BROWNFIELD SOLUTIONS LTD

GEO-ENVIRONMENTAL ENGINEERING EXCELLENCE

CANDOUR SOLAR PROPCO LTD

Land to the rear of 39 Deansgate, Manchester

Phase I Geo-Environmental Assessment Report

PH/C4293/12543

October 2023

PROJECT QUALITY CONTROL DATA SHEET

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Drawing Number	**Rev**	**Title**
C4293/01A	-	Site Location Plan
C4293/04	-	Site Features Plan
6145-SRA-XX-00-SK-A-SK-114	-	Initial Works Plan

APPENDICIES	
Appendix	**Title**
Photographs	Site Walkover Photographs
Appendix A	BSL Methodology and Guidance
Appendix B	Historical Maps
Appendix C	BGS Boreholes
Appendix D	Mining Search Report
Appendix E	Environmental Database Search
Appendix F	UXO Screening Map

1.0 INTRODUCTION

1.1 Context

This report describes a Phase I Geo-Environmental Assessment carried out by Brownfield Solutions Limited (BSL) for Candour Solar Propco Ltd as appointed by Renaissance Associates Ltd on a site off Deansgate, Manchester.

This report has been completed in general accordance with the following guidance:

- CLR11 Model Procedures for the Management of Land Contamination.
- BS 10175:2011+A2:2017 Investigation of Potentially Contaminated Sites.
- BS5930: 2015 Code of Practice for Ground Investigations.
- BS EN 1997-2:2007 Eurocode 7 Geotechnical design. Ground investigation and testing plus UK National Annex.

1.2 Objectives and Scope

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

The scope of works comprises a Desk Study and site walk-over, with a review of the site, surroundings, historical uses and environmental setting in order to develop a preliminary Conceptual Site Model (CSM). A summary of previous investigations carried out at the site has also been undertaken.

1.3 Proposed Development

The proposed development is for a new sub-station in the area of a car park ramp shown on the Initial Works Plan, Drawing No. 6145-SRA-XX-00-SK-A-SK-114 provided to BSL by the client.

1.4 Limitations

This desk study assessment has been prepared in accordance with the relevant legislative framework, guidance and risk assessment methodology as outlined in Appendix A.

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

There may be other conditions prevailing on the site which are outside the scope of work and have not been highlighted by this assessment and therefore have not been taken into account by this report. Responsibility cannot be accepted for such site conditions not revealed by the assessment.

This report has been prepared for the sole use and reliance of the Client, Candour Solar Propco Ltd.. No other third parties may rely upon or reproduce the contents of this report without the written permission of Brownfield Solutions Ltd (BSL). If any unauthorised third party comes into possession of this report they rely on it at their own risk and BSL do not owe them any Duty of Care.

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

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

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

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

2.0 THE SITE

2.1 Location

The site is located off Deansgate, Manchester, M3 2AY. It is situated approximately 0.5 miles from Manchester City Centre, centred on National Grid Reference 383775, 398501 as shown on the Site Location Plan, Drawing No. C4293/01A.

2.2 Site Description

A walkover survey was carried out on the site on the 14th August 2019. The main site features and potential issues identified during this survey are detailed below and are shown on the Initial Works Plan, Drawing No. 6145-SRA-XX-00-SK-A-SK-114. A selection of photographs from the site walkover is presented to the rear of this report.

Feature	Description
Site Area	The site covers approximately 0.04 hectares.
Site Access	Access to the ground floor access road and courtyard is gained off Exchange Street to the east.
Current Land Use and Site Features	The site a concrete car park ramp which leads to a car park present above and beyond the site boundary. A substation is currently present below the car park ramp. The courtyard which leads to the ramp currently acts as an accessway for cars and access into the adjacent buildings to the site. Air conditioning plant and bin storage areas are also present in the west section of the site.
Potential Sources of Gross Contamination	No evidence of storage tanks was noted during the site walkover. An electricity station is present within the centre of the spiral ramp.
Vegetation	No vegetation was recorded at the site.
Topography	The site is generally flat however there is a retaining wall present to the south of the car park ramp in the south-west section of the site. The height of the retaining wall is currently unknown.
Site Boundaries	The north of the building is bound by St Mary's Gate, the east of the site is bound by a commercial building, the south of the site is bound by Barton Arcade, and the west of the site is bound by Deansgate.
Surrounding Area	The site is set within a mixed retail and business area, bordered by office buildings and ground floor retail units.

3.0 ENVIRONMENTAL SETTING

3.1 Historical Setting

Information has been obtained from historical Ordnance Survey Maps with the pertinent issues that may have affected the site, or its environs summarised below.

Notable features within 100m of the site boundary have been presented. Any features that have potentially been infilled will be considered up to 250m from the site boundary.

Feature	Distance	Years Present	Description
Terrace Buildings including commercial	On site	1848 - 1949	The earliest map of 1840/1850 indicates the site to be occupied by terraced buildings, with exchange arcade showing just to the north of the site, one of these is labelled as a public house and these units are anticipated to be commercial. By 1891 the site appears to have been largely redeveloped with a mixed use of small buildings. Deansgate and St Marys Gate have both been significantly widened. The buildings remain on site until the map dated 1949 where the site and surrounding area are no longer occupied, a ruin is noted adjacent to the site, so it is assumed that these buildings had been destroyed during WWII bombing.
Circular Feature/Car Park Ramp	On site	1970 – Present	By the map dated 1970 the site had been re-occupied by a circular structure assumed to be the car park ramp currently present onsite. This structure remains on-site.
Cotton Mills	75m – 100m radius	1851	A number of cotton related buildings are situated in the surrounding area, these are only noted on the 1851 map however the buildings are present well after this date.
Ruins	0m – 100m radius	1949 - 1958	The surrounding area is densely developed, however between 1949 and 1958 a noticeable number of these buildings are either noted as 'ruins' or are not present on the map suggesting the area was heavily bombed during WWII.

The site is situated in an area that has been densely developed since the 1840s. The surrounding area appears to have been a mix of residential and commercial, with a number of cotton works interspersed. The area has remained generally unchanged, with the re-building of a number of buildings following WWII and a shift toward primarily commercial land use.

The Historical Maps are presented in Appendix B.

3.2 Published Geology

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

- 1:50,000 Scale Geological Map Sheet 85 Macclesfield. Solid and Drift Edition.
- British Geological Survey (BGS) Geology of Britain Map Viewer.
- Coal Authority Interactive Map.
- Environmental Data Report.

Made Ground

BGS mapping does not display and made ground deposits on site, however based on the historical mapping and the development that has taken place, made ground deposits are highly likely to be present.

Superficial Deposits
The site is indicated to be underlain by Glaciofluvial Sheet Deposits. This stratum typically comprises sands and gravels, locally with lenses of silt or clay. The superficial deposits are indicated to have been deposited within a channel the runs roughly parallel to Deansgate for approximately 1km.

Solid Geology
The deeper solid geology underlying the superficial deposits is indicated to be part of the Chester Formation, which typically comprises red sandstones.

The East Manchester Fault is present approximately 100m south of the site striking NW-SE, down throwing to the northeast. However, any movements associated with this fault should now have stopped.

The nearest coal seam subcrop is circa 2.5km northeast of the site of the Openshaw Coal.

3.3 BGS Boreholes

There a BGS borehole record is available across the road from the site (<50m west). The log indicates made ground to 0.90m bgl. Sand and gravel with occasional thin clay bands were present to 7.80m bgl.

A dense brown, red silty sand was present between 5.90m and 7.80m bgl which may represent weathered bedrock. Sandstone was present from 7.80m to the base of the borehole at 15.00m bgl.

The BGS Borehole Logs are presented in Appendix C.

3.4 Mining and Mineral Extraction

The site lies in an area where the Law Society and Coal Authority recommends a mining search be undertaken as the site could be affected by past or current coal mining.

Therefore, a mining search was carried out, which is presented in Appendix D, the main findings of which are presented below.

Highlighted Evidence	Issue	Details
Past Underground Mining	No	
Present Underground Mining	No	
Future Underground Mining	No	The property is not in an area likely to be affected from any planned future underground coal mining. However, reserves of coal exist in the local area which could be worked at some time in the future.
Mine Entries	No	
Past, present and future opencast coal mining	No	
Coal mining subsidence	No	
Mine gas	No	
Withdrawal of support	No	
Information from the Cheshire Brine Subsidence Compensation Board	No	

3.5 Hydrogeology

The superficial deposits beneath the site are classified by the Environment Agency as a Secondary (A) Aquifer. These are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

The bedrock underlying the site is classified as a Principal Aquifer. This is Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers.

There are no source protection zones within 500m of the site.

The nearest active groundwater abstraction licence is 200m north of the site for general cooling.

There are no active potable water abstractions within 2000m of the site.

The soils have been assigned a Soil Vulnerability Category of HU (High). This is a worst case classification for urban areas and restored mineral workings. These soils are assumed to be highly permeable in the absence of site specific information.

3.6 Hydrology

The nearest watercourse to the site is the River Irwell, which lies at a distance of 145m northwest of the site and flow direction is indicated to be from north to south.

Biological River Quality is available for one location 400m north of the site which is graded as 'E' for the years 2005 to 2009.

Chemical River Quality data is available at two locations on the River Irk and six locations on the Rochdale Canal between 400m and 1173m from the site. The River Irk is graded as 'C' for 2005 to 2008, and 'D' in 2009, the Rochdale Canal is graded as 'A' for 2005 to 2009.

The nearest surface water abstraction licence is ~1700m southwest of the site and is historical.

The closest active licenced discharge consent is 150m northwest and relates to sewer storm overflow.

Information obtained from the Environment Agency (EA) Risk of Flooding from Rivers and the Sea (RoFRaS) database indicates that the risk of flooding across the site is very low (less than 1 in 1000 chance of flooding in any given year).

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

3.7 Environmental Searches

An Environmental Search has been conducted which utilises British Geological Survey and Environment Agency databases. The full report can be found in Appendix E, although a summary of the more relevant findings is presented below.

Entry	On-site	0 – 249m	250 – 500m	Details
Authorised Industrial Processes (IPC/IPPC/LAPPC)	0	0	6	One List 2 site 446m west of the site. Five Part B permits between 278m and 480m both historic and active for dry cleaning and vehicle spraying.

Entry	On-site	0 – 249m	250 – 500m	Details
Pollution Incidents	0	4	1	Incidents are recorded as having a 'Minor' or 'No impact' on water, land and air.
Landfill Sites	0	0	0	
Waste Treatment	0	0	14	The nearest entry is 379m south for a recycling centre that appears to have been cancelled at the planning stage. The remainder of the entries are duplicates for a scrapyard approximately 385m northwest.
Control of Major Accident Hazard (COMAH) Sites	0	0	0	
Consents issued under planning (Hazardous Substances) Act 1990	0	0	0	
Radioactive Substances	0	0	0	
Fuel Station Entries	0	0	0	
Other Current industrial land uses	1	26	2	The nearest entry is a substation on site. The remainder of the entries are for commercial use and occasional substations.
National Grid Services	0	0	0	

3.8 Radon

Information from the environmental database report indicates the property is not in a radon affected area and therefore no radon protective measures are necessary in accordance with BRE Report 211 'Radon – Guidance on protective measures for new dwellings' 2015 Edition.

3.9 UXO Risk

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

There is no indication of former military use from the desk study. The map indicates the site to be in an area where the bomb risk is moderate. A UXO find is indicated circa 100m southwest of the site. A copy of the map is presented in Appendix F.

The mapping shows a number of "ruins" and areas of missing buildings, including on site, suggesting bomb damage following WWII.

This is confirmed by the bomb damage maps for Manchester that can viewed online. This shows the site to have been completely destroyed (shaded red) by bombing during the second world war. An extract of the map covering the site and surrounding area is shown below.



Following the above evidence, a detailed UXO desk study was undertaken by EOD contracts Ltd (ref. 230825). From the desk study, it has been concluded that the site was subject to a direct strike, supported by historical bomb mapping and images. Therefore, the detailed desk study has classified the site as being medium risk and intrusive works on site may require supervision by a UXO specialist.

4.0 DESK STUDY SUMMARY AND RISK ASSESSMENT

4.1 Introduction

The risk posed by any contaminants in soil or groundwater will depend on the nature and level of the source, the probability of exposure occurring, the potential pollution pathway and the likely effects on the receptors.

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

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

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

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

4.2 Potential Contaminative Sources

On-Site

From the information obtained during the desk study the following sources have been identified by the desk study which may affect the redevelopment of the site for commercial end use:

- Made ground associated with former and current land use.
- Ground gas from on-site made ground.
- Electricity substation.

Off-Site

There are no sources within a relevant distance to the site that are considered to pose a risk to site end-users.

Associated Contaminants

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

Contaminative Sources	Department of the Environment Industry Profile	Commonly Associated Contaminants
On Site		
Made Ground	-	Heavy metals, polycyclic aromatic hydrocarbons (PAHs), asbestos, ground gases (carbon dioxide and methane).
Electricity Substation	Electrical Works	Polychlorinated Biphenyls (PCBs)

4.3 Pathways

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

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

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

4.4 Receptors

The identified receptors are listed below:

- Commercial end users (human health).
- Structures/Property/water pipes.
- Nearest watercourse. River Irwell (Controlled waters).
- Superficial Secondary (A) Aquifer. Glaciofluvial Sheet Deposits (Controlled waters).
- Bedrock Principal Aquifer. Chester Formation (Controlled waters).
- Construction workers.

4.5 Preliminary Conceptual Site Model

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

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

Human Health						
Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk	Justification
On site Made ground Metals, PAH's, asbestos	Ingestion, direct contact, inhalation of dusts	End-users	Unlikely	Medium	Low	Made ground is expected on site due to the site history, however the proposed development is indicated to be surfaced in hardstanding, therefore breaking the pathway to site end-users. Furthermore, as the proposed end-use of the building is for a substation, there will not be any permanent residents and when accessed will only be for short durations. As such, the risk is considered to be low.
Made ground Ground Gas (carbon dioxide and methane)	Migration into confined spaces, inhalation and asphyxiation/ explosion	End-users / property / structures	Negligible	Severe	No Linkage	Made ground is expected on site due to the site history, however as this development is limited to an electricity sub-station, there will not be any permanent residents within the building and the building when accessed will likely only be for short durations. As with most buildings housing plant, the substation will be built with an inherent level of ventilation thus inhibiting the ability for ground gases to accumulate within the structure. Therefore, the risk to end-users is considered to be negligible.
Electricity Substation PCBs	Ingestion, direct contact, inhalation of dusts	End-users	Unlikely	Medium	Low	Given the substation has only been in place since the current building has been in place it is considered that the hardstanding will have prevented contaminants from reaching the soils. Although if there is any contamination present in the soils, as the site will be completely surfaced in hardstanding with no soft landscaping, this will break the pathway to site end-users. Therefore, the risk is considered to be low.

Controlled Waters						
Potential Source	Potential Pathway	Potential Receptor	Likelihood	Severity	Level of Risk	Justification
Made Ground PAH's, Metals **Electricity Substation** PCBs	Overland flow, / migration through saturated zone	River Irwell 150m away (Surface waters)	Unlikely	Medium	Low	It is considered any potential contaminants associated with the made ground, the electricity substation and other past industrial uses are unlikely to impact the river, as over this distance, there is potential for contaminants to attenuate and degrade. Furthermore, the majority of the site is surfaced in hardstanding and will remain so and part of the proposed development, this will inhibit lateral migration to the river will likely aid in betterment of drainage, preventing overland flow and the mobilisation of any contaminants. Previous site use does not suggest any significant contaminative processes. Therefore the risk is considered to be low.
	Leaching through unsaturated zone / Migration through saturated zone	Secondary A Aquifer (Ground-water)	Unlikely	Medium	Low	The majority of made ground on site is covered in hardstanding and will remain so as part of the development, which will prevent infiltration of rainwater and the mobilisation of any contaminants. The site does not lie within an SPZ. There are no potable water abstractions within 2000m of the site. The nearest groundwater abstraction is for general cooling. Therefore, the risk is considered to be low.
	Migration through saturated zone	Principal Aquifer (Ground-water)	Unlikely	Medium	Low	As stated above, the site will be surfaced with hardstanding and with a new surface water drainage system installed which will further reduce the risk to controlled waters. By virtue of the development taking place, this should contribute to an overall "betterment" of groundwater quality. Therefore, the risk is considered to be low.

Human Health Risk – Summary
Based on the preliminary CSM and the current use of the site, the overall risk from land contamination at the site is considered low for a redeveloped site.

A potential on-site gas source has been identified associated with the made ground from previous developments. The preliminary CSM considers the sources to be a negligible risk to site end users and property based on its future redevelopment.

Controlled Waters Risk - Summary
Based on the preliminary CSM, BSL believes the overall risk to controlled waters at the site is low for the following reasons:

- No significant contamination is anticipated on site based on past end-use.
- The site does not lie within 500m of an SPZ.
- There are no potable (sensitive) water abstractions within 2000m.
- The nearest groundwater abstraction is for general cooling.
- The site and surrounding area are predominantly covered in hardstanding reducing the infiltration of groundwater.

5.0 PRELIMINARY GEOTECHNICAL ASSESSMENT

5.1 Hazard Identification

Potential geotechnical hazards based on the expected ground conditions are listed below:

- Made ground of unknown nature; if placed in a non-engineered manner may cause excessive settlement of foundations, highways and infrastructure.
- Buried obstructions such as old foundations basements etc. leading to difficulty in excavation or deep foundation emplacement (e.g. piles).
- Attack of buried concrete by aggressive ground conditions; the site may contain unknown made ground and potentially sulphate bearing soils.
- Presence of UXO preventing the safe installation of foundations.

5.2 Foundations

The proposed development will comprise a new substation to replace the once currently onsite in the area of the concrete car park ramp. Due to the adjacent buildings with basements and the retaining wall close to site, it is assumed deep foundations will be utilised although suitability for this should be confirmed to allow the detailed design of the foundations.

5.3 Soakaways

Drainage to soakaways is a potentially viable option for the site, given the indicated presence of permeable glaciofluvial sheet deposits, subject to the depth to the groundwater and test results.

This would need to be confirmed by an onsite intrusive investigation to confirm ground conditions and infiltration rates.

6.0 OTHER DEVELOPMENT CONSTRAINTS

6.1 Constraint Identification

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

No invasive species have been noted during the walkover.

The preliminary risk assessment undertaken within this Desk Study may identify potential risks to site demolition and construction workers. However, full consideration of occupational health and safety issues is beyond the scope of this report.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Environmental

The site is situated in an area that has been densely developed since the 1840s. The surrounding area has remained generally unchanged, however the site appears to have been redeveloped three times since the 1840s with the re-building of a number of buildings, including the buildings on site following WWII and a shift toward primarily commercial land use.

The risk from onsite sources is considered low due to the lack of significantly contaminative processes and the presence of hardstanding across the site.

The risk from ground gas is considered negligible due to the inherent level of protection included within the proposed building design and that there will be no permanent residents within the structure.

The risk for offsite sources is considered low.

The risk to controlled waters is considered to be low due to the lack of significantly contaminative processes, this site not being within 500m of an SPZ or within 2000m of a potable water abstraction, and the site being covered by hardstanding.

7.2 Geotechnical

The proposed development will comprise a new substation building. Intrusive investigations will be required to confirm ground conditions to allow detailed foundation design and obtain parameters for concrete classification and highways design.

The site is potentially at risk from Unexploded Ordnance (UXO) and UXO supervision will be required for intrusive works including UXO Magnetometer proving of any proposed pile locations.

7.3 Further Work

To confirm the risks to the identified receptors and confirm the ground conditions in respect to the identified geotechnical and geo-environmental risks, an appropriate intrusive investigation will need to be undertaken.

Therefore, to allow future development of the site the following further works are recommended, although this list is not exhaustive and should be read in conjunction with any planning conditions that are applicable to the site.

- Undertake preliminary UXO risk assessment by a UXO specialist.
- Post demolition intrusive site investigations comprising cable percussive drilling, rotary core drilling and geotechnical and chemical confirmatory testing of soils and rock.
- Assessment and recommendations based on the above, including requirements for further work, if necessary.
- Demolition Asbestos survey.

8.0 REFERENCES

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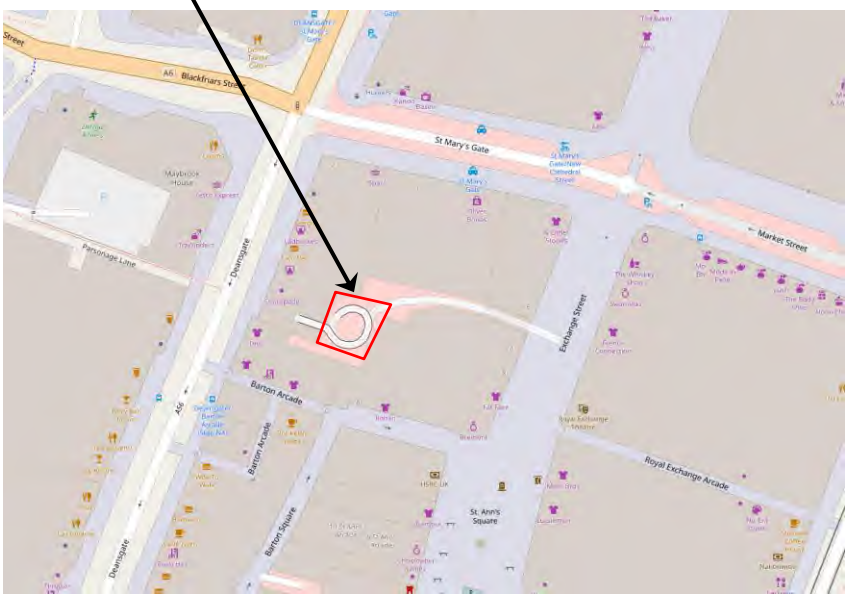
DRAWINGS



SITE LOCATION

NEAREST POSTCODE: M3 2BA

SITE ENTRANCE WHAT3WORDS: ///CROWNED.OLDEST.TRUCKS



REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD

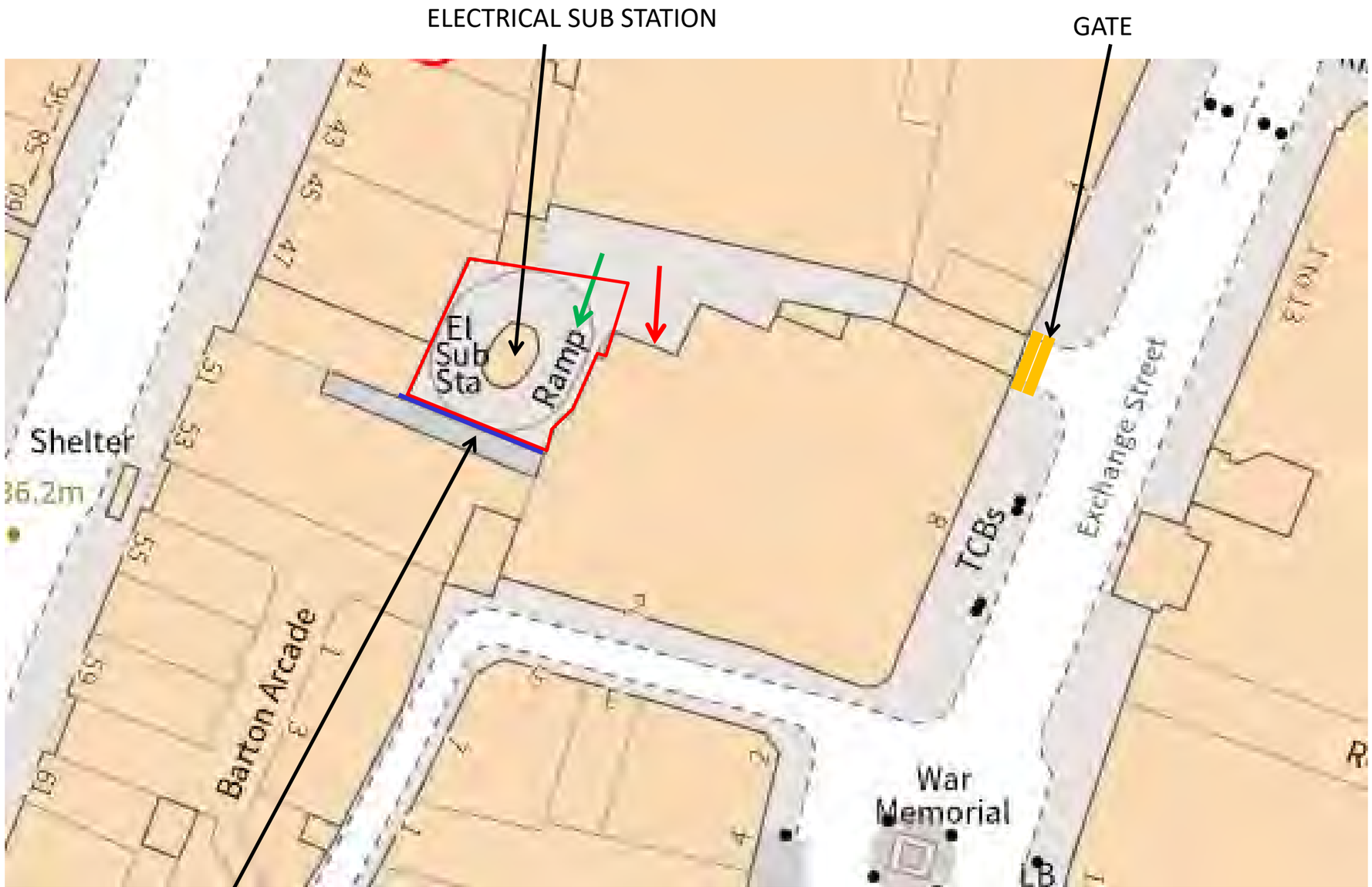
CLIENT
CANDOUR SOLAR PROPCO LTD

PROJECT TITLE
LAND TO THE REAR OF 39 DEANSGATE, MANCHESTER

DRAWING TITLE
SITE LOCATION PLAN

DRAWING No.	REVISION	SCALE	DATE
C4293/01A	-	NTS	03/10/23

DRAWN BY	CHECKED BY
PH	NS



KEY

- APPROXIMATE SITE BOUNDARY
- RETAINING WALL
- RAMP ACCESS
- BASEMENT CAR PARK ACCESS

NOTES

1. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE COMMENCING WORKS. ANY DISCREPANCIES ARE TO BE REPORTED TO THE ARCHITECT & ENGINEER FOR VERIFICATION. FIGURED DIMENSIONS ONLY ARE TO BE TAKEN FROM THIS DRAWING.
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS REPORTS. THIS DRAWING IS COPYRIGHT OF BSL.
3. DRAWING NOT FOR CONSTRUCTION PURPOSES.

REV	DATE	DESCRIPTION	BY	CKD

BROWNFIELD SOLUTIONS LTD

CLIENT
CANDOUR SOLAR PROPCO LTD

PROJECT TITLE
LAND TO THE REAR OF 39 DEANSGATE

DRAWING TITLE
SITE FEATURES PLAN

DRAWING No.	REVISION	SCALE	DATE
C4293/04	-	NTS	18/10/23

DRAWN BY	CHECKED BY
PH	NS

A1

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The copyright in this drawing is vested in Sheppard Robson and no license or assignment of any kind has been, or is, granted to any third party whether by provision of copies or originals or otherwise unless agreed in writing.

DO NOT SCALE FROM THIS DRAWING
The contractor shall check and verify all dimensions on site and report any discrepancies in writing to Sheppard Robson before proceeding work

FOR ELECTRONIC DATA ISSUE
Electronic Data / drawings are issued as "read only" and should not be interrogated for measurement. All dimensions and levels should read, only from those values stated in test, on the drawing.

AREA MEASUREMENT
The areas are approximate and can only be verified by a detailed dimensional survey of the completed building. Any decisions to be made on the basis of these predictions, whether as to project viability, pre-letting, lease agreements or otherwise, should include due allowance for the increases and decreases inherent in the design development and building processes. Existing buildings may present anomalies in relation to surveyed/drawn plans that may also effect the stated areas. All areas are subject to Town Planning and Conservation Area Consent and detailed Rights to Light analysis.
Figures relate to the likely areas of the building at the current stage of the design and are calculated using one of the following (as stated in the accompanying areas schedule) IPMS1, IPMS2, IPMS 3, Gross External Area (GEA), Gross Internal Area (GIA) or Nett Internal Area (NIA) methods of measurement from the RICS Property Measurement 1st edition.

KEY

- INTERIM SECTION OF RAMP TO BE DEMOLISHED (AND PROPPED)
- PROPOSED NEW HV SUBSTATION BASE CONSTRUCTED. (GROUND MADE GOOD LOCALLY ABOVE)

(NOT INCLUDED IN IMPLEMENTATION WORKS)

- EXISTING SUBSTATION WILL BE DEMOLISHED ONCE NEW HV SUBSTATION IS CONSTRUCTED AND COMMISSIONED
- FULL EXTENT OF PROPOSED SUBSTATION(S)

NOTE:

SCOPING AND REFERENCE DRAWING ONLY. PLEASE REFER TO STRUCTURAL ENGINEERS DRAWINGS FOR SETTING OUT AND DIMENSIONS

REV.	DATE	AMENDMENT
P01	19/06/2023	NMA PLANNING ISSUE

Barton Arcade

BARTON ARCADE

THE GARDEN BUILDING

12-14 St Mary's Gate

5150

3750

4000

1285

CIRCA 40M2 OF RAMP TO BE DEMOLISHED

SK-115

2 Sim







INITIAL WORKS PLAN
1 : 50

KEYPLAN

CLIENT

FOR AND ON BEHALF OF CANDOUR

SHEPPARD ROBSON
77 Parkway Camden Town London NW1 7PU
T: +44 (0)20 7504 1700 E: london@sheppardrobson.com

PROJECT
39 Deansgate

SCALE@A1	DATE	ORIGINATOR	CHECKED	AUTHORISED
As indicated	**05/15/23**	**MM**	**MM**	**TOB**

INITIAL WORKS PLAN

Stage 3

STATUS	PURPOSE FOR ISSUE	SR NO.
S2	**PLANNING**	**6145**

DRAWING NO. — REV.
6145 · SRA · XX · 00 · SK · A · SK-114 — **P01**

19/06/2023 11:56:51

PHOTOGRAPHS



Photo 1: Associated Building (39 Deansgate) from the west



Photo 2: Electric substation to rear of property



Photo 3: Car park Ramp entrance.



Photo 4: Retaining Wall

APPENDIX A

BSL Methodology and Guidance

BSL Phase I Geo-Environmental Assessment Reports - Methodology and Guidance

Background

This Appendix provides information on the approaches, methods and guidance used by Brownfield Solutions Ltd in the preparation of this report.

The term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential soils and groundwater contamination). The term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements). It should be noted that this is an integrated investigation and these two main aspects are related, unless otherwise specified within the report.

Phase I reports are written in general accordance with the description of a Preliminary Investigation as defined in BS10175:2011+A2:2017 and are also produced in general accordance with the recommendations for a Tier 1 Preliminary Risk Assessment as described in LCRM guidance.

The first stage of the investigation and assessment of a site is the Preliminary Investigation/Tier 1 Preliminary Risk Assessment, often referred to as a Phase 1 Desk Study, comprising a desk study and walk-over survey and collation of desk-based searches, which culminates in the Preliminary Risk Assessment and the development of a preliminary/initial **Conceptual Site Model (CSM)**. From this are identified any potential geotechnical and geo-environmental hazards and the qualitative degree of risk associated with them. In the case of the geotechnical hazard identification, this is referred to as the **Ground Model.**

From the geo-environmental perspective, the hazard Identification process uses professional judgement to evaluate all the hazards in terms of possible contaminant linkages (of source-pathway-receptor). Possible contaminant linkages are potentially unacceptable risks in terms of the current contaminated land regime legal framework and require either remediation or further assessment. These are normally addressed via intrusive ground investigation and generic risk assessment as part of Phase II investigations and reports.

The second stage is the Ground Investigation, Generic Risk Assessment and Geotechnical Interpretation. This represents the further assessment mentioned above. The Ground Investigation comprises field work and laboratory testing based on the findings of the Preliminary Risk Assessment, to reduce uncertainty in the geotechnical and geo-environmental hazard identification. This may include an exploratory, a detailed or/and supplementary Investigations as described in BS 10175:2011+A2:2017. Phase II Assessments are produced in general accordance with the recommendations for a Tier 2 Generic Quantitative Risk Assessment as described in LCRM guidance and are also intended to fulfil the requirements of a Ground Investigation Report (GIR) as detailed in BS EN 1997-2:2007.

Contaminated Land - Legislative Background

Land contamination can be addressed in several ways, e.g. during planning, under Part 2A, following an incident, during an investigation into environmental damages, or during the application of an environmental permit, or its surrender.

For the planning process the key test is **as a minimum the site cannot be determined as contaminated land**, e.g. there is not significant harm, significant possibility of significant harm to human health or that there is not significant harm to, or the significant possibility that the pollution of controlled waters will occur.

Environmental liabilities and risks have been evaluated in terms of a source -pathway - target relationship in accordance with the approach set out in:

- The 1995 Environment Act.
- The Contaminated Land Statutory Guidance, DEFRA – April 2012.
- The Contaminated Land (England) Regulations 2006.
- The Contaminated Land (England) Amendment Regulations 2012.
- Water Resources Act.
- Water Framework Directive.
- Environmental Damage Regulations.
- Environment Agency (EA) - Land Contamination Risk Management (LCRM) 2019.

Contaminated land is defined within the legislative framework as land which is in such condition by reason of substances in, on or under the land that:

1) Significant harm is being caused or there is a significant possibility of such harm being caused.
2) Significant pollution of controlled waters is being or is likely to be caused.

The potential for harm is based on the presence of three factors:

Source - substances that are potential contaminants or pollutants that may cause harm.
Pathway - a potential route by which contaminants can move from the source to the receptor, and the impact of that migration on the source e.g., attenuation.
Receptor - a receptor that may be harmed, for example the water environment, humans and water, considering the sensitivity of the receptor.

Where a source, pathway and target are all present a pollutant linkage exists and there is potential for harm to be caused.



Where any one of the “pollution linkages” between the above is absent there is deemed to be no risk.

The presence of a source does not automatically imply that a contamination problem exists, since contamination must be defined in terms of pollutant linkages and unacceptable risk of harm. The nature and importance of both pathways and receptors are site specific and will vary according to the intended end use of the site, its characteristics and its surroundings.

The key principle which supports the S-P-R approach is ‘suitable for use’ criteria. This requires remedial action only where contamination is considered to pose unacceptable actual or potential risks to health or the environment and, taking into account the proposed use of the site.

Relevant Guidance Documents
This report has been prepared in accordance with the list of guidance below, however the list is not exhaustive:

- DETR: Circular 02/2000: Environmental Protection Act 1990: Part IIA: Contaminated land. 2012.
- Environment Agency technical advice to third parties on Pollution of Controlled Waters for Part IIA of the EPA1990, May 2002.
- BS 10175:2011+A2:2017.
- Environment Agency (EA) - Land Contamination Risk Management (LCRM). 2019.
- Groundwater Protection https://www.gov.uk/government/collections/groundwater-protection
- UK Technical Advisory Group (UKTAG) - - Water Framework Directive
- Incidents and their classification: the Common Incident Classification Scheme (CICS) – Used by the Environment Agency to classify pollution incidents.

Relevant Legislative Documents
The following is a non-exhaustive list of legislative framework documents that has been considered in the production of this report:

- The Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (2012).
- The Environment Protection Act (1990).
- The Water Resources Act (1991).
- The Environment Act (1995).
- The Contaminated Land (England) Act (2000).
- The Pollution Prevention and Control (England and Wales) Regulations (2000).
- The Landfill Regulations (England and Wales) Regulations (2002).
- The Landfill (England and Wales) (Amendment) Regulations (2004).
- Contaminated Land (England) Regulations (2012).
- The Environmental Damage (Prevention and Remediation) Regulations (2009).
- Environmental Permitting Regulations (England and Wales) Regulations (2010).
- The Water Environment (Water Framework Directive) (England and Wales) Regulations (2017).
- Health and Safety at Work Act.
- National Planning Policy Framework (NPPF) – latest version.

Contaminated Land Risk Assessment Approach

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



LCRM outlines the framework to be followed for risk assessment in the UK. The framework is designed to be consistent with UK legislation and policies including planning. The starting point of the risk assessment is to identify the context of the problem and the objectives of the process. Under LCRM, three tiers of risk assessment exist – Stage/Tier Preliminary Risk Assessment, Stage 2 Generic Quantitative Assessment and Stage 3 Detailed Quantitative Assessment.

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

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

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

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

The likelihood of an event is classified on a four-point system using the following terms and definitions from CIRIA C552, with reference to Incidents and their classification: the Common Incident Classification Scheme (CICS), Environmental Protection Act 1990: Part 2A – Contaminated Land Statutory Guidance 2012 and other guidance as appropriate which will be detailed within the main body of the report if applied.

The likelihood of a given receptor being impacted is related to a number of factors, e.g. the geology which could inhibit contaminant migration. For example, a site with a significant thickness of clay between it and a receptor may reduce migration of contamination via the subsurface, which will reduce the likelihood of a given receptor being impacted. The geology or drainage for example could offer a preferential pathway e.g. mines shafts/faults increasing the likelihood and potential magnitude of an impact. The depth of contamination will also affect the exposure pathway, for example petroleum hydrocarbons at depth are unlikely to reach a receptor via dermal contact but could via vapour pathways which will influence the likelihood of an impact being felt e.g. if there are no buildings on site.

The terms and definitions used for the assessment of the likelihood are provided below:

High likelihood: There is a pollution linkage and an event appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Examples - Extensive areas with concentrations above saturation limits for mobile contamination e.g. petroleum hydrocarbons within the water table.

Likely: There is a pollution linkage and all the elements are present and in the right place, which means it is probable that an event will occur. Circumstances are such that the event is not inevitable, but possible in the short term and likely over the long term.
Examples – Localised areas of contaminants with concentrations above saturation limits for mobile contamination e.g. localised petroleum hydrocarbons within the water table; shallow contamination above relevant human health generic assessment criteria is present with little or no hardstanding,

Low likelihood: There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain even over a longer period such event would take place, and is less likely in the short term.
Examples - A thickness/distance of low permeability deposits preventing contaminant migration to a receptor is present; a site is mostly covered hard standing preventing exposure to soil contamination.

Unlikely: There is a pollution linkage but circumstances are such that it is improbable the event would occur even in the long term.
Examples – A site is underlain by a substantial thickness of low permeability clays, between the source and potential receptors which will inhibit significantly, but not completely rule out migration to sensitive receptors.

The severity is also classified using a system based on CIRIA C552, with reference to Incidents and their classification: the Common Incident Classification Scheme (CICS), Environmental Protection Act 1990: Part 2A – Contaminated Land Statutory Guidance 2012 and other guidance as appropriate which will be detailed within the main body of the report, if applied. The terms and definitions are:

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

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

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

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

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

		Consequences			
		Severe	Medium	Mild	Minor
Probability	Highly likely	Very high	High	Moderate	Moderate/low
	Likely	High	Moderate	Moderate/low	Low
	Low likelihood	Moderate	Moderate/low	Low	Very low
	Unlikely	Moderate/low	Low	Very Low	Very low
	Negligible	Negligible Risk / No Linkage			

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

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

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

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

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

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

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

Ground Gas Risk Assessment

BS8485:2015+A1:2019, BS 8576:2013, CL:AIRE RB17, and NHBC 'Hazardous Ground Gas - An essential guide for housebuilders' 2023, are the current guidance which gives up-to-date advice on all aspects of permanent ground gas risk. BS8576 alongside CIRIA C682 also provides guidance on assessment of hydrocarbon vapour intrusion.

The CL:AIRE publication 'Good Practice for Coal Mine Gas Emissions" 2021 provides guidance on the assessment of risks from mine gas sources.

The above all outline good practice in investigation, the collection of relevant data and monitoring programmes in a risk-based approach to ground gas contamination. The aim of the guidance is for a consistent approach to decision making, particularly relating to the scope of protective design measures on a site-specific basis.

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

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

Generation Potential	Typical Sources
Very Low	• Natural carbonate soil and strata, e.g. chalk and limestone. • Natural soil strata with a low degradable organic content, e.g. alluvium, peat. • In-filled pond less than 15 m diameter, in-filled before 1930s to 1940s. • Made ground with low degradable organic content (e.g. up to 5% organic material such as pieces of wood, pieces of paper, rags, etc. with a high proportion of ash and no food or other easily degradable waste). • Mine workings shallow or shaft (where there is clear evidence that they are flooded). • Inert landfill sites.
Low	• Natural soil strata with a high degradable organic content (DOC). • Made ground with total organic carbon (TOC) up to 6% (e.g. dock silt, no food or other easily degradable waste). • Foundry sand (includes phenolic binders, rags and wood that decay, albeit at low rates). • Landfill 1945 to mid 1960s (see also Moderate below).
Moderate	• Sewage sludge. • Mine workings – unflooded, more than 50 years since last worked (gas is liberated from coal when mine workings are excavated; this continues for up to about 50 years). • Landfill 1945 to mid 1960s (this could also be "low" or, if disturbed, "high").
High	• Landfill mid 1960s to early 1990s. • Mine workings – unflooded – less than 50 years since last worked.
Very High	• Municipal landfill sites. • Landfill early 1990s onward.

Frequency and Duration of Monitoring

BS8576 notes to determine where and how to monitor ground gases requires consideration of credible pathways of possible exposure of the receptors, taking into account what is known about the geology and hydrogeology, building construction and services layout, foreseeable events such as flooding, changes in groundwater level, climate change, extreme weather conditions, the closure of mines, and possible changes to the gas regime caused by future development.

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

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

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

Typical/idealised periods of monitoring

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

Typical/idealised frequency of monitoring/Number of Visits Required

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

Notes

1 Generation potential of sources based on descriptions within BS 8576:2013.

2 At least two sets of readings should be at low and falling atmospheric pressure (but not restricted to periods below <1000 mb) known as worst case conditions. Historical data can be used as part of the data set (Table 5.5b).

RB17 Approach

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

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

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

Radon
Advice on radon protection in England is provided by the UK Health Security Agency, https://www.ukradon.org/information/ukmaps and by the BRE (BR 211 (Scivyer 2023)).

Areas of the country can be categorised according to the percentage of existing homes where radon is present above the Action Level:

- 0-1% lower probability.
- 1-3% and 3-10% intermediate probability.
- >10% higher probability.

Basic radon protection measures are required in new buildings and extensions in areas of England and Wales where 3-10% of properties exceed the Action Level and full radon protection measures where >10% exceed the Action Level.

Unexploded Ordnance (UXO) Guidance

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

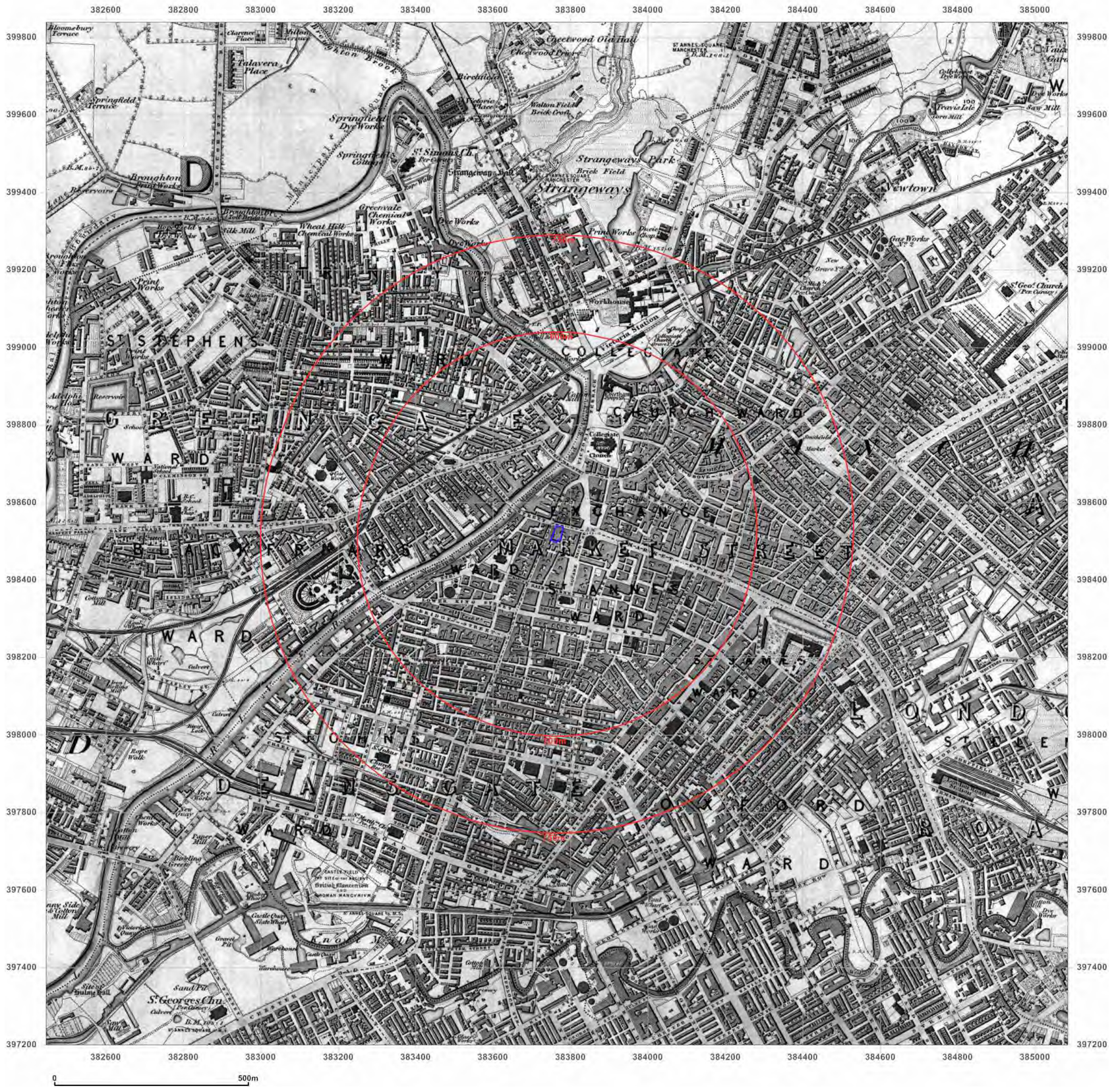
BSL carry out non-specialist UXO screening exercises by considering any evidence of UK defence activities on or near the site evident from gathered desk study information and the unexploded aerial delivered bomb (UXB) online risk maps produced by Zetica. Other data sources are available, but as a first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

Geotechnical Guidance

A preliminary risk assessment of geotechnical hazards is carried out at the desk study stage and confirmed (or amended) at the ground investigation stage. The desk-based stage my include the requirements for a Coal Mining Risk Assessment (CMRA) which specifically assesses the risks from mining induced instability and related issues in high risk development areas: https://www.gov.uk/guidance/planning-applications-coal-mining-risk-assessments

APPENDIX B

Historical Maps



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DESIGN/ENVIRONMENTAL ENGINEERING/EXCELLENCE

Site Details:

ADVERTISING RIGHT
JUNCTION EXCHANGE STREET,
ST MARY'S GATE,
MANCHESTER, M1 1PX

Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: County Series

Map date: **1848**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1845
Revised N/A
Edition 1848
Copyright N/A
Levelled N/A

Groundsure INSIGHTS

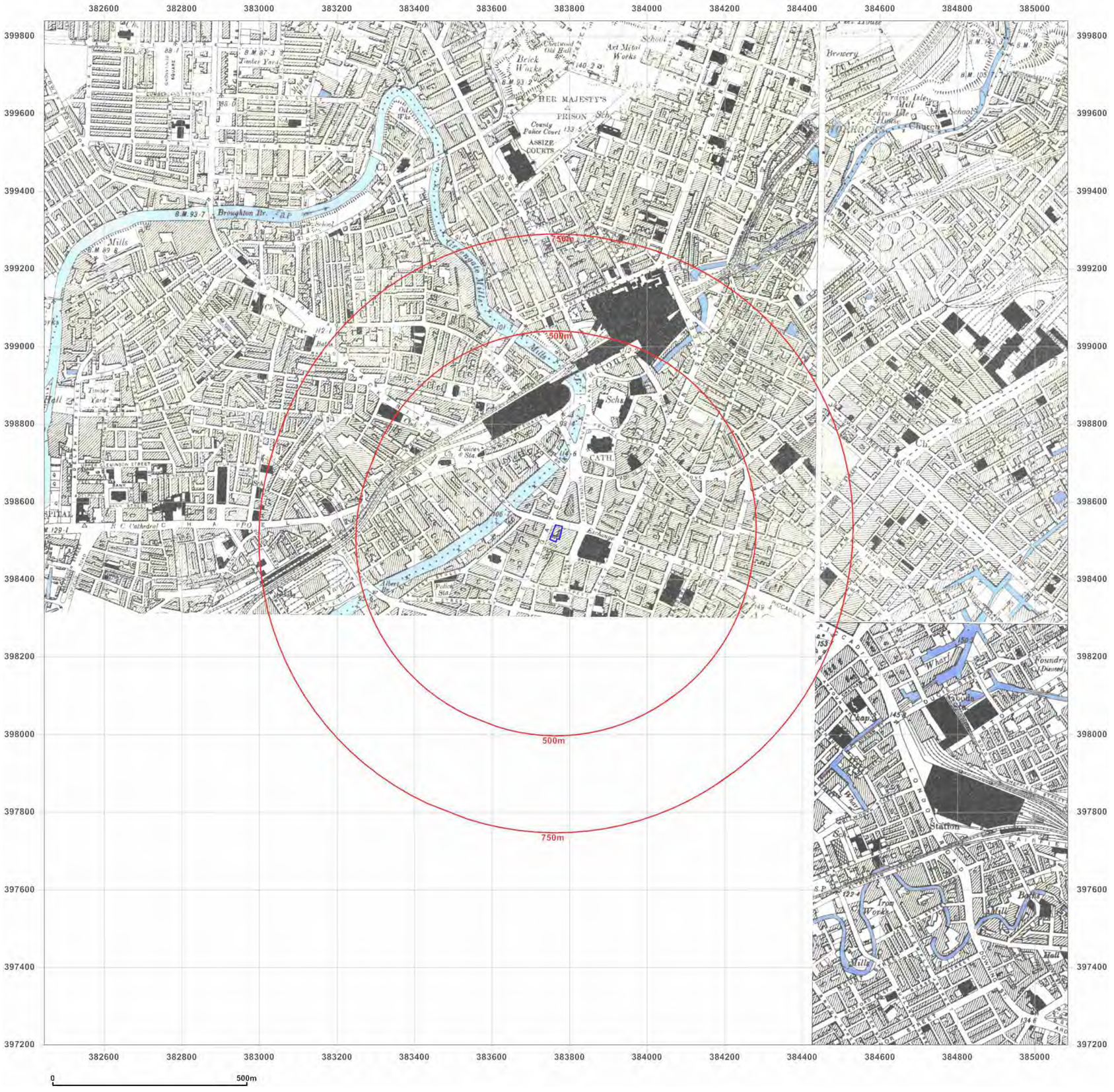
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Production date: 05 August 2019

Map legend available at:
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MANCHESTER, M1 1PX

Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: County Series

Map date: **1890-1894**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1889
Revised 1889
Edition 1894
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1891
Edition 1891
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Levelled N/A

Surveyed 1890
Revised 1890
Edition 1890
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Groundsure INSIGHTS

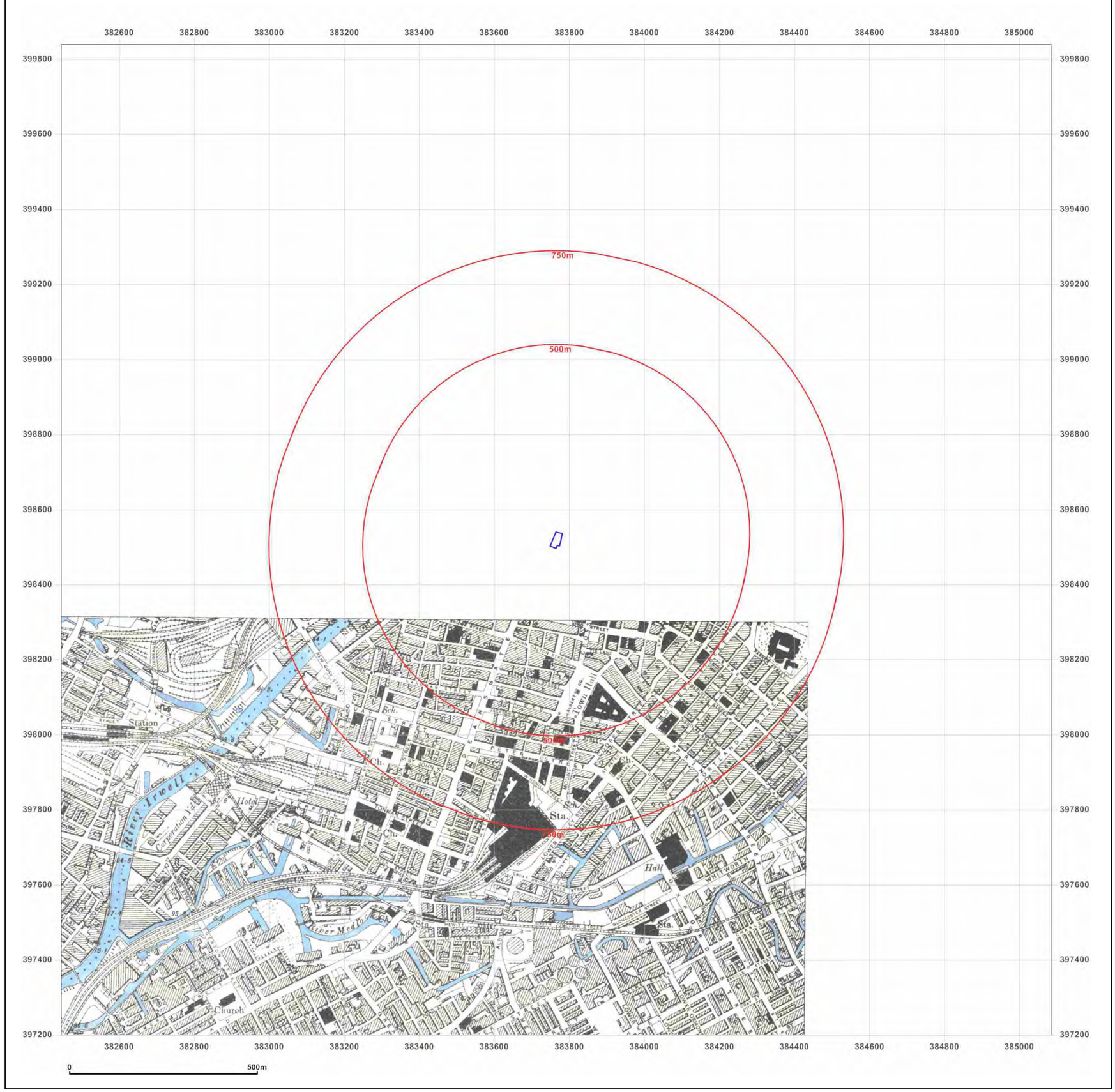
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

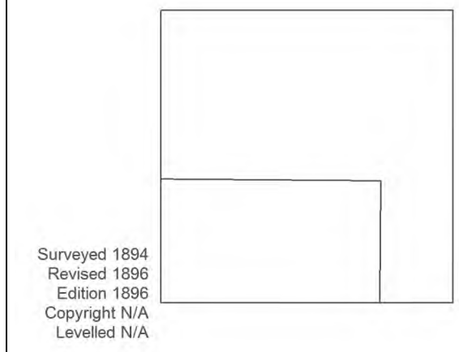
Map Name: County Series

Map date: **1896**

Scale: 1:10,560

Printed at: 1:10,560

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Groundsure INSIGHTS

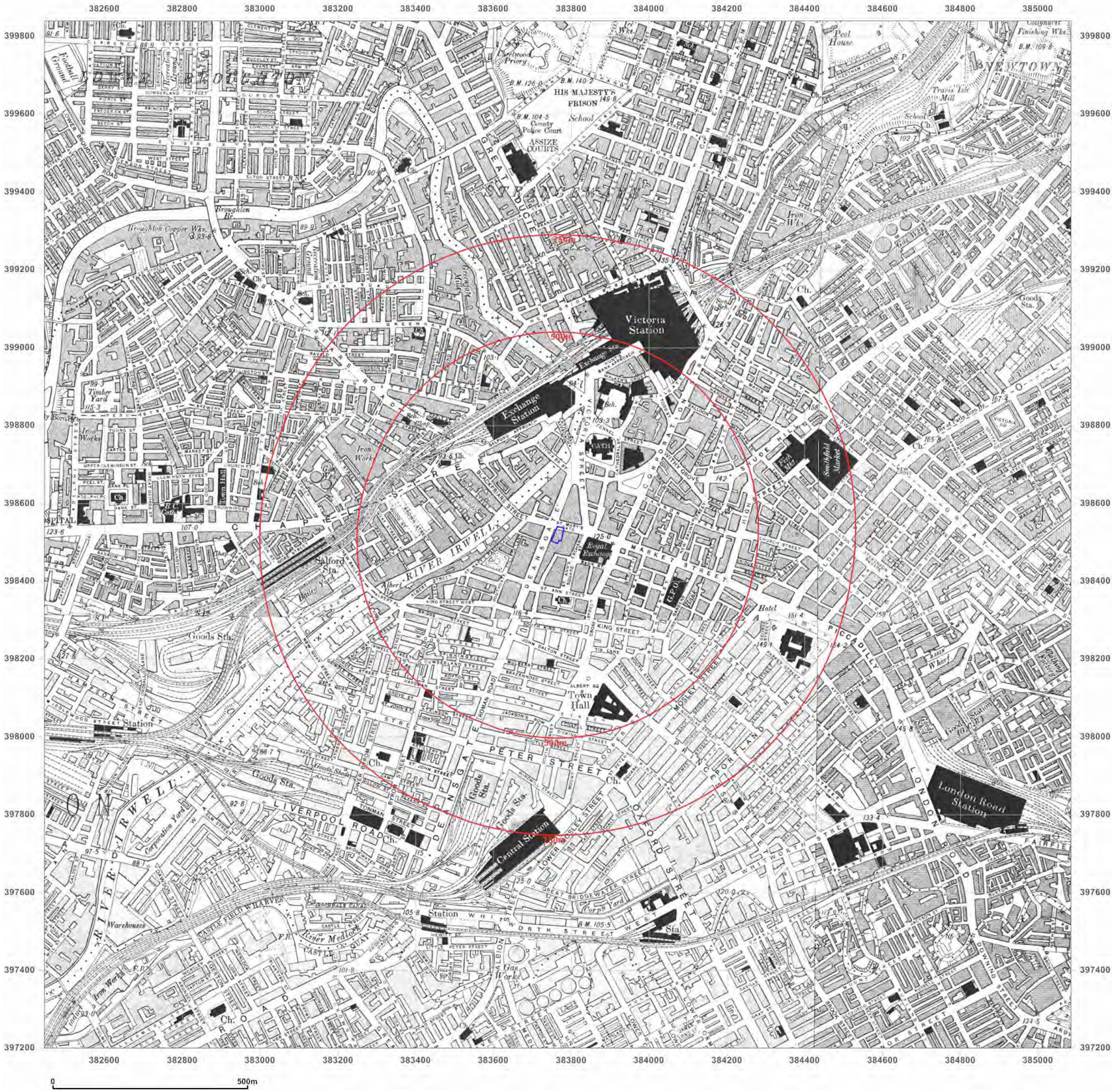
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Map legend available at:
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Site Details:

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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

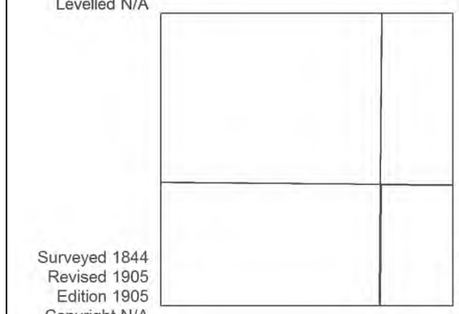
Map Name: County Series

Map date: **1905-1906**

Scale: 1:10,560

Printed at: 1:10,560

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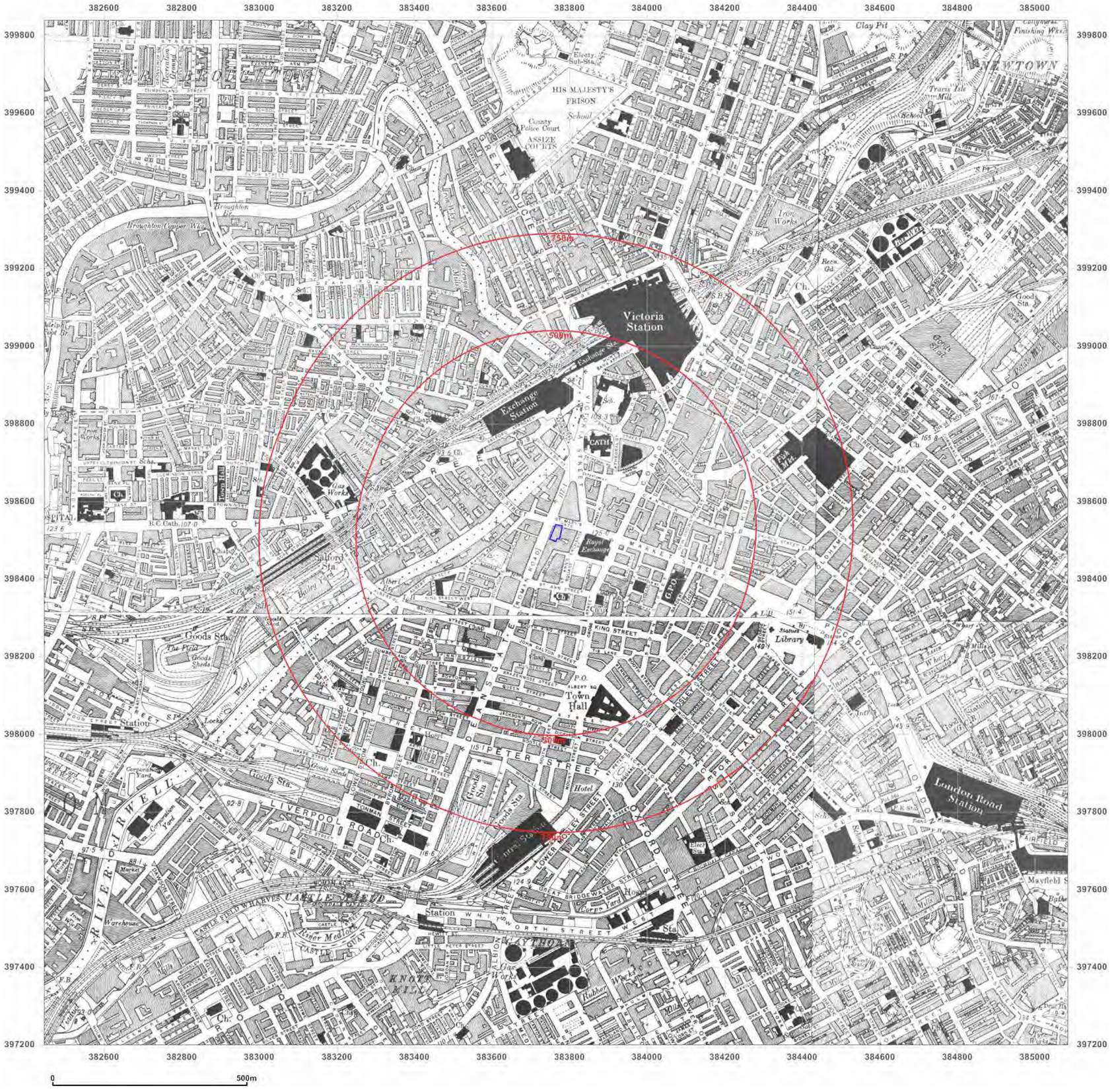


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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

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

Surveyed 1844
Revised 1921
Edition 1923
Copyright N/A
Levelled 1906

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

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

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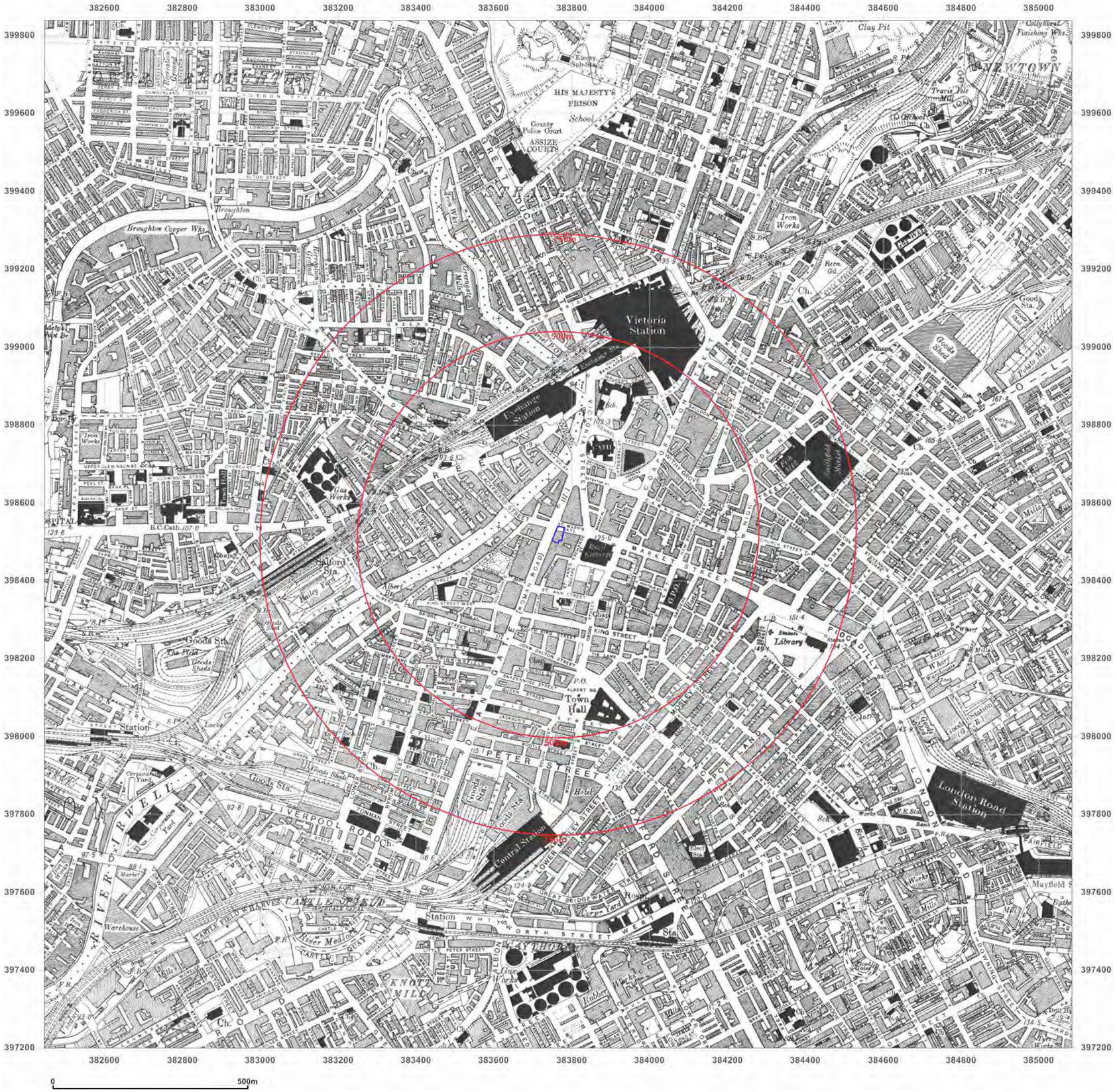
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

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

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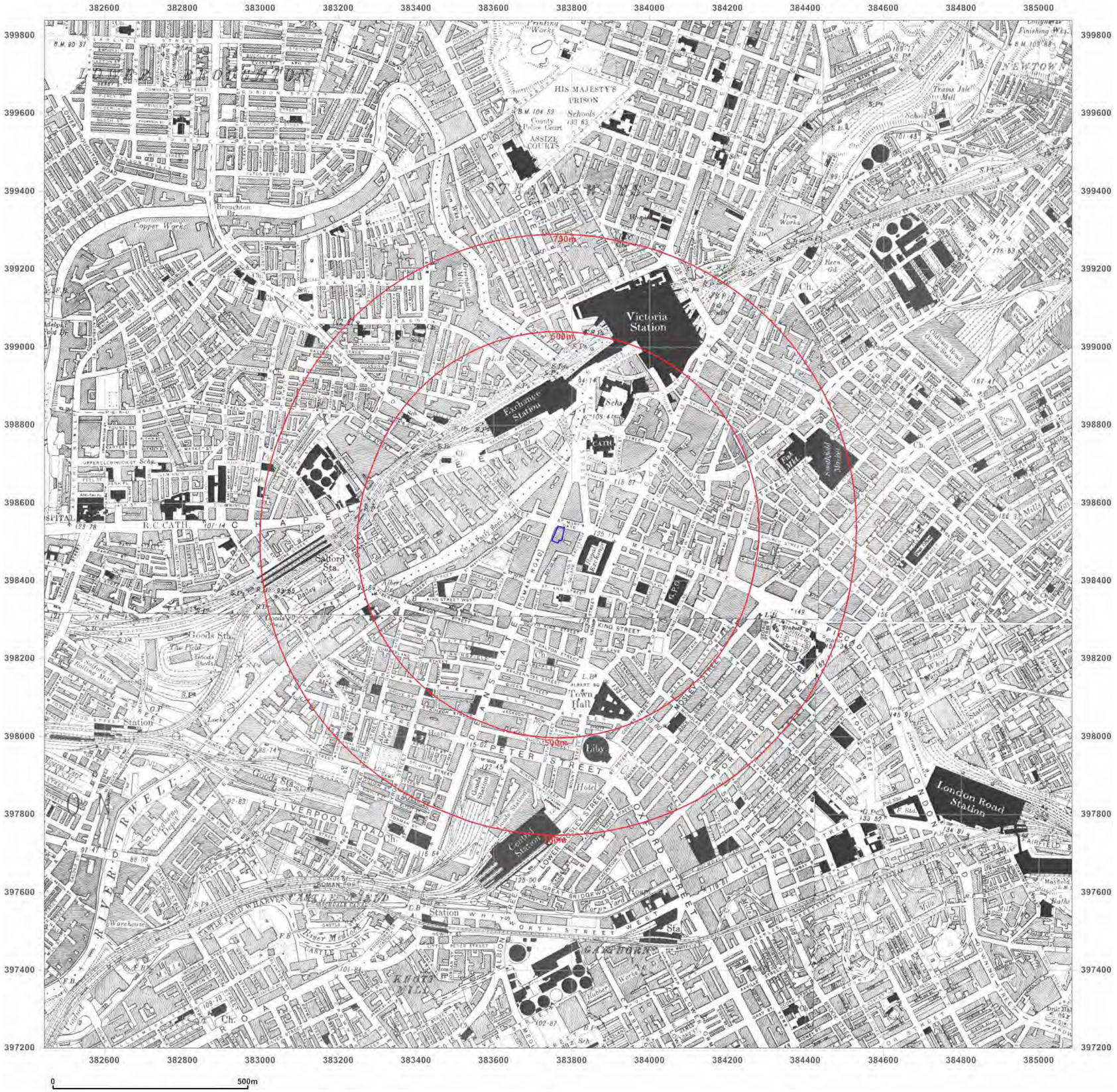
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: County Series

Map date: **1931-1934**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1844
Revised 1931
Edition 1931
Copyright N/A
Levelled 1927

Surveyed 1844
Revised 1933
Edition 1933
Copyright N/A
Levelled 1927

Surveyed 1844
Revised 1932
Edition 1932
Copyright N/A
Levelled 1927

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

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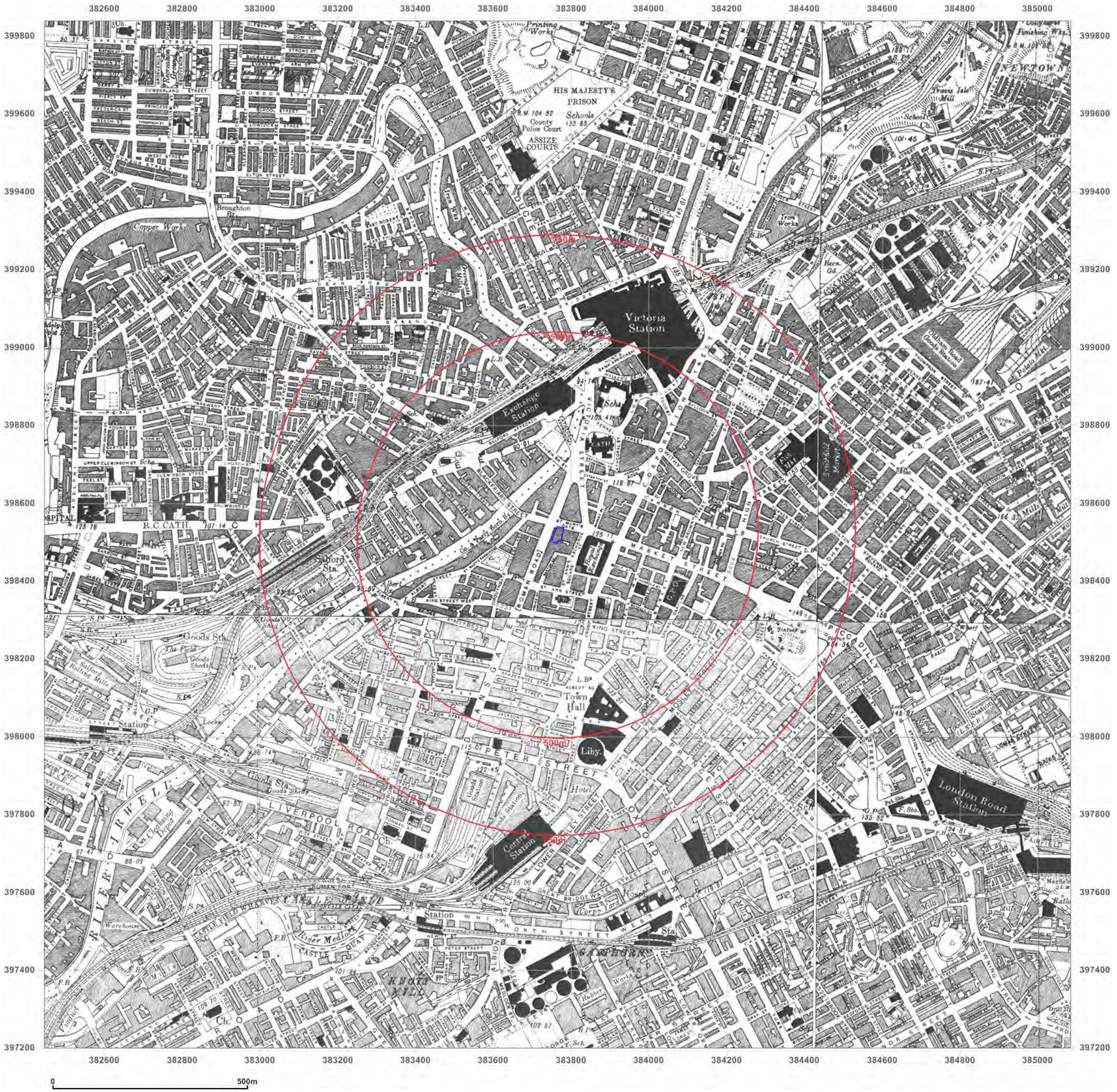
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: County Series

Map date: **1938**

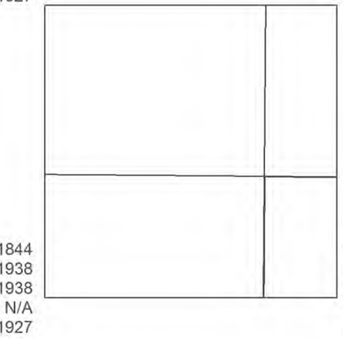
Scale: 1:10,560

Printed at: 1:10,560

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

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



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Revised 1938
Edition 1938
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Levelled 1927

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Revised 1938
Edition 1938
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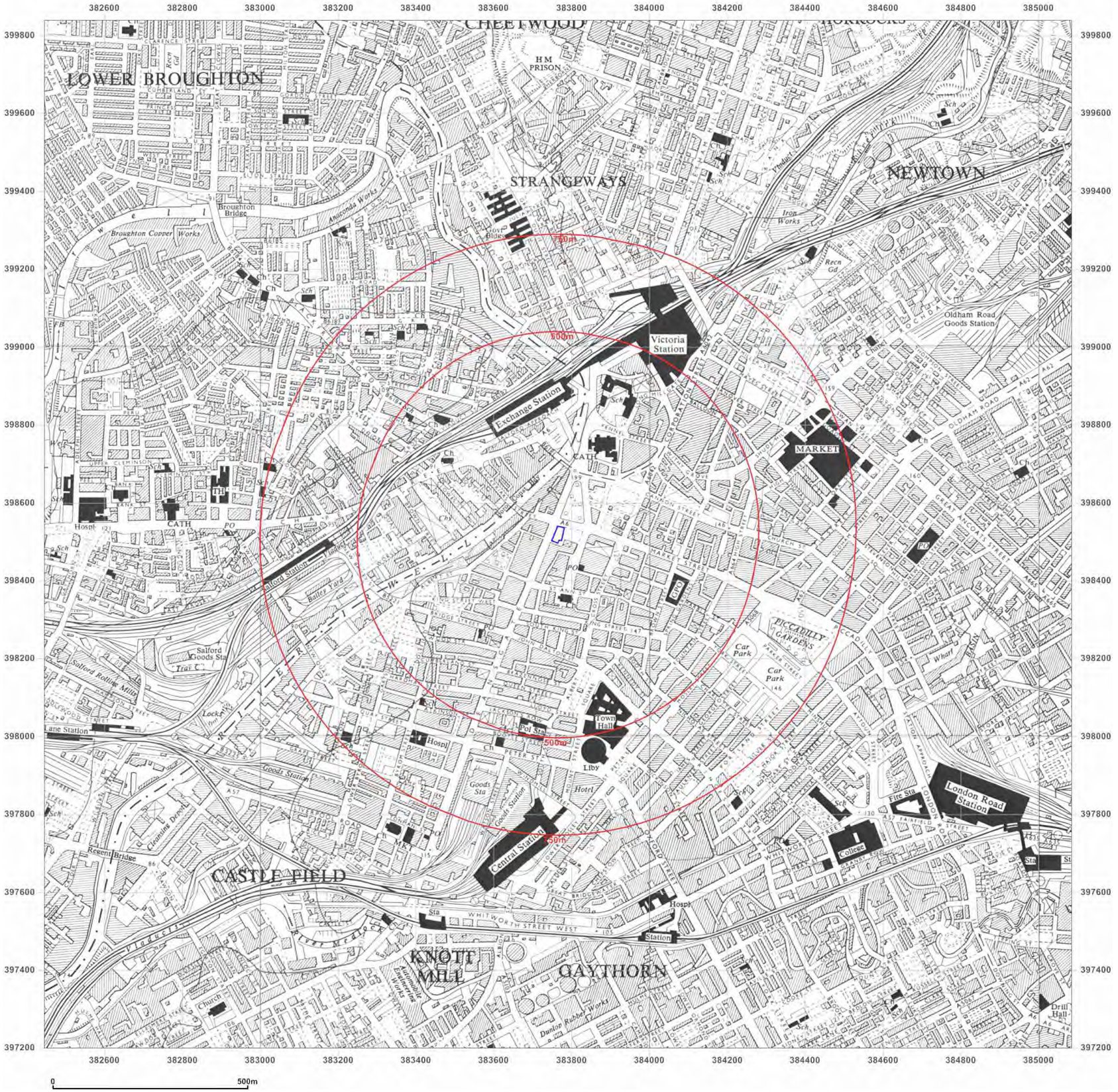
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: Provisional

Map date: **1956**

Scale: 1:10,560

Printed at: 1:10,560

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

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

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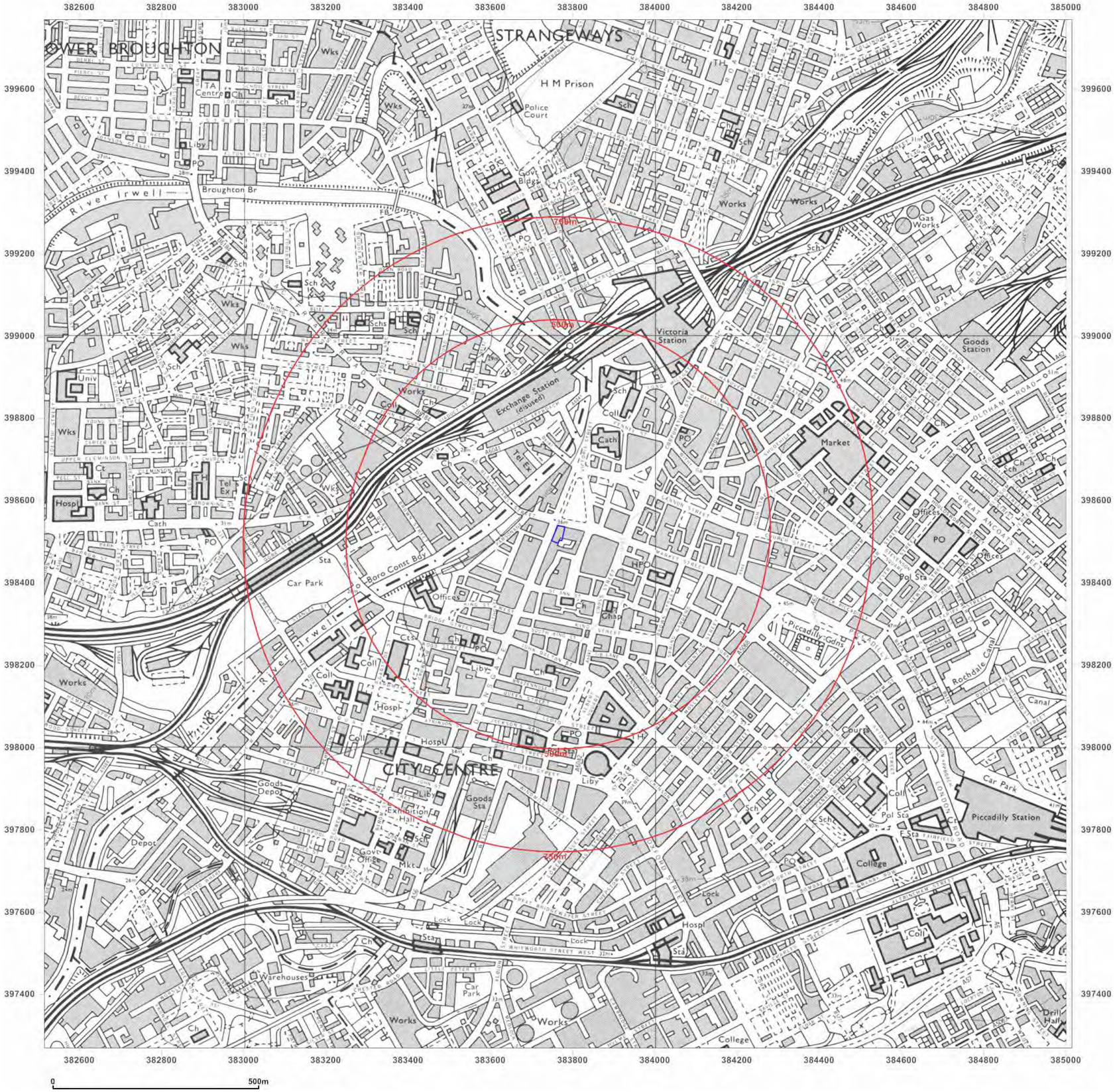
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1972**

Scale: 1:10,000

Printed at: 1:10,000

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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1980-1981**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1976
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Edition N/A
Copyright 1980
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Surveyed 1976
Revised 1980
Edition N/A
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1985**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1983
Revised 1985
Edition N/A
Copyright 1985
Levelled 1981

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

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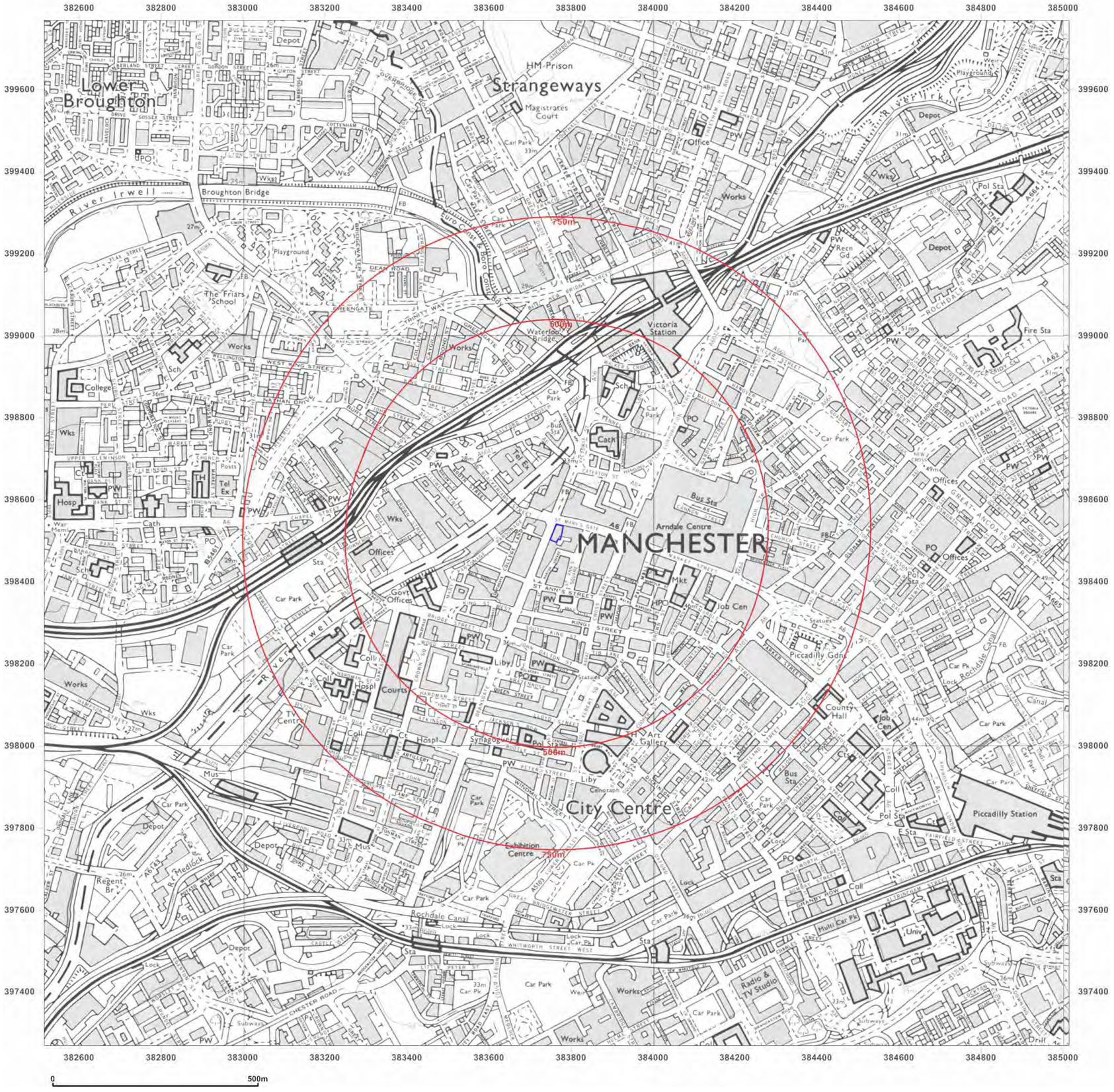
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1988-1991**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1986
Revised 1988
Edition N/A
Copyright 1988
Levelled 1981

Surveyed 1985
Revised 1991
Edition N/A
Copyright 1991
Levelled 1981

Groundsure INSIGHTS

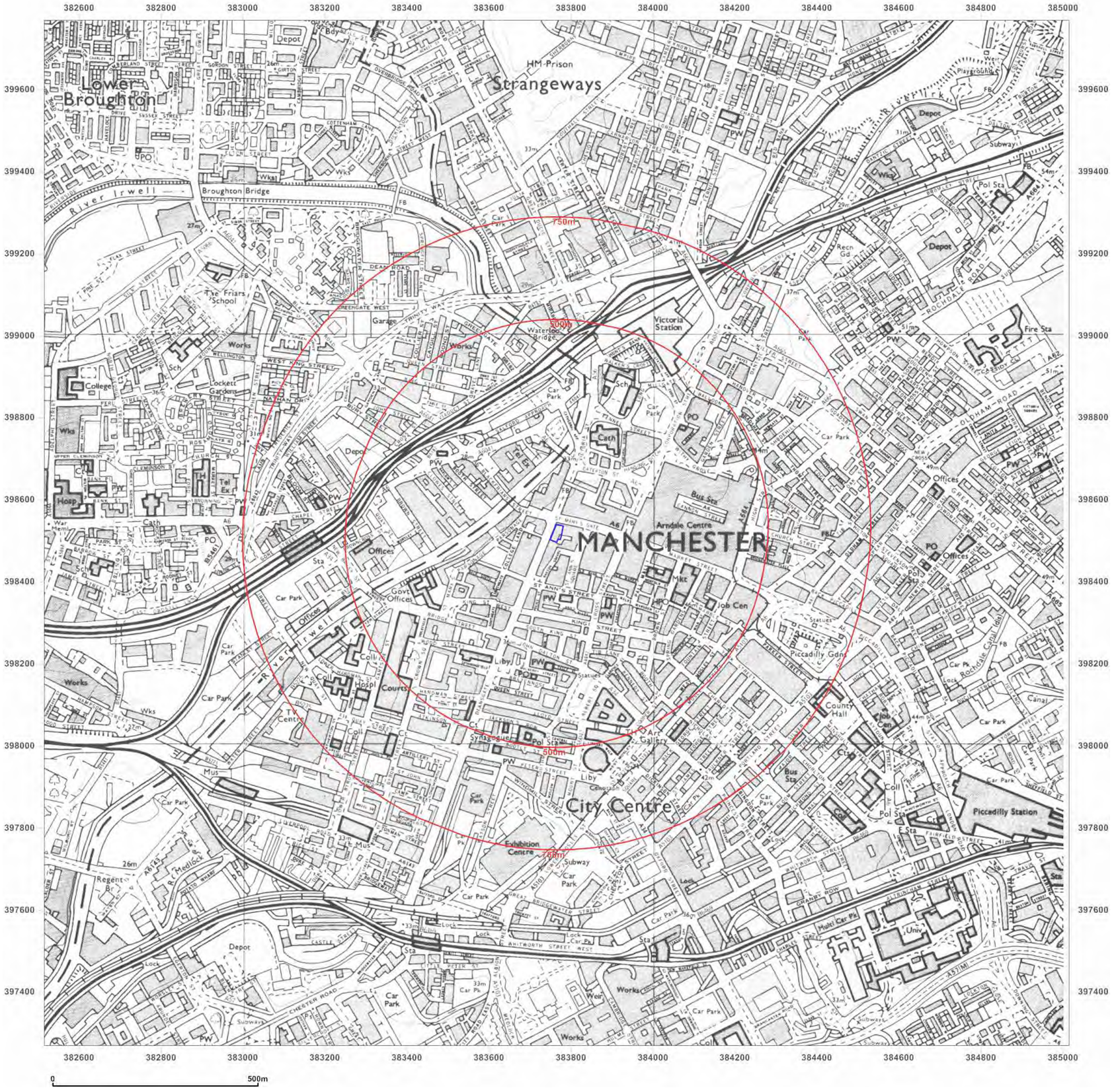
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1994**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1986
Revised 1994
Edition N/A
Copyright 1994
Levelled 1981

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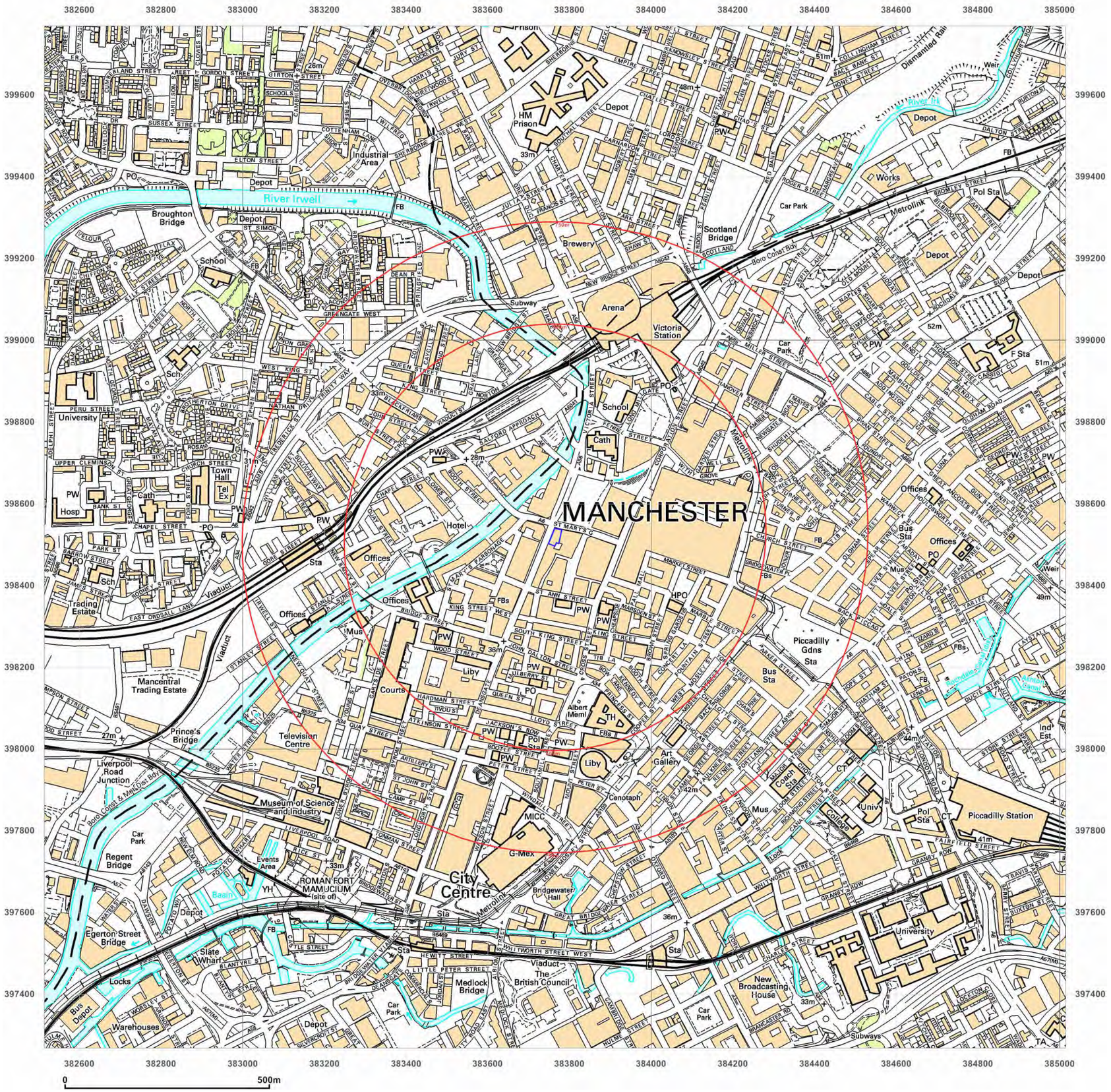
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: 1:10,000 Raster

Map date: **2002**

Scale: 1:10,000

Printed at: 1:10,000

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2002

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Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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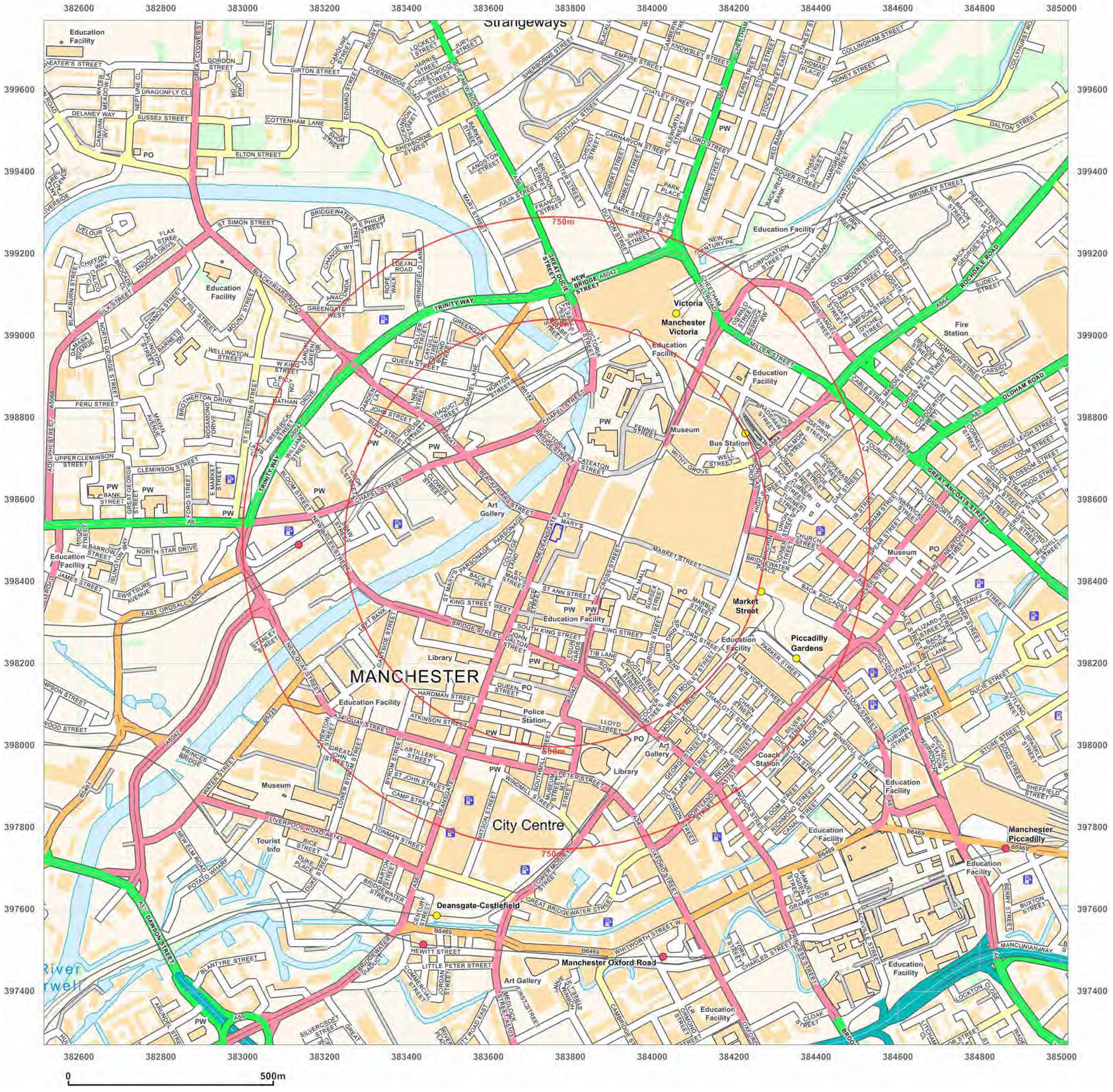
2010

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Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **2014**

Scale: 1:10,000

Printed at: 1:10,000

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2014

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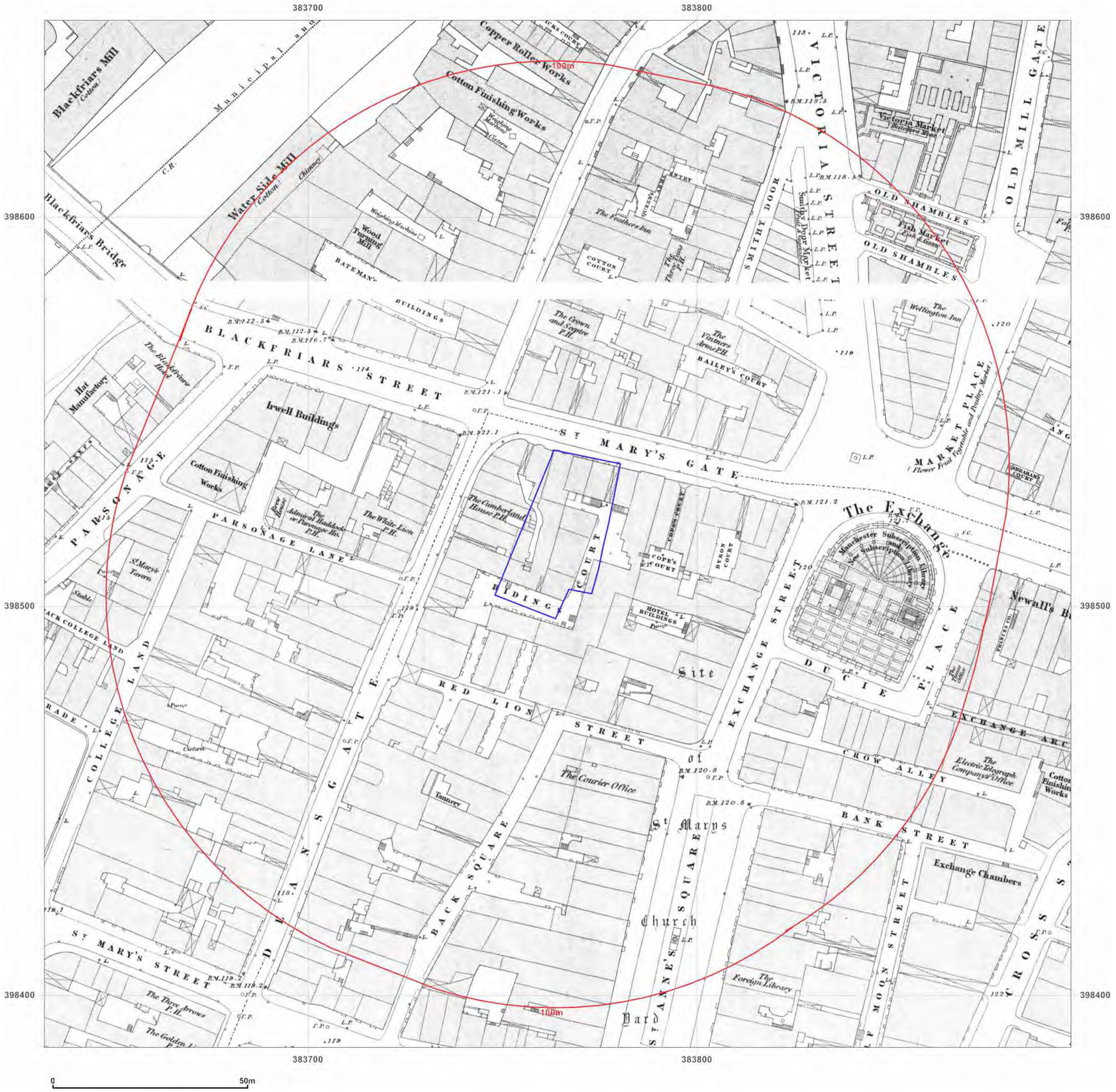
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: 1056 Scale Town Plan

Map date: **1850-1851**

Scale: 1:1,056

Printed at: 1:1,056

N
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Surveyed 1849
Revised N/A
Edition 1850
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Levelled N/A

Surveyed 1849
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: County Series Town Plan

Map date: **1891**

Scale: 1:500

Printed at: 1:1,000

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

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

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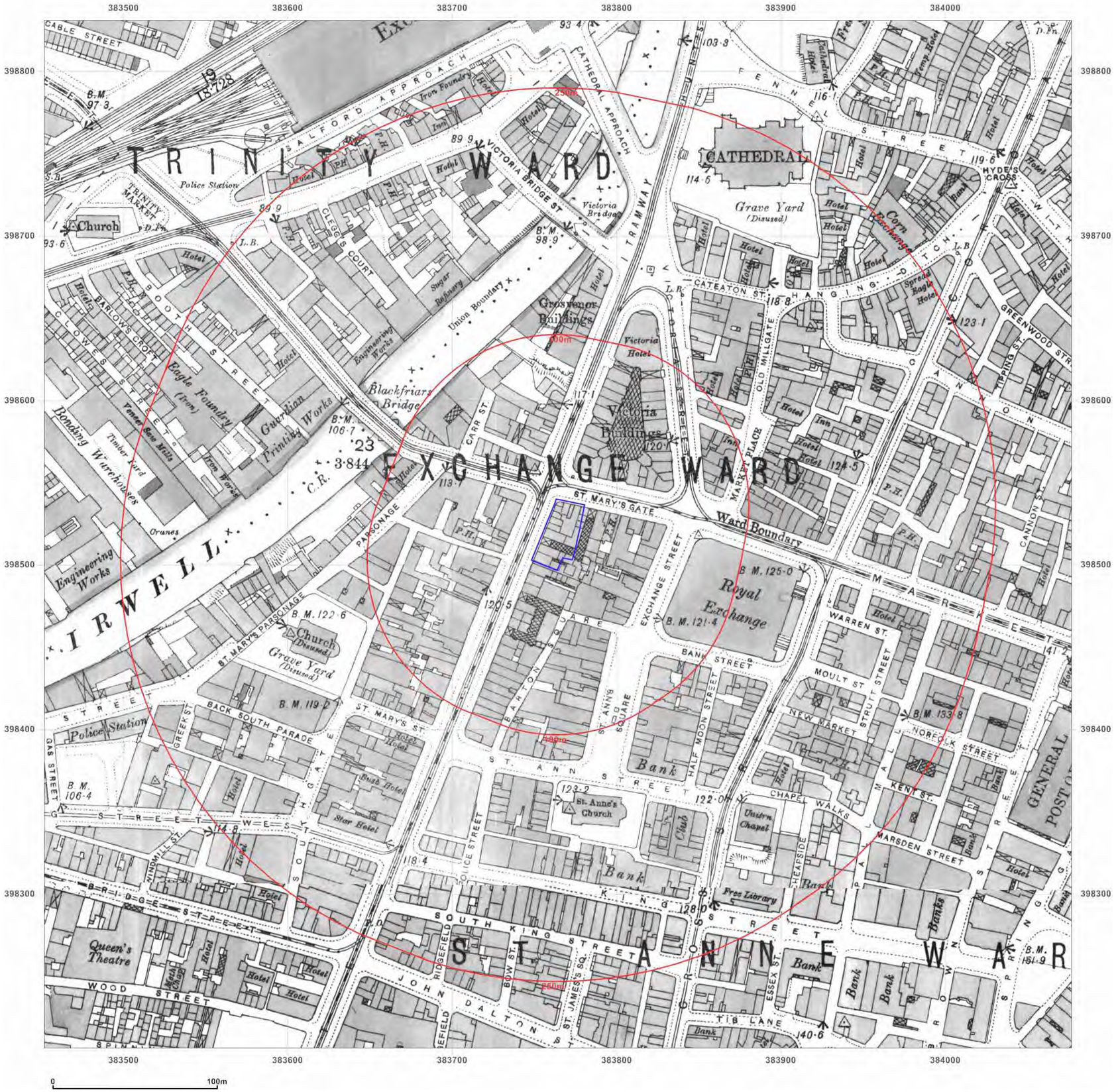
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Grid Ref: 383764, 398518

Map Name: County Series

Map date: **1892-1893**

Scale: 1:2,500

Printed at: 1:2,500

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

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

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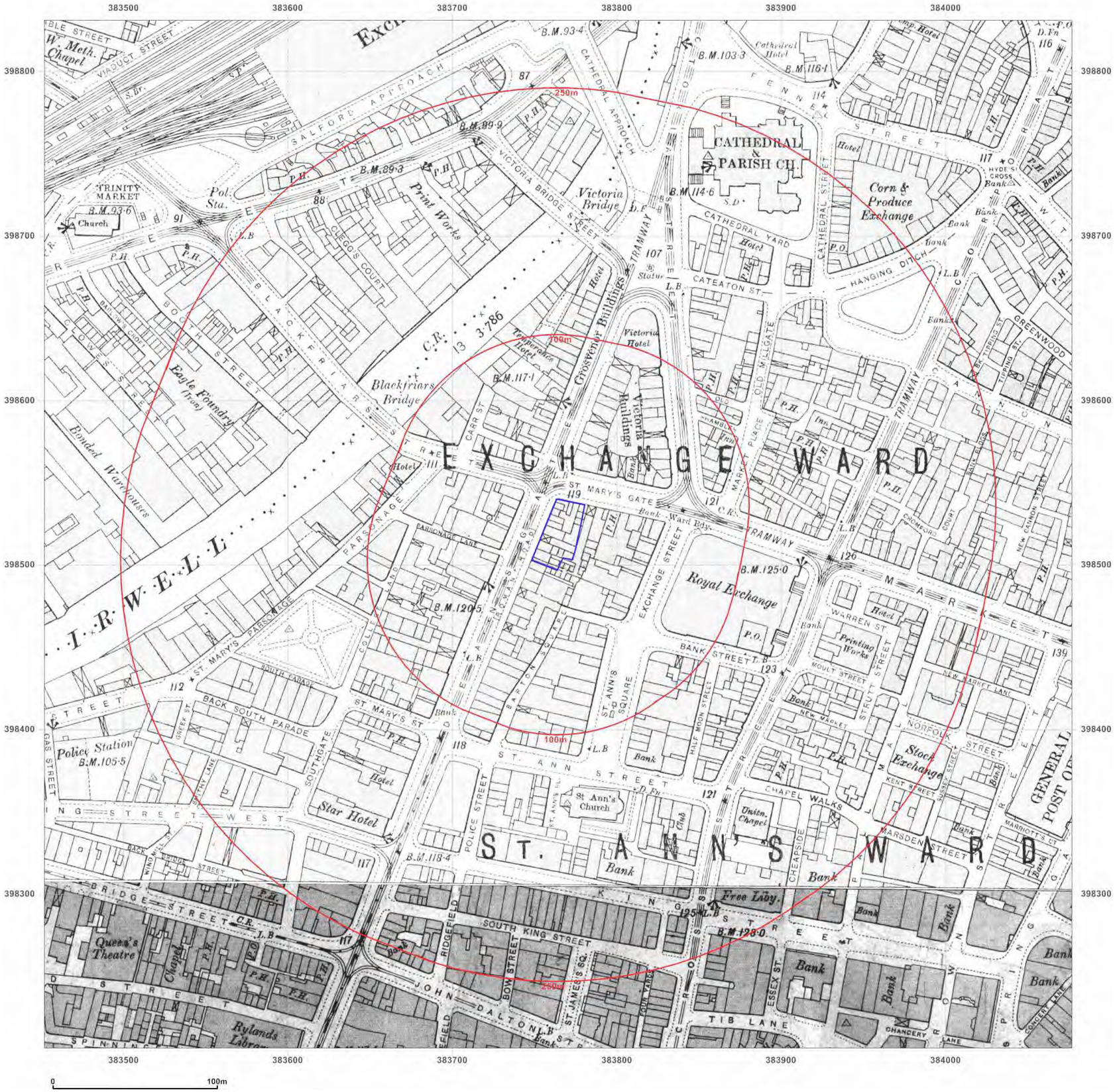
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Grid Ref: 383764, 398518

Map Name: County Series

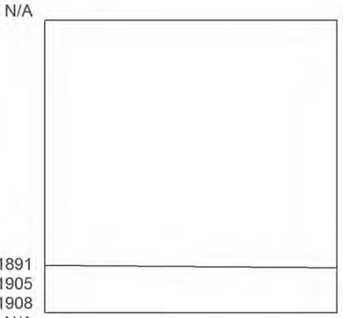
Map date: **1908**

Scale: 1:2,500

Printed at: 1:2,500

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Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: County Series

Map date: **1922**

Scale: 1:2,500

Printed at: 1:2,500

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

Surveyed 1922
Revised 1916
Edition 1922
Copyright N/A
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Surveyed 1873
Revised 1933
Edition N/A
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Surveyed 1873
Revised 1932
Edition N/A
Copyright N/A
Levelled 1927

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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: County Series

Map date: **1932-1933**

Scale: 1:2,500

Printed at: 1:2,500

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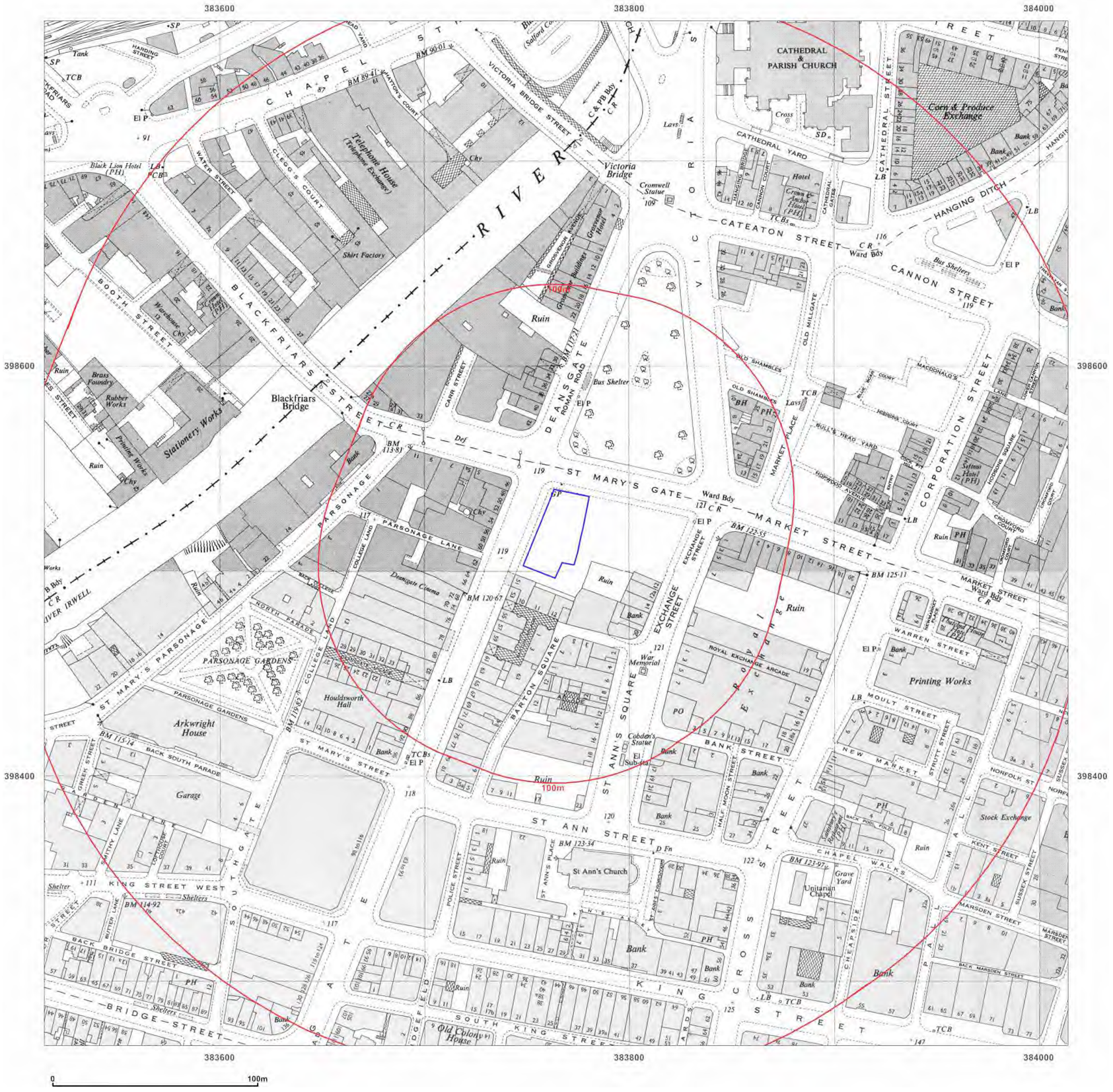
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1948-1949**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1949
Revised 1949
Edition N/A
Copyright 1949
Levelled 1927

Surveyed 1948
Revised 1948
Edition N/A
Copyright 1948
Levelled 1929

Surveyed 1948
Revised 1948
Edition N/A
Copyright 1948
Levelled 1927

Surveyed 1948
Revised 1948
Edition N/A
Copyright 1948
Levelled 1929

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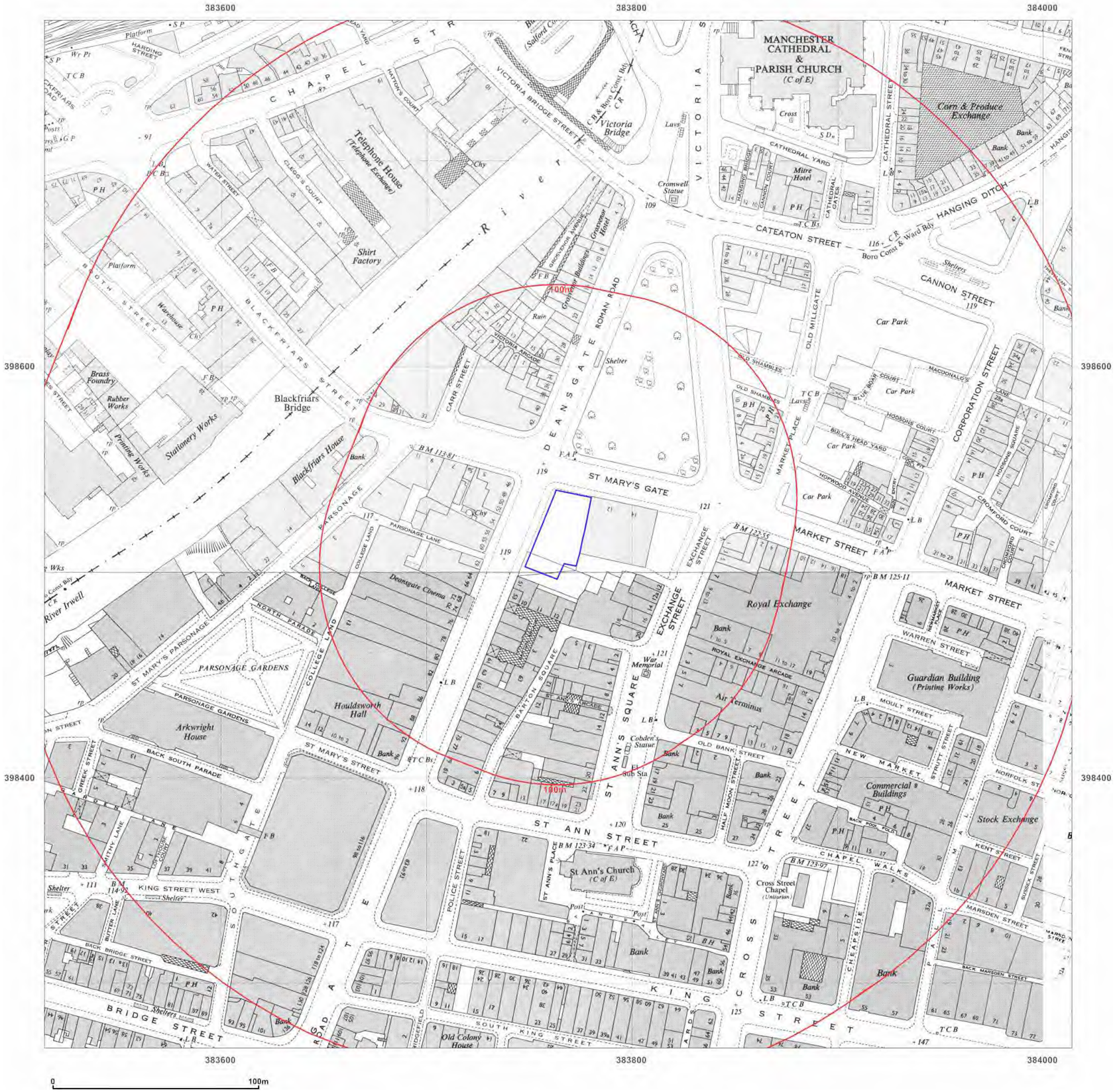
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

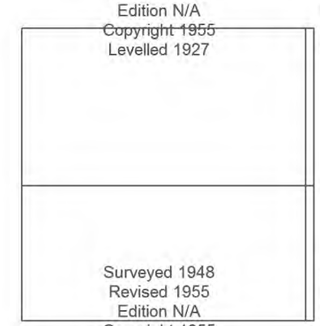
Map Name: National Grid

Map date: **1951-1955**

Scale: 1:1,250

Printed at: 1:2,000

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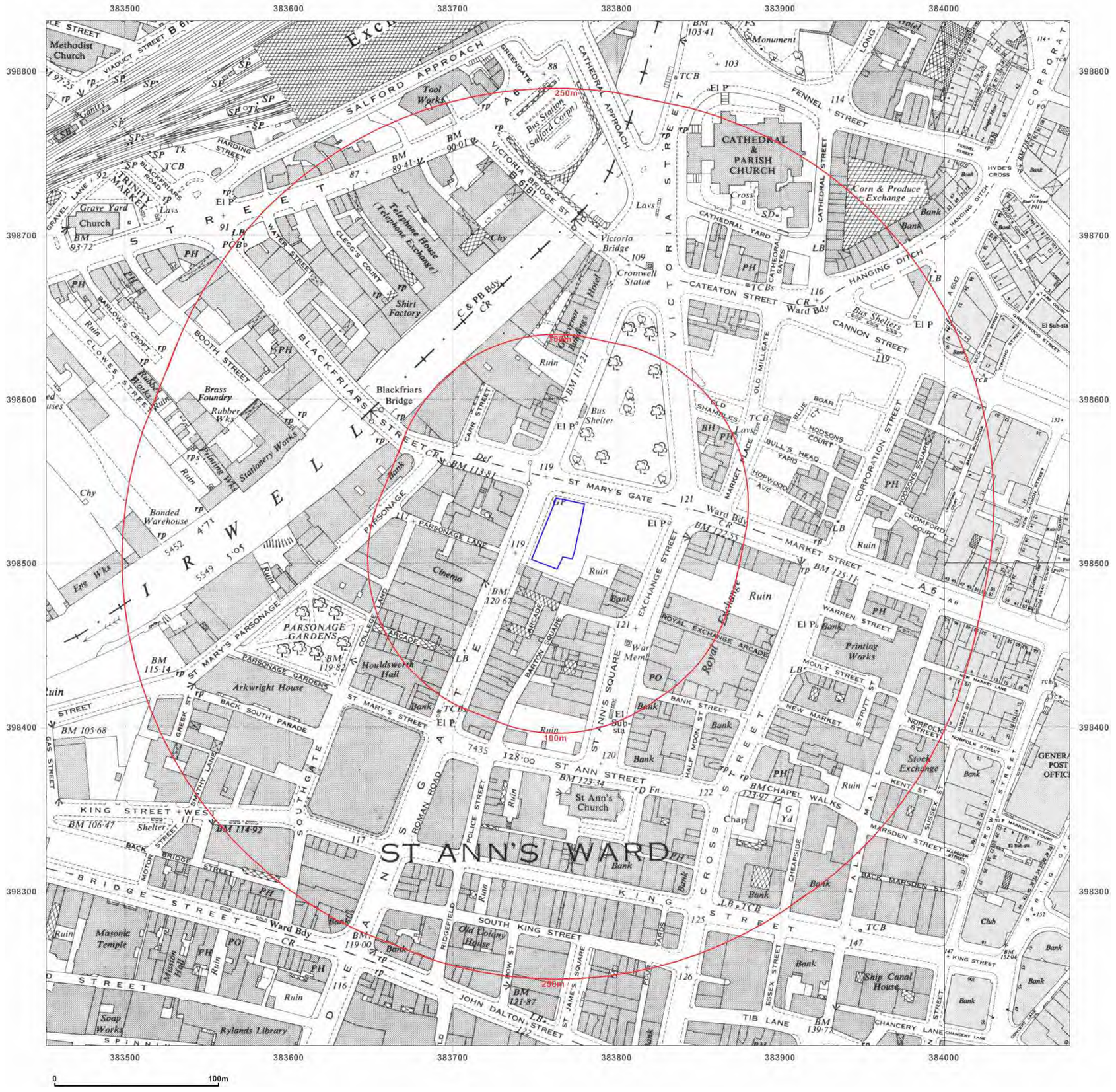


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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1953-1957**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1949
Revised 1949
Edition N/A
Copyright 1958
Levelled 1927

Surveyed 1953
Revised 1953
Edition N/A
Copyright 1954
Levelled 1929

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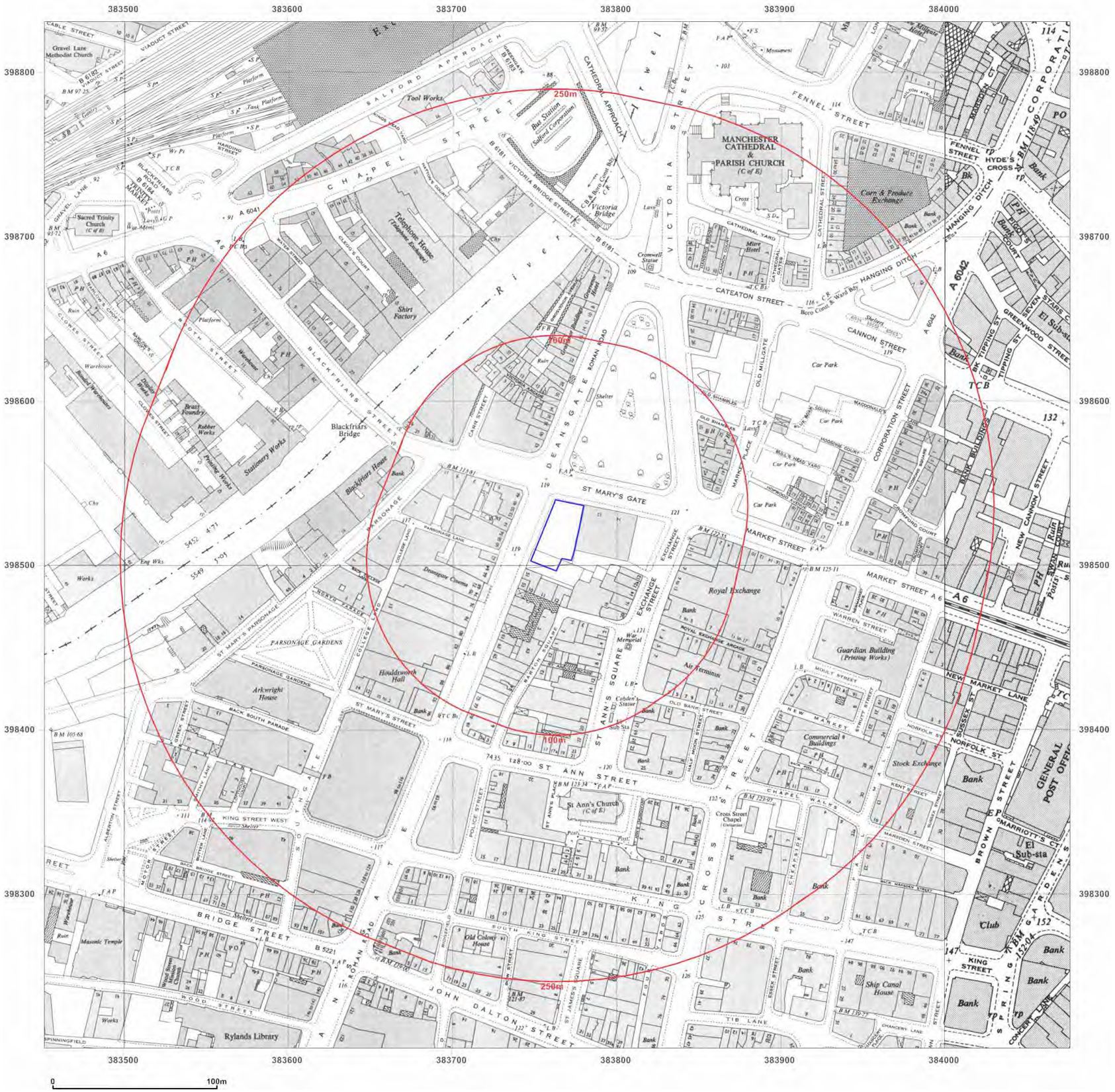
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1953-1958**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed N/A
Revised 1957
Edition N/A
Copyright 1958
Levelled 1927

Surveyed 1948
Revised 1948
Edition N/A
Copyright 1954
Levelled 1929

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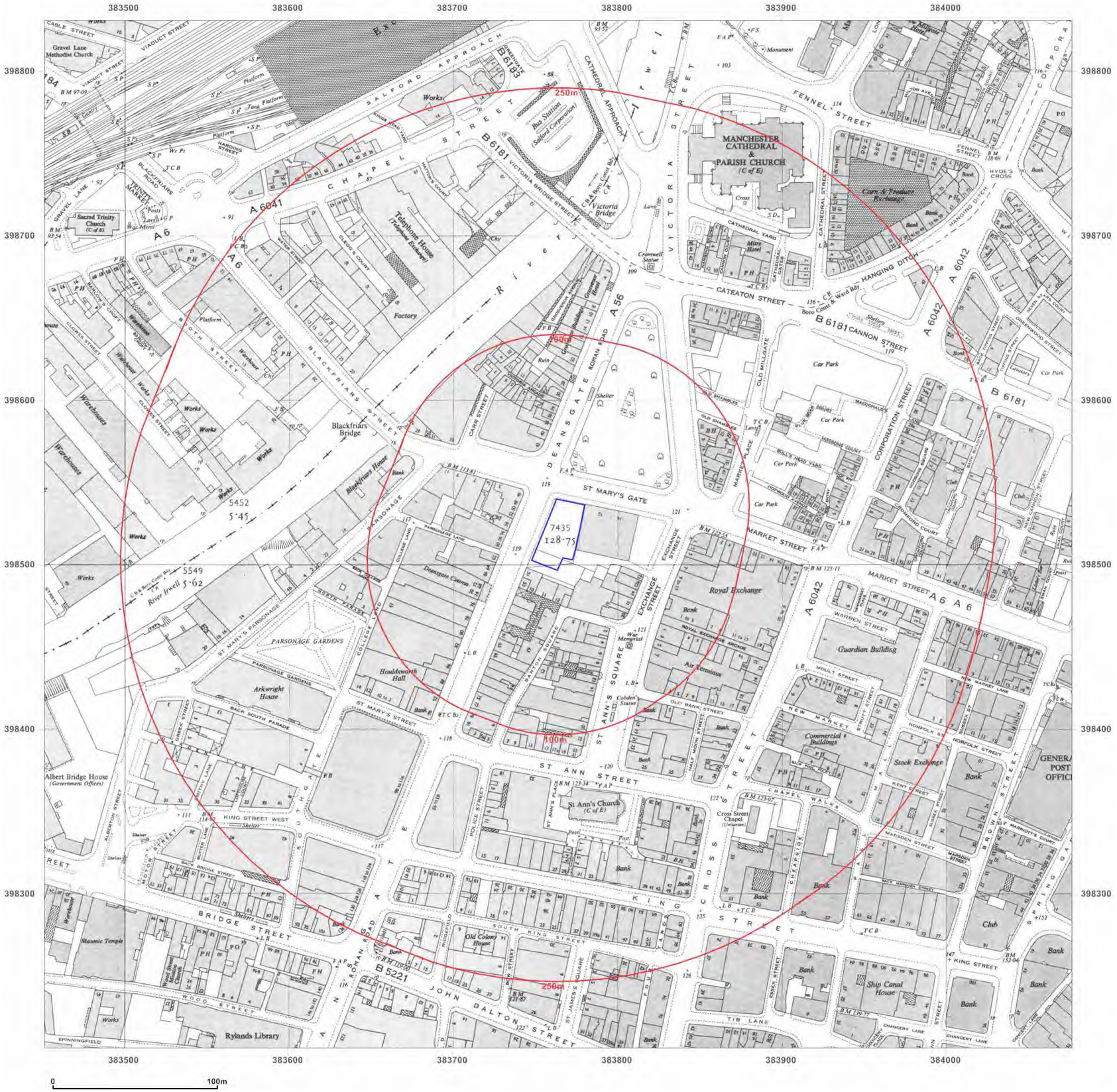
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1963-1965**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed N/A
Revised 1962
Edition N/A
Copyright 1963
Levelled 1958

Surveyed N/A
Revised 1964
Edition N/A
Copyright 1965
Levelled 1959

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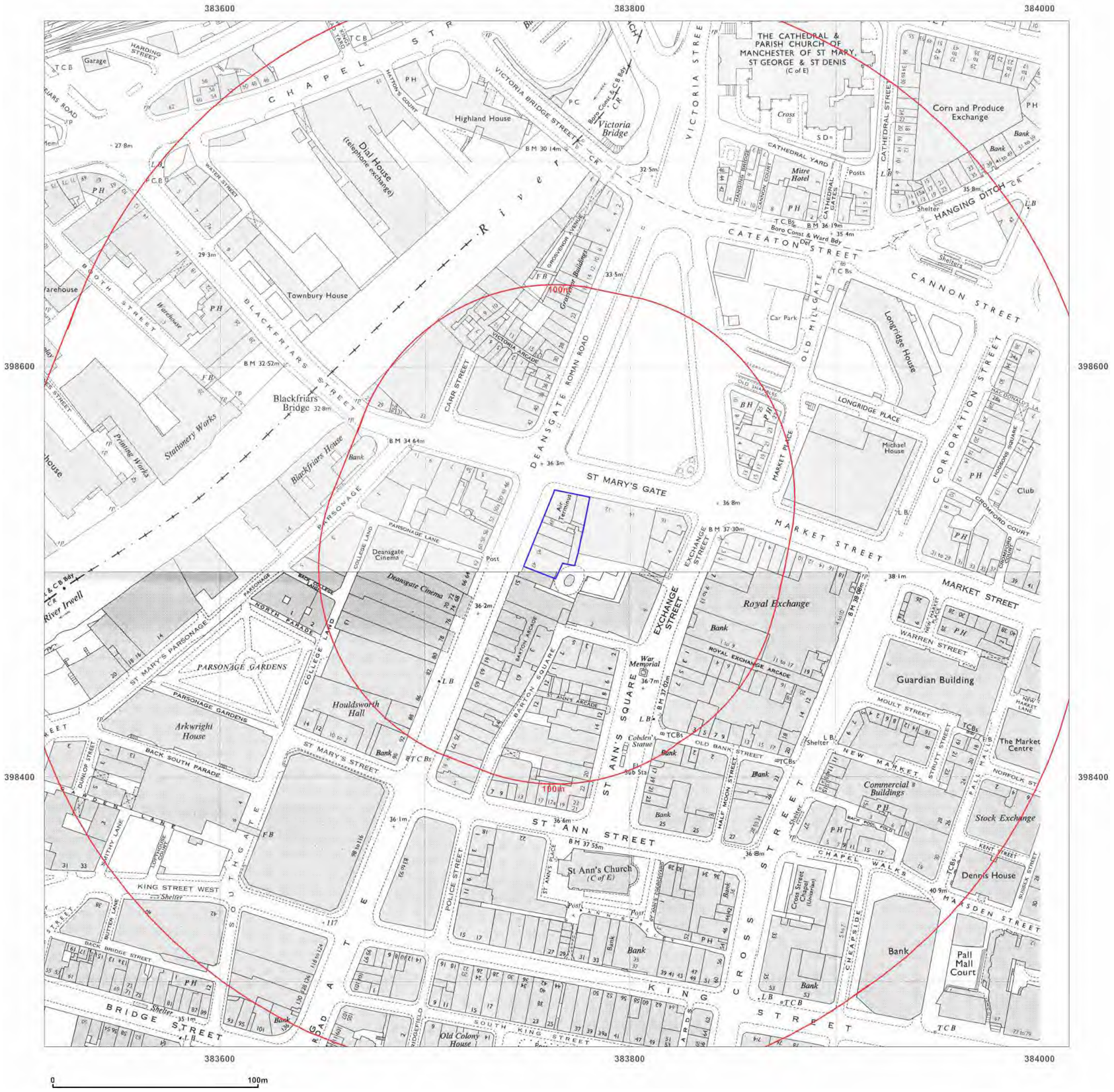
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1970**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1949
Revised 1970
Edition N/A
~~Copyright 1970~~
Levelled 1964

Surveyed 1948
Revised 1970
Edition N/A
Copyright 1970
Levelled 1963

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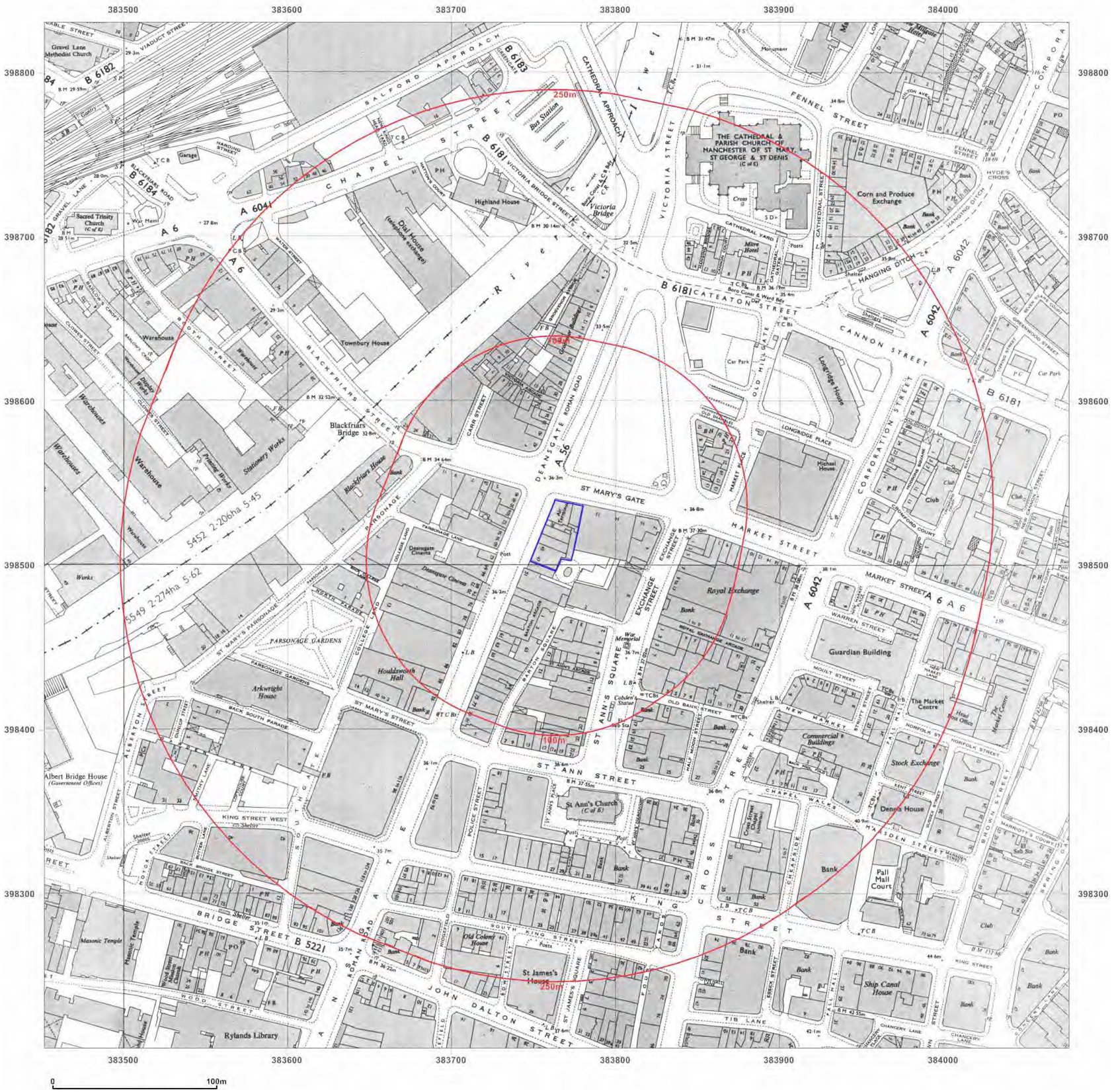
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Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1967-1970**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1949
Revised 1970
Edition N/A
Copyright 1971
Levelled 1964

Surveyed 1967
Revised 1967
Edition N/A
Copyright 1969
Levelled 1964

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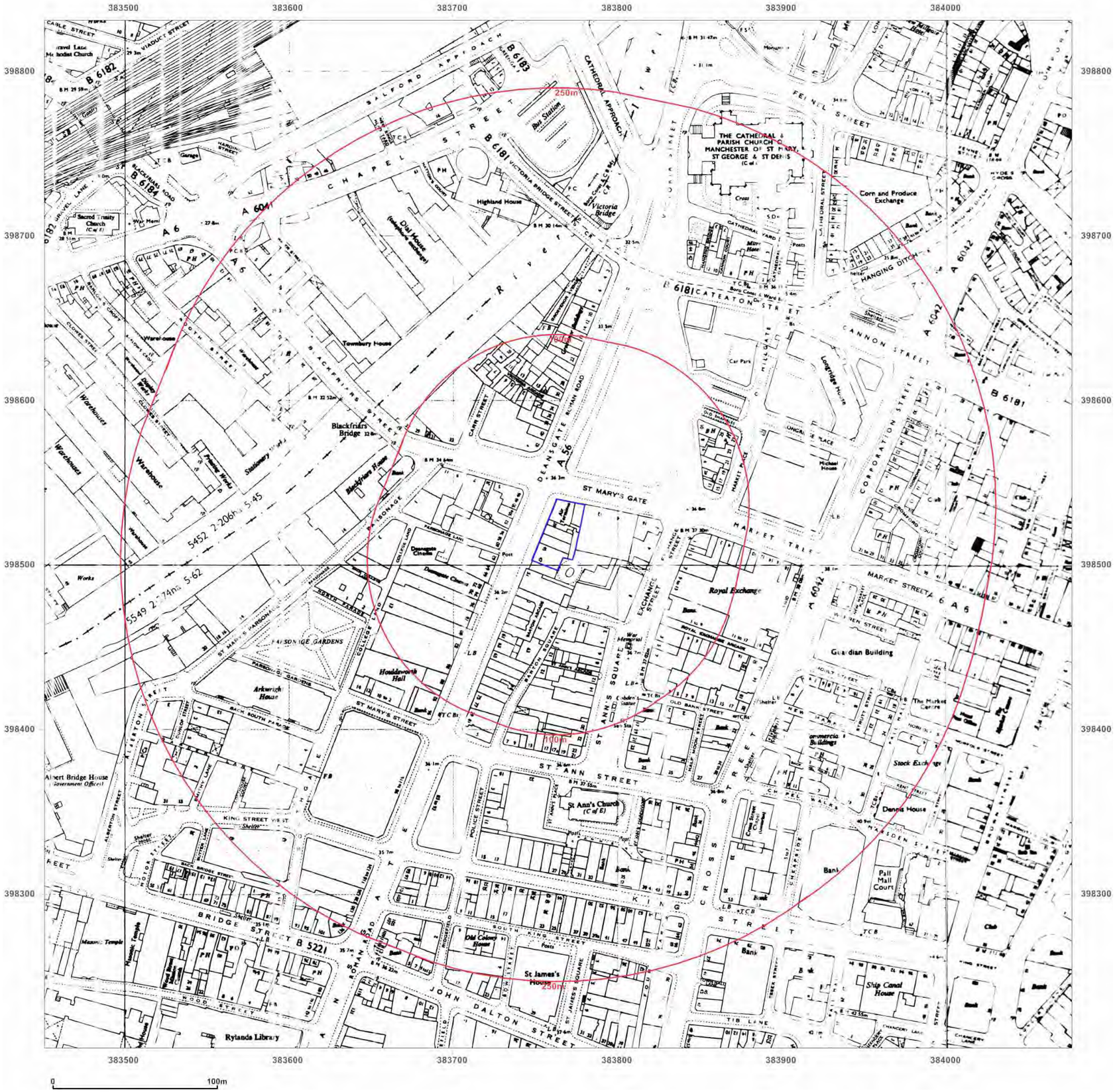
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1969-1971**

Scale: 1:2,500

Printed at: 1:2,500

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

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

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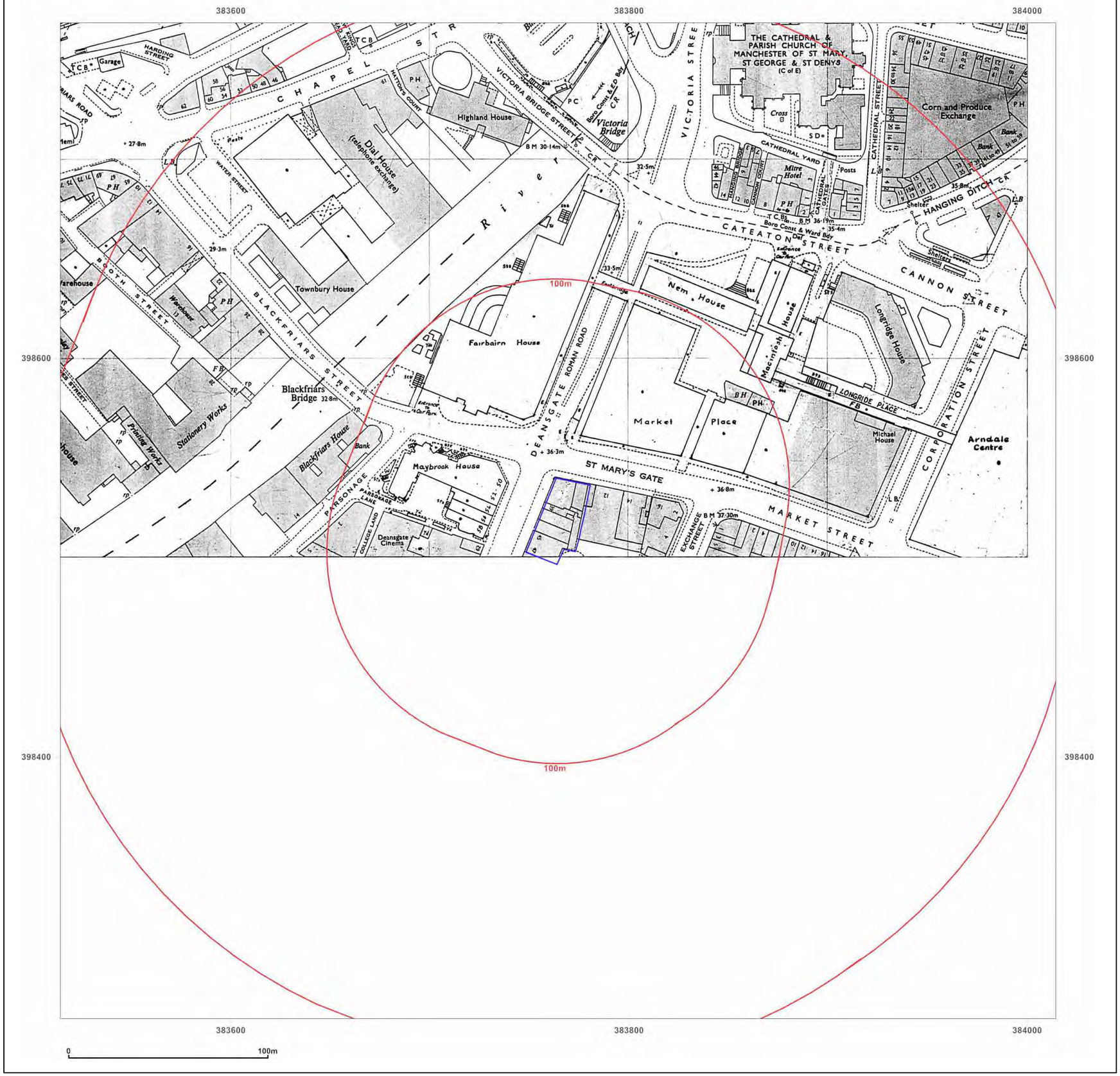
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Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1979**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1979
Levelled 1963

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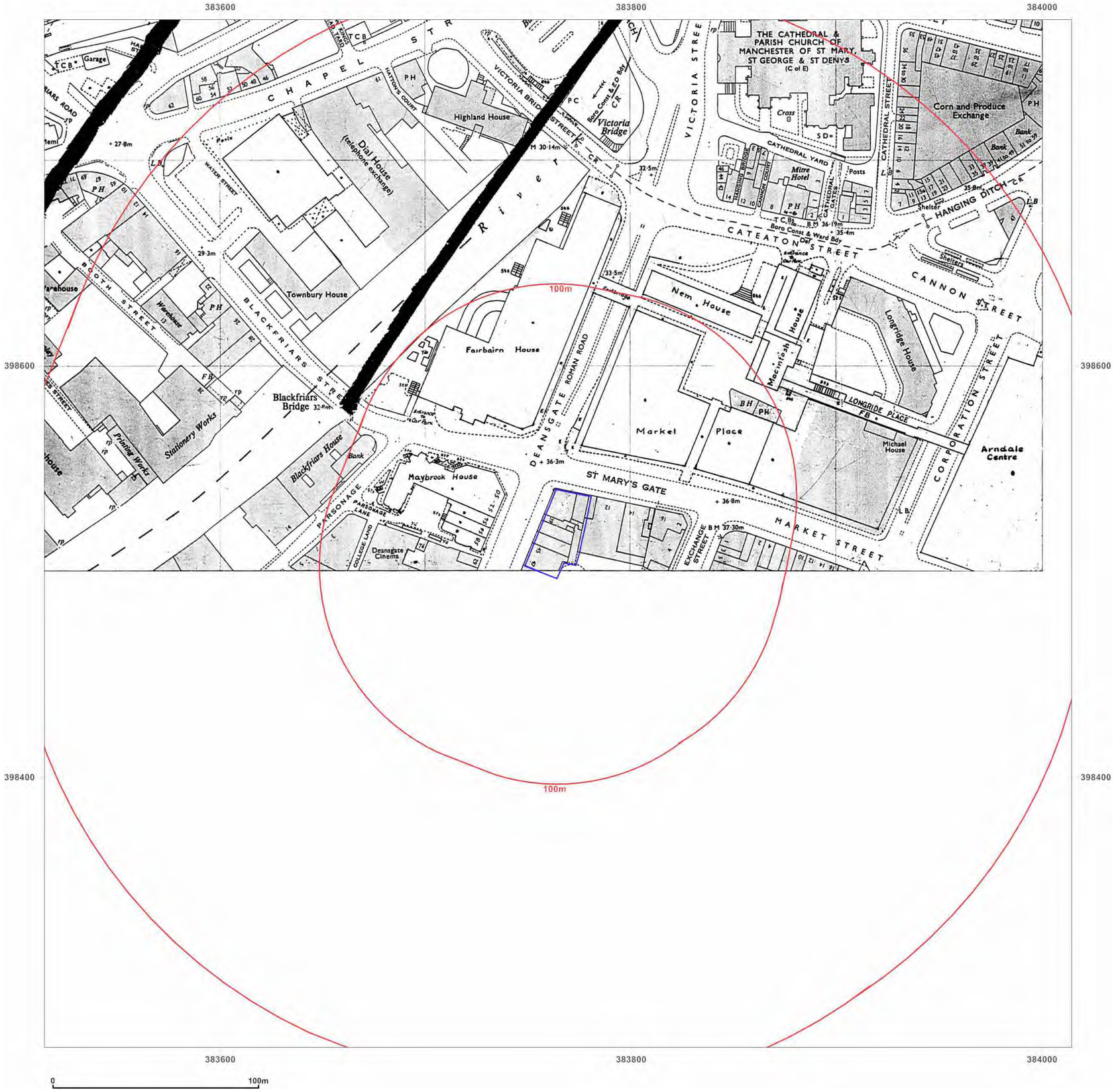
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Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1979**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1979
Levelled 1963

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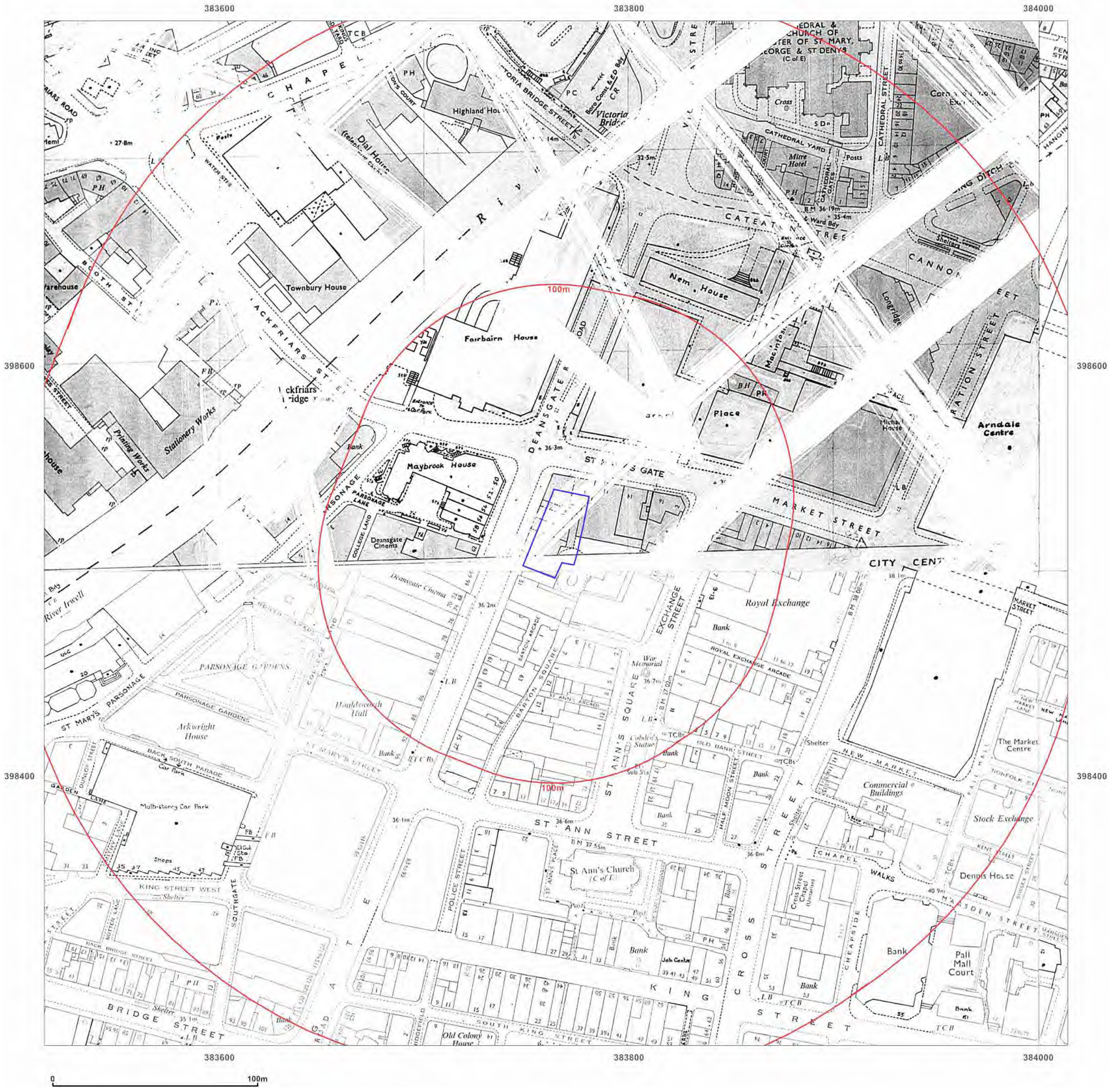
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Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1979-1980**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1979
Levelled 1963

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1980
Levelled 1964

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1980
Levelled 1964

Surveyed N/A
Revised N/A
Edition N/A
Copyright 1980
Levelled 1964

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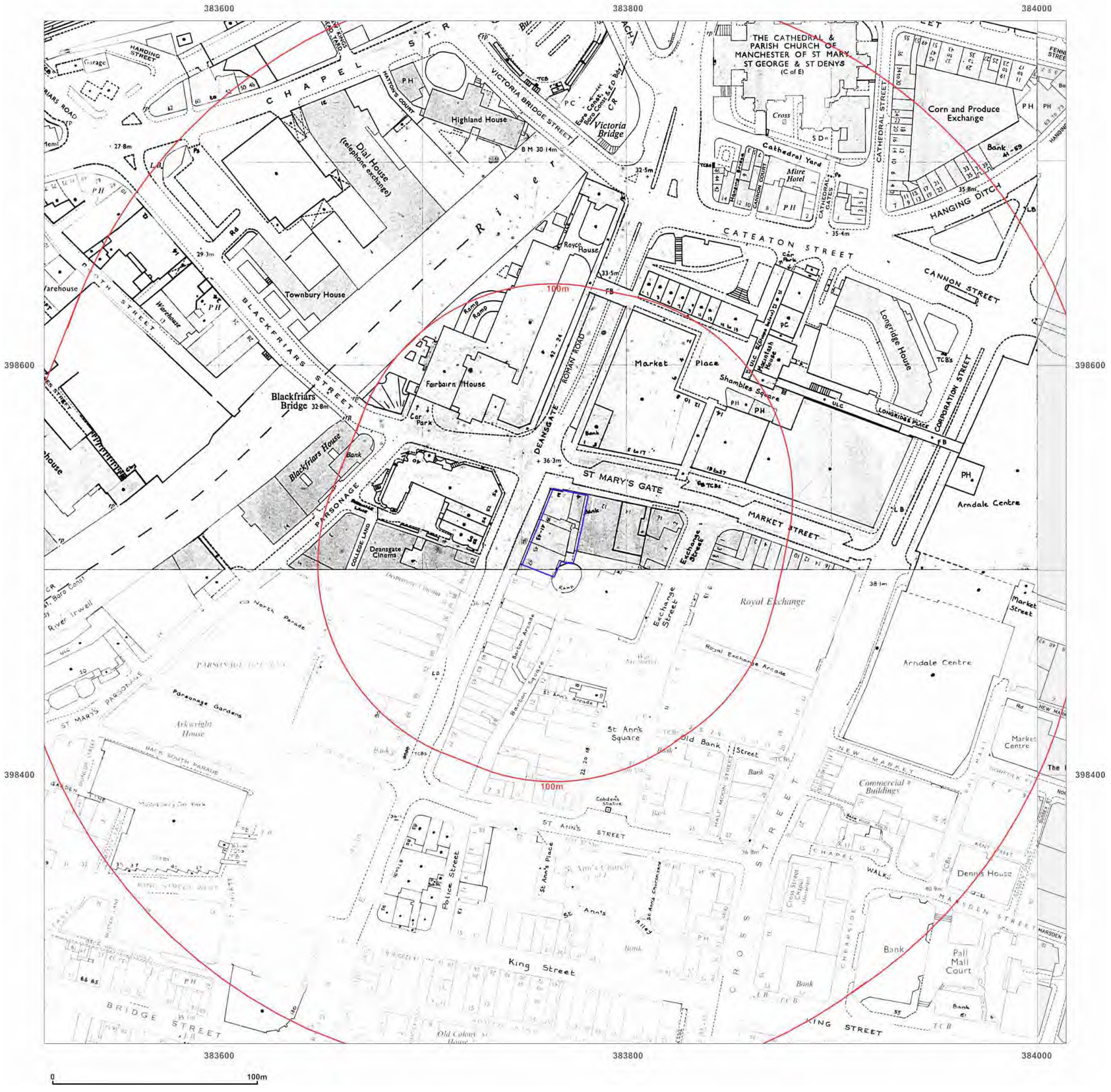
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Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1985-1986**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1985
Levelled 1964

Surveyed 1948
Revised 1985
Edition N/A
Copyright 1986
Levelled 1964

Surveyed 1964
Revised 1986
Edition N/A
Copyright 1986
Levelled 1964

Surveyed 1948
Revised 1985
Edition N/A
Copyright 1986
Levelled 1964

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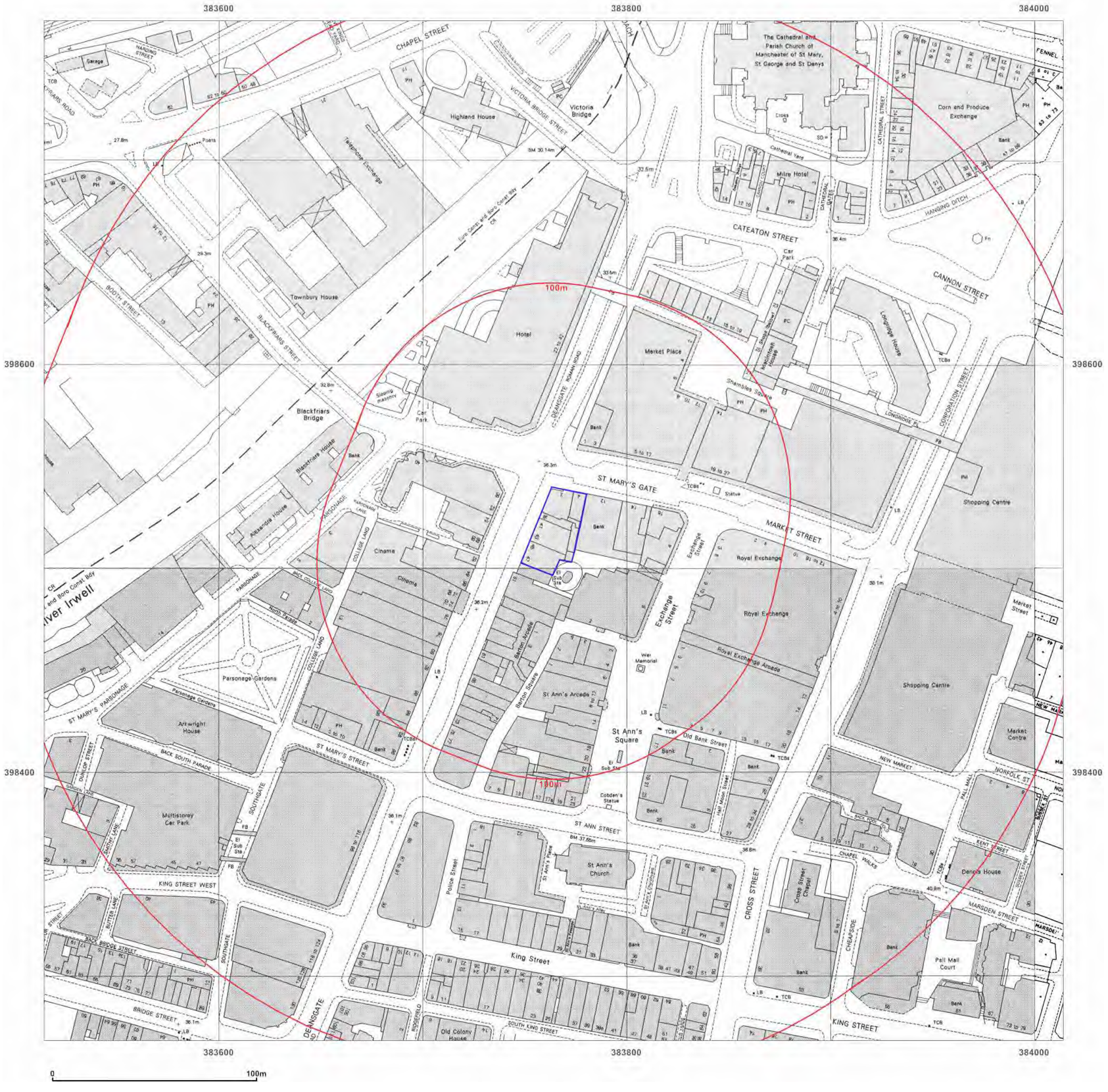
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1989-1992**

Scale: 1:1,250

Printed at: 1:2,000

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Edition N/A
Copyright 1989
Levelled N/A

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

Surveyed 1948
Revised 1989
Edition N/A
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Surveyed 1992
Revised 1992
Edition N/A
Copyright 1992
Levelled N/A

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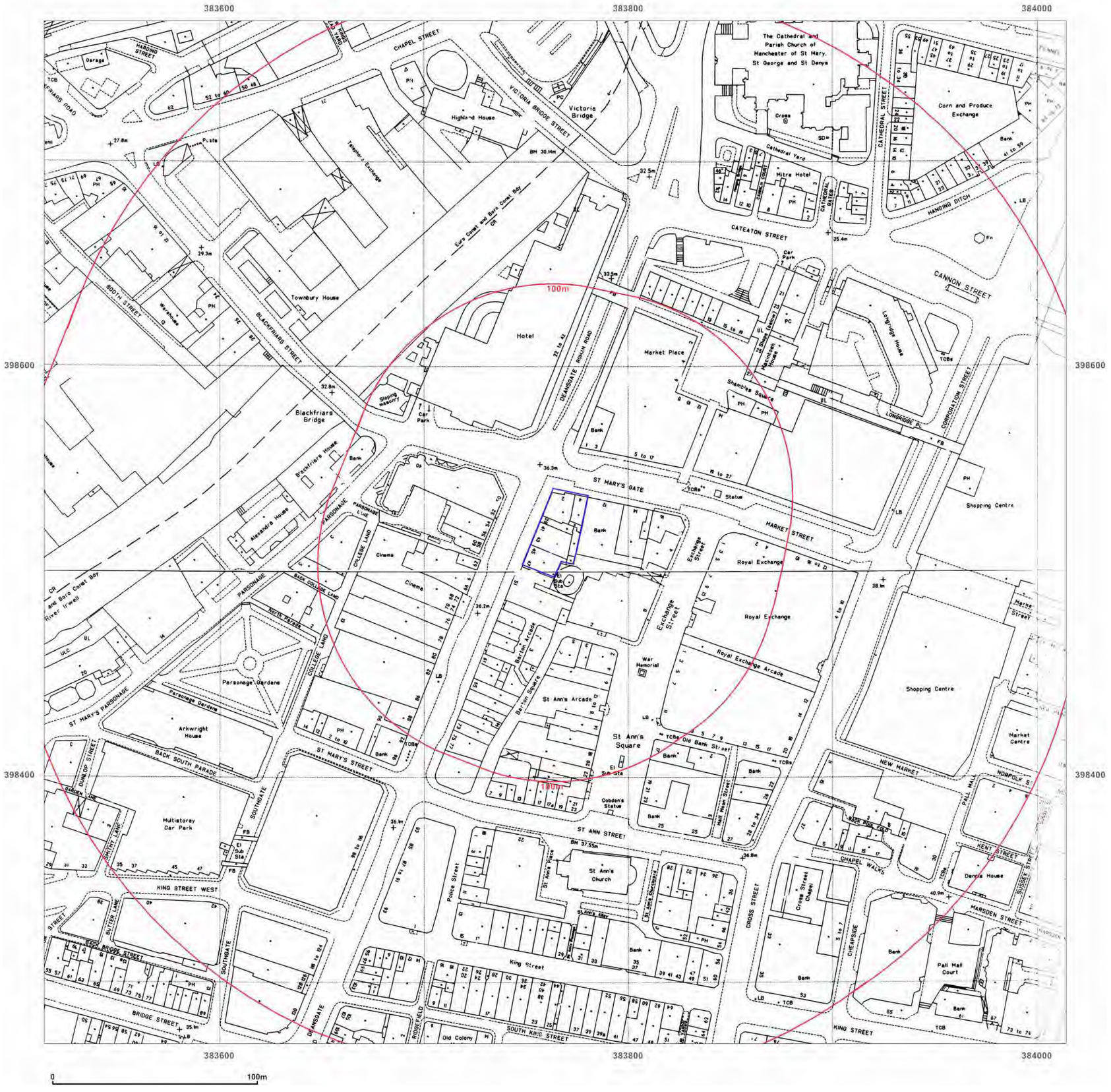
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1992-1995**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1992 Revised 1992 Edition N/A Copyright 1992 Levelled N/A	Surveyed 1992 Revised 1992 Edition N/A Copyright 1992 Levelled N/A
Surveyed 1992 Revised 1992 Edition N/A Copyright 1992 Levelled N/A	Surveyed N/A Revised 1995 Edition N/A Copyright 1995 Levelled N/A

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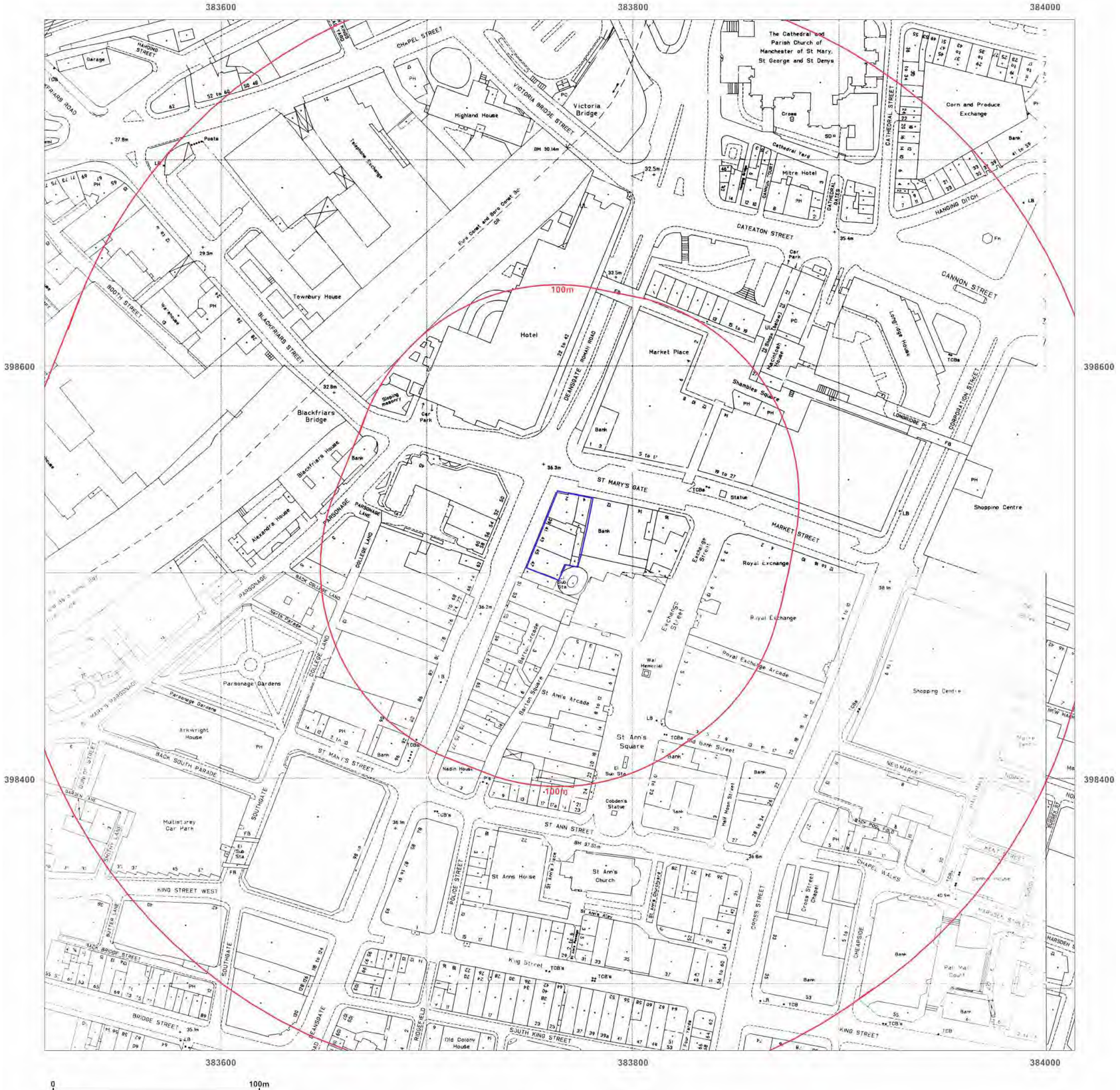
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Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

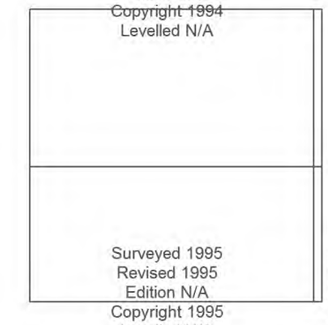
Map Name: National Grid

Map date: **1994-1995**

Scale: 1:1,250

Printed at: 1:2,000

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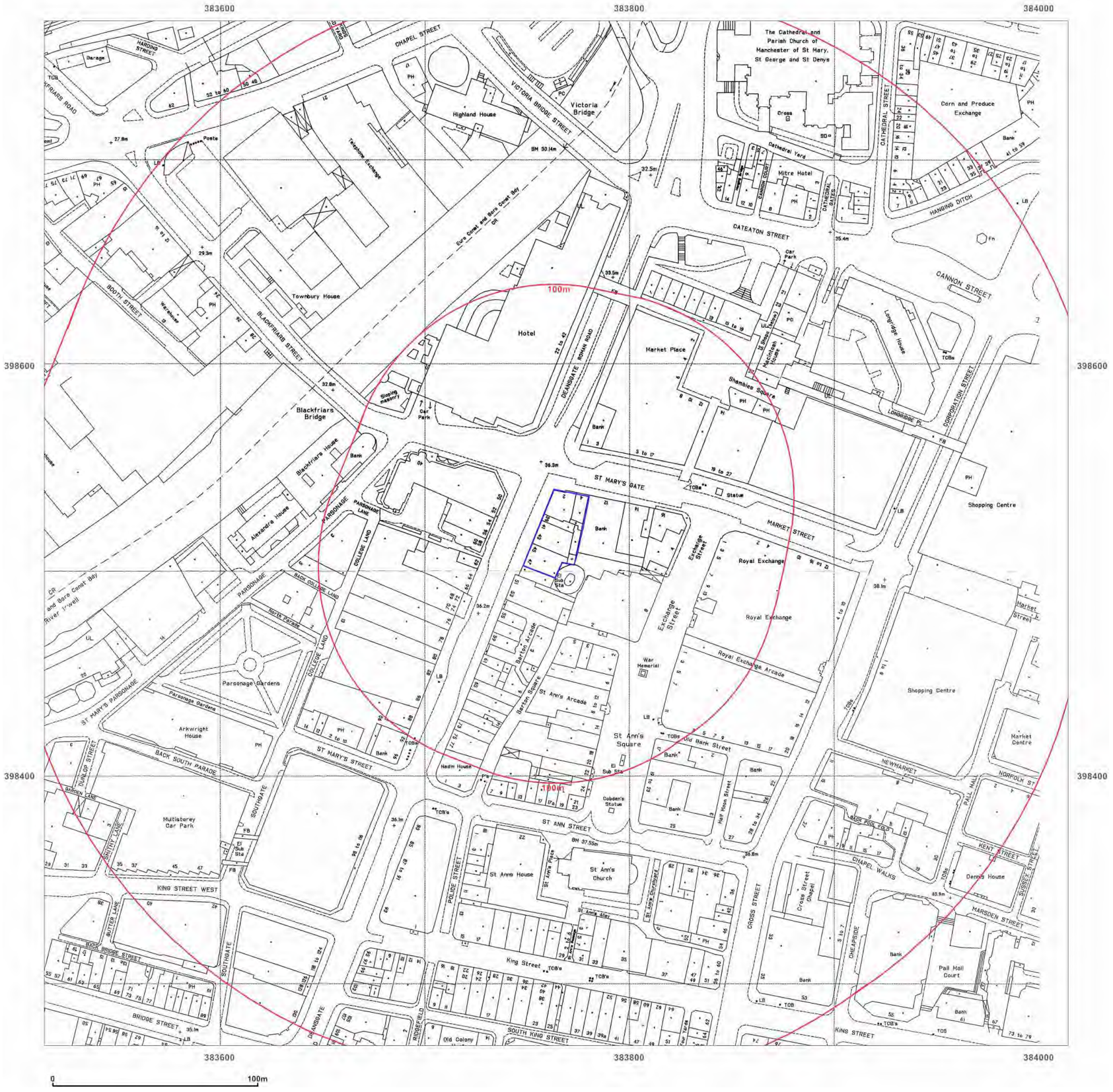
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ADVERTISING RIGHT
JUNCTION EXCHANGE STREET,
ST MARY'S GATE,
MANCHESTER, M1 1PX

Client Ref: C4293_215
Report Ref: BRO-6220623
Grid Ref: 383764, 398518

Map Name: National Grid

Map date: **1994-1995**

Scale: 1:1,250

Printed at: 1:2,000

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Production date: 05 August 2019

Map legend available at:
www.groundsure.com/sites/default/files/groundsure_legend.pdf

APPENDIX C

BGS Boreholes

APPENDIX D

Mining Search Report

The Coal Authority

CON29M
coal mining report

ADVERTISING RIGHT JUNCTION EXCHANGE STREET, ST MARY'S GATE, MANCHESTER, M1 1PX

Known or potential coal mining risks

Future underground coal mining Page 3

Further action

No further reports from the Coal Authority are required. Further information on any next steps can be found in our Professional opinion.

For more information on our reports please visit www.groundstability.com

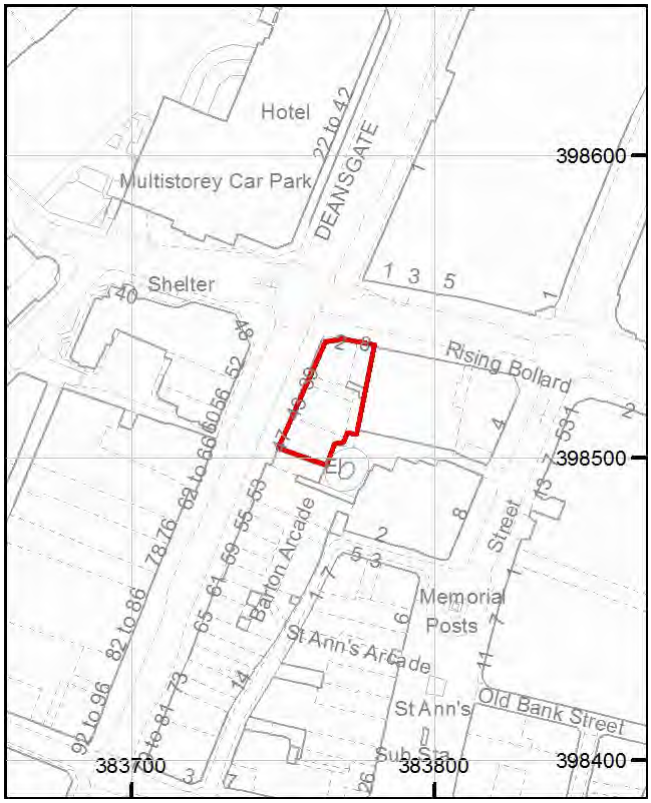
Professional opinion

According to the official mining information records held by the Coal Authority at the time of this search, evidence of, or the potential for, coal mining related features have been identified. It is unlikely that these features will impact on the stability of the enquiry boundary.

Enquiry boundary

Key

Approximate position of enquiry boundary shown



We can confirm that the location is **on the coalfield**

Map data

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This report is prepared in accordance with the latest Law Society's Guidance Notes 2018, the User Guide 2018 and the Coal Authority's Terms and Conditions applicable at the time the report was produced.

Accessibility

If you would like this information in an alternative format, please contact our communications team on 0345 762 6848 or email communications@coal.gov.uk.

Detailed findings

Information provided by the Coal Authority in this report is compiled in response to the Law Society's CON29M Coal Mining enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL.

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1 Past underground coal mining

The property is not within a surface area that could be affected by any past recorded underground coal mining.

2 Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3 Future underground coal mining

The property is not in an area where the Coal Authority has received an application for, and is currently considering whether to grant a licence to remove or work coal by underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

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

4 Mine entries

There are no recorded coal mine entries known to the Coal Authority within, or within 20 metres, of the boundary of the property.

5 Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6 Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7 Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8 Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9 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.

10 Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11 Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Coal Authority, under its Emergency Surface Hazard Call Out procedures.

12 Withdrawal of support

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.

13 Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14 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.

Statutory cover



Coal mining subsidence

In the unlikely event of any coal mining related subsidence damage, the Coal Authority or the mine operator has a duty to take remedial action in respect of subsidence caused by the withdrawal of support from land or property in connection with lawful coal mining operations.

When the works are the responsibility of the Coal Authority, our dedicated public safety and subsidence team will manage the claim. The house or land owner ("the owner") is covered for these works under the terms of the Coal Mining Subsidence Act 1991 (as amended by the Coal Industry Act 1994). Please note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

If you believe your land or property is suffering from coal mining subsidence damage and you need more information on what to do next, please use the following link to our website which sets out what your rights are and what you need to consider before making a claim.
www.gov.uk/government/publications/coal-mining-subsidence-damage-notice-form



Coal mining hazards

Our public safety and subsidence team provide a 24 hour a day, 7 days a week hazard reporting service, to help protect the public from hazards caused by past coal workings, such as a mine shaft or shallow working collapse. To report any hazards please call 01623 646 333. Further information can be found on our website: www.gov.uk/coalauthority.

Glossary

Key terms

adit - horizontal or sloped entrance to a mine

coal mining subsidence - ground movement caused by the removal of coal by underground mining

Coal Mining Subsidence Act 1991 - the Act setting out the duties of the Coal Authority to repair damage caused by coal mining subsidence

coal mining subsidence damage - damage to land, buildings or structures caused by the removal of coal by underground mining

coal seams - bed of coal of varying thickness

future opencast coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal from the surface

future underground coal mining - a licence granted, or licence application received, by the Coal Authority to excavate coal underground. Although it is unlikely, remaining coal reserves could create a possibility for future mining, which would be licensed by the Coal Authority

mine entries - collective name for shafts and adits

payments to owners of former copyhold land - historically, copyhold land gave rights to coal to the copyholder. Legislation was set up to allow others to work this coal, but they had to issue a notice and pay compensation if a copyholder came forward

shaft - vertical entry into a mine

site investigation - investigations of coal mining risks carried out with the Coal Authority's permission

stop notice - a delay to repairs because further coal mining subsidence damage may occur and it would be unwise to carry out permanent repairs

subsidence claim - a formal notice of subsidence damage to the Coal Authority since it was established on 31 October 1994

withdrawal of support - a historic notice informing landowners that the coal beneath their property was going to be worked

working facilities orders - a court order which gave permission, restricted or prevented coal mine workings

APPENDIX E

Environmental Database Report



Brownfield Solutions ltd

William Smith House, 173-183, WITTON STREET,
NORTHWICH, CW9 5LP

Groundsure Reference:	BRO-6220622
Your Reference:	C4293_215
Report Date	5 Aug 2019
Report Delivery Method:	Email - pdf

Enviro Insight

Address: ADVERTISING RIGHT JUNCTION EXCHANGE STREET, ST MARY'S GATE, MANCHESTER, M1 1PX

Dear Sir/ Madam,

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

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159 000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director
Groundsure Limited

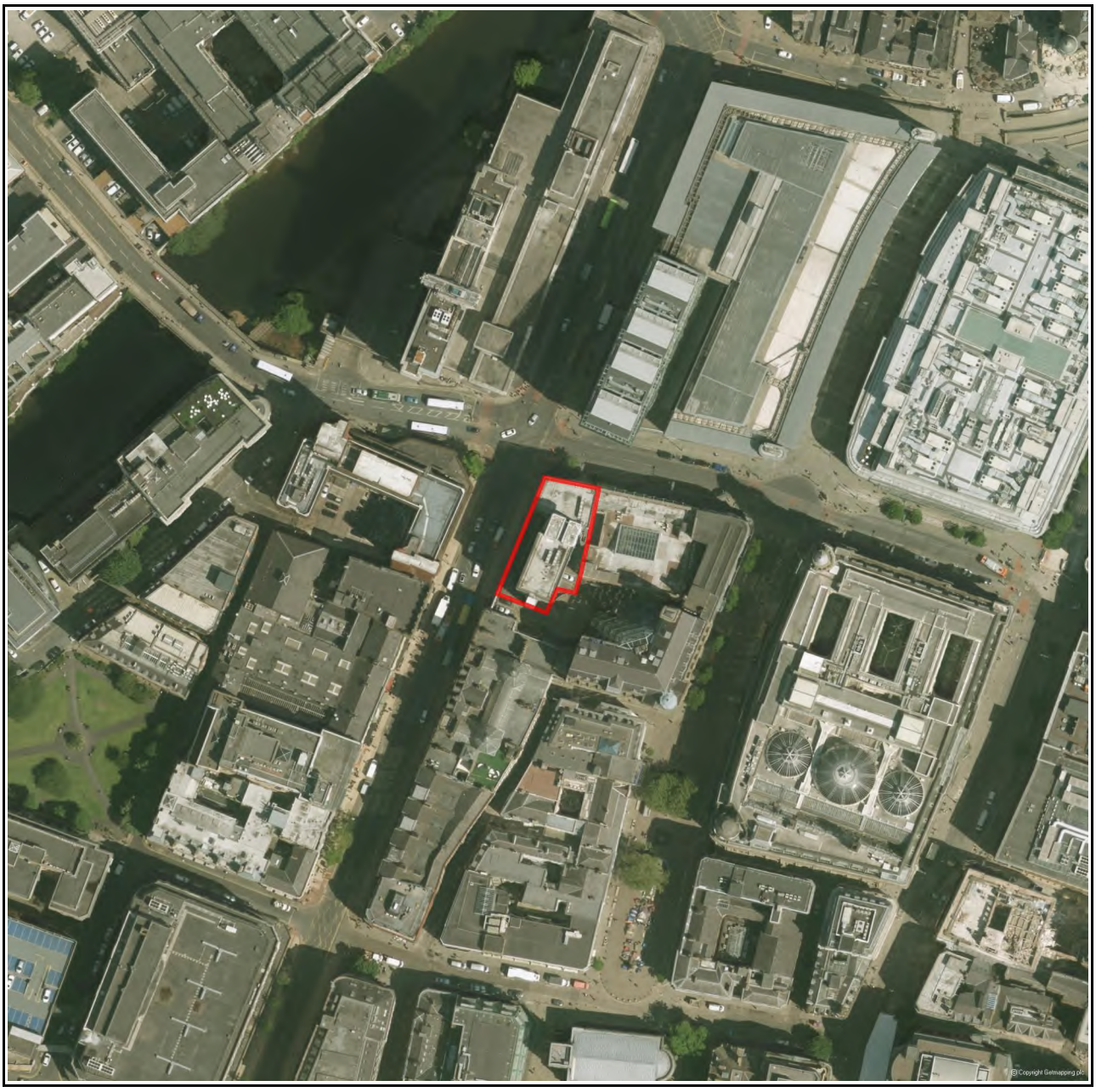
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Groundsure Enviroinsight

Enviro Insight

Address:	**ADVERTISING RIGHT JUNCTION EXCHANGE STREET, ST MARY'S GATE, MANCHESTER, M1 1PX**
Date:	**5 Aug 2019**
Reference:	**BRO-6220622**
Client:	**Brownfield Solutions ltd**

NW N NE

W E



SW S SE

Aerial Photograph Capture date: 11-Jun-2015
Grid Reference: 383768,398520
Site Size: 0.0820ha

Report Reference: BRO-6220622
Client Reference: C4293_215

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Overview of Findings

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

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	5	7	24	111
1.2 Additional Information – Historical Tank Database	0	5	3	40
1.3 Additional Information – Historical Energy Features Database	1	2	12	55
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	1	33
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	0	6	4

Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	1
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	0	0	5
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	13	11
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	5	1
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	1	4
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	1
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	14	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	26

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	5	24	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology	
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	Identified
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.	

Section 6: Hydrogeology and Hydrology	0-500m
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	3	1	22	16
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	2
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	9	1
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	Yes	No	Yes
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	0	16	10	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Enviroment Agency Zone 2 floodplains within 250m of the study site	Identified
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	Identified
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low
7.4 Flood Defences within 250m of the study site	None identified
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified
7.6 Areas used for Flood Storage within 250m of the study site	None identified
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Limited potential
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Low

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	1	1	0	2
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

9.1 Maximum risk of natural ground subsidence	Low
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Negligible
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Negligible
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Low
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary.

Section 10: Mining

10.1 Coal mining areas within 75m of the study site	Identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	None identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between Groundsure and the Client. The document contains the following sections:

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure gas pipelines and underground electricity transmission lines.

5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

Provides information on river and coastal flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon..

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, Groundsure provide a free Technical Helpline (08444 159000) for further information and guidance.

Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier “A” on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as “Not Shown”.

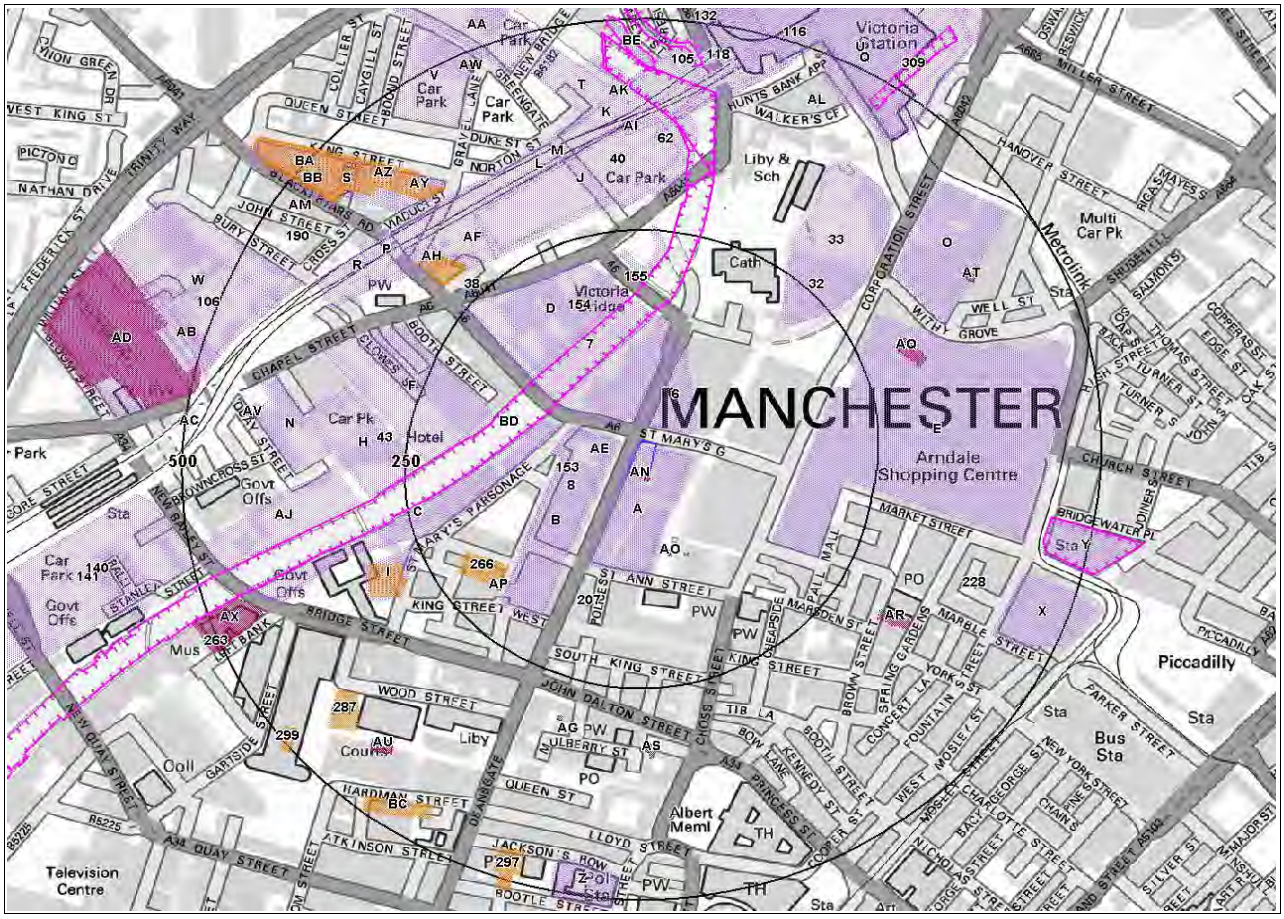
All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

1. Historical Land Use

NW N NE

W E

SW S SE



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Site Outline

250
500
Search Buffers (m)

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

Industrial Land Use

Potentially Infilled Land

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

Energy Features

Petrol Stations

Historical military sites

Tanks

Garages

1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 147

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Unspecified Commercial/Industrial	1906
2A	0	On Site	Unspecified Commercial/Industrial	1894
3A	0	On Site	Unspecified Commercial/Industrial	1931
4A	0	On Site	Unspecified Commercial/Industrial	1916
5A	0	On Site	Unspecified Commercial/Industrial	1938
6	19	N	Unspecified Commercial/Industrial	1931
7	20	N	Unspecified Commercial/Industrial	1938
8	22	W	Unspecified Commercial/Industrial	1894
9B	30	W	Unspecified Commercial/Industrial	1906
10B	31	W	Unspecified Commercial/Industrial	1916
11B	31	W	Unspecified Commercial/Industrial	1931
12B	32	W	Unspecified Commercial/Industrial	1938
13C	89	W	Unspecified Commercial/Industrial	1906
14C	92	W	Unspecified Commercial/Industrial	1938
15C	106	W	Unspecified Commercial/Industrial	1931
16C	106	W	Unspecified Commercial/Industrial	1916
17D	134	NW	Telephone Exchange	1971
18D	134	NW	Telephone Exchange	1978
19D	134	NW	Telephone Exchange	1985
20D	135	NW	Telephone Exchange	1994
21D	135	NW	Telephone Exchange	1988
22D	142	NW	Unspecified Commercial/Industrial	1916
23D	142	NW	Unspecified Commercial/Industrial	1931

24E	158	SE	Bus Station	1988
25E	158	SE	Bus Station	1985
26E	158	SE	Bus Station	1994
27F	161	W	Unspecified Foundry	1906
28F	161	W	Unspecified Commercial/Industrial	1931
29F	161	W	Unspecified Commercial/Industrial	1916
30G	189	N	Bus Station	1988
31G	189	N	Bus Station	1985
32	200	NE	Unspecified Commercial/Industrial	1931
33	202	NE	Unspecified Commercial/Industrial	1938
34H	233	W	Finishing Works	1923
35H	234	W	Finishing Works	1931
36H	234	W	Finishing Works	1916
37I	253	W	Police Station	1894
38	255	NW	Police Station	1894
39I	256	W	Tanks	1851
40	267	NW	Exchange Station	1923
41	268	NW	Railway Stations	1894
42L	270	NW	Railway Sidings	1923
43	271	W	Chimney	1956
44J	272	NW	Disused Station	1971
45J	272	NW	Disused Station	1978
46K	273	NW	Railway Sidings	1971
47K	273	NW	Railway Sidings	1956
48J	273	NW	Exchange Station	1956
49K	273	NW	Railway Sidings	1988
50K	273	NW	Railway Sidings	1978
51K	273	NW	Railway Sidings	1994
52K	273	NW	Railway Sidings	1985
53J	274	NW	Exchange Station	1931
54J	274	NW	Exchange Station	1916
55J	274	NW	Exchange Station	1938
56J	274	NW	Exchange Station	1906
57L	284	NW	Railway Sidings	1938
58M	284	NW	Railway Sidings	1931
59M	284	NW	Railway Sidings	1916
60M	284	NW	Railway Sidings	1906
61AJ	301	W	Unspecified Commercial/Industrial	1931
62	304	N	Cotton Mill	1851
63M	306	NW	Railway Sidings	1894
64N	332	W	Unspecified Works	1988
65N	332	W	Unspecified Works	1985

66N	332	W	Unspecified Works	1978
67O	334	NE	Unspecified Commercial/Industrial	1938
68O	340	NE	Unspecified Commercial/Industrial	1931
69O	340	NE	Unspecified Commercial/Industrial	1916
70P	355	NW	Railway Building	1923
71P	367	NW	Railway Building	1923
72S	368	NW	Unspecified Commercial/Industrial	1923
73Q	370	N	Railway Station	1971
74Q	370	N	Railway Station	1956
75Q	370	N	Railway Station	1978
76T	372	N	Unspecified Mills	1894
77R	373	NW	Railway Building	1923
78R	374	NW	Railway Building	1931
79S	374	NW	Unspecified Works	1971
80S	374	NW	Unspecified Works	1978
81S	374	NW	Unspecified Works	1985
82S	376	NW	Unspecified Commercial/Industrial	1931
83S	376	NW	Unspecified Commercial/Industrial	1916
84R	380	NW	Railway Building	1931
85AK	384	N	Unspecified Commercial/Industrial	1851
86T	388	N	Unspecified Commercial/Industrial	1923
87T	406	N	Print Works	1851
88U	410	N	Railway Station	1906
89U	410	N	Railway Station	1916
90U	410	N	Railway Station	1931
91U	410	N	Railway Station	1938
92V	422	NW	Unspecified Works	1978
93V	422	NW	Unspecified Works	1985
94V	422	NW	Unspecified Works	1994
95V	422	NW	Unspecified Works	1988
96W	422	NW	Unspecified Commercial/Industrial	1971
97W	422	NW	Unspecified Commercial/Industrial	1956
98W	426	NW	Iron Works	1906
99W	426	NW	Unspecified Commercial/Industrial	1894
100W	426	NW	Iron Works	1931
101W	426	NW	Iron Works	1916
102X	429	SE	Unspecified Commercial/Industrial	1938
103X	429	SE	Unspecified	1916

			Commercial/Industrial	
104X	429	SE	Unspecified Commercial/Industrial	1931
105	432	N	Railway Building	1923
106	434	NW	Unspecified Depot	1994
107U	435	NE	Railway Station	1923
108W	436	W	Iron Works	1923
109Q	438	N	Railway Station	1988
110Q	438	N	Railway Station	1985
111BE	438	N	Unspecified Pit	1894
112W	438	NW	Unspecified Commercial/Industrial	1938
113BF	447	N	Unspecified Ground Workings	1851
114Y	448	E	Unspecified Commercial/Industrial	1938
115Y	449	E	Unspecified Ground Workings	1931
116	450	N	Railway Station	1851
117Q	452	NE	Railway Station	1994
118	456	N	Railway Building	1931
119AA	457	N	Unspecified Mills	1923
120Z	458	S	Police Station	1956
121Z	458	S	Police Station	1994
122Z	458	S	Police Station	1985
123Z	458	S	Police Station	1978
124Z	458	S	Police Station	1971
125Z	458	S	Police Station	1988
126AA	465	N	Unspecified Mills	1938
127AA	465	N	Unspecified Mills	1916
128AA	465	N	Unspecified Mills	1906
129AA	465	N	Unspecified Mills	1931
130AB	479	W	Brewery	1923
131AB	482	W	Brewery	1916
132	487	N	Railway Building	1923
133AA	487	N	Unspecified Mills	1894
134AC	488	W	Railway Building	1916
135AC	488	W	Railway Building	1931
136AD	492	W	Unspecified Works	1971
137AD	492	W	Unspecified Commercial/Industrial	1956
138AC	495	W	Railway Building	1916
139AC	495	W	Railway Building	1931
140	496	W	Unspecified Yard	1956
141	496	W	Railway Sidings	1956
142AD	499	W	Unspecified Commercial/Industrial	1894
143AD	499	W	Gas Works	1916

144AD	499	W	Gas Works	1906
145AD	499	W	Unspecified Commercial/Industrial	1931
146AD	499	W	Gas Works	1923
147AD	499	W	Unspecified Commercial/Industrial	1938

1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical tanks within 500m of the search boundary: 48

ID	Distance (m)	Direction	Use	Date
148AE	37	W	Unspecified Tank	1922
149AE	37	W	Unspecified Tank	1892
150AE	37	W	Unspecified Tank	1908
151AE	37	W	Unspecified Tank	1933
152AE	37	W	Unspecified Tank	1892
153	67	W	Unspecified Tank	1891
154	169	NW	Unspecified Tank	1891
155	187	N	Tanks	1891
156AF	302	NW	Unspecified Tank	1958
157AF	302	NW	Unspecified Tank	1963
158AF	302	NW	Unspecified Tank	1957
159AF	303	NW	Unspecified Tank	1955
160AF	303	NW	Unspecified Tank	1949
161AG	310	S	Tanks	1995
162AG	310	S	Unspecified Tank	1989
163AH	318	NW	Unspecified Tank	1957
164AH	318	NW	Unspecified Tank	1949
165AI	368	N	Unspecified Tank	1891
166AI	372	N	Unspecified Tank	1933
167AI	378	N	Unspecified Tank	1979
168AI	378	N	Unspecified Tank	1979
169AI	378	N	Unspecified Tank	1979
170AI	378	N	Unspecified Tank	1949
171AI	378	N	Unspecified Tank	1970
172AI	378	N	Unspecified Tank	1955
173AI	378	N	Unspecified Tank	1963
174AI	378	N	Unspecified Tank	1970
175AI	378	N	Unspecified Tank	1957
176AI	378	N	Unspecified Tank	1958

177AJ	380	W	Unspecified Tank	1908
178AK	401	N	Unspecified Tank	1933
179AL	438	NE	Unspecified Tank	1908
180AL	438	NE	Unspecified Tank	1933
181AL	438	NE	Unspecified Tank	1922
182AL	441	NE	Unspecified Tank	1891
183AL	445	NE	Unspecified Tank	1957
184AL	445	NE	Unspecified Tank	1963
185AL	445	NE	Unspecified Tank	1970
186AL	445	NE	Unspecified Tank	1958
187AL	445	NE	Unspecified Tank	1949
188AL	445	NE	Unspecified Tank	1970
189AL	445	NE	Unspecified Tank	1955
190	453	NW	Unspecified Tank	1891
191AM	470	NW	Unspecified Tank	1970
192AM	470	NW	Unspecified Tank	1963
193AM	470	NW	Unspecified Tank	1962
194AD	493	W	Gas Works	1957
195AD	499	W	Gas Works	1922

1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical energy features within 500m of the search boundary: 70

ID	Distance (m)	Direction	Use	Date
196AN	0	On Site	Electricity Substation	1995
197AN	4	SE	Electricity Substation	1986
198AN	5	SE	Electricity Substation	1989
199AO	92	S	Electricity Substation	1986
200AO	92	S	Electricity Substation	1957
201AO	92	S	Electricity Substation	1989
202AO	92	S	Electricity Substation	1955
203AO	92	S	Electricity Substation	1970
204AO	92	S	Electricity Substation	1948
205AO	92	S	Electricity Substation	1995
206AO	101	SE	Electricity Substation	1980
207	159	S	Electricity Substation	1986
208AP	197	SW	Electricity Substation	1995
209AP	197	SW	Electricity Substation	1980
210AP	197	SW	Electricity Substation	1986
211AQ	292	NE	Electricity Substation	1948

212AQ	292	NE	Electricity Substation	1951
213AQ	292	NE	Electricity Substation	1953
214AQ	293	NE	Electricity Substation	1953
215AG	296	S	Electricity Substation	1986
216AG	296	S	Electricity Substation	1980
217AG	296	S	Electricity Substation	1995
218AG	296	S	Electricity Substation	1989
219AR	306	SE	Electricity Substation	1953
220AR	306	SE	Electricity Substation	1953
221AS	314	S	Electricity Substation	1989
222AS	317	S	Electricity Substation	1995
223AR	320	SE	Electricity Substation	1953
224AR	320	SE	Electricity Substation	1967
225AR	320	SE	Electricity Substation	1968
226AR	320	SE	Electricity Substation	1953
227AR	320	SE	Electricity Substation	1948
228	385	E	Electricity Substation	1995
229AT	399	NE	Electricity Substation	1953
230AT	399	NE	Electricity Substation	1948
231AT	399	NE	Electricity Substation	1951
232AT	400	NE	Electricity Substation	1953
233AU	413	SW	Electricity Substation	1957
234AU	413	SW	Electricity Substation	1957
235AV	423	W	Electricity Substation	1957
236AV	423	W	Electricity Substation	1988
237AV	423	W	Electricity Substation	1953
238AV	423	W	Electricity Substation	1949
239AV	423	W	Electricity Substation	1994
240AV	424	W	Electricity Substation	1980
241AV	424	W	Electricity Substation	1990
242AV	424	W	Electricity Substation	1988
243AV	424	W	Electricity Substation	1987
244AV	440	W	Electricity Substation	1995
245AV	440	W	Electricity Substation	1996
246AX	442	W	Hydraulic Power Station	1984
247AW	476	NW	Electricity Substation	1979
248AW	476	NW	Electricity Substation	1979
249AW	476	NW	Electricity Substation	1979
250AW	476	NW	Electricity Substation	1985
251AX	476	SW	Power Station	1957
252AW	476	NW	Electricity Substation	1957
253AW	476	NW	Electricity Substation	1970
254AX	476	SW	Hydraulic Power Station	1973
255AW	476	NW	Electricity Substation	1955
256AW	476	NW	Electricity Substation	1970
257AW	476	NW	Electricity Substation	1949

258AW	476	NW	Electricity Substation	1989
259AW	477	NW	Electricity Substation	1994
260AW	477	NW	Electricity Substation	1992
261AX	480	W	Hydraulic Power Station	1957
262AX	482	SW	Hydraulic Power Station	1933
263	487	SW	Hydraulic Power Station	1932
264AD	493	W	Gas Works	1957
265AD	499	W	Gas Works	1922

1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical petrol stations and fuel sites within 500m of the search boundary: 0

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 34

ID	Distance (m)	Direction	Use	Date
266	173	SW	Garage	1948
267I	276	SW	Garage	1957
268AH	283	NW	Garage	1970
269AH	283	NW	Garage	1979
270AH	283	NW	Garage	1979
271AH	283	NW	Garage	1979
272AH	283	NW	Garage	1985
273AH	283	NW	Garage	1994
274AH	283	NW	Garage	1992
275AH	283	NW	Garage	1970
276AH	283	NW	Garage	1989
277AZ	371	NW	Motor Repairing Works	1970
278AY	371	NW	Motor Repair Works	1970
279AY	372	NW	Motor Repair Works	1979
280AY	372	NW	Motor Repair Works	1979
281AY	372	NW	Motor Repair Works	1979
282S	393	NW	Garage	1988
283S	393	NW	Garage	1980

284S	393	NW	Garage	1987
285S	393	NW	Garage	1988
286AZ	393	NW	Garage	1990
287	402	SW	Garage	1957
288BA	442	NW	Motor Repair Works	1957
289BA	443	NW	Motor Repair Works	1949
290BB	444	NW	Garage	1922
291BB	444	NW	Motor Repair Works	1933
292BA	449	NW	Garage	1994
293BA	449	NW	Garage	1995
294BA	449	NW	Garage	1996
295BC	450	SW	Garage	1963
296BC	450	SW	Garage	1970
297	461	S	Garage	1948
298BC	462	SW	Garage	1962
299	479	SW	Garage	1957

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

1.7 Potentially Infilled Land

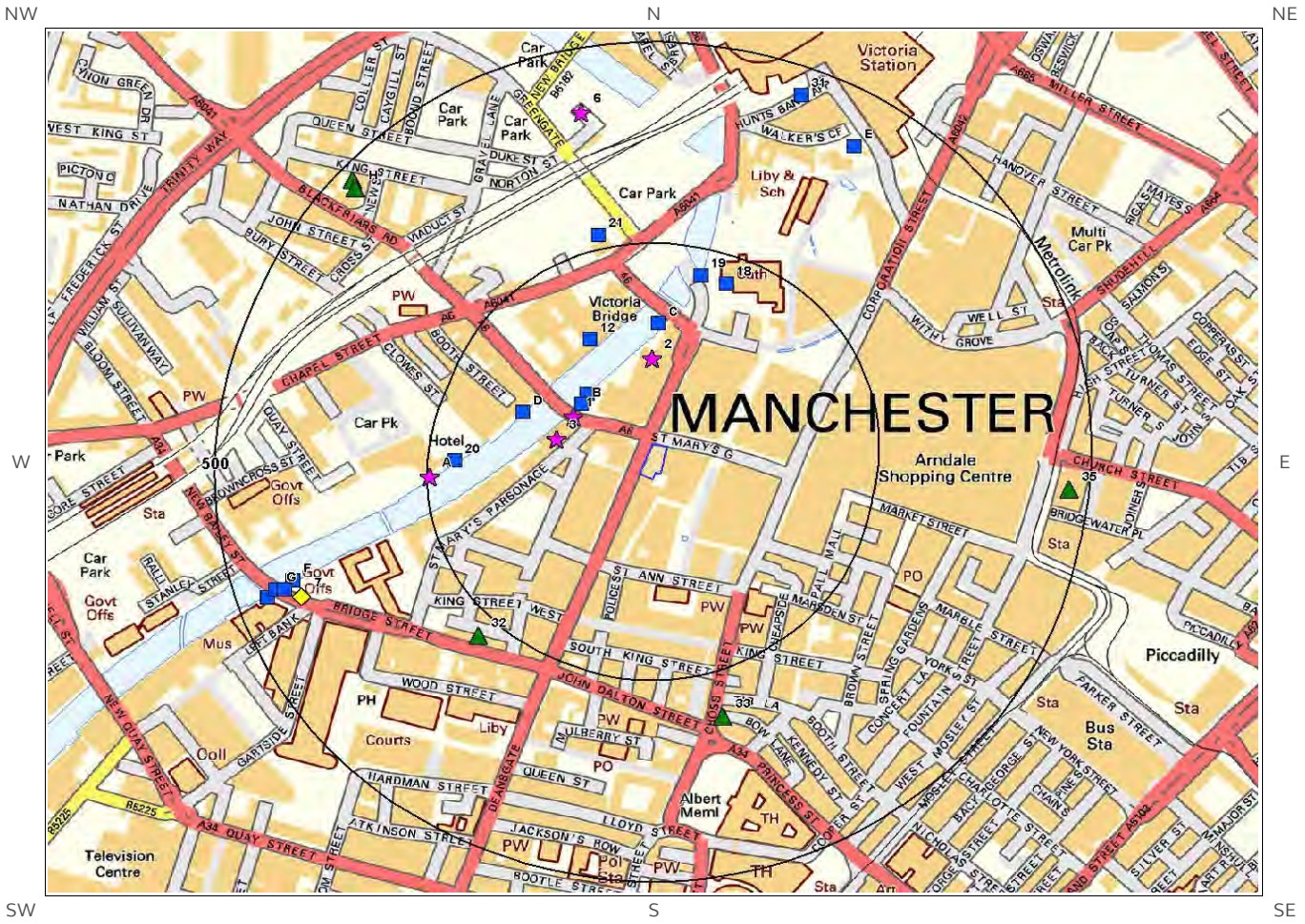
Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 10

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

ID	Distance(m)	Direction	Use	Date
300BD	99	NW	Canal	1994
301BD	99	NW	Canal	1985
302BD	99	NW	Canal	1978
303BD	99	NW	Canal	1988
304BD	99	NW	Canal	1971
305BD	99	NW	Canal	1956
306BE	438	N	Unspecified Pit	1894
307BF	447	N	Unspecified Ground Workings	1851
308Y	449	E	Unspecified Ground Workings	1931

309	467	NE	Pond	1894

2. Environmental Permits, Incidents and Registers Map



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2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

2.1.1 Records of historic IPC Authorisations within 500m of the study site:

0

Database searched and no data found.

2.1.2 Records of Part A(1) and IPPC Authorised Activities within 500m of the study site:

0

Database searched and no data found.

2.1.3 Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site:

0

Database searched and no data found.

2.1.4 Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site:

0

Database searched and no data found.

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

1

The following List 2 Dangerous Substance Inventory Site records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
7	426	W	383350	Name: Te Dis Manchester Civil Justice	Authorised Substances: pH

ID	Distance (m)	Direction	NGR	Details
			398350	Centre Status: Active Receiving Water: -

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

5

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

ID	Distance (m)	Direction	NGR	Details	
32	278	SW	383558 398300	Address: Granada Dry Cleaners, 71-73 Bridge Street, Manchester, M30 9BA Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
33	308	S	383845 398200	Address: Johnsons Cleaners UK Ltd, 59 Cross Street, Albert Square, Manchester, M2 4JW Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
34H	471	NW	383413 398856	Address: Ryland Nissan, Blackfriars Road, Manchester, M3 7AP Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified
35	476	E	384253 398482	Address: Johnsons Cleaners UK Ltd, 24 High Street, City Centre, Manchester, M4 1QB Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
36H	480	NW	383410 398866	Address: Ryland Honda, Blackfriars Road, Salford, M3 7AW Process: Coating Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of Enforcement: No Enforcements Notified Comment: No Enforcements Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

2.1.8 Records of Licensed Discharge Consents within 500m of the study site:

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

ID	Distance (m)	Direction	NGR	Details	
8B	97	NW	383680 398590	Address: BLACKFRIARS STREET CSO 283J1, 1541 BLACKFRIARS STREET, ., MANCHESTER, M1 1PH Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0156 Permit Version: 2	Receiving Water: RIVER IRWELL Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03-Sep-2010 Revocation Date: 04/02/2016
9B	97	NW	383680 398590	Address: BLACKFRIARS STREET CSO 283J1, 1541 BLACKFRIARS STREET, ., MANCHESTER, M1 1PH Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0156 Permit Version: 1	Receiving Water: RIVER IRWELL Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01-Jan-1995 Revocation Date: 02/09/2010
10B	99	NW	383686 398603	Address: BLACKFRIARS STREET CSO 283J1, 1541 BLACKFRIARS STREET, ., MANCHESTER, M1 1PH Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0156 Permit Version: 4	Receiving Water: RIVER IRWELL Status: VARIED UNDER EPR 2010 Issue date: 25/06/2018 Effective Date: 25-Jun-2018 Revocation Date: -
11B	99	NW	383686 398603	Address: BLACKFRIARS STREET CSO 283J1, 1541 BLACKFRIARS STREET, ., MANCHESTER, M1 1PH Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0156 Permit Version: 3	Receiving Water: RIVER IRWELL Status: VARIED UNDER EPR 2010 Issue date: 05/02/2016 Effective Date: 05-Feb-2016 Revocation Date: 24/06/2018
12	149	NW	383690 398670	Address: BT DIAL HOUSE, EXCHANGE BUILDING, 21 CHAPEL STREET, ., SALFORD, M3 7BA Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: EPRTB3638AL Permit Version: 1	Receiving Water: RIVER IRWELL Status: NEW ISSUED UNDER EPR 2010 Issue date: 29/05/2013 Effective Date: 29-May-2013 Revocation Date: -
13C	150	N	383770 398690	Address: VICTORIA STREET, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0155 Permit Version: 1	Receiving Water: RIVER IRWELL Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01-Jan-1995 Revocation Date: 13/04/2009
14C	150	N	383770 398690	Address: VICTORIA STREET, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0155 Permit Version: 2	Receiving Water: RIVER IRWELL Status: SURRENDERED UNDER EPR 2010 Issue date: 14/04/2009 Effective Date: 14-Apr-2009 Revocation Date: 10/12/2010
15D	157	W	383610 398580	Address: BOOTH STREET CSO, SALFORD, GREATER MANCHESTER	Receiving Water: RIVER IRWELL Status: REVOKED - UNSPECIFIED

ID	Distance (m)	Direction	NGR	Details	
				Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982902 Permit Version: 2	Issue date: - Effective Date: 11-May-1995 Revocation Date: 13/11/1995
16D	157	W	383610 398580	Address: BOOTH STREET CSO, SALFORD, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982902 Permit Version: 3	Receiving Water: RIVER IRWELL Status: SURRENDERED UNDER EPR 2010 Issue date: - Effective Date: 14-Nov-1995 Revocation Date: 03/12/2014
17D	157	W	383610 398580	Address: BOOTH STREET CSO, SALFORD, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982902 Permit Version: 1	Receiving Water: RIVER IRWELL Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01-Jan-1995 Revocation Date: 10/05/1995
18	215	N	383850 398740	Address: SUBWAY - VICTORIA AVENUE, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 01MAN0175 Permit Version: 1	Receiving Water: RIVER IRK Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 15-Sep-1993 Revocation Date: 15/09/1993
19	217	N	383820 398750	Address: VICTORIA ARCHES, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0357 Permit Version: 1	Receiving Water: - Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01-Jan-1995 Revocation Date: -
20	219	W	383530 398520	Address: CHAPEL WHARF, DEARMANS PLACE, SALFORD, MANCHESTER, M3 5LH Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: 016993796 Permit Version: 1	Receiving Water: VIA DITCH TO RIVER IRWELL Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 22/06/2005 Effective Date: 22-Jun-2005 Revocation Date: 10/06/2008
21	267	N	383700 398800	Address: FOOD & WINE BAR SWO, RAILWAY ARCHES, CHAPEL STREET, SALFORD, GREATER MANCHESTER Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991311 Permit Version: 1	Receiving Water: RIVER IRWELL Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01-Nov-1994 Revocation Date: 01/11/1994
22F	429	W	383340 398371	Address: BRIDGE STREET CSO, 4 BRIDGE STREET, ., MANCHESTER, M3 3ER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982898 Permit Version: 4	Receiving Water: RIVER IRWELL Status: VARIED UNDER EPR 2010 Issue date: 19/03/2018 Effective Date: 01-Apr-2018 Revocation Date: -
23E	433	NE	384000 398910	Address: LONG MILLGATE -TODD ST, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016993741 Permit Version: 1	Receiving Water: RIVER IRK Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 01/06/2005 Effective Date: 01-Jun-2005 Revocation Date: -
24E	433	NE	384000 398910	Address: LONG MILLGATE -TODD ST, MANCHESTER, GREATER MANCHESTER	Receiving Water: RIVER IRK Status: CONSENT REVOKED OR REVISED -

ID	Distance (m)	Direction	NGR	Details	
				Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0160 Permit Version: 1	NEW CONSENT ISSUED (37(1)) Issue date: 01/01/1995 Effective Date: 01-Jan-1995 Revocation Date: 31/05/2005
25F	442	W	383330 398360	Address: BRIDGE STREET CSO, 4 BRIDGE STREET, ., MANCHESTER, M3 3ER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982898 Permit Version: 2	Receiving Water: RIVER IRWELL Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 11-May-1995 Revocation Date: 13/11/1995
26F	442	W	383330 398360	Address: BRIDGE STREET CSO, 4 BRIDGE STREET, ., MANCHESTER, M3 3ER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982898 Permit Version: 1	Receiving Water: RIVER IRWELL Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01-Jan-1995 Revocation Date: 10/05/1995
27F	442	W	383330 398360	Address: BRIDGE STREET CSO, 4 BRIDGE STREET, ., MANCHESTER, M3 3ER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982898 Permit Version: 3	Receiving Water: RIVER IRWELL Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 14-Nov-1995 Revocation Date: 31/03/2018
28G	451	W	383320 398360	Address: WATER ST/BRIDGE ST, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0174 Permit Version: 1	Receiving Water: RIVER IRWELL Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: 01/01/1995 Effective Date: 01-Jan-1995 Revocation Date: 11/04/2006
29G	451	W	383320 398360	Address: WATER ST/BRIDGE ST, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016993550 Permit Version: 1	Receiving Water: THE RIVER IRWELL Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 12/04/2006 Effective Date: 12-Apr-2006 Revocation Date: -
30G	464	W	383310 398350	Address: MANCHESTER CIVIL JUSTICE CENTRE, GARTSIDE STREET, MANCHESTER, M3 3EL Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: 016993601 Permit Version: 2	Receiving Water: RIVER IRWELL Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: 26/04/2006 Effective Date: 01-Jan-2007 Revocation Date: -
31	465	N	383938 398974	Address: HUNTS BANK CSO, HUNTS BANK, ., MANCHESTER, GREATER MANCHESTER, M3 1AX Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0176 Permit Version: 3	Receiving Water: RIVER IRK Status: VARIED UNDER EPR 2010 Issue date: 05/02/2016 Effective Date: 05-Feb-2016 Revocation Date: -

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

0

Database searched and no data found.

2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site:

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

Records of COMAH & NIHHS sites within 500m of the study site: 0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

6

The following NIRS List 2 records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details	
1	99	W	383670.0 398574.0	Incident Date: 21-Jan-2002 Incident Identification: 53604.0 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
2	107	N	383762.0 398647.0	Incident Date: 23-Apr-2002 Incident Identification: 74061.0 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
3	108	W	383649.0 398546.0	Incident Date: 17-Aug-2001 Incident Identification: 24963.0 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
4A	248	W	383500.0 398500.0	Incident Date: 30-Jan-2002 Incident Identification: 55466.0 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
5A	248	W	383500.0 398500.0	Incident Date: 30-Jan-2002 Incident Identification: 55466.0	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact)

ID	Distance (m)	Direction	NGR	Details	
				Pollutant: Other Pollutant Pollutant Description: Other	Air Impact: Category 4 (No Impact)
6	421	N	383678.0 398952.0	Incident Date: 02-Aug-2001 Incident Identification: 21338.0 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

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

0

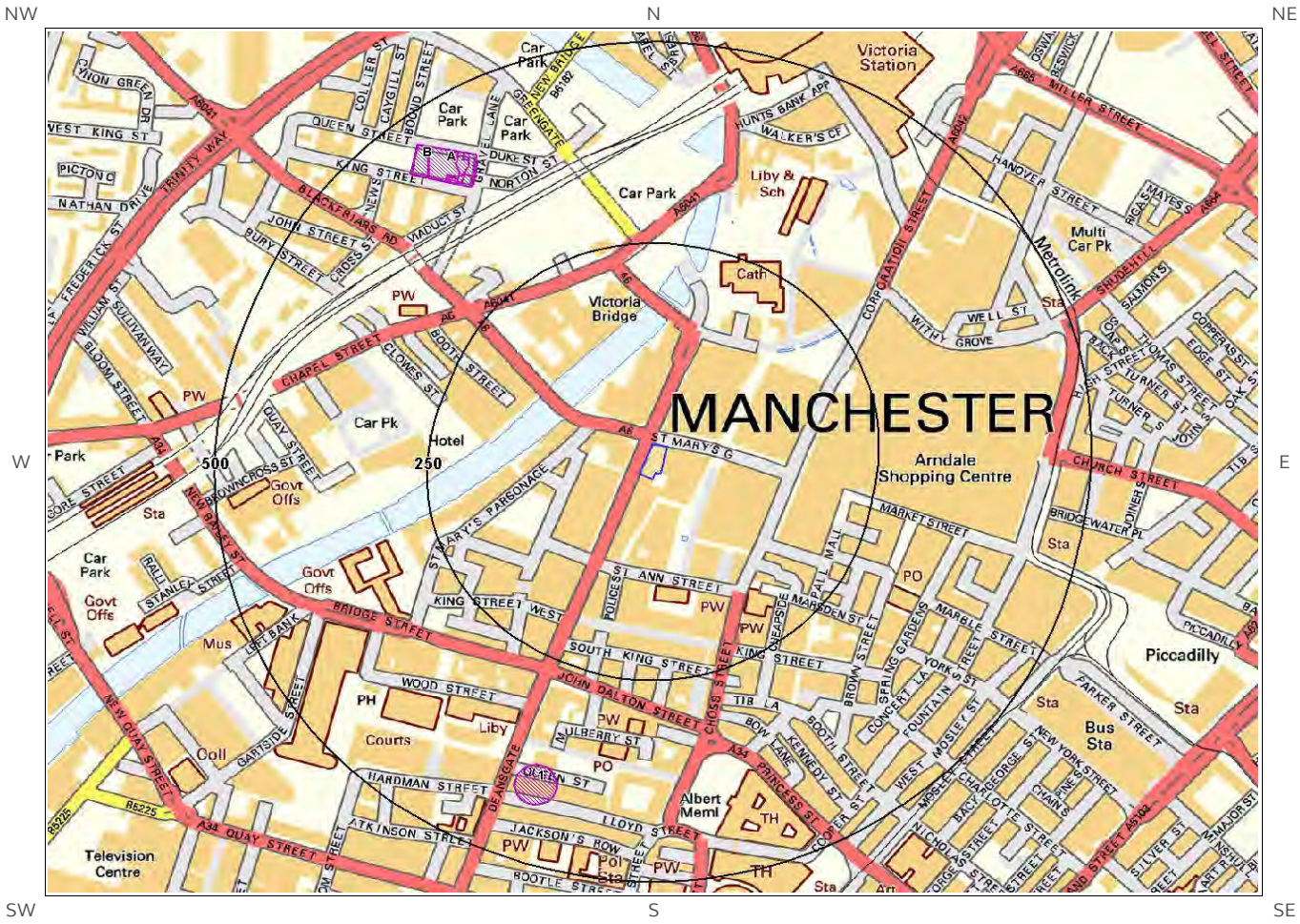
Database searched and no data found.

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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Site Outline

250 Search Buffers (m)
500

EA/NRW Active Landfill

EA/NRW Historic Landfill

BGS / DoE Survey Landfill

Historic and Planned Waste Sites

EA/NRW Licensed Waste Site

Local Authority/Historical Mapping Landfill Records

3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

5

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

ID	Distance (m)	Direction	NGR	Details	
Not shown	819	N		Site Address: Overbridge Road, Salford, Greater Manchester Waste Licence: - Site Reference: E090 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1097	SW		Site Address: Wilburn Street, Salford, Greater Manchester Waste Licence: - Site Reference: E052 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1449	NE		Site Address: Queens Road Tip - Land to South of Queens Road and North of Collingham Street, Cheetham, Manchester, Greater Manchester Waste Licence: Yes Site Reference: F005,RD/LIC/241/82 Waste Type: Inert, Industrial, Commercial, Household, Special, Liquid sludge Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 01-Jan-1974 Licence Surrendered: Licence Holder Address: - Operator: H Evers Limited Licence Holder: Manchester City Council First Recorded: 31-Dec-1955 Last Recorded: 31-Dec-1970
Not shown	1450	N		Site Address: Elizabeth Street, Cheetham, Greater Manchester Waste Licence: - Site Reference: F030 Waste Type: - Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -

ID	Distance (m)	Direction	NGR	Details	
Not shown	1486	W		Site Address: Former Ordsall Lane Sidings, Oldfield Road, Salford, Greater Manchester Waste Licence: Yes Site Reference: E020, RD/LIC/414/85 Waste Type: Inert Environmental Permitting Regulations (Waste) Reference: -	Licence Issue: 14-Apr-1986 Licence Surrendered: Licence Holder Address: London Midland Operator: - Licence Holder: British Rail Property Board First Recorded: 01-May-1986 Last Recorded: 31-Dec-1986

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

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

1

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

ID	Distance (m)	Direction	NGR	Site Address	Source	Data Type
Not shown	1202	N	383302 399677	Pricewise, 1 Overbridge Road, Salford	Manchester city council	Point

3.2 Other Waste Sites

3.2.1 Records of waste treatment, transfer or disposal sites within 500m of the study site:

14

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details		
1	379	S	383626 398117	Type of Site: Recycling Storage Facility Site Address: St. Johns House, 2-10 Queen Street, MANCHESTER, Greater Manchester, M2 5JB	Planning Application Reference: 088327/FO/2008/C1 Date: -	Further Details: Scheme comprises construction of recycling storage facility and bicycle storage facility including mesh fencing to lloyd street elevation. Construction - fencing site works. An application (ref: 088327/FO/2008/C1) for detailed planning permission was whdrawn from Manchester C.C. Planning decision obtained Data Source: Historic Planning

ID	Distance (m)	Direction	NGR	Details		
						Application Data Type: Point
2A	385	NW	383518 398885	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1949	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
3A	385	NW	383518 398885	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1970	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
4A	385	NW	383518 398885	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1963	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
5A	385	NW	383518 398885	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1957	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
6A	385	NW	383528 398884	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1979	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
7A	385	NW	383528 398884	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1979	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
8A	385	NW	383528 398884	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1979	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
9A	393	NW	383528 398888	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1955	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
10A	394	NW	383523 398886	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1970	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
11A	397	NW	383517 398886	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1949	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
12B	423	NW	383489 398891	Type of Site: Scrap Metal Yard Site Address: N/A	Planning Application Reference: N/A Date: 1961	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
13B	423	NW	383489 398891	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1949	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon
14B	423	NW	383489 398891	Type of Site: Metal Scrap Yard Site Address: N/A	Planning Application Reference: N/A Date: 1953	Further Details: N/A Data Source: Historic Mapping Data Type: Polygon

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

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1008	NE	384300 399400	Site Address: Red Bank, Cheetham Hill, Manchester, M8 Type: Mobile Plant Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MEL002 EPR reference: EA/EPR/LP3292ZH/S002 Operator: Mel Ltd Waste Management licence No: 65243 Annual Tonnage: 75000.0	Issue Date: 17/04/2002 Effective Date: - Modified: - Surrendered Date: Feb 6 2007 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Mobile Plant Correspondence Address: -
Not shown	1037	E	384771 398842	Site Address: 35 - 39, Oldham Road, Manchester, M4 5FG Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KER003 EPR reference: EA/EPR/TP3494CL/S002 Operator: Brendan J Kershaw & Winston Brown Waste Management licence No: 50328 Annual Tonnage: 0.0	Issue Date: 10/08/2004 Effective Date: - Modified: - Surrendered Date: Jul 6 2010 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: French Parts Uk Correspondence Address: -
Not shown	1037	NW	383354 399493	Site Address: 23, Cottenham Lane, Salford, Manchester, M7 1TH Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MOT002 EPR reference: EA/EPR/SP3694CX/A001 Operator: Motor Body Services (salford) Ltd Waste Management licence No: 50240 Annual Tonnage: 2500.0	Issue Date: 13/07/2004 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: M B S & Partfirst Correspondence Address: -
Not shown	1037	NW	383354 399493	Site Address: 23, Cottenham Lane, Salford, Manchester, M7 1TH Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MOT002 EPR reference: EA/EPR/SP3694CX/A001 Operator: Motor Body Services (Salford) Ltd Waste Management licence No: 50240 Annual Tonnage: 2500.0	Issue Date: 13/07/2004 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: M B S & Partfirst Correspondence Address: -
Not shown	1063	NE	384400 399400	Site Address: Hargreaves Street, Manchester, M4 4EJ Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: PLT001 EPR reference: EA/EPR/CP3998CM/A001 Operator: Placemix Ltd Waste Management licence No: 50017 Annual Tonnage: 24900.0	Issue Date: 31/03/2000 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Placemix Ltd Transfer Station Correspondence Address: -
Not	1147	S	383998	Site Address: Little Ireland Phase B, Great	Issue Date: 17/06/2002

ID	Distance (m)	Direction	NGR	Details	
shown			397374	Marlborough Street, Manchester, M1 5NN Type: Mobile Plant Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TER003 EPR reference: - Operator: Terra Vac (uk) Ltd Waste Management licence No: 50191 Annual Tonnage: 0.0	Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Terra Vac (uk) Ltd Correspondence Address: Unit 7a, Whitwood Enterprise Park, Castleford, WF10 5PX
Not shown	1170	NW	383200 399566	Site Address: Cambridge Industrial Area, Cottenham Lane, Salford, Lancashire, M7 1GS Type: Special Waste Transfer Station Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: GSC001 EPR reference: EA/EPR/UP3692CM/S002 Operator: Granyte Surface Coatings Plc Waste Management licence No: 53446 Annual Tonnage: 50000.0	Issue Date: 21/09/1999 Effective Date: - Modified: - Surrendered Date: Jul 3 2002 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Granyte Surface Coatings Plc Correspondence Address: -
Not shown	1186	SW	382841 397739	Site Address: Mobile Plant Permi Type: Mobile Plant Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SOI005 EPR reference: EA/EPR/GP3895SV/T001 Operator: Soil & Water Remediation Ltd Waste Management licence No: 50480 Annual Tonnage: 0.0	Issue Date: 12/12/2006 Effective Date: 20/05/2010 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Mobile Plant Correspondence Address: -
Not shown	1186	SW	382841 397739	Site Address: Medlock House, New Elm Road, Manchester, M3 4JW Type: Mobile Plant Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RES001 EPR reference: - Operator: Rec Remediation Ltd Waste Management licence No: 50480 Annual Tonnage: 75000.0	Issue Date: 12/12/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Rec Remediation Ltd - Mobile Plant Correspondence Address: 25, Barnes Wallis Road, Segensworth East, Fareham, Hampshire, PO15 5TT
Not shown	1186	SW	382841 397739	Site Address: Medlock House, New Elm Road, Manchester, M3 4JW Type: Mobile Plant Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RES001 EPR reference: - Operator: Resource And Environmental Consultants Ltd Waste Management licence No: 50480 Annual Tonnage: 75000.0	Issue Date: 12/12/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: R E M Mobile Plant Correspondence Address: 25, Barnes Wallis Road, Segensworth East, Fareham, PO15 5TT
Not shown	1226	NE	384650 399400	Site Address: Land/premises At, Warford Street, Collyhurst, Manchester, M4 4DD Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FAR008 EPR reference: EA/EPR/YP3594CH/V002 Operator: Farlam Waste Management Ltd Waste Management licence No: 50461 Annual Tonnage: 74999.0	Issue Date: 20/02/2007 Effective Date: - Modified: 12/11/2010 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: Farlam Waste Management Ltd Correspondence Address: -
Not	1226	NE	384650	Site Address: Warford Street, Collyhurst,	Issue Date: 27/08/2002

ID	Distance (m)	Direction	NGR	Details	
shown			399400	Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FPL001 EPR reference: EA/EPR/DP3098CF/A001 Operator: Farlam Properties Ltd Waste Management licence No: 50118 Annual Tonnage: 24999.0	Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Farlam Properties Ltd Correspondence Address: -
Not shown	1226	NE	384650 399400	Site Address: Warford Street, Collyhurst, Manchester, M4 4DD Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: FAR008 EPR reference: - Operator: Farlam Waste Management Ltd Waste Management licence No: 50461 Annual Tonnage: 0.0	Issue Date: 20/02/2007 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Farlam Waste Management Ltd Correspondence Address: Warford Street, Off Dantzic Street, Collyhurst, Manchester, M4 4DD
Not shown	1288	NE	384690 399449	Site Address: Dulwich Street, Collyhurst, Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JR001 EPR reference: - Operator: J Ryan & Co Ltd Waste Management licence No: 50084 Annual Tonnage: 0.0	Issue Date: 15/03/2002 Effective Date: - Modified: 26/07/2004 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: J Ryan & Co Ltd Correspondence Address: Pearl Environmental Services, 13, Middleton Road, Reddish, Stockport, Cheshire, SK5 6SG
Not shown	1288	NE	384690 399449	Site Address: Dulwich Street, Collyhurst, Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JR001 EPR reference: - Operator: J Ryan & Co Ltd Waste Management licence No: 50084 Annual Tonnage: 0.0	Issue Date: 15/03/2002 Effective Date: - Modified: 26/07/2004 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: J Ryan & Co Ltd Correspondence Address: Brian Cook, Pearl Environmental Services, 13, Middleton Road, Reddish, Stockport, Cheshire, SK5 6SG
Not shown	1288	NE	384690 399449	Site Address: Dulwich Street, Collyhurst, Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JR001 EPR reference: - Operator: J Ryan & Co Ltd Waste Management licence No: 50084 Annual Tonnage: 0.0	Issue Date: 15/03/2002 Effective Date: - Modified: 26/07/2004 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified Site Name: J Ryan & Co Ltd Correspondence Address: Pearl Environmental Services, 13, Middleton Road, Reddish, Stockport, Cheshire, SK5 6SG
Not shown	1288	NE	384690 399449	Site Address: Land/premises At, Dulwich Street, Collyhurst, Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JRC001 EPR reference: EA/EPR/WP3898CJ/T003	Issue Date: 15/03/2002 Effective Date: 04/07/2007 Modified: 26/07/2004 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: J Ryan

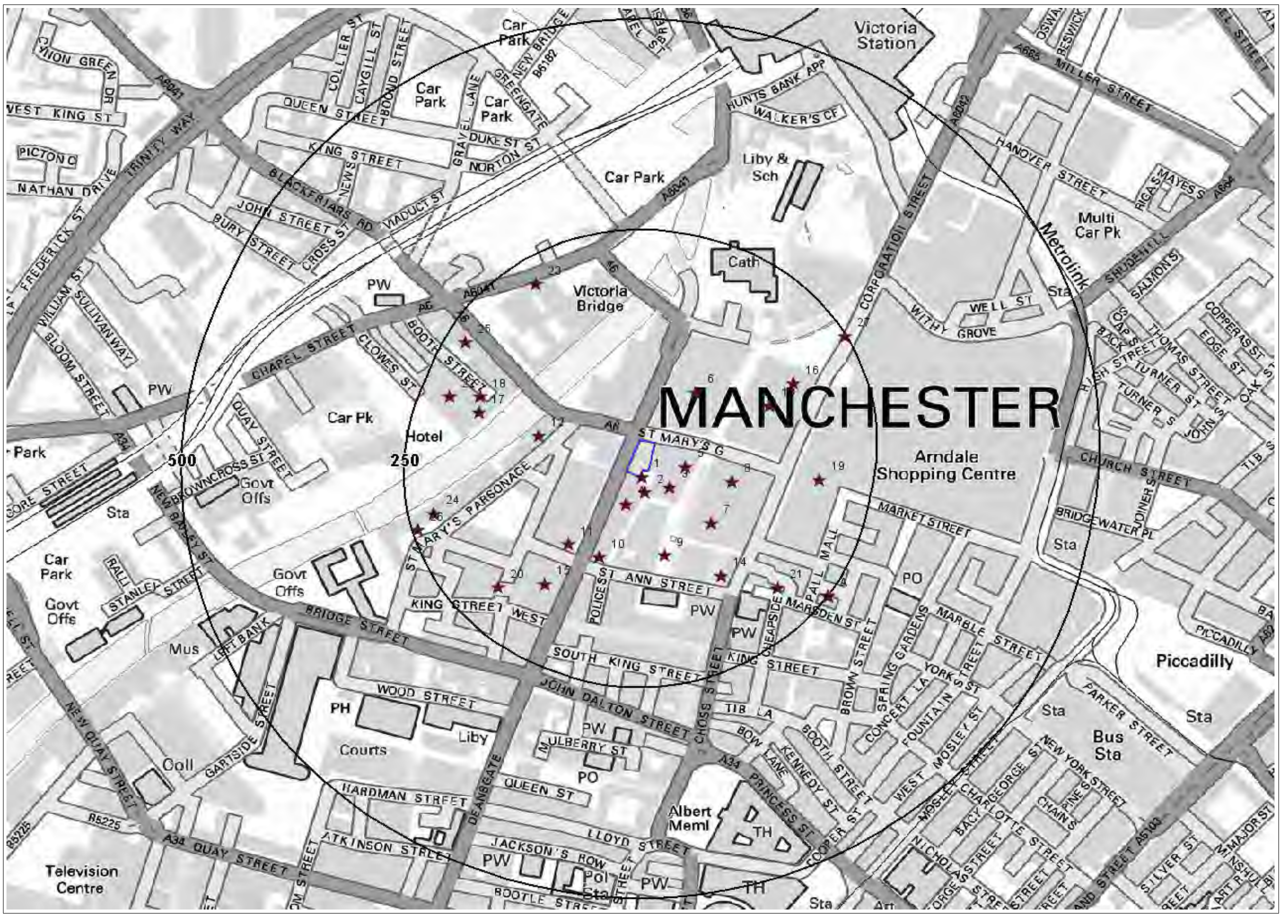
ID	Distance (m)	Direction	NGR	Details	
				Operator: Ryan John Waste Management licence No: 50084 Annual Tonnage: 75000.0	Correspondence Address: -
Not shown	1316	NE	384690 399487	Site Address: Dulwich Street, Collyhurst, Manchester, M4 4JJ Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JR001 EPR reference: - Operator: J Ryan & Co Ltd Waste Management licence No: 50084 Annual Tonnage: 25000.0	Issue Date: 15/03/2002 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: J Ryan & Co Correspondence Address: Pearl Environmental Services, 13, Middleton Road, Reddish, Stockport, Cheshire, SK5 6SG
Not shown	1322	W	382428 398434	Site Address: 2a, Hulme Street, Salford, Lancashire, M5 4PY Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ACC001 EPR reference: EA/EPR/KP3996CK/S002 Operator: A Cohen & Co Ltd Waste Management licence No: 53734 Annual Tonnage: 30000.0	Issue Date: 17/05/1994 Effective Date: - Modified: - Surrendered Date: Mar 25 2002 12:00AM Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: A Cohen & Co Ltd Correspondence Address: -
Not shown	1335	NW	383201 399751	Site Address: Unit 26, Caroline Street, Salford, Manchester, M7 1SS Type: Material Recycling Treatment Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: EGR001 EPR reference: EA/EPR/YP3492CM/A001 Operator: Gregson Ernest Waste Management licence No: 53620 Annual Tonnage: 2083.0	Issue Date: 15/03/1996 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Star Drums Correspondence Address: -
Not shown	1368	NE	384545 399671	Site Address: 21-23, Honey Street, Collyhurst, Manchester, M8 8RG Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: UKS001 EPR reference: EA/EPR/YP3498CV/T002 Operator: U K Skip Hire Ltd Waste Management licence No: 50136 Annual Tonnage: 24999.0	Issue Date: 02/01/2003 Effective Date: 14/05/2005 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Revoked Site Name: Honey Street Transfer Station Correspondence Address: -
Not shown	1368	W	382389 398344	Site Address: Upper Wharf Street, Salford, Lancashire, M5 4TY Type: Physical Treatment Facility Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LRN002 EPR reference: CP3098VU/T001 Operator: Landfill Restoration (Northern) Ltd Waste Management licence No: 53487 Annual Tonnage: 0.0	Issue Date: 17/08/1998 Effective Date: 08/05/2009 Modified: 12/08/2008 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Manchester Tippers & Aggregates Ltd Correspondence Address: -
Not shown	1368	W	382389 398344	Site Address: Manchester Tippers And Aggregates, Upper Wharf Street, Salford, Lancashire, M5 4TY Type: Physical Treatment Facility Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: LRN002	Issue Date: 17/08/1998 Effective Date: 08/05/2009 Modified: 02/12/2013 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Modified

ID	Distance (m)	Direction	NGR	Details	
				EPR reference: EA/EPR/CP3098VU/V003 Operator: Landfill Restoration (Northern) Ltd Waste Management licence No: 53487 Annual Tonnage: 74999.0	Site Name: Manchester Tippers And Aggregates Correspondence Address: -
Not shown	1399	W	382356 398368	Site Address: Manchester Tippers And Aggregates, Upper Wharf Street, Salford, Lancashire, M5 4TY Type: Physical Treatment Facility Size: >= 25000 tonnes < 75000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CAN057 EPR reference: EA/EPR/CB3400UG/T001 Operator: Canal & River Trust Waste Management licence No: 53487 Annual Tonnage: 74999.0	Issue Date: 17/08/1998 Effective Date: 04/12/2014 Modified: 02/12/2013 Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Land Restoration (Northern) Ltd Correspondence Address: -
Not shown	1470	NE	384610 399750	Site Address: 23, Honey Street, Collyhurst, Manchester, M8 8RG Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MBS001 EPR reference: - Operator: Manchester And Bury Skip Hire Ltd Waste Management licence No: 50136 Annual Tonnage: 0.0	Issue Date: 02/01/2003 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Honey Street Transfer Station Correspondence Address: 28, Alnwick Drive, Bury, Lancashire, BL9 8BZ
Not shown	1470	NE	384610 399750	Site Address: 23, Honey Street, Collyhurst, Manchester, M8 8RG Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: UKS001 EPR reference: - Operator: Uk Skip Hire Ltd Waste Management licence No: 50136 Annual Tonnage: 0.0	Issue Date: 02/01/2003 Effective Date: 14/05/2005 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Honey Street Transfer Station Correspondence Address: 23, Honey Street, Collyhurst, Manchester, M8 8RG

4. Current Land Use Map

NW N NE

W E



SW S SE

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Site Outline

Current Industrial Sites

Electricity Transmission Cables

250 500 Search Buffers (m)

Petrol & Fuel Sites

Gas Transmission Pipelines

4. Current Land Uses

4.1 Current Industrial Data

Records of potentially contaminative industrial sites within 250m of the study site: 29

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	1	SE	Electricity Sub Station	383765 398497	Greater Manchester, M3	Electrical Features	Infrastructure and Facilities
2	19	S	Rollerblinds Ltd	383768 398478	46, Barton Arcade, Manchester, Greater Manchester, M3 2BH	Curtains and Blinds	Consumer Products
3	29	SE	Airport Strategy & Marketing	383796 398485	Acresfield, 8 Exchange Street, Manchester, Greater Manchester, M2 7HA	Airlines and Airline Services	Transport, Storage and Delivery
4	36	S	A K A Bespoke Jewellers	383747 398464	61-63, Barton Arcade, Manchester, Greater Manchester, M3 2BJ	Jewellery, Gems, Clocks and Watches	Consumer Products
5	39	E	Ramboll UK Ltd	383814 398509	Kings Court 2-4, Exchange Street, Manchester, Greater Manchester, M2 7HA	Civil Engineers	Engineering Services
6	76	NE	Not Frm Ldn	383825 398597	Flat 906 1, Deansgate, Manchester, Greater Manchester, M3 1AZ	Recording Studios and Record Companies	IT, Advertising, Marketing and Media Services
7	93	SE	London Camera Exchange	383842 398442	16, Cross Street, Manchester, Greater Manchester, M2 7AE	Photographic and Optical Equipment	Household, Office, Leisure and Garden
8	93	E	Hoare Lea Ltd	383866 398491	601, Royal Exchange, Manchester, Greater Manchester, M2 7FL	Civil Engineers	Engineering Services
9	97	S	Electricity Sub Station	383791 398404	Greater Manchester, M2	Electrical Features	Infrastructure and Facilities
10	105	S	Bim Tech Engineering	383717 398402	1, St. Ann Street, Manchester, Greater Manchester, M2 7LR	Industrial Engineers	Engineering Services
11	108	SW	F1 Mobile Valeting	383682 398417	92-96, Deansgate, Manchester, Greater Manchester, M3 2QG	Vehicle Cleaning Services	Personal, Consumer and Other Services
12	108	W	Jane Lewis Healthcare	383649 398546	Blackfriars House, Parsonage, Manchester, Greater Manchester, M3 2JA	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
13	137	E	The Watch Gallery	383909 398581	1, Exchange Square, Manchester, Greater Manchester, M3 1BD	Jewellery, Gems, Clocks and Watches	Consumer Products
14	148	SE	Carcanet	383854 398380	Alliance House 30, Cross Street, Manchester, Greater Manchester, M2	Published Goods	Industrial Products

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
					7AQ		
15	162	SW	And So to Bed Ltd	383656 398370	98-106, Deansgate, Manchester, Greater Manchester, M3 2QG	Beds and Bedding	Consumer Products
16	171	NE	David Clulow Opticians	383936 398608	Exchange Square, Manchester, Greater Manchester, M1 1WT	Photographic and Optical Equipment	Household, Office, Leisure and Garden
17	179	W	Spectrum Investment Maangement	383582 398573	The Edge, Clowes Street, Salford, Greater Manchester, M3 5NA	Business Parks and Industrial Estates	Industrial Features
18	186	W	Electricity Sub Station	383584 398592	Greater Manchester, M3	Electrical Features	Infrastructure and Facilities
19	190	E	Samsung Support Centre	383965 398493	Unit R33, Marsden Way South, Manchester, Greater Manchester, M4 3AT	Electrical Equipment Repair and Servicing	Repair and Servicing
20	199	SW	Electricity Sub Station	383604 398366	Greater Manchester, M3	Electrical Features	Infrastructure and Facilities
21	200	SE	Moving Manchester	383917 398365	Tudor House 15-17, Chapel Walks, Manchester, Greater Manchester, M2 1HN	Published Goods	Industrial Products
22	218	W	Evergreen Energy	383549 398592	The Edge, Clowes Street, Salford, Greater Manchester, M3 5NA	Electronic Equipment	Industrial Products
23	220	NW	Telephone Exchange	383646 398726	Greater Manchester, M3	Telecommunications Features	Infrastructure and Facilities
24	222	W	John Good Shipping	383531 398453	Cardinal House 20, St. Marys Parsonage, Manchester, Greater Manchester, M3 2LY	Distribution and Haulage	Transport, Storage and Delivery
25	228	NW	Glyns Collections	383567 398656	Conavon Court 12, Blackfriars Street, Salford, Greater Manchester, M3 5BQ	Clothing, Components and Accessories	Consumer Products
26	245	W	Electricity Sub Station	383513 398434	Greater Manchester, M3	Electrical Features	Infrastructure and Facilities
27	249	NE	Exchange Square (Manchester Metrolink)	383994 398664	Greater Manchester, M1	Tram, Metro and Light Railway Stations and Stops	Public Transport, Stations and Infrastructure
28A	250	SE	1 Marsden Street Business Centre	383974 398356	1, Marsden Street, Manchester, Greater Manchester, M2 1HW	Business Parks and Industrial Estates	Industrial Features
29A	250	SE	Campbell Reith	383974 398355	1, Marsden Street, Manchester, Greater Manchester, M2 1HW	Civil Engineers	Engineering Services

4.2 Petrol and Fuel Sites

Records of petrol or fuel sites within 500m of the study site: 0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

Database searched and no data found.

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5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
GFSDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL

5.3 Bedrock and Solid Geology

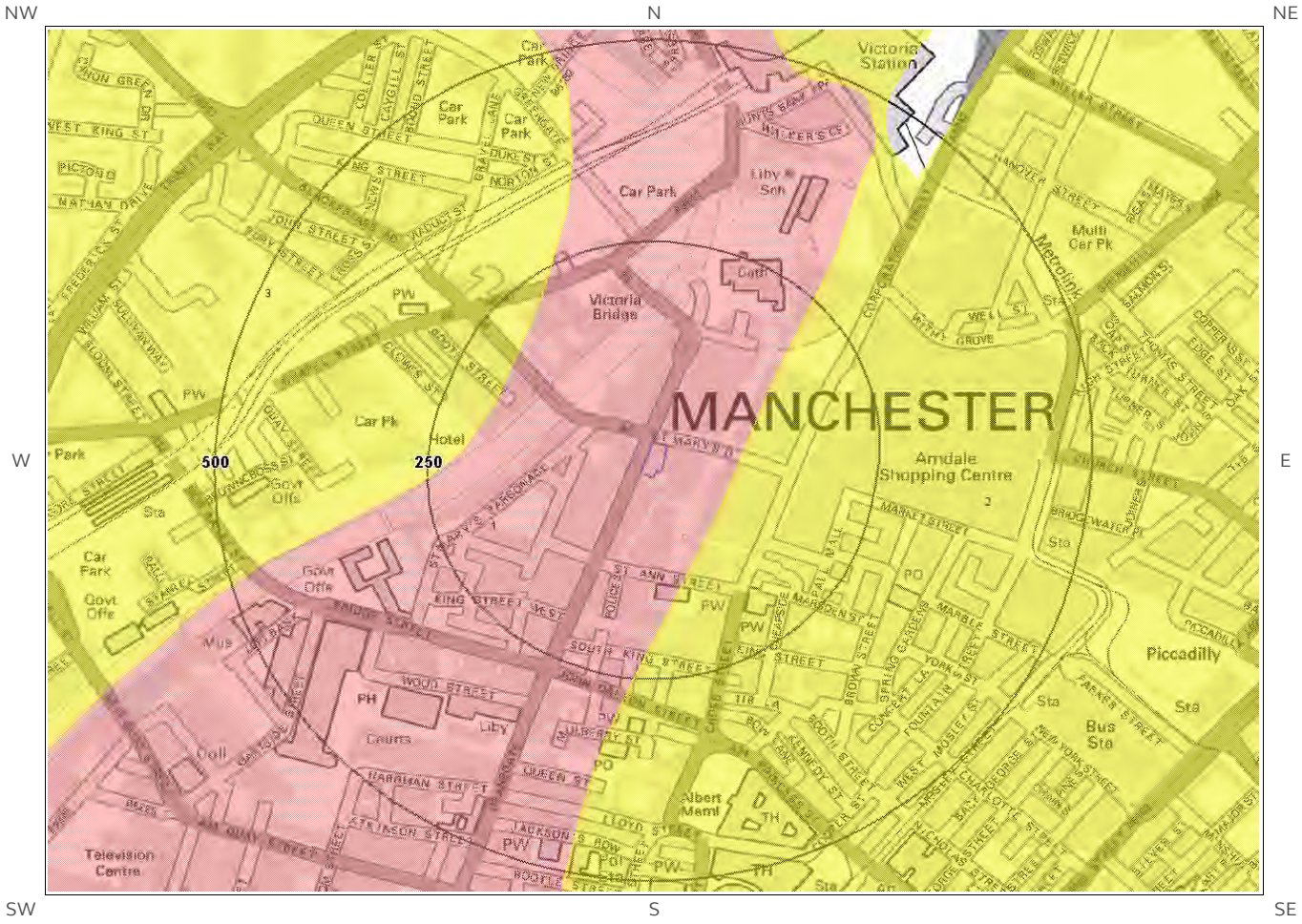
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
CHES-SDST	CHESTER FORMATION	SANDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

6a. Aquifer Within Superficial Geology



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Site Outline

250
500
Search Buffers (m)

Principal Aquifer

Secondary (A) Aquifer - Permeable Layers

Secondary (B) Aquifer - Lower Permeability Layers

Secondary Aquifer - Undifferentiated Layers

Unproductive

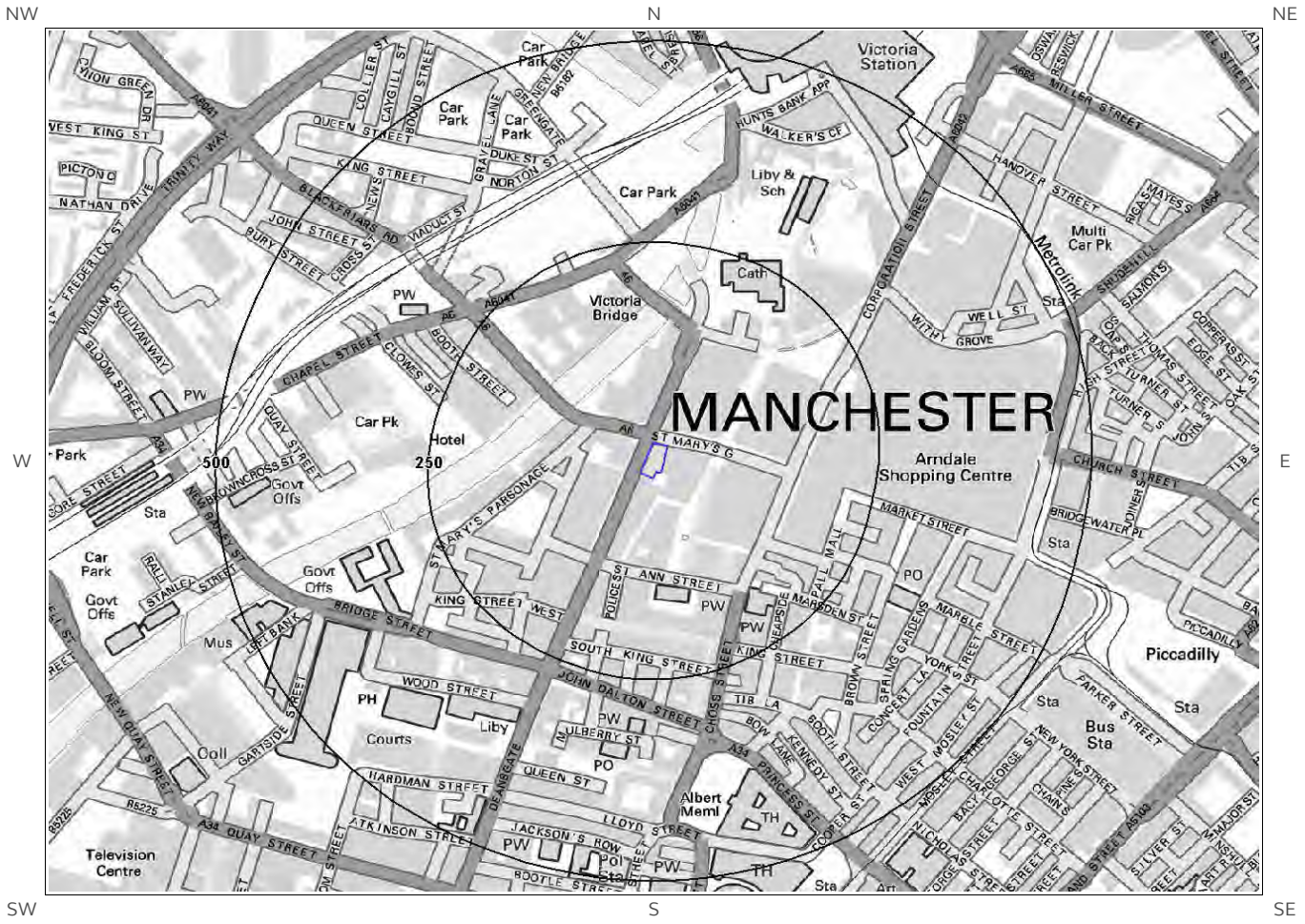
Unknown (lakes and landslip)

6b. Aquifer Within Bedrock Geology and Abstraction Licences



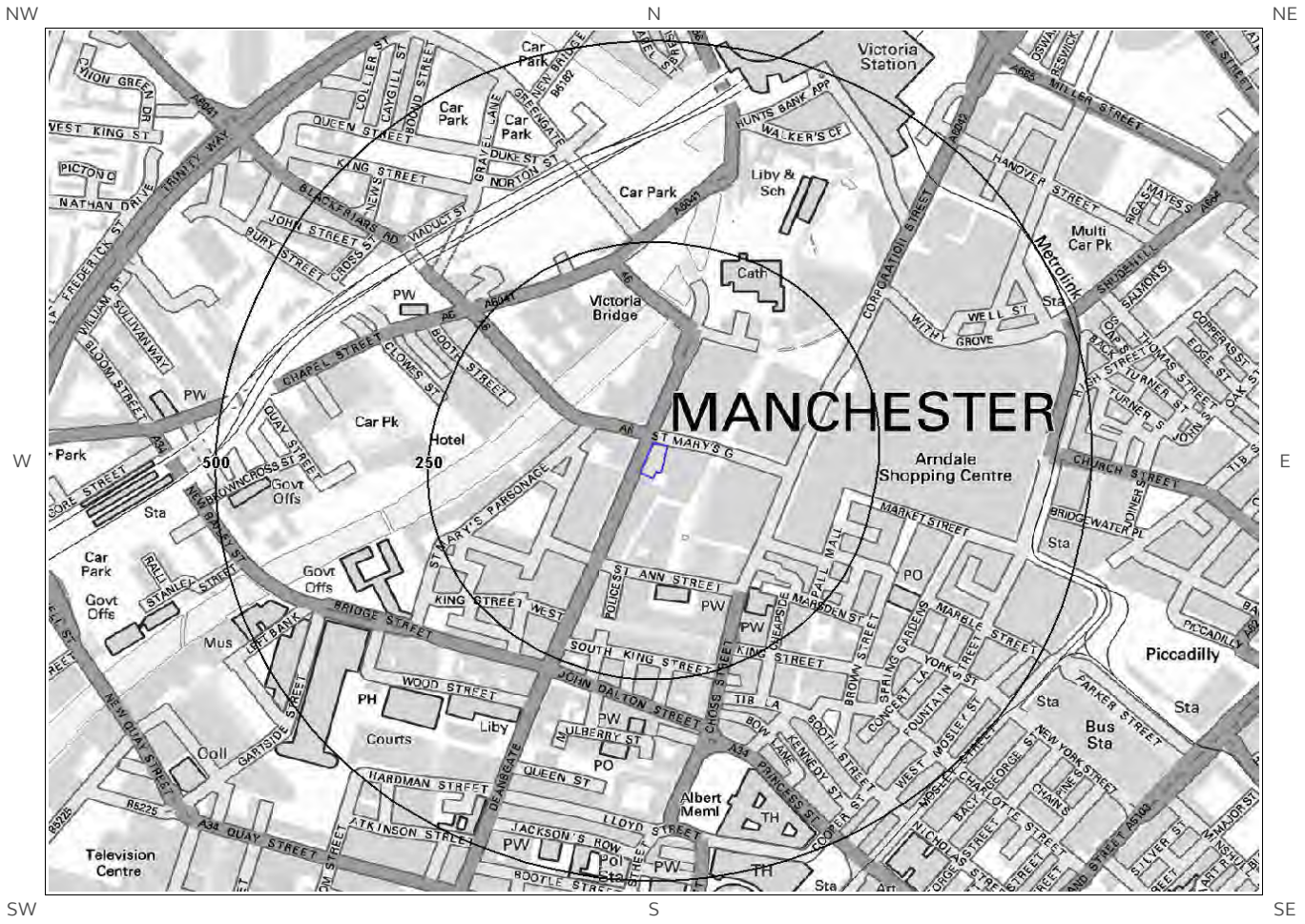
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6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



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6d. Hydrogeology – Source Protection Zones within confined aquifer



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Site Outline

250
500
Search Buffers (m)

Source Protection Zone 1 - Inner Catchment

Source Protection Zone 2C - Outer Catchment within Confined Aquifer

Source Protection Zone 3C - Total Catchment within Confined Aquifer

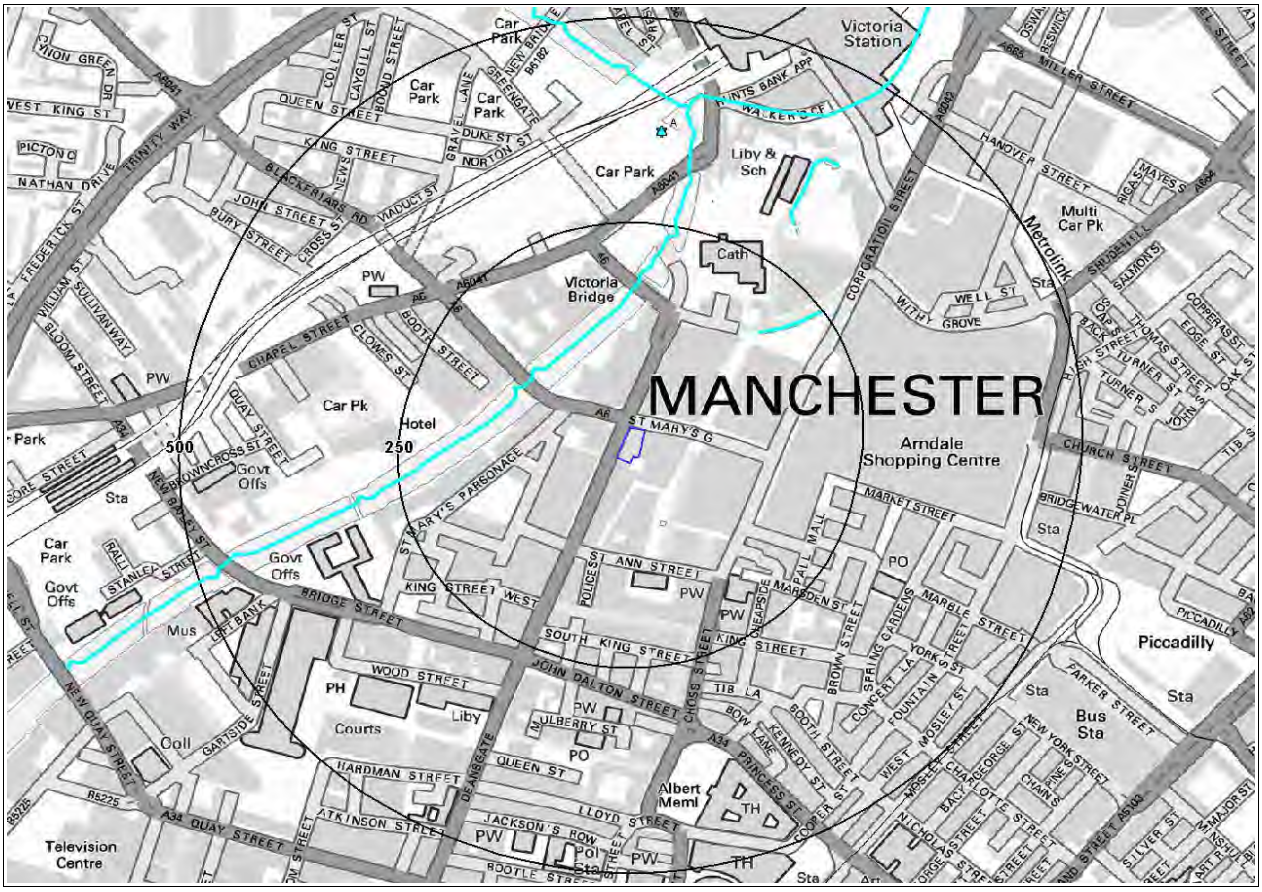
Potable Water Abstraction Licence

6e. Hydrology – Watercourse Network and River Quality

NW N NE

W E

SW S SE



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6.Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	81	E	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
3	190	W	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site — Identified

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

ID	Distance (m)	Direction	NGR	Details	
3A	172	N	383700 398700	Status: Historical Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT DIAL HOUSE, CHAPEL ST, SALFORD" Data Type: Point Name: BRITISH TELECOM	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/01/1971 Version End Date:
4A	172	N	383700 398700	Status: Historical Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT DIAL HOUSE, CHAPEL ST, SALFORD Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 101 Version Start Date: 01/04/1984 Version End Date:
5A	172	N	383700 398700	Status: Active Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT DIAL HOUSE CHAPEL STREET SALFORD Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC	Annual Volume (m^3): 45 Max Daily Volume (m^3): 30 Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2007 Version End Date:
6	456	SW	383335 398310	Status: Historical Licence No: 2569007089 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: 2 BOREHOLES AT GARTSIDE STREET MANCHESTER Data Type: Line Name: HER MAJESTY'S COURT SERVICE	Annual Volume (m^3): 200000 Max Daily Volume (m^3): 1179 Original Application No: - Original Start Date: 26/01/2005 Expiry Date: 31/03/2011 Issue No: 2 Version Start Date: 10/07/2008 Version End Date:
7B	600	SE	384100 398000	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT GEORGE ST, MANCHESTER Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC	Annual Volume (m^3): 1100 Max Daily Volume (m^3): 860 Original Application No: - Original Start Date: 01/04/1984 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
8B	600	SE	384100 398000	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT GEORGE ST, MANCHESTER" Data Type: Point Name: BRITISH TELECOM	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/01/1971 Version End Date:
Not shown	652	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date:
Not shown	652	N	383820 399190	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date:
Not shown	652	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:
Not shown	652	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 2 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:
Not shown	652	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 2 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	652	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:
Not shown	683	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 3 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:
Not shown	683	N	383830 399220	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date:
Not shown	683	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date:
Not shown	683	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:
Not shown	683	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 3 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	683	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:
Not shown	715	N	383850 399250	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date:
Not shown	715	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:
Not shown	715	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:
Not shown	715	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 1 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:
Not shown	715	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	715	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 1 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date:
Not shown	980	SE	384378 397733	Status: Historical Licence No: NW0690006001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLES AT ORIGIN DEVELOPMENTS, MANCHESTER Data Type: Point Name: West Contracting	Annual Volume (m^3): 139128 Max Daily Volume (m^3): 1010 Original Application No: - Original Start Date: 19/01/2009 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 19/01/2009 Version End Date:
Not shown	980	SE	384378 397733	Status: Historical Licence No: NW/069/0006/001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLES AT ORIGIN DEVELOPMENTS, MANCHESTER Data Type: Point Name: West Contracting	Annual Volume (m^3): 139128 Max Daily Volume (m^3): 1010 Original Application No: - Original Start Date: 19/01/2009 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 19/01/2009 Version End Date:
Not shown	1207	N	384100 399700	Status: Historical Licence No: 2569004011 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT DERBY BREWERY, CHEETHAM, MANCHESTER 3" Data Type: Point Name: JOSEPH HOLT LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/02/1966 Version End Date:
Not shown	1207	N	384100 399700	Status: Historical Licence No: 2569004011 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT DERBY BREWERY, CHEETHAM, MANCHESTER 3" Data Type: Point Name: JOSEPH HOLT LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/02/1966 Version End Date:
Not shown	1207	N	384100 399700	Status: Active Licence No: 2569004011 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT DERBY BREWERY, CHEETHAM, MANCHESTER 3 Data Type: Point Name: JOSEPH HOLT LTD	Annual Volume (m^3): 45460 Max Daily Volume (m^3): 181.84 Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/02/1966 Version End Date:
Not shown	1207	N	384100 399700	Status: Active Licence No: 2569004011 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT DERBY BREWERY, CHEETHAM, MANCHESTER 3 Data Type: Point Name: JOSEPH HOLT LTD	Annual Volume (m^3): 45460 Max Daily Volume (m^3): 181.84 Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/02/1966 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1267	N	383900 399800	Status: Historical Licence No: 2569004021 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, DERBY STREET, CHEETHAM, MANCHESTER Data Type: Point Name: LANCASHIRE DAIRIES LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date:
Not shown	1267	N	383900 399800	Status: Historical Licence No: 2569004021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, DERBY STREET, CHEETHAM, MANCHESTER Data Type: Point Name: LANCASHIRE DAIRIES LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date:
Not shown	1466	S	384180 397091	Status: Active Licence No: NW/069/0006/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University	Annual Volume (m^3): 283240 Max Daily Volume (m^3): 1532 Original Application No: - Original Start Date: 04/04/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date:
Not shown	1466	S	384180 397091	Status: Active Licence No: NW/069/0006/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University	Annual Volume (m^3): 283240 Max Daily Volume (m^3): 1532 Original Application No: - Original Start Date: 04/04/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date:
Not shown	1568	W	382190 398330	Status: Active Licence No: 2569007085 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT HOPE STREET, SALFORD, MANCHESTER Data Type: Point Name: CEMEX UK MATERIALS LTD	Annual Volume (m^3): 23000 Max Daily Volume (m^3): 115 Original Application No: - Original Start Date: 01/11/2000 Expiry Date: - Issue No: 4 Version Start Date: 21/12/2018 Version End Date:
Not shown	1568	W	382190 398330	Status: Historical Licence No: 2569007085 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT HOPE STREET, SALFORD, MANCHESTER" Data Type: Point Name: READY MIXED CONCRETE (NORTH WEST) LIMITED	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/11/2000 Expiry Date: - Issue No: 1 Version Start Date: 01/11/2000 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1751	S	383715 396746	Status: Active Licence No: NW/069/0004/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University	Annual Volume (m^3): 274115 Max Daily Volume (m^3): 751 Original Application No: - Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/01/2015 Version End Date:
Not shown	1751	S	383715 396746	Status: Active Licence No: NW/069/0004/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University	Annual Volume (m^3): 274115 Max Daily Volume (m^3): 751 Original Application No: - Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/01/2015 Version End Date:
Not shown	1755	SE	385240 397540	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, BROADIE ST, ARDWICK, MANCHESTER" Data Type: Point Name: MOSELEY RUBBER CO LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 08/02/1966 Version End Date:
Not shown	1755	SE	385240 397540	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, BROADIE ST, ARDWICK, MANCHESTER Data Type: Point Name: MOSELEY RUBBER CO LTD	Annual Volume (m^3): 331858 Max Daily Volume (m^3): 909.2 Original Application No: - Original Start Date: 08/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 08/02/1966 Version End Date:
Not shown	1983	NE	385000 400100	Status: Historical Licence No: 2569005015 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "B/HOLE, LITTLE GREEN WORKS, COLLYHURST RD, MANCHESTER 10" Data Type: Point Name: PACKAGING PRODUCTS LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 16/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 21/02/1995 Version End Date:
Not shown	1983	NE	385000 400100	Status: Active Licence No: 2569005015 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: B/HOLE, LITTLE GREEN WORKS, COLLYHURST RD, MANCHESTER 10 Data Type: Point Name: Packaging Products (Coatings) Ltd	Annual Volume (m^3): 438689 Max Daily Volume (m^3): 1636.56 Original Application No: - Original Start Date: 16/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/02/2011 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site — Identified

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

ID	Distance (m)	Direction	NGR	Details	
Not shown	1666	SW	382500 397400	Status: Historical Licence No: 2569007053 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "R IRWELL AT IRWELL WORKS, ORDSALL LANE, SALFORD" Data Type: Point Name: CDS COMPUTER DESIGN SYSTEMS LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 22/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1987 Version End Date:
Not shown	1666	SW	382500 397400	Status: Historical Licence No: 2569007053 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: R IRWELL AT IRWELL WORKS, ORDSALL LANE, SALFORD Data Type: Point Name: CDS COMPUTER DESIGN SYSTEMS LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Application No: - Original Start Date: 22/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1987 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site — Identified

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

ID	Distance (m)	Direction	NGR	Details	
Not shown	652	N	383820 399190	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	652	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	652	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 2 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	683	N	383830 399220	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	683	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	683	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 3 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	715	N	383850 399250	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	715	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	715	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 1 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1267	N	383900 399800	Status: Historical Licence No: 2569004021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, DERBY STREET, CHEETHAM, MANCHESTER Data Type: Point Name: LANCASHIRE DAIRIES LTD	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site — None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site — None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Major Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site Identified

6.9.1 Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

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

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
14A	362	N	383800 398900	River Name: Irk Reach: Moston Bk. To Irwell End/Start of Stretch: End of Stretch NGR	E	E	E	E	E

6.9.2 Chemical Quality:

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

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

					Chemical Quality Grade				
ID	Distance (m)	Direction	NGR	River Quality Grade	2005	2006	2007	2008	2009
15A	362	N	383800 398900	River Name: Irk Reach: Moston Bk. To Irwell End/Start of Stretch: End of Stretch NGR	C	C	C	C	D
Not shown	1033	SW	383330 397558	River Name: Rochdale Canal Reach: Ashton Canal To Knott Mill End/Start of Stretch: Sample Point NGR	A	A	A	A	A
Not shown	1039	NE	384445 399335	River Name: Irk Reach: Moston Bk. To Irwell End/Start of Stretch: Sample Point NGR	C	C	C	C	D
Not shown	1111	SW	383100 397600	River Name: Rochdale Canal Reach: Ashton Canal To Knott Mill End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
Not shown	1118	E	384830 398140	River Name: Rochdale Canal Reach: Ashton Canal To Knott Mill End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
Not shown	1119	E	384850 398200	River Name: Rochdale Canal Reach: Empress Processing To Ashton Canal End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
Not shown	1173	E	384950 398450	River Name: Rochdale Canal Reach: Empress Processing To Ashton Canal End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
Not shown	1173	E	384950 398450	River Name: Rochdale Canal Reach: Qsl At Summit To Empress Processing End/Start of Stretch: End of Stretch NGR	A	A	A	A	A

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
1	117 NW	River Irwell	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 25.0
52	117 NW	River Irwell	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 25.0
2	176 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
53	176 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.1
3	193 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
54	193 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
4	201 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
55	201 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
5	214 N	River Irwell	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
56	214 N	River Irwell	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	223 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
57	223 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				Average Width in Watercourse Section (m): Not Provided
7	227 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
58	227 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.0
8	237 N	River Irwell	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 24.8
59	237 N	River Irwell	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 24.8
9	304 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
60	304 NE	-	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 2.6
10	397 N	River Irwell	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	397 N	River Irwell	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
11	398 N	River Irk	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 14.7
Not shown	398 N	River Irk	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 14.7
12	412 N	River Irk	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	412 N	River Irk	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
13	432 N	River Irwell	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 28.7
Not shown	432 N	River Irwell	Inland river not influenced by normal tidal action.	Catchment Area: Mersey Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 28.7

6.11 Surface Water Features

Surface water features within 250m of the study site Identified

The following surface water records are not represented on mapping:

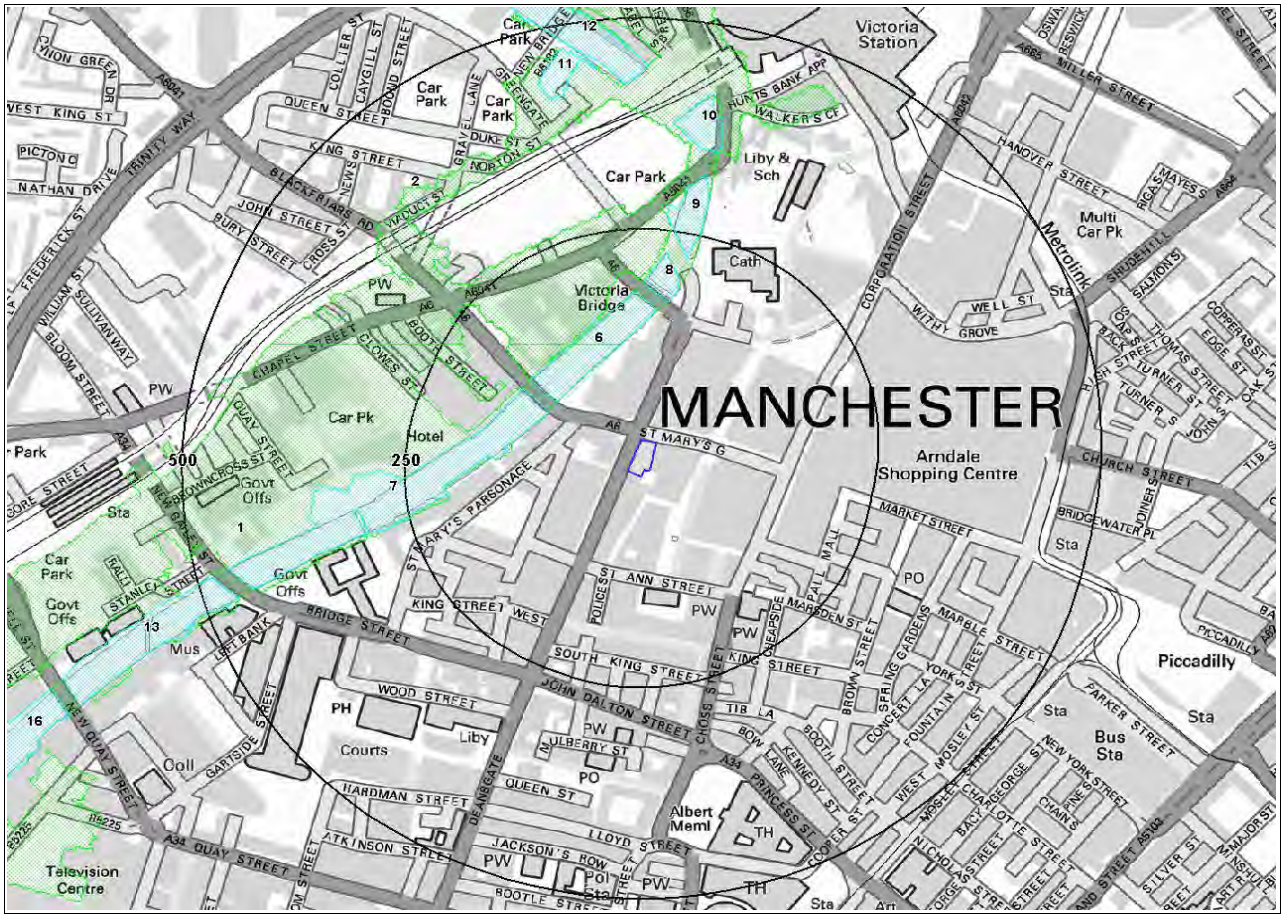
Distance (m)	Direction
99	NW
107	W
166	N
222	N

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

NW N NE

W E

SW S SE



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Site Outline

100
250
Search Buffers (m)

Zone 2 Floodplain

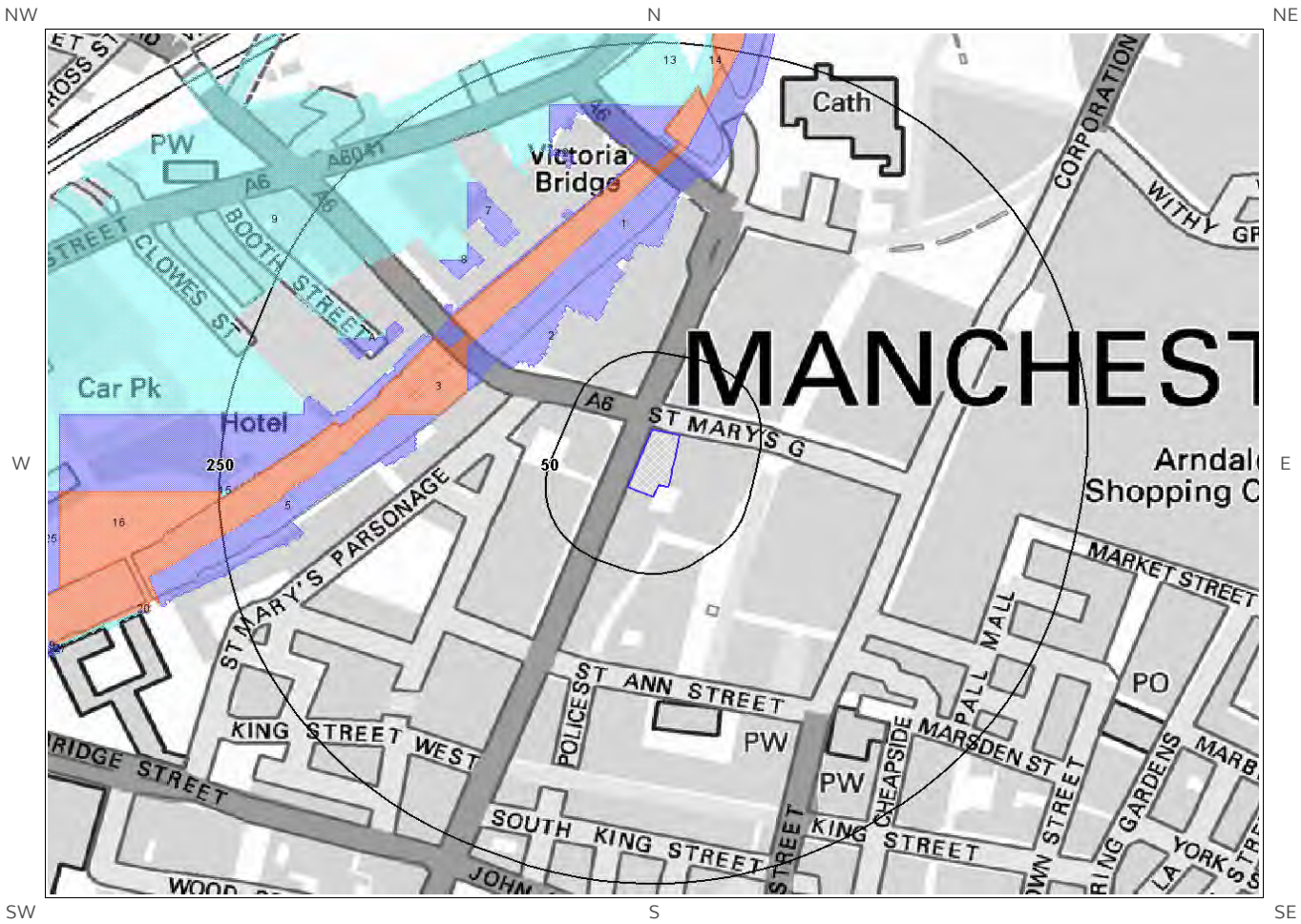
Zone 3 Floodplain

Flood Defences

Area used for Flood Storage

Area Benefiting from Flood Defences

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



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Site Outline

100
250
Search Buffers (m)

RoFRaS Rating

- Very Low
- Low
- Medium
- High

7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m — Identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

ID	Distance (m)	Direction	Update	Type
1	98	NW	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)
2	116	N	20-Jun-2019	Zone 2 - (Fluvial /Tidal Models)

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m — Identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

ID	Distance (m)	Direction	Update	Type
1	99	NW	20-Jun-2019	Zone 3 - (Fluvial Models)
2	108	W	20-Jun-2019	Zone 3 - (Fluvial Models)
	166	N	20-Jun-2019	Zone 3 - (Fluvial Models)
	224	N	20-Jun-2019	Zone 3 - (Fluvial Models)

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite — Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Flood Defences within 250m of the study site — None identified

Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site — None identified

---

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site — None identified

---

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site — Identified

Clearwater Flooding or Superficial Deposits Flooding — Clearwater Flooding

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

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Limited potential

Where limited potential for groundwater flooding to occur is indicated, this means that although given the geological conditions there may be a groundwater flooding hazard, unless other relevant information, e.g. records of previous flooding, suggests groundwater flooding has occurred before in this area, you need take no further action in relation to groundwater flooding hazard.

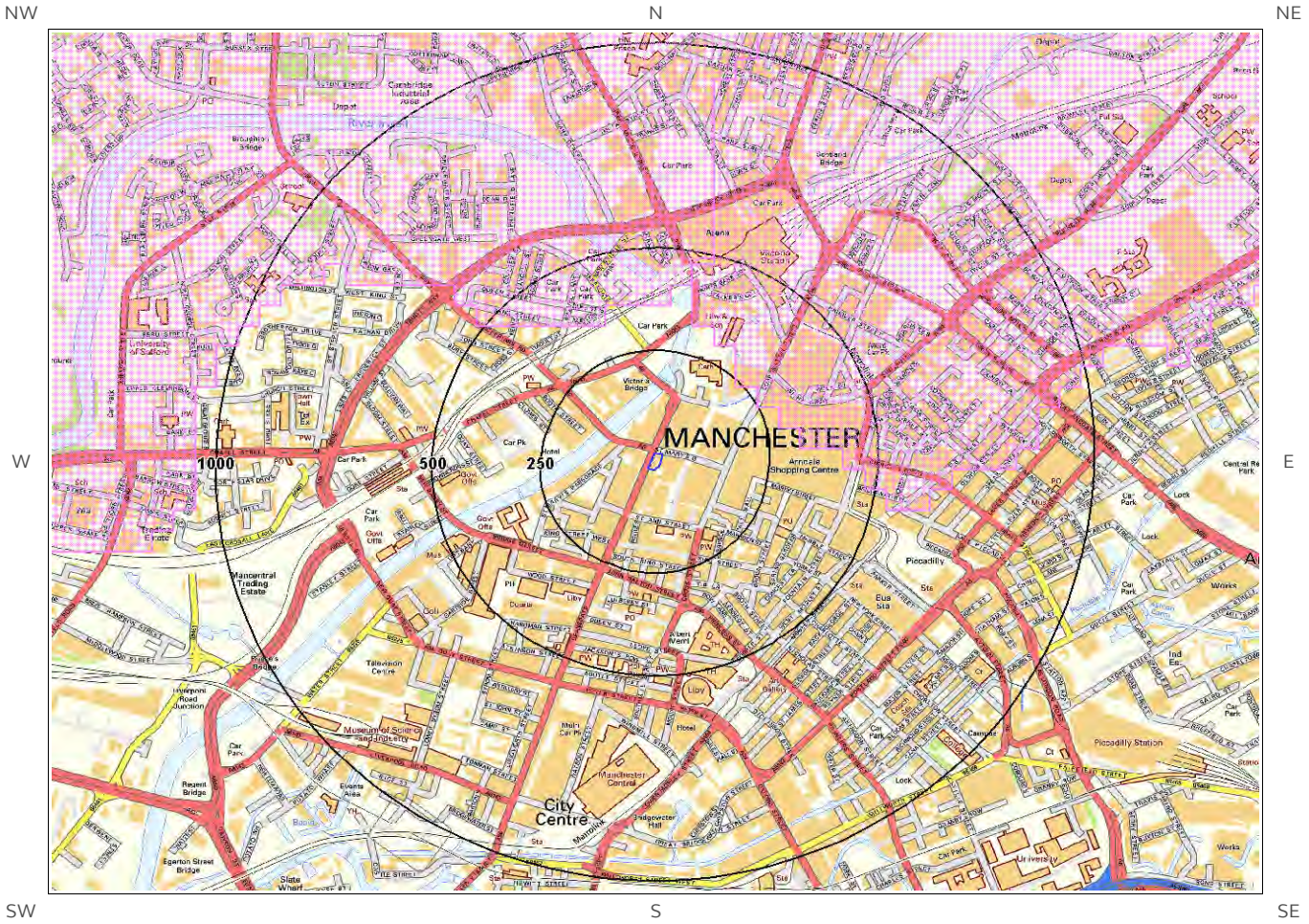
7.8 Groundwater Flooding Confidence Areas

British Geological Survey confidence rating in this result	Low

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

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

8. Designated Environmentally Sensitive Sites Map



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Site Outline

100
250
Search Buffers (m)

AONB

National Park

SSSI

Special Protection Areas

Nitrate Vulnerable Zones

Green Belt

Environmentally Sensitive Areas

Special Areas of Conservation

World Heritage Sites

Nitrate Sensitive Areas

Ancient Woodland

National Nature Reserve

Local Nature Reserves

Ramsar Sites

8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site | Identified

8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

0

Database searched and no data found.

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

0

Database searched and no data found.

8.8 Records of World Heritage Sites within 2000m of the study site:

0

Database searched and no data found.

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

4

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

ID	Distance (m)	Direction	NVZ Name	Data Source
1	236	NE	Existing	DEFRA
2	330	N	Existing	DEFRA
Not shown	1460	N	Existing	DEFRA
Not shown	1553	N	Existing	DEFRA

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

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a Groundsure Geo Insight, available from our website. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell*[*] hazard rating identified on the study site — Negligible

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

Hazard
Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site — Very Low

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

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

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site — Negligible

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

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This indicates an automatically generated 50m buffer and site.

9.1.4 Compressible Ground

Maximum Compressible Ground* hazard rating identified on the study site — Negligible

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

Hazard
No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

9.1.5 Collapsible Rocks

Maximum Collapsible Rocks* hazard rating identified on the study site — Very Low

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

Hazard
Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

9.1.6 Running Sand

Maximum Running Sand** hazard rating identified on the study site — Low

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

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

* This indicates an automatically generated 50m buffer and site.

9.2 Radon

9.2.1 Radon Affected Areas

Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The site is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

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

9.2.2 Radon Protection

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

10. Mining

10.1 Coal Mining

Coal mining areas within 75m of the study site — Identified

The following coal mining information provided by the Coal Authority is not represented on Mapping:

Distance (m)	Direction	Details
0	On Site	The site lies in or in proximity to the coal mining reporting area as defined by the Coal Authority

10.2 Non-Coal Mining

Non-Coal Mining areas within 50m of the study site boundary — None identified

Database searched and no data found.

10.3 Brine Affected Areas

Brine affected areas within 75m of the study site — None identified
Guidance: No Guidance Required.

Contact Details

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info@brownfield-solutions.co.uk
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CW9 5LP

British Geological Survey Enquiries
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Tel: 0115 936 3143.
Fax: 0115 936 3276.
Email:
Web:**www.bgs.ac.uk**
BGS Geological Hazards Reports and general geological enquiries:
enquiries@bgs.ac.uk

Environment Agency
National Customer Contact Centre, PO Box 544
Rotherham, S60 1BY
Tel: 03708 506 506
Web: **www.environment-agency.gov.uk**
Email: enquiries@environment-agency.gov.uk

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

The Coal Authority
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Mansfield
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Tel: 0345 7626 848
DX 716176 Mansfield 5
www.coal.gov.uk

Ordnance Survey
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SO16 0AS
Tel: 08456 050505

Local Authority
Authority: Manchester City Council
Phone: 0161 234 5000
Web: http://www.manchester.gov.uk/
Address: , Manchester, M60 2LA

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

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https://www.groundsure.com/terms-and-conditions-feb11-2019

APPENDIX F

UXO Screening Map

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Unexploded Ordnance Risk Mitigation

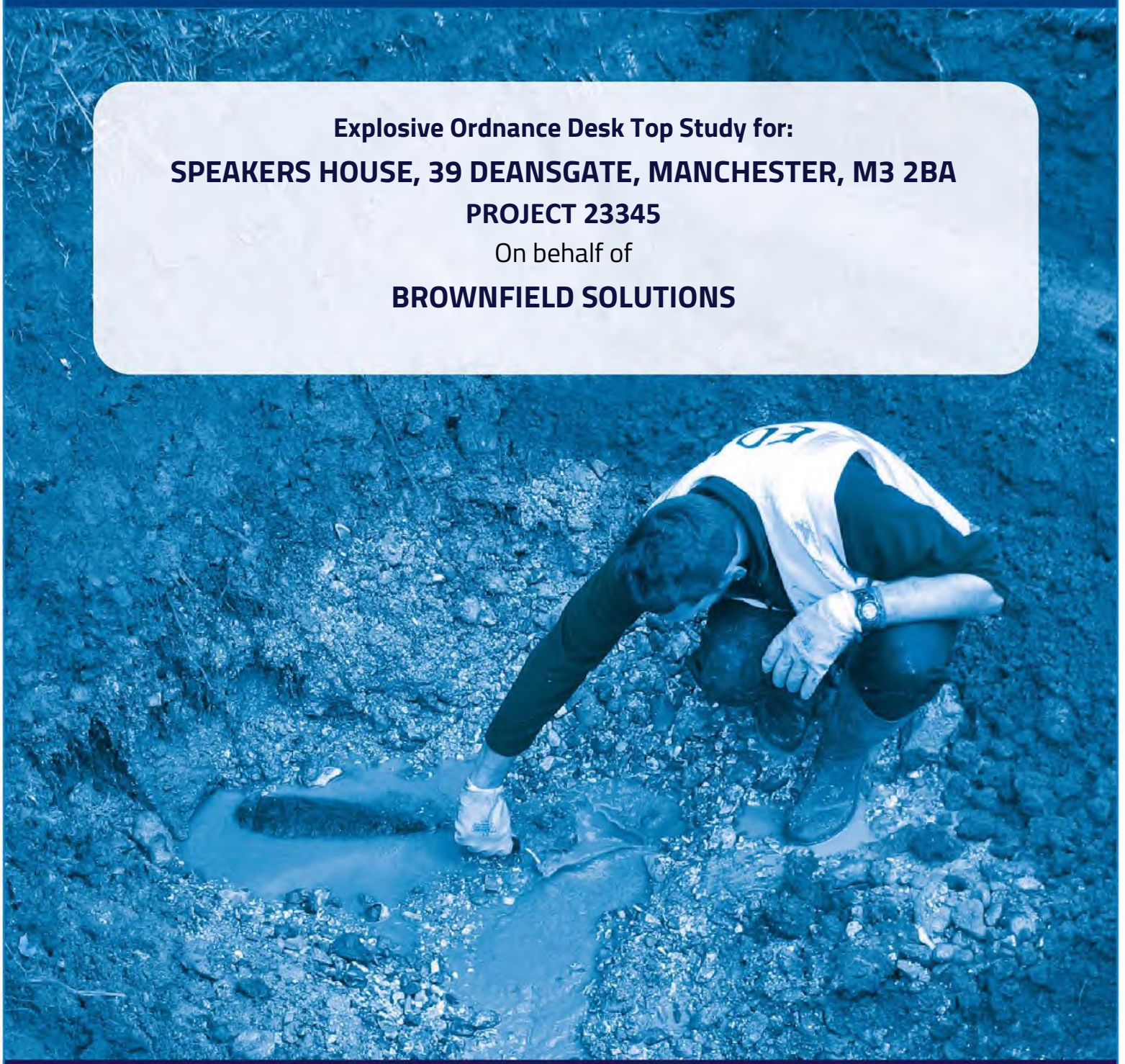
Explosive Ordnance Desk Top Study for:

SPEAKERS HOUSE, 39 DEANSGATE, MANCHESTER, M3 2BA

PROJECT 23345

On behalf of

BROWNFIELD SOLUTIONS



www.eodcontractsltd.com

Tel: 01386 578 405

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Institute of Explosives Engineers
VOICE OF THE EXPLOSIVES INDUSTRIES

EXPLOSIVE ORDNANCE DESKTOP STUDY

For

SPEAKERS HOUSE, 39 DEANSGATE, MANCHESTER, M3 2BA

Conducted by **EOD Contracts Limited**

On behalf of **BROWNFIELD SOLUTIONS**

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TERMS AND DEFINITIONS

Anti-Aircraft Shells (AA)
Small High Explosive Shells (HE) shells ranging up to 100mm in diameter.

Air Raid Precautions (ARP)
An organisation in the United Kingdom set up in 1937 dedicated to the protection of civilians from the danger of air raids. It included the Raid Wardens' Service that was to report on bombing incidents.

Battlefield Area Clearance (BAC)
The systematic clearance of munitions from military property or old battle sites e.g., ranges, airfields etc.

Borehole Search
The placing of boreholes in a set pattern, then using a magnetometer to take readings at specific depths along each borehole. When used with a geophysical survey system this will give a magnetic signature of the area. The depth of the borehole and the pattern will depend upon the type of Unexploded Bombs (UXB) and the geology of the ground.

Doodle Bug (See Pilotless Aircraft)

Explosive Ordnance (EO)
All munitions containing explosives, nuclear fission/fusion materials and or biological and chemical agents. This includes bombs and warheads; guided and ballistic missiles; artillery, mortar, rocket, and Small Arms Ammunition (SAA); all mines, torpedoes and depth charges; pyrotechnics; clusters and dispensers; cartridge and propellant actuated devices; electro-explosive devices; clandestine and improvised explosive devices (IED); and all similar or related items or components explosive in nature.

Explosive Ordnance Clearance (EOC)
See BAC.

Explosive Ordnance Disposal (EOD)
The detection, identification, field evaluation, render safe, recovery and disposal of **UXO**.

Geophysical Survey
The survey of an area using a Magnetometer and geophysical gathering device, after interpretation, this will produce a geophysical map and an object list for any metallic anomalies.

High Explosive (HE)
High explosives burn/detonate at rates of up to 9,000 m/per second.

Incendiary Bomb (IB)
Incendiary bombs ranged from 1kg in size to 500kg the larger sizes were sometimes called Oil Bombs. Fills range from thermite mixtures, phosphorus to kerosene.

Intrusive Survey
The use of a cone penetrometer (MagCone) or drilled boreholes (MagDrill) to take magnetometer test in a set pattern (see borehole search), or to prove pile positions.

Land Service Ammunition (LSA)

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LSA is defined as “All items containing explosives or pyrotechnic compounds which are placed, thrown, or projected so as to cause damage to men and equipment during land warfare.

Long Range Rocket (LRR)
The long-range rocket sometimes codenamed Big Ben is the V2 rocket designed to deliver an approximate payload of 1000 kg.

Oil Bomb (OB)
A bomb containing a flammable liquid, normally the KC 250 Flam or the C 500 flam.

Pilot less Aircraft (PAC)
A flying bomb (Fly) or doodlebug is the V1 rocket, or predecessors designed to deliver an explosive payload of approximately 500kg - 800kg.

Parachute Mine (PM)
Air dropped mine may have been used as a blast effect bomb maximum explosive content 1600lb always fitted with anti-handling and anti-stripping equipment.

Unexploded Bomb (UXB)
Any air dropped bomb that has failed to operate.

Unexploded Ordnance (UXO)
Explosive ordnance that has been primed, fused, armed, or otherwise prepared for use or used. It may have been fired, dropped, launched, or projected yet remains unexploded either through malfunction or design or for any other cause.

Vengeance Weapons (V)
V1 see Pilotless Aircraft.
V2 see Long Range Rocket.

WWI
World War 1 (1914 – 1918)

WWII
World War 2 (1939 – 1945)

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EXECUTIVE SUMMARY

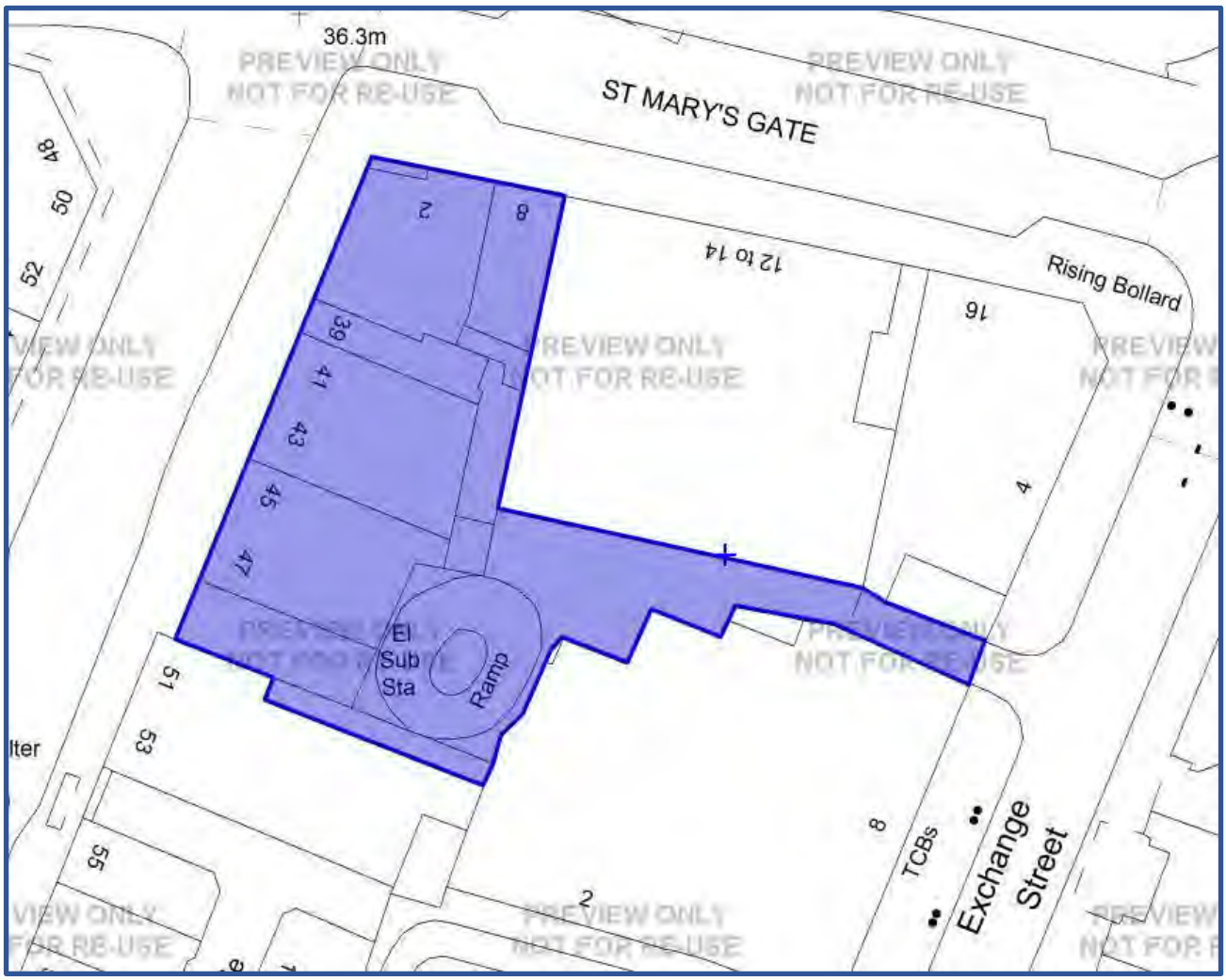
INSTRUCTION

EOD Contracts Ltd, have been commissioned by BROWNFIELD SOLUTIONS (hereafter the Client) to undertake a desktop study for potential historic Unexploded Ordnance (UXO) contamination for the future works being carried out at Speakers House, 39 Deansgate, Manchester, M3 2BA, (hereafter referred to as the Site).

SCOPE OF WORK

The scope of this EO Risk Assessment/Desk Study is to assess the likelihood of buried EO/UXO within the environs of The Site (See Figure 1.1), in view of further development. A further aim was to evaluate the implication from UXO contamination during any future intrusive land use.

Figure 1.1: Clients Supplied Site Diagram, This DTS will be covering all areas shown within the blue shaded area.

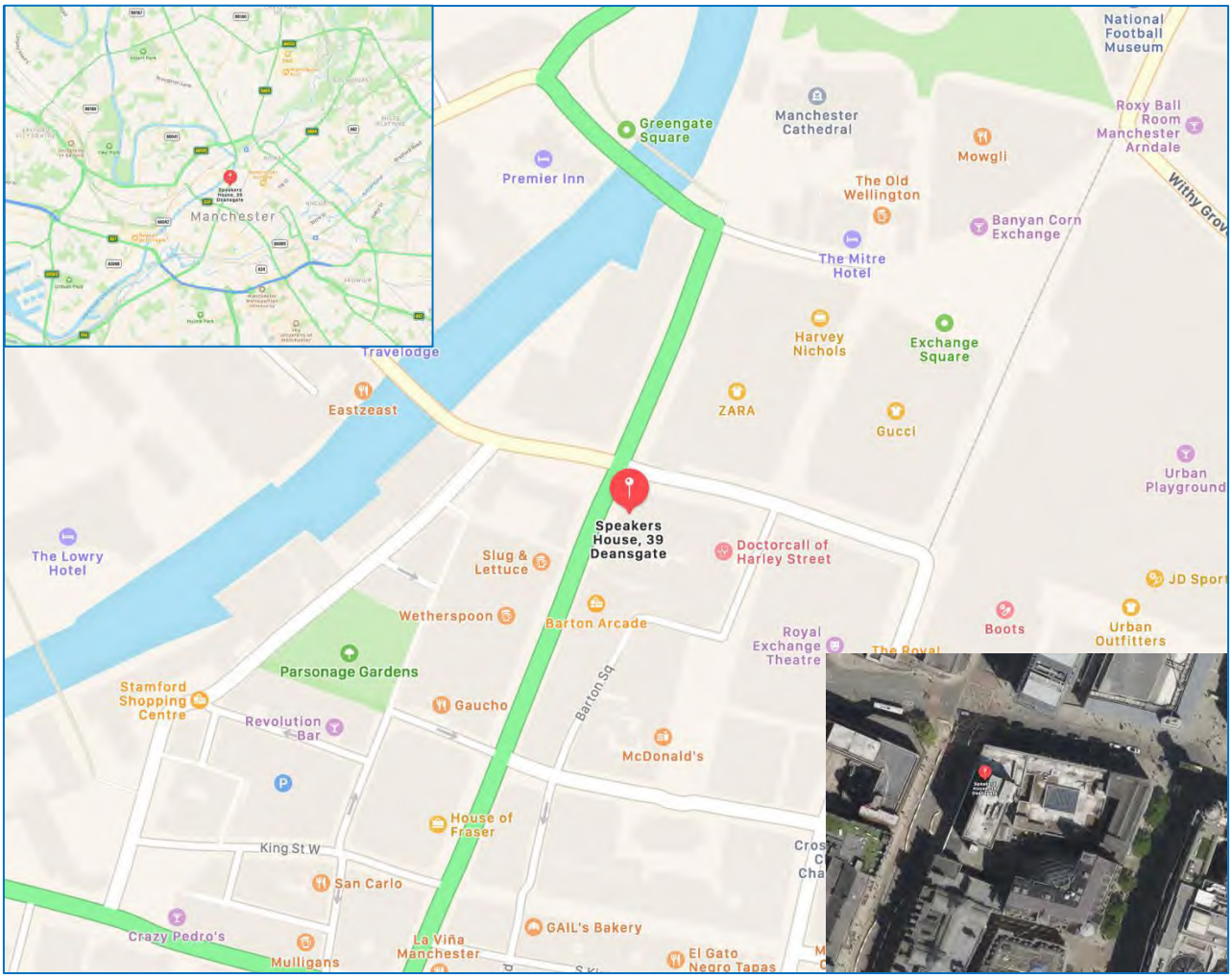


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LOCATION

The Site is located along Deansgate, Manchester (NW of the center) in close proximity. Should the need be required the client will provide an exact meeting place.

Table 3.1 Site Location.



Title	Description (Centre of Site)
Address	Speakers House, 39 Deansgate, Manchester.
Post Code	M3 2BA
Nat Grid Reference	SJ 837985 – SJ 8376498524
what3words	chop.avoid.civil

SOURCES OF UXO CONTAMINATION

The main sources of potential UXO contamination that have been researched for the site are:

- Buried or discarded items of ordnance.
- Air delivered ordnance bombs and sub-munitions/incendiaries.

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KEY FINDINGS

Based on the information researched by EOD Contracts Ltd for the proposed scope of works being carried out within the given Site area, the following conclusions have been reached:

Risk Level

The overall risk has been determined to one area within the site footprint (see below). The prevailing risk level has been determined to be **MEDIUM**.

Historical UXO Contamination

The indicators for UXO contamination are:

Bomb Strikes	There are no recorded incidents of the site being the subject of bombardment throughout WW1. Throughout WW2 the Site was the subjected to a direct strike which resulted in all buildings within the Site boundary, as well as the surrounding area. It is not known whether this was from one large calibre bomb, or several smaller ones.
Bomb Damage	The Manchester City Council Bomb Damage Map indicates that there was heavy destruction, which took place both within and outside of the Sites boundary.
Reconstruction	There has been construction work that has taken place within the Site boundary. However, to what depth any remediation works was carried out could not be ascertained at this time.
Military Usage	No obvious signs.
Explosive/Munition Factory	No obvious signs

Risk Level	Therefore, so far as reasonably practicable the risk level on Site has been divided, containing one area deemed as a **MEDIUM**
Risk Depth	7.062m **OR** dependent on the geology discovered on site.

PART 8: RECOMMENDATIONS

It is recommended that the following risk mitigation strategy be executed during phases of the project indicated previously as a **MEDIUM** risk.

Communicating the risks, all stakeholders should be made aware of the UXO situation on the site and the possible impact it may have on the project works and day to day running of the district. Clients have a legal duty under the Construction Design & Management Regulations (CDM) and Health & Safety at Work legislation to provide Designers and Contractors with project specific information needed to identify hazards and risks associated with the design and construction work. The possibility that UXO

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may be encountered on site falls within the category of a significant risk and as such it should be addressed as early as possible in the lifecycle of the project.

Further planning: the risks posed by UXO should be brought to the attention of the Project CDM Coordinators and other individuals with a responsibility for project safety and operations at the site. The matter of UXO should be considered critical to project safety and one requiring high priority action.

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Project overview and the responsibilities of those working on site with regard to duty of care and public safety.

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Emergency procedures to be followed in the event of an explosion. Evacuation routes, muster stations and accounting for personnel.

Work permits, works methodology and specific UXO risk mitigation methods. Post-incident inspections and returning to normal works.

Prior to any intrusive piling or drilling commencing, UXO safety testing and appropriate clearance certification into the ground to sufficient depth to provide clearance from UXO. This can be done using a progressive drilling process or (where large numbers of piles are to be placed and ground permitting) using a vehicle borne hydraulic system to push a magnetometer into the ground to test for the presence of UXO prior to piling.

UXO safety monitoring of all "at risk" excavations, including geotechnical or archaeological trial pits to be conducted during the project. This should be provided by a UK Home Office Authorised EOD/UXO Contractor using qualified EOD Engineer with specialist locators and detectors to scan the ground ahead of the excavation wherever possible.

PART 9: SPECIFICALLY

Geotechnical investigations, percussive drilling/trial pits/window/samples, require an EOD Engineer over watch.
Any made ground within the site boundary can be considered as a **LOW** risk, this includes any works being carried out within the building.

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EOD Contracts Ltd can supply a turnkey solution to your UXO requirements. Therefore, the following mitigation strategies can be supplied for land or water-based operations:

Intrusive survey using CPT *(Cone Pressure Testing)* or borehole equipment, *supplying risk mitigation to all Borehole and Pile locations, down to a maximum bomb penetration depth determined within this document.*

Non-Intrusive Survey using multiple array system with DGPS *(Differential Global Positioning System).*

Offshore, near-shore, estuarine and freshwater water environments magnetic, side scan and bathymetric supported by state-of-the-art DGPS.

The aforementioned surveys are supported with post processing of data and intrusive investigations if required.

EOD Engineer over watch using Suitably Qualified and Experienced Personnel, normally former British Army, Navy, or RAF Bomb Disposal specialists.

Explosive Ordnance Safety Presentations.

Bibliography

The significant published documents referred to during this study are listed below:

- HO 193 series from National Archives
- HO 198 series from National Archives
- The Blitz Then and Now Volumes 1 to 3
- AA Command Colin Dobinson
- German Air Raids on Britain 1914-1918
- English Heritage
- https://luna.manchester.ac.uk/luna/servlet/detail/maps002~1~1~351132~123655?qvq=w4s:/where%2FEngland%25253A%2BGreater%2BManchester%25253A%2BManchester%2Fwhen%2F20th%2BCentury%2BCE%2F1940-1941%2F&mi=48&trs=49

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PART 1: INTRODUCTION

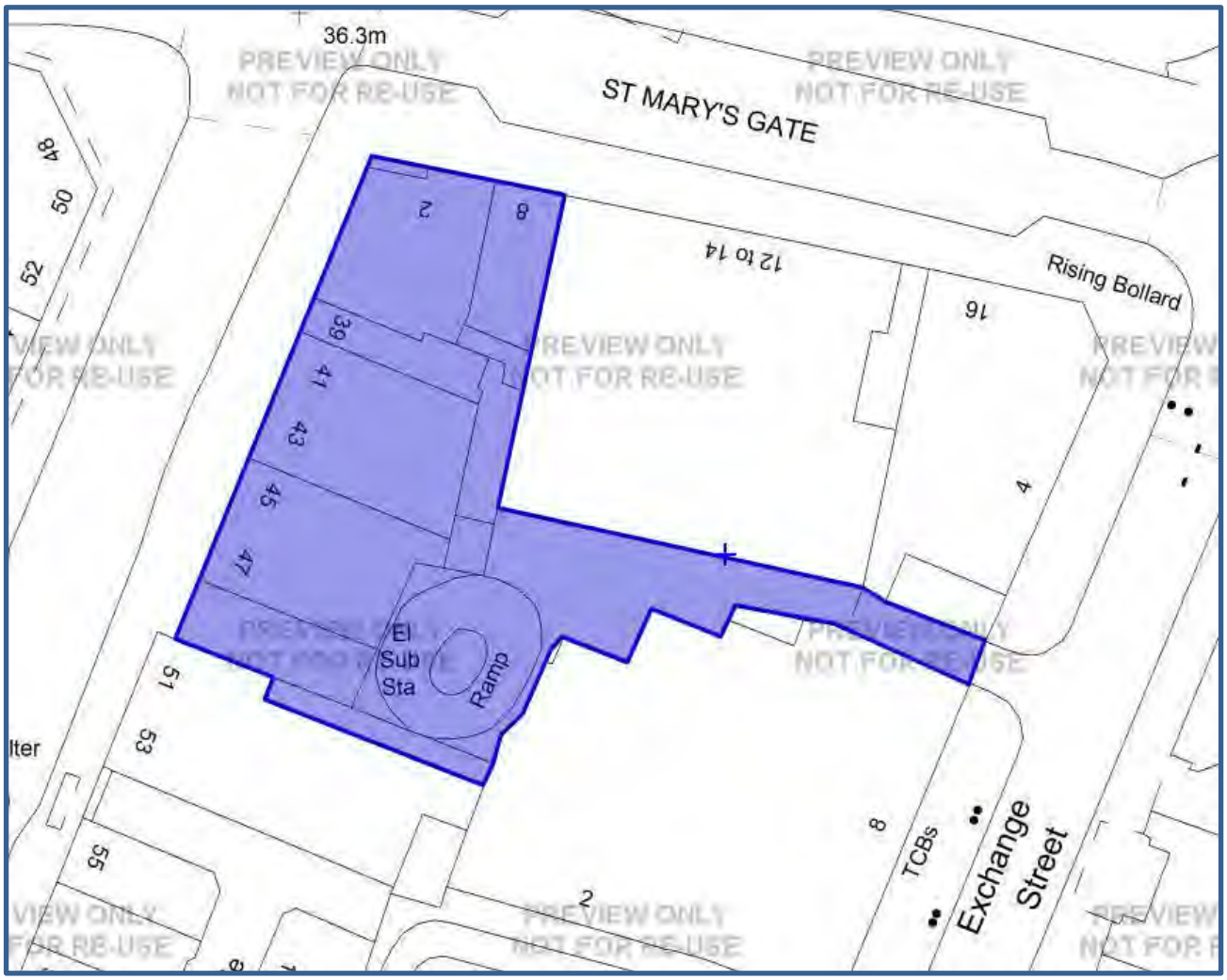
Instruction

EOD Contracts Ltd, have been commissioned by BROWNFIELD SOLUTIONS (hereafter the Client) to undertake a desktop study for potential historic Unexploded Ordnance (UXO) contamination for the future works being carried out at Speakers House, 39 Deansgate, Manchester, M3 2BA, (hereafter referred to as the Site).

Scope of Work

The scope of this EO Risk Assessment/Desk Study is to assess the likelihood of buried EO/UXO within the environs of The Site (See Figure 1.1), in view of further development. A further aim was to evaluate the implication from UXO contamination during any future intrusive land use.

Figure 1.1: Clients Supplied Site Diagram, This DTS will be covering all areas shown within the blue shaded area.



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Restrictions

It must be emphasized that a desk study can only indicate the potential for UXO to be present on the site. This study was written with the site conditions prevailing at the time of the study and no liability can be accepted for any change in the condition of the area.

Please note that our appraisal relies on the accuracy of the information contained in the documents consulted and that EOD Contacts Ltd will in no circumstances be held responsible for the accuracy of such information or data supplied.

Sensitive Documentation

Information may be classified, restricted, or deemed to be confidential in nature to EOD Contracts Limited, where such material has been gained a summary of the documentation has been approved.

Objective

The objective of this document is to define the UXO contamination routes as defined in Unexploded ordnance (UXO) A guide for the construction industry (C681) dated July 2009 and offer remediation methodologies if required.

CIRIA Framework

The CIRIA report is intended to provide good practice guidance (code of practice) on how to identify whether a site is likely to be at significant risk of UXO encounter and, if so, to set-out a process that will allow this risk to be managed. To be effective this process must start early in the life of the project (usually before intrusive works commence) and have involved Clients, Advisors and Principal Contractors. Therefore, the ground contractor should be provided with a systematic appraisal of the UXO risk when they become involved. The CIRIA report recommends the following stages be undertaken as part of the risk management process:

- Phase 1 Preliminary Risk Assessment
- **Phase 2 Detailed Risk Assessment (Completed and updated in this document)**
- Phase 3 Risk Mitigation (The act of ameliorating the risk, the clearance methodology)
- Phase 4 The UXO Risk Management and Implementation Plan

PART 2: SOURCES OF INFORMATION

Research of the site's history, with regard to military usage, bombing raids and bomb impacts has been undertaken to establish the following:

- Frequency and intensity of enemy bombing raids for the site and immediate vicinity up to 500m.
- Bomb impacts and associated damage on the Site and in the immediate vicinity.
- The potential for UXO to remain on the Site and in the vicinity.
- Records of UXO removal activities for the Site and immediate vicinity.
- The main sources of information consulted include:

    a. EOD Contracts Ltd company records

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b. Ministry of Defence records
c. Central and Local Government Records
d. Public Records Office (Kew)
e. Historic Maps and Air Photography
f. Open-Source information (Internet)

Ministry of Defence (MOD) Records

33 Engineer Regiment (Explosive Ordnance Disposal) Royal Engineers is the unit responsible for maintaining the records concerning conventional Bomb incidents, reports, clearances and related UXO matters. These records are known to be incomplete and are no longer supplied. Based on in-house information released by the MOD previously, it is considered unlikely that any information released will have any significant impact on the findings of this study.

Attack Record Keeping

In general, the quality and accuracy of bombing and shelling records prior to 1942 varied greatly from one region to another. Records relating to the limited air attacks on the United Kingdom are considered to be sufficiently accurate in urban areas to provide a reasonable level of confidence in determining the likelihood that an area was or was not bombed during this period. Wartime records, maps etc held within the civil archives are considerably more comprehensive than those still in existence within the MOD, where it is acknowledged that large numbers of records have been disposed of since 1945. Records from some areas, particularly rural districts or near large bodies of water should still be regarded as an incomplete picture of the extent and effect of the bombing campaign.

Attack Record Accuracy

While an Air Raid was in progress it was inevitable that mistakes would be made in the transcription of rushed verbal reports into the written records. Discrepancies did occur between the total of bombs dropped against detonations witnessed. In some cases, records were made several hours after the event and mistakes were inevitable. Some reports were drafted before the full extent of the raid had been determined which has led to significant omissions in the records. Reports of raids on rural areas were often witnessed and submitted by untrained individuals and passed through third parties before being recorded. Suspect UXBs occasionally went unreported by local farmers and freeholders who saw the event as insignificant or were reluctant to report their findings for fear of valuable land or crops being destroyed by the authorities in their attempts to find the UXB. It should also be noted that bomb strikes in water were notoriously difficult to spot, particularly if the bomb had failed to detonate. As a result, bomb record accuracy in areas containing large bodies of water or marshland is considered to be questionable.

Errors and Omissions

The accuracy of bombing records has been shown to vary greatly; this may have been a result of the individual record keeper's expertise. Additionally, in some cases, errors occurred as a result of poor or incomplete transcription and copying. Some "errors and omissions" were intentional, designed to serve as dis-information to confuse German intelligence. So long after the event, official verification of such

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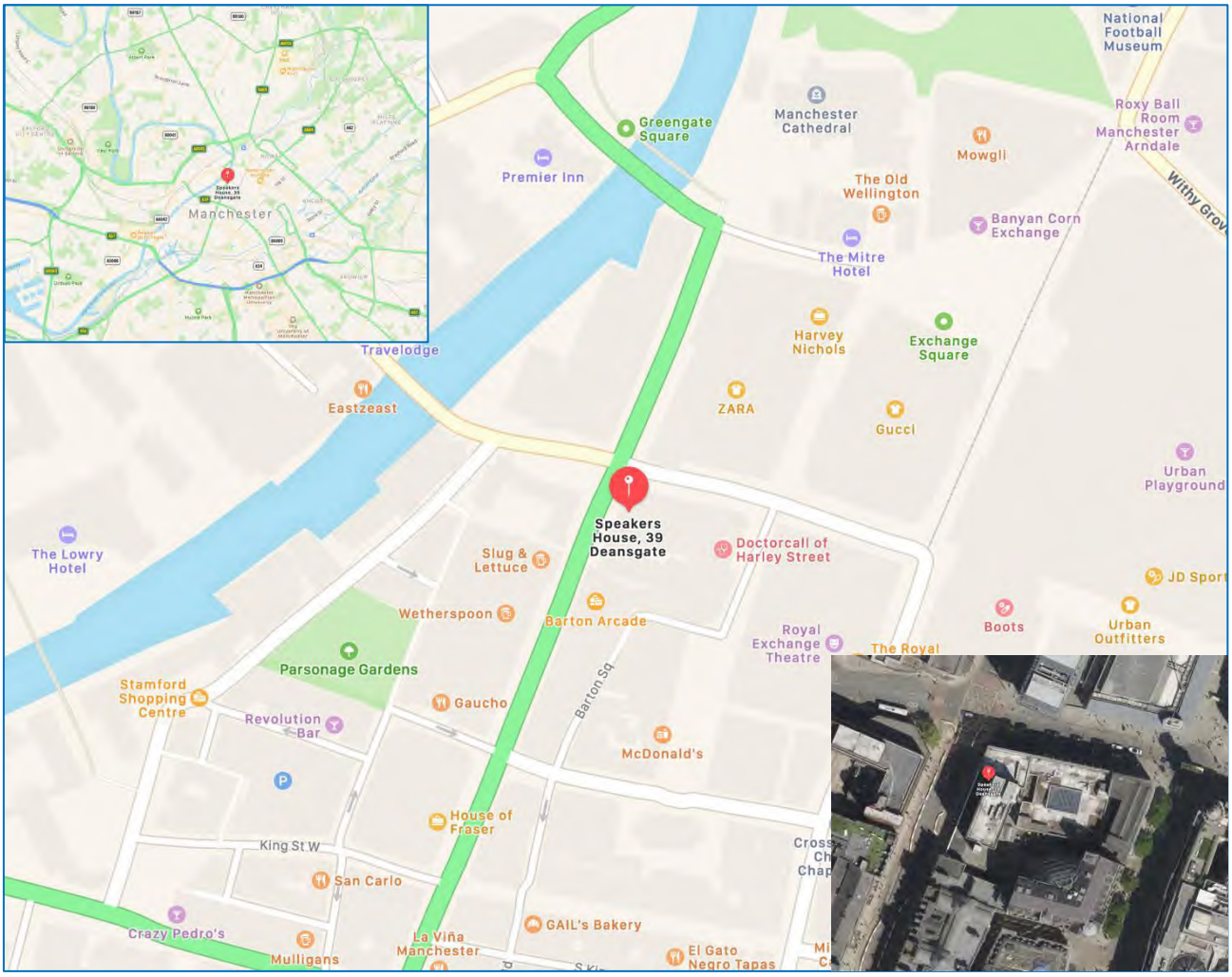
incidents has often proven to be impossible to obtain. At present, UXBs are found on construction sites and other locations where there had been no documentary evidence to suggest their presence. These events, although infrequent, do serve as confirmation that records cannot be considered definitive.

PART 3: SITE DESCRIPTION AND DETAILS

Location

The Site is located along Deansgate, Manchester (NW of the center) in close proximity. Should the need be required the client will provide an exact meeting place.

Table 3.1 Site Location.



Title	Description (Centre of Site)
Address	Speakers House, 39 Deansgate, Manchester.
Post Code	M3 2BA
Nat Grid Reference	SJ 837985 – SJ 8376498524
what3words	chop.avoid.civil

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Description and Current Usage

PHOTO 3.1: EODC have been informed that the works will be carried out within the courtyard to the rear of 39 Deansgate. This appears to be an open area of hardstanding.



Geology

BGS (British Geological Survey) indicates the following geology.

Chester Formation - Sandstone. Sedimentary bedrock formed between 250 and 247.1 million years ago during the Triassic period.

Future Works

At the time of writing this report it is understood that the site will be redeveloped (the exact scope of works is not known at this time). The supplied requirement is for, geotechnical investigations, possibly percussive drilling/trial pits/window/samples.

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PART 4: HISTORICAL REVIEW

Historical Mapping

The historical maps in Annex B have been reviewed and a brief synopsis is in Table 4.1:

Table 4.1 Historical Map Synopsis

Date	Scale	Description/Remarks
1932 - 33	1:2,500	The Site pre-WW2 is fully utilised as would be expected due to its location. The Site incorporates several office style buildings (multi-storey) the largest of which is known to be the Exchange Building.
1948 - 49	1:2,500	Post war the historic map indicates that no buildings (except a small corner of a building along the SE edge of the Site) remain within the Site boundary. This extends to the buildings just outside of the Sites northern boundary line.
1962 - 70	1:2,500	Although difficult to ascertain the exact date through the use of historic mapping available the Site was developed into its current state.
2023	1:10,000	No significant changes.

Post War Construction

Post WWII the construction appears to have been minimal. With the original building remaining in situ, until such time that it was removed to ground level and the Site being utilised as a carpark.

WWI

Although many people associate wartime bombing with The Blitz during World War II, the first airborne terror campaign in Britain took place during the First World War. Air raids in World War One caused significant damage and took many lives. German raids on Britain, for example, caused 1,413 deaths and 3,409 injuries.

Site Specific Bombing Information

There is no evidence to suggest that the Site was targeted throughout this period.

WWII

Bombing started as early as October 1939, by the end of the WWII the Luftwaffe had dropped approximately 50,000 tonnes of high explosive bombs and 110,000 tonnes of incendiary bombs, this caused over 40,000 UXBs, killed 43,000 people and over 250,000 homes were destroyed.

Manchester throughout WW2

Manchester and its surrounding area were a major centre of industry during the Second World War. Many large firms were concentrated in the Trafford Park area, making it an important target for the Luftwaffe. Major producers included the aircraft manufacturers A V Roe that produced Manchester and Lancaster Bombers; Ford also employed 17,000 workers making aero engines in a huge new factory complex. During the raids on 22nd – 24th December 1940, the Metropolitan-Vickers works in Mosley Road was just one

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of the areas factories that was badly damaged. In a later raid 1n 1941 Manchester United's Stadium was hit by a bomb and remained out of action till 1949.

Manchester was attacked on the night of 22nd – 23rd December and again the following night of 23rd – 24th December 1940 (the Christmas raids). On the first night of the raids over 272 tons of HE Bombs was dropped, followed the next night by a further 195 tons. In cooperation to this the Luftwaffe also dropped around 2000 Incendiary bomblets across the city.

Additionally, to these raids, Manchester also suffered smaller attacks, including one in June 1941 when the Blitz was thought to be over. The city had three major raids over the Blitz period (a major raid being defined when over 100 tons of HE Bombs have been dropped) in total, more than 578 tons of explosives were aimed at the city making it the 11th most heavily raided city in Britain.

During the Christmas Raids over 600 fires were started by Incendiary bombs, unfortunately the majority of these were allowed to burn causing further damage. This was due to the cities 3,500 full and part time fire fighters had not returned from Liverpool where they had been sent several days before to help fight fires caused by previous raids. In some cases, the Army was utilised to demolish surrounding buildings to stop the fire from spreading further. Some of the fires continued to burn throughout the day on the 23rd December, providing a beacon for the German Luftwaffe upon its return that night.

So far as the city's infrastructure was concerned, following the Christmas raids both of Manchester's railway stations had been hit, as were the major bus stations. Deansgate and Oxford Road were blocked by debris from damaged buildings; bomb craters and UXBs meant that whole sections of the city had to be cordoned off. Water supplies were also affected, and electricity was rationed.

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Site Specific Bombing Information

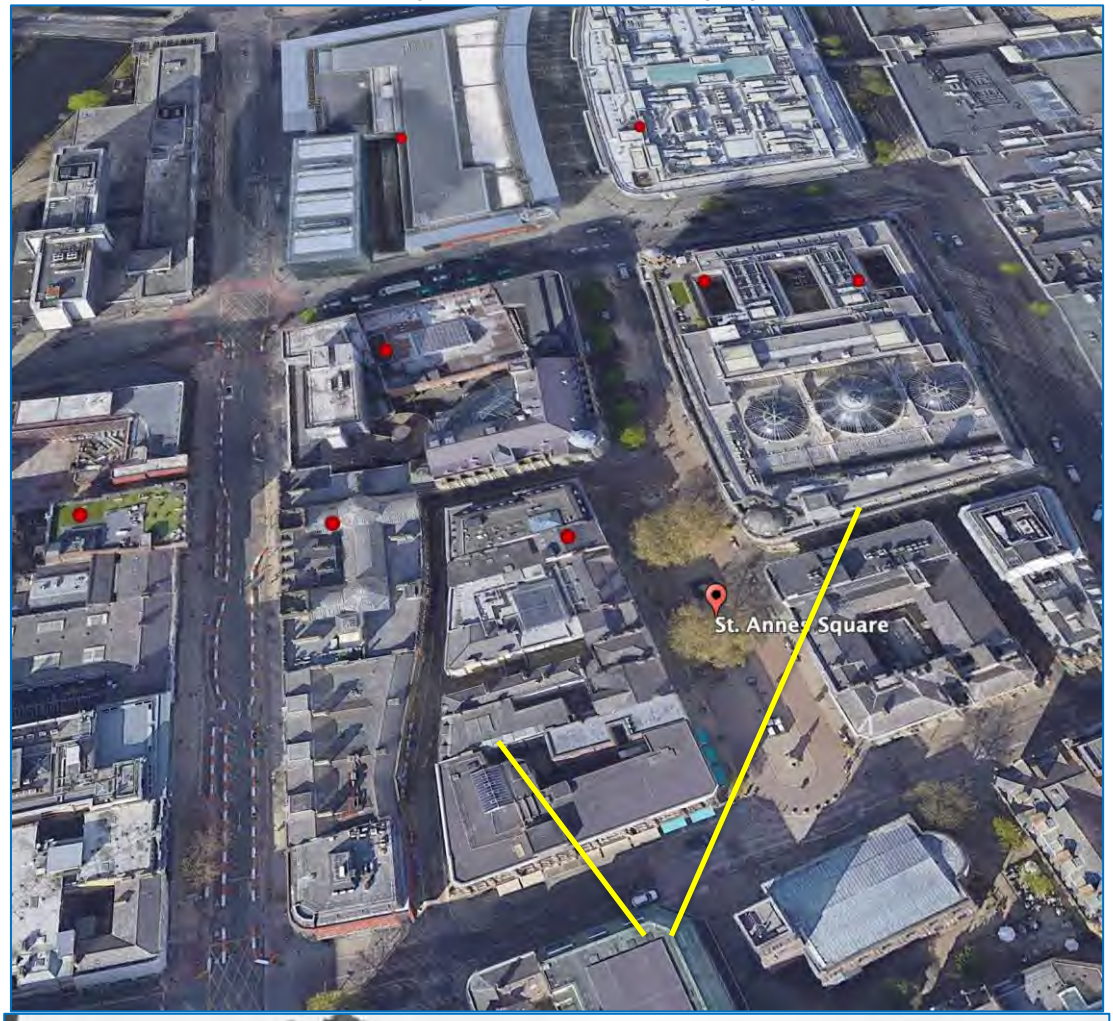
Photo 4.2: All "known" Bomb strikes that landed around the Site area have been overlaid on the modern-day aerial photo below utilising the Bomb Damage map located within Annex D. Due to the map concentrating on the damage caused, and not the exact location where the bomb landed it is not known exactly where the bomb(s) landed that destroyed the Site and its surrounding area. Therefore these have been approximated by the author.



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Photo 4.3 (top) & 4.4 (bottom): The photograph (bottom) is taken looking approximately NE of the Site from St Annes Square. Although the Site cannot be seen directly from this phot it gives an indication of the level of destruction that the Site and its surrounding area was subjected too.

NOTE: *the yellow lines in the top aerial photo give an approximate viewing angle.*





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Abandoned Bombs/UXO

EOD Contracts records could find no evidence of any abandoned Bombs in or around the subject Site.

Anti-Aircraft Artillery

There is no recorded evidence of the site being utilised for this purpose.

Explosive or Munition Factories

No explosive or munition factories were noted.

Military Usage

No records that indicate that the site has served any military purpose.

Prior Clearance Operations

EOD Contracts could find no evidence to suggest that there have been any prior UXO clearance operations in or around the site footprint.

PART 5: SOURCES OF UXO CONTAMINATION

The main sources of UXO contamination that have been researched for the site are:

Air delivered ordnance bombs and sub-munitions/incendiaries.

- Anti-Aircraft Ammunition (AA)
- Air delivered ordnance bombs and sub-munitions/incendiaries.

General

UXO contamination pathways from:

- Air delivered ordnance bombs between 100m and 200m
- The nearest Anti-Aircraft Weapons (AA) is over 3km
- No recorded use as an Explosive or Munition Factory
- Has had no Military Usage

UXOs are essentially dangerous; therefore, further information on UXO and Safety is detailed in Annex D.

Bomb Penetration Depths

The weapon penetration depths have been assessed as part of the tables in Annex E.

Factors Affecting Penetration

The penetration of sub-surface bombs will be affected by the following:

- Height of release
- Weight, shape, and design of bomb
- Aerodynamic qualities
- Angle of flight and impact

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- Nature of impact surface
- Nature of sub soil

The expected bomb depths for the site assuming the following criteria:

- 15,000 feet, the vast majority of bombs were dropped from height to avoid AA fire and balloons.
- General Purpose Bombs of 50kg to 1000kg
- Near Vertical impact 80 to 90 degrees
- Surface geotechnical conditions are made ground.
- Subsurface geotechnical conditions are generally clays.

Therefore, the expected depths for Air dropped UXBs on site are indicated in RED in the following table:

TABLE 5.1: Bomb Penetration Depths

	Bomb Weights			
Sub-Soil Type	50kg	250kg	500kg	1000kg
Soft Rock	2.442	5.016	6.006	7.062
Gravel	2.442	5.016	6.006	7.062
Sand	2.442	5.016	6.006	7.062
Chalk	3.7	7.6	9.1	10.7
Shingle	3.7	7.6	9.1	10.7
Dry Clay	3.7	7.6	9.1	10.7
Wet Sand	5.55	11.4	13.65	16.05
Wet Clay	5.55	11.4	13.65	16.05
Average Offset (m)	0.8-1.6	1.6-3.7	3-4.5	3.4-5.3

PART 6: RISK ASSESSMENT

Risk Assessment

Assessing both the likelihood of occurrence and the consequences of the encounter has derived the overall risk for the site from unexploded ordnance. Review of the Site's history and geographic location can provide an overall likelihood of encounter factor, which is used in the subsequent determination of a risk level when a Figure can be determined for the consequence.

Likelihood of Encounter

Given the study findings and other criteria (see Annex F Tables) it is considered that there is a **LOW** risk of encountering UXO within the one area within the Site footprint. This finding is based on assessment of all of the available information and taking account of the following factors:

- There is no recorded evidence that the Site area was targeted directly throughout this period.
- The surrounding area was also the subject of heavy bombardment throughout this period.
- The Site was however in close proximity to several key military targets/infrastructure.
- The Site has been the subject of post war development. However, there will be areas within the Site boundary that have remained undisturbed post WW2.

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Encounters of UXO are not uncommon, recent UXO finds are in Annex F.

Consequence of Encounter

The consequence (see Annex D) of an uncontrolled encounter with UXO, given its lethal design and its unpredictable nature could be catastrophic and warrants a high severity factor. With regards to the consequences, the following factors were considered:

The project works may make use of a number of common ground investigation and construction techniques in its methodology during the project. Any intrusive groundwork has the potential to encounter UXO.

Intrusive earthwork, piling driving and dynamic ground compaction are by nature, aggressive, significant force (kN) is often required to achieve the desired results. As a precaution it is prudent to assume that any external stimulus, no matter how slight, may result in an unstable weapon detonating.

Records of encounters with UXO, particularly where plant machinery has been involved have resulted in detonations of the items with varying degrees of consequence; ranging from slight injuries sustained to piling contractors when a bomb detonated at 6.0m bgl to fatal injuries sustained to a construction worker while conducting near surface machine works on a motorway.

Detonation on land; the effects of a detonation at depth will be more localised and less destructive than one occurring on the surface. Figure 6.1 shows an illustration of the primary blast and fragmentation dispersal from explosive ordnance when it detonates on the surface. The weapon's design, and other key factors such as the ratio of explosive charge weight to total weapon weight (CWR) and the Net Explosive Quantity (NEQ) will determine the size and effects of a blast. The effects will also be enhanced or reduced by a number of factors including, the presence of other energetic materials in close proximity to the blast or if the weapon is buried or exposed on the surface. As a guide Annex E Table 1 gives an indication of the likely blast radius for common types of UXO.

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Figure 6.1: Primary Blast & Fragmentation on Land



In addition to the dangers of explosion, many common chemicals used in the manufacture of explosive ordnance fillings are in sufficient quantity, and level of exposure, toxic or poisonous. Although it is unlikely that such chemicals would be encountered in significant quantity to represent a significant risk to personnel, leakage or venting could pose a risk to the local marine environment. In addition to heavy metals, copper, lead, zinc etc used in the weapon body and fuze, hydrocarbon propellants such as Kerosene may also be present.

Risk Level

The overall risk has been determined to one area within the site footprint (see below). The prevailing risk level has been determined to be **MEDIUM**.

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PART 7: CONCLUSIONS

Based on the information researched by EOD Contracts Ltd for the proposed scope of works being carried out within the given site area, the following conclusions have been reached:

Historical UXO Contamination

The indicators for UXO contamination are:

Bomb Strikes	There are no recorded incidents of the site being the subject of bombardment throughout WW1. Throughout WW2 the Site was the subjected to a direct strike which resulted in all buildings within the Site boundary, as well as the surrounding area. It is not known whether this was from one large calibre bomb, or several smaller ones.
Bomb Damage	The Manchester City Council Bomb Damage Map indicates that there was heavy destruction, which took place both within and outside of the Sites boundary.
Reconstruction	There has been construction work that has taken place within the Site boundary. However, to what depth any remediation works was carried out could not be ascertained at this time.
Military Usage	No obvious signs.
Explosive/Munition Factory	No obvious signs

Risk Level

The overall risk has been determined to apply to all ground works within the site footprint.

Risk Level	Therefore, so far as reasonably practicable the risk level on Site has been divided, containing one area deemed as a **MEDIUM** risk
Risk Depth	7.062m **OR** dependent on the geology discovered on site.

PART 8: RECOMMENDATIONS

It is recommended that the following risk mitigation strategy be executed during phases of the project indicated previously as a **MEDIUM** risk.

Communicating the risks, all stakeholders should be made aware of the UXO situation on the site and the possible impact it may have on the project works and day to day running of the district. Clients have a legal duty under the Construction Design & Management Regulations (CDM) and Health & Safety at Work legislation to provide Designers and Contractors with project specific information needed to identify hazards and risks associated with the design and construction work. The possibility that UXO may be encountered on site falls within the category of a significant risk and as such it should be addressed as early as possible in the lifecycle of the project.

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Further planning: the risks posed by UXO should be brought to the attention of the Project CDM Coordinators and other individuals with a responsibility for project safety and operations at the site. The matter of UXO should be considered critical to project safety and one requiring high priority action.

UXO safety awareness training should be given at all levels of site personnel and selected individuals on the project staff with relevant responsibilities. A competent person as part of the project safety induction course should provide the awareness training. It should be reinforced with specific safety briefings and toolbox talks to individuals involved in conducting intrusive earthworks.

Project overview and the responsibilities of those working on site with regard to duty of care and public safety.

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Work permits, works methodology and specific UXO risk mitigation methods. Post-incident inspections and returning to normal works.

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UXO safety monitoring of all "at risk" excavations, including geotechnical or archaeological trial pits to be conducted during the project. This should be provided by a UK Home Office Authorised EOD/UXO Contractor using qualified EOD Engineer with specialist locators and detectors to scan the ground ahead of the excavation wherever possible.

PART 9: SPECIFICALLY

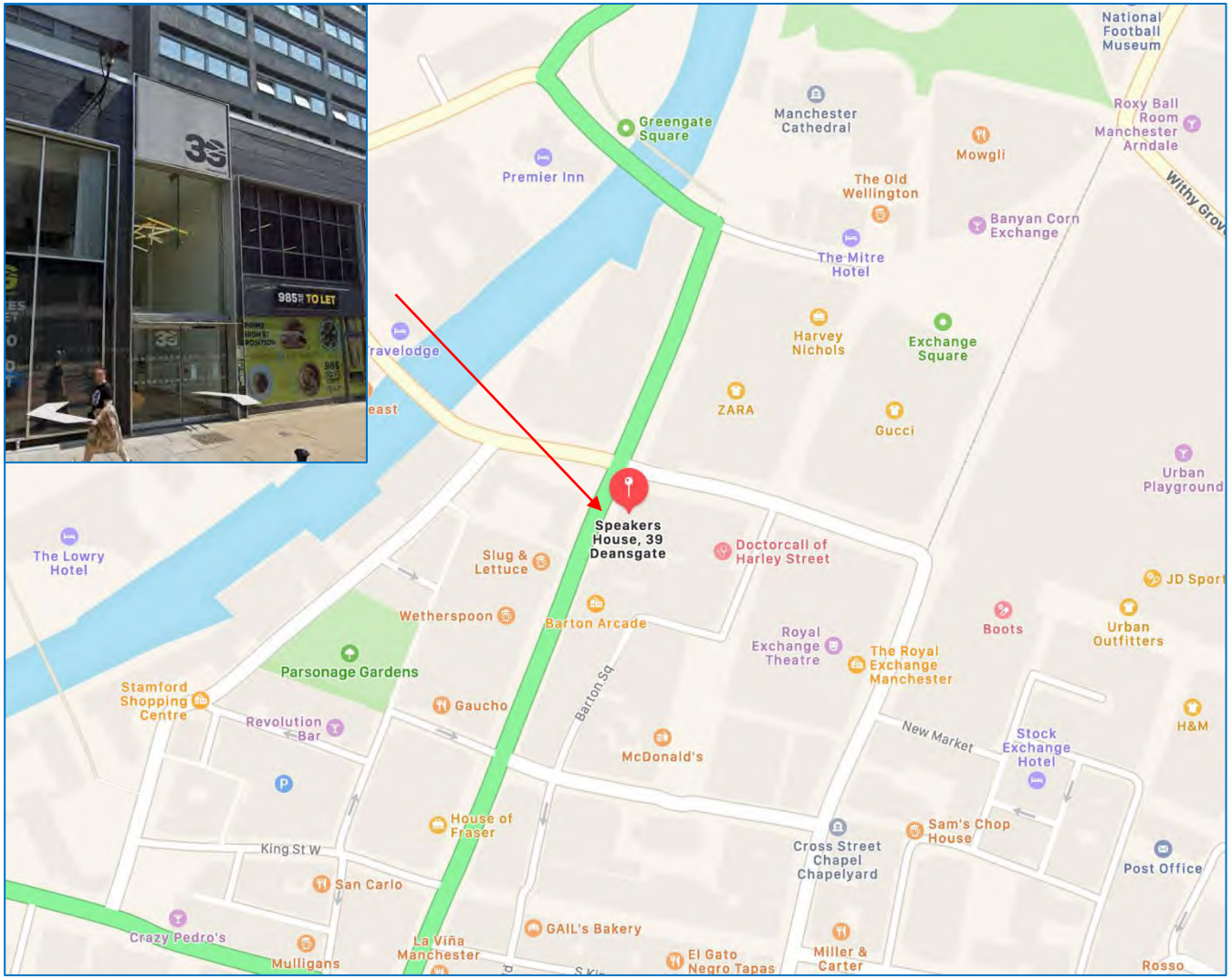
Geotechnical investigations, percussive drilling/trial pits/window/samples, require an EOD Engineer over watch within the area previously classified as a **MEDIUM** risk.
Any made ground within the site boundary can be considered as a **LOW** risk, this includes any works being carried out within the building.

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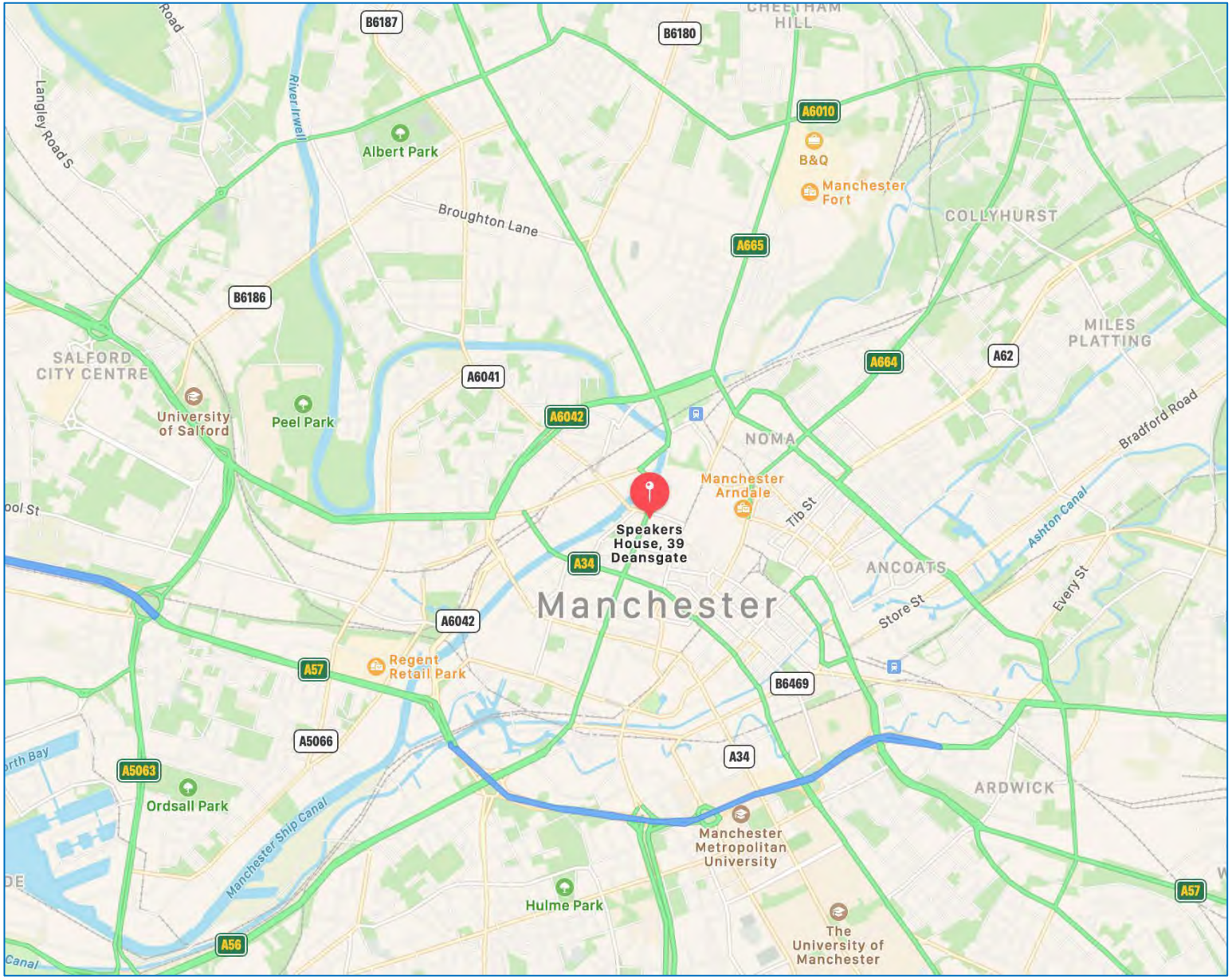
Annex A

SITE LOCATION

The Site is located along Deansgate, Manchester (NW of the center) in close proximity. Should the need be required the client will provide an exact meeting place.



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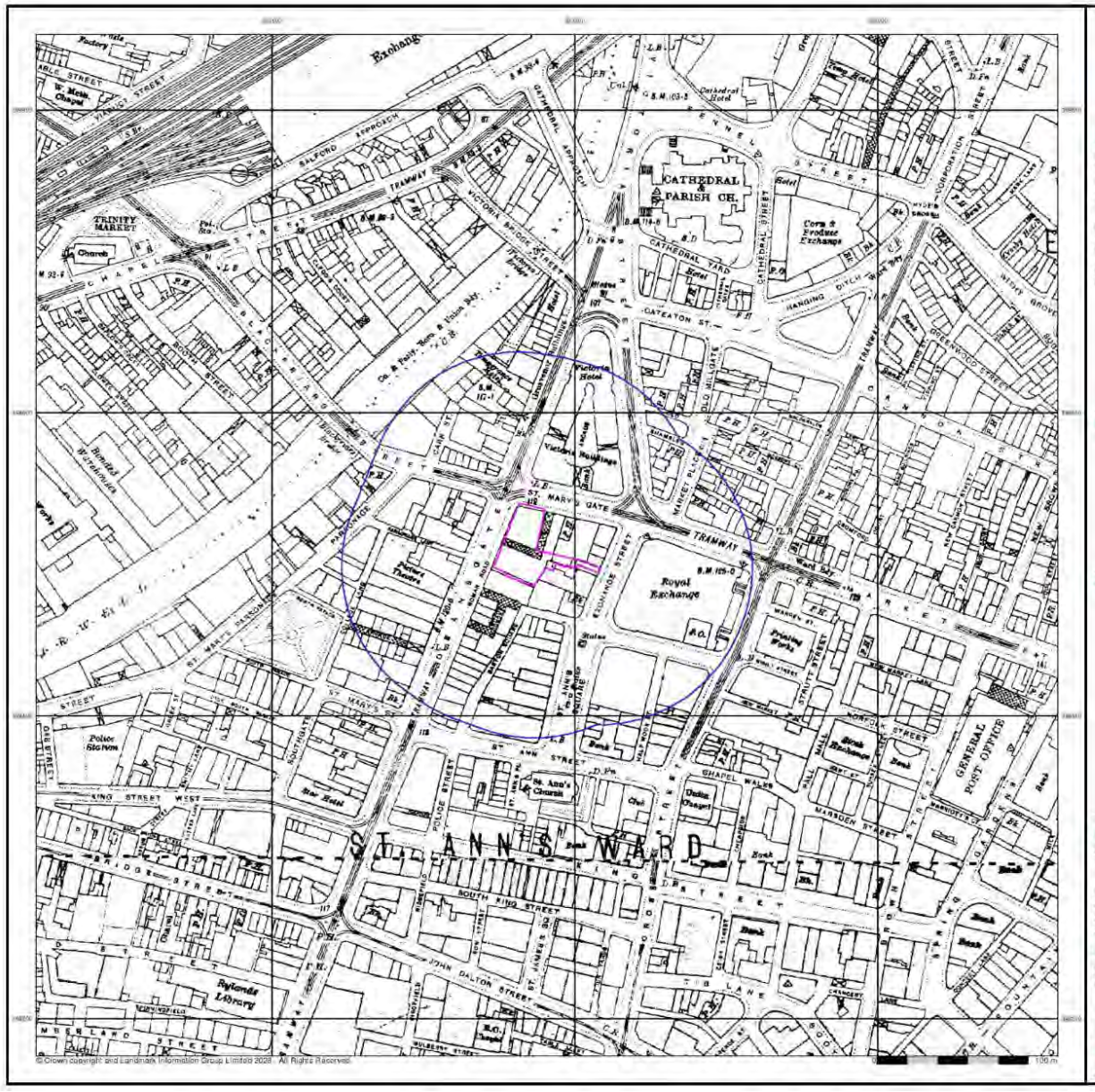
Annex B

HISTORIC MAPS

Index of Historical Maps

Page No.	Date	Scale	Description/Remarks
B-2	1932 - 33	1:2,500	The Site pre-WW2 is fully utilised as would be expected due to its location. The Site incorporates several office style buildings (multi-storey) the largest of which is known to be the Exchange Building.
B-3	1948 - 49	1:2,500	Post war the historic map indicates that no buildings (except a small corner of a building along the SE edge of the Site) remain within the Site boundary. This extends to the buildings just outside of the Sites northern boundary line.
B-4	1962 - 70	1:2,500	Although difficult to ascertain the exact date through the use of historic mapping available the Site was developed into its current state.
B-5	2023	1:10,000	No significant changes.

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EOD Contracts Ltd

Lancashire And Furness

Published 1932 - 1933

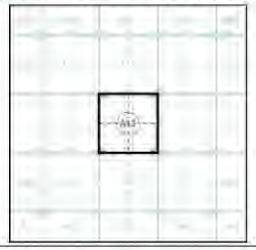
Source map scale - 1:2,500

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 1936, 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:	315882841_1_1
Customer Ref:	23345 re 39 Deansgate BROWNFIELD
National Grid Reference:	383780, 398510
Slice:	A
Site Area (Ha):	0.15
Search Buffer (m):	100

Site Details

Deansgate Surgery Ltd, Speakers House, 39, Deansgate, MANCHESTER, M3 2BA

Landmark

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

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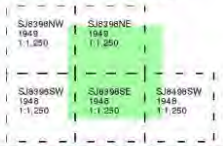
Ordnance Survey Plan

Published 1948 - 1949

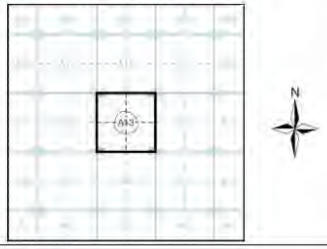
Source map scale - 1:1,250

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Map Name(s) and Date(s)



Historical Map - Segment A13



Order Details

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National Grid Reference:	383780, 398510
Slice:	A
Site Area (Ha):	0.15
Search Buffer (m):	100

Site Details

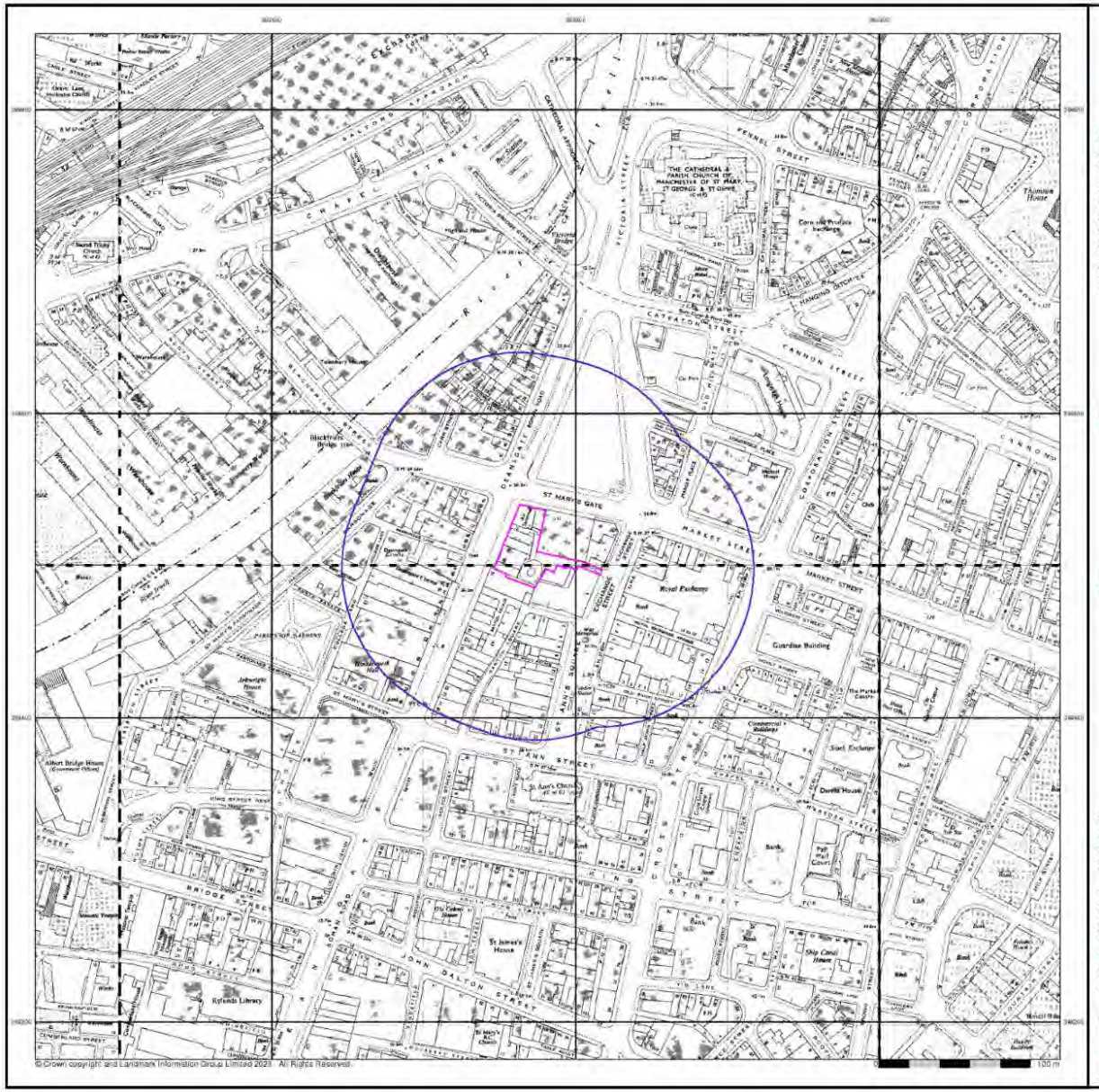
Deansgate Surgery Ltd, Speakers House, 39, Deansgate, MANCHESTER, M3 2BA

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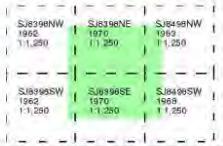


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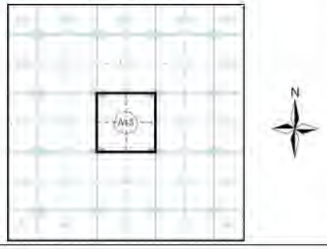
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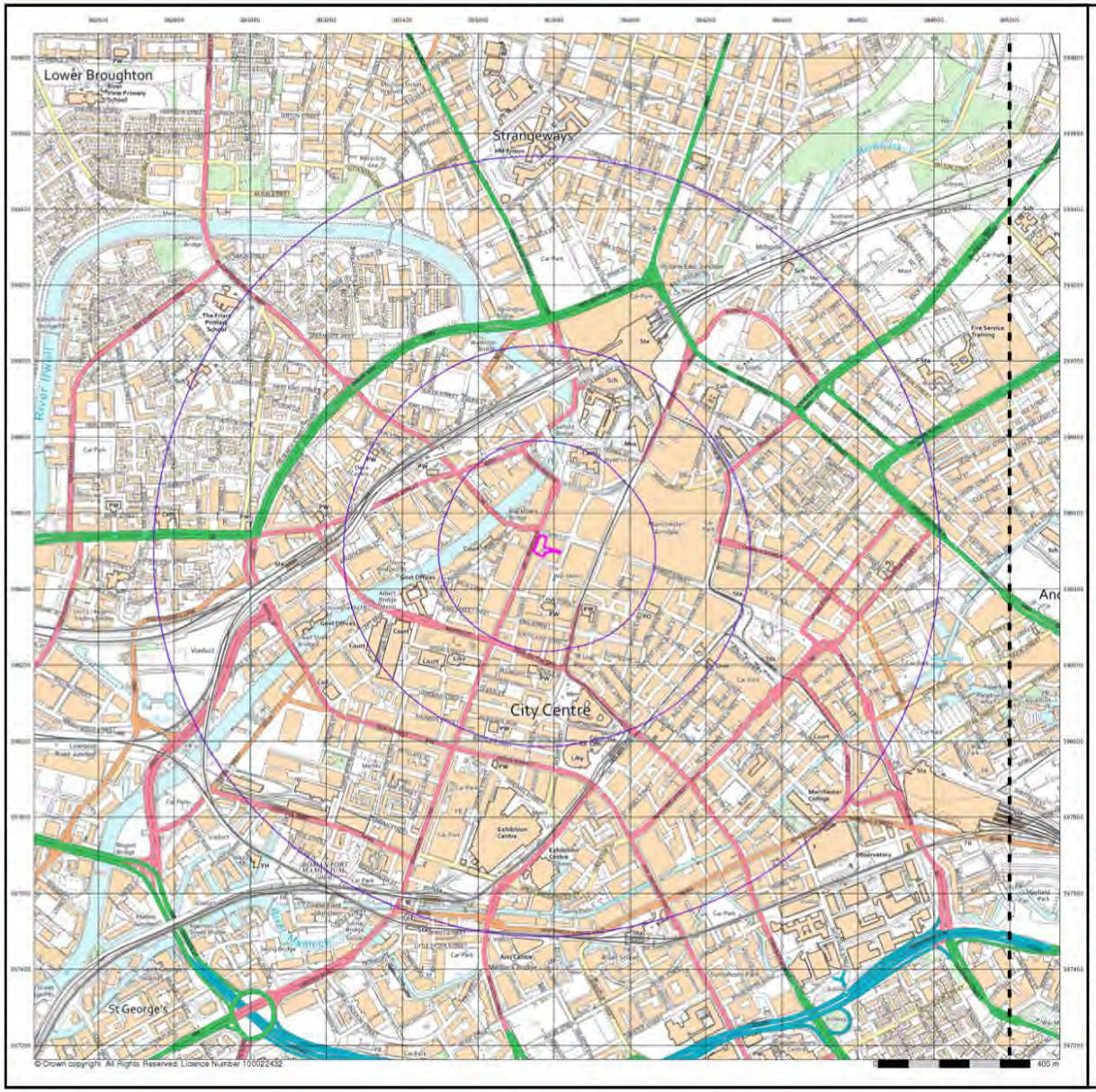
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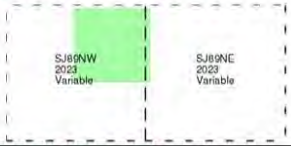
VectorMap Local

Published 2023

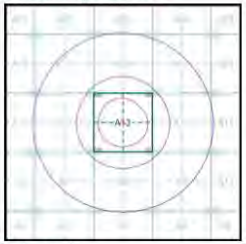
Source map scale - 1:10,000

VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

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Customer Ref:	23345 re 39 Deansgate BROWNFIELD
National Grid Reference:	383780, 398510
Slice:	A
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Search Buffer (m):	1000

Site Details

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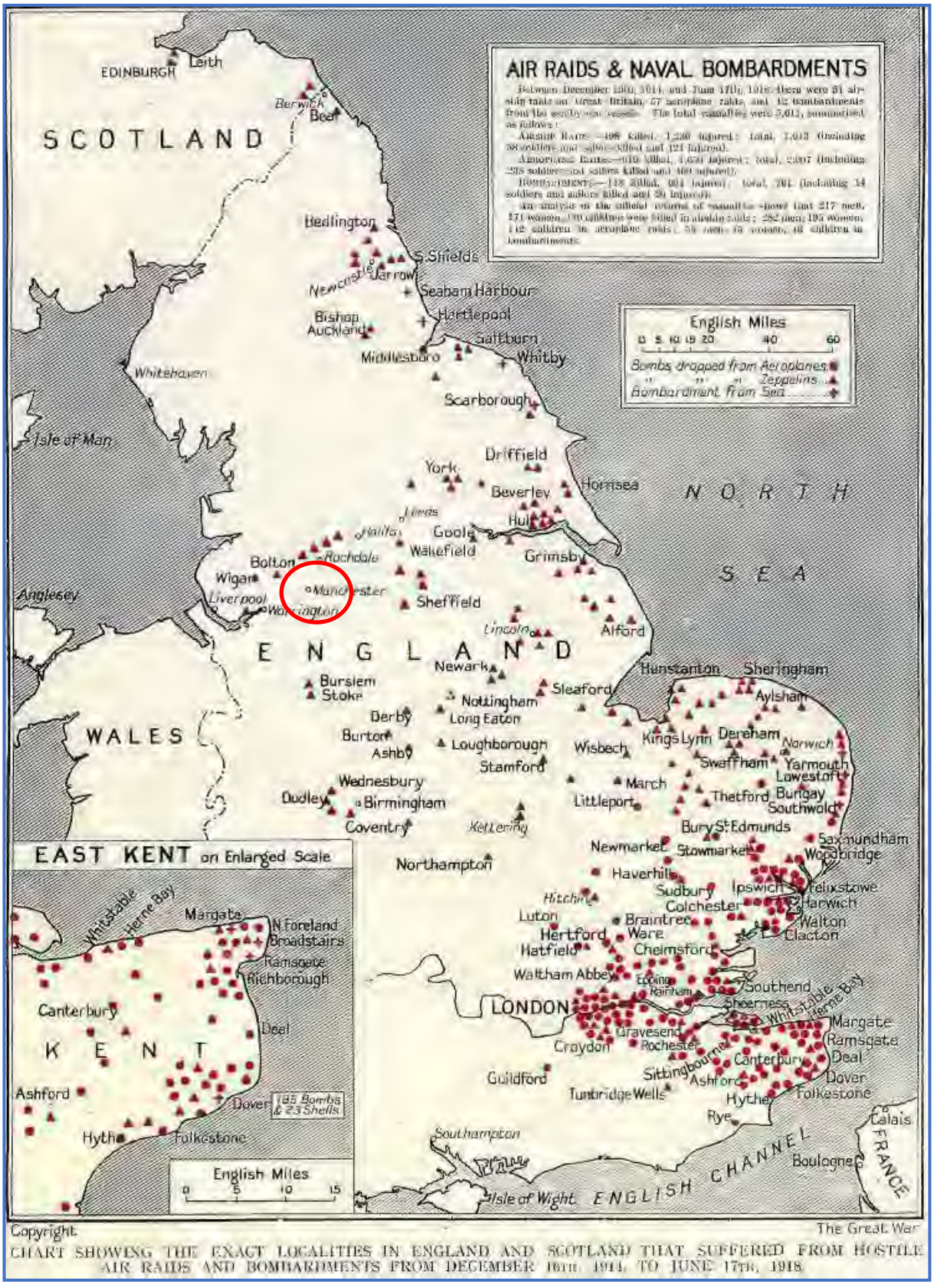
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Annex C

BOMB RAIDS WWI



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Annex D

BOMB IMPACT MAPS

PHOTO D-1: Extracted from the Manchester Council Bomb Damage Maps. The Site, bordered in yellow appears to have been completely destroyed, as well as heavy damage around the Site boundary.



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Annex E

EXPLOSIVE ORDNANCE SAFETY AND INFORMATION

UNEXPLODED ORDNANCE

Since the end of WWII, there have been a limited number of recorded incidents in the UK where bombs have detonated during engineering works, though a significant number of bombs have been discovered.

The threat to any proposed investigation or development on the site may arise from the effects of a partial or full detonation of a bomb or ordnance item. The major effects usually being shock, blast, heat and shrapnel damage. It should be noted that the detonation of a 50kg buried bomb could damage brick/concrete structures up to 16m away and unprotected personnel on the surface up to 70m away from the blast. Larger ordnance is obviously more destructive. Table 1 denotes recommended safe distance for UXO.

Table 1: Safety Distances for Personnel

UXO (Kg)	Safety Distances (m)			
	Surface UXO		**Buried UXO**	
	Protected	Unprotected	Protected	Unprotected
2	20	200	10	20
10	50	400	20	50
50	70	900	40	70
250	185	1100	120	185
500	200	1250	140	200
1000	275	1375	185	275
3000	450	1750	300	450
5000	575	1850	400	575

Explosives rarely become inert or lose effectiveness with age. Over time, fuzing mechanisms can become more sensitive and therefore more prone to detonation.

This applies equally to items that have been submersed in water or embedded in silt, clay, peat or similar materials.

Once initiated, the effects of the detonation of the explosive ordnance such as shells or bombs are usually extremely fast, often catastrophic and invariably traumatic to the personnel involved.

The degradation of a shell or bomb may also offer a source of explosive contamination into the underlying soils. Although this contamination may still present an explosion hazard, it is not generally recognised that explosives offer a significant toxicological risk at concentrations well below that at which a detonation risk exists.

BOMB PENETRATION DEPTHS

Weapons penetrate a significant depth into the ground and other types of ammunition are designed to permit the weapon time to penetrate deeply into the target before detonating a short time after coming to rest or a considerable number of hours afterwards. The second reason is where the weapon has failed to function as designed becoming a UXB. A number of studies have been carried out into weapon penetration and it is an inevitable consequence of a number of variable factors acting on the bombs trajectory that figures can and do differ significantly. Careful consideration must be given to the weapon's velocity, trajectory and shape. Also surface

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conditions and subsurface geology. The largest of the common German bombs, (500kg) can penetrate to significant depths given favourable conditions for penetration. In the case of projectiles and shells, the potential for deep penetration is significantly less.

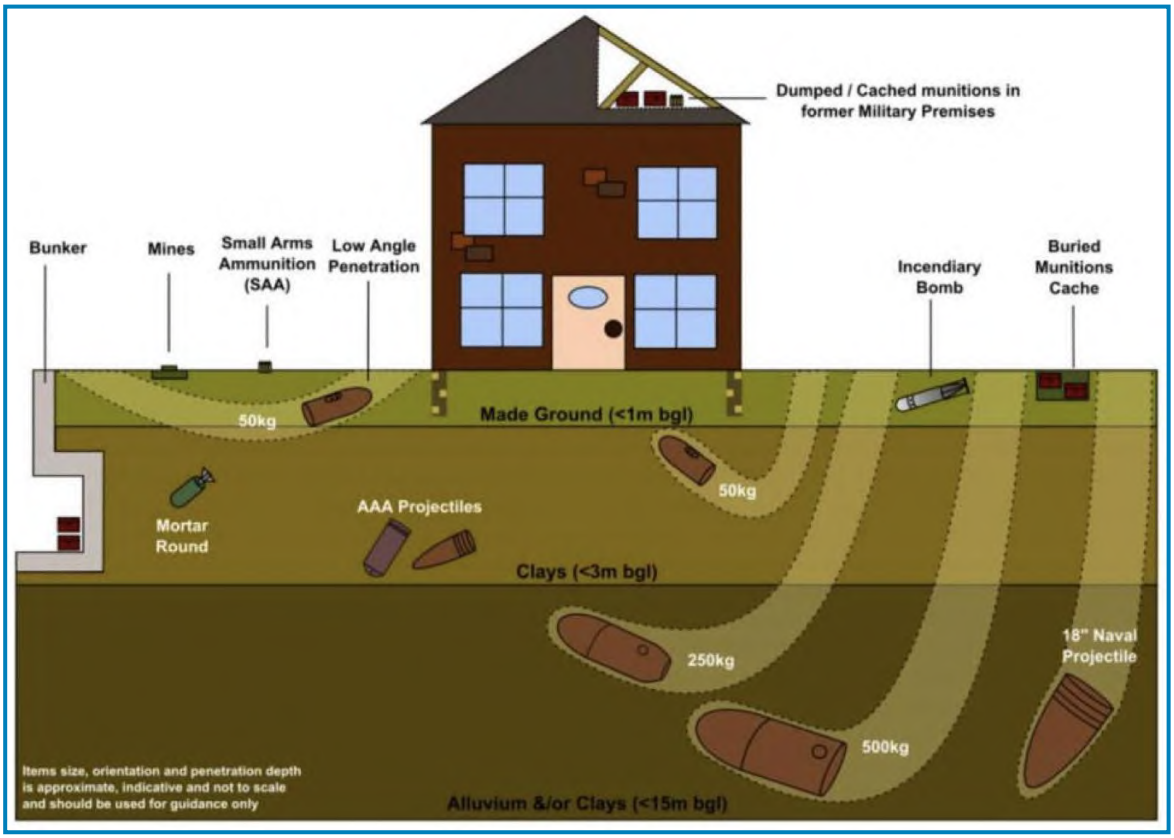
A number of assumptions were used in determining the maximum threat depth within the project footprint, which were.

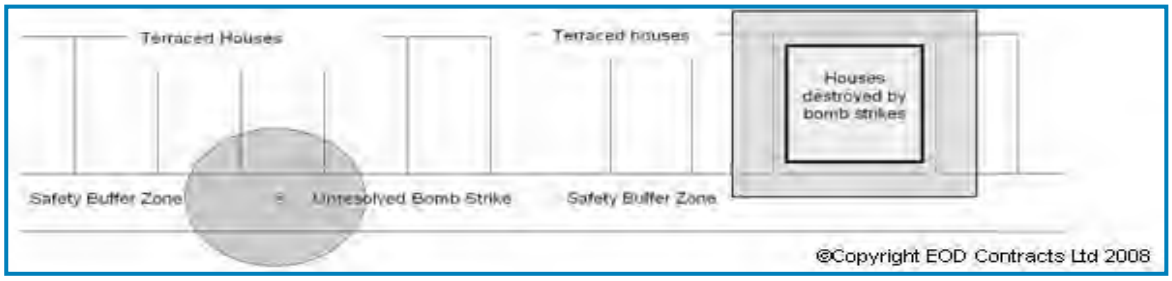
The penetration of sub-surface bombs will be affected by the following:

- Height of release
- Weight, shape and design of bomb
- Aerodynamic qualities
- Angle of flight and impact
- Nature of impact surface
- Nature of sub soil

Bombs on penetration of the surface do not follow a straight-line trajectory they can and do curve; this is called a "J" curve where the bomb's path bends back towards the surface. This gives what is known as the Offset, which may place a bomb under a structure and at a shallow depth.

Figure 1: Sub-Surface Trajectories & Safety Buffers





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Note; the common sub-surface trajectory will follow a path best described as a 'J' curve. The curve can result in a weapon coming to rest some distance from its impact point. The distance from impact point to resting place is referred to as the "Off set Distance and is normally considered to be 1/3 of the depth. This mechanism can permit a weapon to strike outside a building and travel below ground finally coming to rest within the building footprint. Where a strike is known to have occurred close to a building or structure such as a dock wall, a danger zone should be considered to exist around the area of the strike of sufficient size to accommodate the likely sub-surface travel distance for the weapon.

Note; the typical offset distance is shown as the shaded area, on rare occasions a near surface deflection of the weapon can occur and the offset distance can be substantially increased up to 5/4 of the penetration depth. This mechanism does however reduce the penetration depth considerably with the net result that while the offset is increased the overall travel distance is for the most part unaffected.

Note; scenario 1 shown top left shows a hypothetical bomb strike outside a structure or building. The strike location has been accurately identified and as a consequence; a potential danger zone (circular shaded area) can be placed around the point of impact. Scenario 2 shown top right; depicts a direct HE bomb or Incendiary strike within a building which totally destroyed the building. In circumstances such as this UXB entry the building rubble may have concealed hole and the weapon may still be present within the building footprint or it may have travelled sub-surface and come to rest outside the footprint. Here the danger zone (square shaded Area) extends outwards on all sides of the original building footprint.

TYPES OF ORDNANCE

German Air Delivered Ordnance. Technical information on the nature and characteristics of the ordnance used by the German Air Force during both world wars has been available for several years. Assessment that began during the 1930's has continued to the present day. Experts have conducted research in many countries as part of national research programmes and as individual research projects. Consequently, a well-informed assessment of the threat posed by unexploded ordnance, and the hazards that they represent, can be made with a high degree of confidence.

Terminology. It should be noted that two terms used in bomb records can lead to some confusion as to their meaning and therefore significance. The term Unexploded Bomb (UXB) refers to a bomb that has fallen, failed to function and has been subsequently dealt with and removed from the site. The term Abandoned Bomb (A/UXB) refers to a UXB that could not be found or recovered, or the decision was taken not to pursue the matter further. Consequently, the unexploded bomb remains where it came to rest when it was dropped or fell to the present day. It should also be noted the word 'bomb' can be used to describe an airdropped bomb or a shell as in some cases no differentiation was made, and the term was interchangeable.

Abandoned Bombs. The records of known abandoned unexploded bomb locations in the London area were released in response to a written Parliamentary Question from Simon Hughes. (Hansard: Volume; 282. Dated 15th October 1996). The information was provided by the Ministry of Defence (MOD) and supplied under an indemnity.

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Explosive Ordnance Failure Rates. Over the course of both World Wars a considerable quantity of ordnance dropped on UK targets failed to function as designed and subsequently penetrated the ground without exploding. Information gathered during the war by the MOD and its research partners provide typical failure rates for different types of ordnance. Figures significant to this study are:

- 10% of all German airdropped bombs failed to function as intended.
- 30% of all anti-aircraft and other types of shells failed to function as intended.

Deductions & Considerations. The following points were considered as part of the assessment and have been given due consideration:

Records were found that indicated that the general area was subjected to heavy bombing.

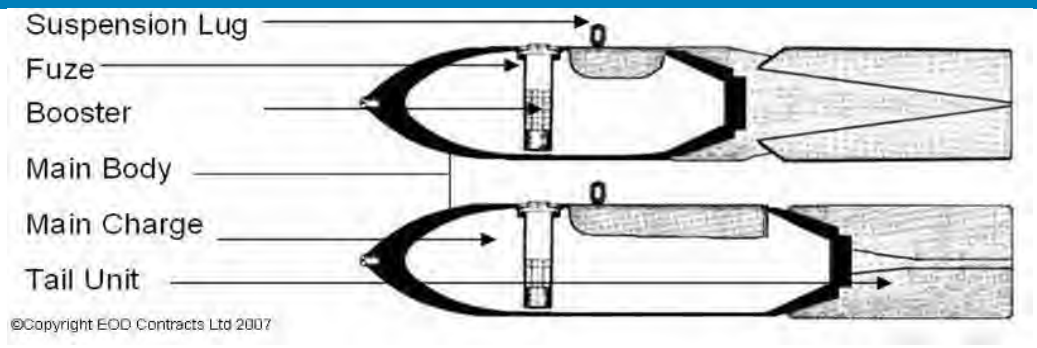
Bombs, which struck previously, hit or burned-out targets and did not function; consequently their impact was unseen and therefore no report was ever made.

In all likelihood, the local anti-aircraft battery would have fired a far higher number of shells than the bombers dropped HE bombs. Contamination by anti aircraft shells can not be rules out.

Generic German Bomb Types. The majority of German bombs dropped were 50kg in weight, accounting for approximately 16% of the total bombs dropped. The range of common bombs increased in weight to a maximum of 1700kg. Regardless of size, German bombs were fitted with one or more Electrical Condenser Resistance (ECR) fuzes many of which included a mechanical component. The fuzes were mounted transversely in the bomb body with the booster directly below, and in contact with, the fuze. The booster: sometimes referred to as the Gaine, is composed of a sensitive explosive material (Picric Acid). Picric Acid is known to deteriorate over time becoming increasingly unstable. The internal layout of two common German bombs and a German fuze is shown in Figures 2 & 3.

Figure 2: Generic German Bomb Design

Graphic Cross Section through the most common German bombs (50kg)



Note; the diagram shows that there can be a significant difference in the quantity of High Explosive contained within bombs of similar size and shape; the Grade 1 bomb on the bottom having 30% more HE than the Grade 2 shown at the top. This serves to demonstrate the importance of an accurate identification of any item of UXO.

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Figure 3: Generic German Bomb Fuze Design.

Graphic Cross Section through a typical German fuze (ECR)

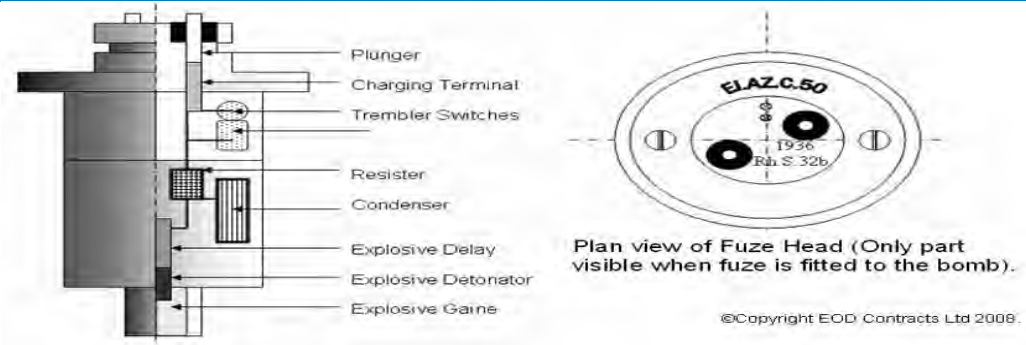


Figure 4: Range of HE bombs dropped on the United Kingdom.

German Bombs



NOTE: The smaller sub-munitions (Bomblets) seen to the right, ranged in size between 1 and 3kg, were dropped in large numbers and were intended as incendiary bombs, anti-personnel bombs or as bombs filling both roles. The smaller bomblets were dropped in larger container bombs designed to hold between 360 and 620 of the bomblets. The containers were designed to burst open at a predetermined height above ground level, dispersing the bomblets over a wide area. Air raid damage was far greater by using both incendiary, and HE bombs on a single raid. The fires started by the incendiaries being rapidly spread by the blast waves from the HE bomb. This scenario was shown to devastating effect on the 14th February 1945 in the German city of Dresden. Where fires started and spread by the bombing increased to a point where the oxygen was being sucked into the flames at such a high speed that the fire became a "Fire Storm". At the time the city's population had increased due to a high number of

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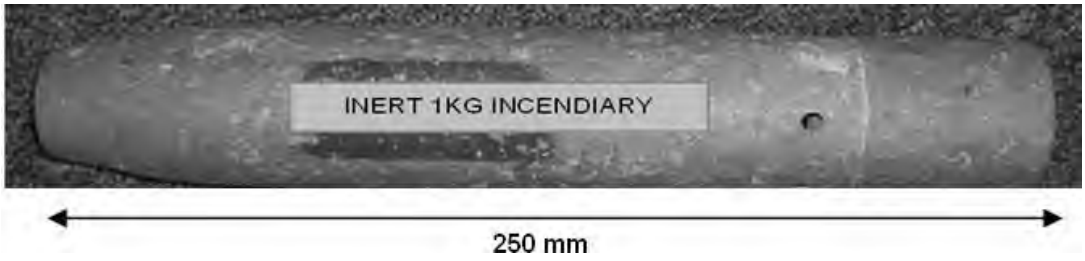
refugees fleeing the Russian advance to the east, the exact civilian death toll from fire and suffocation will never be known, but is considered to be somewhere between 25,000 and 100,000.

High Explosive (HE) Bomb. Some of the most common type of ordnance to be dropped on the United Kingdom, HE bombs are often the type encountered as UXBs. Relatively thick cased, they are still recovered in remarkably good condition. Ranging in size from 50 to 1700 kg, their typical release height (1,500m) allowed them to penetrate deep into the ground as a result of design or flaw. Towards the end of the bombing campaign, as steel became scarce the German Engineers produced a range of bombs that used steel reinforced concrete as the bomb body. Figure 4 shows the range of steel HE bombs dropped on the UK.

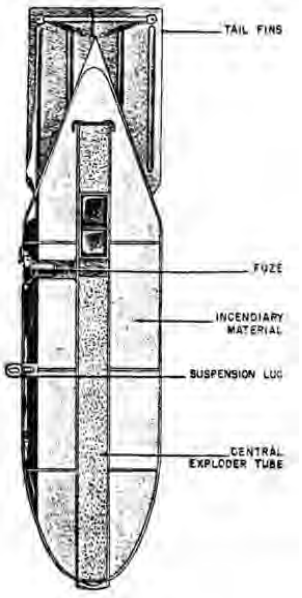
Incendiary Bomb. The larger incendiary bombs, containing bottles of white phosphorus and an incendiary mixture contained within a thin steel case were designed to burst on contact with the ground. A fixed dispenser on the aircraft delivered the smaller type of bomb or 'Bomblet' to the target area in container bombs or; both types of container would open dispersing the smaller Incendiary bombs. Relatively small and light they were unlikely to penetrate the ground to any significant depth. However, once concealed in bomb damage rubble or below water they were easily missed and are still unearthed today from in-fill and drained land. Later versions of the incendiary bomb contained an additional explosive charge used as a short delay "Booby Trap" device that contained a significant amount of high explosive. The Booby Trap component was designed to kill or injure fire fighters and hinder the damage control. See Figure 5.

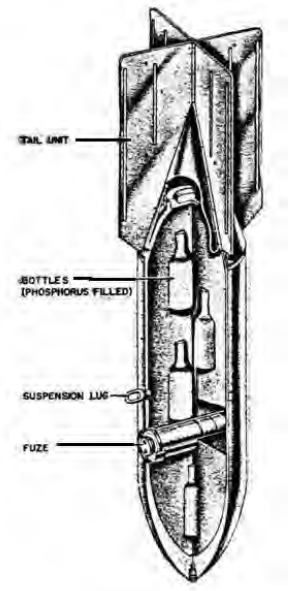
Figure 5: Incendiary Bombs.

Common German Incendiary Bombs



Above 1kg incendiary bomblet, below left the larger 500kg incendiary bomb Below right a 50kg incendiary bomb containing bottles of white phosphorus.





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Note; Incendiary bomblets were made of a flammable alloy similar in appearance to aluminium, which resists corrosion well. The tail unit was made of thin tin-plate steel and is more prone to have rusted away. Some Incendiary models were fitted with a High Explosive (HE) steel nose. With the tail and explosive nose attached the bomb was 480mm long.

Blast Bomb / Parachute Mine. The parachute mine was extensively used on land and at sea and was fitted with specialist fuzes designed to trigger the weapon at a predetermined altitude, water depth or to switch on other magnetic influence mechanisms to trigger the weapon when a ship approached (Magnetic or Acoustic influence). While early versions were based on the standard 1000kg SD Bomb case others were specially designed and manufactured with an aluminium body, making them extremely difficult to detect using magnetometers. The thin cased versions would normally disintegrate on impact on land and are normally considered to pose little threat to work on land-based projects, but the risk increases significantly on projects over water or in marshland. Thicker cased versions however will survive impact and pose a significant risk regardless of the local ground conditions. (See Figure 6)

Figure 6: Common Airdropped Mines.

Parachute & Ground Mines





Note; all mine fuzes were designed to arm after deployment from the ship, submarine or aircraft, some fuze designs incorporated anti-removal booby traps. Unexploded mines found today are the result of a failure within the arming mechanism or procedure whereby the mine never fully armed. Sudden shock or jarring of a weapon in this state has the potential to complete the arming sequence and could result in the mine detonating with lethal consequences.

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Non-Steel Cased Bombs. Used primarily in the construction of training or practice bombs, some high explosive variants were introduced towards the end of the war. With resources running scarce, German Engineers produced a small number of blast bombs with a concrete body. The design utilised a steel framework onto which concrete was cast. The explosive filling was also contained within a thin steel container within the bomb body. Very few "concrete" bombs were dropped on the UK. In common with standard steel cased weapons, this type of bomb can be detected using standard magnetometer detection techniques (albeit, providing a smaller ferromagnetic signature than its all steel counterparts). This type of bomb represents a very small percentage of the total number of bombs dropped worldwide and are not considered a significant threat, particularly when viewed from an overall bomb threat in the UK.

Anti-Personnel Bomb. Generally, these were small weapons of 1-3 kilograms in weight and are often referred to as 'Bomblets' and possessing similar ground penetration ability as the Incendiary Bomblets. They were often located during the post-raid searches. This type of bomb has been recovered within the bomb rubble being cleared or used as in-fill on construction projects and poses the same potential to function as the Incendiary bomb with a greater potential to cause localised casualties.

Specialist Bomb. These types of bombs were designed to meet a specific mission requirement. Typically, this would be a design modification or special fusing to enable the bomb to destroy hardened/armoured targets or deep buried and sub-marine targets. Similar to the more common HE bombs, they differ in that they rarely contain large amounts of high explosive. Therefore, the consequence of a detonation is reduced but remains a significant risk, particularly when the detonation occurs on or near the surface.

Depth Bombs & Depth Charges. These types of weapons were designed to meet a specific mission requirement. Typically, the modifications would include the type of explosive filling and special fusing to enable the bomb to penetrate to a significant depth into the ground or water before detonating. Depth bombs intended for maritime attack and sub-marine targets would be fitted with one or more fuzes, one of which would be a hydrostatic fuze designed to detonate the bomb at a predetermined depth. The bomb would be fitted with an anti-skip ring to reduce the deflection of the bomb as it entered the water. Similar in many ways to Depth Bombs, Depth Charges were exclusively designed to detonate at a predetermined depth. This was achieved by fitting the Charge with a short time delay or hydrostatic fuze. Depth bombs; having a similar configuration to general purpose bombs had the potential to penetrate deeply into the sea bed where an attack occurred in the relatively shallower water of a dock.

Unmanned Rocket Bombs & Missiles. The most famous in this category of weapons were the V1 (Fi103 flying bomb) commonly known as the Doodlebug and the Larger V2 (A4 missile). Both V1 & V2 with high explosive warheads containing 850kg & 1000kg (respectively) represent some of the largest weapons to land in the United Kingdom. Both types were built in a similar manner to an aircraft and would generally disintegrate on impact even if the warhead failed to detonate. The impact would spread debris over a wide area which was difficult to miss, and any resulting unexploded 'V' weapons were comprehensively dealt with at the time. For this reason, they are rarely encountered on land. However, where a 'V' weapon landed in water the opportunity for the event to have been missed and/or follow-up action abandoned was greater and they continue to pose a significant risk. Other, less well-known rocket bombs were also produced by the Luftwaffe to attack maritime targets. Some were equipped with TV/Radio guidance from the parent bomber. Two of the most common were the Fritz X which consisted of an adapted SD1400kg bomb and the Henschel Hs293 which was based on a smaller 500kg bomb. No record of one having been recovered on land as a UXB can be found but these large HE bombs are considered to pose a significant risk, particularly to maritime projects. No records were found to indicate this type of bomb was ever used on targets in the area.

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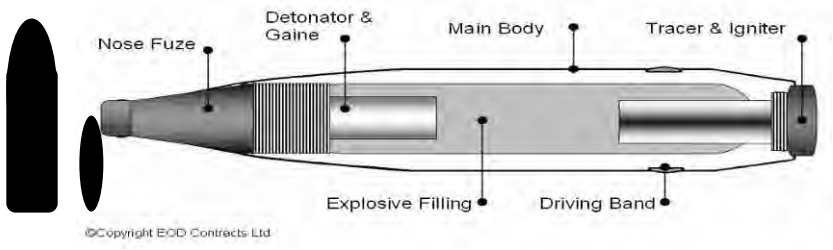
Photoflash Bomb. This type of bomb was dropped by specialist "Pathfinder" aircraft and although this type of bomb can be included with the category of specialist bombs, it is worthy of specific comment due to the danger it may still pose. Photoflash bombs were designed to explode with a blinding flash, rather like a camera flashbulb. They were used to enable photographs to be taken of targets at night and also served to identify ground targets for other aircraft to attack. The speed at which the highly energetic filling detonated, and energy it produced in doing so, was significant. Although these bombs were thin skinned and are prone to corrosion the functioning of one can be compared to a high explosive bomb detonation.

High Explosive Shells & Projectiles. As mentioned previously, one of the most common sources of UXO contamination encountered in the United Kingdom is High Explosive Shells and Projectiles. This is most commonly found to be as the result of firing practice ranges, bombardment and anti-aircraft defence, the latter often positioned to defend Major cities and Strategic installations and ports from German Bombing. Anti Aircraft Shells and projectiles are generally smaller (Up to 4.7" inch diameter) than the airdropped bombs and as a consequence were more easily missed amongst the bomb rubble. However, coastal bombardment guns could fire a shell weighing 1000kg, (larger than most common airdropped bombs) and capable of significant ground penetration. The generic layout of a projectile can be found at Figure 7. It should be noted that the fatal incident on the German autobahn in 2006 was thought to be the result of a shell or projectile detonating, not an airdropped bomb as first reported.

The Fuzes used in Anti-Aircraft Ammunition were designed to ensure the projectile would detonate in contact with the target, or at a pre-set altitude, or in close proximity to the target. The fuzes employed different means to achieve this, including direct impact, or indirect impact, Barometric, Delay and Electro-magnetic influence. Some were fitted with more than one fuze, which served to reduce the chance of the projectile falling to earth and detonating. Artillery fuzes are activated during the firing process, using the projectile's acceleration or spin within the gun barrel to switch off the safety mechanisms. For this reason, fired projectiles are considered more dangerous than unfired ones.

Figure 7: Generic Shell Design

Scale & Graphic Cross Section of a typical High Explosive (HE) Shell



Approximate size of a large shell used by battleships and coastal bombardment guns (Left) and Anti-aircraft shell (Right)

Other Types of Ordnance

The following additional sources of ordnance types have been considered, and inherent risks taken account of:

Flares and Pyrotechnics. Flares and pyrotechnics were used for a variety of reasons throughout the war and continue to be found today in the most unlikely places. However, due to the thin casings of these weapons a high level of corrosion is likely to have occurred since manufacture. Depending on the specific nature of the weapon, this effectively renders them inert with the exception of any white phosphorous content or explosive gaine.

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Land Service Ammunition (LSA). While as the name implies this type of ammunition was designed for use on land, it was also issued to naval personnel for close protection of vessels and their crew and to provide a limited offensive capability even to relatively small craft. This type of ammunition includes some shells and projectiles such as those covered previously. Other natures of LSA range from Small Arms Ammunition (SAA), having little or no high explosive content to Grenades, Mortars and Rockets which may pose a risk of detonation due to their explosive content and the design of their fuzes (impact) which; if subjected to sufficient shock or friction may result in the weapon functioning. (See Figure 8).

Figure 8: Common Categories of Land Service Ammunition

Land Service Ammunition

Small Arms Ammunition



Grenades



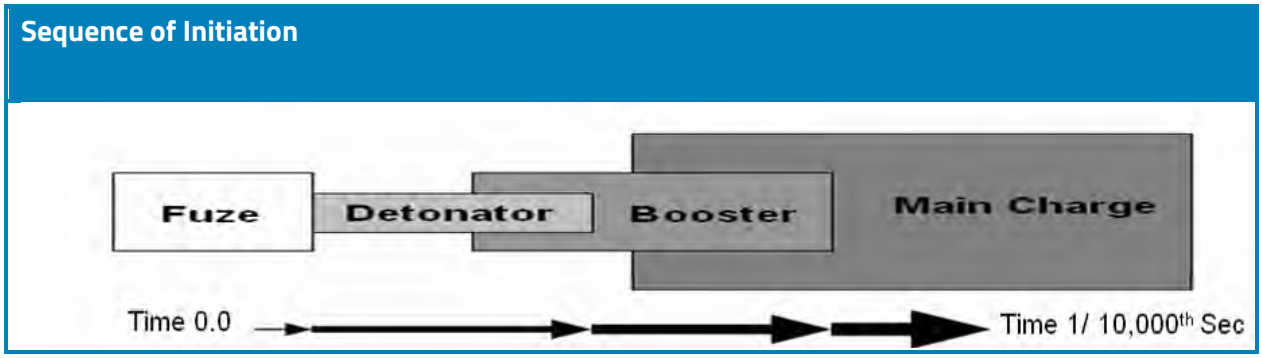
Mortar Bombs



Initiation of Unexploded Ordnance. Explosive Ordnance is highly unlikely to spontaneously explode. The energetic chemical compounds, (Explosives) used in weapon manufacture are chosen to be as stable as possible and they all require a significant application of additional energy to create the right conditions for detonation to occur. If stored correctly, most explosive materials are designed to remain stable for the duration of their expected lifespan (typically 20 years). During this time, the correct functioning of the weapon is achieved by means of the 'Initiation Train' (See Figure 9).

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Figure 9: Explosive Ordnance Initiation Train



Initiation Train. This is a means by which, once the safety features have been switched off or removed, a chain reaction occurs through the weapon. Starting within the fusing system as a small ignition or spark, causing a detonator to explode, which in turn causes the booster charge to detonate with a greater energy and ending in the full detonation of the main explosive filling. Each part of the process has in-built safety features to prevent an unintended detonation. A failure in any of the components within the Initiation Train can result in a UXO. In the case of a UXB; the chain reaction has broken down and the Initiation Train is brought to a halt, albeit, a temporary one. There are a number of ways that sufficient energy could be introduced to the otherwise stable UXB / UXO that may allow the Initiation Train to set off once more, overcoming the initial reason for failure. In addition to subjecting the weapon to excessive heat, such as a fire, the most common methods to bring about an explosive detonation in such items are considered to be:

Direct impact onto the main body of the bomb by mechanical excavation or pile driving: Such an occurrence can cause the bomb to detonate, should the point of impact be on the bomb fuze; less force would be required to bring about a full or partial explosive detonation.

Re-starting the clock timer in the bomb fuze. Only a small percentage of bombs were fitted with clockwork fuzes. It is likely that corrosion has taken place within the fuze that may prevent the clockwork mechanism from functioning. However, the restarting of the clock is by no means a scenario that can be completely ruled out. This is considered to be one of the two most credible mechanisms by which sufficient energy could be introduced to the bomb and result in a detonation.

Induction of a static charge or exposure to an external power source (Electrical Services), causing a current in an electrical fuze. The majority of German bombs employed an electrical component within the fuzes, it is likely that corrosion would have taken place within the fuze mechanism and that it would no longer contain, or conduct sufficient electrical charge to initiate the bomb.

Friction initiating the sensitive fuze explosive. Some chemical constituents may have deteriorated, due to oxidisation. Components designed with a high degree of stability at the time of manufacture may no longer be as safe. This is considered to be the most likely mechanism by which sufficient energy could be introduced to the bomb and result in a detonation.

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Annex F

Risk Assessment Tables

Table 1: Summary of Potential Contamination Sources

Source	Applicable	Not Applicable
Enemy Attack & Counter Measures		
Bombing WW1		☒
Manned Aircraft Bombing WW2	☒	
Unmanned V1 & V2 Rocket Attack		☒
Shelling		☒
Anti-Shipping Mines & Depth Charges		☒
Anti-Aircraft Shells & Rockets		☒
Beach Mines & Coastal Defences.		☒
Airfield/Key Point Defensive Mines/Charges		☒
Abandoned Unexploded Bomb (A/UXB)		☒
Migration of UXO		
UXO Migration in Rubble & Infill		☒
UXO Migration by Tide & River Current		☒
UXO Migration by Marine Dredging		☒
Shipwrecks		☒
Dispersal by Explosion, Fire & Accident		☒
Aeroplane Crash		☒
Private Collections		☒
MOD Facilities		
Bombing Range		☒
Artillery, Mortar & Tank Range		☒
Grenade Range		☒
Small Arms Firing Range		☒
Weapon Research & Development Facilities		☒
Ammunition Burial Grounds		☒
Docks & Harbour Facilities		☒
Offshore Ammunition Dumping Grounds		☒
Ammunition Storage & Manufacture Sites		☒
Airfields & Air Stations		☒
Bombing Decoy Site		☒
Army Barracks & Camps		☒
MOD Training / Concentration Areas		☒
Home Guard & SOE Weapon Caches		☒

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Table 2: Airdropped Weapon Strike Indicators (UK)

Item	Increasing Potential level ⇨			
Site Location	Rural	Small Town	Brown Field Large Towns	Cities
Site Description and Use	Greenfield or Agricultural Land	Near Strategic Target	Adjacent to Strategic Target	Strategic Target
Site History	No history of Attack	Near area of Attack	Immediate Area Attacked	Direct Attack
Strategic Target: Military Installation, Industrial or Munitions Manufacturer, Power Station, Gas or Water Works, Port, Dock, Railway Yard, Decoy Site.				

Table 3: Weapon Strike Records (UK)

Source	Availability			
Archive	None	Non-specific	Specific	Extensive
In-house	None	Non-specific	Specific	Extensive
Anecdotal	None	Non-specific	Specific	Confirmed

Table 4: Anti-Aircraft Weapon Strike Indicators (UK)

Item	Increasing Potential level ⇨			
Site Location	Rural	Town	City	Military Site
Fixed Battery Location	None	General Area	Nearby	Onsite
Mobile Battery	Rural	Town	City	Military Site
Military Site: Airfield, Port, Radar, Barracks, Depots, Arsenal or Similar.				

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Table 5: Abandoned Bomb Records (UK)

Item	Increasing Potential level ⇨		
In-house	None	Yes	On-site
Other	None	Yes	On-site

Table 6: Bomb Strike Density Assessment

Bombs & Mines	Placed at less than 50 per hectares.

Table 7: Opportunity to have detected Bomb or Shell Strikes (UK)

Increasing Potential level
No recorded bombs or damage
Good ARP cover
Significant development (within some areas of the Site)
No significant ground cover
Light bombing or damage
Moderate ARP cover
Moderate development
Frequent public access
Little ground cover
Significant bombing or damage
Poor ARP cover
Minimal development limited to shallow excavations (within some areas of the Site)
Infrequent public access
Moderate ground cover
Heavy bombing or damage (surrounding area)
No ARP cover
Development limited to site clearance
Controlled private access
Heavy ground cover, vegetation, ploughing or body of water

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Table 8: Post Contamination Development Indicators (UK)

	Increasing Potential level
Nature of Post Contamination Development	100% excavations of the entire site to below contamination depth.
	Significant development
	Moderate development
	Minimal development
	No development

Table 9: Construction Activities Encounter Indicators

	Increasing Potential level
Activities	Borehole Drilling
	Dynamic Sampling
	Shallow Trial Pit
	Services Trenching
	Bored (CFA) Piling
	Sheet Piling
	Shallow Excavations over extended area
	Deep Excavations over a limited area
	High Density Piles
	Deep Excavations over extended area
	Bulk Excavations

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Annex G





Source:	BBC
Date:	10th February 2023
Description:	**A World War Two bomb found in Great Yarmouth has detonated while work was being done to defuse it, causing a huge blast that was heard for miles.** Army specialists were attempting to disarm it when there was an unplanned detonation at about 17:00 GMT. People on social media said they heard a loud bang and felt buildings shake 15 miles (24km) away. There have been no reports of injuries among the Army, emergency services or the public, Norfolk Police said. Cordons were put in place when the bomb was first discovered close to two gas pipes on Tuesday, and work began to make it safe. The cordons, at 200m (656ft) and 400m (1,312ft) from the bomb, were lifted on Friday evening. Most roads have been reopened and residents have been allowed to return to their homes.

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Source:	BBC
Date:	24 July 2021
Description:	A live World War Two bomb unearthed by builders on a housing development has been destroyed in a controlled explosion. The 500lb (227kg) device was found on the new-build estate in Goole, East Yorkshire, on Thursday. Eight homes were evacuated and the M62 was shut between junctions 35 and 37 as a safety precaution. Humberside Police said the device was successfully detonated at 16:22 BST on Saturday. All residents have been able to return to their homes and local business are no longer being asked to remain closed. The force also said a no-fly zone and the closures of the M62 and other roads nearby had since been lifted. John Sharpe, site manager of the Beal Homes development, said he received a call from workers just after midday on Thursday. "They didn't know what they'd dug up at first and a guy went down into the hole because we thought it was a metal pipe. "As he uncovered it he realised it was a bomb and got out pretty quickly," he said.

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Source:	The Sun
Date:	27 February 2021
Description:	A WORLD War II bomb which sparked a mass evacuation in Exeter has been detonated by army experts leaving a crater the "size of a double decker bus." The noise from the huge blast - which sent debris flying more than 250 metres - could be heard five miles away with some residents claiming the aftershock rattled their windows. Personnel from the Army's Royal Logistics Corps took over from Royal Navy bomb disposal experts this morning. They used 400 tonnes of sand to create an enclosing "box" before it was "made safe" at around 6.10pm. He added: "Around 400-tonnes of sand was transported to the site of the device, which is at a building site on private land, and walls were erected... to mitigate the impact of the detonation. "Trenches were also dug to prevent ground shock. Despite these mitigation measures, the impact of the blast has been significant and debris has been thrown at least 250-metres away. "The crater is around the size of a double decker bus.

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Source:	UKNIP
Date:	04 May 2020
Description:	Officers from Kent Police are working with Army Bomb Disposal officers after the discovery of two unexploded WW2 bombs were located in Kings Hill, Kent. Police were called just after 4:30pm Monday afternoon to Warwick Way after the discovery of an unexploded ordnance.The Army Bomb disposal service were called in to action to attend the scene to evaluate the discovery and make it safe. Shortly after a second ordnance was found in the adjacent road Gibson Drive. Officers have placed a cordon on the area whist the Army investigate and decide if a controlled explosion is needed.

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Source:	The Bolton News
Date:	10 February 2020
Description:	A worker who found an unexploded bomb in a back garden has spoken about the discovery. Aram Mahmoud found the item while putting fence posts in for a house on Bradford Road, and said he recognised the explosive instantly due to growing up in Iraq. Mr Mahmoud said: "We were putting up concrete posts and we were digging and we found a rocket. "We called the police immediately and they came round. The bomb disposal team told Mr Mahmoud that the device was "very very dangerous". Bradford Road was closed between Green Lane and Bishops Road, and Oakleigh Avenue was also shut off with residents evacuated. Both roads have now reopened and the police have left the scene.

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Source:	Sky News
Date:	4 February 2020
Description:	London's Soho Evacuated as World War Two Bomb Discovered A large part of central London's busy Soho area was evacuated after an unexploded Second World War bomb was found at a building site. Police were called at 1.42pm on Monday to Dean Street, connecting Oxford Street to Shaftesbury Avenue, which they cordoned off after the device was discovered near the Soho Hotel. A Royal Engineers bomb disposal unit was called in and removed the half-tonne device. The Metropolitan Police's Soho team said the cordons in Oxford Street, Charing Cross Road, Shaftesbury Avenue, Lexington Street and Poland Street had been lifted shortly after 8:30pm.

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Source:	Express and Star
Date:	May 17, 2019
Description:	Second World War Bomb Detonated in Bilston. A Second World War bomb was detonated by the army in Bilston last night following a discovery by a workman. The detonation took place on what appeared to be a building site at around 8.30pm. A West Midlands Police spokesman said: "We were called to reports of an unexploded World War 2 bomb at a building site on Coseley Road, Bilston, at 3.40pm. A controlled explosion was carried out."

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Sip Grenades



Aftermath of Demolition



Source:	The Beach https://www.thebeach.co.uk/news/local-news/bomb-squad-called-after-dozens-of-second-world-war-grenades-discovered/
Date:	28 May 2019
Description:	Army bomb disposal teams have detonated 24 grenades found in a field in East Suffolk. The 'SIP grenades' - which stands for 'self-igniting phosphorus' - were discovered in the village of Sibton, which is near Yoxford, yesterday. The bombs, which were designed during the 1940s, were glass bottles filled with phoshorus and petrol. Unlike traditional Molotov cocktails, they would ignite spontaneously when the glass shattered, and the phosphorus became exposed to air. The grenades were issued to Home Guard units in the event of a German invasion; as that never happened crates of them have been left buried in unregistered hiding places.

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Source:	BBC News https://www.bbc.com/news/uk-england-hampshire-48327618
Date:	19 May 2019
Description:	A suspected German wartime bomb which was caught in a fishing net off the coast of the Isle of Wight has been detonated. A fishing vessel reported picking up the 7ft-long sea mine, which was "most likely an old German wartime sea mine", about a mile from the Needles at around 8am on Saturday, the Maritime and Coastguard Agency (MCA) said. Bomb disposal experts from the Royal Navy's Portsmouth base were called in to detonate the device, while warnings were issued to ships and public in the area. Divers placed the mine back on the sea bed and blew up the bomb – found to contain 2,000lb of explosives – at 10.51am on Sunday, the Ministry of Defence said.

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Source:	Birmingham Live
Date:	25th March 2019
Description:	Stechford Retail Park and homes evacuated after 'unexploded bomb' found. Police have cordoned off the area at the Retail Park, off Flaxley Road, following reports an unexploded bomb. The discovery was made Stechford Retail Park just after midday. A number of homes have been evacuated along with part of the retail park. West Midlands Police say they believe it's from World War Two. A section of the A4040 closed, with bus routes also affected.

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Source:	The Guardian
Date:	3 March 2017
Description:	A second world war bomb that forced schools and homes in London to be evacuated has been defused. The device, weighing 500lb (227kg), was found by builders working on a development in Brondesbury Park, north-west London, late on Thursday morning, on The Avenue, near the junction of Willesden Lane. The Metropolitan police, London fire brigade and an army bomb-disposal team were scrambled to the scene, where a cordon was erected and homes were evacuated.

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