Phase I Geoenvironmental Site Assessment
Jersey Street, Ancoats

Reference: 15-798-R1-1
Date: March 2022

PHASE I GEOENVIRONMENTAL SITE ASSESSMENT

Jersey Street
Ancoats
Manchester
M4 6JW

Prepared for:

Civic Engineers

Report Ref: 15-798-R1-1
Date Issued: March 2022

E3P

Taylor Road
Trafford Park
Urmston
Manchester
M41 7JQ

+ 44 (0) 161 707 9612
https://e3p.co.uk

Registered in England
CRN: 08725262

QUALITY ASSURANCE

PROJECT NUMBER	15-798		
VERSION	Version 1		
REMARKS	Draft for Comment		
DATE	January 2022		
PREPARED BY	G Haigh		
QUALIFICATIONS	BSc (Hons), MSc, FGS		
CHECKED BY	P Winstanley		
QUALIFICATIONS	MGeol, FGS		
AUTHORISED BY	M. Dyer		
QUALIFICATIONS	BSc, FGS, AIEMA, AMIES CEnv		

Cert No 18890
ISO 9001 (2015)
ISO 14001 (2015)
ISO 45001 (2018)

EXECUTIVE SUMMARY

Site Address	Wider Back of Ancoats area - with a specific focus on the section of Jersey Street containing the Jersey Street Bridge, Ancoats, Manchester.
Grid Reference	E 385184, N 398851
Site Area	11.88 Ha
Proposed Development	E3P understands that Civic Engineers on behalf of Manchester CC are submitting two planning applications for the Back of Ancoats area. It is understood that the first will consider the Jersey Street area, specifically the demolition of the Jersey Street Bridge and regrading of the highway for a pedestrian walkway. The second planning application will focus on the redevelopment potential and pedestrianisation of the wider back of the Ancoats area.
Current Site Use	<u>Jersey Street</u> The Jersey Street area is a rectangular subsection of the larger site including Jersey street to the east of Poland Street. The site is bound by a concrete hardstanding car park to the north and a large warehouse to the south, currently unoccupied. To the southeast of the roadway, an area of undeveloped land is present in the former location of the Bengal Arm canal, predominantly concrete hardstanding from previous development with overgrown shrubs and vegetation around the periphery. <u>Back of Ancoats</u> The back of the Ancoats area is an irregular shaped parcel of land in the Northwest section of the City of Manchester. The central area consists predominantly of commercial plots including shops, warehouses, and car parks. These commercial plots have current uses including a car garage, used car forecourt, glassworks, and recycling works. The eastern and western sections of the site contain residential buildings, comprising high rise apartments and housing. The site also contains multiple areas of public open space, including Ancoats Green.
Site History	<u>Jersey Street</u> No significant changes to Jersey Street have occurred since the earliest historical mapping records, with the jersey street bridge infilled circa 1955. From 1948, Jersey Street comprises the main carriageway running east-west with adjacent pavements. The Rochdale Canal runs parallel to the south of the road. The Jersey Street area is surrounded by significant industrial development, including the sheet metal works to the south-east, ironworks to the north-west and the waste paper factory to the south-west. Terraced residential housing is present to the east of jersey street. By 1963, significant further industrial development occurred surrounding jersey street occurs, surrounded by several various works and factories. By 2003, the majority of structures surrounding Jersey Street have been demolished and repurposed as car parking. <u>Back Of Ancoats</u> A review of the pertinent ordnance survey mapping suggests that the site comprised predominantly industrial plots and a scattering of residential plots in the northeast section from pre-1848. The majority of the industrial buildings were cotton mills up until the 1950s. Since then, they have been changed into commercial and residential units.

	The Bengal Arm, a historical branch of the Rochdale Canal is present through the centre of the site. During this time, there have been multiple phases of development, with buildings across the area being demolished and new buildings being constructed. In the 1950s, the Bengal Arm was disconnected from the main canal and infilled.	
Environmental Setting	Drift Geology	Devensian Till - Diamicton The site is underlain predominantly by CLAY deposits in excess of 10 m, with some 1 m thick sections of SAND.
	Bedrock Geology	Manchester Marls Formation - MUDSTONE Collyhurst Sandstone Formation - SANDSTONE Chester Sandstone Formation - SANDSTONE
	Faults	A geological fault trending northwest-southeast runs cuts through the site in the northern section.
	Hydrogeology	Principal and Secondary B bedrock aquifer with a Secondary Undifferentiated superficial aquifer recorded. No active or historical abstraction points are located within 1 km of the site.
	Hydrology	The nearest surface water feature is the Rochdale Canal, located adjacent to the southern boundary of the site. Due to the local topography, any shallow groundwater if present will likely flow in a south-easterly direction towards the canal.
	Flood Risk	Unaffected by flooding from rivers.
Utility Locations	A formal drainage survey has not been completed; however, manholes and street lighting have been noted across the entirety of the site. Additionally, due to the back of Ancoats are containing multiple commercial and residential units it is assumed that all roadways and pavements are likely to have electricity, gas, water and sewerage services buried within them. Street lighting, manholes and asphalt scarring are present in the Jersey Street area, and as such, it is assumed multiple services will be present.	
Landfill Sites and Ground Gases	No landfill sites (current or historic) are located within 250 m of the site. The site has undergone some historic development and ground working, the Made Ground associated with the historic development may produce hazardous ground gases such as methane and carbon dioxide.	
Radon	Less than 1% of houses above the 'Action Level' – no special precautions required.	
Coal Mining/Land Stability	It has been deemed by E3P that the site is at low risk of shallow coal mining beneath the site, and no further assessment is required.	
Hazardous Installations	No hazardous installations that could potentially prejudice the proposed construction have been identified within influencing distance of the subject site.	

Initial Conceptual Site Model	**On-site Contaminant Sources:** <u>Jersey Street</u> • Made Ground associated with multiple phases of development. Borehole data suggests an average of 2.50 m of Made Ground across the site - Heavy metals, Polycyclic Aromatic Hydrocarbons (PAHs), sulphates, Asbestos Containing Materials (ACM), TPHs and ground gas (carbon dioxide and methane). • Made Ground and possible organic peat deposits associated with infilling of historical canal features. Heavy metals, Polycyclic Aromatic Hydrocarbons (PAHs), TPHs, Volatile contaminants, sulphates, Asbestos Containing Materials (ACM) and potential for ground gas (carbon dioxide and methane). • Electricity Substations - Polychlorinated Biphenyls (PCBs) - Multiple have been identified across the site. <u>Back of Ancoats Area</u> • Multiple Mill Buildings – Cotton Industry - Ground gases (carbon dioxide and methane). • Volatile Contaminants associated with localised fuel spillages in the car parks within the site - Hydrocarbons, solvents. • Iron Works - Metals and Metalloids (Iron, Manganese, Aluminium, Arsenic, Nickel, Chromium, Vanadium, etc), Inorganic compounds (Phosphates, sulphates, sodium, cyanide, sulphides, etc), Acids, Alkalis, Organic compounds (fuels and oils, tar, PAH, Phenols), and Solvents. • Flint Glass Works - Heavy metals (Lead and Lead oxides). **Off-site Contaminant Sources:** • Made Ground associated with multiple phases of development - Heavy metals, Polycyclic Aromatic Hydrocarbons (PAHs), sulphates, Asbestos Containing Materials (ACM) and ground gas (carbon dioxide and methane). **Pathways** • Dermal contact & Ingestion; • Inhalation; • Accumulation; • Vertical/lateral migration; • Corrosion of concrete.

	Receptors • Construction workers; • Residential end-users; • Third-party property; • Primary bedrock aquifer; • Secondary undifferentiated superficial aquifer; • Concrete foundations.
Conclusion	Jersey Street The area of Jersey street is likely to be underlain by significant depths of Made Ground, associated with the underlying infilled canal, ramps to the bridge and surrounding historic industrial development. The proposed demolition of the bridge and re-grading of the highway for a pedestrian walkway along Jersey Street is likely to cover the whole area with concrete and/or asphalt hardstanding. This will mitigate the risk for direct exposure of contamination to underlying soils and therefore risk to human health is considered to be low. As no buildings or structures are proposed, risk for vapour/ground gas exposure and accumulation can be considered to be negligible. Contaminants have the potential to leach from the soil and migrate downwards to the underlying Secondary B and Principal bedrock aquifers, as well as the adjacent Rochdale Canal, and further investigation will be required to facilitate further risk assessment. Back of Ancoats Area Made Ground associated with multiple historical phases of development is likely to be present across the back of the Ancoats area. Made Ground may be impacted by heavy metals, hydrocarbons, asbestos and polycyclic aromatic hydrocarbons (PAH). These contaminants have the potential to leach from the soil and migrate downwards to the underlying Secondary B and Principal bedrock aquifers, as well as the adjacent Rochdale Canal. As the proposed development will involve the regrading of the public realm for pedestrian walkways and other public features, risk of dermal exposure will be mitigated by hardstanding cover, and risk to vapour exposure and accumulation is considered negligible due to no structures or buildings proposed.
Recommendations	Intrusive investigation with chemical analysis of soil and groundwater samples alongside geotechnical analysis of underlying soils is recommended to assess the presence of mobile contaminants, determine geotechnical issues and facilitate further risk assessment.

Table of Contents

EXECUTIVE SUMMARY 1

1. INTRODUCTION 7
   1.1. Background 7
   1.2. Proposed Development 7
   1.3. Objectives 7
   1.4. Sources of Information 8
   1.5. Limitations 8
   1.6. Confidentiality 8
   1.7. Risk Classification 9

2. SITE SETTING 10
   2.1. Site Details 10
   2.2. Current Site Use 10
   2.3. Surrounding Area 12

3. SITE HISTORY 13
   3.1. On-Site Historical Development 13
   3.2. Off-Site Historical Development 21
   3.3. Planning History 22
   3.4. Anecdotal Information 22
      3.4.1. Jersey Street Bridge 22
      3.4.2. Back of Ancoats Area 22
      3.4.3. World War 2 23
   3.5. Previous Reports 23

4. ENVIRONMENTAL SETTING 24
   4.1. Geology and Hydrogeology 24
   4.2. Natural Landform and Geomorphology 26
   4.3. Geotechnical Data 26
   4.4. Coal Mining 27
   4.5. Coal Mining Information 27
      4.5.1. Coal Authority Plan 31
   4.6. Coal Mining Risk Assessment 32
   4.7. Radon Risk Potential 32
   4.8. Preliminary Geotechnical Assessment 33
   4.9. Hydrology 33
   4.10. Industrial Land Uses 34
   4.11. Sensitive Land Uses 34
   4.12. Site Sensitivity Assessment 35

5. CONSULTATIONS 36
   5.1. Landfill Sites and Waste Treatment Sites 36
   5.2. Regulatory Database 36
   5.1. Unexploded Ordnance 38
   5.2. Initial Conceptual Site Model 39

6. CONCLUSIONS AND RECOMMENDATIONS 44
   6.1. Site Summary 44
   6.2. Contaminated Land Assessment 45
   6.3. Coal Mining 47
   6.4. Geotechnical Assessment 47

APPENDIX I LIMITATIONS 49

APPENDIX II GLOSSARY 51

APPENDIX III DRAWINGS 54

APPENDIX IV PHOTOGRAPHS 56

APPENDIX V HISTORICAL MAPS 64

APPENDIX X COAL AUTHORITY REPORT AND MINE ABANDONMENT PLANS 65

DRAWING LIST

15-798-R1-001 - Site Location Plan
15-798-R1-002 - Proposed Development Plan
15-798-R1-003 - Historical Features Plan
15-798-R1-004 - Site Features Plan

1. INTRODUCTION

1.1. BACKGROUND

E3P Ltd has been commissioned by Civic Engineers on behalf of Manchester CC to undertake a Phase I Geoenvironmental Site Assessment of the area bound between Oldham road to the North, Rodney Street to the East, Bengal Street to the West, and the Rochdale Canal to the South, which will herein be referred to as the 'back of Ancoats area'. Specific interest is paid to an area of Jersey Street including the Jersey Street Bridge and further road sections East and West.

This report is required to determine potential contaminated land liabilities and geotechnical constraints as part of potential future site redevelopment.

1.2. PROPOSED DEVELOPMENT

E3P understands that Civic Engineers are submitting two planning applications for the Back of Ancoats area. It is understood that the first will consider the Jersey Street area, specifically the demolition of the Jersey Street Bridge and regrading of the highway.

The second planning application will focus on the redevelopment potential of the wider back of Ancoats area.

1.3. OBJECTIVES

- The objectives of the geoenvironmental investigation are as follows:
- Review historical plans, geology, hydrogeology, site sensitivity, floodplain issues, mining records and any local authority information available in order to complete a desk study in line with Environment Agency (EA) document Land Contamination: Risk Management (LC:RM) (2019)
- Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to the future use of the site and in relation to off-site receptors.
- Assess the desk-study information and, where possible, provide preliminary recommendations in relation to foundations, pavement construction and floor slabs.
- Provide recommendations regarding future works required and undertake a preliminary pre-construction cost appraisal.

1.4. SOURCES OF INFORMATION

Background information was sought from the following sources:

- Groudsure Search;
- Historical mapping dated 1848 to 2022. A selection of historical maps are reproduced in Appendix V;
- On-line planning records held by Manchester City Council;
- Consultations with representatives of Manchester City Council;
- Magic Map Groundwater Vulnerability Map;
- Radon: Guidance on protective measures for new buildings (BRE Document BR 211, 2007);
- British Geological Survey Map;
- Groundsure IO database;
- https://zeticauxo.com/downloads-and-resources/risk-maps/; and,
- https://flood-map-for-planning.service.gov.uk.

1.5. LIMITATIONS

The limitations of this report are presented in Appendix I.

1.6. CONFIDENTIALITY

E3P has prepared this report solely for the use of the client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from E3P; a charge may be levied against such approval.

1.7. RISK CLASSIFICATION

E3P has utilised the available data to classify the site on the basis of its likely contaminated land liability and potential for geotechnical constraints in relation to the site development. The risk classification definitions are summarised in Table 1.1.

TABLE 1.1 RISK CLASSIFICATION

RISK	DEFINITION
Low	There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property.
Low Moderate	There are unlikely to be significant contaminated land liabilities/geotechnical constraints associated with the property with regard to the proposed use. However, minor issues may require further consideration in the event of future redevelopment of the site.
Moderate	Some potential contaminated land liabilities/geotechnical constraints are likely to affect the property as a result of historical and/or current activities. The risks identified are unlikely to pose an immediate significant issue but the purchaser/developer may wish to make further enquiries of the vendor or undertake further environmental improvements. Redevelopment of the site will likely require further site investigation.
Moderate High	Some potentially significant contaminated land liabilities/geotechnical constraints have been identified at the property that require further assessment, including intrusive ground investigations.
High	Significant potential contaminated land liabilities/geotechnical constraints have been identified at the property. Further assessment including intrusive ground investigation will be required to determine to level of risk and associated liability.

2. SITE SETTING

2.1. SITE DETAILS

Site Address	Wider back of Ancoats area - with a specific focus on the section of Jersey Street containing the Jersey Street Bridge, Ancoats, Manchester.
National Grid Reference	E 385184, N 398851
Site Area	Jersey Street Bridge Area ~ 0.15 Ha Wider back of Ancoats Area ~ 11.88 Ha

All acronyms used within this report are defined in the Glossary presented in Appendix II.

A site location map is presented in Appendix III as Drawing 15-798-001.

2.2. CURRENT SITE USE

E3P has undertaken a site walkover of the entire site and a description of the key findings is summarised in Table 2.1.

TABLE 2.1 SITE DESCRIPTION

Occupancy/Use	The Jersey Street area is a rectangular subsection of the larger site including Jersey Street to the east of Poland Street. The site is bound by a concrete hardstanding car park to the north and a large warehouse to the south, currently unoccupied. To the south-east of the roadway, an area of undeveloped land is present in the former location of the Bengal Arm canal, predominantly concrete hardstanding from previous development with overgrown shrubs and vegetation around the periphery. The back of Ancoats area is an irregular shaped parcel of land in the Northwest section of the City of Manchester. The central area consists predominantly of commercial plots including shops, warehouses, and car parks. These commercial plots have current uses including a car garage, used car forecourt, glassworks, and recycling works. The eastern and western sections of the site contain residential buildings, comprising high rise apartments and housing. The site also contains multiple areas of public open space, including Ancoats Green.		
Surface Cover (%)	**Buildings**	**Jersey Street** - **Back of Ancoats Area** -	0% 50%
	Hardstand	**Jersey Street** - **Back of Ancoats Area -**	100% 30%
	Soft Cover	**Jersey Street** - **Back of Ancoats Area** -	0% 20%
Structures	The wider site is predominantly commercial and residential and contains many structures associated with these land uses, including warehouses, shops, houses, high rise apartments and other smaller multi-storey buildings. The high rise apartments are mostly contained within the western and south-western sections of the site, but one is also present in the northeast corner. Within the Jersey Street area of the site, there is the bridge, steel fencing, and concrete blocks/walls.		

Access	Access can be gained to the wider site via multiple roads leading from all directions. Access the Jersey Street can be gained via Poland Street and Wadeford Close.
Slope	Significant anthropogenic changes have occurred across the wider Ancoats area, with the area showing only minor undulations in topography. Across Jersey Street, a gradual slope is present up to the Jersey Street Bridge from the west, with a gradual fall past the bridge to the east.
Retaining Structures	No retaining structures have been identified within the site boundary.
Vegetation/Ecology	Within the wider site, semi-mature trees are present along Bengal Street and George Leigh Street in the northern section of the area. There are other mature and semi-mature trees within the public open space areas and along the southern boundary of the site down banks of the canal. Rough scrub vegetation is present across the site, mainly within the public open spaces and car parks where there are some areas of overgrown grasses. Rough scrub vegetation is present along the banks of the canal. Within the Jersey Street section of the site, a mature tree is present immediately adjacent to the southern edge of the bridge, with overgrown scrub present around the surrounding plot boundaries.
Hazardous Material Storage	Based on the vast industrial history of the Ancoats area, it is likely that significant storage of hazardous material has occurred through both above-ground storage tanks (ASTs) and underground storage tanks (USTs). No above-ground storage tanks have been identified across Jersey Street, however, storage of hazardous materials likely occurred across the factories and works surrounding the roadway.
Asbestos-Containing Material (ACM)	The site is highly developed and contains multiple buildings constructed pre-1999 and therefore it is considered likely that ACMs will be present within the building fabric and Made Ground deposits. A pre-demolition asbestos survey will be required within existing buildings constructed pre-1999 within the site boundary.
Polychlorinated Biphenyls (PCBs)	Multiple existing and historical electricity substations have been identified within the site boundary that may contain PCBs.
Waste Storage	Potentially hazardous waste streams are unlikely to be generated at the site and none were observed during the preliminary site inspection.
Drainage	A formal drainage survey has not been completed; however, a review of online records held by United Utilities indicates the presence of water mains and combined sewers, throughout the site.

2.3. SURROUNDING AREA

The surrounding area land uses are summarised in Table 2.2.

TABLE 2.2 SURROUNDING LAND USES

DIRECTION	LAND USE
North	Commercial units including Royal Mail Office, supermarket and building suppliers
East	Residential units
South	Canal and residential units
West	Residential units and commercial units include: Pubs, restaurants and supermarkets

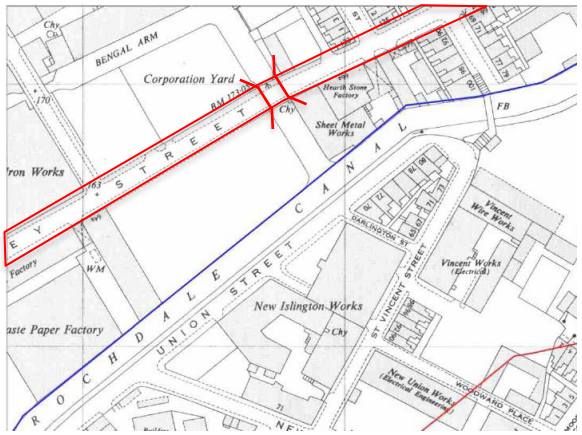
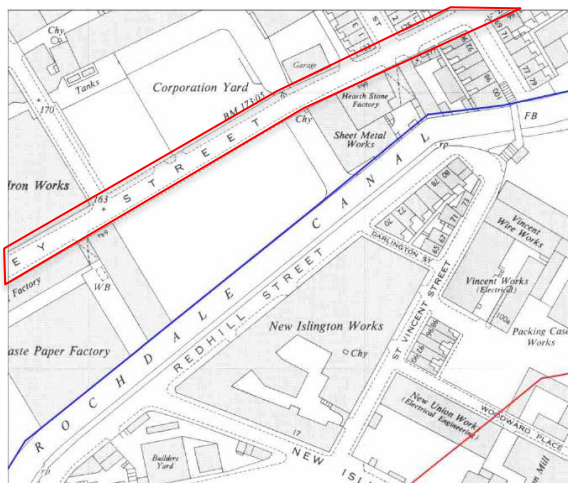
3. SITE HISTORY

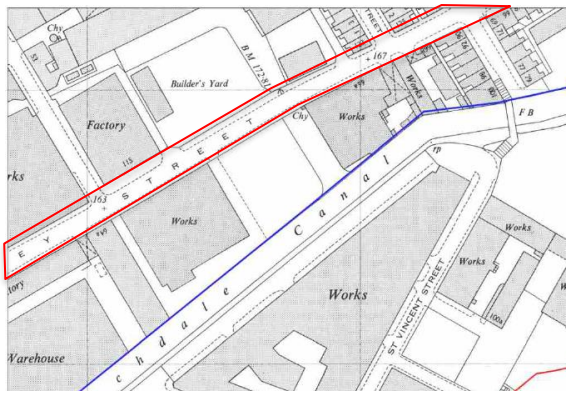
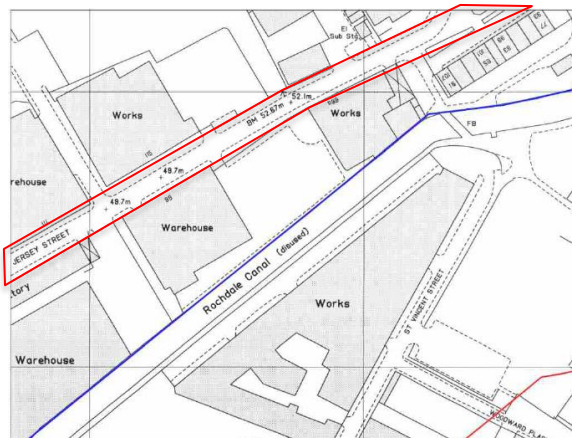
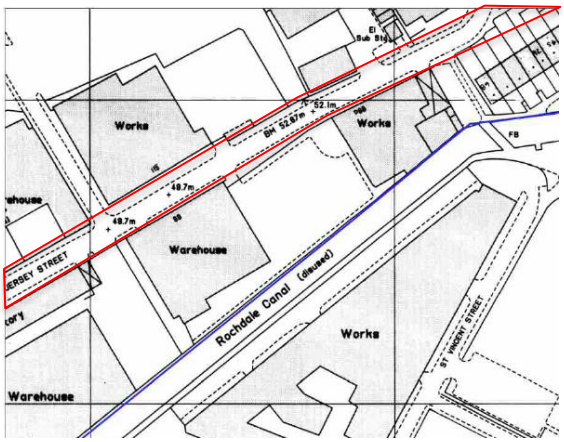
3.1. ON-SITE HISTORICAL DEVELOPMENT

A review of historical mapping and historical aerial imagery pertinent to the Jersey Street Bridge section is summarised in Table 3.1. The historical mapping pertinent to the back of Ancoats Area is summarised in Table 3.2.

In addition, historical site features are presented in Drawing No 15-798-003 in Appendix III.

TABLE 3.1 HISTORICAL DEVELOPMENT - JERSEY STREET

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
1948 **1:1,250**	Jersey Street comprises the main carriageway running east-west with adjacent pavements. The Rochdale canal runs parallel to the south of the road. The Jersey Street area is surrounded by significant industrial development, including the sheet metal works to the southeast, Ironworks to the northwest and the Waste Paper factory to the southwest. Terraced residential housing is present to the east of Jersey Street. The Jersey Street bridge is marked in red over the Bengal Arm of the Rochdale Canal.	
1955 **1:1,250**	The Bengal Arm has been infilled and two tanks are present to the north of Jersey Street.	

1963 **1:1,250**	Significant industrial development has occurred surrounding Jersey Street. A factory is noted developed to the north of Jersey Street with an adjacent builder's yard. A large works building has also been noted to the south of Jersey Street adjacent to the Rochdale canal. The waste paper factory is now noted as a Warehouse and the sheet metal works is now a Works.	
1989 **1:1,250**	By 1989, the Rochdale Canal is now disused. Terraced housing to the far east of Jersey Street has been replaced with more terraced housing. The tanks noted to the north of Jersey street have been removed.	
1994 **1:1,250**	There are no significant changes to Jersey Street.	

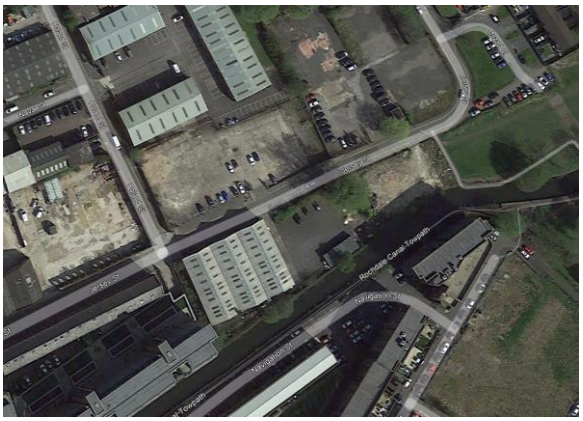
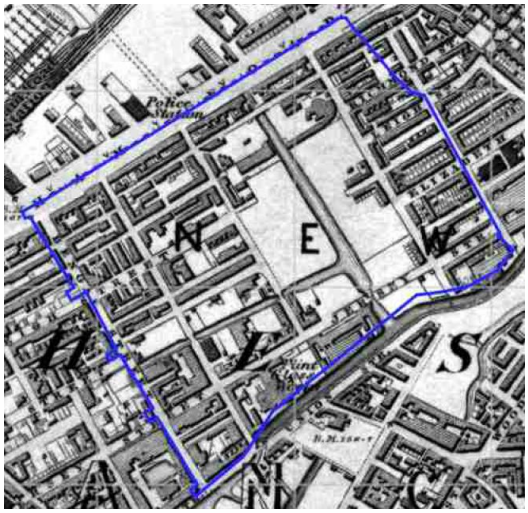
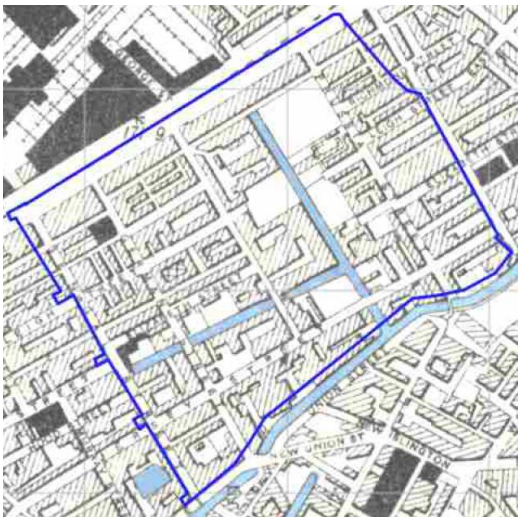
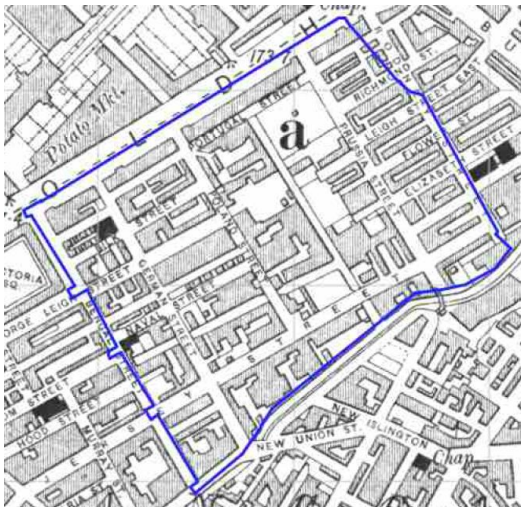
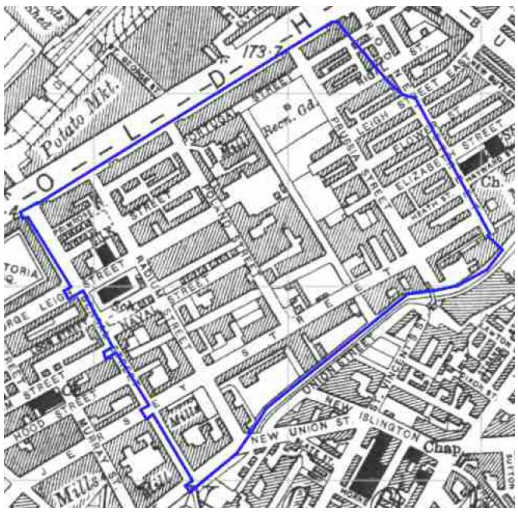
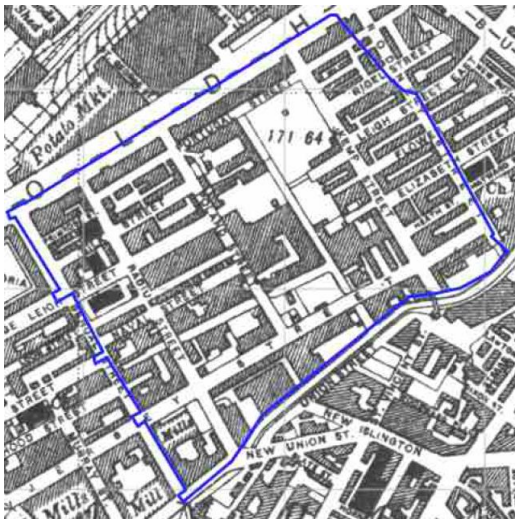
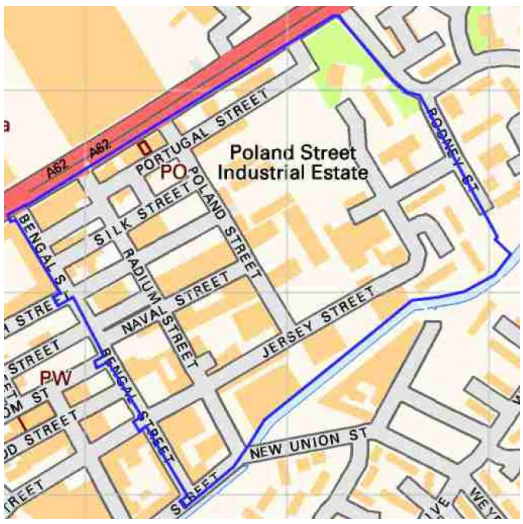
Aerial Photography **2003**	The works to the north of Jersey street has been demolished and repurposed as a concrete hardstanding car park. Works present to the southeast of Jersey street in the former area of the Bengal Arm of the canal has also been demolished and left undeveloped with the concrete slab still intact. A large tree is present directly south of Jersey Street with overgrown vegetation surrounding the peripheries of boundaries.	
Aerial Photography **2021**	Housing to the east of Jersey street has been demolished and is now noted as kept grassland. There are no other significant changes to Jersey Street.	

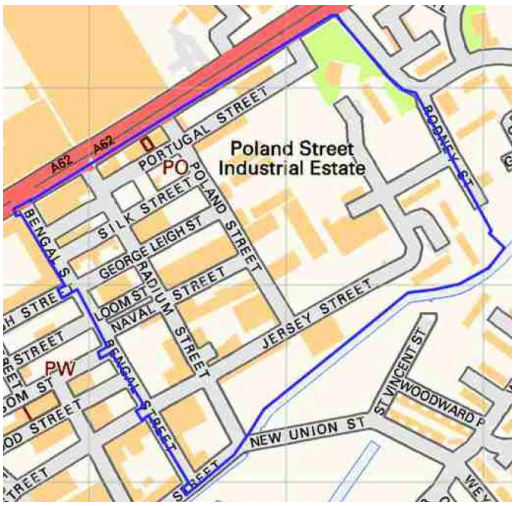
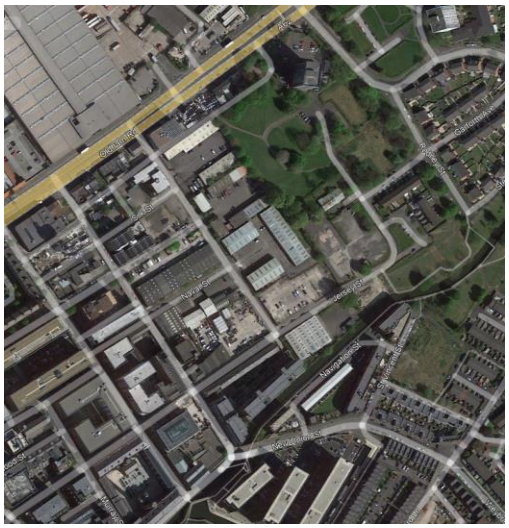
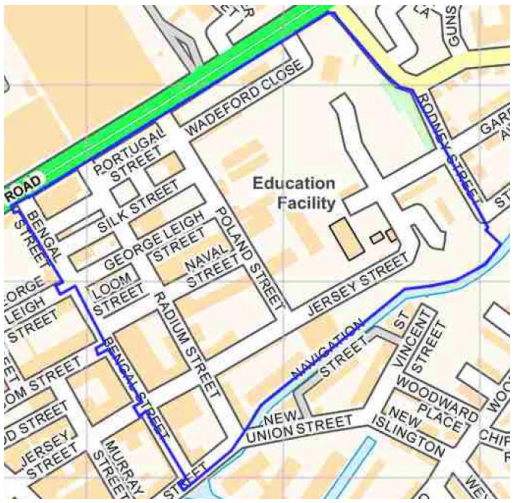
TABLE 3.2 HISTORICAL DEVELOPMENT - BACK OF ANCOATS AREA

MAP EDITION	HISTORICAL LAND USE	HISTORICAL MAP EXCERPT
1848 **1:10,560**	The back of Ancoats area comprised a significant number of Cotton Mills with surrounding terraced housing associated with the workers of the mills. A flint glassworks is present to the south of the area, directly north of the Rochdale Canal. The centre of the site is a large, wide-open area with a branch canal, named the Bengal Arm, coming off of the Rochdale Canal to the south. The Bengal Arm has a further branch that runs parallel to Jersey Street from the centre of the site to the western boundary. Several wharves are present along this arm, associated with the transportation of material from the cotton mills.	
1896 **1:10,560**	Multiple buildings have been constructed in the central section of the site on both the east and west of the Bengal Arm.	

1906 **1:10,560**	There are no significant changes to the site.	
1923 **1:10,560**	There are no significant changes to the site.	
1934 **1:10,560**	Throughout World War 2, this area of Ancoats was utilised as industry for the war effort, and many of the former cotton mills were repurposed as such.	

1938 **1:10,560**	There are no significant changes to the site.	
1956 **1:10,560**	The wider Ancoats area was bombed heavily during the war, and a number of buildings may have been subsequently repurposed after the war. A building along the southern section of the site has been demolished. The Bengal Arm has been infilled sometime pre-1955.	
1985 **1:10,000**	The terraced residential properties in the western section of the site have been demolished and new buildings have been constructed. Other buildings have been demolished in the central area of the site.	

1988 **1:10,000**	Two buildings have been constructed in the central and northern sections of the site.	
1991 **1:10,000**	A large building in the centre of the site has been demolished, leaving an open space.	
2001 **1:10,000**	There are no significant changes to the site.	

2010 **1:10,000**	A few small buildings have been demolished along the eastern boundary of the site.	
Aerial Photography **April 2020**	There are no significant changes to the site.	
2022 **1:10,000**	There are no significant changes to the site.	

3.2. OFF-SITE HISTORICAL DEVELOPMENT

A review of potentially contaminative uses identified on historical Ordnance Survey maps within a 250 m radius of the site is summarised in Table 3.3.

TABLE 3.3 SURROUNDING HISTORICAL DEVELOPMENT

AREA	SURROUNDING FEATURE	DISTANCE	DATES	DIRECTION
Jersey Street	**Flint Glass Works** Then: Works	5 m	Pre 1893 - Present	South
	Jersey Street Mills Then: Works	5 m	Pre 1848 - Pre 1908	South
	Iron Works	5 m	Pre 1848 - Pre 1922	North
Back of Ancoats Area	**Murray Street Mill (Cotton)** Then: Works	5 m	Pre 1893 - Present	Southwest
	Rodney Street Mills (Cotton) Then: Works	10 m	Pre 1893 - Present	East
	Wholesale Potato Market	20 m	Pre 1851 - Pre 1956	North
	Flint Glass Works	30 m	Pre 1848 - Pre 1893	North
	Sedgewick Mill (Cotton) Then: Works	40 m	Pre 1893 - Present	Southeast
	Ducie Saw Mills	50 m	Pre 1893 - Pre 1923	South
	Oldham Road Goods Station	100 m	Pre 1893 - Pre 1991	North
	Butler Street Mills (Cotton) Then: Works	100 m	Pre 1893 - Present	East
	Old Mill (Cotton) Then: Royal Mill (Cotton) Then: Works	120 m	Pre 1893 - Present	Southeast
	Saw Mill Then: Works	150 m	Pre 1893 - Present	South
	Long Mill (Cotton) Then: Works	160 m	Pre 1893 - Present	Southeast
	Lloydsfield Mill (Cotton) Then: Works	175 m	Pre 1893 - Present	Northeast

3.3. PLANNING HISTORY

E3P has undertaken a review of online planning records held by Manchester City Council.

The following environmentally pertinent information has been obtained for Jersey Street:

- 096440/FO2011/N1 - Erection of two number 4.5 metre high dummy flag poles housing 6 telecommunication antennas to roof of the existing building
- 100847/FO/2012/N1 - Installation of an additional pole-mounted 30cm wide telecommunications dish to existing telecoms installation on top of the building
- 130354/FO/2021 - Erection of an 8 storey building to form 118 residential apartments (Use Class C3) and ground floor commercial floorspace (Use Class E (a),(c),(g)(i)) (583 sqm) together with amenity space, car and cycle parking provision, hard and soft landscaping, access, servicing and other associated works

Over 100 planning applications were found for the back of the Ancoats area, however, no applications have been identified as environmentally pertinent to the area.

3.4. ANECDOTAL INFORMATION

3.4.1. JERSEY STREET BRIDGE

From: SA/2021/2 - Archaeological Desk-Based Study - Eliza Yard, Ancoats, Manchester - 2021

During the early 19th century, the Bengal Arm of the Rochdale Canal was constructed, which bounded the proposed development site to the north and east. Archaeological remains of the Bengal Arm of the Rochdale Canal may survive in-situ within the footprint of the site.

The canal was built in the early 19th century and opened in 1808.

By 1824, the Bengal Arm of the Rochdale Canal had been constructed. Bridges over the arm of the canal were constructed on Poland Street and Jersey Street.

The Bengal Arm was infilled in during the second half of the 20th century.

3.4.2. BACK OF ANCOATS AREA

From the opening of the Rochdale Canal in 1804, the development of mills continued on a much larger scale. Mills in Ancoats included Victoria Mills, Wellington Mill, Brunswick Mill, India Mills, Dolton Mills, Lonsdale Mills, Phoenix Mill, Lloydsfield Mill, Sedgewick Mill, Decker Mill (owned by the Murray brothers), New Mill, Beehive Mill, Little Mill, Paragon Mill, Royal Mill and Pin Mill.

Cotton was not the only industry in the locality, as foundries and engineering factories were required to produce the machinery needed by the mills. The largest of these were those operated by the brother's John Muir Hetherington and Thomas Ridley Hetherington, which were established in 1830. Eventually, the company became known as John Hetherington and Sons Ltd and the principal factory was at Vulcan Works on Pollard Street. The company was also the proprietor of Curtis, Sons & Company, which was established in 1804 at the Phoenix Works, which were on both sides of Chapel Street (now Chapeltown Street). On one side of the street, there was a Brass and Ironworks and on the other side, there was a machinery factory.

Possibly the least known, but vitally important, industry in Ancoats was the manufacture of flint glass. More than 25 glassworks have been identified in Manchester, all built during the 19th century, and many of these were in Ancoats. Thomas Percival and William Yates established one of these on Union Street (now Redhill Street) in 1844. The works were equipped with two furnaces (later three), an annealing house, workshops, a warehouse and offices. In 1852, Thomas Vickers joined the company and William Yates left in 1862. After this, the company became known as Percival Vickers British and Foreign Flint Glass Works. It made a large range of glassware that included tumblers, wine glasses, decanters, vases, celery vases, salts and cake stands. One of the buildings in Ancoats, the Flint Glass Works, still exists today and has been converted into serviced offices.

3.4.3. WORLD WAR 2

The Jersey Street area was largely avoided in the significant bombing of Manchester during the second world war, however, significant bombing occurred throughout the wider Ancoats area with bombing recorded within the northwestern sector of the back of Ancoats site.

Figure 3.1 indicates a record of Aerial Bombs dropped during the Ancoats “Blitz” between 1940 and 1941.

FIGURE 3.1 RECORD OF LOCATION OF AERIAL BOMBS ON THE CITY OF MANCHESTER (REF: GB127.MISC/1192/1, DATED 1940-1941)



Source: University of Manchester – Collection of Historic Maps

3.5. PREVIOUS REPORTS

No previous site investigation reports have been provided to E3P for review.

4. ENVIRONMENTAL SETTING

4.1. GEOLOGY AND HYDROGEOLOGY

The British Geological Survey (BGS) map for the site, (1:50,000, Solid and Drift editions) and online records indicate the site is underlain by the geological sequence presented in Table 4.1.

TABLE 4.1 SUMMARY OF UNDERLYING GEOLOGY

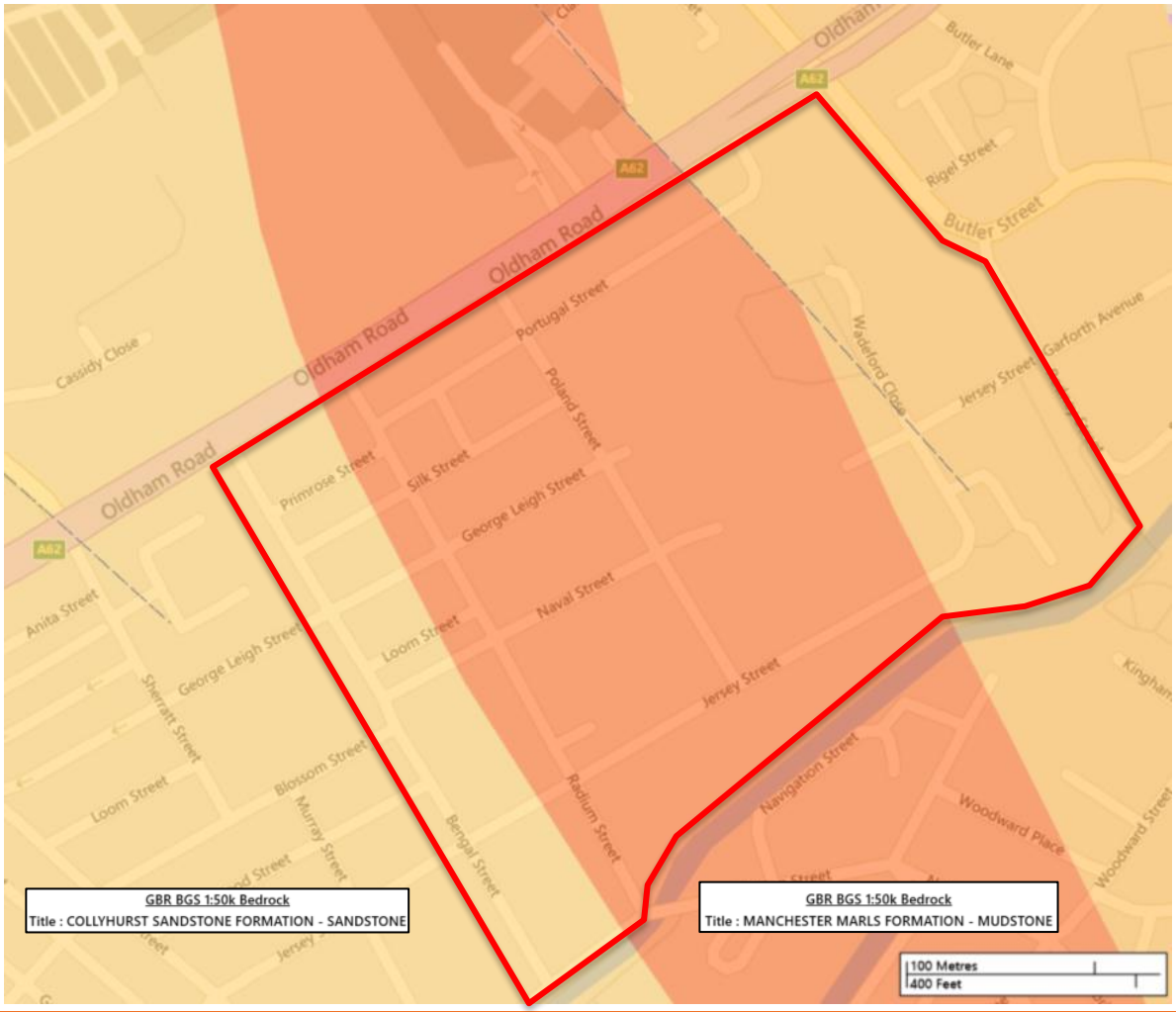
AREA	GEOLOGICAL UNIT	CLASSIFICATION	DESCRIPTION	AQUIFER CLASSIFICATION
Jersey Street	**Drift**	Till, Devensian	DIAMICTON	Secondary Undifferentiated
	Solid	Manchester Marls Formation	MUDSTONE	Secondary B
		Collyhurst Sandstone Formation	SANDSTONE	Principal
Back of Ancoats Area	**Drift**	Till, Devensian	DIAMICTON	Secondary Undifferentiated
	Solid	Manchester Marls Formation	MUDSTONE	Secondary B
		Collyhurst Sandstone Formation	SANDSTONE	Principal
		Chester Sandstone Formation	SANDSTONE	Principal

TABLE 4.2 SUMMARY OF BGS BOREHOLE RECORDS

LOCATION	DEPTH	MADE GROUND	DRIFT	SOLID
Jersey Street				
55m South SJ89NE2388	3.00 m	0.96 m	CLAY > 3.00 m	Not encountered
Back of Ancoats Area				
On-site SJ89NE651	12.00 m	2.00 m	CLAY and SAND > 12.00 m	Not encountered
On-site SJ89NE652	12.00 m	3.00 m	CLAY and SAND > 12.00 m	Not encountered

TABLE 4.3 FAULTING

LOCATION	DESCRIPTION
On-site	Inferred Fault - Trending NW-SE Fault intersects the northern boundary and ends within the site boundary
50 m West	Inferred Fault - Trending NW-SE



The Groundsure report indicates that the site is not located within a groundwater source protection zone. Furthermore, there are no active or historical groundwater, surface water or potable abstractions within 1 km of the site.

The Rochdale Canal is present and marks the southern boundary of the site. A historical arm of the canal, named the Bengal Arm, was infilled during the 1950s.

The River Irk is present 650 m northwest of the site.

Based on the local topography and the location of surface watercourses, it is considered likely that shallow groundwater, if present, will flow in a south-easterly direction, towards the Rochdale Canal along the southern boundary.

4.2. NATURAL LANDFORM AND GEOMORPHOLOGY

Based on the initial geological assessment, a review of available topographic data and pertinent mapping, E3P has undertaken a preliminary geomorphological assessment of the landform and its possible mechanism for formation.

A review of relevant records indicates that the site has been subject to significant anthropogenic changes, including the construction of the Rochdale Canal. The site, therefore, indicates only minor undulations in topography, with most of the wider site levelled for development platforms.

Across Jersey Street, a gradual slope is present up to the Jersey Street Bridge from the west, with a gradual fall past the bridge to the east.

4.3. GEOTECHNICAL DATA

Geotechnical data presented within a commercially available environmental database is summarised in Table 4.4.

TABLE 4.4 SUMMARY OF GEOTECHNICAL DATA

HAZARD	DESIGNATION
Shrink-Swell Clay	Very low risk
Landslides	Very low risk
Ground Dissolution	Negligible risk
Compressible Ground	Negligible risk
Collapsible Deposits	Very low risk
Running Sand	Very low risk

4.4. COAL MINING

The Groundsure report states the site is in an area that may be affected by coal mining.

A CA mining report was obtained (Ref: 51002984761001) dated 16th March 2022.

The CA operates a risk-based approach to the assessment of potential instability issues associated with future development of land located within the predefined CA consultation areas. This risk-based approach subdivides the potential risk into "low" and "high" risk categories.

The risk categories can be defined as:

Low-Risk Sites – Deemed to be land where coal mining has taken place, however it was at such depth not to pose a risk to new development and it therefore contains no known recorded risks and as such no further assessment is required.

For low-risk sites, the CA categorically states:

> *If your proposed development is within the Development Low Risk Area there is no need for you to submit any coal mining information with your planning application and The Coal Authority will not be consulted by the LPA. The LPA will include our Standing Advice as an informative note within the decision notice.*

High-Risk Sites – Deemed to be landholdings located within an area known to contain legacy risks that include:

- Mine entries (shaft or adit);
- Shallow coal workings (recorded and probable);
- Workable coal seam outcrops;
- Mine gas sites and areas;
- Recorded coal-mining-related hazards;
- Geological features (fissures and break lines); and
- Former surface mining sites (sometimes using historic opencast extraction methods).

4.5. COAL MINING INFORMATION

Prior to the enactment of the Coal Mines Regulation Act (1872), which came into force on the 1st January 1883, there was no statutory requirement to record the extent of abandoned mine workings and as such the CA has no knowledge of extensive workings throughout the UK Coal Fields where shallow workings are present at a depth that could result in a subsidence event in the future (through successive cavitation) associated with failure of support mechanism.

To determine if a site may have unrecorded or recorded coal mine workings requires the consideration of a wide range of information and E3P has completed a review of relevant information in relation to potential coal mining activities.

In the first instance, E3P has reviewed the Coal Authority Online Viewer and an excerpt of this is presented as Figure 4.1. This map shows that the site is not in a development high-risk area. A review of the geology and coal authority records has identified no coal seams, mine entries or records of past underground workings within or within 400 m of the back of Ancoats area, and none within 650 m of the Jersey Street area.

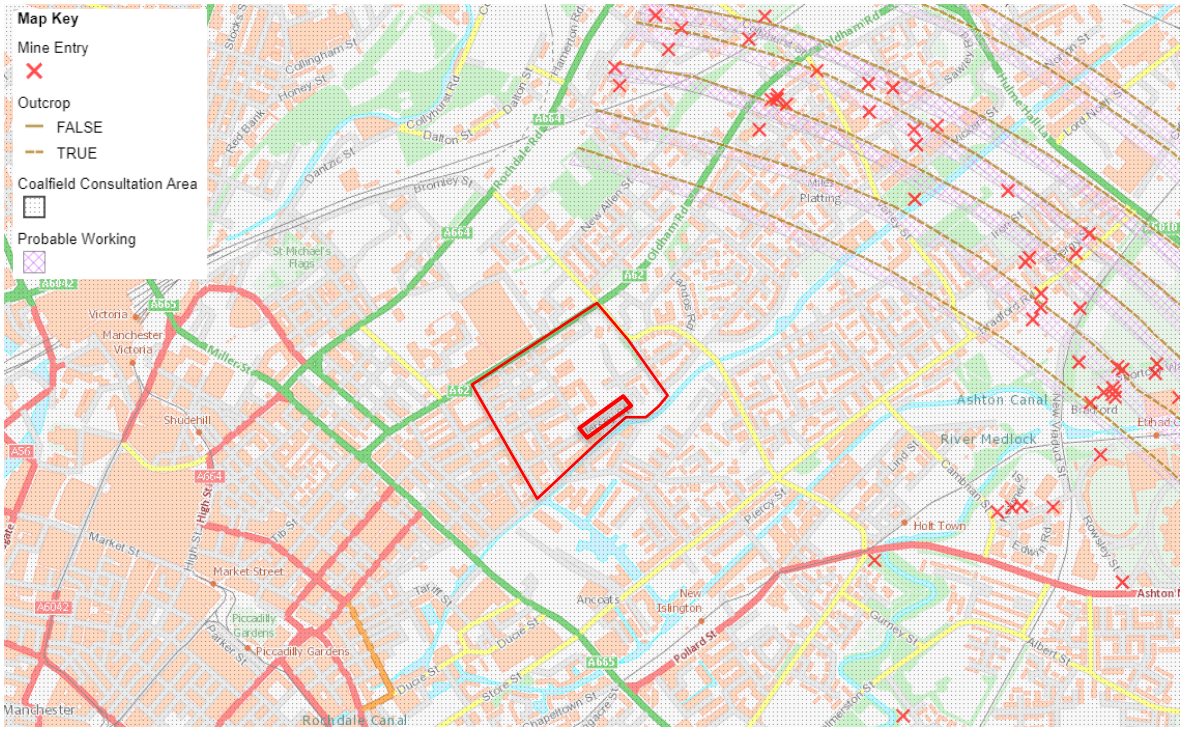
Figure 4.1 is an excerpt from the Coal Authority online viewer and shows the proximity of probable shallow coal mine workings and mine entries to the site boundary.

FIGURE 4.1 EXCERPT OF THE COAL AUTHORITY ONLINE VIEWER



Based on the nearest coal seam outcropping 380 m north of the site and the shallowest dip being 18.2˚, the shallowest depth of any probable coal underneath the northern corner of the site would be 125 m, and deeper again underneath the Jersey Street area.

FIGURE 4.2 COAL AUTHORITY ONLINE VIEWER

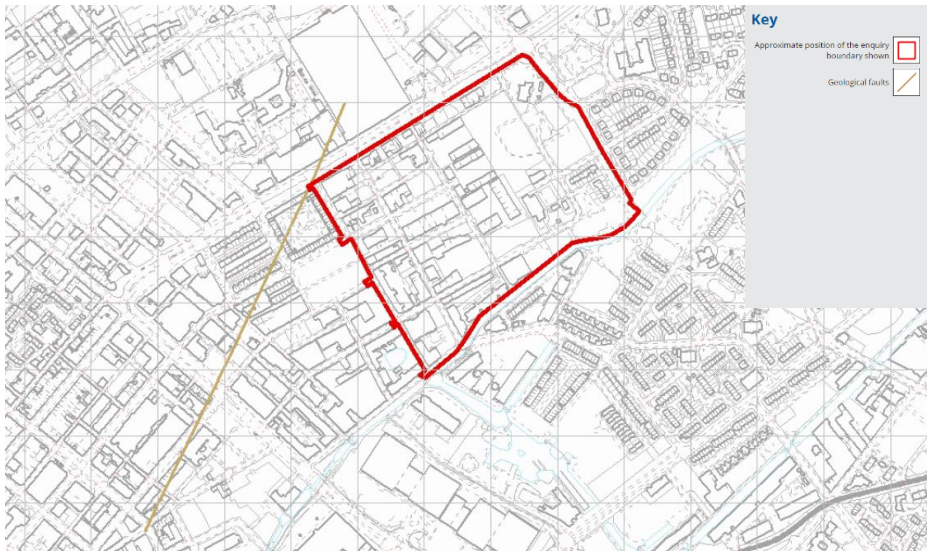


As the site is within an area affected by Coal Mining E3P have consulted with the Coal Authority who have provided a Consultant Coal Mining Report for the site (ref: 51002984761001).

Table 4.5 provides a summary of pertinent coal mining information with this report.

TABLE 4.5 COAL MINING INFORMATION

SOURCES OF INFORMATION	SUMMARY
Known Past Underground Mining	Seam – dip – extraction thickness – depth – year BRADFORD FOUR FEET - 18.4° South-East - 120cm – 293m - 1900 PARKER - 22.5° North - 80cm – 617m - 1935 PARKER - 18° East - 80cm – 681m - 1935 ROGER - 20.8° North-East - 180cm – 780m - 1946 CROMBOUKE - 21° North-East - 120cm – 788m - 1924 ROGER - 21.6° North - 180cm – 810m - 1965 ROGER - 19° North-East - 180cm – 875m - 1961 CROMBOUKE - 16.5° North-East - 120cm – 963m - 1932 CROMBOUKE - 13.3° South-East - 120cm – 1064m - 1947
Probable Unrecorded workings	NO
Spine Roadways at Shallow Depth	No spine roadway recorded at shallow depth.
Mine Entries within 100m of the site	None recorded within 100 metres of the enquiry boundary.

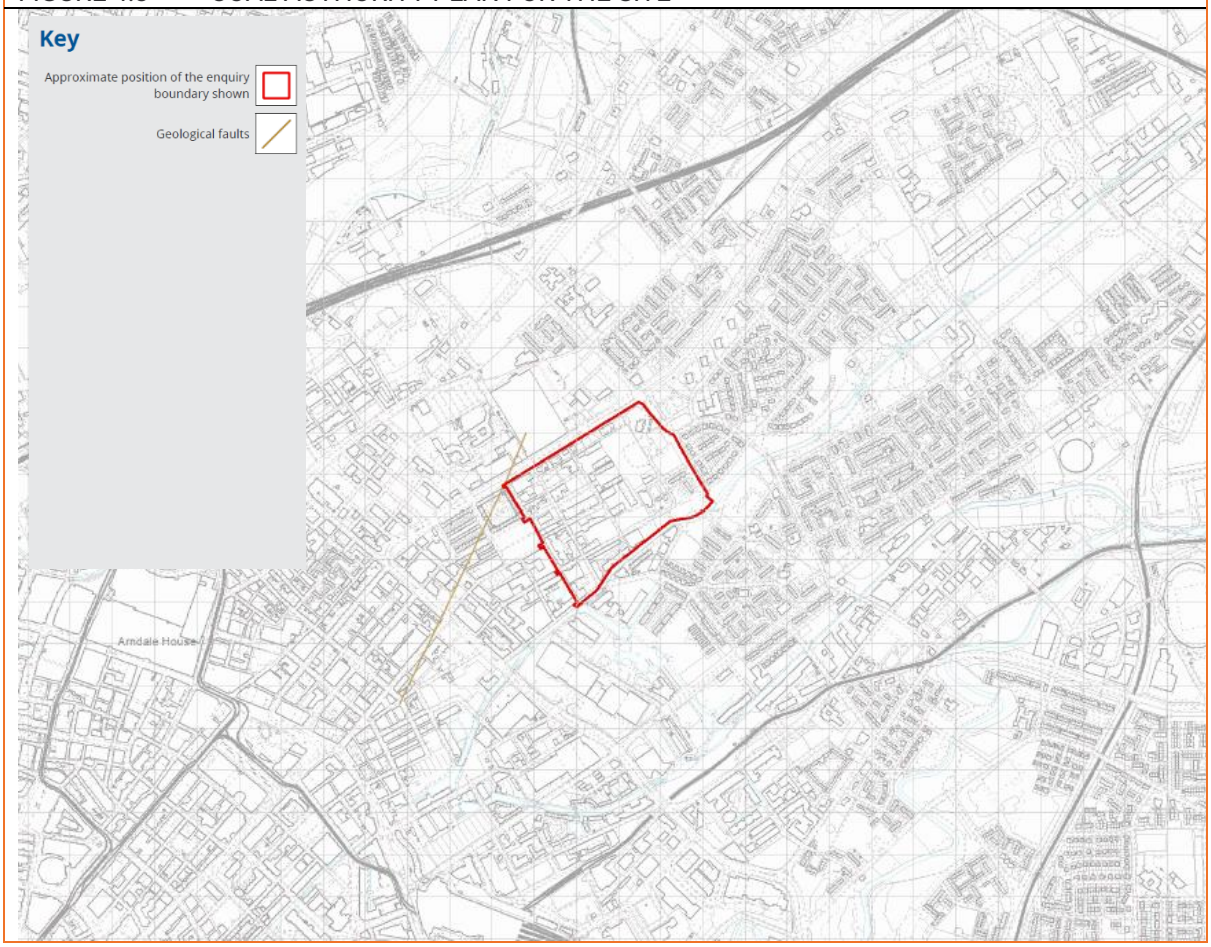
SOURCES OF INFORMATION	SUMMARY
Mine Abandonment plans	Yes
Known outcrops	No outcrops recorded.
Faults / Fissures	 Fault recorded trending northeast south west across the northwestern corner of the site boundary.
Opencast mines	None recorded within 500 metres of the enquiry boundary.
Coal Authority Managed Tips	None recorded within 500 metres of the enquiry boundary.
Remediated Sites	None recorded within 50 metres of the enquiry boundary.
Coal Mining Subsidence	The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994. There is no current Stop Notice delaying the start of remedial works or repairs to the property. The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.
Mine Gas	None recorded within 500 metres of the enquiry boundary.
Mine Water	None recorded within 500 metres of the enquiry boundary.
Future Underground Mining	None recorded.
Coal Authority Development Advice	The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.
Review of Coal Authority Archive	No CA archives/mine abandonment plans are made available.

SOURCES OF INFORMATION	SUMMARY
Historical Ordnance Survey Mapping	A review of the 1:10,000 Ordnance Survey mapping from circa 1850, which has records of mine workings that predate the Mining & Regulation Act of 1872, has not identified any evidence of coal mining within 750 m of the site.
Historical Site Investigations	E3P has not been provided with any historic site investigation reports.

4.5.1. COAL AUTHORITY PLAN

The Coal Authority plan referenced: GS-8599385_LARGE_PLOT indicates a geological fault trending northeast-southwest across the northwestern corner of the site. No other coal mining issues have been highlighted across the site.

FIGURE 4.3 COAL AUTHORITY PLAN FOR THE SITE



4.6. COAL MINING RISK ASSESSMENT

This risk assessment comprises a desk-based review of all available information on coal mining issues that are relevant to the application site deemed to be located within a high-risk area. This includes:

- Interpretation of information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues;
- Setting out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development; and
- Demonstrating to the local planning authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

The coal mining risk assessment is summarised in Table 4.6.

TABLE 4.6 SUMMARY OF COAL MINING RISK ASSESSMENT

COAL MINING RISK ASSESSMENT	YES/NO	RISK ASSESSMENT
Recorded Underground Coal Mining at Shallow Depth (< 30 m)	No	Low
Recorded Underground Coal Mining at Shallow Depth (> 30 m)	No	Low
Evidence of Unrecorded Surface Extraction of Coal Outcrop	No	Low
Unrecorded Underground Coal Mining at Shallow Depth (< 30 m)	No	Low
Mine Entries (Shaft/Adits)	No	Low
Coal Mining Geology – Fractures/Fissures	No	Low
Recorded Gas Emissions	No	Low
Recorded Mining Surface Hazard	No	Low
Surface Mining (Opencast)	No	Very Low/Low

Based on the above the site has been deemed to be in an area of low risk and further assessment is therefore not required.

4.7. RADON RISK POTENTIAL

The Envirocheck report indicates the site is situated in an area where less than 1% of homes are above the “Action Level” and that the BGS reports that full radon protective measures are not necessary in the construction of new dwellings or extensions.

4.8. PRELIMINARY GEOTECHNICAL ASSESSMENT

Based on the desk-study information, the following geotechnical assessment has been made:

- A historical branch of the Rochdale Canal, the Bengal Arm, was historically infilled and is, therefore, a potential source of alluvial deposits, silts and possible organic peat deposits in addition to significant potential depths of Made Ground. Further intrusive investigation will be required in order to assess the infill material and undertake in-situ geotechnical testing to determine allowable bearing pressures for future developments.
- The site is in an area of significant urban development, and therefore it is likely that significant underground obstructions associated with former founding slabs are present.
- Given the multi-phase, highly developed nature of the site, it is likely there will be significant depths of Made Ground fill deposits, BGS borehole data confirms Made Ground deposits up to 3.00 m bgl across the wider back of Ancoats area.

4.9. HYDROLOGY

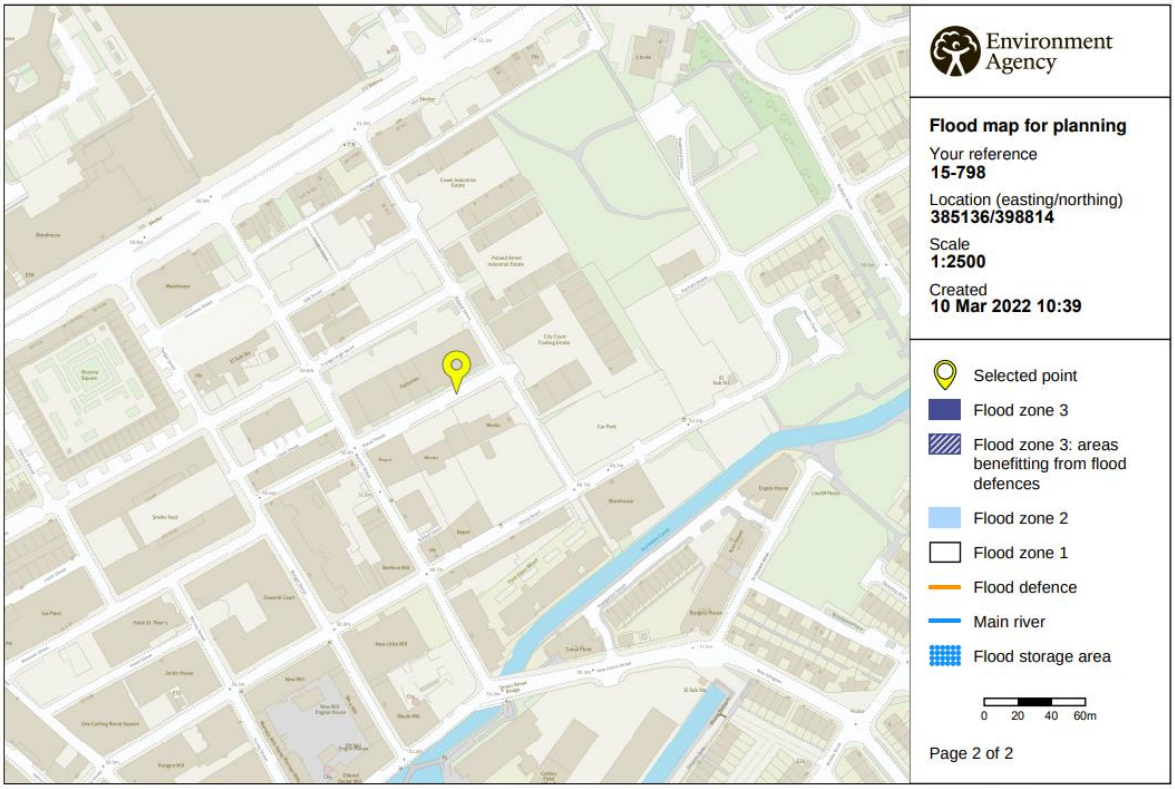
Surface water features within 250 m of the subject site are summarised in Table 4.7.

TABLE 4.7 SURFACE WATER FEATURES

SURFACE WATER FEATURE	QUALITY	DISTANCE (m)	DIRECTION
Rochdale Canal	Unknown	1 m	South
New Islington Marina	Unknown	15 m	South

The site is located within a currently defined “Flood Risk Zone 1”; defined as land assessed as having less than 1 in 1,000 annual probability of river or sea flooding (< 0.1%), and as such is considered to be unaffected by river flooding.

FIGURE 4.4 EA FLOOD RISK MAP



© Environment Agency copyright and / or database rights 2021. All rights reserved. © Crown Copyright and database right 2021. Ordnance Survey licence number 100024198.

Source - https://flood-map-for-planning.service.gov.uk/

4.10. INDUSTRIAL LAND USES

Entries in the trade directory for environmentally pertinent industrial land uses within 250 m of the site have been summarised in Table 4.8.

TABLE 4.8 INDUSTRIAL LAND USES

LOCATION	DETAILS	ACTIVITY
On-site	Electricity Sub Station	Electrical Features
On-site	B & C Motorcycles, 198-200 Oldham Road, Manchester	Vehicle Repair, Testing and Servicing
On-site	Electricity Sub Station	Electrical Features
48 m W	Electricity Sub Station	Electrical Features
87 m SE	Electricity Sub Station	Electrical Features

4.11. SENSITIVE LAND USES

There are multiple residential properties located within the site boundary, both housing and high rise apartments. There are further residential properties adjacent to the eastern, southern, and western boundaries.

The Rochdale Canal and New Islington Marina are both within 15 m of the southern boundary of the site.

4.12. SITE SENSITIVITY ASSESSMENT

The site is assessed to be located within a "Moderate" sensitivity setting as discussed within Table 4.9.

TABLE 4.9 SITE SENSITIVITY ASSESSMENT

SENSITIVITY PROFILE	DISCUSSION	RATING
Groundwater Source Protection Zone or Drinking Water Safeguard Zone	The site is not within a Groundwater Source Protection Zone.	Low
Distance to the Closest Groundwater Abstraction Point	There are no active or historical abstraction points within 1km of the site.	Low
Aquifer Classification in Superficial Drift Deposits	Secondary Undifferentiated Aquifer.	Moderate
Aquifer Classification in Bedrock	Secondary B Aquifer in Manchester Marls Formation. Principal Aquifer in Collyhurst Sandstone and Chester Sandstone formations.	High
Is the Site Underlain by Low-Permeability Drift to Depths in Excess of 10 m?	BGS borehole data shows underlying superficial deposits comprise predominantly CLAY deposits in excess of 10 m, with some relatively thin SAND horizons, up to 1 m thick. This is likely to reduce the potential for mobile phase contaminants to migrate towards the bedrock aquifer or adjacent watercourses.	Low/Moderate
Is the Site Located Within 50 m of a Surface Watercourse?	The Rochdale Canal is located along the southern boundary of the site. The New Islington Marina is located within 15 m of the southern boundary of the site. The Rochdale Canal is present within 30 m of Jersey Street.	Moderate/High
Sensitive Land Uses	Residential units are present on-site, further residential units are present adjacent to the eastern, southern, and western boundaries of the site. The closest residential properties to Jersey Street are located 60 m northeast.	Moderate/High
OVERALL SITE ENVIRONMENTAL SENSITIVITY		Moderate

5. CONSULTATIONS

5.1. LANDFILL SITES AND WASTE TREATMENT SITES

No active or historical landfill sites are present within 250 m of the site boundary.

9 historical waste sites have been identified within 250 m of the site boundary, 7 of which are located on-site. They are summarised in Table 5.2.

TABLE 5.1 SUMMARY OF ENVIRONMENTAL DATA

LOCATION	DETAILS	DATE
On-site	Waste Paper Factory	1948
On-site	Waste Paper Factory	1951
On-site	Waste Paper Factory	1951
On-site	Waste Paper Factory	1948
On-site	Waste Paper Factory	1931
On-site	Scrap Metal Yard	1967
On-site	Scrap Metal Yard	1967
76 m SE	Scrap Metal Yard	1967
90 m SE	Scrap Metal Yard	1967

5.2. REGULATORY DATABASE

The information summarised in Table 5.2 has been obtained from a commercially available environmental database. The summary table only includes records from within 250 m of the subject site and not otherwise detailed in the report.

TABLE 5.2 SUMMARY OF ENVIRONMENTAL DATA

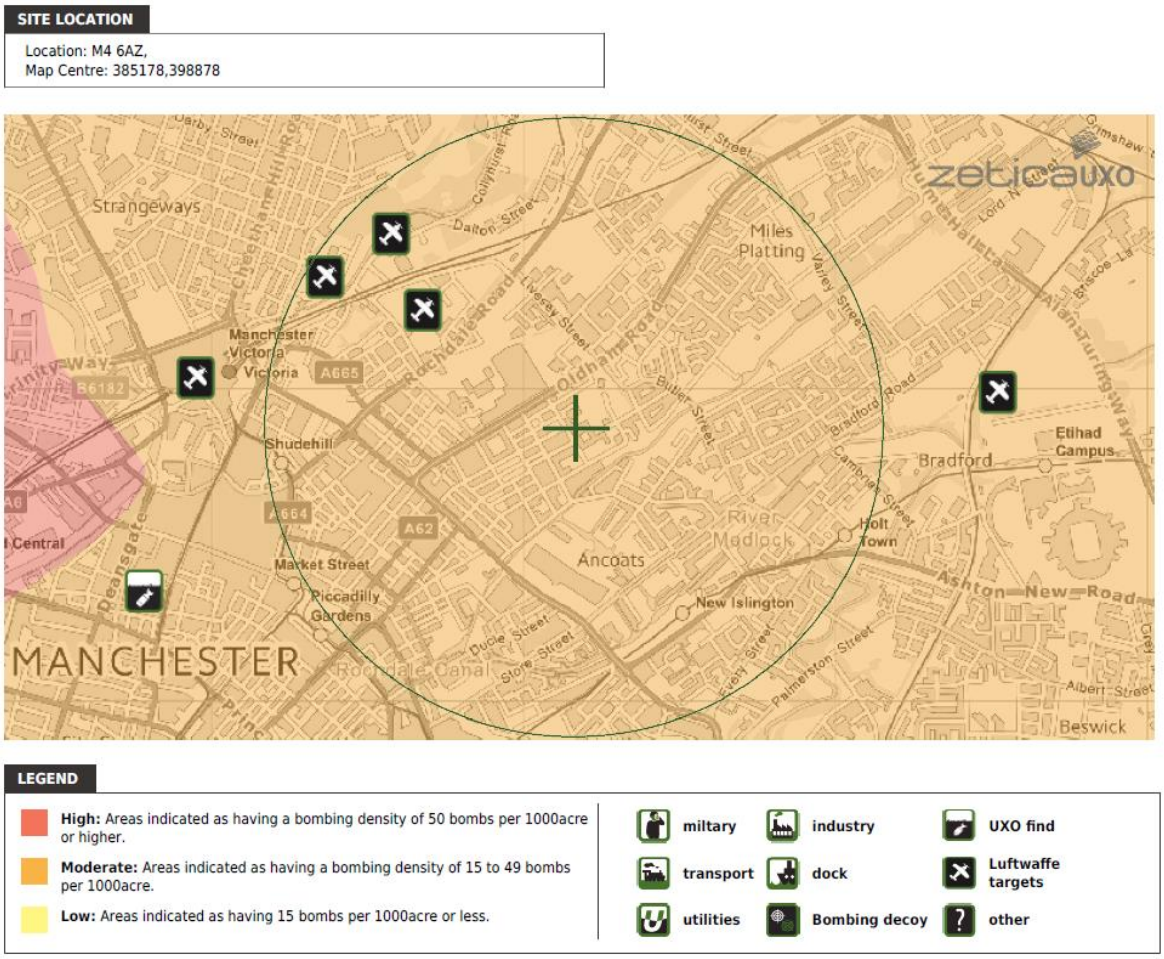
RECORD	ENTRIES WITHIN 250 m	DETAILS
Contaminated Land Register Entries and Notices	0	None Identified
Authorised Industrial Processes (IPC/IPPC/LAPPC)	2	LAPPC • On-site - Presbar Die-castings Ltd, 62-64 Jersey Street, Ancoats - Process: Non-ferrous Metal Foundry Processes - No Enforcement Notified. • On-site - Bill Howarth Metals, 109 Jersey Street, Ancoats - Process: Non-ferrous Metal Foundry Processes - No Enforcement Notified.

Fuel Stations Entries	3	209 m W - 12 Rochdale Road, Bendix Street, Collyhurst, Manchester - Status: Obsolete 230 m SW - 27 Gun Street, Ancoats, Manchester - Status: Obsolete 237 m NW - 95-105 Rochdale Road, Manchester - Status: Obsolete
Licensed Radioactive Substances	0	None Identified
Enforcements, Prohibitions or Prosecutions	0	None Identified
Discharge Consents	1	170 m E - Butler Street/Holland Street/Rolleston Avenue - Effluent Type: Sewage
Pollution Incidents	3	12/07/2001 - On-site - Pollutant: Specific Waste Materials - Land Impact: Category 3 (Minor) 17/05/2001 - 154 m SW - Pollutant: Contaminated Water - Water Impact: Category 3 (Minor) 22/05/2001 - 164 m SW - Pollutant: Contaminated Water - Water Impact: Category 3 (Minor)
Consents Issued Under the Planning (Hazardous Substances) Act 1990	0	None Identified
Control of Major Accident Hazard (COMAH) Sites	0	None Identified

5.1. UNEXPLODED ORDNANCE

The regional unexploded bomb risk map from Zetica (2014) indicates that the site is in an area at moderate risk from possible unexploded ordnance (UXO) resulting from the Second World War. The Zetica UXO Risk Map is presented in Figure 5.1.

FIGURE 5.1 ZETICA UXO RISK MAP



Source - https://zeticauxo.com/downloads-and-resources/risk-maps/

5.2. INITIAL CONCEPTUAL SITE MODEL

In accordance with EA LCRM (2019) and BSI 10175 (Code of Practice for Investigation of Potentially Contaminated Land), E3P has developed an initial conceptual site model (CSM) to identify potential contamination sources, migration pathways and receptors within the study area. This is summarised in Table 5.1.

ON-SITE SOURCES OF CONTAMINATION

The following potential on-site sources of contamination have been identified:

Jersey Street

- Made Ground associated with multiple phases of development. Borehole data suggests an average of 2.50 m of Made Ground across the site - Heavy metals, Polycyclic Aromatic Hydrocarbons (PAHs), sulphates, Asbestos Containing Materials (ACM), TPHs and ground gas (carbon dioxide and methane).
- Made Ground and possible organic peat deposits associated with infilling of historical canal features. Heavy metals, Polycyclic Aromatic Hydrocarbons (PAHs), TPHs, Volatile contaminants, sulphates, Asbestos Containing Materials (ACM) and potential for ground gas (carbon dioxide and methane).
- Electricity Substations - Polychlorinated Biphenyls (PCBs) - Multiple have been identified across the site.

Back of Ancoats Area

- Multiple Mill Buildings – Cotton Industry - Ground gases (carbon dioxide and methane).
- Volatile Contaminants associated with localised fuel spillages in the car parks within the site - Hydrocarbons, solvents.
- Iron Works - Metals and Metalloids (Iron, Manganese, Aluminium, Arsenic, Nickel, Chromium, Vanadium, etc), Inorganic compounds (Phosphates, sulphates, sodium, cyanide, sulphides, etc), Acids, Alkalis, Organic compounds (fuels and oils, tar, PAH, Phenols), and Solvents.
- Flint Glass Works - Heavy metals (Lead and Lead oxides).

OFF-SITE SOURCES OF CONTAMINATION

The following potential off-site source of contamination have been identified:

- Made Ground associated with multiple phases of development - Ground gases (carbon dioxide and methane).

TABLE 6.1 INITIAL CONCEPTUAL SITE MODEL

SOURCE	PATHWAY	RECEPTOR
Human Health		
Heavy Metals, PAHs Associated Within Made Ground and Historical Site Uses	Dermal Contact and Ingestion.	Construction Workers. Residential End Users.
Discussion: Jersey Street The area of Jersey street is likely to be underlain by significant depths of Made Ground, associated with the underlying infilled canal, ramps to the bridge and surrounding historic industrial development. Made Ground in this area is likely to contain a number of contaminants, including ash, demolition rubble and other waste material, which have the potential to be significant sources of Heavy Metals, speciated PAHs and PCBs. The proposed demolition of the bridge and re-grading of the highway for a pedestrian walkway along Jersey Street is likely to cover the whole area with concrete and/or asphalt hardstanding. As the main pathway for the above contaminants are dermal contact and ingestion, hardstanding will significantly reduce the risk to end-users of the roadway. Short-term risk is potentially posed to construction workers through dermal contact and soil ingestion and these risks may be mitigated through the use of appropriate PPE (e.g. gloves) and the maintenance of good personal hygiene. Back of Ancoats Area Made Ground associated with multiple historical phases of development is likely to be present across the back of the Ancoats area. Made Ground may be impacted by heavy metals, hydrocarbons, and polycyclic aromatic hydrocarbons (PAH). As the proposed development will involve the regrading of the public realm for pedestrian walkways and other public features, direct exposure of contaminants can be mitigated by hard standing and clean cover in landscaped and public open space areas. If present, heavy metals and non-volatile PAHs may pose a short-term risk to construction workers who may come into contact with impacted soils during earthworks.		
Volatile Hydrocarbon Compounds Associated Within Vehicle Repair Facilities	Volatilisation/Accumulation. Vapour Inhalation.	Construction Workers. Residential End Users.
Discussion: Jersey Street As mentioned above, the area of Jersey street is likely to be underlain by significant depths of Made Ground, associated with the underlying infilled canal, ramps to the bridge and surrounding historic industrial development, which are likely impacted with volatile contaminants. As no buildings or structures are proposed, risk for vapour exposure and accumulation can be considered to be negligible. Back of Ancoats area A number of historic cotton mills, flint glassworks and other industries have been noted across the wider back of Ancoats area, which are likely to involve the uses of various volatile compounds and solvents. Many of the volatile compounds and solvents anticipated will have moderate vaporific properties and therefore have the potential to evaporate and collect in indoor spaces. As the proposed development will involve the regrading of the public realm for pedestrian walkways and other public features, risk of vapour exposure and accumulation is considered negligible.		

Polychlorinated Biphenyl (PCB) associated with on-site substations	Dermal Contact Inhalation Accumulation	Construction Workers. Residential End Users. Third-Party Property.
Discussion: Jersey Street An Electricity substation is present to the northwest of Jersey street, first noted within the 1969 historic mapping, which may indicate a source of PCBs in a localised area. Direct exposure to PCB's will be mitigated by the implementation of hardstanding to prevent dermal exposure. Back of Ancoats Area Multiple electricity substations have been identified within the site boundary, as well as in the surrounding area, which historically. The substations are recorded pre-1985, therefore the presence of PCBs cannot be ruled out. However, direct exposure to PCB's will be mitigated by the implementation of hardstanding to prevent dermal exposure.		
Asbestos-Containing Materials (ACMs) within Made Ground	Fibre/Dust Inhalation.	Construction Workers. Residential End Users. Third-Party Property.
Discussion: Jersey Street Based on the significant development prior to 1999, it is likely that ACMs are present within the fabric of the underlying Made Ground and infilled canal in the Jersey Street Area. Back of Ancoats Area Based on the significant development history across the wider Ancoats area, including historic cotton mills, flint glassworks and other industries, ACMs are likely to have been used extensively in the former structures due to its insulating/non-flammable properties. ACMs are likely to not have been correctly managed due to significant redevelopment across the site pre-1999. ACM (fibres and fragments) may therefore be present within the underlying Made Ground soils. ACMs only pose a risk through fibre and dust inhalation, and as the proposed end-use includes regrading the public realm for pedestrian walkways and other public features, risk of dust inhalation is considered negligible.		
Hazardous Ground Gases		
Methane and Carbon Dioxide Associated with Possible On-Site Fill Material and Made Ground	Inhalation. Accumulation.	Construction Workers. Residential End Users.
Discussion: Jersey Street VOC impacted Made Ground, as discussed above, is considered to be likely associated with the infilling of the Bengal Arm of the Rochdale Canal, which may be a source of hazardous ground gases such as carbon dioxide and methane, which have associated asphyxiation and explosive risks. As no buildings or structures are proposed, risk from hazardous ground gases can be considered to be negligible. Back of Ancoats Area The wider Ancoats area is likely to be underlain by significant depths of Made Ground, and the presence of historic tanks and chemical storage cannot be ruled out. As above, the presence of significant hardstanding cover, as well as depths of low permeability clay (>5.0 mbgl), will further reduce the risk of ground gas across the site.		

As above, the proposed regrading of the public realm for pedestrian walkways will not include the development of any buildings or structures, and therefore risk from hazardous ground gases can be considered to be negligible.		
Controlled Waters		
Hydrocarbon Compounds Associated with infilled Canal and Made Ground	Vertical/Lateral Migration.	Principal and Secondary B Aquifer. Rochdale Canal.
Discussion: <u>Jersey Street</u> Made Ground is likely to be present across the site, and is likely to be impacted by heavy metals (arsenic, carbon, selenium, chromium, iron, zinc etc) associated with the infilled canal and former industries in the surrounding area, together with TPH fractions and non-volatile polycyclic aromatic hydrocarbons (e.g. Benzo(a)Pyrene, Benzo(b)Fluoranthene, Dibenzo(a,h)Anthracene). The proposed end-use involves the regrading of Jersey Street, and as this will involve significant hardstanding cover which will prevent infiltration through underlying Made Ground deposits, thus reducing the risk. Intrusive investigation with chemical analysis of soil and groundwater samples is recommended to assess the presence of mobile contaminants and facilitate further risk assessment. <u>Back of Ancoats Area</u> The historical land uses across the wider back of Ancoats area are also a source of volatile contaminants associated with the manufacturing processes, which may include light TPH fractions, BTEX compounds, naphthalene, creosote, and chlorinated solvents. The site is underlain by both Principal and Secondary A Aquifers, and the Rochdale Canal runs directly adjacent to the southern boundary of the site. These contaminants have the potential to leach from the soil and migrate downwards to the underlying Secondary A superficial and Principal bedrock aquifers. In this instance, the risk of lateral and vertical migration of mobile contaminants is reduced due to the presence of >5.0 mbgl of low permeability glacial till across the site. The proposed end-use involves the regrading of the public realm for pedestrian walkways and other public features, and as this will involve significant hardstanding cover which will prevent infiltration through underlying Made Ground deposits, thus reducing the risk. However, due to the presence of the Rochdale Canal running adjacent to the southern boundary of the site, the risk to controlled waters is considered high. Intrusive investigation with chemical analysis of soil and groundwater samples is recommended to assess the presence of mobile contaminants and facilitate further risk assessment.		
Buildings and Infrastructure		
pH and Sulphate	Corrosion of Concrete.	Foundations/Concrete.
Discussion: High sulphate concentrations may be present within Made Ground deposits (associated with ash/slag and coal dust from historical burning/heating processes), which may result in corrosion of buried concrete within the proposed development. Assessment must be undertaken to confirm the levels of pH and sulphate within the underlying strata and in particular any Made Ground deposits so that a concrete classification can be determined.		

Ecology		
None Identified	Lateral Migration.	Thornley Brook.
Discussion: High concentrations of Nickel, Zinc and Copper are likely given the historical land uses (cotton mills/ infilled canal), which may inhibit healthy plant growth. A sampling of soils as part of the intrusive investigation will be required. Importation of clean cover soils is likely to be required due to the absence of suitable topsoil on-site.		

6. CONCLUSIONS AND RECOMMENDATIONS

6.1. SITE SUMMARY

Current Site Use	Jersey Street The Jersey Street area is a rectangular subsection of the larger site including Jersey street to the east of Poland Street. The site is bound by a concrete hardstanding car park to the north and a large warehouse to the south, currently unoccupied. To the southeast of the roadway, an area of undeveloped land is present in the former location of the Bengal Arm canal, predominantly concrete hardstanding from previous development with overgrown shrubs and vegetation around the periphery. Back of Ancoats The back of Ancoats area is an irregular shaped parcel of land in the Northwest section of the City of Manchester. The central area consists predominantly of commercial plots including shops, warehouses, and car parks. These commercial plots have current uses including a car garage, used car forecourt, glassworks, and recycling works. The eastern and western sections of the site contain residential buildings, comprising high rise apartments and housing. The site also contains multiple areas of public open space, including Ancoats Green.
Historical Site Use	Jersey Street No significant changes to Jersey street have occurred since the earliest historical mapping records, with the Jersey street bridge infilled circa 1955. From 1948, Jersey Street comprises the main carriageway running east-west with adjacent pavements. The Rochdale canal runs parallel to the south of the road. The Jersey Street area is surrounded by significant industrial development, including the sheet metal works to the southeast, Ironworks to the northwest and the Waste Paper factory to the southwest. Terraced residential housing is present to the east of Jersey Street. By 1963, significant further industrial development occurred surrounding Jersey Street occurs, surrounded by several various works and factories. By 2003, the majority of structures surrounding Jersey street have been demolished and repurposed as car parking. Back of Ancoats A review of the pertinent Ordnance Survey mapping suggests that the site comprised predominantly industrial plots and a scattering of residential plots in the northeast section from pre-1848. The majority of the industrial buildings were cotton mills up until the 1950s. Since then, they have been changed into commercial and residential units. The Bengal Arm, a historical branch of the Rochdale Canal is present through the centre of the site.

	During this time, there has been multiple phases of development, with buildings across the area being demolished and new buildings being constructed. In the 1950s, the Bengal Arm was disconnected from the main canal and infilled.

6.2. CONTAMINATED LAND ASSESSMENT

Human Health	<u>Jersey Street</u> The area of Jersey street is likely to be underlain by significant depths of Made Ground, associated with the underlying infilled canal, ramps to the bridge and surrounding historic industrial development. Made Ground in this area is likely to contain a number of contaminants, including ash, demolition rubble and other waste material, which have the potential to be significant sources of Heavy Metals, speciated PAHs, TPHs, SVOCs, VOCs and PCBs. Further Made Ground deposits associated with the infilling of the historical Bengal Arm of the Rochdale Canal will be present in the area of the Jersey Street Bridge demolition. This area was infilled in the 1950s and it is therefore considered likely that the Made Ground may contain a significant number of contaminants. An Electricity substation is present to the northwest of Jersey street, first noted within the 1969 historic mapping, which may indicate a source of PCBs in a localised area. Based on the significant development prior to 1999, it is likely that ACMs are present within the fabric of the underlying Made Ground and infilled canal in the Jersey Street Area. The proposed demolition of the bridge and re-grading of the highway for a pedestrian walkway along Jersey Street is likely to cover the whole area with concrete and/or asphalt hardstanding which will mitigate the risks of direct exposure, and any proposed areas of landscaping can be mitigated by the installation of a cover system. <u>Back of Ancoats Area</u> Made Ground associated with multiple historical phases of development is likely to be present across the back of Ancoats area. Made Ground may be impacted by heavy metals, hydrocarbons, asbestos and polycyclic aromatic hydrocarbons (PAH). A number of historic cotton mills, flint glass works and other industries have been noted across the wider back of Ancoats area, which are likely to involve the uses of various volatile compounds and solvents. Many of the volatile compounds and solvents anticipated will have moderate vaporific properties and therefore have the potential to evaporate and collect in indoor spaces.

	As the proposed development will involve the regrading of the public realm for pedestrian walkways and other public features, direct exposure of contaminants can be mitigated by hard standing and clean cover in landscaped and public open space areas. As no buildings or structures are proposed, risk for vapour exposure and accumulation can be considered to be negligible.
Controlled Waters	Jersey Street Made Ground is likely to be present across the site, and is likely to be impacted by heavy metals (arsenic, carbon, selenium, chromium, iron, zinc etc) associated with the infilled canal and former industries in the surrounding area, together with TPH fractions and non-volatile polycyclic aromatic hydrocarbons (e.g. Benzo(a)Pyrene, Benzo(b)Fluoranthene, Dibenzo(a,h)Anthracene). Back of Ancoats Area The historical land uses across the wider back of Ancoats area are also a source of volatile contaminants associated with the manufacturing processes, which may include light TPH fractions, BTEX compounds, naphthalene, creosote, and chlorinated solvents. These contaminants have the potential to leach from the soil and migrate downwards to the underlying Secondary A superficial and Principal bedrock aquifers. The mobility of leachable heavy metals, organic solvents, hydrocarbons is dependent on the soil characteristics e.g. clay soils have a higher organic content and adsorption properties, thus reducing the potential for migration. In this instance, the risk of lateral and vertical migration of mobile contaminants is reduced due to the presence of >5.0 mbgl of low permeability glacial till across the site. However, due to the presence of the Rochdale Canal running adjacent to the southern boundary of the site, the risk to controlled waters is considered high. Intrusive investigation with chemical analysis of soil and groundwater samples is recommended to assess the presence of mobile contaminants and facilitate further risk assessment.

Ground Gas	Jersey Street VOC impacted Made Ground, as discussed above, is considered to be likely associated with the infilling of the Bengal Arm of the Rochdale Canal, which may be a source of hazardous ground gases such as carbon dioxide and methane, which have associated asphyxiation and explosive risks. The site is also underlain by >5.0 mbgl of low permeability glacial till, which will reduce the potential for vertical and lateral migration of ground gases and reduce the risk. As no buildings or structures are proposed, risk for vapour/ground exposure and accumulation can be considered to be negligible. Back of Ancoats Area The wider Ancoats area is likely to be underlain by significant depths of Made Ground, and the presence of historic tanks and chemical storage can not be ruled out. As above, the presence of significant hardstanding cover, as well as depths of low permeability clay (>5.0 mbgl), will further reduce the risk of ground gas across the site. As no buildings or structures are proposed, risk for vapour/ground exposure and accumulation can be considered to be negligible.
Potable Water	Barrier pipes likely to be required due to the probability of PAH/VOC impacted Made Ground on-site, which may affect water pipelines.

6.3. COAL MINING

Coal Mining	The site is not in a development high-risk area. A review of the geology and coal authority records has identified no coal seams, mine entries or records of past underground workings within or within 400 m of the back of Ancoats area, and none within 650 m of the Jersey Street area. Based on the above assessment it has been deemed by E3P that the site is at low risk of shallow coal mining beneath the site, and no further assessment is required.

6.4. GEOTECHNICAL ASSESSMENT

Geological	Significant thicknesses of mixed granular and cohesive drift deposits are anticipated.
Civil and Structural	Given the predominantly developed nature of the site, it is likely there will be Made Ground fill deposits and obstructions sitewide. Significant obstructions are anticipated due to the presence of the former mills, iron works, and associated chimneys identified from historical mapping and ariel imagery. Given the generally flat nature of the site, it is anticipated that a small series of earthworks will be required following the removal of current structures, hardstand and obstructions to create a developable platform in the future.

	The presence of the Rochdale Canal adjacent to the southern boundary of the site indicates that shallow groundwater may be present. Ground conditions within the infilled Bengal Arm canal that passes beneath the Jersey Street Bridge are currently unknown.
Abnormal Foundations	Should redevelopment of structures occur, Abnormal foundations may be required due to the significant depths of anthropogenic ground anticipated and the potential for deleterious material within the infilled canal arm.

END OF REPORT

APPENDIX I
LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between E3P and the client as indicated in Section 1.3.

2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information it has been assumed it is correct. No attempt has been made to verify the information.

3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination which are enforced by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.

4. During the site walkover, reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover, no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.

5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.

6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials, this is for indicative purposes only and do not constitute or replace full and proper surveys.

8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.

9. E3P cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by E3P is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by E3P in this connection without their explicit written agreement there to by E3P.

10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

APPENDIX II
GLOSSARY

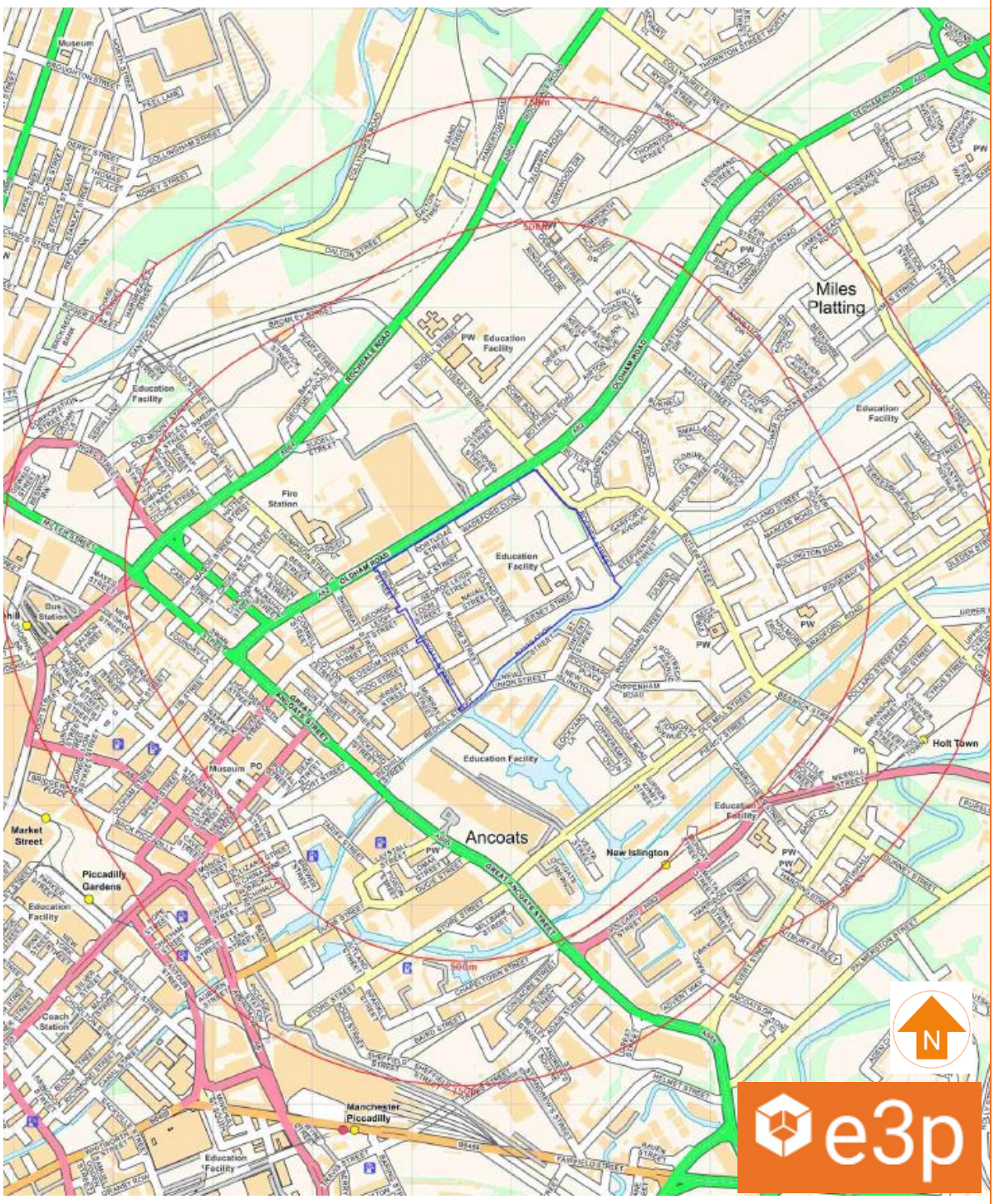
TERMS

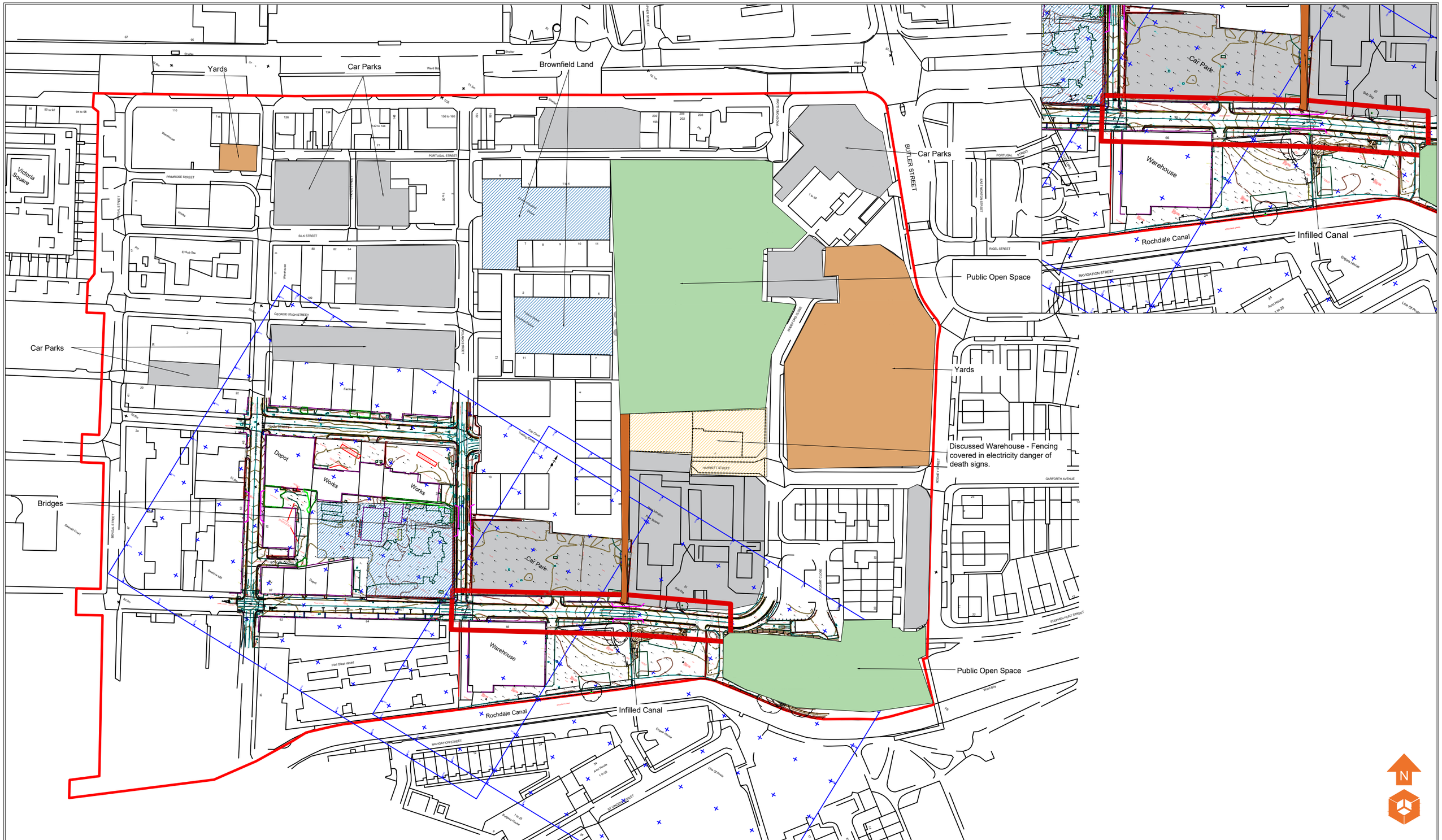
ACM	Asbestos-containing material	**MMP**	Materials management plan
ADS	Acoustic design statement	**ND**	Not detected
AST	Above-ground storage tank	**NDP**	Nuclear density probe
BGS	British Geological Survey	**NMP**	Noise management plan
BSI	British Standards Institute	**NPSE**	Noise policy statement for England
BTEX	Benzene, toluene, ethylbenzene, xylenes	**NR**	Not recorded
CA	Coal Authority	**PAH**	Polycyclic aromatic hydrocarbon
CBR	California bearing ratio	**PCB**	Polychlorinated biphenyl
CIEH	Chartered Institute of Environmental Health	**PI**	Plasticity index
CIRIA	Construction Industry Research Association	**PID**	Photo ionisation detector
CLEA	Contaminated land exposure assessment	**POS**	Public open space
CML	Council of Mortgage Lenders	**PPE**	Personnel protective equipment
CoC	Contaminants of concern	**ProPG**	Professional practice guidance
CSM	Conceptual site model	**QA**	Quality assurance
DNAPL	Dense non-aqueous phase liquid (chlorinated solvents, PCB)	**SGV**	Soil guideline value
DWS	Drinking water standard	**SPH**	Separate-phase hydrocarbon
EA	Environment Agency	**SPT**	Standard penetration test
EQS	Environmental quality standard	**SVOC**	Semi-volatile organic compound
FFL	Finished floor level	**TPH**	Total and speciated petroleum hydrocarbon
GAC	General assessment criteria	**TPH CWG**	Total Petroleum Hydrocarbon (Criteria Working Group)
GL	Ground level	**UKWIR**	United Kingdom Water Infrastructure Risk
GSV	Gas screening value	**UST**	Underground storage tank
HCV	Health criteria value	**VCC**	Vibro-concrete column
ICSM	Initial conceptual site model	**VOC**	Volatile organic compound
LEL	Lower explosive limit	**VRSC**	Vibro-replacement stone columns
LMRL	Lower method reporting limit	**VSC**	Vibro-stone columns
LNAPL	Light non-aqueous phase liquid (petrol, diesel, kerosene)	**WHO**	World Health Organisation
MCV	Moisture condition value	**WRAP**	Waste and Resources Action Programme

MIBK	Methyl isobutyl ketone	**WTE**	Water table elevation
m	Metres	**ppm**	Parts per million
km	Kilometres	**mg/m^3**	Milligram per metre cubed
% v/v	Percent volume in air	**m bgl bgl**	Metres below ground level
mb	Millibars (atmospheric pressure)	**m bcl**	Metre below cover level
l/hr	Litres per hour	**mAOD**	Metres above ordnance datum (sea level)
µg/l	Micrograms per litre (parts per billion)	**kN/m^2**	Kilonewtons per metre squared
ppb	Parts per billion	**µm**	Micrometre
mg/kg	Milligrams per kilogram (parts per million)	**SSRT**	Site Specific Remediation Target
PSD	Particle Size Distribution	**DD**	Dry Density
CL:AIRE	Contaminated Land: Applications in Real Environments	**Mc**	Moisture Content
ρ	Bulk Density	**GPR**	Ground Penetrating Radar
NDP	Nuclear Density Probe	**FFL**	Finished Floor Level
LEL	Lower Explosive Limit	**UKWIR**	UK Water Industry Research
CIRIA	Construction Industry Research and Information Association	**LOD**	Limit of Detection

APPENDIX III
DRAWINGS

DRAWING 15-798-001 – SITE LOCATION PLAN





Site Features

- Infilled Canal
- Car Parking
- Public Open Space
- Yards
- Brownfield Land
- Discussed Warehouse

Notes:

P1	REVA	18.03.2022	EB	PW
Phase	Issue	Date	Drawn	Checked

Client: Civic Engineers

Job No: 15-798

Date: 18.03.2022

Drawing No: 004

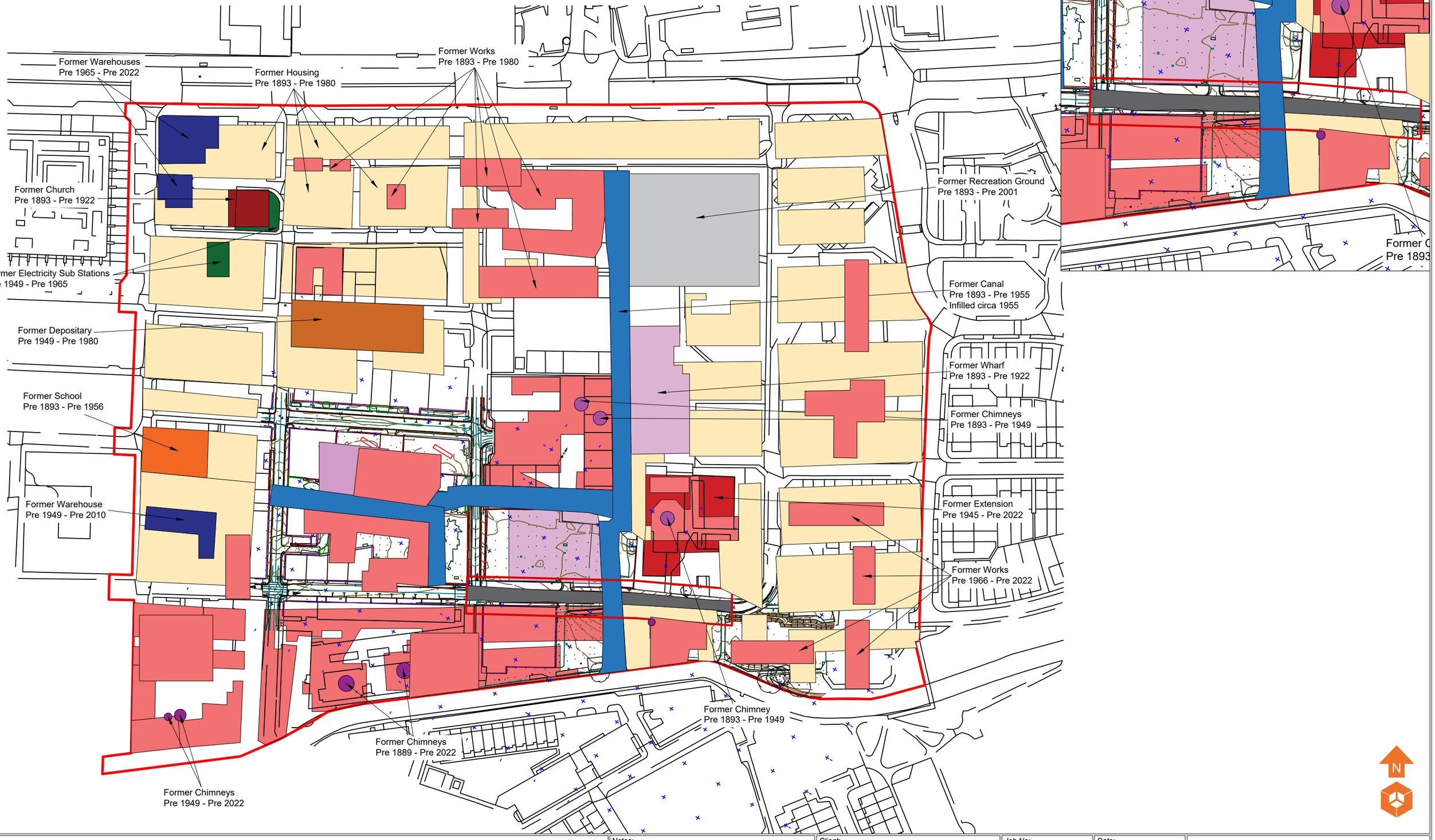
Scale: NTS@ A3

Job Title: Jersey Street, Ancoats

Drawing Title: Site Features Plan

Environmental Engineering Partnership Ltd
Taylor Road, Trafford Park
Urmston, Manchester, M41 7JQ
Tel: 0161 707 9612
E-mail: info@e3p.co.uk
Website: www.e3p.co.uk

The client must not amend any drawing, design or other intellectual property produced by E3P Ltd without permission in writing from E3P Ltd in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, E3P Ltd shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or intellectual property.



Historical Features

- Former Works Buildings
- Former Works Extension
- Former Residential Homes
- Former Canal
- Former Wharfs
- Former Chimneys
- Former School
- Former Church
- Former Warehouse
- Former Depositary
- Former Electricity Sub station

Notes:

Client: Civic Engineers

Job No: 15-798

Date: 18.03.2022

Drawing No: 004

Scale: 1:1000 @ A3

Phase	Issue	Date	Drawn	Checked
P1	REVA	18.03.2022	LM	PW

Job Title: Jersey Street, Ancoats

Drawing Title: Site Features Plan

e3p
Environmental Engineering Partnership Ltd
Taylor Road, Trafford Park
Urmston, Manchester, M41 7JQ
Tel: 0161 707 9612
E-mail: info@e3p.co.uk
Website: www.e3p.co.uk

The client must not amend any drawing, design or other intellectual property produced by E3P Ltd without permission in writing from E3P Ltd in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, E3P Ltd shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or intellectual property.

APPENDIX IV
PHOTOGRAPHS

Jersey Street

PLATE 1	VIEW OF JERSEY STREET FACING WEST FROM THE JERSEY STREET BRIDGE



PLATE 2 VIEW OF JERSEY STREET FACING EAST FROM THE JERSEY STREET BRIDGE



PLATE 3 INFILLED BENGAL ARM OF ROCHDALE CANAL, FACING NORTH FROM JERSEY STREET



Back of Ancoats

PLATE 4 VIEW OF GEORGE LEIGH STREET FACING EAST



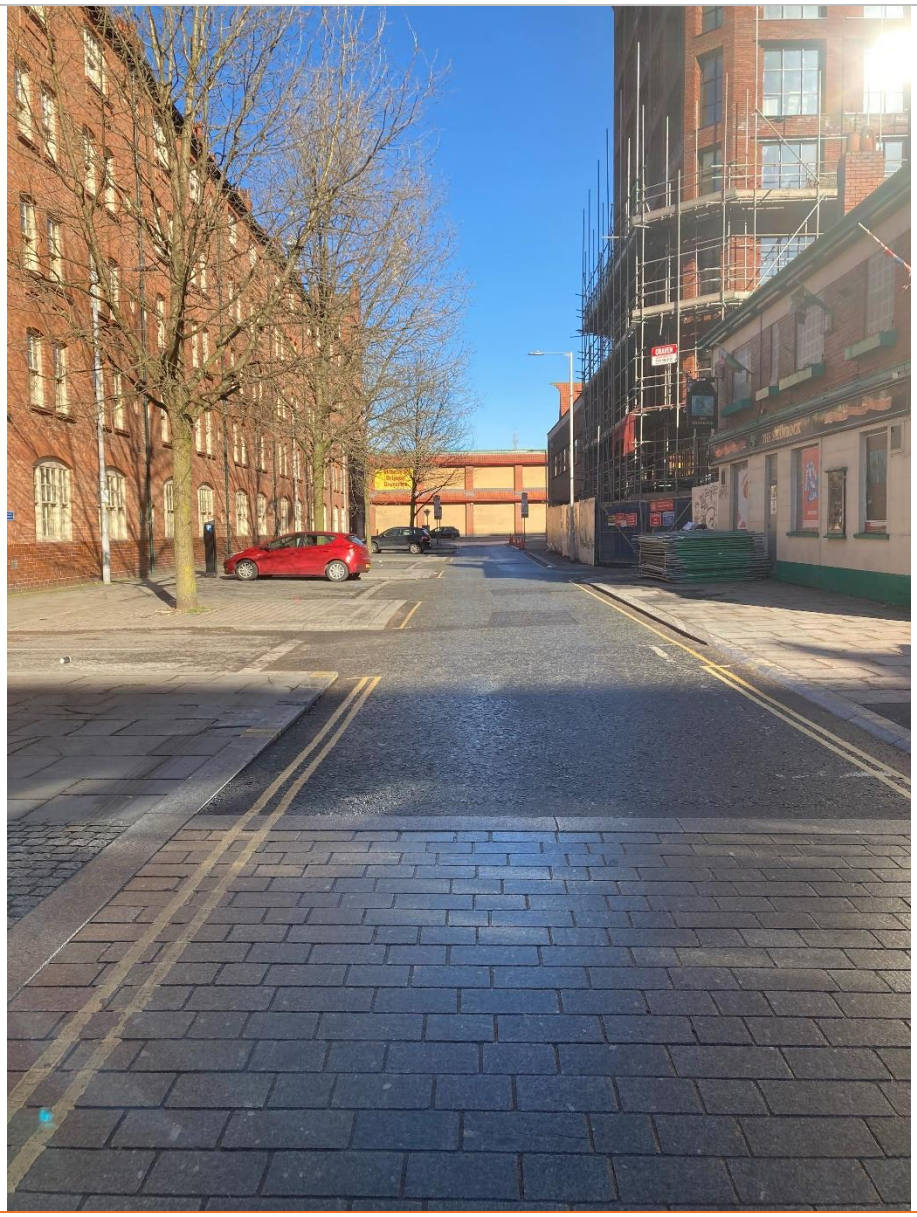
PLATE 5 VIEW OF RADIUM STREET FACING SOUTH



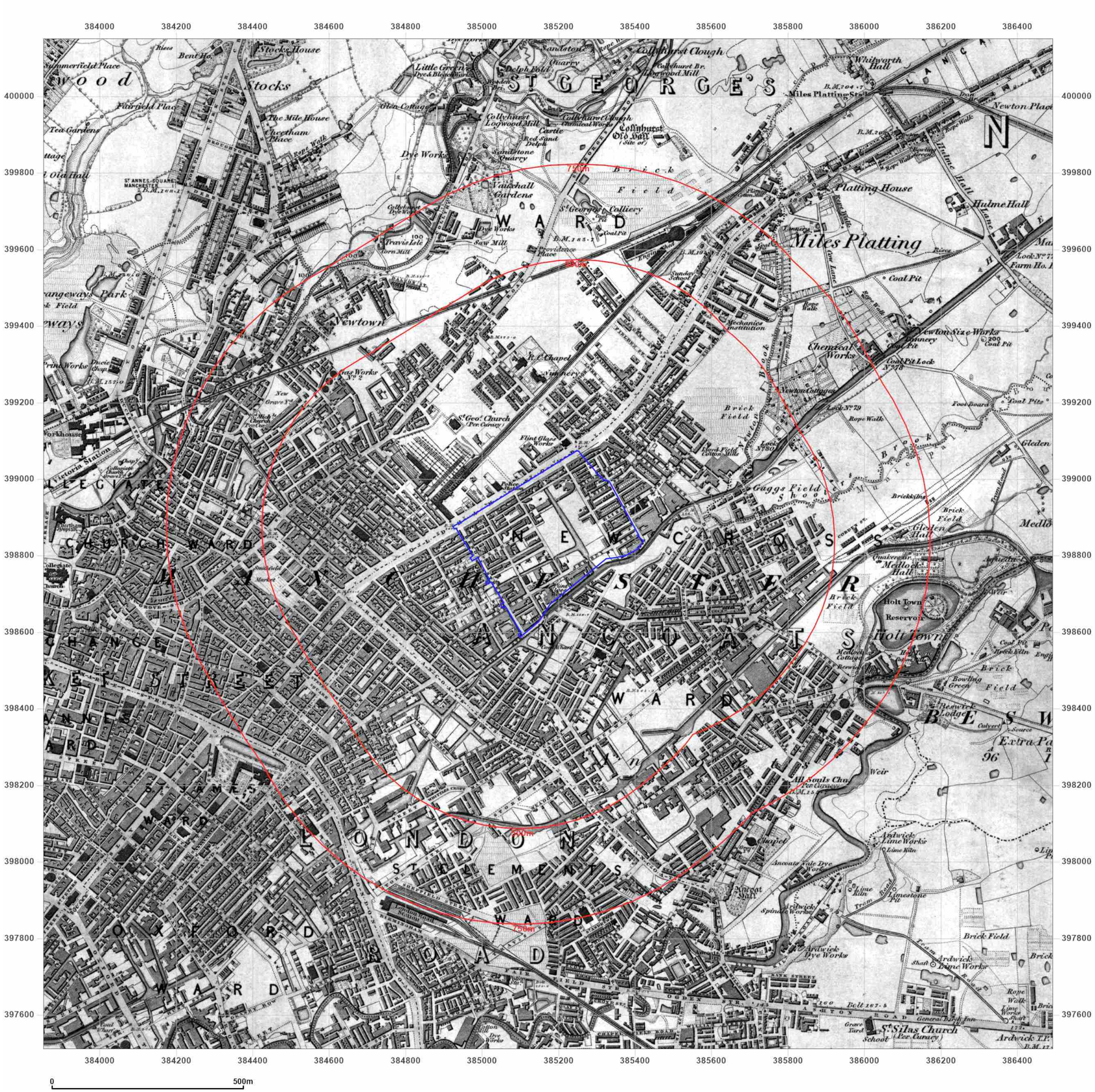
PLATE 6 VIEW OF JERSEY STREET FACING WEST FROM POLAND STREET



PLATE 7 VIEW OF BENGAL STREET FACING NORTH



APPENDIX V
HISTORICAL MAPS



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: County Series

Map date: **1848**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

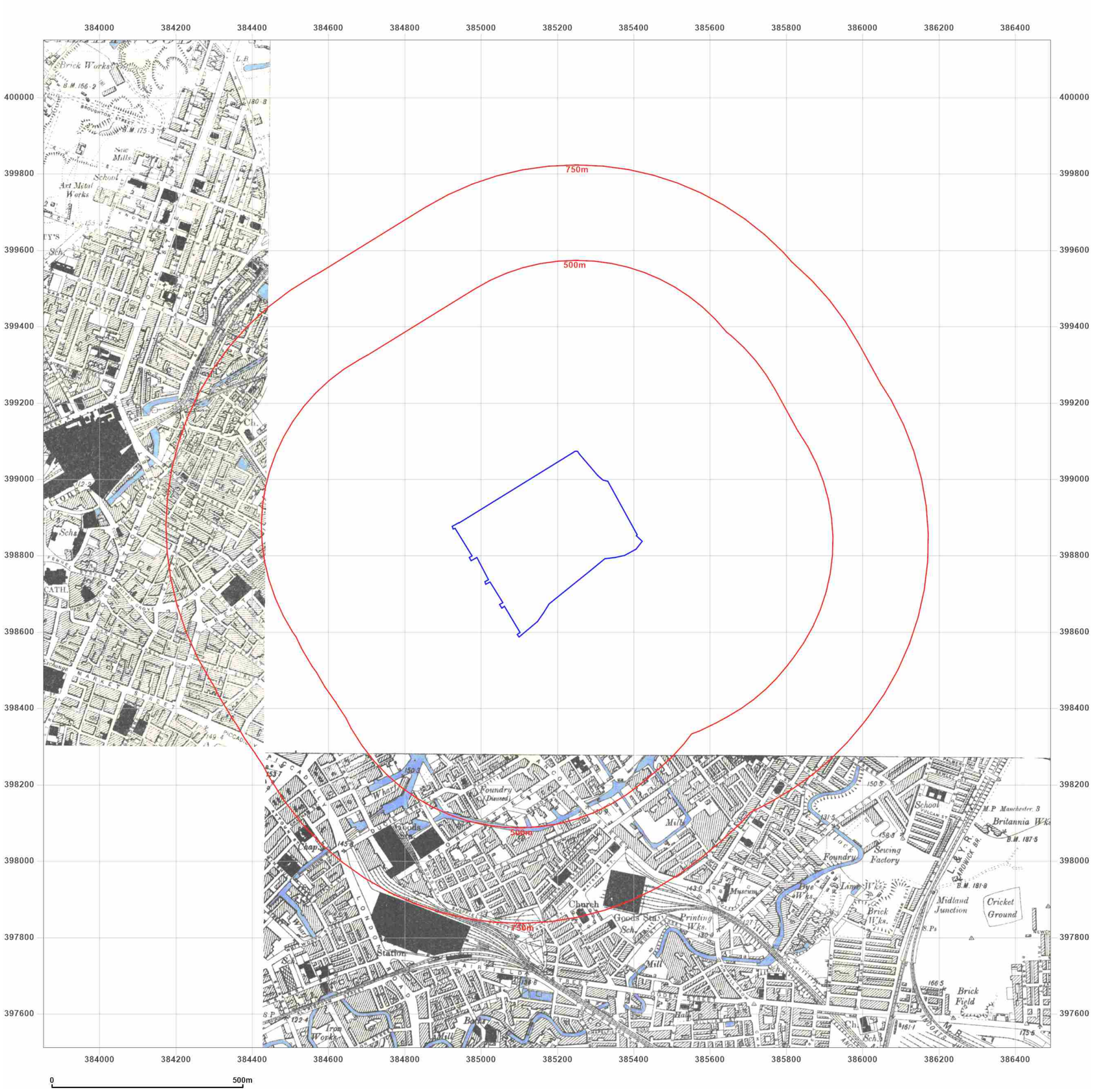
Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: County Series

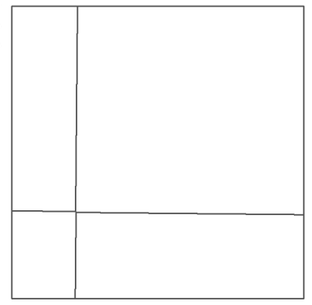
Map date: **1890-1894**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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



Surveyed 1890
Revised 1890
Edition 1890
Copyright N/A
Levelled N/A

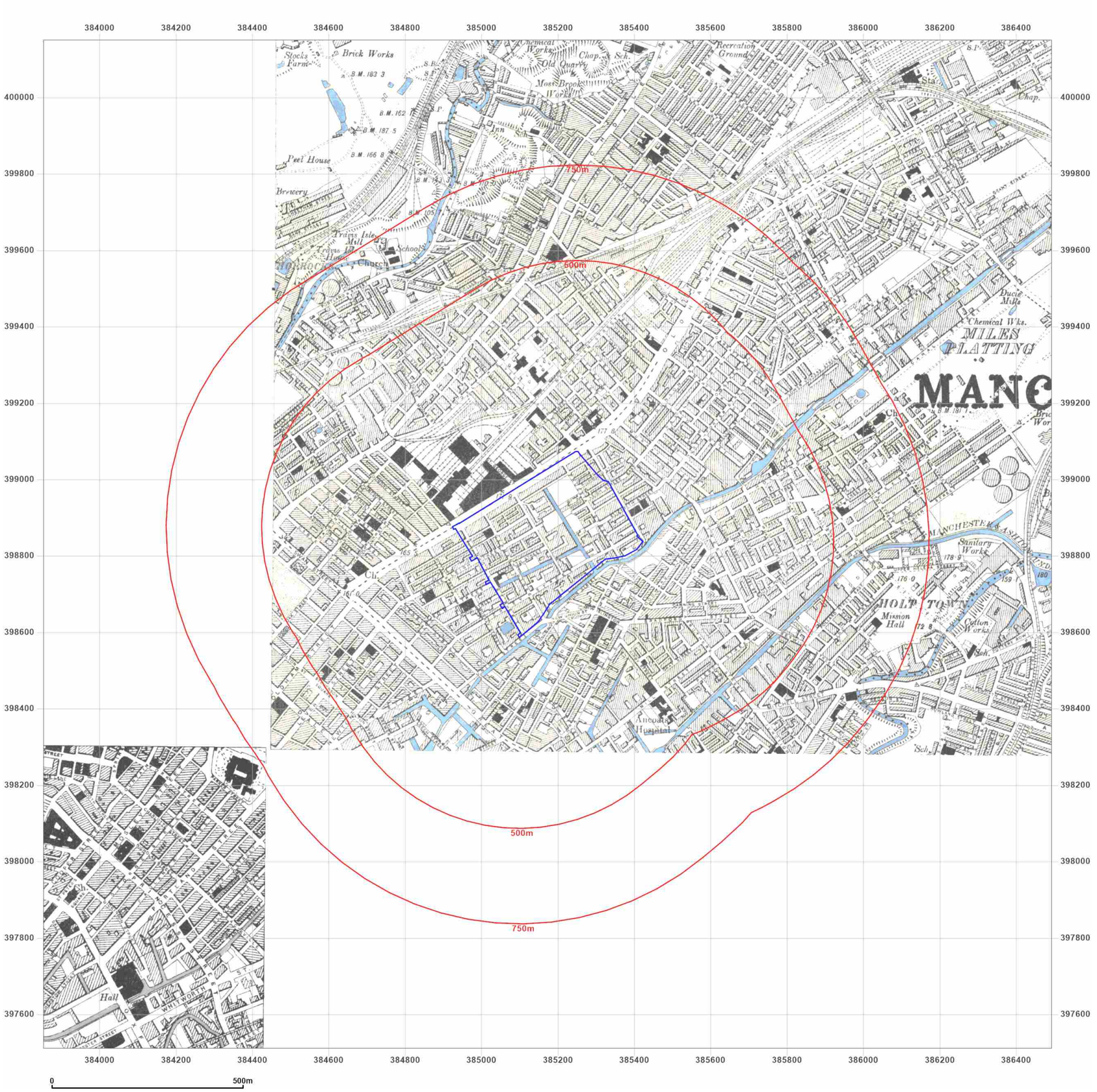
Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: County Series

Map date: **1891-1896**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

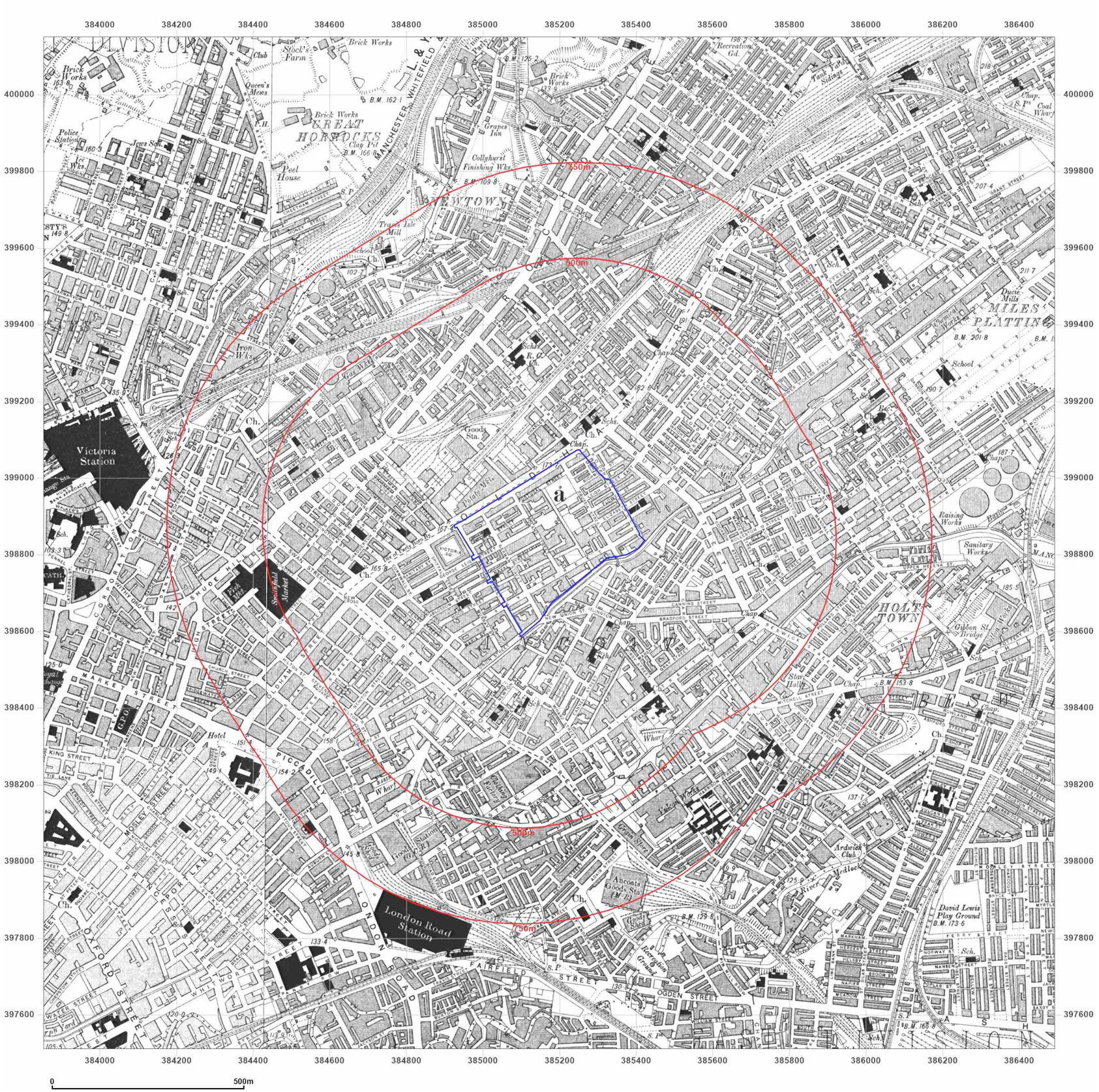
Surveyed 1894
Revised 1896
Edition 1896
Copyright N/A
Levelled N/A

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: County Series

Map date: **1905-1906**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

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

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

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

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

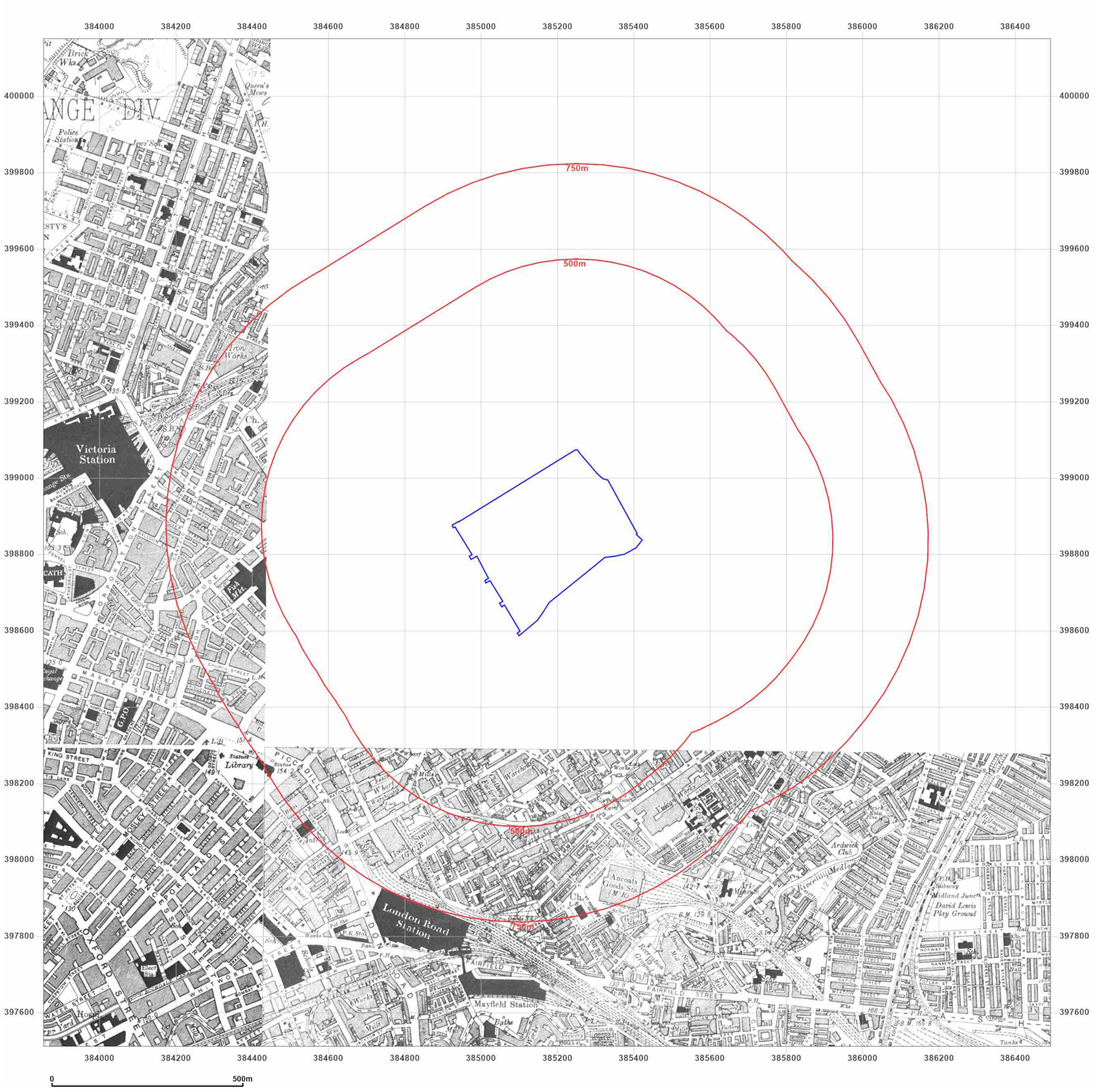
Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

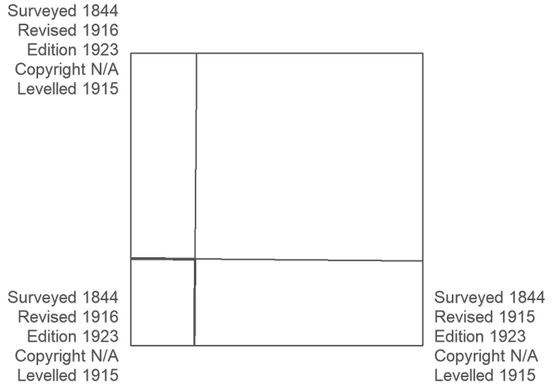
Map Name: County Series

Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S



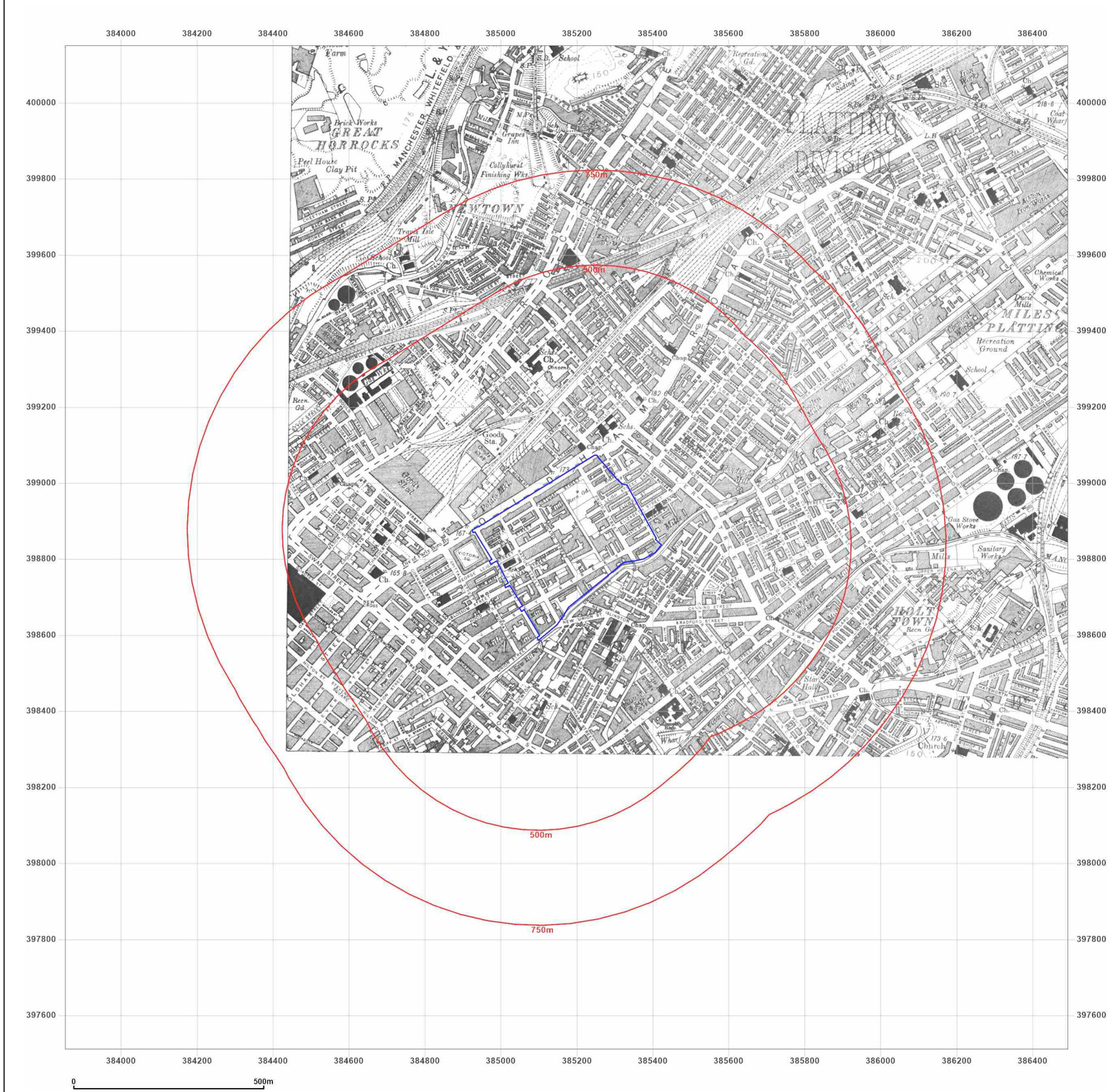
Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: County Series

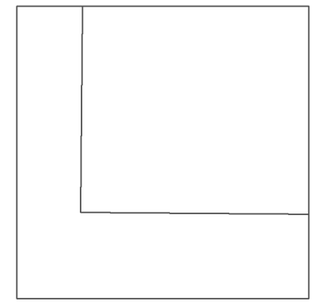
Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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



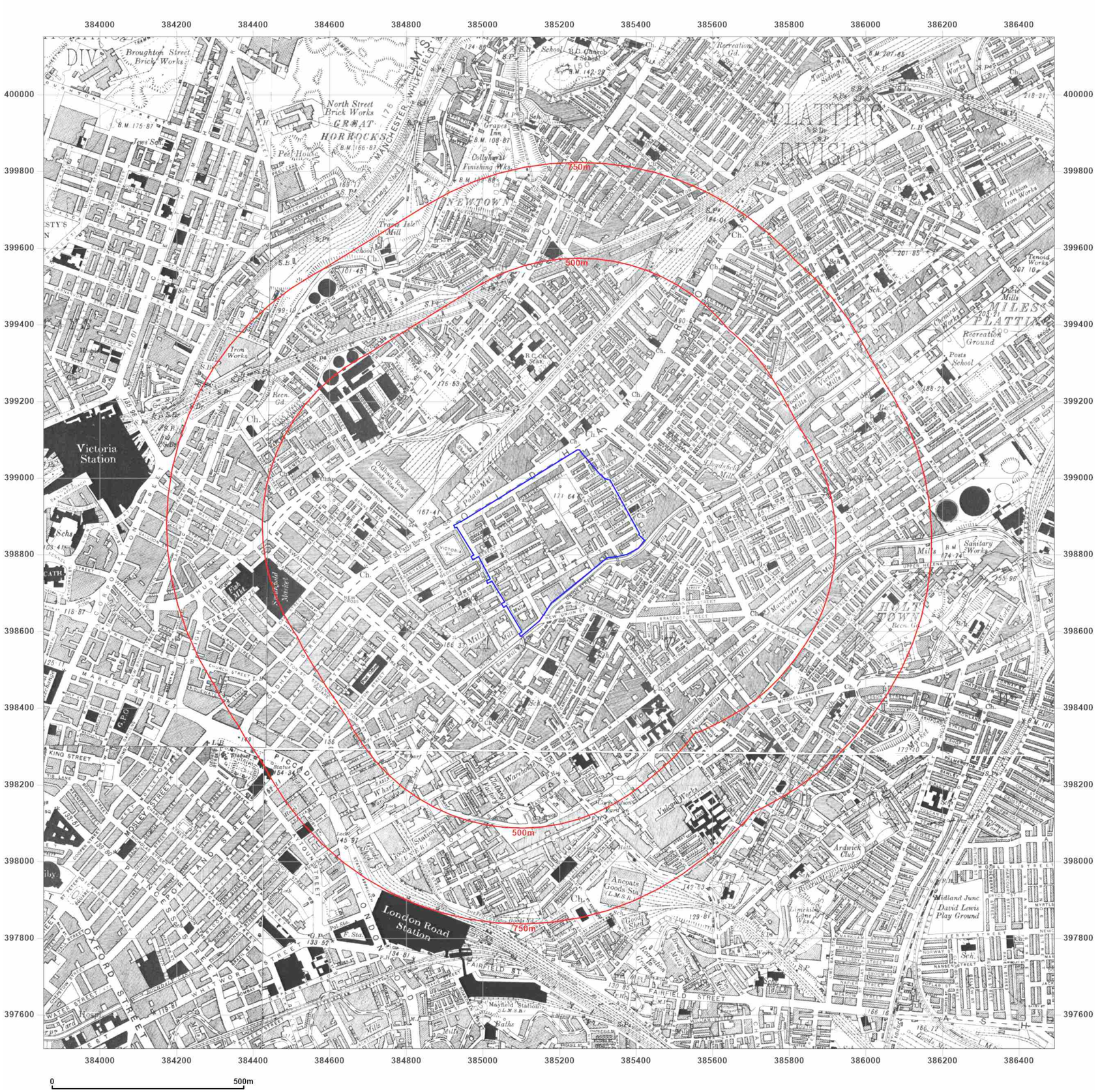
Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: County Series

Map date: **1931-1934**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

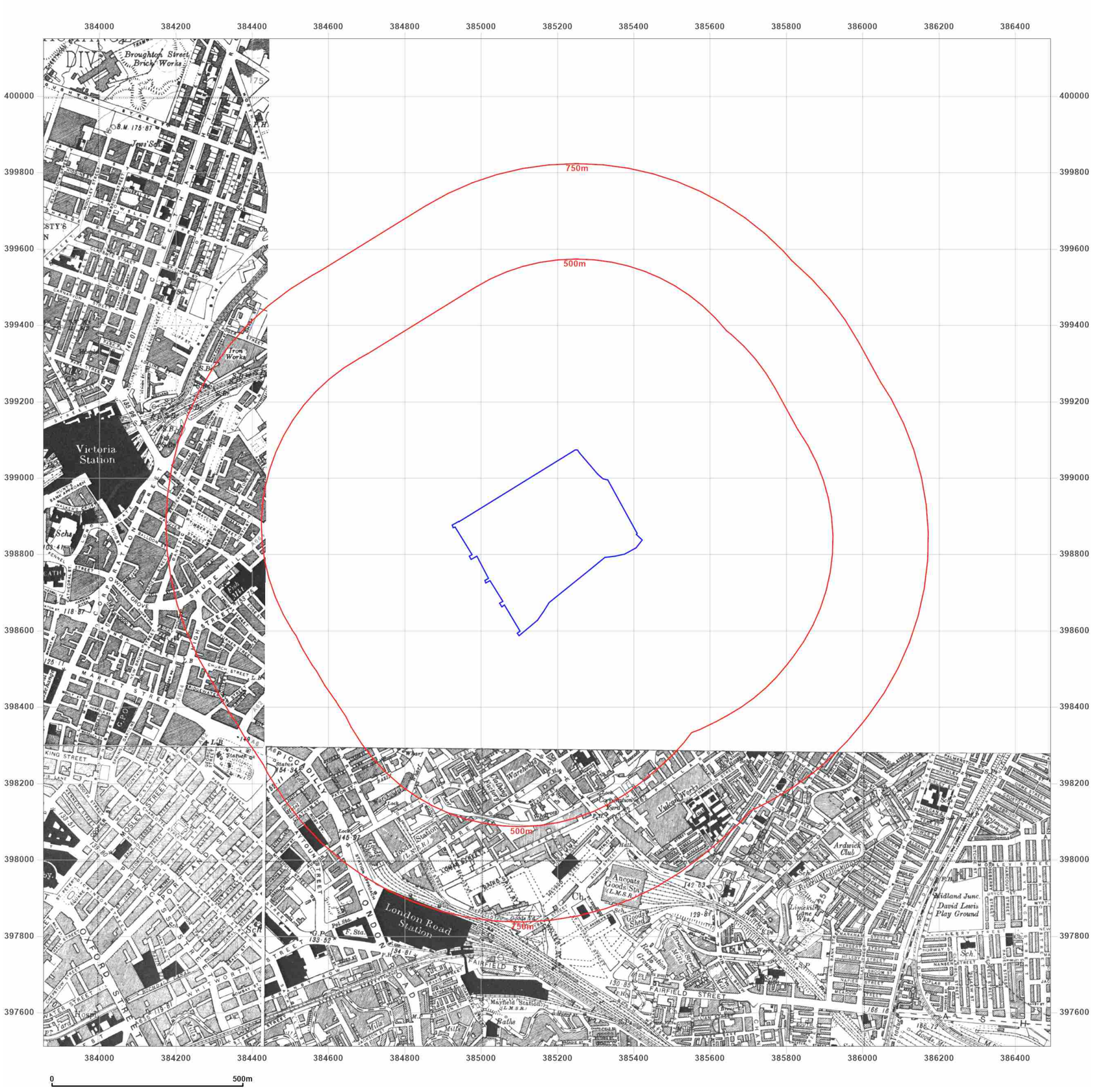
Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: County Series

Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

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

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

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

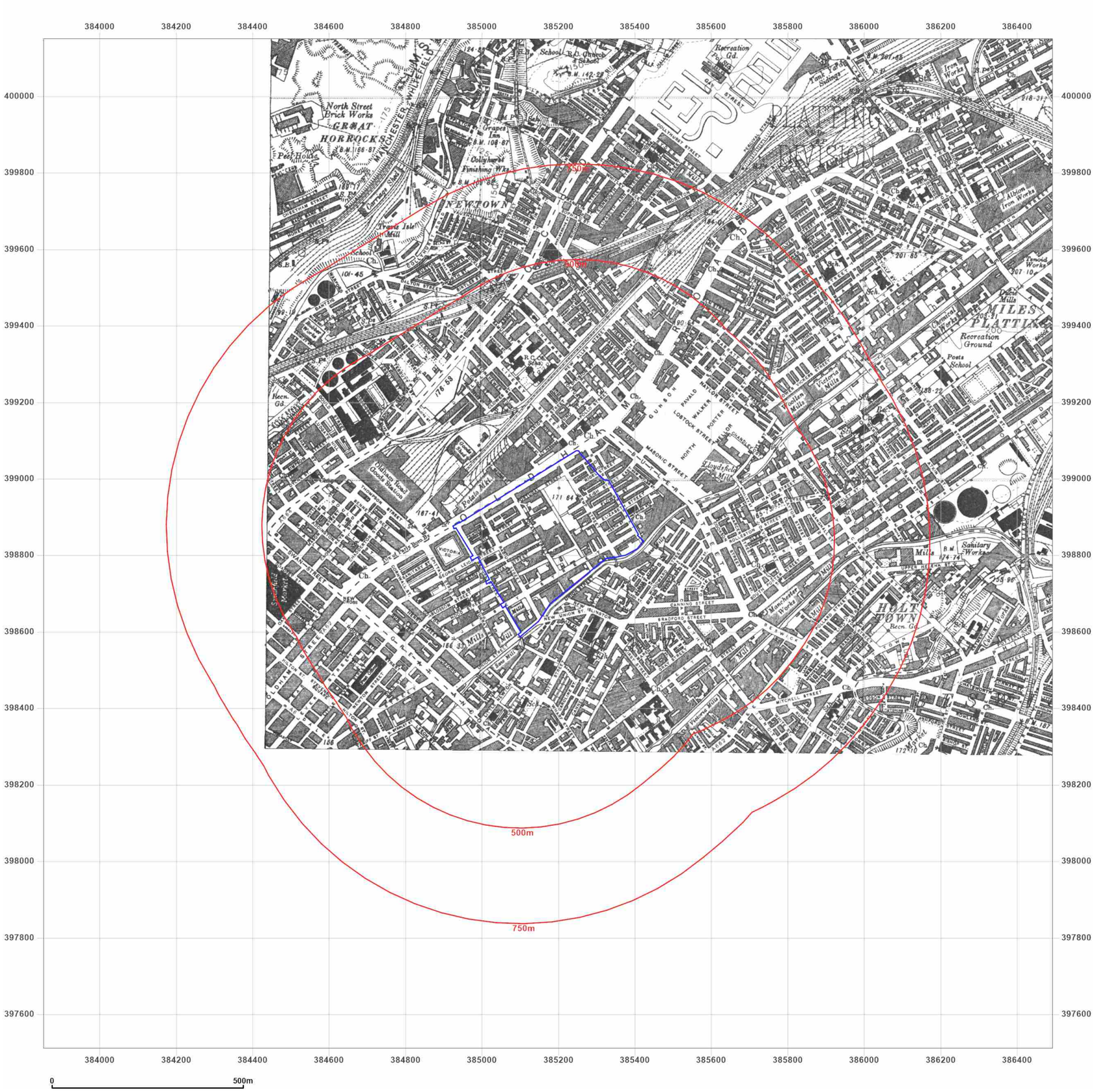
Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: County Series

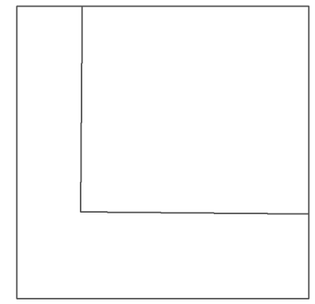
Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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



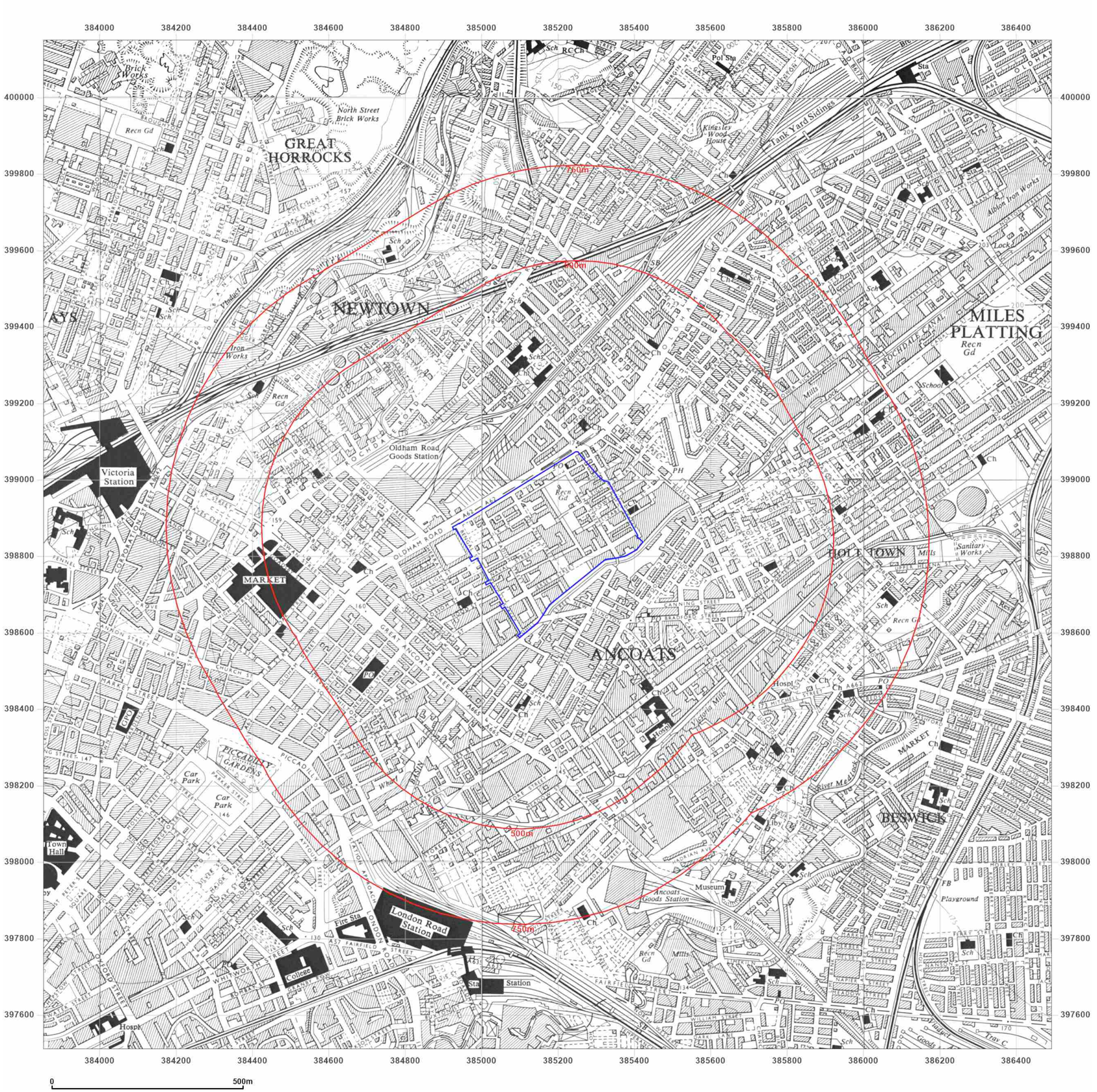
Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: Provisional

Map date: **1956**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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

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

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

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

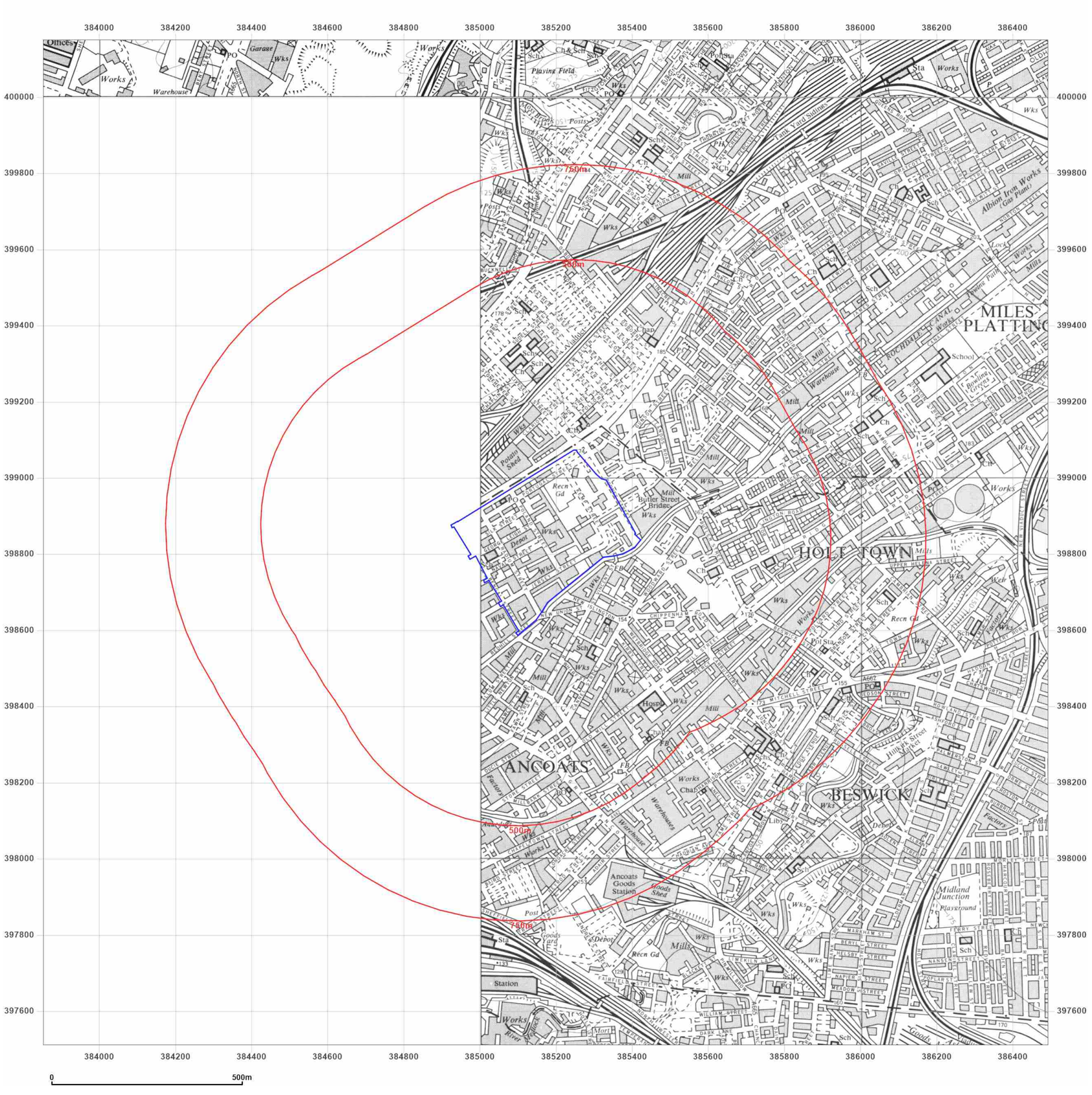
Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: Provisional
Map date: **1966-1968**
Scale: 1:10,560
Printed at: 1:10,560

N
W E
S

Surveyed 1968
Revised 1968
Edition N/A
Copyright N/A
Levelled N/A

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

Surveyed 1968
Revised 1968
Edition N/A
Copyright 1968
Levelled N/A

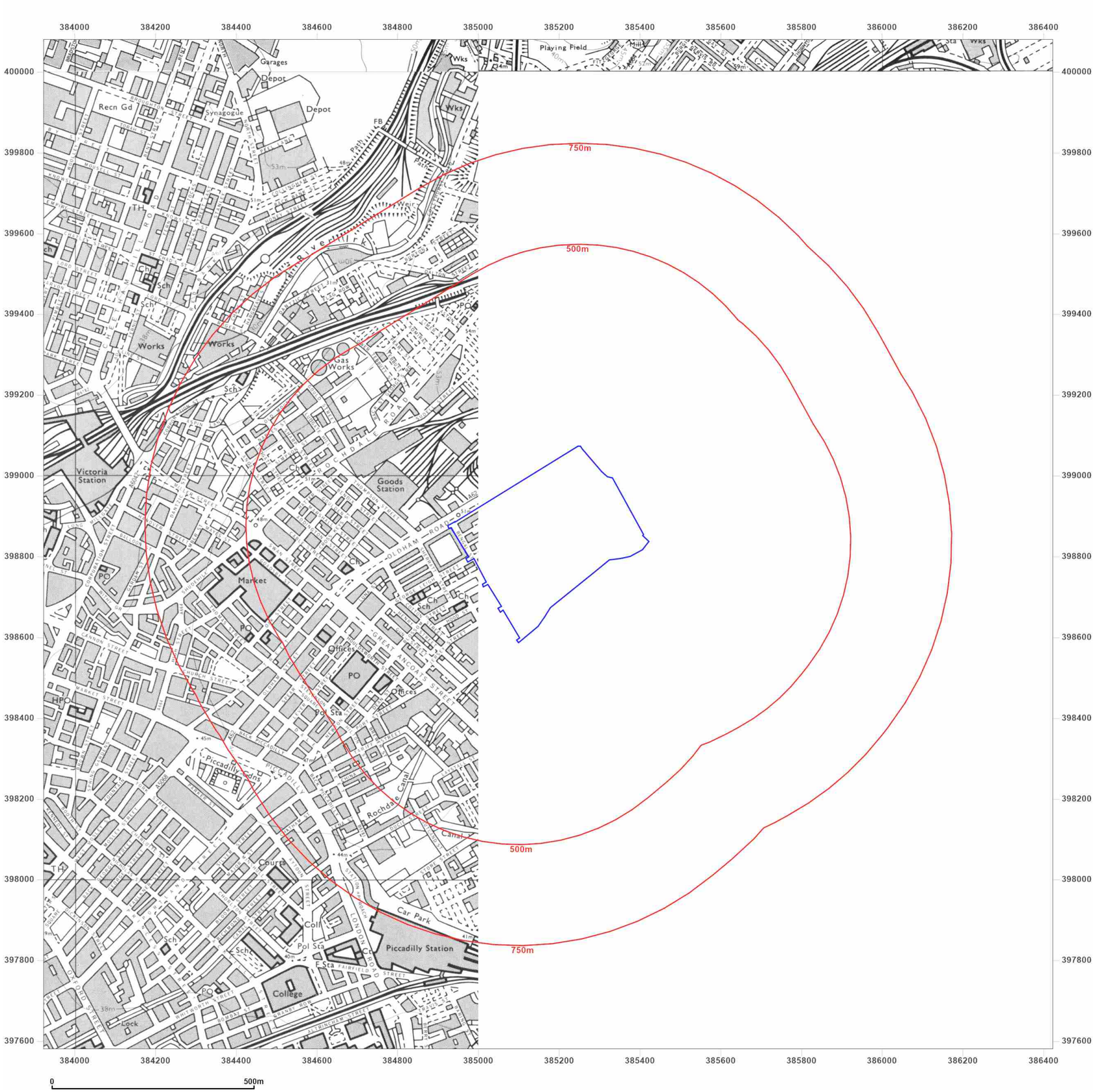
Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: National Grid

Map date: **1972-1977**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1975
Revised 1977
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1975
Revised 1975
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1971
Revised 1972
Edition N/A
Copyright 1972
Levelled 1972

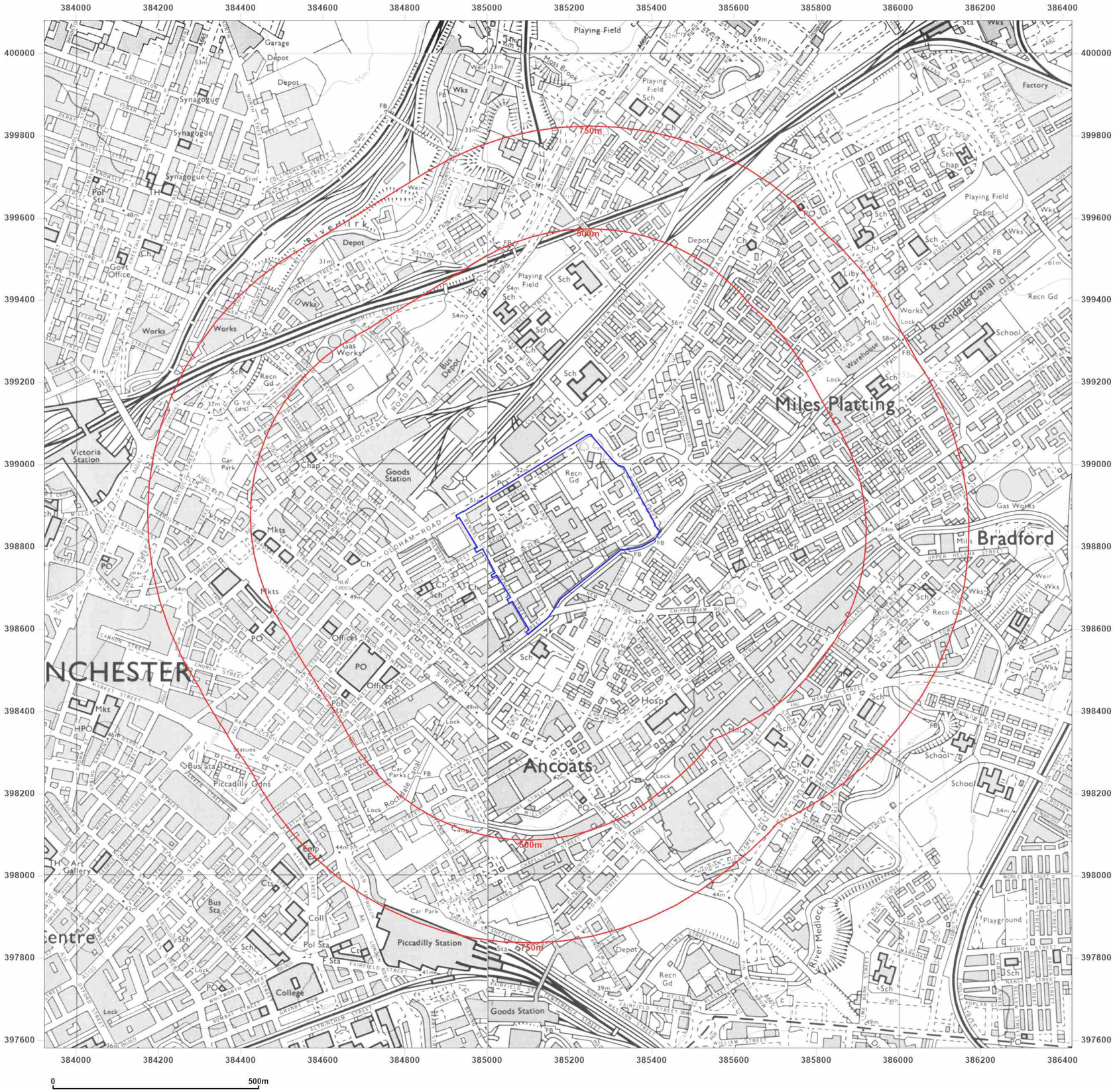
Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: National Grid

Map date: **1980-1985**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

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

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

Surveyed 1976
Revised 1980
Edition N/A
Copyright 1980
Levelled 1976

Surveyed 1976
Revised 1980
Edition N/A
Copyright 1981
Levelled 1976

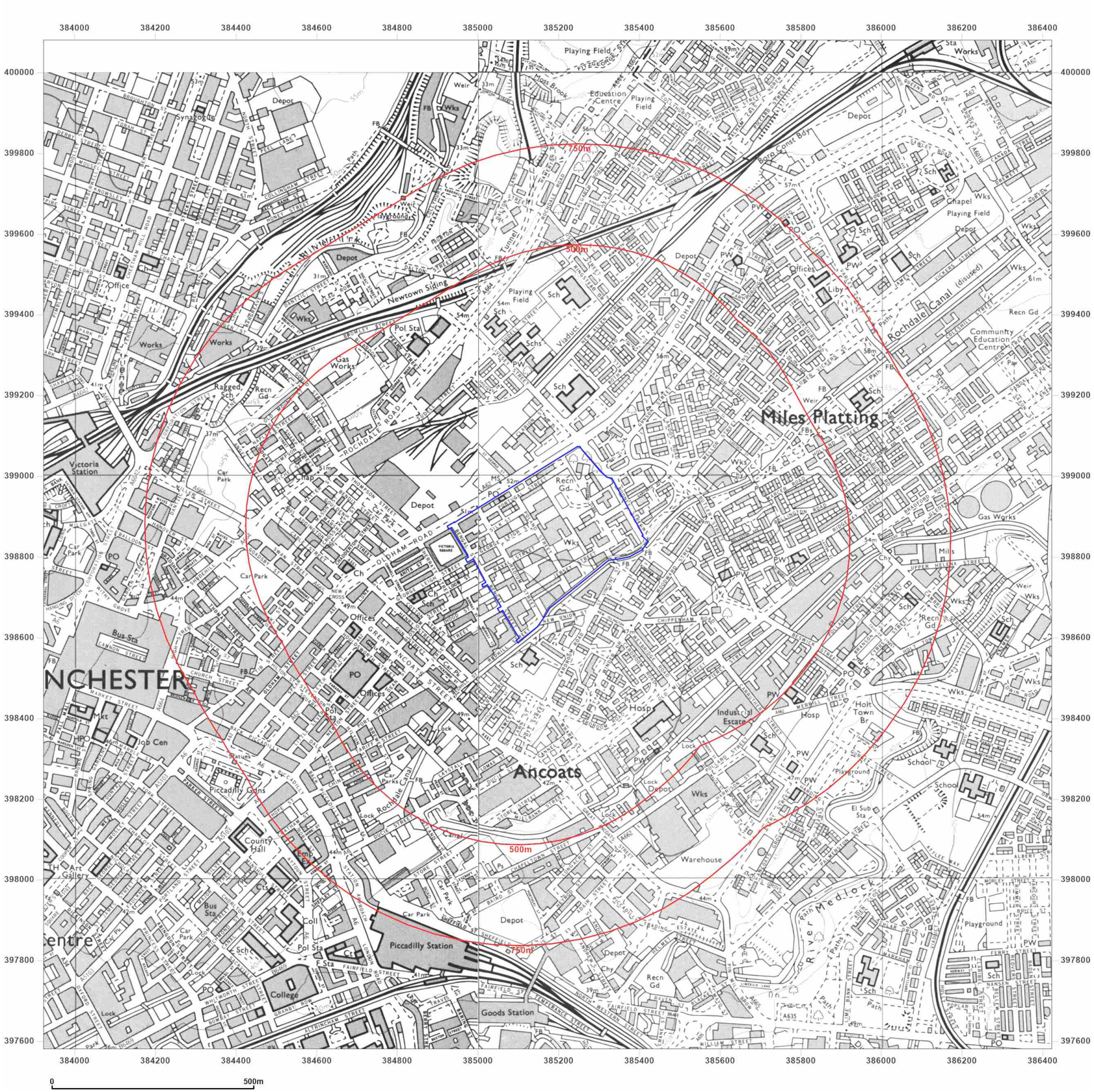
Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: National Grid

Map date: **1985-1988**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

Surveyed 1987
Revised 1988
Edition N/A
Copyright N/A
Levelled N/A

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

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

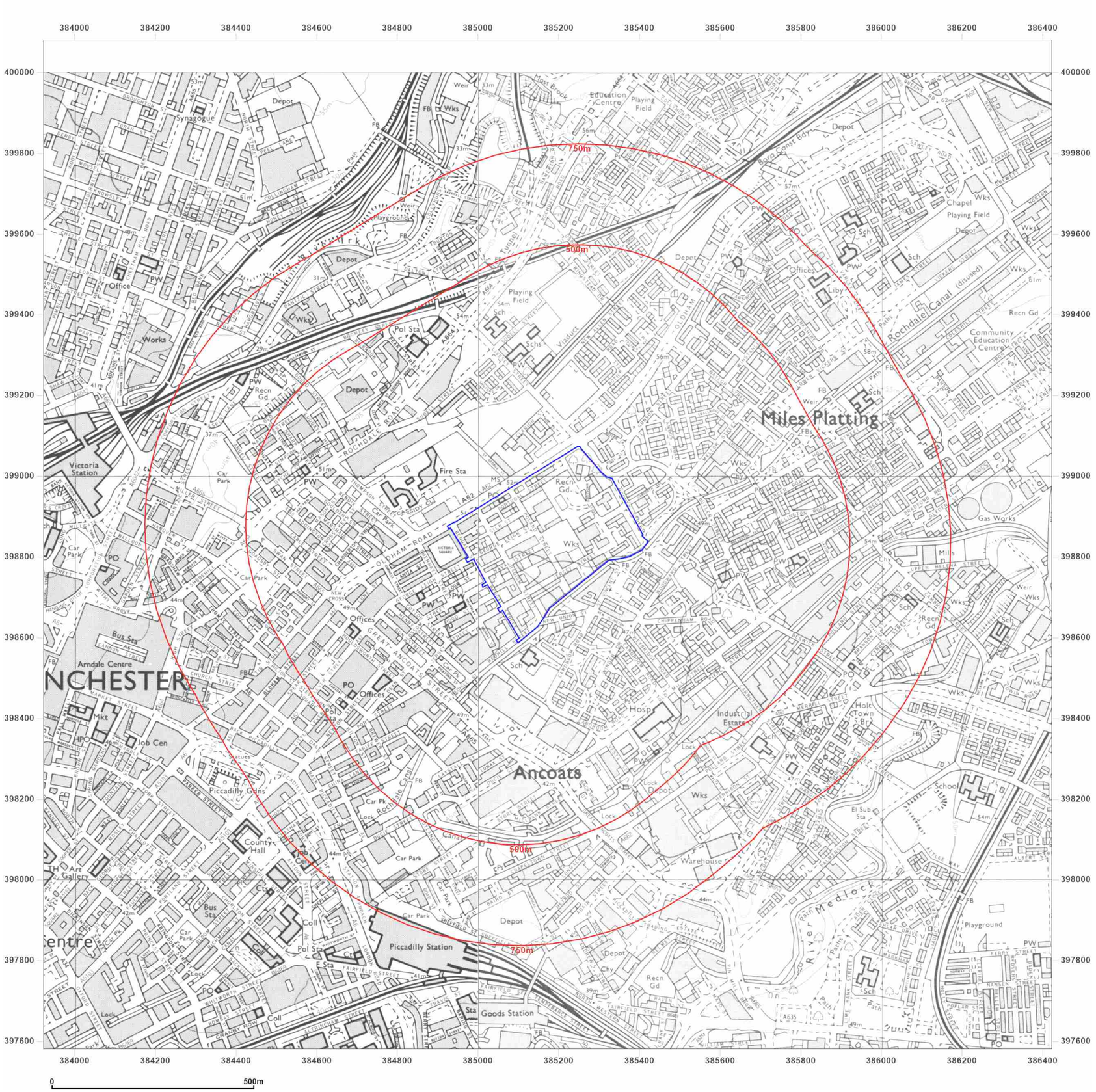
Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: National Grid

Map date: **1988-1991**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

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

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

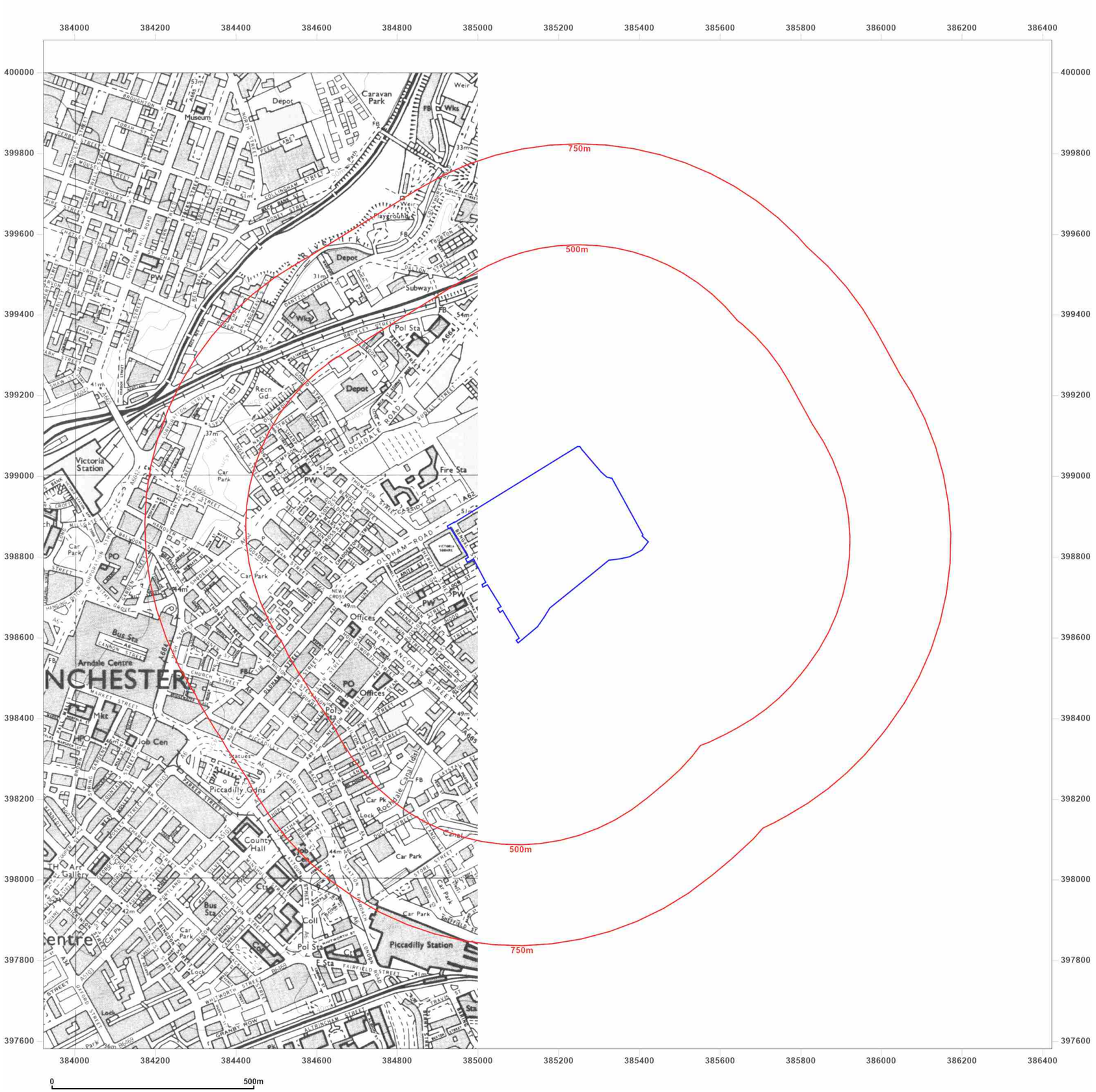
Powered by

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

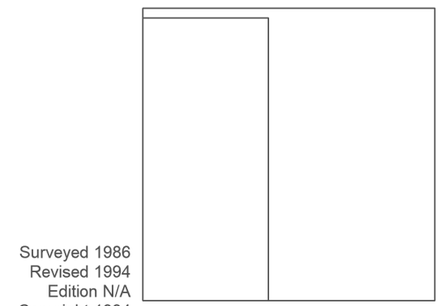
Map Name: National Grid

Map date: **1994**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S



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

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2001

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2010

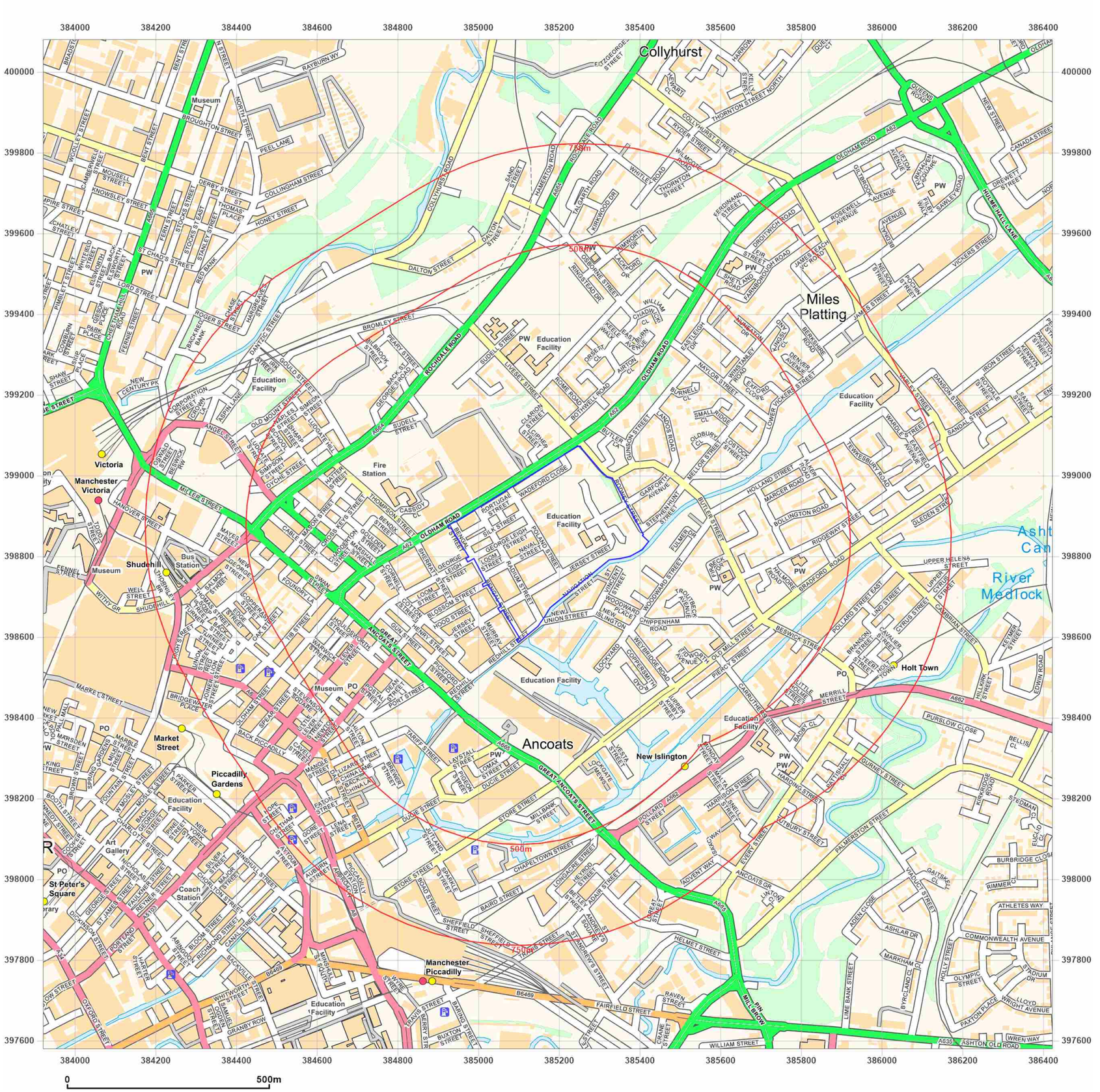
Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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



Groundsure INSIGHTS

Site Details:

23, RADIUM STREET,
MANCHESTER, M4 6AY

Client Ref: 000870
Report Ref: GS-8574591
Grid Ref: 385172, 398830

Map Name: National Grid

Map date: **2022**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

2022

Powered by OS

Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 08 March 2022

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

APPENDIX X
COAL AUTHORITY REPORT AND MINE ABANDONMENT PLANS

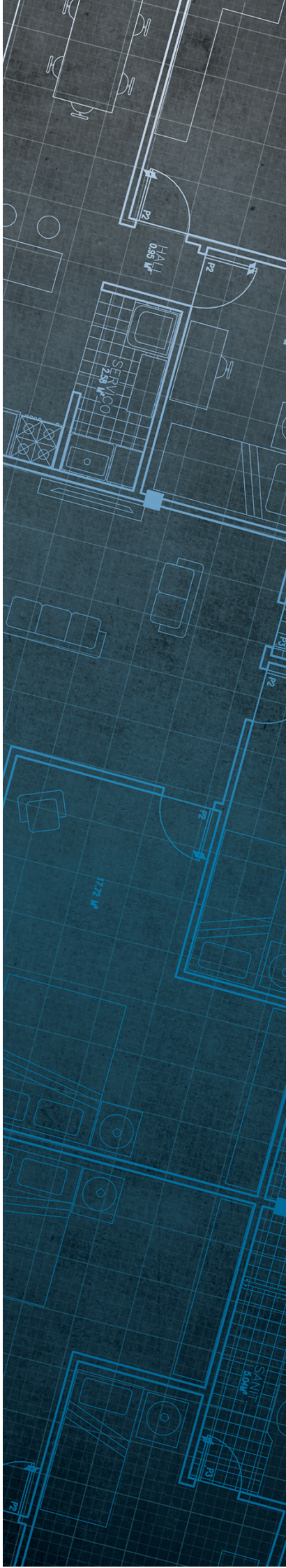
The Coal Authority

Consultants

Coal Mining Report

23, Radium Street, Manchester, M4
6ay
Greater Manchester

Date of enquiry:	**16 March 2022**
Date enquiry received:	**16 March 2022**
Issue date:	**16 March 2022**
Our reference:	**51002984761001**
Your reference:	**GS-8599385**



Consultants
Coal Mining Report

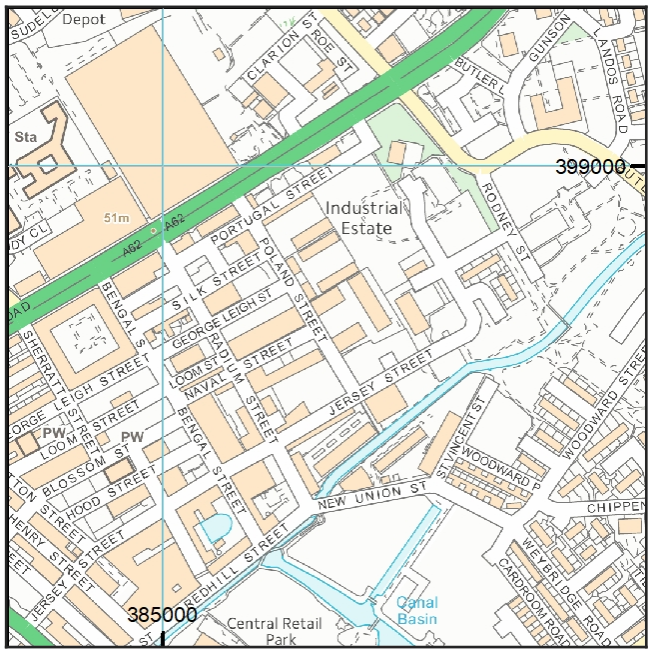
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GROUNDSURE LIMITED

Enquiry address

23, Radium Street, Manchester, M4 6ay
Greater Manchester



Approximate position of property

Map data

Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2018. All rights reserved.

Ordnance Survey Licence number: 100020315

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

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

Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
unnamed	BRADFORD FOUR FEET	Coal	35CT	293	South-East	18.4	South-West	120	1900
unnamed	PARKER	Coal	35BQ	617	North	22.5	South	80	1935
unnamed	PARKER	Coal	35BO	681	East	18.0	South-West	80	1935
unnamed	ROGER	Coal	35AZ	780	North-East	20.8	South-West	180	1946
unnamed	CROMBOUKE	Coal	359F	788	North-East	21.0	South-West	120	1924
unnamed	ROGER	Coal	35B2	810	North	21.6	South	180	1965
unnamed	ROGER	Coal	35B0	875	North-East	19.0	South-West	180	1961
unnamed	CROMBOUKE	Coal	359E	963	North-East	16.5	South-West	120	1932
unnamed	CROMBOUKE	Coal	359K	1064	South-East	13.3	South-West	120	1947

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

2655		

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

No outcrops recorded.

Copyright © 2022 The Coal Authority

Geological faults, fissures and breaklines

Please refer to the 'Summary of findings' map (on separate sheet) for details of any geological faults, fissures or breaklines either within or intersecting the enquiry boundary.

Fault under or close to the property recorded.

Opencast mines

None recorded within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Copyright © 2022 The Coal Authority

Section 2 – Investigative or remedial activity

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

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

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

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

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

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

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

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

Copyright © 2022 The Coal Authority

Section 3 – Licensing and future mining activity

Future underground mining
None recorded.

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

Court orders
None recorded.

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

Withdrawal of support notices
The property is in an area where notices to withdraw support were given in 1955.

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

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

Copyright © 2022 The Coal Authority

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Copyright © 2022 The Coal Authority

Section 5 – Data definitions

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

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

Copyright © 2022 The Coal Authority

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

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

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

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

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

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

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

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

Copyright © 2022 The Coal Authority

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

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

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

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

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

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

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

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

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

Copyright © 2022 The Coal Authority

The Coal Authority

Summary of findings

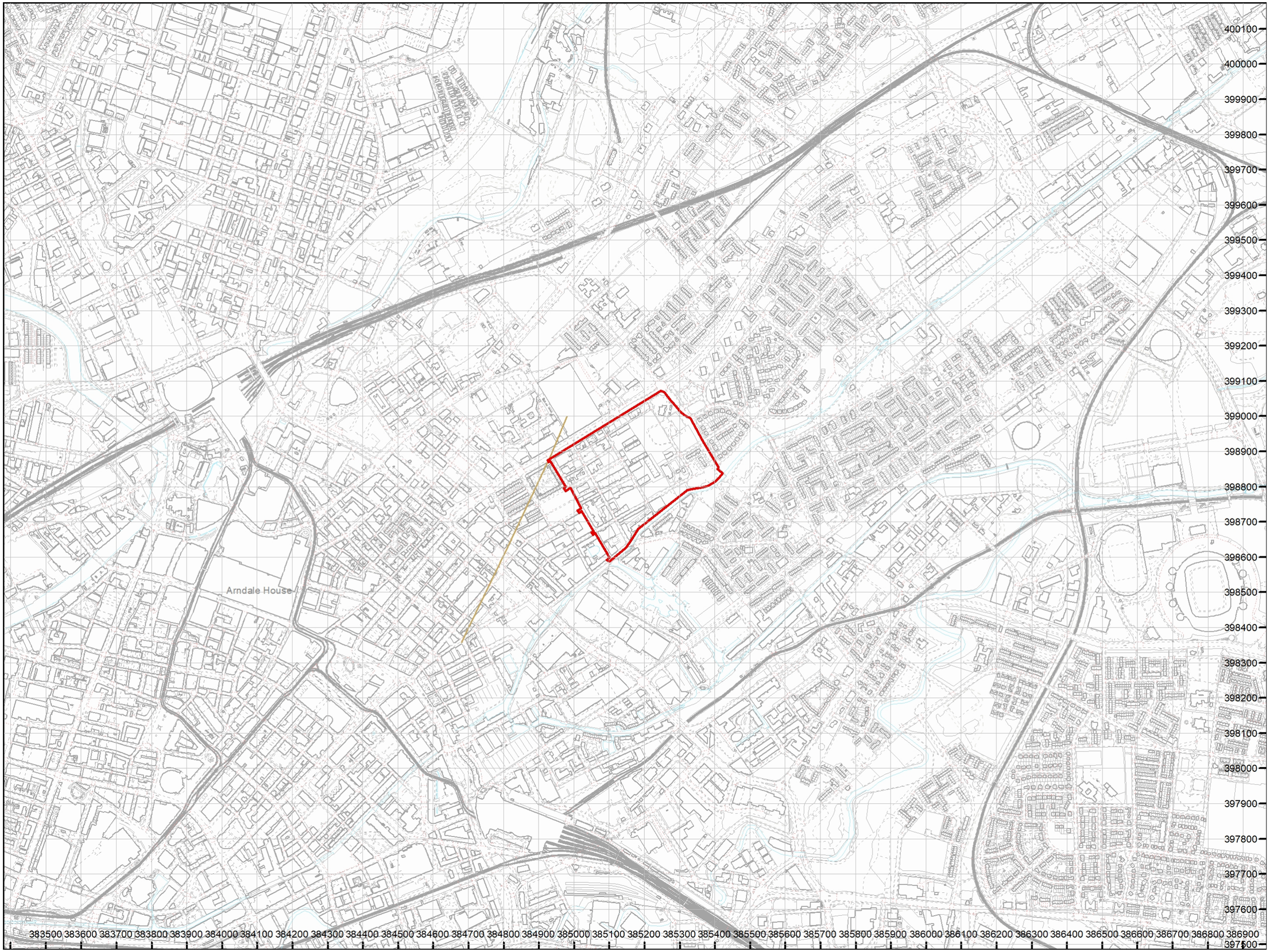
Reproduced by permission of Ordnance Survey on behalf of HMSO.
© Crown copyright and database right 2018. All rights reserved.
Ordnance Survey Licence number: 100020315
Map data

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

Key

Approximate position of the enquiry boundary shown

Geological faults



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