estimate the ground conditions. Before firm foundation recommendations can be given, it will be necessary to undertake an appropriate ground investigation. However, tentative recommendations are provided below.

The published geological data and information from the existing on-site boreholes suggests that made ground likely extends to around 6m with granular soils to 9m where sandstone is anticipated.

Made ground is not generally considered suitable founding materials and foundations should be taken through these into underlying natural in-situ strata of adequate bearing capacity. Consequently, it is likely that end-bearing piles of around 12m to 15m length will be required for any future redevelopment.

All concrete slabs and service ducts will require breaking out during the demolition of existing buildings. Foundations of plots that conflict with relict foundations should be taken to greater depth than the relict foundations and into natural ground of adequate bearing capacity.

8.6 Contamination & Remediation

The current use of the site as a car park is unlikely to have caused any significant ground or groundwater contamination. Former small-scale industrial and commercial uses of the land may have given rise to some ground and groundwater contamination although limited previous investigation did not find any significant issues.

At this stage the only potential requirement for remediation might be 'clean' soil cover within landscaped areas and potentially remediation (removal or suitable vapour barrier) of volatile compounds from beneath the building.

8.7 Potential Development Constraints

A Grade II Listed railway viaduct structure bounds the northern boundary of the site in an east-west orientation this is an operational Network Rail asset. This structure including its foundations may constrain any further development.

The culverted water course beneath the site will require consideration within any future redevelopment of the site (see Section 4.2 above).

DRAWINGS	
7356/1	Site Location Plan
7356/2	Proposed Layout
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7356/4	Site History
7356/5	Site Photographs
7356/6	Preliminary Conceptual Site Model
7356/7P	Proposed Exploratory Hole Locations

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client	RGRE LIMITED, ID MANCHESTER LIMITED AND THE UNIVERSITY OF MANCHESTER
project	PLOT H, SISTER
drawing title	SITE LOCATION
drawing number	7356/1
revision	–
drawing status	Final
scale	1:25,000 @ A4
date	03/07/2025
drawn by	RJH
checked by	–

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notes

Proposed layout reproduced from Hodder & Partners drawing referenced 0667-HOD-XX-00-DR-A-(--)200, revision 07, dated 20/08/25.

rev. description

client: RGRE LIMITED, ID MANCHESTER LIMITED AND THE UNIVERSITY OF MANCHESTER

project: PLOT H, SISTER

drawing title: PROPOSED LAYOUT

drawing number: 7356/2

revision: –

drawing status: Final

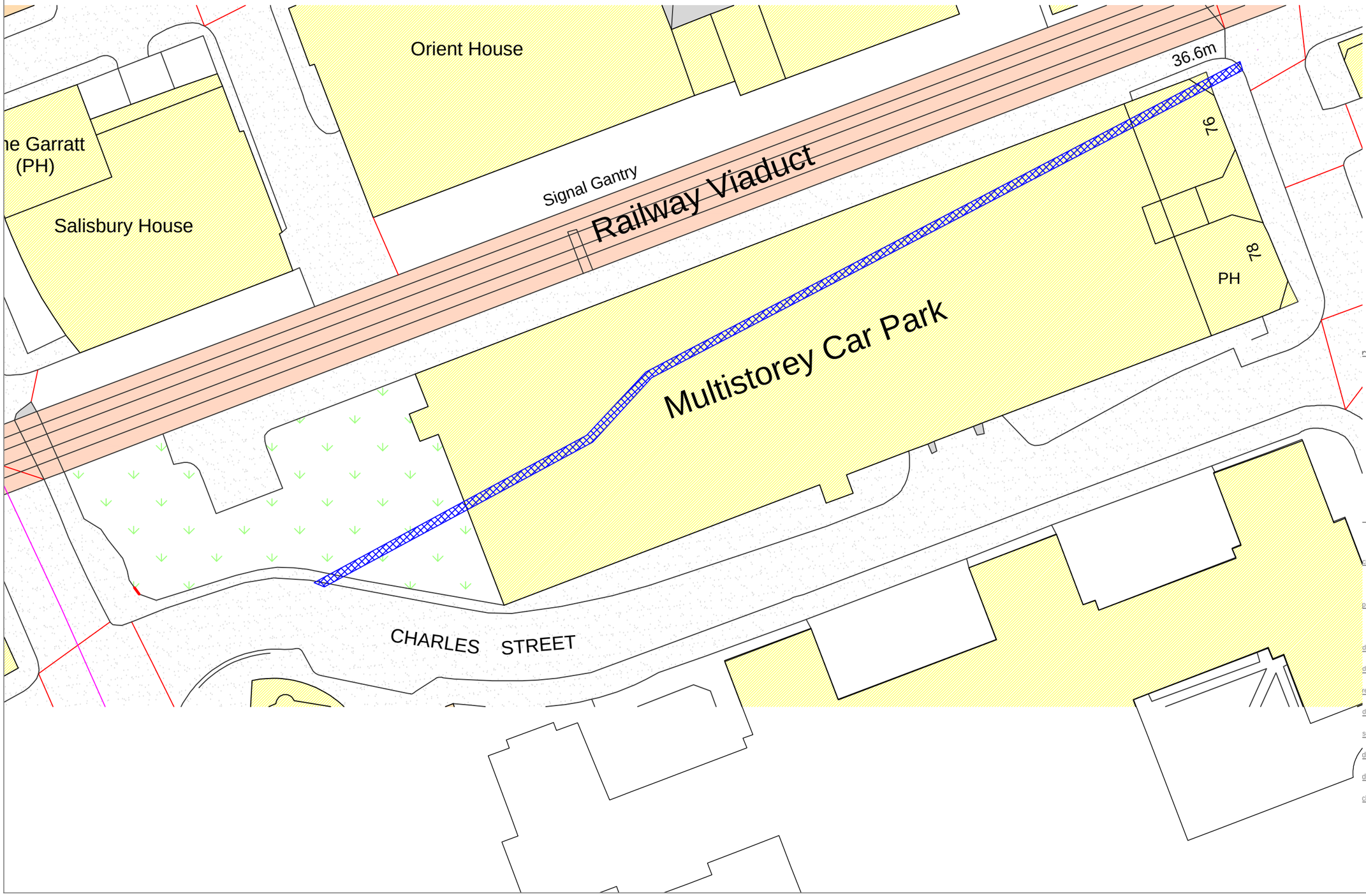
scale: 1:500@A3

date: 20/09/2025

drawn by: RJH

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notes

- GRASS & MATURE TREES
- BUILDING
- GRAVEL OR HARDCORE SURFACING
- TARMAC HARDSTAND
- APPROXIMATE LINE OF CULVERTED WATERCOURSE
- APPROXIMATE SITE BOUNDARY

rev. description

client	RGRE LIMITED, ID MANCHESTER LIMITED AND THE UNIVERSITY OF MANCHESTER
project	PLOT H, SISTER
drawing title	SITE FEATURES
drawing number	7356/3
revision	–
drawing status	Final
scale	1:500@A3
date	03/07/2025
drawn by	RJH
checked by	–

calabrian
GEOTECHNICAL | GEOENVIRONMENTAL
info@calabrian.co.uk



notes

APPROXIMATE SITE BOUNDARY

EXISTING BUILDING FOOTPRINT

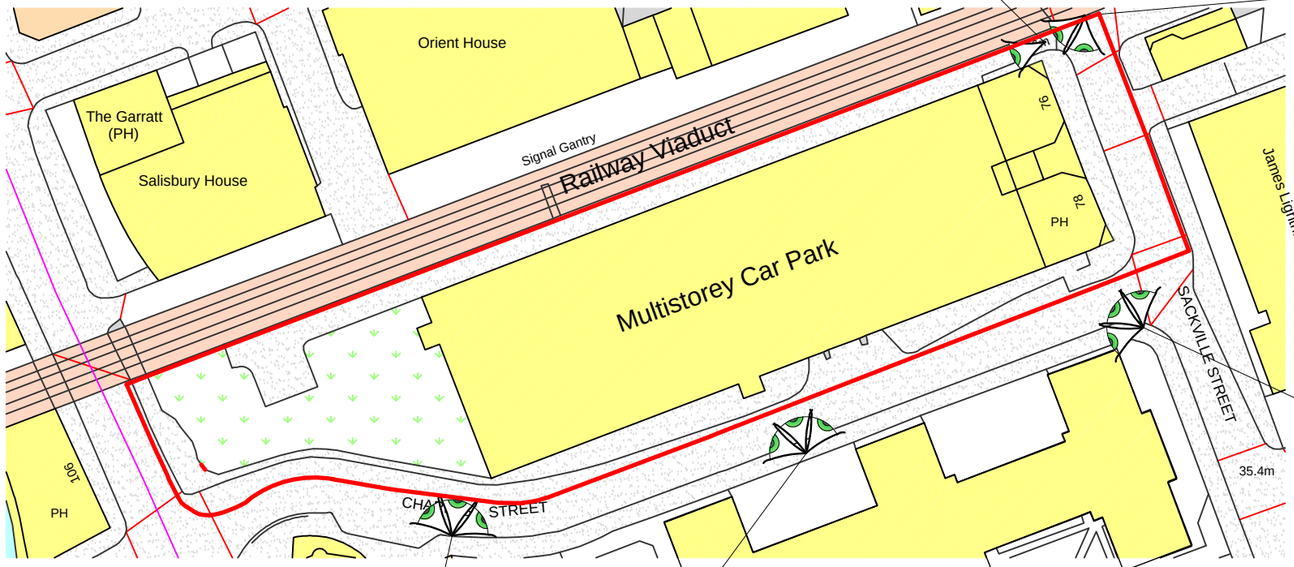
rev. description

client	RGRE LIMITED, ID MANCHESTER LIMITED AND THE UNIVERSITY OF MANCHESTER
project	PLOT H, SISTER
drawing title	HISTORICAL FEATURES *Reproduced from OS 1891 Map*
drawing number	7356/4
revision	–
drawing status	Final
scale	1:500@A3
date	03/07/2025
drawn by	RJH
checked by	–

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notes

APPROXIMATE SITE BOUNDARY

LOCATION & ORIENTATION OF PHOTOGRAPH

rev. description

client: RGRE LIMITED, ID MANCHESTER LIMITED AND THE UNIVERSITY OF MANCHESTER

project: PLOT H, SISTER

drawing title: PHOTOGRAPHS

drawing number: 7356/5

revision: –

drawing status: Final

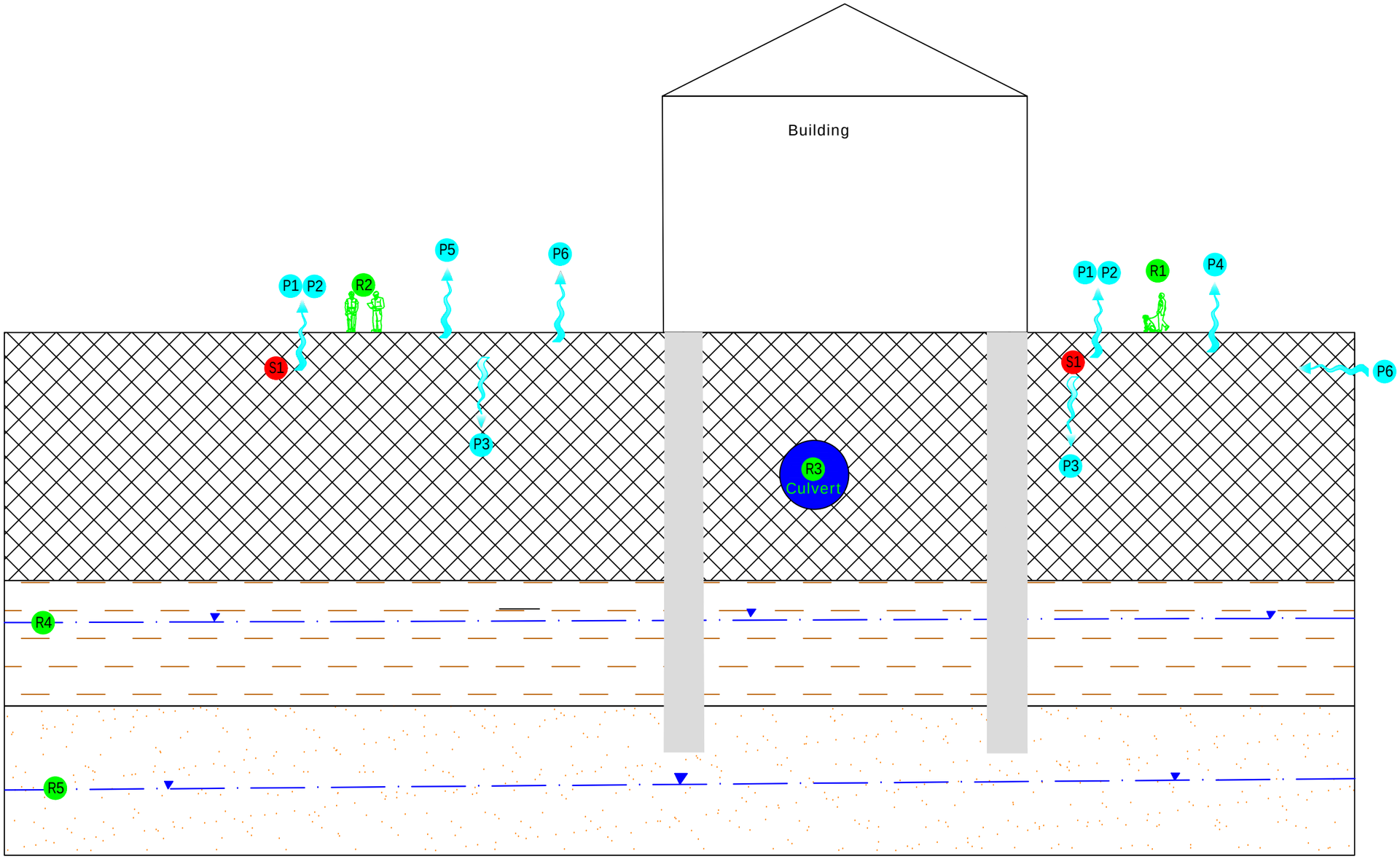
scale: 1:1000@A3

date: 03/07/2025

drawn by: RJH

checked by: –

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GEOLOGY

- MADE GROUND
- TILL (CLAY, possible GRAVEL)
- CHESTER FORMATION (SANDSTONE)

SOURCES

- S1 MADE GROUND (inorganics, organics & asbestos)

POTENTIAL PATHWAYS

- P1 DERMAL CONTACT
- P2 INGESTION\INHALATION
- P3 LEACHING OF CONTAMINANTS
- P4 UPTAKE BY PLANTS
- P5 VOLATILISATION
- P6 MIGRATION OF GAS

SIGNIFICANT RECEPTORS

- R1 END USERS
- R2 SITE WORKERS
- R3 SURFACE WATERS (Culvert)
- R4 SECONDARY AQUIFER (Superficial)
- R5 PRINCIPAL AQUIFER (Bedrock)

notes

rev. description

client: RGRE LIMITED, ID MANCHESTER LIMITED AND THE UNIVERSITY OF MANCHESTER

project: PLOT H, SISTER

drawing title: PRELIMINARY CONCEPTUAL SITE MODEL

drawing number: 7356/6

revision: –

drawing status: Final

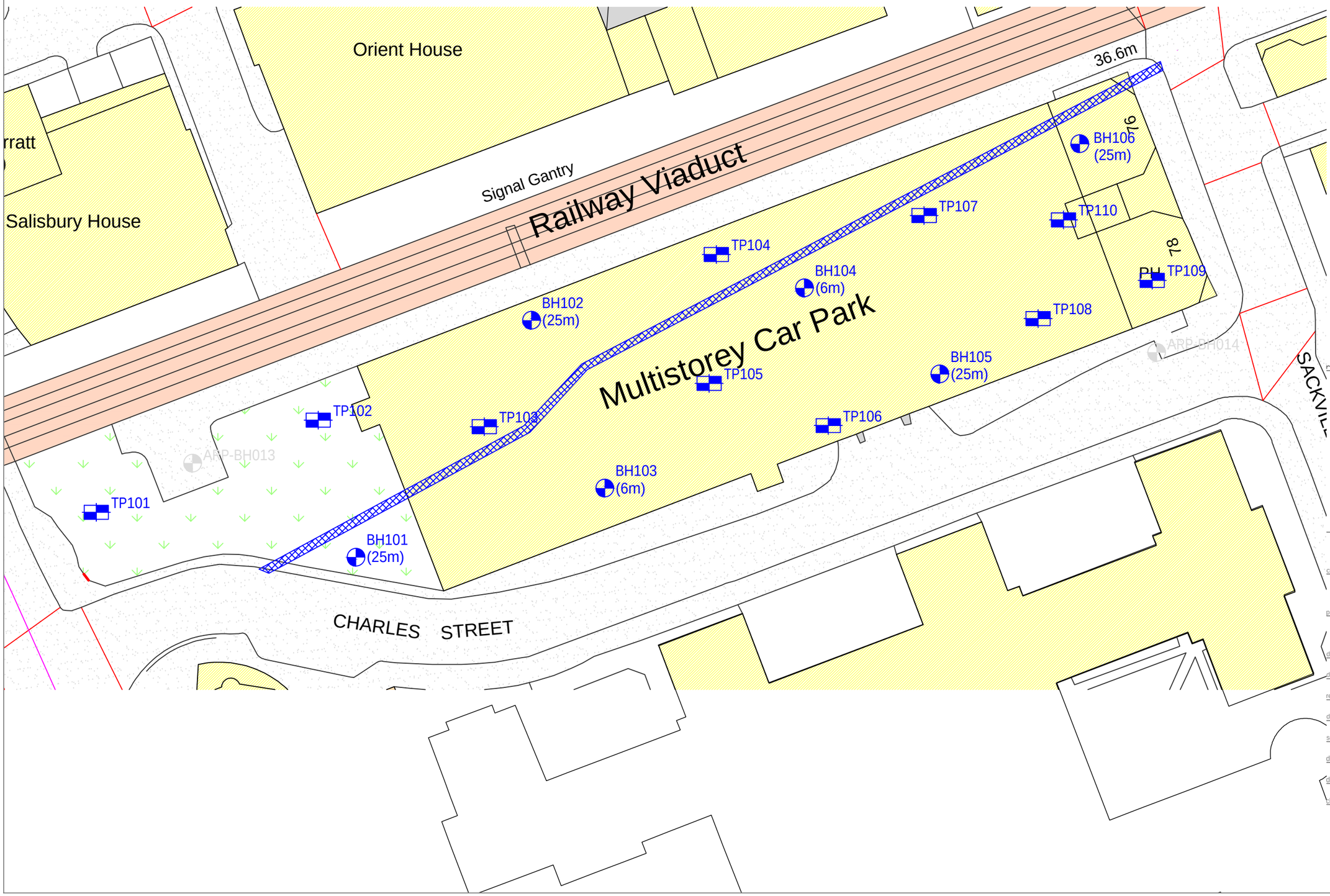
scale: Not to Scale

date: 03/07/2025

drawn by: RJH

checked by: –

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notes

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OVE ARUP AND PARTNERS 2020 INVESTIGATION

BOREHOLE LOCATION

CALABRIAN PROPOSED INVESTIGATION

TRIAL PIT LOCATION

BOREHOLE LOCATION

rev. description

client	RGRE LIMITED, ID MANCHESTER LIMITED AND THE UNIVERSITY OF MANCHESTER
project	PLOT H, SISTER
drawing title	PROPOSED EXPLORATORY HOLE LOCATION PLAN
drawing number	7356/7P
revision	–
drawing status	FINAL
scale	1:500@A3
date	13/11/2025
drawn by	RJH
checked by	–

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APPENDIX A COMMISSION

calabrian

7356/002/RJH/rjh

2nd July 2025

Mr A Wall
Roscoe
38 Mosley Street
Manchester
M2 3AZ

Dear Aaron

Charles Street, Manchester, M1 7AR – Desk Study Fee Proposal

Further to your recent invitation, please find below our proposal for undertaking a geotechnical and environmental desk study appraisal of the above land. It is understood that the site consists of a single parcel of land of approximately 0.54 hectares and is currently a large multi-storey car park.

This site is located within a Coal Mining Development High Risk Area (an area with specific mining legacy risks to the surface, including mine entries; shallow coal workings etc), and therefore a mining report will be obtained. Our report will include a mining risk assessment (desk-based) that should satisfy the Mining Remediation Authority.

Environmental search data and historical maps (obtained from Landmark) will be reviewed in order to determine whether any past land uses have had any effect on the proposed development. In addition, we will visit site to review current operations and undertake a walkover survey.

Preliminary and detailed unexploded ordnance (UXO) risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'. An initial UXO threat assessment has been undertaken using the ZeticaUXO risk map. The site is located in a medium-risk area and a Detailed UXO Threat Assessment should be undertaken; however, at this stage no allowance has been made for provision of such an assessment.

The report will include preliminary recommendations with respect to mining, foundations, contamination and hazardous gas. It is anticipated, allowing for receipt of statutory search information that a final bound report will be available within around one week of receiving your written instruction to proceed. Our lump sum fee for provision of this report is £*,*** plus VAT.

Terms & Conditions

This work will be undertaken in accordance with our Standard Terms and Conditions, a copy of which are enclosed.

Should you require any further information, please contact the undersigned.

[redacted]

Richard Hey - Managing Director
for and on behalf of
CALABRIAN LIMITED
enc

Terms and Conditions for the Appointment of Calabrian Limited

1 DEFINITIONS AND INTERPRETATION

1.1 In this Agreement, unless the context otherwise requires, the following words and expressions have the following meanings:

"Agreement" shall mean these Terms (entitled "Terms and Conditions for the Appointment of Calabrian Limited"), the Proposal, any document recording the Client's unequivocal acceptance of the Proposal and any other documents or parts of other documents expressly referred to in any of the foregoing:

"Client" shall mean the party for whom the Services are being provided by Calabrian;

"Documents" shall mean all documents of any kind and includes plans, drawings, reports, programmes, specifications, Bills of Quantities, calculations, letters, e-mails, faxes, memoranda, films and photographs (including negatives), or any other form of record prepared or provided or received by, or on behalf of Calabrian, and whether in paper form or stored electronically or on disk, or otherwise;

"Calabrian" shall mean Calabrian Limited whose registered office is at Holly Rise, 17 The Maltings, Liphook, GU30 7DG.

"Intellectual Property" includes all rights to, and any interests in, any patents, designs, trade marks, copyright, know-how, trade secrets and any other proprietary rights or forms of intellectual property (protectable by registration or not) in respect of any technology, concept, idea, data, programme or other software (including source and object codes), specification, plan, drawing, schedule, minutes, correspondence, scheme, programme, design, system, process logo, mark, style, or other matter or thing, existing or conceived, used, developed or produced by any person;

"Parties" shall mean the Client and Calabrian

"Project" shall mean the project described in the Proposal and any enquiry from the Client on which Calabrian has based its Proposal;

"Proposal" means the offer document prepared by Calabrian in response to an enquiry or otherwise, in connection with the proposed provision of the Services;

"Services" means the work and services relating to the Project to be provided by Calabrian pursuant to the Agreement and as set out in the Proposal and shall include any additions or amendments thereto made in accordance with these Terms;

"Terms" means these terms entitled "Calabrian Terms of Appointment";

1.2 Words importing the singular only shall also include the plural and vice versa, where the context requires.

1.3 Words importing persons or parties shall include firms, corporations and any organisation having legal capacity and vice versa, where the context requires; and words importing a particular gender include all genders.

1.4 The sub-headings to the clauses of these Terms are for convenience only and shall not affect the construction of the Agreement.

1.5 A reference to legislation includes that legislation as from time to time amended, re-enacted or substituted and any Orders in Council, orders, rules, regulations, schemes, warrants, by-laws, directives or codes of practice issued under any such legislation.

1.6 In the event of conflict between the documents forming part of the Agreement, the Proposal shall prevail, followed by the Terms.

2 APPOINTMENT

2.1 The Client agrees to engage Calabrian and Calabrian agrees to provide the Services in accordance with the provisions of the Agreement.

3 OBLIGATIONS OF CALABRIAN

3.1 Calabrian shall perform the Services using the reasonable standard of skill and care normally exercised by similar professional Environmental firms in performing similar services under similar conditions.

3.2 Calabrian shall use all reasonable endeavours to perform the Services in accordance with all relevant environmental and safety legislation.

4 OBLIGATIONS OF THE CLIENT

4.1 Throughout the period of this Agreement the Client shall afford to Calabrian or procure the affording to Calabrian of access to any site where access is required for the performance of the Services.

4.2 The Client accepts responsibility for ensuring that Calabrian is notified in writing of all special site and/or plant conditions, including without prejudice to the generality of the foregoing, the existence and precise location of all underground services, cables, pipes, drains or underground buildings, constructions or any hazards known or suspected by the Client, which the Client shall clearly mark on the ground or identify on accurate location plans supplied to Calabrian prior to the commencement of the Services. The Client shall also inform Calabrian in writing of any relevant operating procedures including any site safe operating procedures and any other regulations relevant to the carrying out of the Services. The Client shall indemnify Calabrian against all costs, claims, demands and expenses arising as a result of any non-disclosure in this respect, including but not limited to indemnification against any action brought by the owner of the land or otherwise.

4.3 If the Client discovers any conflict, defect or other fault in the information or designs provided by Calabrian pursuant to the Agreement, he will advise Calabrian in writing of such defect, conflict or other fault and Calabrian shall have the right to rectify the same or where necessary, to design the solution for rectification of any works carried out by others pursuant the conflicting, defective or in any other way faulty information or designs.

5 INTELLECTUAL PROPERTY

5.1 The copyright in all Intellectual Property prepared by or on behalf of Calabrian in connection with the Project for delivery to the Client shall remain vested in Calabrian.

5.2 The Client shall have a non-exclusive licence to copy and use such Intellectual Property for purposes directly related to the Project. Such licence shall enable the Client to copy and use the Intellectual Property but solely for its own purposes in connection with the Project and such use shall not include any licence to reproduce any conceptual designs or professional opinions contained therein nor shall it include any license to amend any drawing, design or other Intellectual Property produced by Calabrian.

5.3 Should the Client wish to use such Intellectual Property in connection with any other works or for any other purpose not directly related to the Project or wish to pass any Intellectual Property to any third party, it must obtain the prior written consent of Calabrian. The giving of such consent shall be at the discretion of Calabrian and shall be upon such terms as may be required by Calabrian. Calabrian shall not be liable for the use by any person of such Intellectual Property for any purpose other than that for which the same were prepared by or on behalf of Calabrian.

5.4 Ownership of any proposals submitted to the Client that are not subsequently confirmed as part of the Services to be provided for the Client remain with Calabrian and such proposals must not be used as the basis for any future work undertaken by the Client or a third party and no liability can be accepted howsoever arising from such proposals.

5.5 In the event of the Client being in default of payment of any fees or other amounts due, Calabrian may suspend further use of the licence on giving 2 days' notice of the intention to do so. Use of the licence may be resumed on receipt of the outstanding amounts

6 TITLE

6.1 Calabrian shall transfer only such title or rights in respect of the Documents as it has, and if any part is purchased from a third party Calabrian shall transfer only such title or rights as that party had and has transferred to Calabrian.

6.2 Title in the Documents shall remain with and shall not pass to the Client until the amount due under the invoice(s) (including interest and costs) has been paid in full.

6.3 Until title passes, the Client shall hold the Documents as bailee for Calabrian and shall store or mark them so that they can at all times be identified as the property of Calabrian.

6.4 At any time before title passes (save and except where payment is not due), but only after prior consultation with the Client, Calabrian may without any liability to the Client repossess and use or sell all or any of part of the Documents and by doing so terminate the right of the Client to use, sell or otherwise deal in the Documents.

6.5 Calabrian may maintain an action for the price of the Documents notwithstanding that title in them has not passed to the Client.

7 CONFIDENTIALITY

7.1 Calabrian undertakes not to divulge or disclose to any third party without the written consent of the Client information which is designated confidential by the Client or which can reasonably be considered to be confidential and arises during the performance of the Services unless required to do so by law or necessary in the proper performance of its duties in relation to the Project, or in order to make full frank and proper disclosure to its insurers or intended insurers, or to obtain legal or accounting advice.

7.2 Subject to the above, Calabrian shall be permitted to use information related to the Services it provides in connection with the Project for the purposes of marketing its services and in proposals for work of a similar type.

8 THIRD PARTIES

8.1 The Agreement or any part thereof or any benefit or interest thereunder may not be assigned by the Client without the prior written consent of Calabrian. The giving of such consent shall be at the discretion of Calabrian and Calabrian will only agree to an assignment on its terms and in return for payment of a fee by the Client to Calabrian to cover Calabrian's legal and other costs associated with any assignment.

8.2 The Agreement shall not confer and shall not purport to confer on any third party any benefit or any right to enforce any term of this Agreement for the purposes of the Contracts (Rights of Third Parties) Act 1999 or otherwise.

8.3 Calabrian will consider and may consent to any request from the Client for Calabrian to enter a collateral warranty with a third party with regard to the Services provided under the Agreement. The giving of such consent shall be at the discretion of Calabrian and Calabrian will only enter a collateral warranty on its terms and in return for payment of a fee by the Client to Calabrian to cover Calabrian's legal and other costs associated with any collateral warranty.

9 INSURANCE

9.1 Calabrian warrants to the Client that there is in force a policy of Professional Indemnity insurance covering its liabilities for negligence under this Agreement, with a limit of indemnity of £5,000,000 (FIVE MILLION POUNDS) any one Single Claim, Defence Costs in addition. This policy is annually renewable and whilst renewal is not automatic, Calabrian agrees to use reasonable endeavours to maintain such insurance at all times until six years from the date of the completion (or termination) of the Services under the Agreement, provided such insurance is available at commercially reasonable rates having regard, inter alia, to premiums required and policy terms obtainable.

9.2 If for any period such insurance is not available at commercially reasonable rates, Calabrian shall forthwith inform the Client and shall obtain in respect of such period such reduced level of Professional Indemnity insurance as is available and as would be fair and reasonable in the circumstances for Calabrian to obtain.

10 LIMITATIONS ON LIABILITY

10.1 Unless otherwise agreed in writing, Calabrian's liability under or in connection with the Agreement whether in contract, tort, negligence, breach of statutory duty or otherwise (other than in respect of personal injury or death) shall be limited to and shall not exceed the lesser of either five million pounds in the aggregate or 10 times the total value of invoices issued to the Client for consultancy work instructed under the Agreement.

10.2 No action or proceedings under or in respect of the Agreement whether in contract, tort, negligence, under statute or otherwise shall be commenced against Calabrian after the expiry of a period of six years from the date of the completion (or termination) of the Services under the Agreement.

10.3 Whilst Calabrian will scan all potential exploratory locations with a Cable Avoidance Tool, Calabrian shall not be liable for any damage to underground services, cables, pipes, drains or underground buildings, constructions and the like which were either not marked on site or for which accurate plans were not provided.

10.4 Calabrian shall not be liable for the cost of rectifying any defect, conflict or other fault in the information or designs provided by Calabrian or for the cost of designing a solution for and rectifying any subsequent works carried out by others pursuant to the conflicting, defective or in any other way faulty information or designs, unless Calabrian has been advised in writing of the same by the Client and has been given the opportunity to rectify the same or where necessary, to design the solution for rectification of any subsequent works carried out by others pursuant to the same.

11 PAYMENT

11.1 Invoices for services rendered will be submitted for payment in accordance with the Proposal.

11.2 The due date for payment is the date of the invoice and the final date for payment is 28 days from the date of the invoice.

11.3 If the Client disputes the amount included for payment in an invoice a written notice must be served on Calabrian by the Client not later than 14 days before the final date for payment. If no notice is given the amount due shall be the amount stated in the invoice.

11.4 In the event of failure on the part of the Client to pay any monies in accordance with the foregoing payment provisions, Calabrian will be entitled to charge interest on any monies owed to it by the Client, such interest to be at a rate of 8% above the base rate of a clearing bank from time to time calculated from the final date for payment to the date of actual payment on a compound basis.

12 DELAY

12.1 Calabrian will comply with any timescale agreed for completion of the Services unless delayed or prevented by circumstances beyond its reasonable control and in the event of any such circumstances arising Calabrian undertakes to complete the Services within a reasonable period, but will not be liable to the Client for any delay as a result.

13 TERMINATION

13.1 The Agreement may be determined by either party in the event of the other making a composition or arrangement with its creditors, becoming bankrupt, or being a company, making a proposal for a voluntary arrangement for a composition of debts, or has a provisional liquidator appointed, or has a winding-up order made, or passes a resolution for voluntary winding-up (except for the purposes of a bona fide scheme of amalgamation or reconstruction), or has an administrator or an administrative receiver appointed to the whole or any part of its assets. Notice of determination must be given to the party which is insolvent by the other party.

13.2 If for any reason the performance of the Services by Calabrian is suspended for a period in excess of three calendar months then Calabrian shall be entitled to determine its appointment in respect of the Services by seven days written notice to the Client.

13.3 If the Client shall fail to pay in full any sum due under the terms of the Agreement by the final date for payment for that sum and no effective notice of intention to withhold payment has been issued, Calabrian may serve written notice on the Client demanding payment within 14 days of such notice. If the Client shall fail to comply with such notice, Calabrian shall be entitled to terminate its employment under the Agreement forthwith.

13.4 Any determination of the appointment of Calabrian howsoever caused shall be without prejudice to the right of Calabrian to require payment for all services performed up to the date of such determination including but not limited to payment of a fair and reasonable proportion of any figure identified in the Proposal or otherwise for fees in respect of a particular service which Calabrian has started, but not completed.

14 NOTICES

14.1 Any notice provided for in the Agreement shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post to the address of the relevant party as may have been notified by each party to the other or, in the absence of notification, to the address of Calabrian set out above or to the registered address of the Client.

14.2 Such notice shall be deemed to have been received on the day of delivery if delivered by hand or on the second working day after the day of posting if sent by first class post.

15 ENTIRE AGREEMENT

15.1 The Agreement constitutes the complete and entire agreement between the Client and Calabrian with respect to the Services and supersedes any prior oral and/or written warranties, terms, conditions, communications and representations, whether express or implied and any claim against Calabrian in respect of the Services can only be made in contract under the provisions of the Agreement and not otherwise under the law or tort or otherwise.

15.2 No amendments, modifications or variation of the Agreement shall be valid unless made in writing and agreed to by both the Client and Calabrian; such agreement must be recorded in writing by at least one of the Parties.

15.3 Calabrian will not be bound by any standard or printed terms or conditions furnished by the Client in any of its documents unless Calabrian specifically states in writing separately from such documents that it intends such terms and conditions to apply.

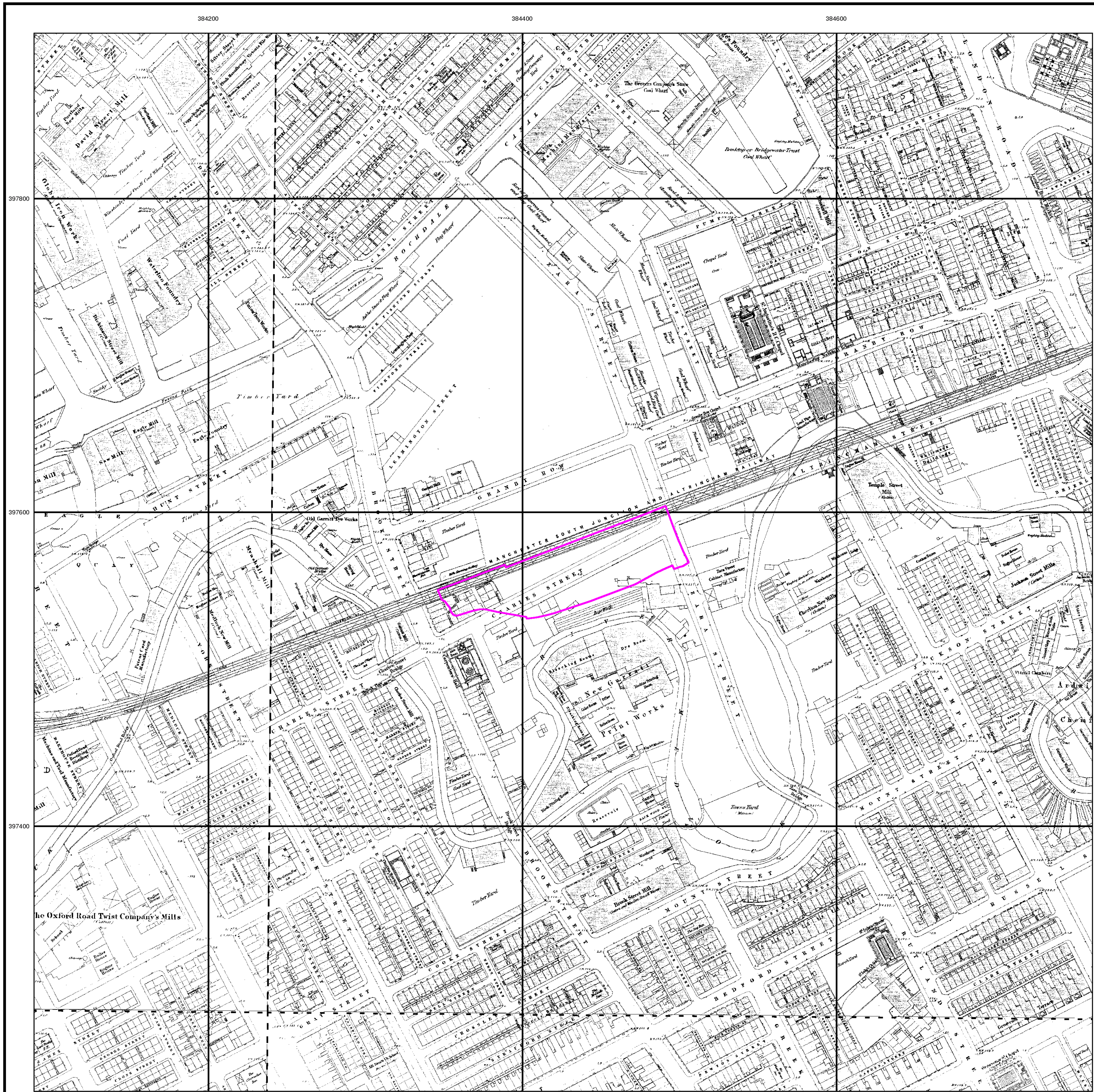
16 DISPUTES AND GOVERNING LAW

16.1 The Agreement shall be governed by and construed in accordance with English law and the Parties irrevocably and unconditionally submit to the jurisdiction of the English Courts.

16.2 Where the Housing Grants, Construction and Regeneration Act 1996 applies, any dispute between the Parties may be referred to adjudication in accordance with The Scheme for Construction Contracts Regulations 1998 or any amendment or modification thereof being in force at the time of the dispute, as applicable to England, Wales, Scotland and Northern Ireland.

APPENDIX B HISTORICAL OS PLANS





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calabrian

Lancashire And Furness

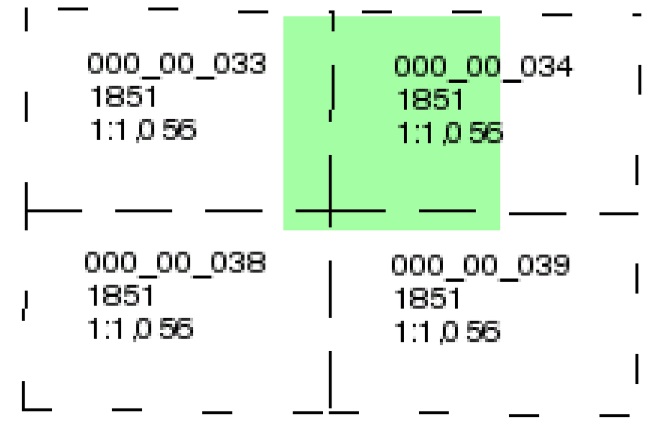
Published 1851

Source map scale - 1:1,056

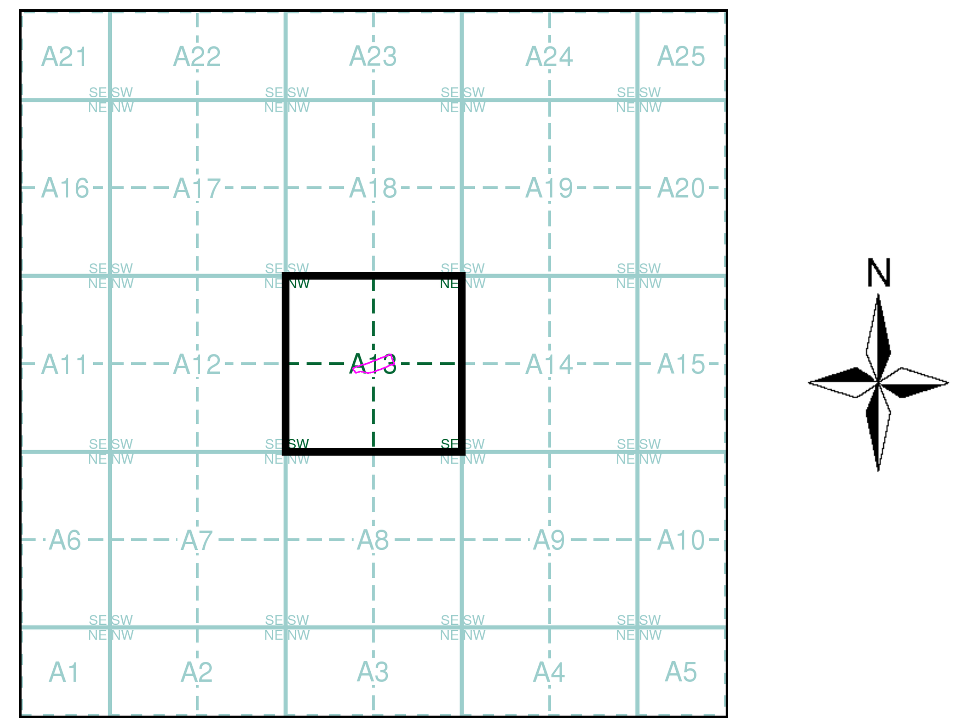
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)



Historical Town Plan - Segment A13



Order Details

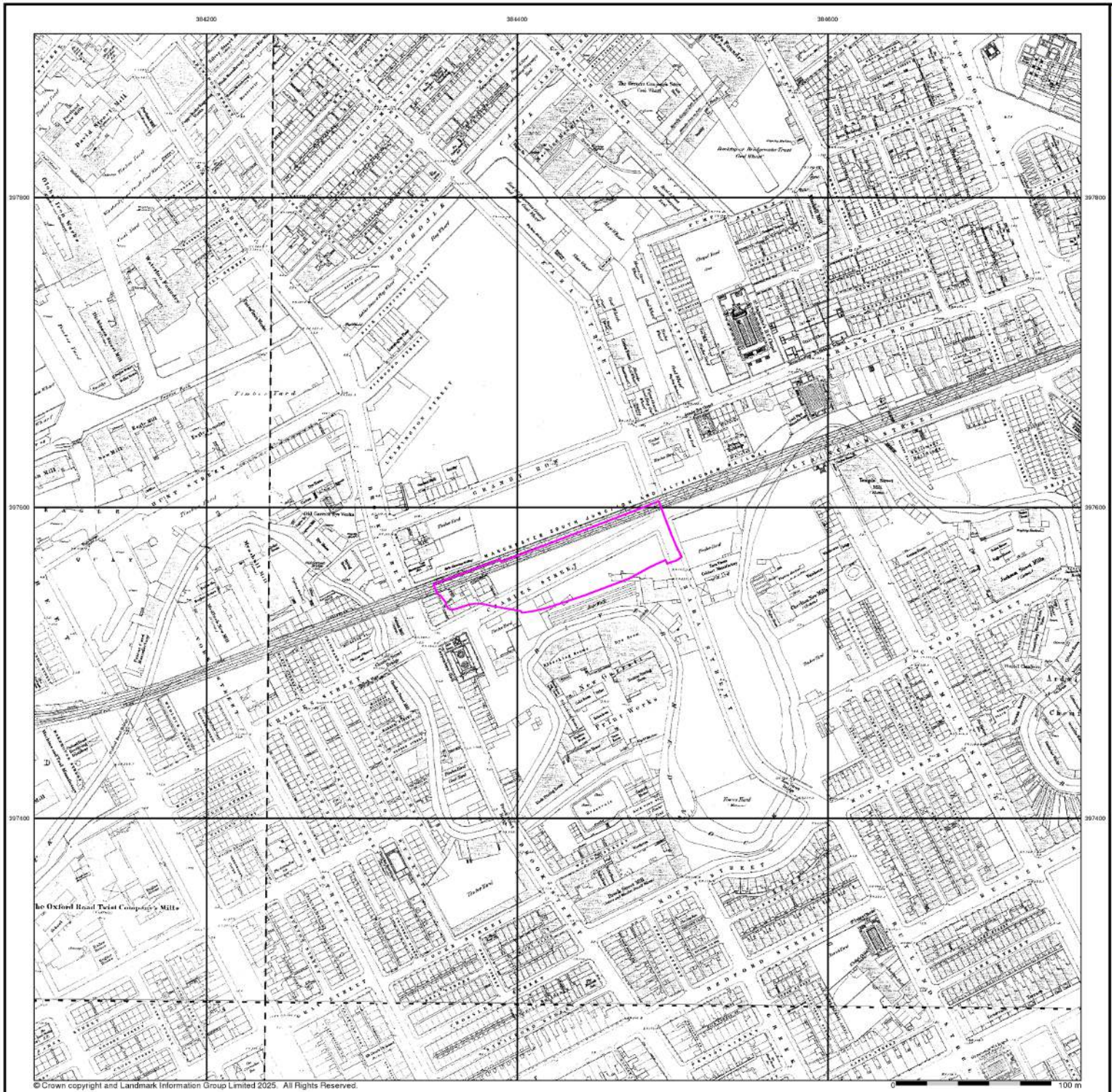
Order Number: 380510101_1_1
Customer Ref: 7356
National Grid Reference: 384430, 397560
Slice: A
Site Area (Ha): 0.53
Search Buffer (m): 0

Site Details

Site at 384426,397568

Landmark INFORMATION GROUP

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



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Lancashire And Furness

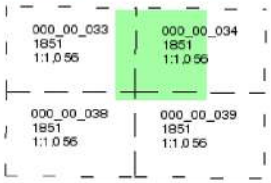
Published 1851

Source map scale - 1:1,056

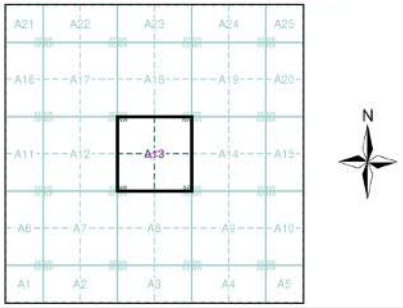
The 1:1056 scale of Ordnance Survey mapping was adopted from Ireland in 1848 and was used to survey towns with a population of over 4000, plus county towns of lesser population, in those counties mapped at the six-inch scale in 1841-55. The scale was the largest scale at which London was mapped by the Ordnance Survey and a 'skeleton' survey of the capital, showing little more than streets, street names, frontages and altitudes, was undertaken between 1848 and 1850. The majority of the 1:1056 surveys were later replaced by 1:500 surveys; although almost all the remainder were revised at this scale, sometimes more than once before 1895. The type of detail shown on the 1:1056 scale is broadly similar to that on 1:500; the apparent omission of minor details such as sewer access points and street lights may be as much a reflection of the generally earlier date of these plans, as of the specification of the map.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)



Historical Town Plan - Segment A13



Order Details

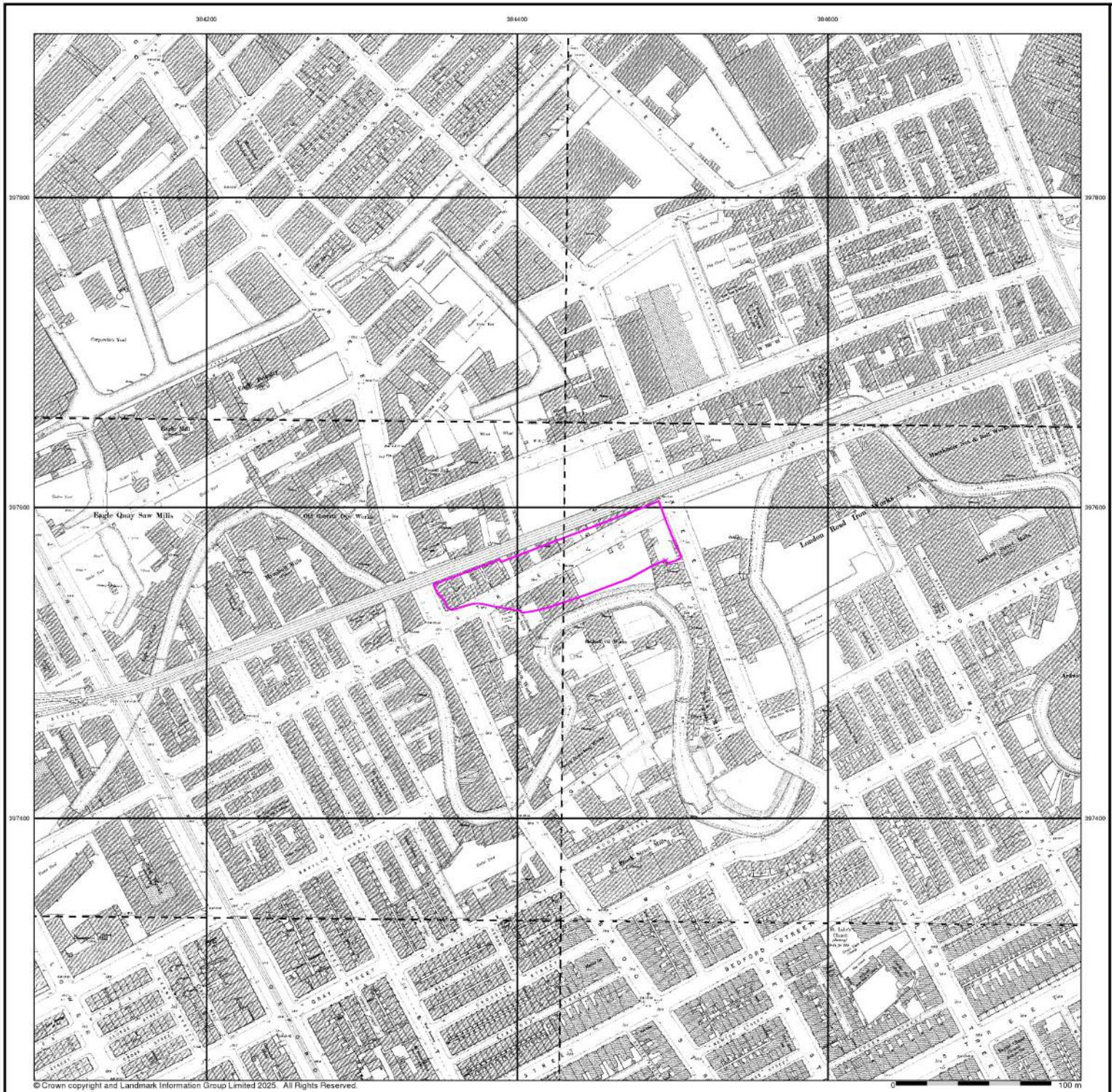
Order Number:	380510101_1_1
Customer Ref:	7356
National Grid Reference:	384430, 397560
Slice:	A
Site Area (Ha):	0.53
Search Buffer (m):	0

Site Details

Site at 384426,397568

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calabrian

Lancashire And Furness

Published 1891

Source map scale - 1:500

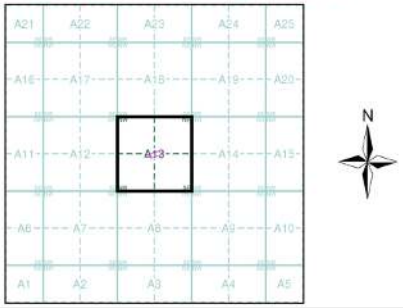
The 1:500 scale Ordnance Survey mapping was introduced in 1855 as a replacement for the 1:528 scale and to compliment the 1:2500 scale that had been implemented in 1853. By 1895, the 1:500 scale covered most towns over a population of about 4000 at the time of survey, although very few towns were mapped more than once at this scale, and none have been since 1910. The 1:500 scale gives particular emphasis to such features as lamp posts, man holes, arched passages and minor building projections. Also often featured are divisions between tenements, interior ground floor layouts of public buildings, and on earlier plans, the functions of the various parts of larger industrial premises are also indicated. Content of the plans does vary however, from one town to the next in terms of, for example, the completeness of railway tracks and the coverage of public buildings.

Please note: Due to the partial coverage of Historical Town Plans, it is possible that not all segments within an order will contain mapping. Only the segments that have Town Plan coverage will be generated.

Map Name(s) and Date(s)

104_10_010 1891 1:500	104_11_006 1891 1:500
104_10_015 1891 1:500	104_11_011 1891 1:500
104_10_020 1891 1:500	104_11_016 1891 1:500

Historical Town Plan - Segment A13



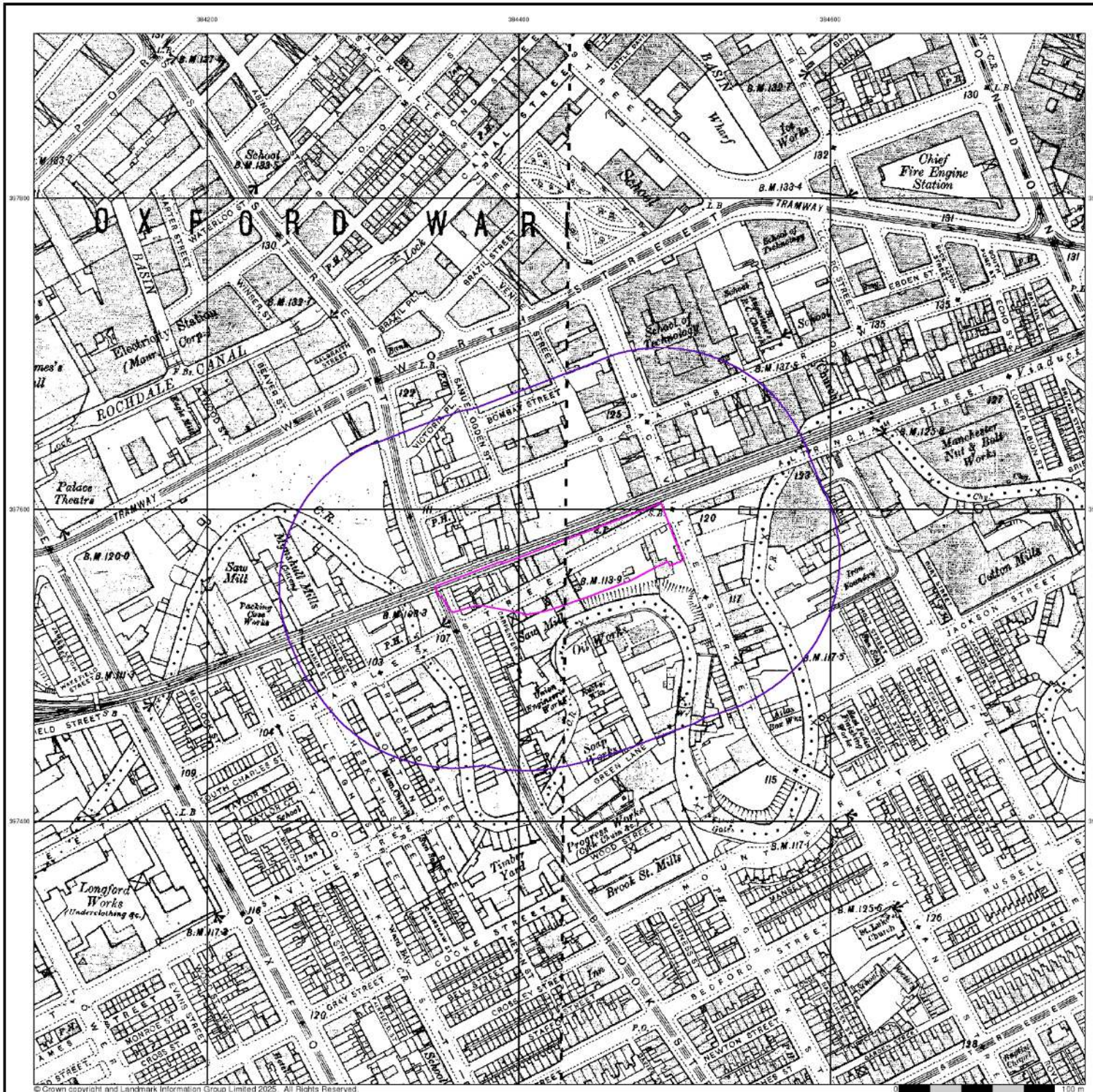
Order Details

Order Number:	380510101_1_1
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Slice:	A
Site Area (Ha):	0.53
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Site Details

Site at 384426,397568

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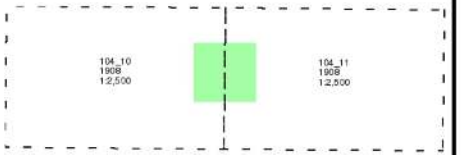
Lancashire And Furness

Published 1908

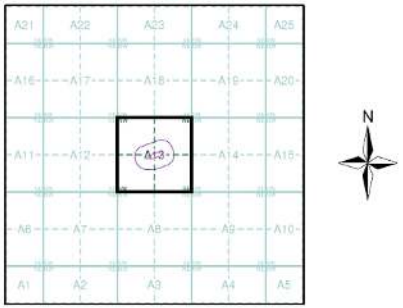
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The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered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

Map Name(s) and Date(s)



Historical Map - Segment A13



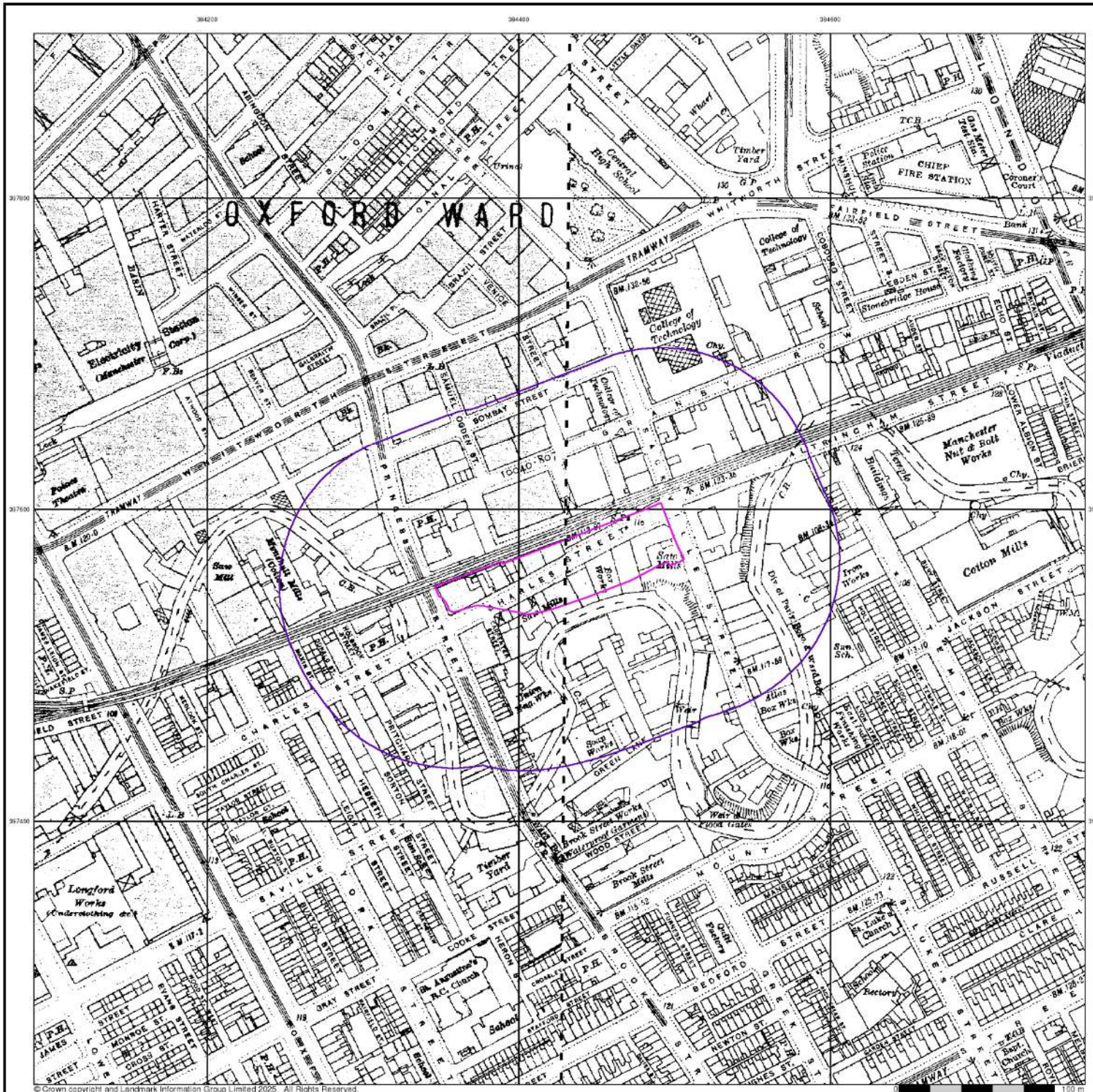
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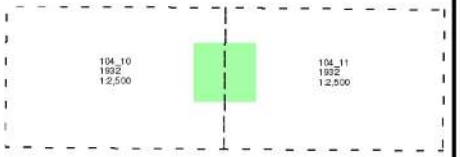
Lancashire And Furness

Published 1932

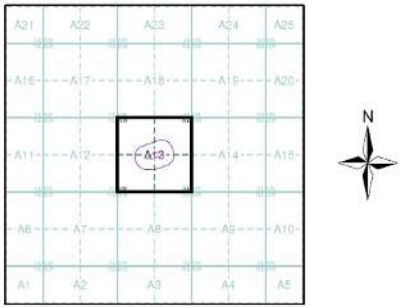
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13

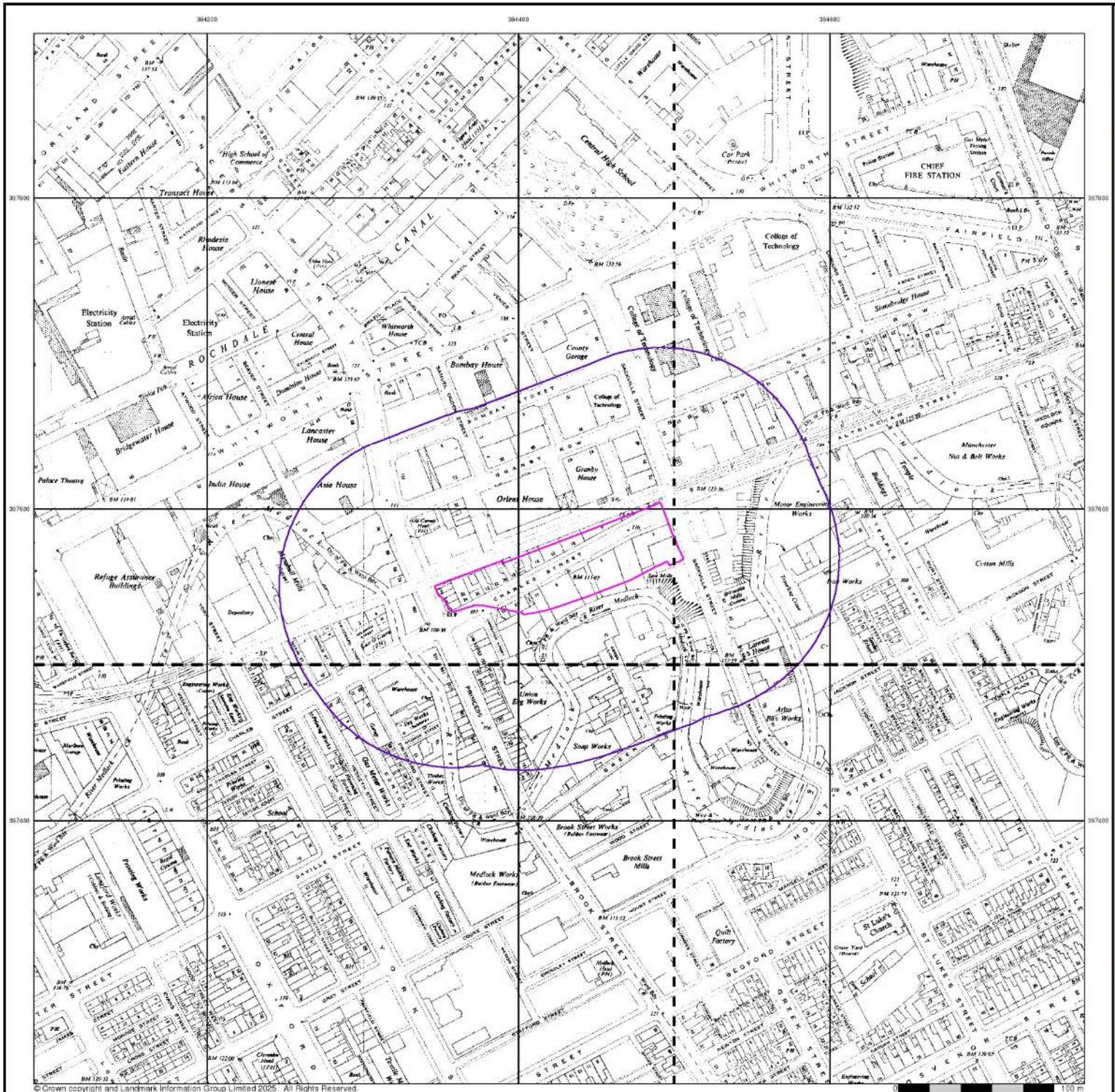


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Ordnance Survey Plan

Published 1948

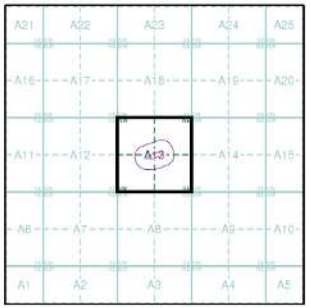
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13

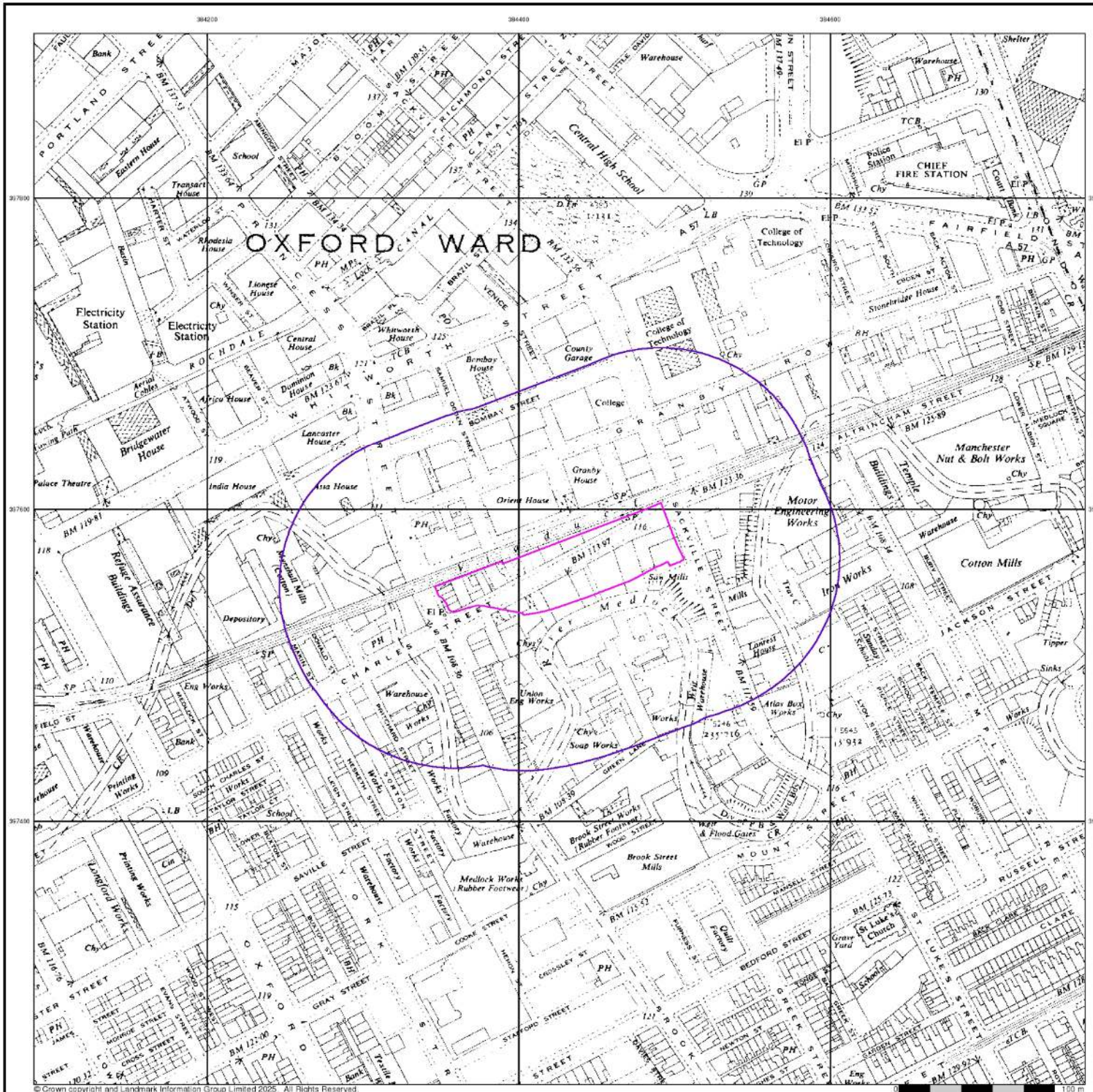


Order Details

Order Number:	380510101_1_1
Customer Ref:	7356
National Grid Reference:	384430, 397560
Slice:	A
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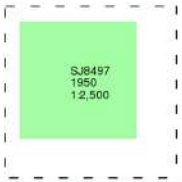
Ordnance Survey Plan

Published 1950

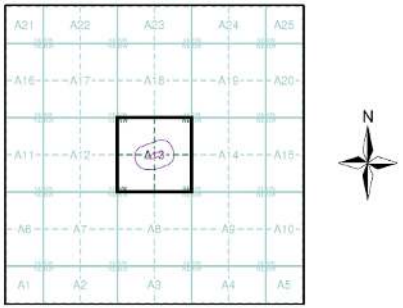
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



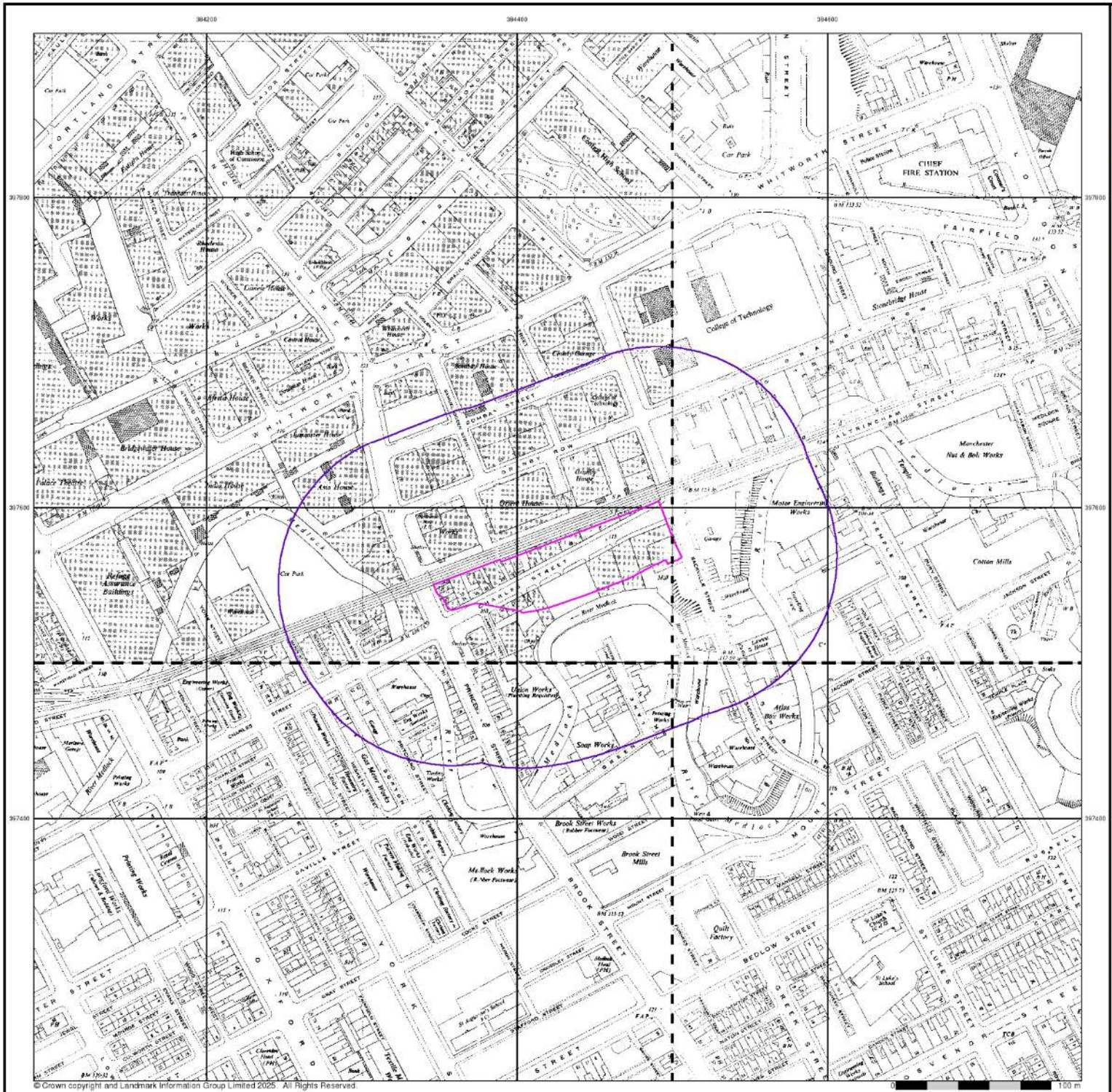
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National Grid Reference:	384430, 397560
Slice:	A
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Ordnance Survey Plan

Published 1954 - 1964

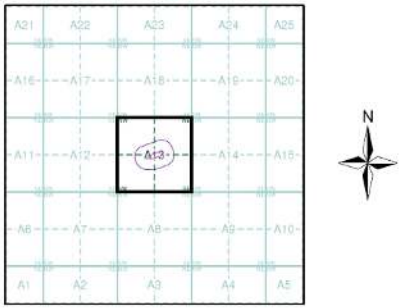
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



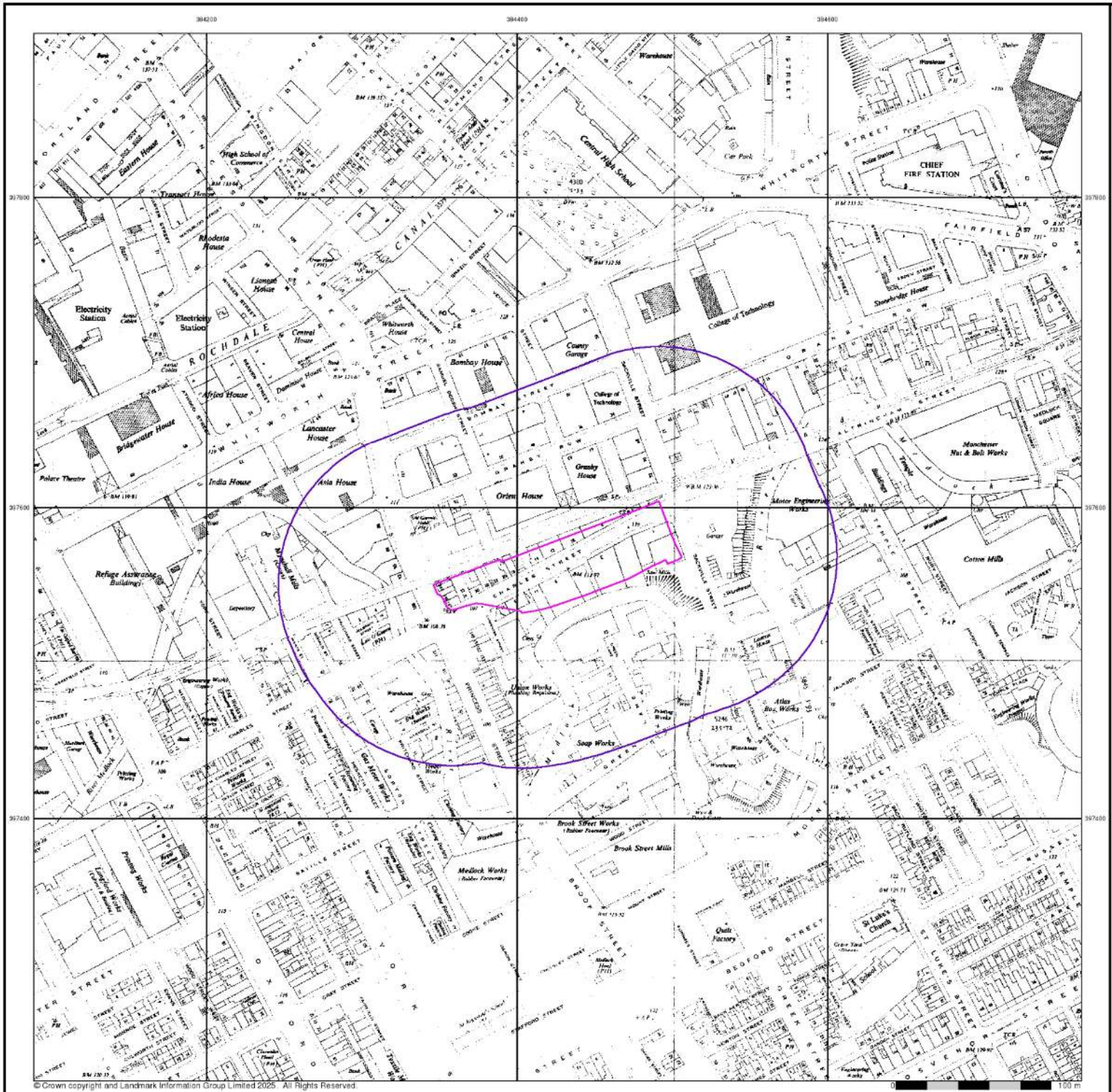
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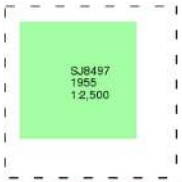
Ordnance Survey Plan

Published 1955

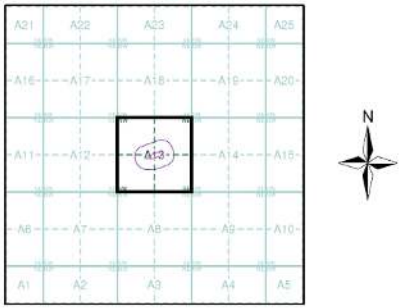
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13

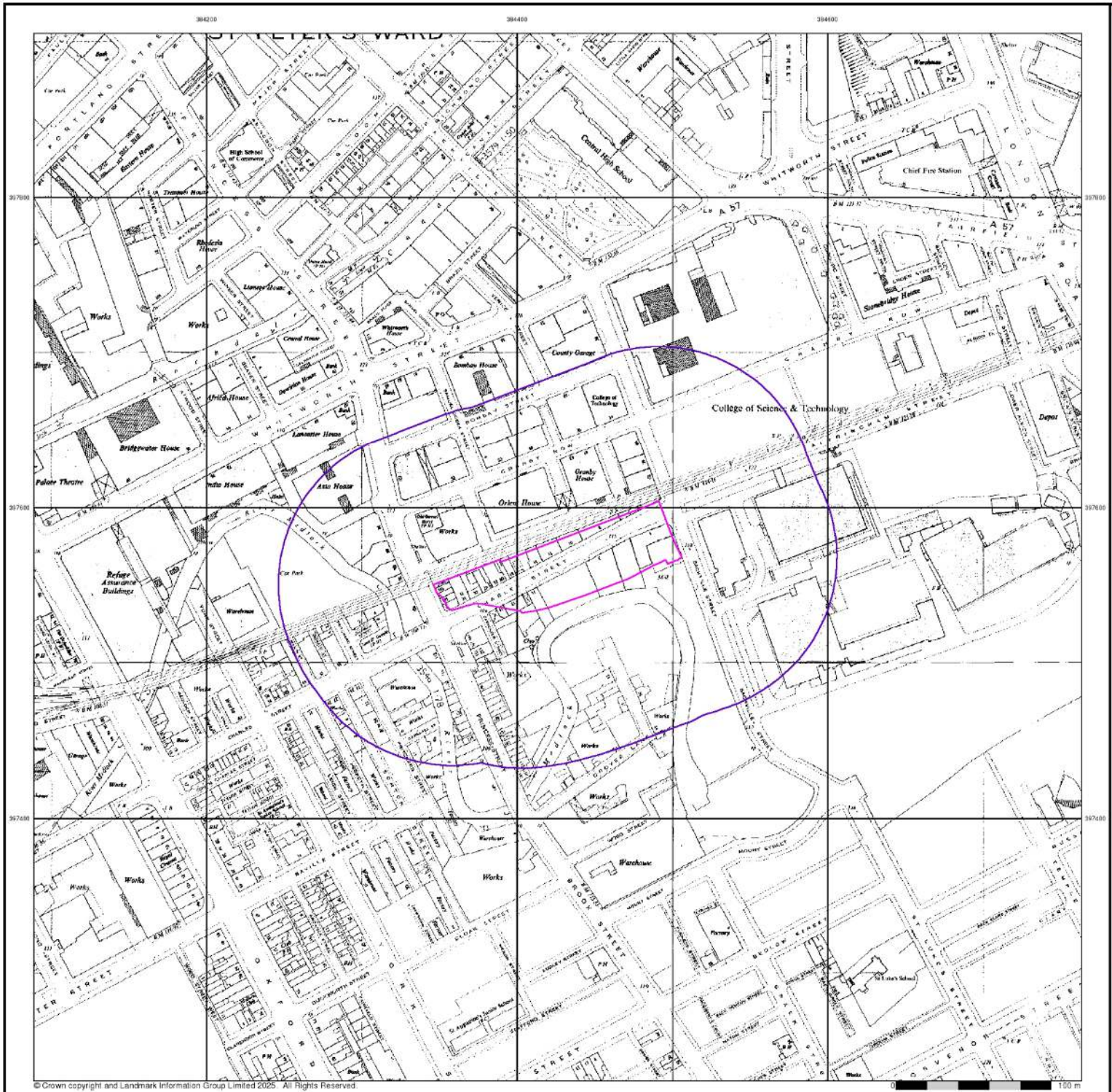


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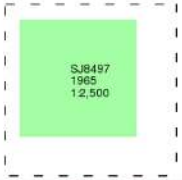
Ordnance Survey Plan

Published 1965

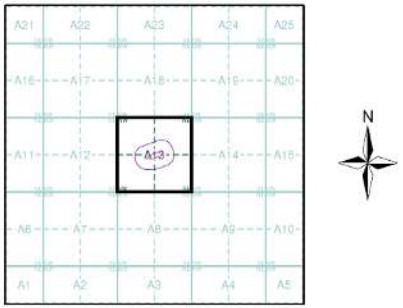
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



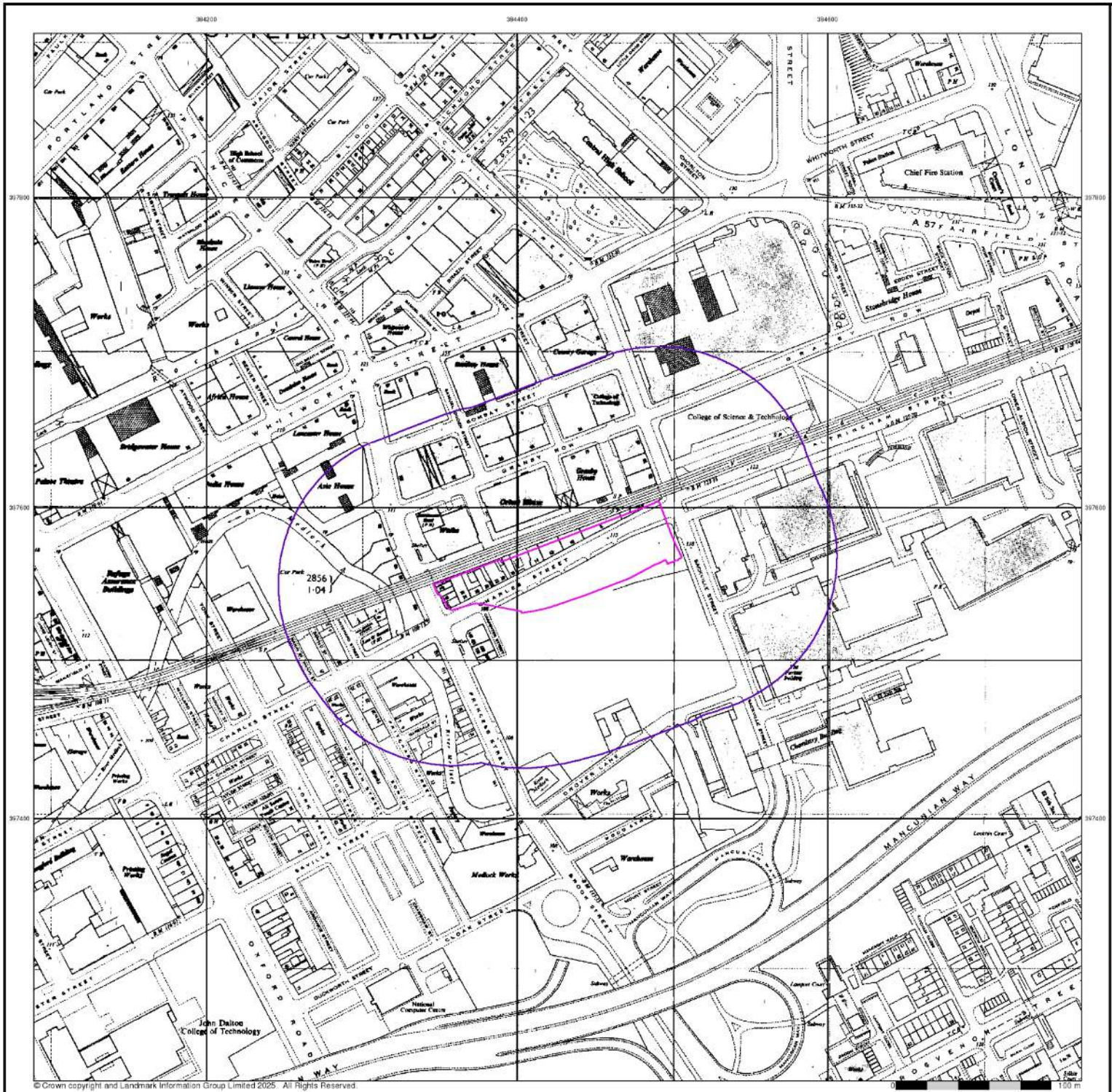
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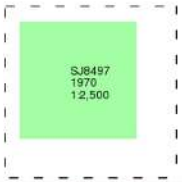
Ordnance Survey Plan

Published 1970

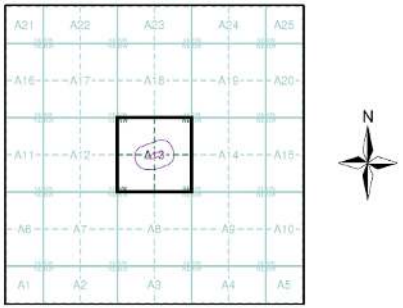
Source map scale - 1:2,500

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

Map Name(s) and Date(s)



Historical Map - Segment A13



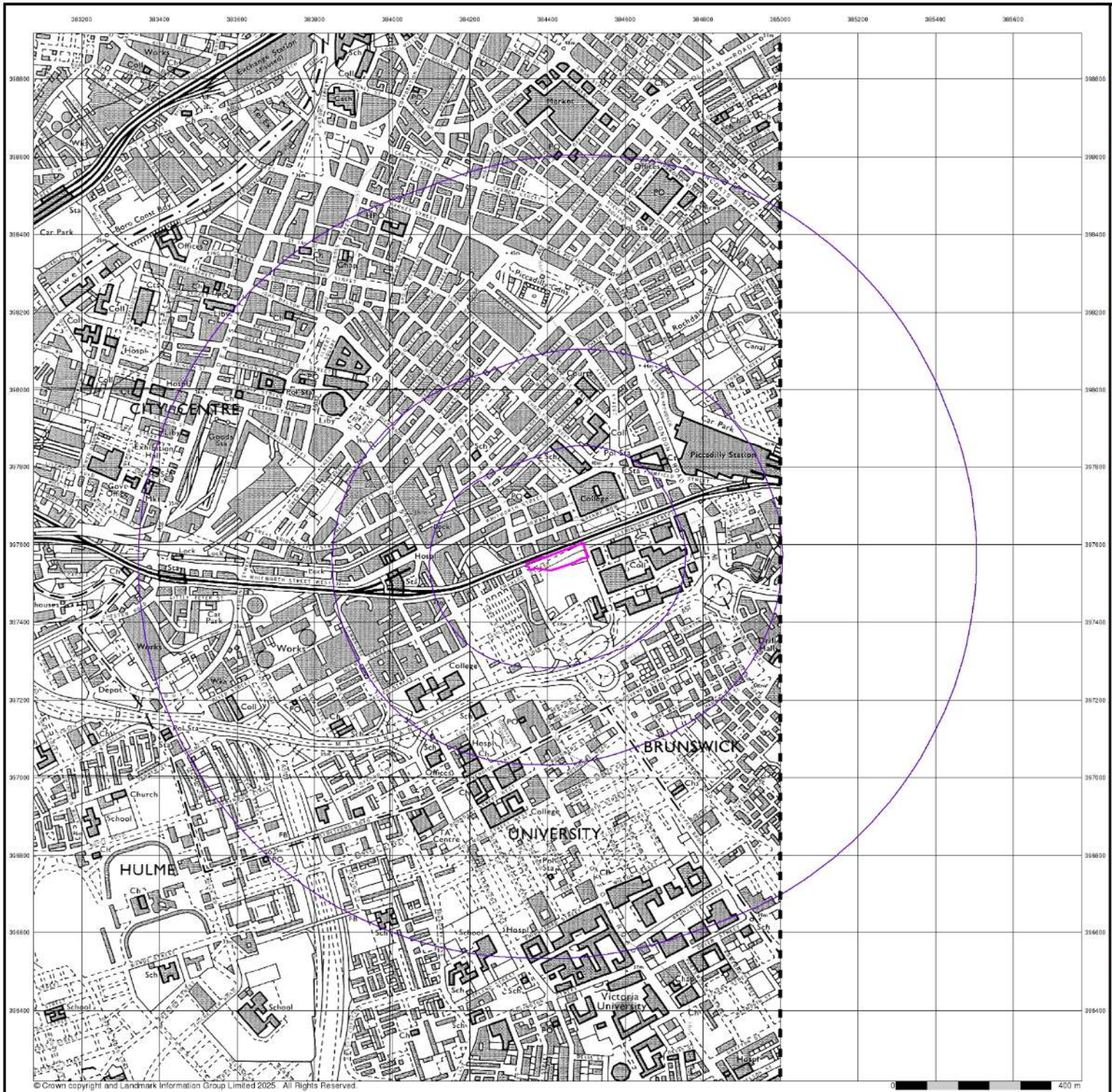
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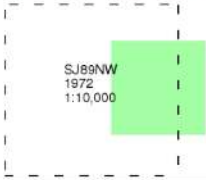
Ordnance Survey Plan

Published 1972

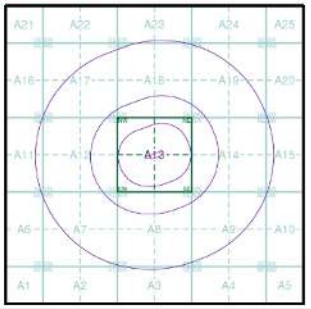
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840's. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940's, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



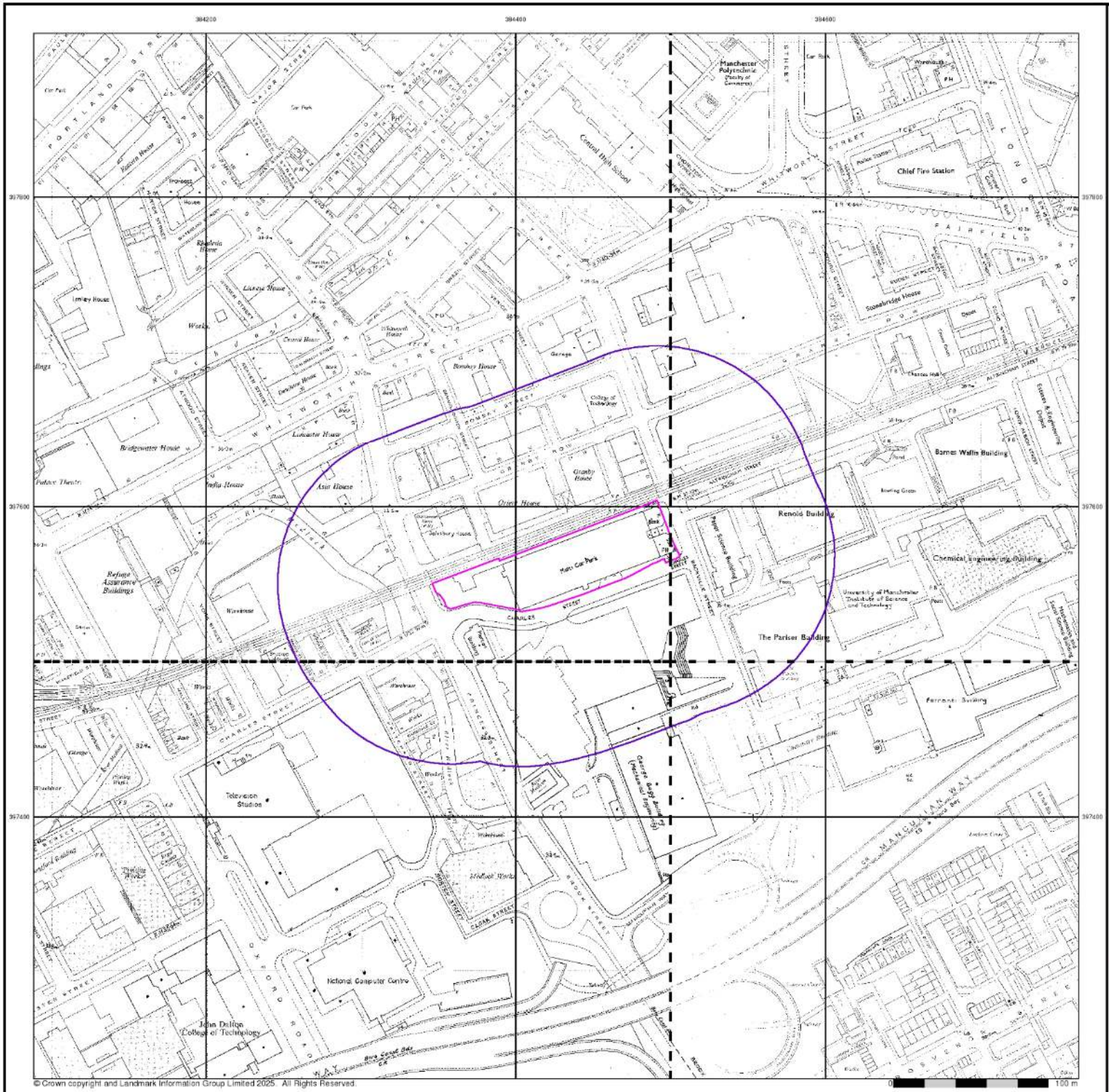
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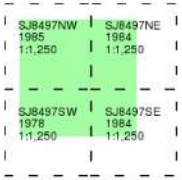
Additional SIMs

Published 1978 - 1985

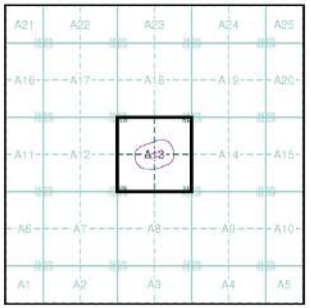
Source map scale - 1:1,250

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A13



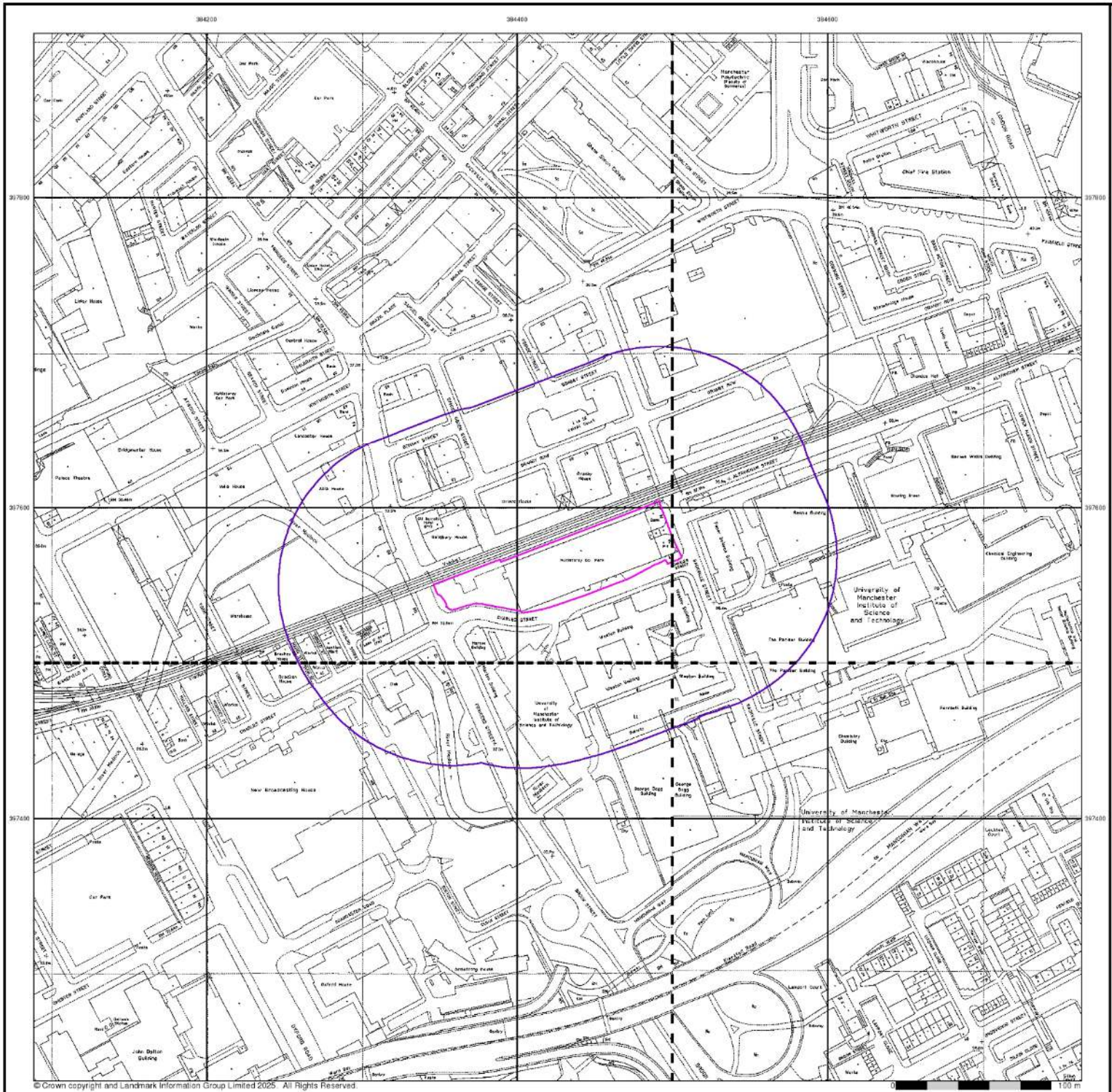
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Large-Scale National Grid Data

Published 1992

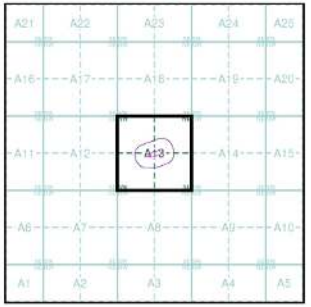
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



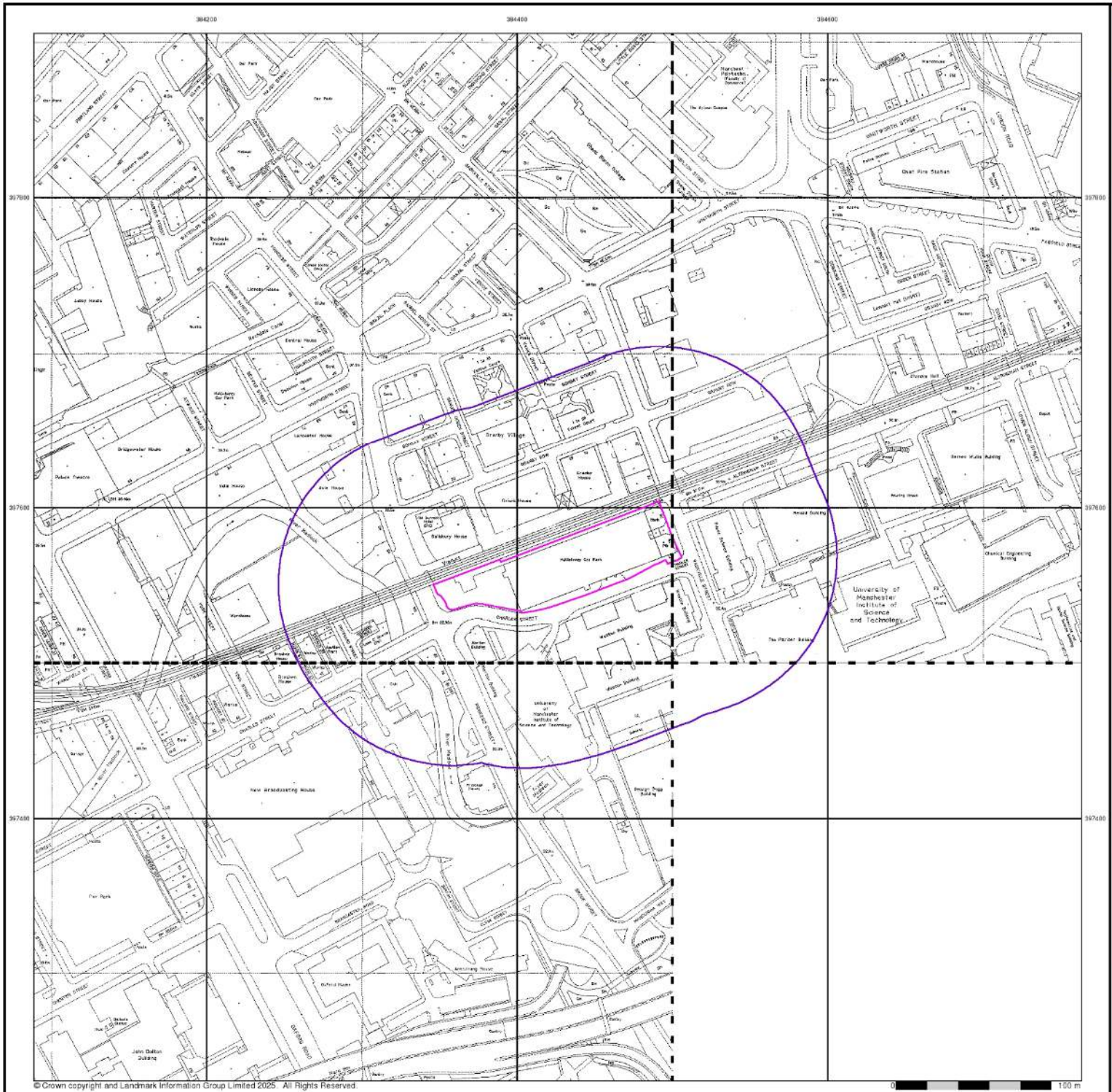
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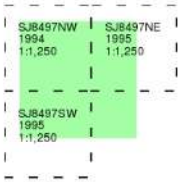
Large-Scale National Grid Data

Published 1994 - 1995

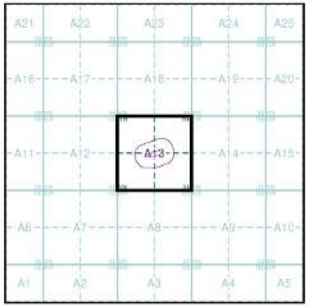
Source map scale - 1:1,250

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

Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

Order Number:	380510101_1_1
Customer Ref:	7356
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Slice:	A
Site Area (Ha):	0.53
Search Buffer (m):	100

Site Details

Site at 384426,397568

APPENDIX C	SEARCHES
Landmark	Envirocheck Report
Coal Authority	Consultants Mining Report
ZeticaUXO	UXO Risk Map
BGS	Archive Borehole Records



Envirocheck® Report:

Datasheet

Order Details:

Order Number:
380510101_1_1

Customer Reference:
7356

National Grid Reference:
384430, 397560

Slice:
A

Site Area (Ha):
0.53

Search Buffer (m):
1000

Site Details:

Site at 384426,397568

Client Details:

Mr R Hey
Calabrian Limited
9 Millwood
Ingleton
LA6 3HY

Prepared For:

Roscoe

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 1		43	15	36
Prosecutions	pg 25				1
Enforcement and Prohibition Notices					
Integrated Pollution Controls					
Integrated Pollution Prevention And Control	pg 25				2
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 25				12
Local Authority Pollution Prevention and Control Enforcements	pg 27				1
Nearest Surface Water Feature	pg 27		Yes		
Pollution Incidents to Controlled Waters	pg 27		7	5	10
Historical Prosecutions					
Registered Radioactive Substances	pg 31		8	7	10
Substantiated Pollution Incident Register					
Water Abstractions	pg 35		2	8	3 (*56)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 52	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 52	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 52	Yes	n/a	n/a	n/a
Source Protection Zones	pg 52			1	
Extreme Flooding from Rivers or Sea without Defences	pg 52	Yes		n/a	n/a
Flooding from Rivers or Sea without Defences	pg 52		Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 53	1	9	9	33
Water Framework Directive - Catchment	pg 59	Yes		Yes	
Water Framework Directive - Groundwater	pg 59	Yes			
Water Framework Directive - Surface Waters					

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites					
Historical Landfill Sites					
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)					
Licensed Waste Management Facilities (Locations)	pg 60			2	5
Local Authority Landfill Coverage	pg 61	1	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)					
Potentially Infilled Land (Water)	pg 61		4	9	19
Registered Landfill Sites					
Registered Waste Transfer Sites					
Registered Waste Treatment or Disposal Sites	pg 63				2
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

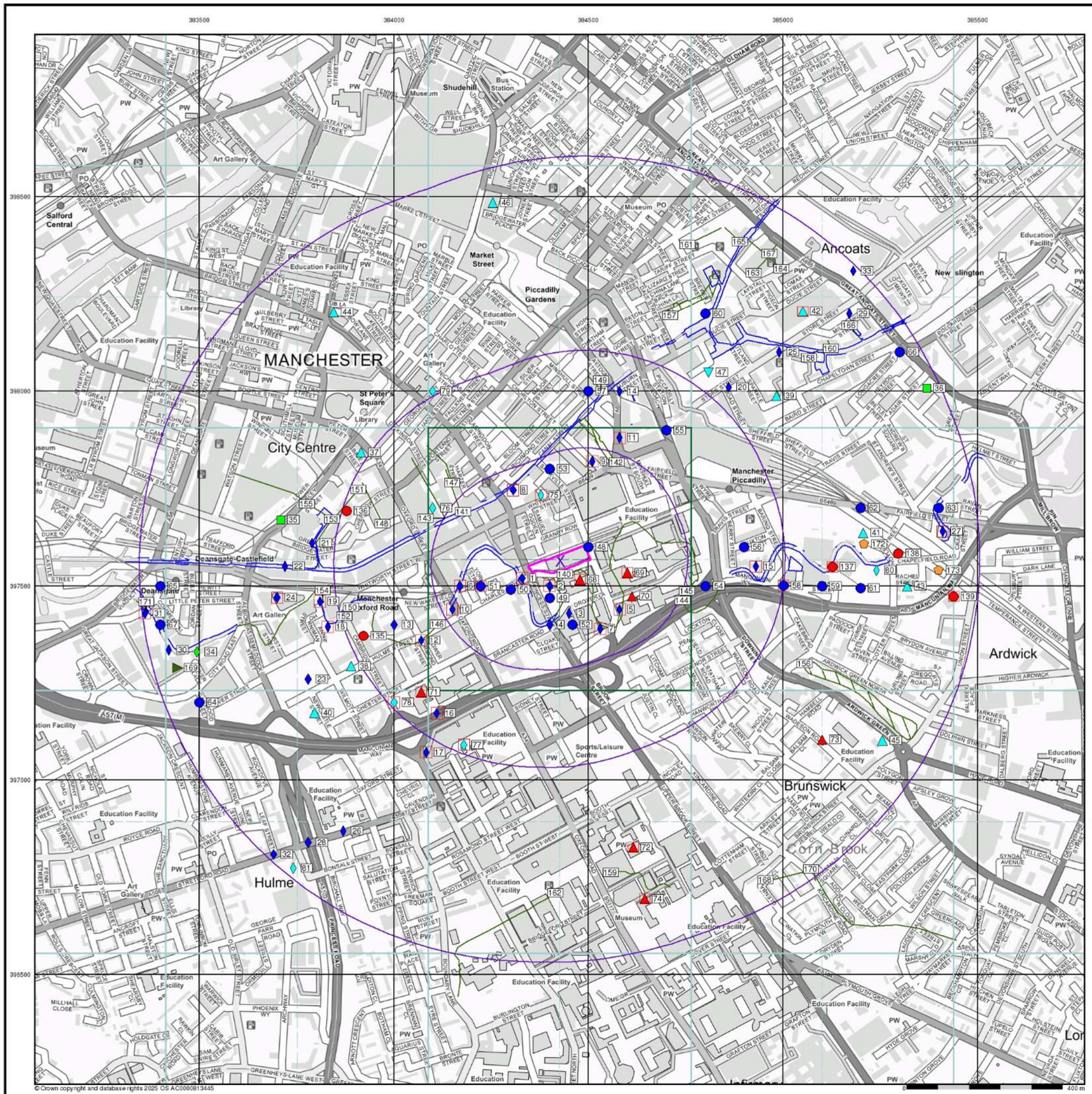
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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 64	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 64	Yes	Yes	Yes	Yes
BGS Recorded Mineral Sites					
BGS Urban Soil Chemistry	pg 66		Yes	Yes	Yes
BGS Urban Soil Chemistry Averages	pg 69	Yes			
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 69	Yes	n/a	n/a	n/a
Mining Instability			n/a	n/a	n/a
Man-Made Mining Cavities	pg 69				1
Natural Cavities					
Non Coal Mining Areas of Great Britain				n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 69	Yes		n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 69	Yes		n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 69	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 70	Yes		n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 70	Yes		n/a	n/a
Radon Potential - Radon Affected Areas			n/a	n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 71		15	100	484
Fuel Station Entries	pg 122			1	2
Points of Interest - Commercial Services	pg 122		1	16	78
Points of Interest - Education and Health	pg 130			1	4
Points of Interest - Manufacturing and Production	pg 131		9	20	89
Points of Interest - Public Infrastructure	pg 141			15	27
Points of Interest - Recreational and Environmental	pg 144			1	11
Underground Electrical Cables					

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt					
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones	pg 146				1
Ramsar Sites					
Sites of Special Scientific Interest					
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					



General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Map ID

Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Historical Prosecutions
- Prosecutions
- Registered Radioactive Substance
- River Network or Water Feature
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

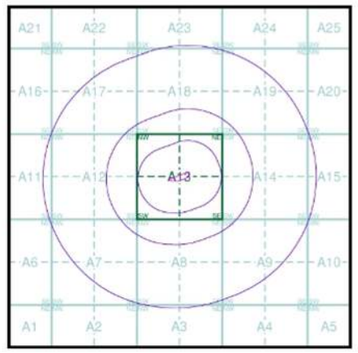
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details

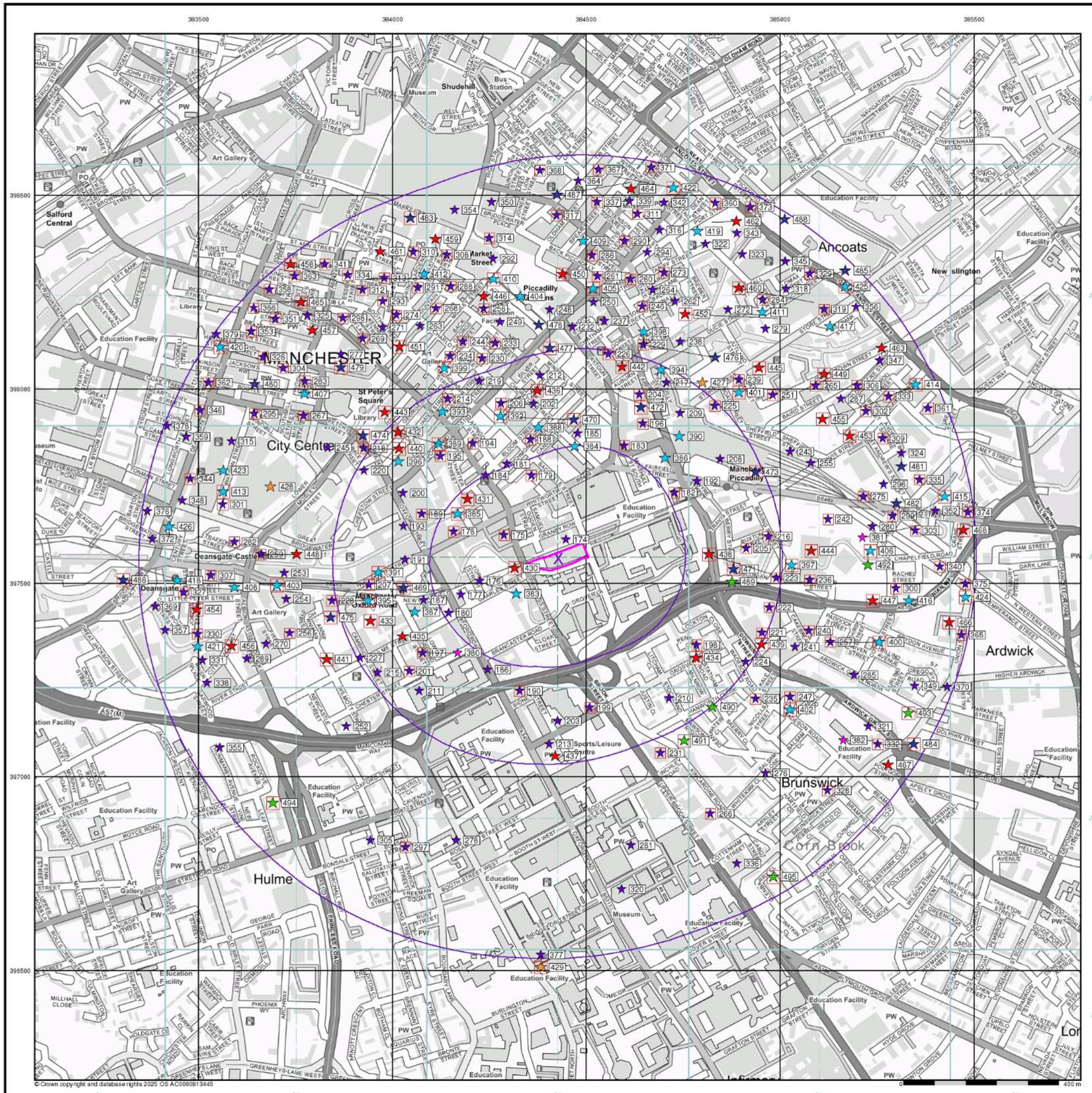
Order Number:	380510101_1_1
Customer Ref:	7356
National Grid Reference:	384430, 397560
Slice:	A
Site Area (Ha):	0.53
Search Buffer (m):	1000

Site Details

Site at 384426,397568

Landmark INFORMATION GROUP

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



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Industrial Land Use Map

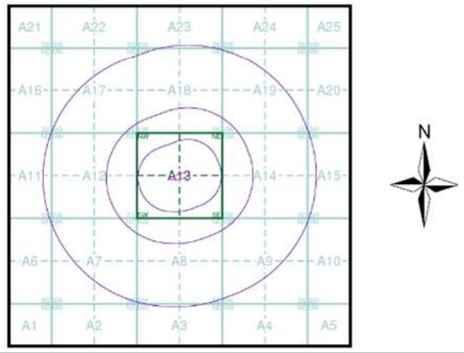
General

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

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



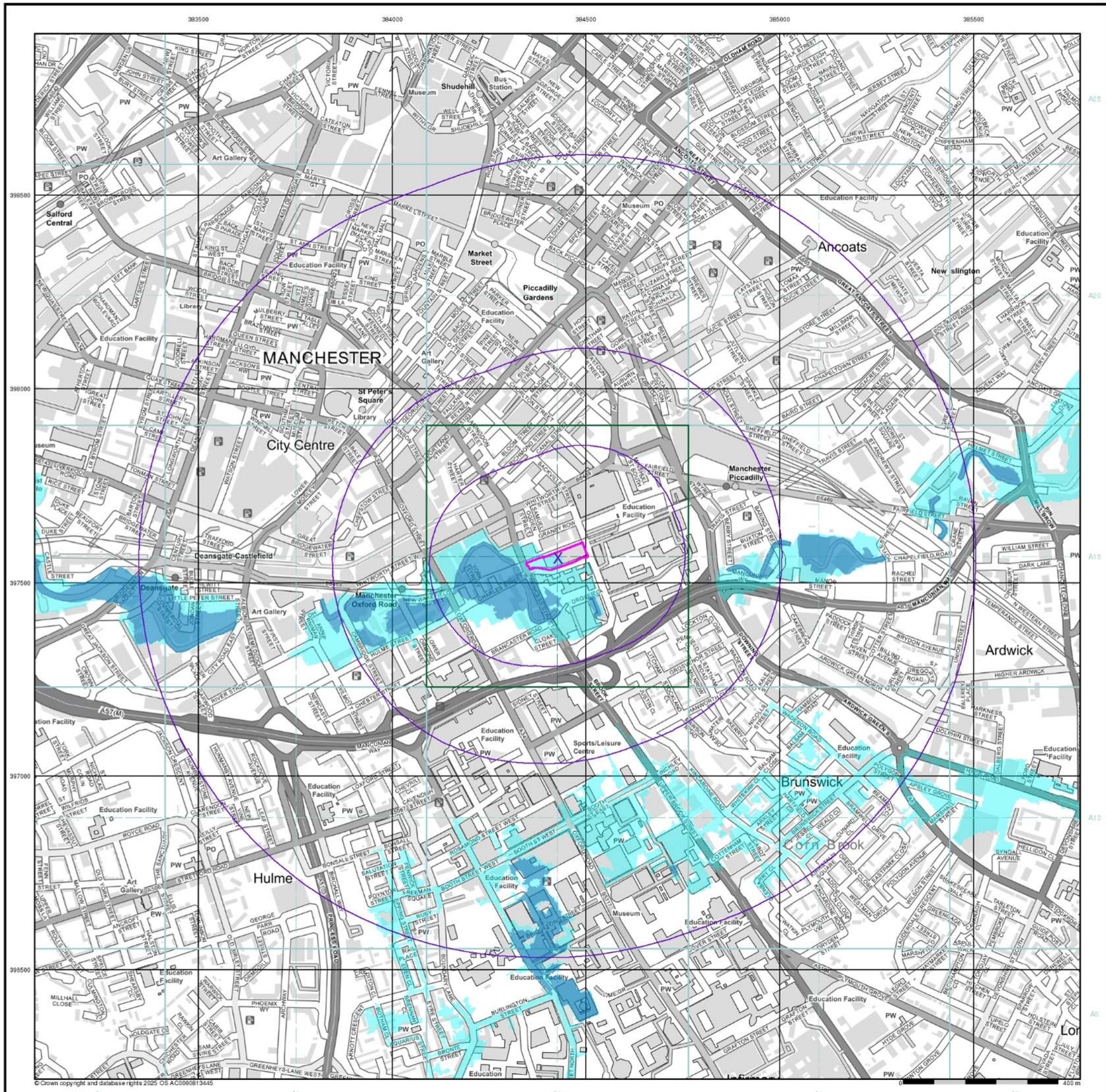
Order Details

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Customer Ref:	7356
National Grid Reference:	384430, 397560
Slice:	A
Site Area (Ha):	0.53
Search Buffer (m):	1000

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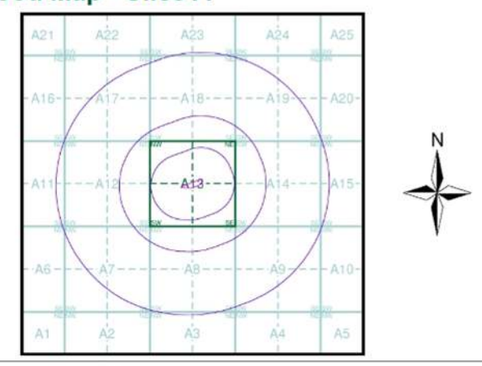
General

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

Agency and Hydrological (Flood)

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

Flood Map - Slice A



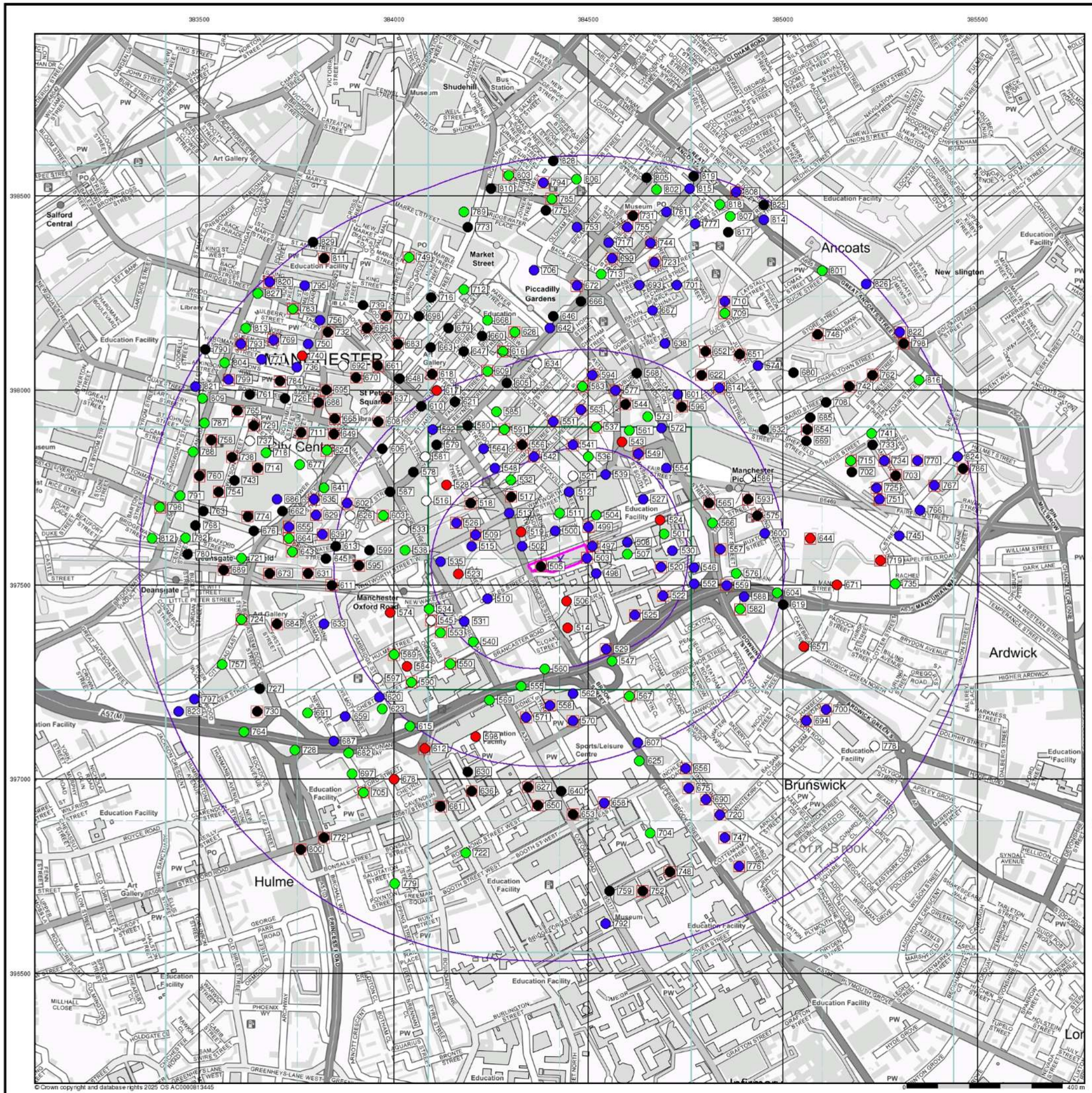
Order Details

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Customer Ref:	7356
National Grid Reference:	384430, 397560
Slice:	A
Site Area (Ha):	0.53
Search Buffer (m):	1000

Site Details

Site at 384426,397568

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

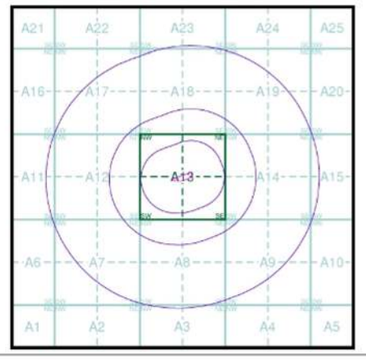
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



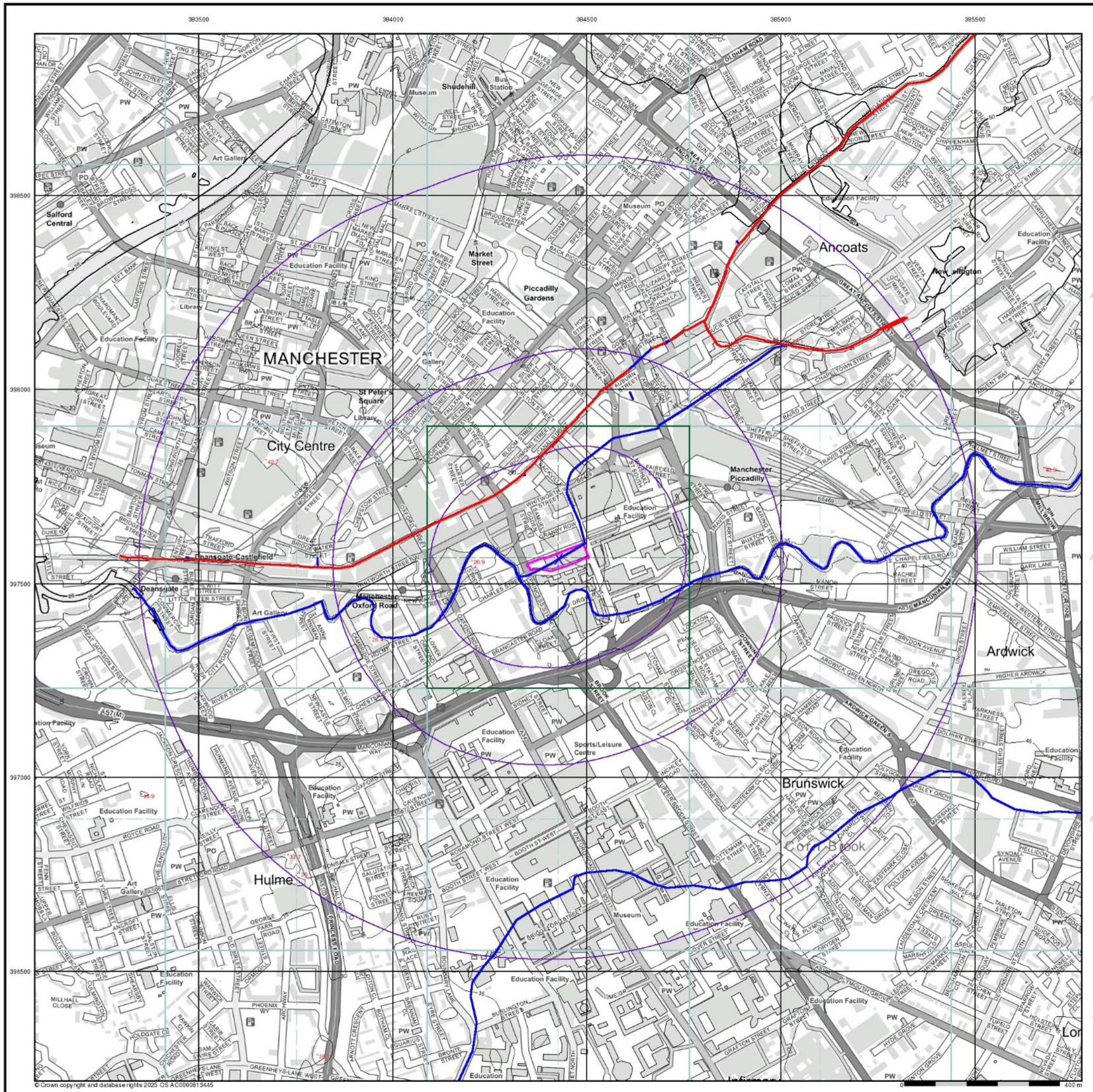
Order Details

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Customer Ref:	7356
National Grid Reference:	384430, 397560
Slice:	A
Site Area (Ha):	0.53
Search Buffer (m):	1000

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General

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

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

Contours (height in meters)

Standard Contour 105 100 95

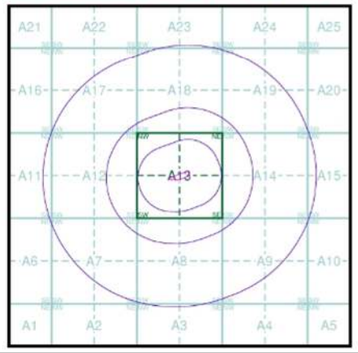
Master Contour

Spot Height 167.3

MLW Mean Low Water

MHW Mean High Water

OS Water Network Map - Slice A



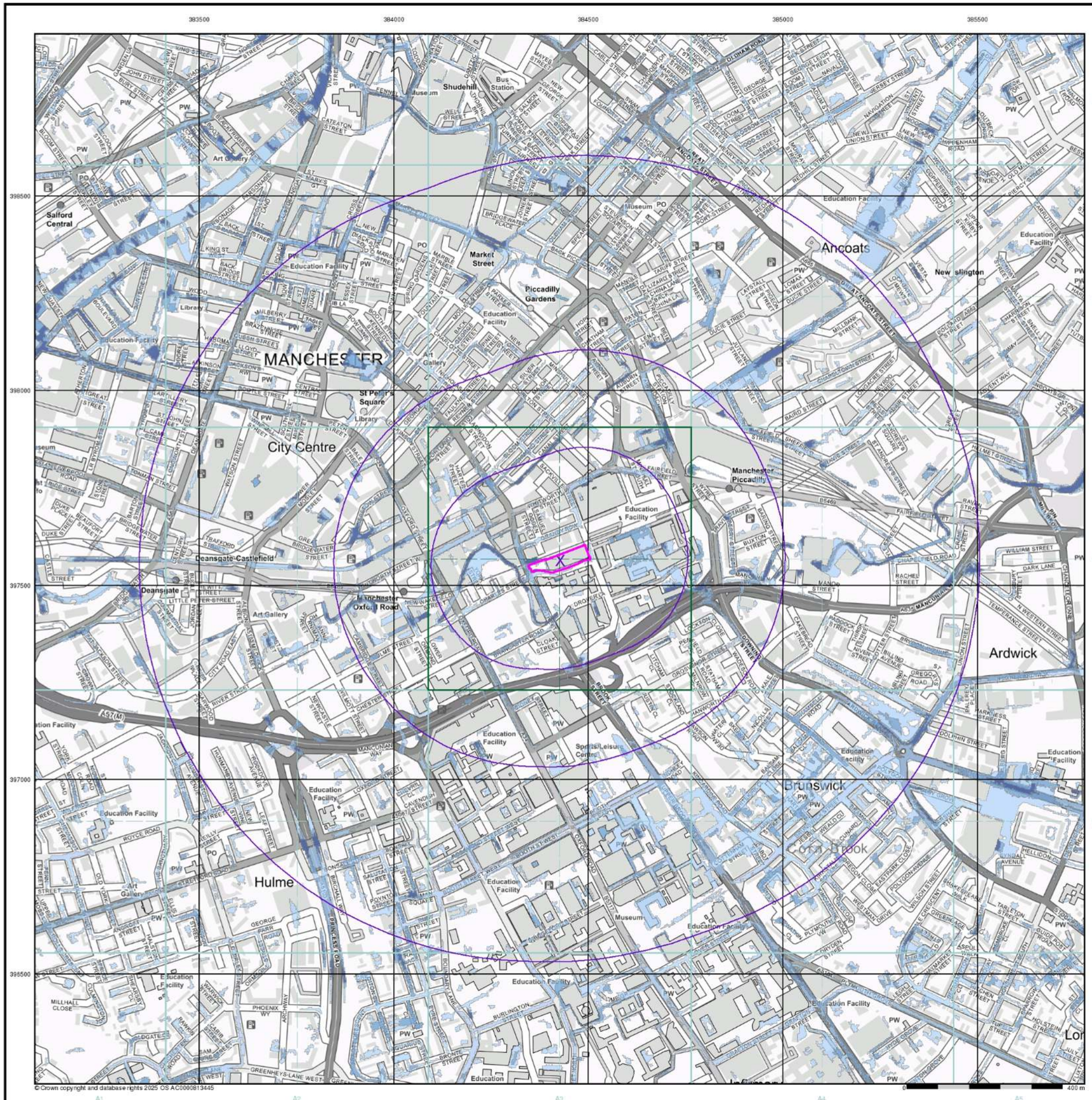
Order Details

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Customer Ref:	7356
National Grid Reference:	384430, 397560
Slice:	A
Site Area (Ha):	0.53
Search Buffer (m):	1000

Site Details

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General

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

Risk of Flooding from Surface Water

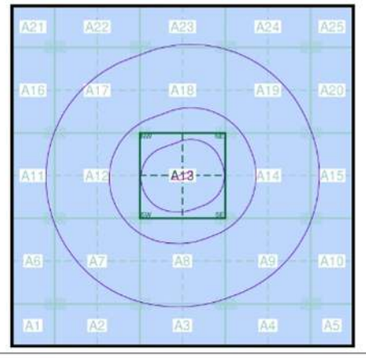
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



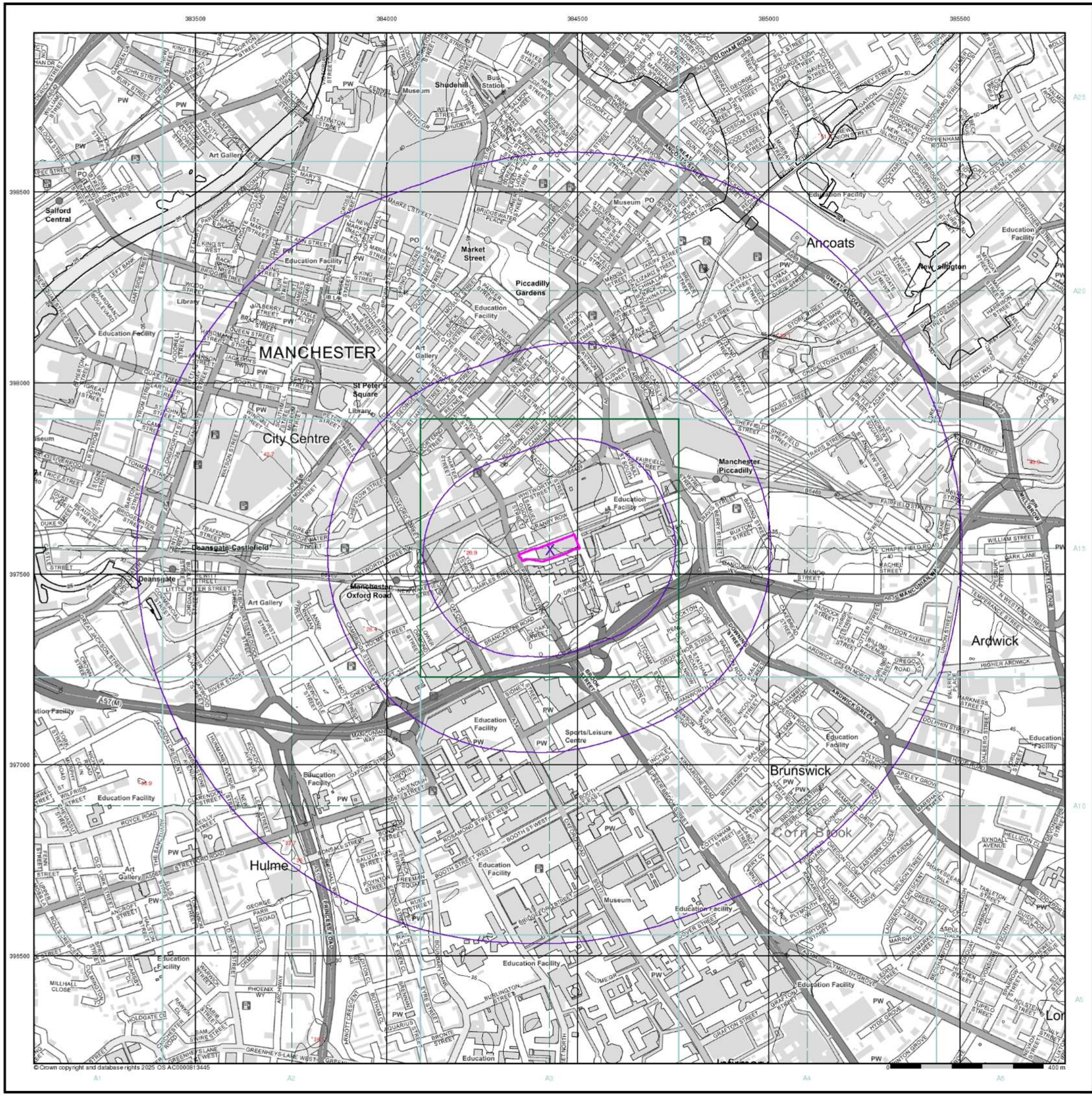
Order Details

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Customer Ref:	7356
National Grid Reference:	384430, 397560
Slice:	A
Site Area (Ha):	0.53
Search Buffer (m):	1000

Site Details

Site at 384426,397568

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Web: www.envirocheck.co.uk



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WFD Surface Waters Map

General

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

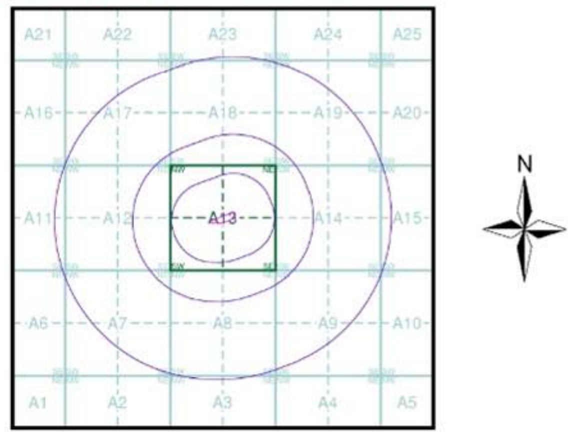
Water Framework Directive - Surface Water Quality

- High
- Good
- Moderate
- Poor
- Bad

Contours (height in meters)

- Standard Contour
- Master Contour
- Spot Height
- MLW Mean Low Water
- MHW Mean High Water

WFD Surface Waters Map - Slice A



Order Details

Order Number: 380510101_1_1
Customer Ref: 7356
National Grid Reference: 384430, 397560
Slice: A
Site Area (Ha): 0.53
Search Buffer (m): 1000

Site Details

Site at 384426,397568

Landmark
INFORMATION GROUP

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Web: www.envirocheck.co.uk

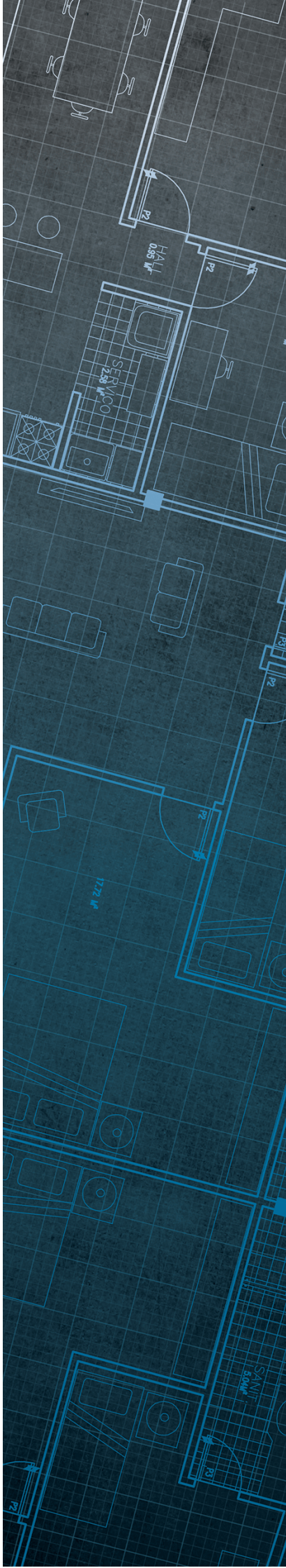
The Coal Authority

Consultants

Coal Mining Report

Orient House
Granby Row
Manchester
Greater Manchester

Date of enquiry:	**2 July 2025**
Date enquiry received:	**2 July 2025**
Issue date:	**2 July 2025**
Our reference:	**51003509281001**
Your reference:	**380510101_2**



Consultants
Coal Mining Report

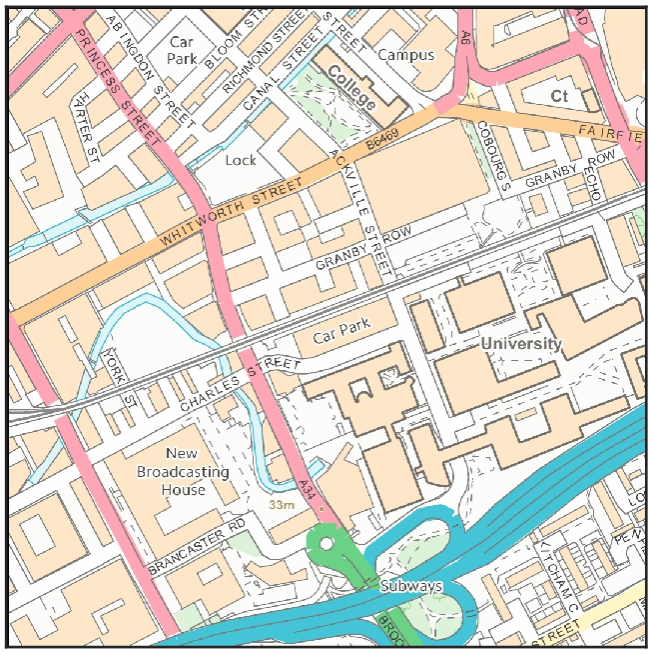
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

NLIS Hub

Enquiry address

Orient House
Granby Row
Manchester
Greater Manchester



Approximate position of property

Map data

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Mansfield
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NG18 4RG

www.groundstability.com

@coalauthority
/company/the-coal-authority
/thecoalauthority
/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.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

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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. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

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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

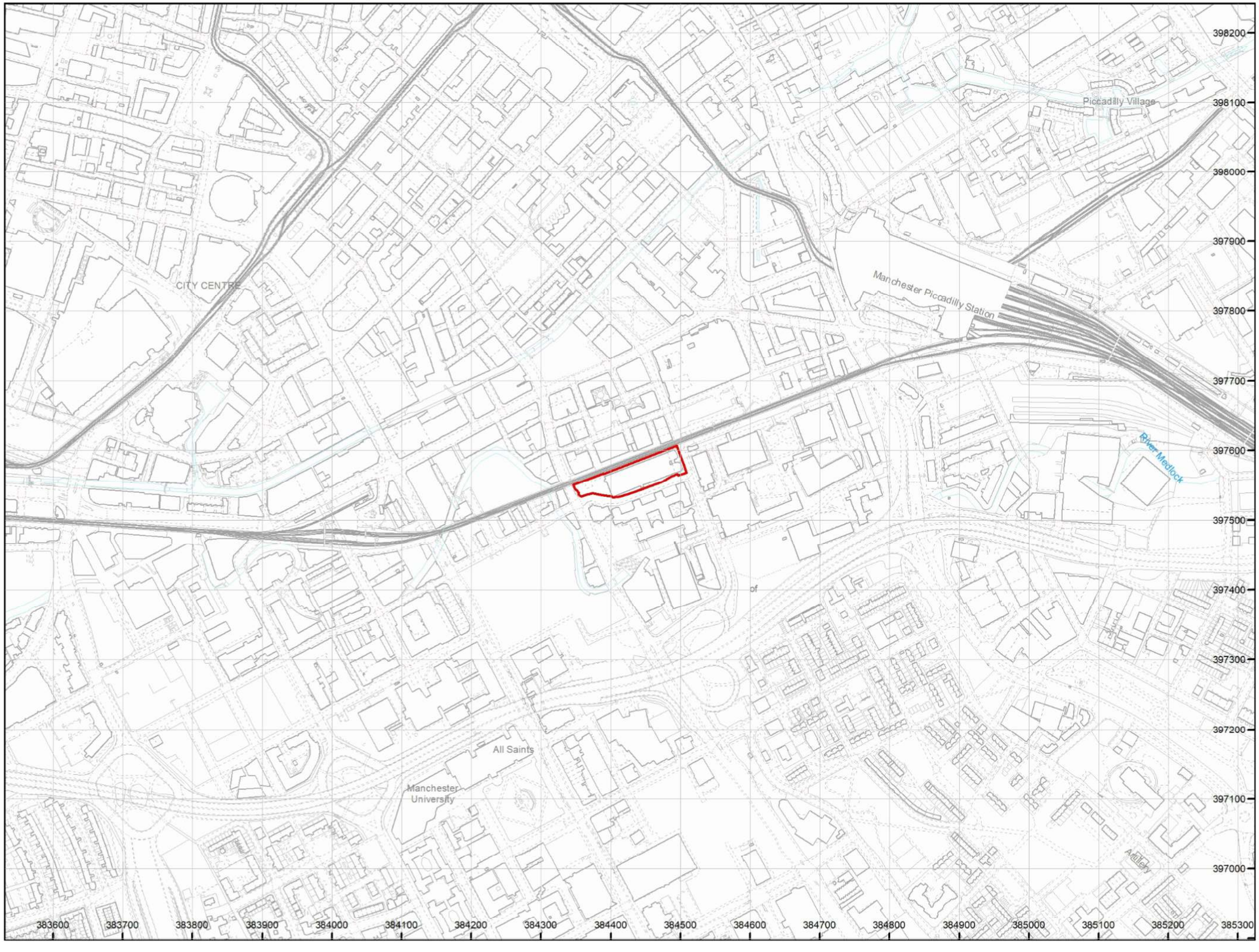
Summary of findings

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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

UNEXPLODED BOMB RISK MAP

SITE LOCATION

Location: M1 7AR,
Map Centre: 384447,397612



This map principally indicates a hazard from Unexploded Bombs (UXB) due to WWII bombardment. Other sources of Unexploded Ordnance (UXO) may be present. It should be noted that this map does not represent UXO risk and should not be reported as such when reproduced.

LEGEND

- **High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- **Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- **Low:** Areas indicated as having 15 bombs per 1000acre or less.

Miltary | **Industry** | **UXO find** | **Other**
Transport | **Docks** | **Luftwaffe targets**
Utilities | **Bombing decoy** | **Airfields**

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

This map indicates the potential for UXBs to be present because of World War Two (WWII) bombing. It can be incorporated into a technical report, such as a Phase 1 Desk Study, or similar document as an indication of the potential for UXO encounter on a Site. Other sources of UXO may also be indicated, although note that these are not comprehensive and more detailed research is required to confirm their presence.

What if my Site is in a moderate or high density area?

We typically recommend that a detailed UXO desk study and risk assessment is undertaken for sites in an area with a moderate or high bombing density.
Additionally, if your site is in close proximity to a strategic target, military establishment, airfield or bombing decoy, then additional detailed research is recommended.

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

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

If you are unsure whether other sources of UXO may be present, you can request one of our pre-desk study assessments (PDSA) by emailing a site boundary and location to pdsa@zetica.com.

You should never plan site work or undertake a risk assessment using these maps alone. More detail is required, to include an assessment of the likelihood of a source of UXO hazard from other military activity not reflected on these maps.

If I have any questions, who do I contact?

tel: +44 (0) 1993 886682 **email:** uxo@zetica.com **web:** www.zeticauxo.com

The information in this UXB risk map is derived from a range of sources and should be used with the accompanying notes on our website.

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgement. The copyright remains with Zetica Ltd.

British Geological Survey

BGS ID: 1043693 : BGS Reference: SJ89NW1499
British National Grid (27700) : 384510,397600

MANCHESTER CITY COUNCIL

CITY ENGINEER AND SURVEYORS DEPARTMENT

SJ89NW 8451 9760 1499

INVESTIGATION FOR	Main Drainage	DATE COMMENCED	24.7.85.
TION	Sackville Street REF:	BORING METHOD	Cable Percussive
HOLE No.	3 (Sheet 1 of 2)	BORING DIAMETER	150 mm.
REFERENCE		SCALE:	1:50 approx.

E	CASING DEPTH (m)	WATER LEVEL MORNING & EVENING	DEPTH OF STRATA BELOW GL	Reduced Level	DESCRIPTION	No. and Type of Sample	SAMPLE DEPTH PENETRATION From	To	No. of Blows
			0.05		Bituminous Surfacing				
			0.15		Setts				
			0.30		Concrete				
					Clayey ashes, cinders, brick pieces, sand, stones soft and firm silty and sandy CLAY Made Ground	D1	0.5		
						D2	1.25		
						P3	1.65	1.95	6
						D4	2.10		
						P5	2.65	2.95	8
						D6	3.10		
						P7	3.65	3.95	4
						D8	4.2		
						P9	4.65	4.95	8
						D10	5.20		
						P11	5.65	5.95	8
						D12	6.10		
			6.40						
			7.20		Medium dense silty and gravelly SAND	P13	6.75	7.05	24

OBSERVATIONS DURING BORING

OF ENTRY	ESTIMATED SEE PAGE	STANDING LEVEL (m)	DEPTH OF CASING WHEN SEALED (m)
ed			

WATER LEVEL IN CASED/UNCASED BOREHOLE ON COMPLETION

DATE	WATER LEVEL	DEPTH OF CASING

REMARKS: -

E TEST KEY

D – DISTURBED SAMPLE
B – BULK SAMPLE
U – UNDISTURBED SAMPLE
P – SPT SAMPLE
W – WATER SAMPLE

WHERE FULL 0.3 PENETRATION HAS NOT BEEN ACHIEVED, THE NUMBER OF BLOWS FOR THE QUOTED PENETRATION IS GIVEN (NOT N – VALUE)

PTHS AND REDUCED LEVELS IN (m) UNLESS OTHERWISE STATED

KS

Trial hole excavated to 1.50m below ground level
* SPT sample P16 proved 69 blows for 115mm within the initial 150MM penetration.

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 1043693 : BGS Reference: SJ89NW1499
British National Grid (27700) : 384510,397600

SJ89NW

1499

MANCHESTER CITY COUNCIL

CITY ENGINEER AND SURVEYORS DEPARTMENT

NVESTIGATION FOR	Main Drainage	DATE COMMENCED	24.7.85.
TION	Sackville Street REF:	BORING METHOD	Cable Percussive
HOLE No.	3(sheet 2 of 2)	BORING DIAMETER	150 MM
REFERENCE		SCALE:	1:50 approx.

E	CASING DEPTH (m)	WATER LEVEL MORNING & EVENING	DEPTH OF STRATA BELOW GL	Reduced Level	DESCRIPTION	No. and Type of Sample	SAMPLE DEPTH PENETRATION From	SAMPLE DEPTH PENETRATION To	No. of Blows	Legend
					Medium dense to dense red/brown fine/medium grained SANDSTONE	B14 P15 P16	7.2 7.65 8.0	7.5 7.95 8.12	 27 69*	
85.	8.0	Dry	8.12							

OBSERVATIONS DURING BORING

OF NTRY	ESTIMATED SEE PAGE	STANDING LEVEL (m)	DEPTH OF CASING WHEN SEALED (m)

WATER LEVEL IN CASED/UNCASED BOREHOLE ON COMPLETION

DATE	WATER LEVEL	DEPTH OF CASING

REMARKS:

TEST KEY

D – DISTURBED SAMPLE B – BULK SAMPLE U – UNDISTURBED SAMPLE
P – SPT SAMPLE W – WATER SAMPLE

HERE FULL 0.3 PENETRATION HAS NOT BEEN ACHIEVED, THE NUMBER OF BLOWS FOR THE QUOTED ENETRATION IS GIVEN (NOT N – VALUE)

THS AND REDUCED LEVELS IN (m) UNLESS OTHERWISE STATED

S

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 1043694 : BGS Reference: SJ89NW1500
British National Grid (27700) : 384520,397530

ENGINEER AND SURVEYORS DEPARTMENT

SJ89NW

INVESTIGATION FOR	Main Drainage	DATE COMMENCED	23.7.85. 8452 9753
TION	Sackville Street REF:	BORING METHOD	Cable Percussive
HOLE No.	4	BORING DIAMETER	150MM 1500
REFERENCE		SCALE:	1:50 approx.

E	CASING DEPTH (m)	WATER LEVEL MORNING & EVENING	DEPTH OF STRATA BELOW GL	Reduced Level	DESCRIPTION	No. and Type of Sample	SAMPLE DEPTH PENETRATION From	To	No. of Blows	Legen
			0.1		Bituminous Surfacing					
			0.3		Concrete					
					Soft and firm silty and sandy CLAY, ashes, sand, brick pieces etc. Made Ground	D1	0.5			
						P2	1.35	1.65	6	
						D3	1.8			
						P4	2.35	2.65	5	
						D5	2.90			
						U6	3.0	3.45		
						D7	4.0			
						P8	4.15	4.45	4	
						D9	4.8			
						P10	5.15	5.45	4	
						D11	5.7			
						P12	5.8	6.25	4	
35	5.80	Dry	6.25							

OBSERVATIONS DURING BORING

OF ENTRY	ESTIMATED SEE PAGE	STANDING LEVEL (m)	DEPTH OF CASING WHEN SEALED (m)

WATER LEVEL IN CASED/UNCASED BOREHOLE ON COMPLETION

DATE	WATER LEVEL	DEPTH OF CASING

REMARKS:-

TEST KEY

D – DISTURBED SAMPLE B – BULK SAMPLE U – UNDISTURBED SAMPLE
P – SPT SAMPLE W – WATER SAMPLE

HERE FULL 0.3 PENETRATION HAS NOT BEEN ACHIEVED, THE NUMBER OF BLOWS FOR THE QUOTED ENETRATION IS GIVEN (NOT N – VALUE)

THS AND REDUCED LEVELS IN (m) UNLESS OTHERWISE STATED

KS

Trial hole excavated to 1.20m below ground level

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 1045814 : BGS Reference: SJ89NW3620
British National Grid (27700) : 384430,397630

MANCHESTER CITY COUNCIL

CITY ENGINEER AND SURVEYORS DEPARTMENT

SJ89NW3620
8443 9763

SITE INVESTIGATION FOR	MAIN DRAINAGE	DATE COMMENCED	7/12/83
LOCATION	GRANBY ROW REF:	BORING METHOD	S.S Multi-Drill
BOREHOLE No.	3 (Sheet 1 of 2)	BORING DIAMETER	150 mm
GRID REFERENCE		SCALE:	1:50 approx.

DATE	CASING DEPTH (m)	WATER LEVEL MORNING & EVENING	DEPTH OF STRATA BELOW GL	Reduced Level	DESCRIPTION	No. and Type of Sample	SAMPLE DEPTH PENETRATION From	To	No. of Blows	Legend
7/12/83			0.05		Bituminous surfacing					
			0.20		Setts					
					Topsoil, brick pieces, clay, ashes etc - Made Ground	D1	0.5			
						D2	1.0			
						P1	1.35	1.65	7	
						D3	1.80			
						P2	2.35	2.65	3	
						D4	2.70			
						P3	3.35	3.65	3	
						D5	3.80			
			3.90		Soft brown silty clay with sand lenses, stone & coal inclusions	D6	4.0			
			4.20		Very dense brown sandy GRAVEL	U1	4.2	4.65		
			5.0			P4	4.95	5.25	33	
					Very dense brown SAND and GRAVEL	B2	5.40			
						P5	5.90	6.09	50	
						B3	6.40			
			6.60							

COMMERCIAL IN CONFIDENCE

WATER OBSERVATIONS DURING BORING

DEPTH OF WATER ENTRY (m)	ESTIMATED SEE PAGE	STANDING LEVEL (m)	DEPTH OF CASING WHEN SEALED (m)
None			

WATER LEVEL IN CASED/UNCASED BOREHOLE ON COMPLETION

DATE	WATER LEVEL	DEPTH OF CASING

REMARKS:-

SAMPLE TEST KEY

D – DISTURBED SAMPLE
P – SPT SAMPLE
B – BULK SAMPLE
W – WATER SAMPLE
U – UNDISTURBED SAMPLE

NOTE: WHERE FULL 0.3 PENETRATION HAS NOT BEEN ACHIEVED, THE NUMBER OF BLOWS FOR THE QUOTED PENETRATION IS GIVEN (NOT N – VALUE)

ALL DEPTHS AND REDUCED LEVELS IN (m) UNLESS OTHERWISE STATED

REMARKS

Trial hole excavated to 1.2 m below ground level. Borehole backfilled on completion, no overnight standing water level observed. SPT sample P5 recorded 50 blows for 150 mm penetration including the initial 150 mm.

M/c 5931

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey

BGS ID: 1045814 : BGS Reference: SJ89NW3620
British National Grid (27700) : 384430,397630

MANCHESTER CITY COUNCIL

CITY ENGINEER AND SURVEYORS DEPARTMENT

SJ89NW3620

SITE INVESTIGATION FOR	MAIN DRAINAGE	DATE COMMENCED	7/12/83
LOCATION	GRANBY ROW REF:	BORING METHOD	S.S Multi-Drill
BOREHOLE No.	3 (sheet 2of 2)	BORING DIAMETER	150 mm
GRID REFERENCE		SCALE:	1:50 approx.

DATE	CASING DEPTH (m)	WATER LEVEL MORNING & EVENING	DEPTH OF STRATA BELOW GL	Reduced Level	DESCRIPTION	No. and Type of Sample	SAMPLE DEPTH PENETRATION From	To	No. of Blows	Legend
					Very dense red/brown silty fine/MEDIUM grained	P6	6.7	6.9	50	
						D7	7.4			
						P7	7.9	8.75	50	
7/12/83	7.50	Dry			SAND	D8	8.40			
8/12/83		Dry			(Weathered SANDSTONE)	P8	8.7	8.85	50	
						D9	9.0			
						P9	9.3	9.425	50	
12/83	9.0	Dry	9.425							

COMMERCIAL IN CONFIDENCE

WATER OBSERVATIONS DURING BORING

DEPTH OF WATER ENTRY (m)	ESTIMATED SEE PAGE	STANDING LEVEL (m)	DEPTH OF CASING WHEN SEALED (m)

WATER LEVEL IN CASED/UNCASED BOREHOLE ON COMPLETION

DATE	WATER LEVEL	DEPTH OF CASING

REMARKS:–

SAMPLE TEST KEY

D – DISTURBED SAMPLE
P – SPT SAMPLE
B – BULK SAMPLE
W – WATER SAMPLE
U – UNDISTURBED SAMPLE

NOTE: WHERE FULL 0.3 PENETRATION HAS NOT BEEN ACHIEVED, THE NUMBER OF BLOWS FOR THE QUOTED PENETRATION IS GIVEN (NOT N – VALUE)

ALL DEPTHS AND REDUCED LEVELS IN (m) UNLESS OTHERWISE STATED

REMARKS

SPT sample P6 recorded 50 blows for 200 mm penetration including the initial 150mm penetrati
SPT sample P7 recorded 50 blows for 175 mm penetration including the initial 150mm penetrati
SPT sample P8 recorded 50 blows for 150 mm penetration within the initial 150mm penetratio
SPT sample P9 recorded 50 blows for 125 mm penetration within the initial 150 mm penetrati

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Contact BGS: ngdc@bgs.ac.uk