2-4 Whitworth Street West, Manchester

Phase 1 Geo-Environmental Investigation Report

For: Glenbrook WWS Limited, Maizelands Limited and Arringford Limited

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1.0 INTRODUCTION

This Phase 1 Geo-Environmental Investigation report has been prepared at the request of Glenbrook WWS Limited, Maizelands Limited and Arringford Limited. Instructions to proceed were received in June 2024. Phase 1 desk study work was undertaken in July 2024 and updated in November 2024.

1.1 Site Location and Description

This report pertains to a c. 0.24 Ha site located at 2-4 Whitworth Street West, Manchester, c. 70m east of Deansgate Station, at the approximate post code M1 5WY. The National Ordnance Survey Grid Reference for the centre of the site is 383516E 397517N.

The site currently comprises 2 No. vacant 2-storey and 3-storey buildings separated by Rowendale Street running north to south through the centre of the site. The site is bound by Whitworth Street West to the north, Cameron Street and a vacant site of the planning permission for 10-12 Whitworth Street West to the east, Network Rail railway tracks and associated Deansgate Station platform to the south and Bugle Street and the Rebellion Club to the west. Access to both sections of the site is off Whitworth Street West and Rowendale Street. An aerial photo of the site is included below:

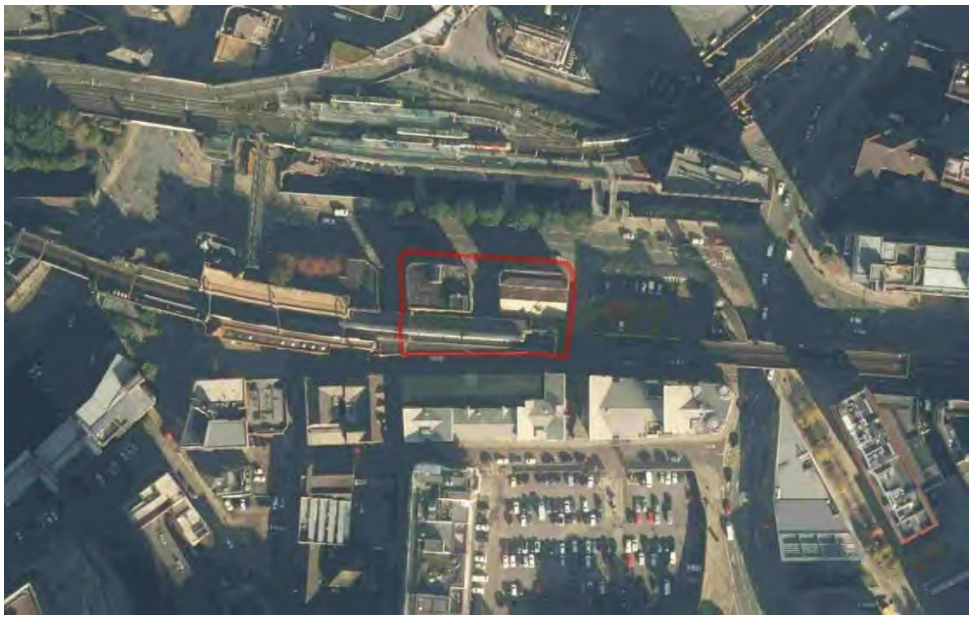


Figure 1: Aerial image of the site dated October 2022.

A site location plan is contained in Appendix 2.

Proposed Development

This Phase 1 Geo-Environmental Investigation is to be used for submission to the Local Authority as part of a planning application. It is the Client's intention to demolish the existing vacant buildings and develop the site into a high-rise combined residential and commercial 44-storey building.

A preliminary proposed site plan is included within Appendix 2 and as an extract below.

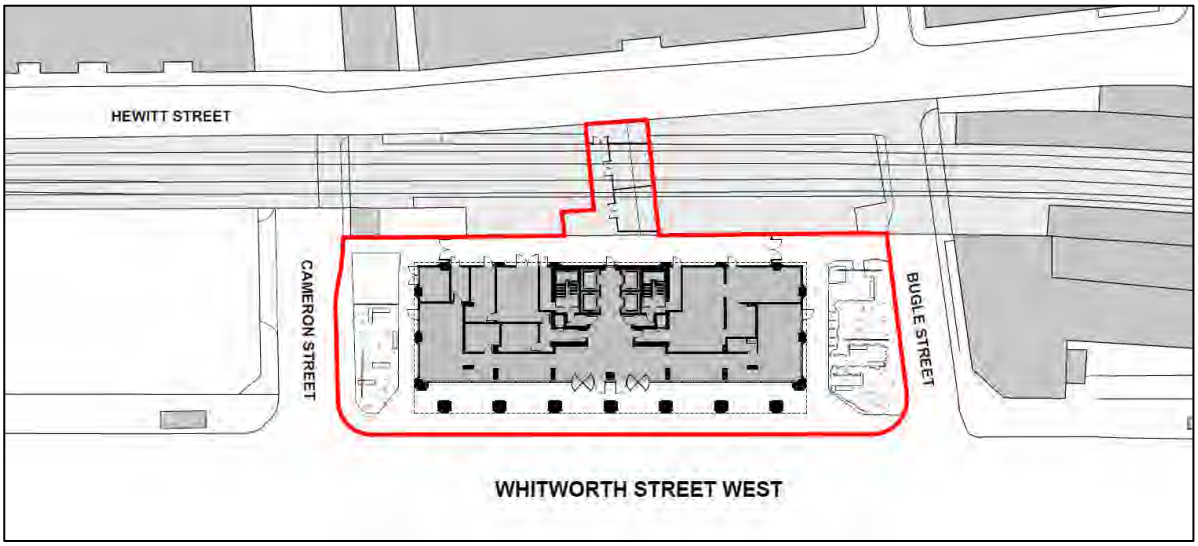


Figure 2: A proposed site plan (taken from Sheppard Robson, Site Plan Proposed 7196-SRA-ZZ-00-DR-A-2011, dated 18.11.2024).

1.2 Brief

The brief was to carry out a Phase 1 Geo-Environmental Investigation for the site based upon the proposed development outlined in Section 1.0. The site area is shown on the site location plan contained in Appendix 2.

The investigation was to include the following:

a) Assess the probable ground conditions and contaminated land conditions on and below the site based on existing and historical site uses and relevant off-site activities, including a site walkover.

b) Identify sources of contamination that may be present at the site using current contaminated land guidance and develop a conceptual site model for potential human health, ground gas and controlled waters receptors.

c) Undertake a Preliminary Risk Assessment which will determine the requirement for further environmental (contaminated land) investigation and assessment.

d) Design, on the basis of the anticipated ground conditions, appropriate ground investigation works and discuss potential development issues (i.e. sub-surface features – obstructions, unexploded ordnance (UXO), infilling, compressible ground, faulting, mineral extraction, mining and land instability).

A report was to be provided to summarise findings and to provide recommendations. The limitations of this investigation work and report are included in Appendix 1.

2.0 SCOPE OF INVESTIGATION WORKS

2.1 Walkover Survey

The site was visited on 2nd July 2024 in overcast weather conditions. Photographs were taken of the site during the walkover survey and these photographs, together with a plan indicating their location and direction, are contained in Appendix 3.

2.2 Documentation

A combined Enviro + Geo Insight report (Ref: GS-IJN-N3I-HCD-ZC5) was obtained from Groundsure, an environmental database company, which provides a list of recorded past and present activities at or adjacent to the site which could have an impact on the levels of contamination in the soils and groundwater at the site. As part of the desk study works, the below documents were obtained and examined. Unless otherwise stated, the documents are contained within the Groundsure Enviro + Geo Insight Report in Appendix 5:

a) Groundsure maps, all dated 2024 as follows:

- Historical Land Use map;
- Environmental Permits, Incidents and Registers map;
- Landfill and other Waste Sites map;
- Current Land Use map;
- Hydrogeology and Hydrology maps;
- Environment Agency / Natural Resources Wales flood maps;
- Designated Environmentally Sensitive Sites map;
- Geological maps and Ground Working map;
- Mining, Extraction & Natural Cavities map;
- Natural Ground Subsidence maps;
- Borehole Records map; and
- Railways and Tunnels map.

b) Aerial photographs of the site dated April 2019, June 2015, June 2009, and June 2000.

c) Historical Ordnance Survey maps dated between 1848 and 2024, at scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

d) The following sources were obtained and examined from the British Geological Survey. All items were copied under licence: [C18/01] British Geological Survey ©UKRI. All rights reserved:
   - The BGS 1:50,000 bedrock geological map (Sheet ref 85 dated 2010);
   - The BGS 1:50,000 bedrock and superficial geological map (Sheet ref 85 dated 2011); and
   - The BGS 1:10,560 solid and drift geological map (Sheet ref SJ89NW, dated 1976).

e) A Zetica UXO Risk Map was obtained and is included in Appendix 7.

f) A Preliminary UXO Risk Assessment Report was obtained from Brimstone Site Investigation Ltd. and is included in Appendix 7.

g) Coal Authority Consultants Mining Report (Ref: 51003432566001). The report is contained within Appendix 8.

h) Britain From Above aerial photographs, copied under Content Licence (Ref: EPW062697, EPW062700, EPW062708 and EPW062710, all dated 1939), included within Appendix 9.

i) Goad Fire Insurance Map of Manchester, Goad Old Street Map Sheet Number 336 Manchester III Jan 1928 Extension – a request of provision of the paper copy of the 366 Sheet was submitted to Goad Old Street Maps on the 2nd July 2024.

j) Manchester Historical Maps, accessed online at the following address on 1st July 2024: *https://manchester.publicprofiler.org*.

k) Old Maps Online, accessed online at the following address on the 1st and 2nd July 2024: *https://www.oldmapsonline.org*.

l) Manchester History article *Gaythorn Gas Works*, accessed online at the following address on the 2nd July 2024: *https://manchesterhistory.net/manchester/gone/gaythorn.html.*

m) Heritage Gateway records for the site, accessed online at the following link on the 2nd July 2024: *https://www.heritagegateway.org.uk.*

n) Historical records and plans made available to IGE by Kathryn Sather and Associates Heritage Conservation Consultants, supplied on 26th July 2024.

3.0 FINDINGS

3.1 Walkover Survey

The walkover survey was carried out on 2nd July 2024 during overcast weather conditions. During the walkover survey the following features were noted.

The site currently comprises 2 No. disused buildings at Whitworth Street West, a 3-storey western building and a 2-storey eastern building with associated industrial units at the rear of the building. Rowendale Street is located between the two buildings. The site is located immediately adjacent to Platform 1 of Deansgate railway station, which is raised above ground level and situated on a viaduct.



Figure 3: Photographs of the front elevations of the eastern buildings Whitworth Street West (left) and the western building (right).

Deansgate Station

The southern boundary of the site is located within c. 2m of the Network Rail Deansgate viaduct and Platform 1 which is located on the viaduct. The height of the viaduct and platform is approximately 10m and is level with the first floors of both disused buildings at Whitworth Street West. The Rowendale Street Bridge. Access to the rear of the buildings to assess the exact distance from the Network Rail assets and the ground conditions was not possible, as the area has been closed off to the public. A visual assessment of the rear area has been undertaken based on the limited view of the site from Platform 1. Liaison with Network Rail is recommended prior to the start of any intrusive works to delineate boundaries and establish any necessary ‘stand off’.

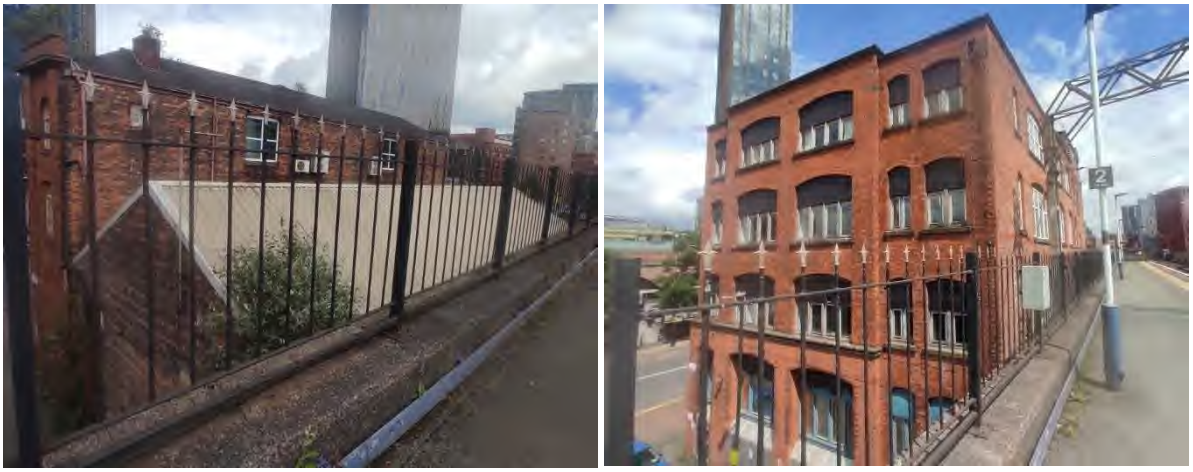


Figure 4: Photographs of the rear elevations of the eastern buildings (left) and the western building (right), as seen from Platform 1 at Deansgate station.



Figure 5: Photographs of the land between the site and Deansgate viaduct at the eastern building (left) and the western building, as seen from Platform 1 at Deansgate station.

Services

Evidence for multiple services, including underground service cupboards, street lighting, (disused) CCTV systems, parking meter machines, manholes and drainage grates, was noted across the site and the vicinity. As the site comprises private land, it is envisaged that unrecorded services are present around and on site and could be live.



Figure 6: Drain grates and manhole covers recorded adjacent to the eastern building (left) and western building (right).



Figure 7: A traffic light control and street lighting control access point in front of the eastern building at Whitworth Street West (left) and underground service cupboards located on the public footpath in from of the western building at Whitworth Street West (right).

Contamination

No evidence of contamination (i.e. spillages or leakages) or contaminative sources were identified. Possible evidence of combustion was recorded adjacent to the south-western corner of the western building near the Deansgate viaduct. Evidence for fly tipping was noted adjacent to the eastern site boundary along the eastern building; the discarded material comprised mainly plastic, metal and wood. The eastern site boundary is adjacent to another development site at 10-12 Whitworth Street, though access to that site was not available.



Figure 8: Suspected material combustion recorded near the south-western site corner of the western building (left) and fly tipping along the eastern site boundary at the eastern building (right).

Due to access restrictions, a walkover survey of the building interiors was not possible at the time of the writing of this report. Following liaison with the client, the walkover will be undertaken on 11th July 2024.

3.2 Site History

The site development history has been researched by reference to historical maps, street plans and aerial photographs. The historical maps are included in Appendix 4 to this report and the principal observations, which are divided into on-site history and off-site history, are summarised below:

3.2.1 On-Site History

Date	Site Feature
1787 – 1808	On the earliest historical map (William Green, A Plan of Manchester and Salford 1787-94 in 18 sheets) the site is recorded as pasture land situated to the south of Gaythorn Street. The site is noted to be located on a hill which slopes towards the south with a suspected hedge dividing the pastures running through the site.
1808 – 1908	Residential buildings are now constructed in place of the pasture fields with the Malkin Street running north-south through the centre of the site.
1908 - 1914	The buildings are no longer present and the site is now vacant land, with Malkin Street, now renamed Rowe Street running through the site. The Knott Mill and Deansgate railway station is now present to the south of the site.
1914 – 2024	2 No. multi-storey buildings (Avon House and Wrendal House) are now constructed on the previously vacant land. There is no significant change recorded to the site until present.

The following historical information regarding the site and the historical uses of the on-site buildings has been obtained from the Heritage Gateway website and the information shared by Kathryn Sather and Associates. The scans of historical plans of the site obtained from Kathryn Sather and Associates are included within Appendix 10.

Avon House (eastern building, 1908)

Based on the information obtained from the Heritage Gateway website, it is known that the buildings on site were both constructed by 1914. The eastern 2-storey building (Avon House) and the adjacent single-storey industrial extension were designed by Cyril Ayres Ainley and primarily used as a warehouse, garage, office spaces and workshops as part of Halley's Industrial Motors Ltd, as evident from the records at Heritage Gateway website and from the historical records made available to IGE by Kathryn Sather and Associates. It was recorded that internal alterations to the ground floor and the office spaces on the floors above were undertaken in the 1990s. It is anticipated that at least in the 2000s the building served as headquarters

for Hobs Repro Ltd, a printing and graphic design company and Union Cars (Deansgate), a taxi service.

The information obtained from Kathryn Sather and Associates confirms the usage of the building as detailed in the records from Heritage Gateway. The archive plans of the building interior and detailed foundation design were made available to IGE. The information available on the foundations of Avon House states that there is a basement present to c. 3.35m (c. 11ft) below the ground floor, c. 2.13m (c. 4ft) below the external ground level. The footings of the building are noted to extend to c. 1.68m (c. 5ft 6in) below the floor of the basement, equivalent to c. 3.83m below the external ground level. The thickness of the footings varies across the building, however, the thickest columns were measured at c. 0.95m (3ft 1in). It was also noted that the bedrock is present within c. 1.22m (c. 4ft) below the floor of the basement, equivalent to c. 3.35m (c. 11ft) below the external ground level. The railway passage width was not included on the provided plans, however it was noted to be approximately 1.50m wide during the walkover, which creates a pathway between the building and the railway arches.

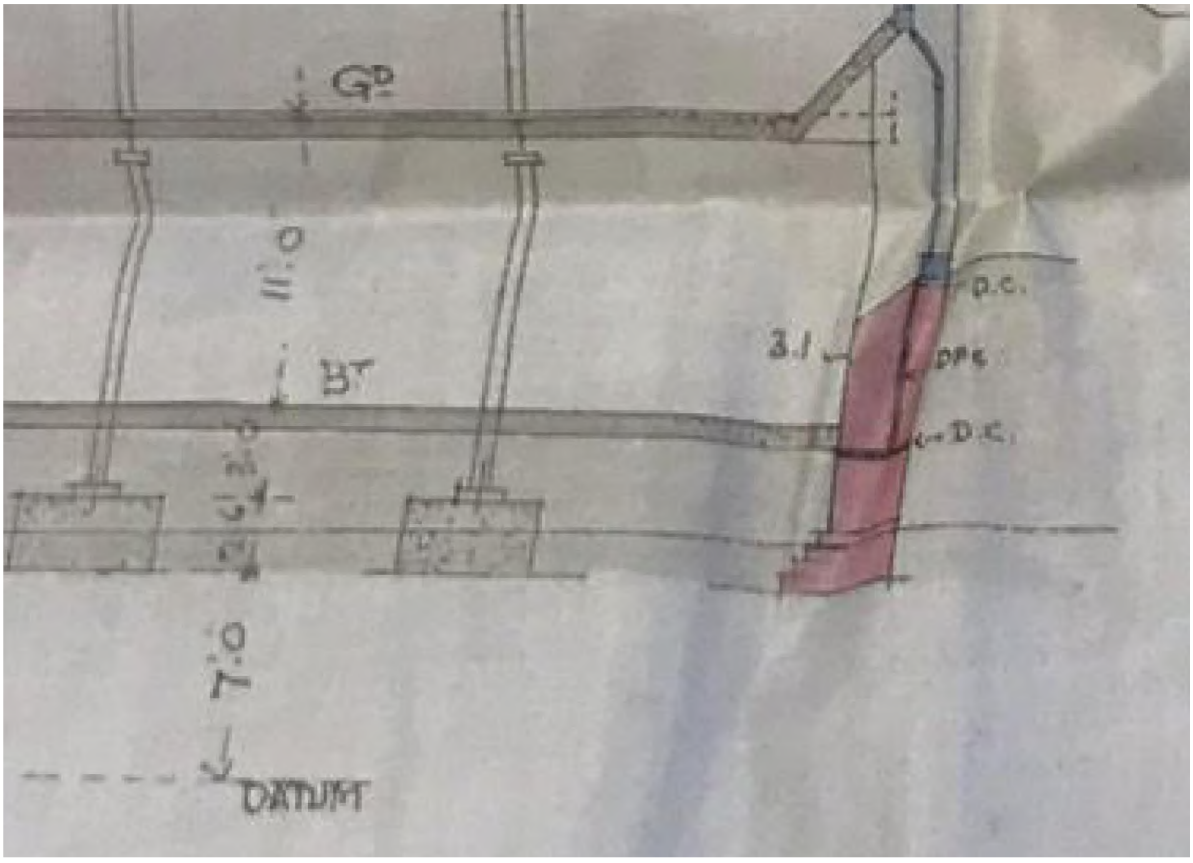


Figure 9: An extract of an architect's sketch of Avon House interior and foundation details from historical records, taken from Kathryn Sather and Associates.

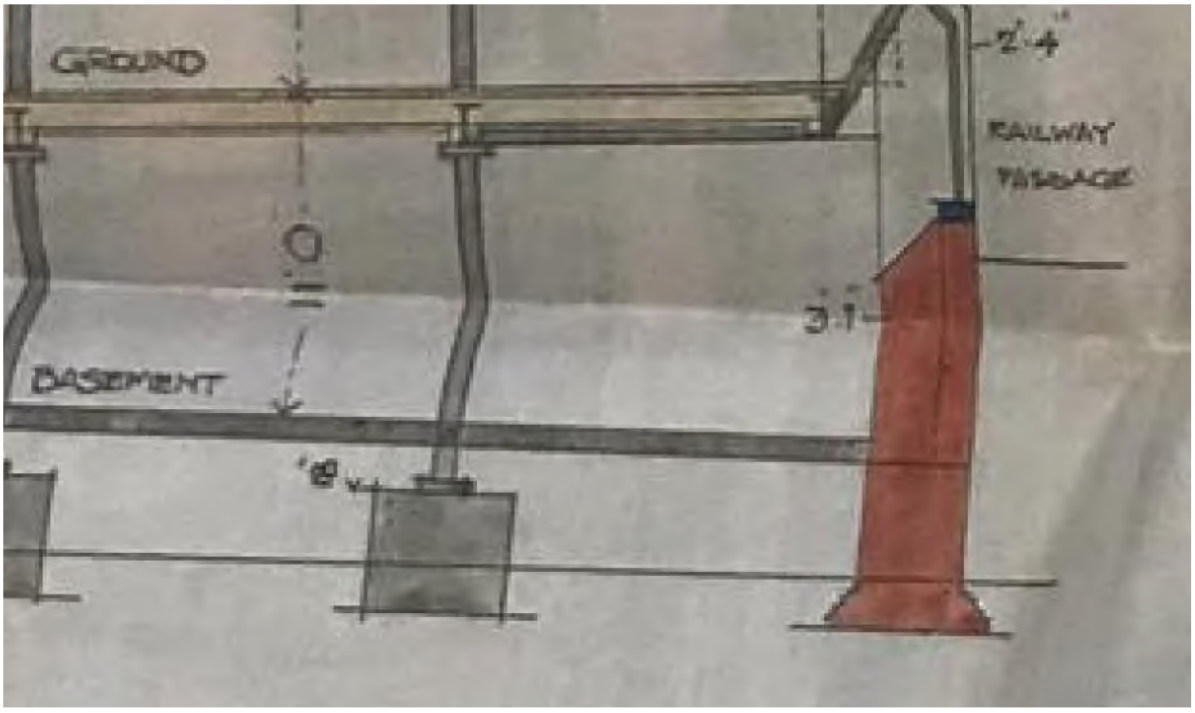


Figure 10: An extract of an architect's sketch of Avon House interior and foundation details from historical records, taken from Kathryn Sather and Associates.

Wrendal House (western building, 1914)

This building was constructed by 1914, with the Heritage Gateway website suggesting that the building was used primarily as a warehouse; a newspaper article indicated that George Henry Owen Milner, an export merchant, was using the premises by 1912. As above, it is anticipated that at least in the 2000s the building served as headquarters for Hobs Repro Ltd and Union Cars (Deansgate).

From the drawings provided by Kathryn Sather and Associates, it is possible to determine that the size of the footings varies between c. 0.76m (2ft 6in) and 1.22m (4ft) wide and c. 0.15m (12in) and c. 0.38 (15in) thick. on the two sides of the building facing Whitworth Street West in the north and the railway arches in the south. No information regarding the width of the railway passage was available from the drawings, however it is anticipated that it will not be dissimilar to the passage measured at the neighbouring Avon House (c. 1.50m wide), consistent with what was observed during the site walkover.

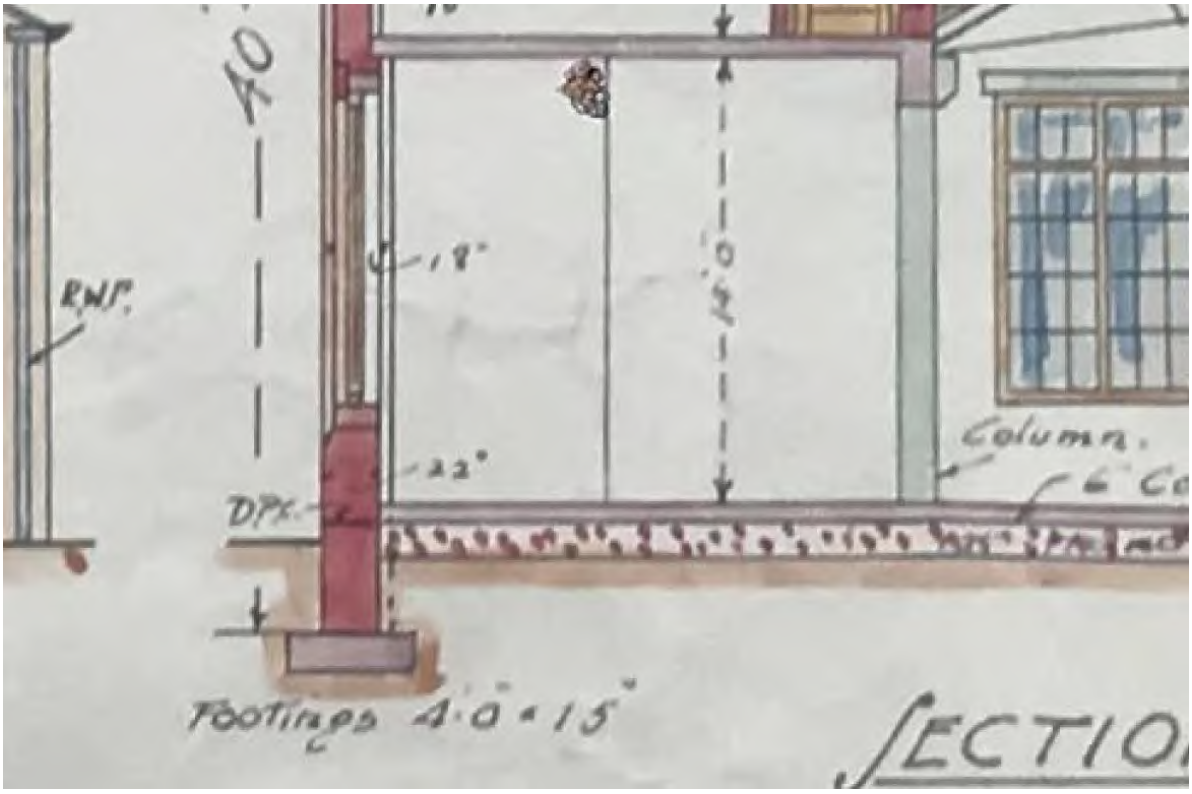


Figure 11: An extract of an architect's sketch of Wrendal House interior and foundation details from historical records, taken from Kathryn Sather and Associates.

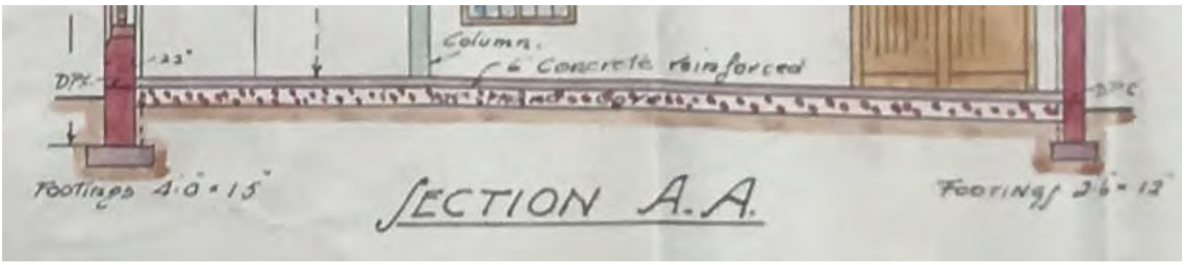


Figure 12: An extract of an architect's sketch of Wrendal House interior and foundation details from historical records, taken from Kathryn Sather and Associates.



Figure 13: An extract of an architect's sketch of Wrendal House interior and foundation details from historical records, taken from Kathryn Sather and Associates.

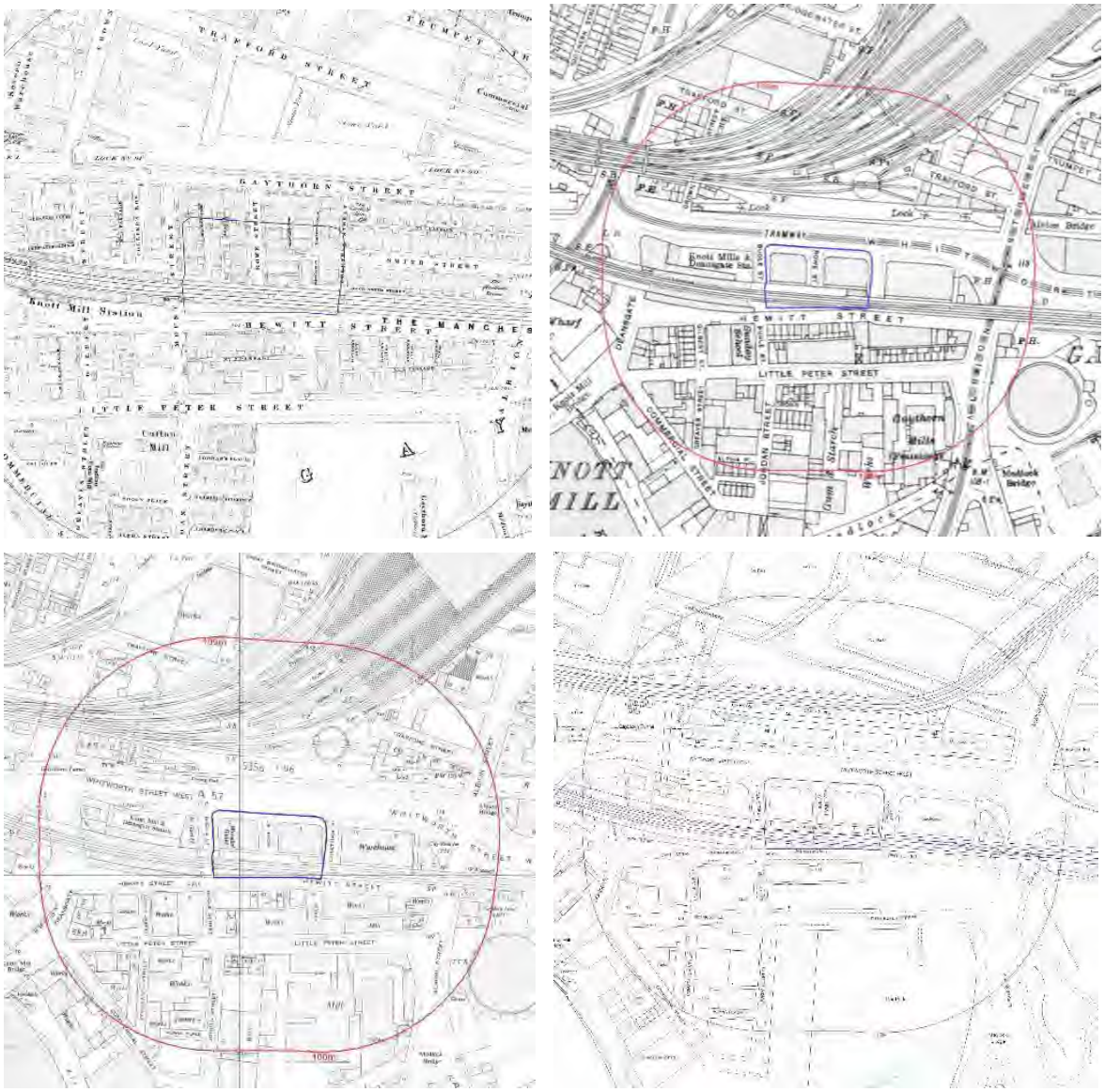


Figure 14: Extracts of the OS historical maps dated 1851 (top left),1922 (top right), 1963 (bottom left) and 2003 (bottom right).

4 No. historical aerial images of the site dated 1939 have been obtained from Britain From Above. The photographs show historical buildings on site and the surrounding environs. The site is highlighted in red on the below photograph (Ref: EPW062700). The 4 No. photographs are included within Appendix 9.

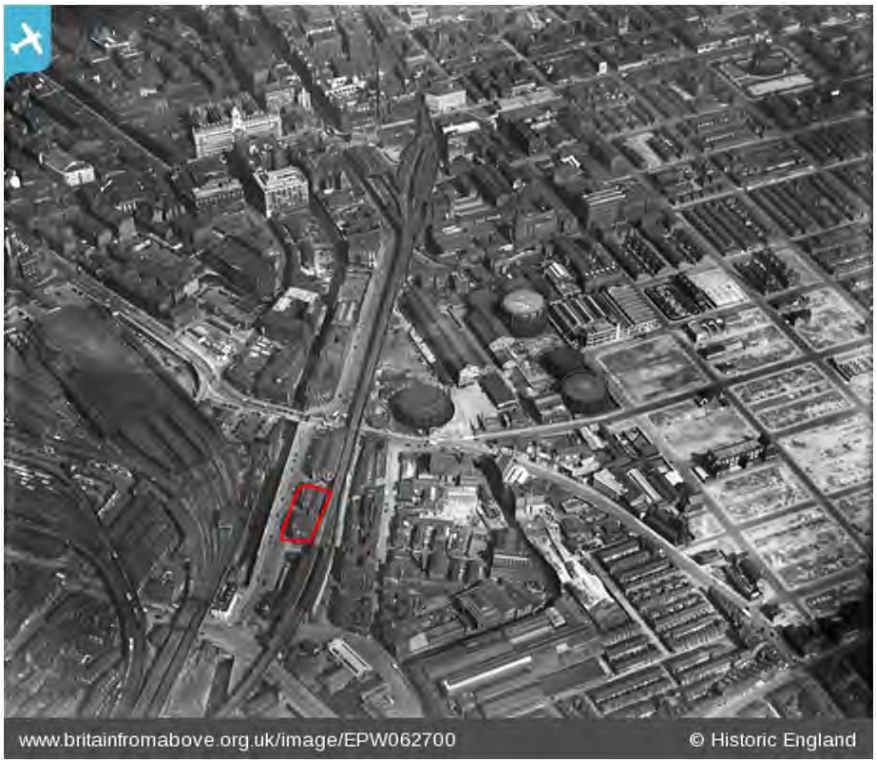


Figure 15: Britain From Above photograph including the site and its surrounding environs (Ref: EPW062700, dated 1939).

3.2.2 Off-Site History

Knott Mill (Deansgate) Railway Station (72m SE)

This railway station, located c. 72m to the south-west of the site, was opened in 1849 on the Manchester South Junction and Altrincham Railway, its ownership belonging to the London and North Western Railway and the Manchester, Sheffield and Lincolnshire Railway. The station was rebuilt from street level in 1896, when the main station building was constructed. This railway was electrified in 1931 and renamed as Deansgate in 1974. The station building, dating back to 1896, is a Grade II Listed Building.

10-12 Whitworth Street West (0m – 150m E)

The land at 10-12 Whitworth Street West was recorded as undeveloped land on the William Green 1794 Map of Manchester and Salford, likely a pasture field. It was first developed between 1818 and 1824 as workers' housing, demolished in 1899 to allow for the construction of Whitworth Street. In 1902 a warehouse building was erected to serve Tatham & Co, Iron and Steel Merchants; this building was recorded to have undergone modifications in the 1920s, 1960s and 1990s. It was primarily used as a warehouse with the upper floors being utilised as workrooms available for tenancy

(blouse factory, and apron and skirt manufacturers). The building changed ownership in 1911, then it was abandoned in 1992. It continued to be unoccupied until September 2017, when it was demolished.

Rochdale Canal Lock 89 – 91 (30m NW – 40m NE)

3 No. canal locks are present within 30m – 40m of the site, all 3 No. locks are recorded to have been constructed between 1804 and 1805. These locks connect the former Rochdale Canal Basin at Dale Street with the Bridgewater Canal at Castlefield, and all are currently operational. Lock 91 is noted to be located in the vicinity of a historical Keeper's Cottage.

Manchester Central Railway Station (50 – 150m NE)

From the information accessed at the Heritage Gateway website it is known that the Manchester Central station building was constructed between 1876 and 1879 to replace a former goods station. It began operations in 1880 under the ownership of the Cheshire Lines Committee. The station comprised 6 No. platforms and multiple sidings extending towards the south-west. It is recorded that the works on the interior of this buildings were never fully completed. The station was closed in 1969 and then converted into an exhibition centre. It is recorded to have an undercroft with intersecting tunnel vaults below ground. The site has been renovated in the 2020s, and it is currently operating as an event venue.

Gaythorn Gas Works (100m SE)

The works were constructed in 1825 by The Provincial Portable Gas Company of London. These works produced gas compressed into copper cylinders and sold to customers. Following a change in ownership in 1837, the works started to supply gas on a wider scale and became conventional gas works. The production of gas ceased in 1929 and converted into a gas distribution point. In 1937 the works were sold to Manchester Gas Directors. The works ceased to exist by the 1980s and the area was redeveloped following a significant programme of remediation works.

Manchester History States: '*Areas of concern were: five infilled gas-holders; two tar wells and contaminated deposits in the River Medlock. In all 60,000m^3 of soil were excavated and material contaminated with bitumen and asbestos was disposed of*

off-site. After the soil levels were stabilized, a 60mm site wide cover was constructed'. The area was generally used as parking spaces in the 1990s.



Figure 16: Britain From Above photograph showing the Gaythorn Gas Works and its surrounding environs (Ref: EPW062710, dated 1939).

The following additional significant industrial land uses that have not been summarised above were recorded within 250m of the site.

Date	Site Feature	Distance (m)	Direction
1955 - 2024	A Garage is recorded site-adjacent from 1955, from 1995 it is recorded as a Public House with no changes until present day.	20	W
1891 - 1893	Knott Mill Brass and Copper Works are recorded in 1891, no longer present on the historical map by 1893.	30	S
1992 – 2024	The Deansgate Castlefield tram stop is constructed in 1992 to the north of the site and it remains unchanged until present day.	30	N
1851 – 1891	Coal Yard with cranes is recorded to the north-west of the site from 1851, by 1891 it is incorporated into the Manchester Central Station.	50-100	NW
1908 - 2003	A Weaving Shed is recorded between 1851 and 1891, recorded as Gum and Starch Works by 1908 and Printing and Joinery works by 1932. The area is then noted to be Upholstery Works 1953, then recorded as Works and Factory in 1956. No longer recorded on maps after 2003.	50 - 100	S
1948 - 2003	Works and Corn Mill are recorded in 1948, the works are specified as Heating and Ventilating, Machine Tools, Wire and Cable and Sheet Metal in 1953; Corn Mill was no longer recorded by the same year. The area is recorded as Printing Works by 1973, then Works by 1985, and is no longer present by 2003.	50	SW, S and SE
1851 – 1893	A Pump is recorded from 1851, no longer present by 1893.	50	SW

1955 – 2003	Corn Mill is first recorded from 1955, then recorded as Garage and Works in 1956, no longer recorded by 2003.	50	SW
1851 – 1891	Stone Yard with weighing machines is recorded from 1851, incorporated into Manchester Central Station by 1891.	60	N
1851 – 2003	Cotton Mill and Indian Cotton Mill with a weighing machine are recorded in 1851, buildings are no longer labelled by 1891 with the exception of chimneys. The site becomes Globe Works (Window Blind) 1893, changed in 1955 into Raising and Sueding Works, Textile Factory and Clothing Works, no longer recorded by 2003.	60	SW
1851 – 1891	Union Foundry (iron) is recorded from 1851, by 1891 it is incorporated into the Manchester Central Station.	70 – 100	N
1948 – 1995	Works are recorded from 1948 to the north-east of the site, renamed as Engineering Works by 1953 and Works by 1963, they are no longer recorded by 1995.	75	NE
1955 – 2003	Printing Works are first recorded in 1955, renamed as works in 1956, they are no longer recorded by 2003.	75	SW
1851 – 1893	A Smithy is recorded between 1851 and 1893 to the south-west of the site.	90	SW
1932 - 2004	Gaythorn Tunnel is recorded from 1932 until the records from 2003. The tunnel is not recorded on the following maps, however it is anticipated that the tunnel is still located underground.	90	NW
1818 – 1888	Tannery is first recorded as an L-shaped building between 1818 and 1819, an extension to the building was noted by 1849. The building is demolished by 1888 and incorporated into the Gaythorn Gas Works.	100	SE
1851 – 1893	Commercial Mill (Cotton) is recorded from 1851, by 1891 it is incorporated into the Manchester Central Station.	100	NE
1851 – 1891	Medlock Bridge Mill (Cotton) and Gaythorn Small Warehouse are recorded adjacent to one another in 1851, by 1891 they are incorporated into the Gaythorn Gas Works.	100	SE
1851 – 1980	Gaythorn Mill (Cotton) was recorded from 1851, noted as Finishing Works by 1908, then Wire and Cable works by 1932. The building was expanded in 1948. As of 1980 the site has been a car park.	100	SE
1851 – 1891	Seven Warehouse was recorded in 1851, replaced in 1891 by railway sidings, becoming part of the Manchester Central Station.	100	NW
1851 - 1893	Trumpet Street Mill (Cotton) is recorded in 1851, by 1891 a chimney is recorded in place of the works. No longer recorded by 1891, when it was incorporated into the Manchester Central Station.	100	NW
1948 - 2024	Automobile engineering works are recorded adjacent to the Manchester Central Station, recorded as Works until 2001, converted into a car park by 2001, which it remains until present.	100	N-NW

Given the highly industrial nature of the area, numerous other mills, dye works, brick fields, engineering works, factories and works are located between 100m and 500m of the site however have not been summarised above.

3.3 Geology

3.3.1 BGS Geological Map

The BGS 1:50,000 Bedrock and Superficial Geological Maps of the area (Sheet No: 85, dated 2010 and 2011) indicate that the majority of site is underlain by superficial deposits comprising **Glaciofluvial Sheet Deposits** which typically comprise sand and gravel, locally with lenses of silt, clay or organic material. No superficial deposits are recorded on the map in the north-western site corner. The superficial deposits are underlain by bedrock of the **Chester Formation** comprising sandstone. A buried channel or valley margin is recorded 56m to the north-west of the site. The underlying bedrock is noted to be dipping to the south-west on the BGS 1:10,000 geological map (Ref: SJ89NW, dated 1976).



Figure 17: Extracts of the BGS 1:10,000 Superficial (left) and Bedrock (right) Geological Maps. Light blue = Glacial Till, Pink = Glaciofluvial Sheet Deposits, Grey = Chester Formation, Black dashed line = buried channel or valley margin

The BGS geological maps records **Made Ground** below the entire extent of the site, anticipated to be related to the construction of the Deansgate railways and the Manchester Central railway.



Figure 18: Extract showing the location of the Made Ground (Dark purple) on site and in the vicinity.

3.3.2 BGS Borehole Logs

There were no available BGS boreholes on site. There were 8 No. BGS boreholes available in close proximity to the site within a comparable geological setting. The pertinent information from the borehole logs is outlined below:

BGS Borehole Reference: SJ89NW116 – SJ89NW120

These boreholes are located approximately c. 20m – 45m west of the site and were excavated to depths of between 0.65m and 4.00m bgl at an unknown date. The logs recorded the following pertinent information:

- **Made Ground** comprising sand and clay with stones to a depth of between 3.66m and 4.57m bgl, underlain by:
- **Chester Formation** comprising sand and gravel (ballast) and sandstone to a depth of between 11.28m and 14.02m bgl.

A request to access confidential boreholes (Ref: SJ89NW604-5, SJ89NW4080-6 and SJ89NW4088) has been made to BGS by IGE Consulting on the 1st July 2024. The records have not yet been made available to IGE at the time of writing.

3.3.3 BGS Geohazards

Data Type	Details
Ground Stability Data	• The Potential for Shrinking or Swelling Clay Ground Stability Hazards is regarded as negligible. • The Potential for Running Sand Ground Stability Hazards is regarded as very low. • The Potential for Compressible Ground Stability Hazards is regarded as very low. • The Potential for Collapsible Ground Stability Hazards is regarded as very low. • The Potential for Landslide Ground Stability Hazards is regarded as very low. • The Potential for Dissolution Ground Stability Hazards is regarded as negligible.

3.3.4 BGS Estimated Soil Chemistry

The BGS have estimated that the superficial deposits across the site naturally comprise the following determinands:

- Arsenic: 15mg/kg – 25mg/kg
- Cadmium: 1.8mg/kg
- Chromium: 60mg/kg – 90mg/kg
- Nickel: 30mg/kg – 45mg/kg
- Lead: 100mg/kg – 200mg/kg
- Bioaccesible Lead: 60mg/kg – 120mg/kg

3.4 Mining

3.4.1 Coal Mining

The site lies within a Coal Authority Coal Mining Reporting Area. However, it does not lie within a Development High Risk Area. No mine entries, shafts, coal outcrops or collieries were recorded within at least 1000m of the site. The Groundsure Enviro + Geo Insight report indicates that a JPB coal mining area has been identified on site. Furthermore, the Groundsure report recorded an area which could be affected by past, current or future coal mining.

Coal Authority Consultants Coal Mining Report

A Consultant's Coal Mining Report was obtained from the Coal Authority (Ref: 51003432566001) which indicates that no coal outcrops are recorded on site.

The Coal Authority report also states that:

- No past underground mining is recorded beneath the site;
- No probable unrecorded shallow workings are anticipated beneath the site;
- No spine roadways are recorded at shallow depth;
- No mine entries are recorded on site or within 100m of the boundary. No abandoned mine plans are available for the site;
- No outcrops, faults, fissures or break lines are recorded on site;
- No open cast mines are recorded within 500m of the site;
- No Coal Authority managed tips are recorded within 500m of the site;
- No coal related site investigations are recorded within 500m of the site;
- No remediated sites are recorded within 50m of the site;
- The Coal Authority has not received a damage notice of claim for the subject property, or any property within 50m of the site since 31st October 1994;
- There are no current Stop Notices 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 preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991;
- No mine gas is recorded within 500m of the site boundary;
- No mine water treatment schemes are recorded within 500m of the site boundary;
- No future underground mining licenses are recorded;
- No court orders are recorded; and
- No notices have been given that the land is at risk of subsidence.

The Coal Authority Consultants Coal Mining Report can be found in Appendix 8.

3.4.2 Non-Coal Mining

The Groundsure Enviro + Geo Insight report indicates that no non-coal mining has been undertaken on site.

3.4.3 Salt Mining / Brine Extraction

The site does not lie within the Cheshire Brine Subsidence Compensation Board Compensation District or within a Consultation Area.

3.4.4 Historical Surface Excavations

The Groundsure Enviro + Geo Insight report identified that no historical surface excavations were present on site, however, 21 No. historical surface excavation features, including canals, quays and ponds, were identified in the vicinity of the site, as seen on the below extract of the Section 18. Based on the abundance of historical surface excavations in the vicinity of the site, their presence below site cannot be discounted.



Figure 19: An extract of the Mining and Ground Workings map from Section 18 of the Groundsure Enviro + Geo Insight report.

3.4.5 Mineral Safeguarding

Where mineral resources are present the mineral planning authority may designate areas as Mineral Safeguarding Areas (MSA) and Mineral Consultation Areas (MCA). These are aimed to safeguard mineral resource areas from unnecessary sterilization by non-mineral development. The BGS Mineral Resources maps designate the areas of potential mineral resources and where active / lapsed planning permission was granted for mineral extraction.

The BGS Mineral Resources Map for Greater Manchester indicates that the site does lies within an area designated as containing mineral resources related to Glaciofluvial deposits and shallow coal. However, the site does not lie within a Mineral Safeguarding Zone.

3.5 Infrastructure

3.5.1 Railway Infrastructure

The following information relating to the railway infrastructure obtained from the Groundsure Enviro + Geo Insight report, published information and the walkover survey can be summarised as follows:

Data Type	Details
Historical railway and tunnel features	• 6 No. historical railway and tunnel features were recorded on site and pertain to railway sidings and railways. • A further 72 No. historical railway and tunnel features were recorded within 250m of the site, including railway sidings, railways and tunnels.
Historical railways	• No historical railways were recorded on site. • 3 No. historical railways were recorded within 250m of the site, all have been dismantled.
Railways	• 3 No. railways were recorded on site, 2 No. relate to Manchester and Ordsall Lane Junction branch, 1 No. is an unknown multi-track railway. • A further 24 No. railways were recorded within 250m of the site, including Manchester and Ordsall Lane Junction branch, Manchester and Allerton Junction line, light rails, unknown multi-tracks, and unspecified rails.

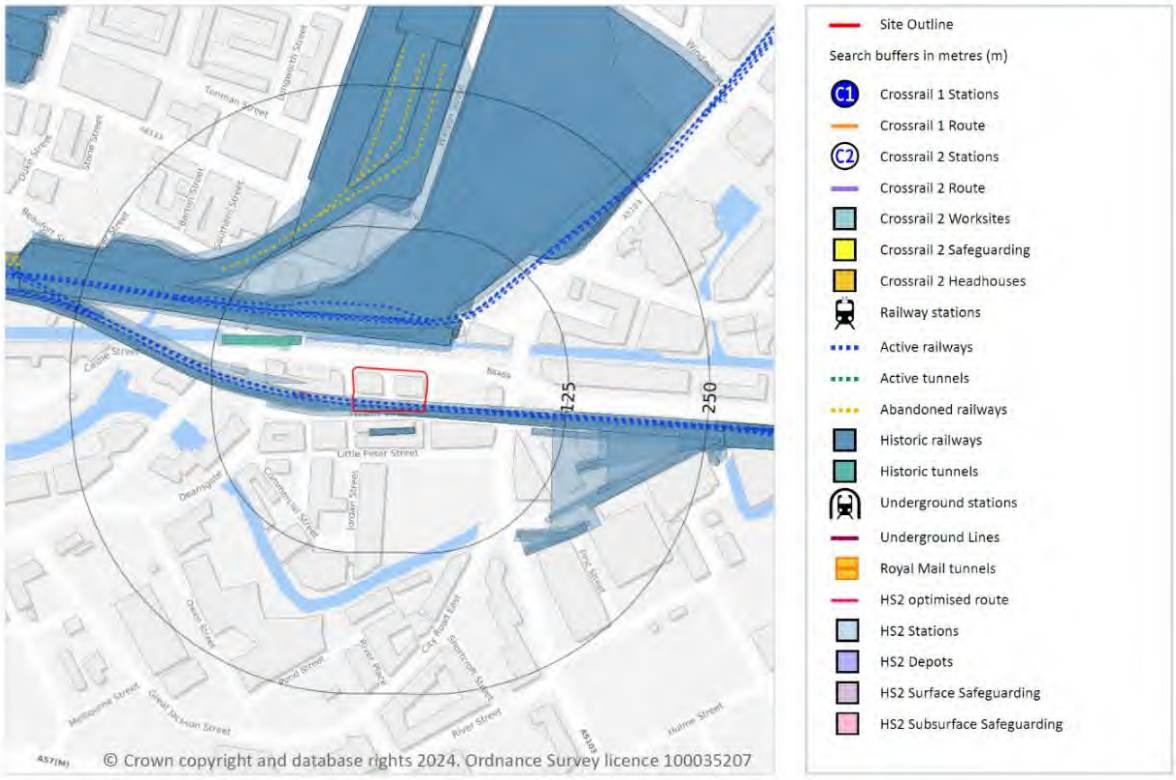


Figure 20: An extract of the Railway Infrastructure and Projects map from Section 22 of the Groundsure Enviro + Geo Insight report.

3.5.2 Designations

The following information relating to visual and cultural designations obtained from the Groundsure Enviro + Geo Insight report, published information and the walkover survey can be summarised as follows:

Data Type	Details
Listed buildings	• No listed buildings were recorded on site. • 19 No. listed buildings were recorded within 250m of the site. The buildings located within 150m of the site include Rochdale Canal Lock No. 90 and 91, Rochdale Canal Lock Keepers Cottage at Lock 91, Deansgate Station, 13-17 Albion Street, Boundary Stone on Knott Mill Bridge, Manchester South Junction And Altrincham Railway Viaduct, Floodgate On East Side Of Knott Mill Bridge.
Conservation areas	• No conservation areas were recorded on site. • 1 No. conservation area was recorded within 101m to the north-west of the site and relates to the area of Castlefield.
Scheduled Ancient Monuments	• No Scheduled Ancient Monuments were recorded on site. • 1 No. Scheduled Ancient Monument was recorded within 220m to the west of the site and relates to the remains of the eastern wall of the Roman fort.

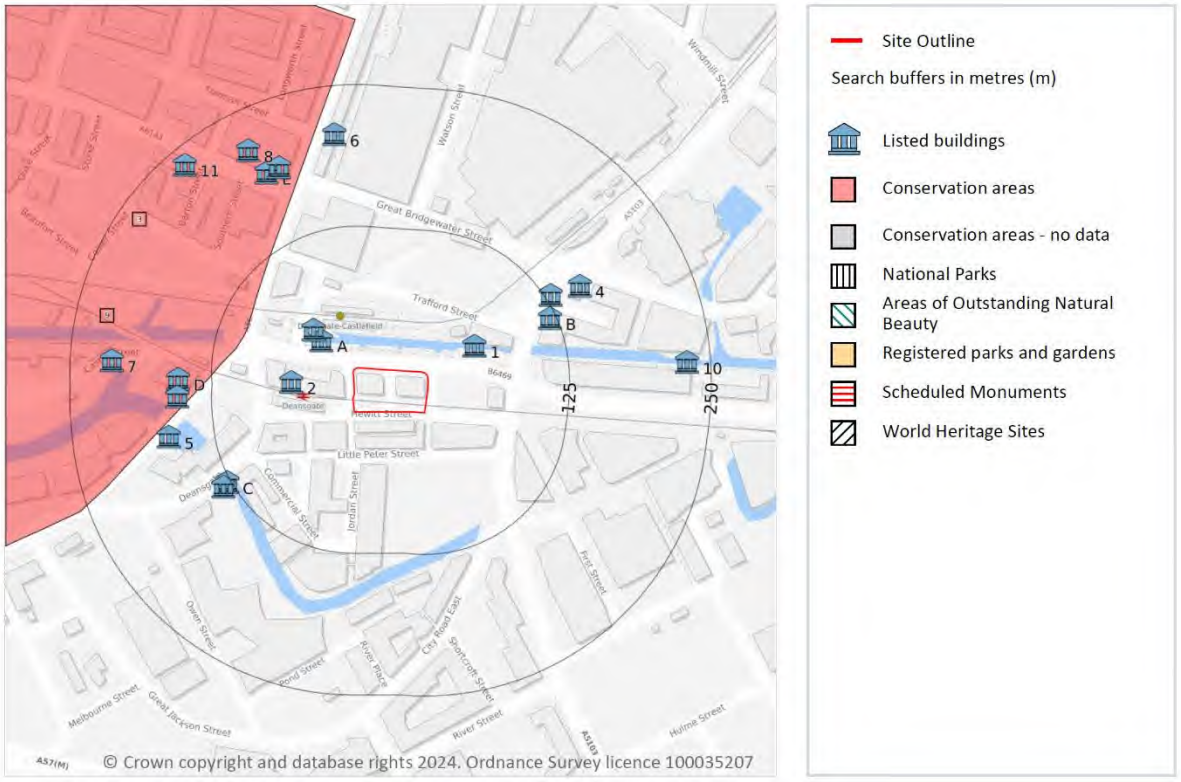


Figure 21: An extract of the Visual and Cultural Designations map from Section 11 of the Groundsure Enviro + Geo Insight report.

3.6 Hydrology and Hydrogeology

Environmental data relevant to the site and its immediately surrounding area has been obtained from sources available in the public domain. In addition, an environmental report was obtained from Groundsure. The Enviro + Geo Insight report and associated maps that have been inspected are presented in Appendix 5 and the principal observations in relation to waters and flooding can be summarised as follows:

Data Type	Details
Flooding	• With respect to rivers and seas, the site lies within Flood Zone 1. • Flood Zone 2 was recorded within 29m to the south of the site, anticipated to be related to the River Medlock. • With respect to the flooding risk from surface water, the site is at negligible risk. The highest risk recorded within 50m of the site is a 1 in 100 year event with the floodwater depth of greater than 1.00m. • The groundwater flooding risk on site is deemed to be moderate, and moderate to high within 50m of the site. • A BGS groundwater vulnerability was recorded on site; the risk was identified as high for the productive secondary superficial and principal bedrock aquifers.

Surface Water Features	• There are no surface water features recorded on site. • The nearest surface water features are the Rochdale Canal, located within 30m to the north of the site and the River Medlock, located within 150m to the south of the site. • There are no Water Network features recorded on site. • There are 21 No. Water Network features recorded within 250m of the site, including canals, lock or flight of locks and inland rivers. • Great Hey stream was historically present in the north western site section, which is now culverted beneath the site • 1 No. Water Framework Directive Surface Water Body Catchment was recorded on site, related to the River Medlock. • 2 No. Water Framework Directive Surface Water Bodies, pertaining to the Rochdale Canal and the River Medlock. • 1 No. Water Framework Directive Groundwater Body was recorded on site, pertaining to the Manchester and East Cheshire Permo-Triassic sandstone aquifers.
Surface Water Abstractions	• There are no licensed surface water abstractions located on site. • There are 2 No. licensed surface water abstractions located within 2000m of the site, both are historical and relate to the abstraction of water from the River Irwell at Irwell Works, Ordsall Lane, Salford for general cooling.
Superficial Aquifer	• The site is underlain by superficial deposits classified as a Secondary A Aquifer - *Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.*
Bedrock Aquifer	• The underlying bedrock is classified as a Principal Aquifer - *Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale.*
Groundwater Abstractions	• There are no recorded groundwater abstraction licenses located on site. • There are 61 No. groundwater abstraction licenses located within 2000m of the site, the majority are historical. The nearest active license is located 752m to the south-east of the site and pertains to the abstraction of water from a borehole at George Street, Manchester for general cooling.
Source Protection Zones	• There are no recorded Source Protection Zones recorded on site. • There is 1 No. Source Protection Zone recorded or within 182m to the east of the site, pertaining to a Zone 3.
Nitrate Vulnerable Zones	• There are no Nitrate Vulnerable Zones recorded on site. • 3 No. Nitrate Vulnerable Zones were recorded or within 500m of the site, related to River Irk (Moston Brook to River Irwell) NVZ and Irwell / Man. Ship Canal (Kearsley to Irlam Locks) NVZ.
Licensed Discharge Consents	• There are no licensed discharge consents to controlled waters located on site. • There are 24 No. recorded licensed discharge consents to controlled waters located within 500m of the site. 20 No. have been revoked. The nearest active consent is located within 138m to the south-west of the site and relates to the discharge of overflow sewage to the River Medlock.
Pollution Incidents to Controlled Waters	• There are no recorded pollution incidents to controlled waters located on site or within 500m of the site.

3.7 Hazardous Installations, Landfill and Waste

The following information relating to hazardous installations, landfill and waste obtained from the Groundsure Enviro + Geo Insight report, published information and the walkover survey can be summarised as follows:

Data Type	Details
Environment Agency Recorded Active Landfill Sites	• There are no Environment Agency recorded landfill sites located on-site or within 500m of the site.
Environment Agency Recorded Historical Landfill Sites	• There are no Environment Agency recorded historical landfill sites located on-site or within 500m of the site.
BGS Recorded Historical Landfill Sites	• There are no BGS recorded landfill sites located on-site or within 500m of the site.
Local Authority Recorded Landfill Sites	• There are no Local Authority recorded historical landfill sites located on-site or within 500m of the site.
Local Authority Pollution Prevention and Control (Part A(1), A(2) and Part B Activities and Enforcements)	• There are no Local Authority Part A2 or Part B Activities or Enforcements located on site. • There are 4 No. Local Authority Part A2 or Part B Activity located within 500m of the site, all are historical. The nearest relates to a historical Part B permit for respraying of road vehicles at Tom Garner Motors, Chester Road, Manchester. • There are 2 No. Environment Agency recorded Part A1 Activities recorded within 500m of the site, pertaining to a combustion plant at Manchester Heat Network Tradeco Ltd, effective as of November 2023.
Registered Radioactive Substances	• There are no Registered Radioactive Substances recorded on-site or within 500m of the site.
Registered Waste Treatment, Transfer or Disposal Sites	• There are no waste exemption recorded on site. • There are 69 No. waste exemptions recorded within 500m of the site, the nearest is located 61m east and pertains to the use of waste in construction. • There are no licensed waste sites recorded on site. • There is 1 No. licensed waste site recorded within 467m to the east of the site, pertaining to Terra Vac (UK) Ltd at Little Ireland Phase B, Great Marlborough Street, Manchester. • There are no historical waste sites recorded on site. • There are 16 No waste sites recorded within 500m of the site, including scrap yards, a refuse destructor, recycling centre, and waste paper works.
Industrial Land Use	• There are no current industrial land uses recorded on site. • There are 25 No. recent industrial uses recorded within 500m of the site, the nearest is located directly adjacent to the southern site boundary and pertains to a vehicle repair, testing and servicing garage. • There is a single petrol / fuel station recorded within 500m of the site, located 300m to the south-west of the site, it is recorded as obsolete. • There are no historical industrial site uses recorded on site. • There are an additional 301 No. historical industrial land uses recorded within 500m of the site, including railway stations, railway sidings, railway buildings, disused stations, cotton mills, unspecified commercial and industrial buildings, gas works, unspecified works, unspecified tanks, gasometers, brewery, bus station, automobile works, quays, unspecified mills, goods stations, corporation yards, rubber works, disused goods stations, unspecified depots, warehouses, police stations, fire stations, goods sheds, hospitals, coal wharf, timber wharf and tanks. • There are 221 No. historical tanks recorded within 500m of the site, including tanks, gas works, unspecified tanks, gasometers and gas holders. • There are 110 No. historical energy features recorded within 500m of the site, including gas works, gasometers, electricity substations, electricity transformers, gas holder stations, disused gas holder stations, gas holders, hydraulic and power stations. • There are 60 No. historical garages recorded within 500m of the site.

Dangerous Substances	• There are no recorded discharges of dangerous substances on-site or within 500m of the site.
Hazardous Building Materials	• Following the findings of the Asbestos Management reports obtained by the Client (S_2 Partnership Ltd, *Asbestos Management*, dated December 2011 and April 2018), asbestos and asbestos products are anticipated to be present across the site, however, the overall risk from the presence of asbestos within both existing buildings was deemed low.
Control of Major Accident Hazards (COMAH) Sites	• A search of the HSE Planning Advice Web App has been undertaken by IGE, revealing that the site does not lie within a HSE Zone, HSE Zone of Interest or Site of Explosive interest.

3.8 Radon

A site-specific radon map is included in the Groundsure Enviro + Geo Insight report which finds that the site lies within an area where less than 1% of homes are above the Action Level and consequently, no radon protection measures are required.

3.9 Previous Site Investigations

RoC Consulting have previously undertaken a ground investigation of the adjacent 10-12 Whitworth Street site in April 2016. The ground investigation included the following exploratory holes:

- 4 No. dynamic sample boreholes undertaken to depths of between 2.24m and 3.90m bgl (WS101 to WS104, inclusive);
- 3 No. rotary core boreholes undertaken to depths of between 25.00m and 35.00m bgl (BH101 to BH103, inclusive);
- 6 No. trial pits undertaken to excavate the existing on-site foundations (FE101 to FE106, inclusive); and
- 4 No. hand dug foundation pits undertaken to excavate the existing railway viaduct foundations to depths of between 3.07m and 3.90m bgl (TH-1 to TH-4, inclusive).

The typical ground conditions encountered were as follows:

- **Made Ground** comprising very loose, light brown, very gravelly sand to depths of between 0.50m and 2.60m bgl, underlain by:
- **Glaciofluvial Sheet Deposits** comprising medium dense, dark brown, mottled light brown, gravelly sand to depths of between 3.35m and 3.70m bgl, underlain by:

- **Chester Formation** comprising very dense, reddish brown, gravelly sand (weathered sandstone) and reddish brown, thickly bedded, fine to coarse sandstone to a depth of at least 35.00m bgl.

Depth to bedrock was reported as between 29.99m and 30.49m AOD to weathered sandstone and 28.01m to 29.19m AOD to solid sandstone bedrock.

Geotechnical Testing

Standard penetration tests were undertaken in 1m intervals within the dynamic sample boreholes and dynamic sample boreholes which recorded variable N-values of between 0 and 50. Subsequent laboratory geotechnical testing was undertaken. 3 No. unconfined compressive strength tests were undertaken on the sandstone rock core samples. These tests recorded unconfined compressive strengths of between 7.60MPa and 15.90MPa. 3 No. point load tests were also undertaken which indicate that the sandstone strength varies between 2.40MPa and 23.28MPa. Following the completion of geotechnical testing, the strength of the sandstone was deemed to be very weak to weak with slight improvement with depth beyond 10m bgl.

Existing Railway Viaduct Foundations

Based on the information from the hand dug foundation inspection pits, the foundations of the viaduct were constructed upon the Glaciofluvial Sheet Deposits to depths of between 29.96m and 30.32m AOD. The foundations were noted to be straight and they were found to contain deep drainage runs throughout, as well as at the base of the structure; their origin and destination are unknown.

Foundations

RoC Consult state that conventional pad foundations may be possible in theory but were not recommended due to the depths required to be excavated to reach suitable sandstone, exceeding 5 metres, as well as due to the potential of undermining the foundations of the existing railway viaduct. Consequently, a piled foundation solution was recommended, specifically augered pile, subject to liaison with a piling contactor and a detailed risk assessment to the existing structures. The BRE SD1 testing of the soils on site revealed that the site falls under DS-2 and AC-2 concrete classification, consequently, consideration needs to be given to the choice of concrete for the future foundations, as well as any drainage solutions.

Chemical Testing and Ground Gas Monitoring

Chemical testing of the 6 No. soil samples revealed exceedances of the S4UL values for Naphthalene, Benzo(a)anthracene, Benzo(b)fluoranthene, Chrysene, Indeno(1,2,3-cd)pyrene and Dibenz(a,h)anthracene, all recorded within WS03 at 1.50m – 2.00m bgl, with the exception of Dibenz(a,h)anthracene, which was recorded at 1.00m – 1.50m bgl within the same borehole. Asbestos was also recorded within WS03 at 1.00m – 1.50m bgl in the form of amosite fibres. Consequently, RoC Consulting recommended undertaking appropriate measures to mitigate the risks associated with these contaminants. Due to the S4UL exceedances recorded, RoC Consult recommended a remediation strategy to be undertaken for the site.

2 No. combined ground gas and groundwater depth monitoring wells and 1 No. groundwater monitoring well were installed, and 4 No. subsequent monitoring visits were undertaken over a period of a month by RoC Consulting. No significant peak or steady concentrations of methane or carbon dioxide (max. concentration of 0.46% v/v) were recorded, consequently, the site was classified as Characteristic Situation (CS) 1 by RoC Consulting.

During the groundwater depth monitoring visits, no groundwater was recorded in the shallow monitoring wells, and between 8.90m and 10.00m bgl in the deep monitoring well installed within BH103.

E3P Remediation Strategy

E3P have undertaken a remediation strategy for the 10-12 Whitworth Street site in July 2022. Following the RoC Consulting site investigation, the E3P remediation strategy recommends the management of asbestos fibres in a controlled environment, the delineation of the naphthalene hotspot as well as further assessment of the presence of mercury across site. Furthermore, it is recommended that all structures, historical foundations and buried obstructions are to be removed according to the engineering specifications. Additionally, a clean cover system comprising 150mm topsoil and 300mm suitable subsoil to a total of 450mm total cover.

3.10 Services

As discussed in Section 3.1, evidence for multiple services, including underground service cupboards, street lighting, (disused) CCTV systems, parking meter machines, manholes and drainage grates, was noted across the site and the vicinity. As the site comprises private land, it is envisaged that unrecorded services are present around and on site and could be live. Full service plans should be obtained prior to any intrusive works. A detailed structural survey of the Deansgate railway bridge is recommended prior to any intrusive site works commencing.

Survey Operations have undertaken a utility scan of the adjacent 10-12 Whitworth Street site on behalf of RoC Consulting as part of their 2016 site investigation. The below extract illustrates the anticipated extent of the services below site along the footpaths and streets only. A full utility survey of the site is recommended following the demolition of the existing on-site buildings.

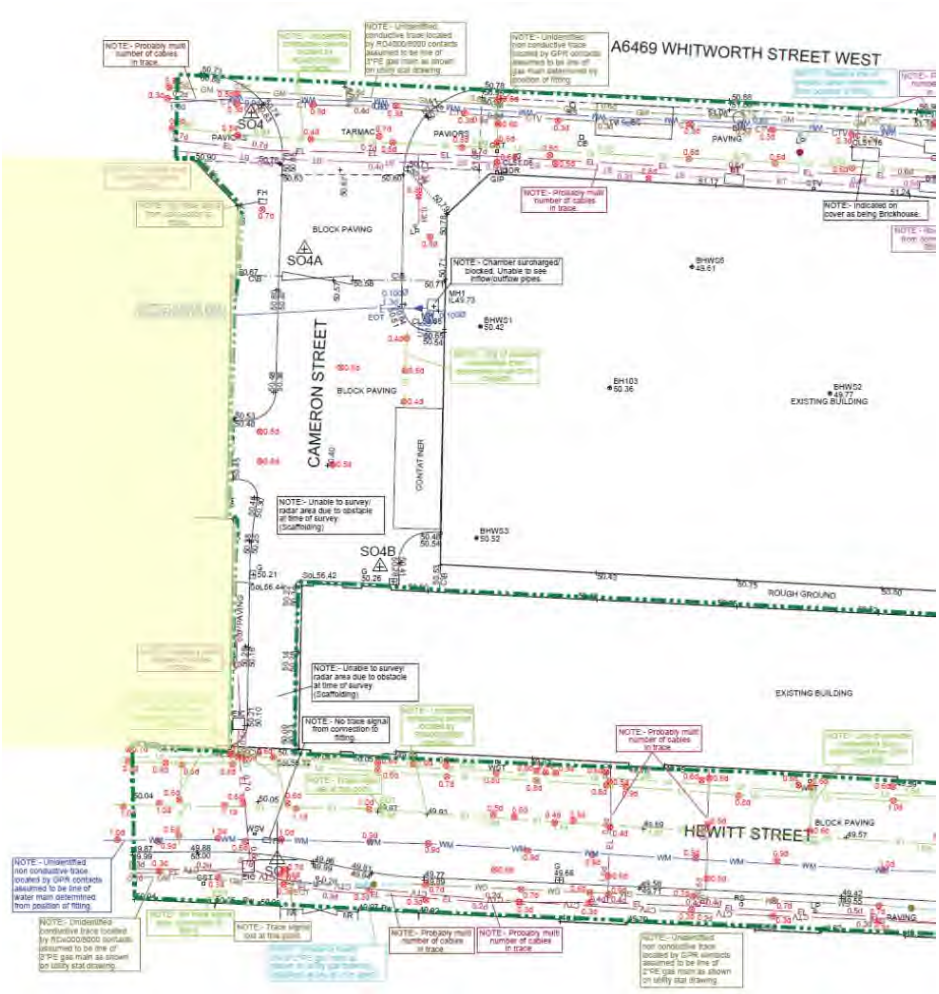


Figure 22: An extract of a utility survey obtained as part of the RoC Consulting Phase 2 Site Investigation report, (Ref: 15C205/001, dated 2015). Site extent is highlighted in light yellow.

3.11 Unexploded Ordnance (UXO)

The Zetica UXO risk map, contained in Appendix 8, indicates that the site lies within an area of low risk. The Zetica UXO risk map is included in Appendix 7. However, as Manchester is known to historically have been targeted by bombing, a Preliminary UXO Risk Assessment Report has been obtained from Brimstone Site Investigation Ltd. The report is included in Appendix 7 and is summarised below.

With respect to World War II German bombing of Manchester, the site was found to be located within an area of Manchester that sustained low to moderate bombing, with the nearest impact recorded within 75m to the south-west of the site, anticipated to be related to the Deansgate station buildings, which were also recorded to undergo repair works. Furthermore, the Manchester Central Station and the former Gaythorn Gas Works were identified as the local Luftwaffe bombing targets, however no evidence was noted that the site itself was targeted. Another WWII incident noted in

the report pertains to an incendiary bomb ‘shower’ identified within 130m to the west of the site.

The report found that during WWII multiple Light and / or Heavy Anti-Aircraft (LAA / HAA) batteries were present in the vicinity of the site, consequently it is possible that an unexploded shell struck the site, as a large number of ammunition was stored in these facilities. However, a direct strike to site is considered unlikely, as the area was developed during WWII.

As the nature of the site is largely unchanged since the war period, based on the historical records, it is considered unlikely that the wartime soils were disturbed since, and no significant works were recorded on-site or in the vicinity. Consequently, the site may be at risk of buried UXO.

In conclusion, the report states *‘A Stage 2 Detailed Risk Assessment is not considered necessary prior to SI works commencing. However, the possibility of UXO remaining on site cannot be completely ruled out at desktop stage. Therefore, a UXO Safety Briefing to all personnel conducting ground works would be considered prudent’*.

3.12 Animal Burial Sites

The Animal Health and Veterinary Laboratories Agency (AHVLA) no longer routinely respond to consultations relating to records of animal burial sites. Based upon a review of the site history it is considered unlikely that the site has been subject to recorded animal burials.

3.13 Archaeology

Heritage Gateway states that a hoard of Roman coins and numerous fragments of pottery were recorded when digging the foundations for Deansgate station in 1852, all dating to between the years 128 AD to 380AD. Additionally, a Roman urn and 3 No. dishes were found within the old course of the River Tib in 1903.

An Archaeological Desk-based Assessment report (Ref: SA/2024/33, dated June 2024) was obtained from Salford Archaeology at the University of Salford by the Client. Based on the findings of the archaeology report, the potential for the site to contain buried archaeological remains is considered to be high. The report states: *Remains may include Roman activity, post-medieval relict soils, and various types of worker's housing dating from the 18th century to early 19th century*.

4.0 CONCLUSIONS

4.1 General

The site comprises 2 No. multi-storey buildings used for commercial and industrial purposes. At the time of writing, the buildings are disused. The Deansgate railway station is located adjacent to the southern site boundary. Based on the history of the site and its surroundings deep Made Ground related to the railway activities may be present across site.

4.2 Ground Conditions and Geotechnical Hazard Identification

The anticipated typical ground conditions across the site are as follows:

- **Made Ground** of unknown composition, anticipated sands, gravel, clay and to a depth of up to between 3.00m and 5.00m bgl, underlain by:
- **Glaciofluvial Sheet Deposits** likely comprising gravelly sand to a depth of at least 4.00m bgl, underlain by:
- **Chester Formation** comprising sandstone, expected to a depth of at least 35.00m bgl.

Based on the historical records obtained from Kathryn Sather and Associates it is anticipated that the Made Ground may form localised deeper ‘pockets’ below the existing on-site buildings. This is likely due to the foundations of the 2 No. buildings bearing onto the underlying bedrock, consequently, deeper areas of Made Ground are expected immediately below the existing foundations.

4.2.1 Geotechnical Hazard Identification

Potential geotechnical hazards based on the expected ground conditions that may require further consideration at the site are outlined below:

Factors	Remarks	Considerations	Hazard
Made Ground	Made Ground could be deep across the site due to the historical site and site-adjacent uses, as well as the railway presence along the southern site boundary.	Made Ground may settle variably, have highly inconsistent bearing capacity and may suffer significant movements that may be problematic for foundations, externals and infrastructure elements without treatment. The presence of Made Ground may be problematic for foundations as there may be loose / soft spots within the Made Ground and it may not be suitable to utilise traditional foundations.	**Moderate**
Aggressive Ground and Groundwater	While the risk posed from the natural strata is anticipated to be very low, given the anticipated presence of site-wide deep Made Ground there is potential for aggressive ground conditions to be present on-site.	Acidic ground / groundwater and sulfate may attack the concrete and steel used in foundations and react with aggregates. The oxidation of pyrite and other sulfides can also occur due to geotechnical activities. This can lead to the generation of high concentrations of sulfate and low pH that attacks construction materials and may lead to the precipitation of gypsum resulting in the heave of foundations and floor slabs. Pyrite oxidation can also be triggered by mixing susceptible materials with lime or cement resulting in high pH that can lead to the expansion of some sulfates that cause heave of stabilised soils.	**Moderate**
Soft Spots	Soft spots may be present across the site associated with localised excavations i.e., historical on-site construction works.	Soft spots may cause differential settlement of foundations therefore there will be a requirement for localised deepening of foundations where soft spots are present.	**Low to Moderate**
Compressible Deposits	Given the anticipated presence of Glaciofluvial Sheet Deposits, there is potential for soft deposits to be present.	May cause significant settlement or differential settlement of foundations if foundations have been placed on compressible ground.	**Low to Moderate**
Obstructions	Following the proposed demolition of the existing on-site buildings and historical housing, remnants of the historical construction will require consideration prior to construction.	May act as obstructions to excavations and / or the chosen foundation solution or act as 'hard spots' within the ground if left in-situ.	**Moderate**
Railway	Railway structures (e.g. railway bridge and platforms) and any materials related to the Deansgate Station may provide additional obstructions in the construction process.	May act as obstructions to excavations and / or the chosen foundation solution or act as 'hard spots' within the ground if left in-situ. Furthermore, it could affect the proposed development due to constraints associated with the works undertaken near the railway structures. **Liaison with Network Rail prior to the start of any intrusive works on site required.**	**Moderate to High**
Canals	The site is located within c. 30m to the south of the Rochdale Canal. Unrecorded branches of the Canal and any structures related to the construction of this canal may act as additional obstructions during construction.	May act as obstructions to excavations and / or the chosen foundation solution or act as 'hard spots' within the ground if left in-situ. Furthermore, there is potential of unrecorded voids and water presence.	**Low**

4.3 Sources of Contamination and Probable Contaminants

Based on the desk study information the following potentially contaminative on-site sources have been identified:

Potentially Contaminative Source	Associated Determinands	Remarks
On-Site Made Ground	Unknown, anticipated to be metals, semi-metals, PAHs, TPH, asbestos. Ground Gas – carbon dioxide, methane, hydrogen sulfide, VOCs	Deep Made Ground is anticipated on site Made Ground, potentially reaching as deep as 5.00m bgl based on historical borehole records.

It should be noted that potentially contaminative unrecorded historical activities may have occurred (e.g. the use or deposition of Made Ground from off-site during historical on-site developments) and in this event, further contaminative sources may be present.

4.3.1 Unknowns

Following the desk study, the areas of uncertainty are summarised as follows:

- Depth of the Made Ground and superficial Glaciofluvial Sheet Deposits;
- Depth to bedrock; and
- Presence, location and extent of underground obstructions.

4.4 Identified Pathways of Contamination

Human Health		Ground Gas		Controlled Waters	
A	Ingestion of dust and soil	**A**	Migration through fractures and fissures in bedrock	**A**	Vertical migration through coarse Made Ground and coarse soils
B	Dermal contact with dust and soil	**B**	Preferential migration along foundations & service ducts	**B**	Lateral migration along low permeability natural soils & pooling at relative low points
C	Inhalation (dust)	**C**	Migration within groundwater	**C**	Lateral migration along historical drainage
D	Inhalation (vapours)	**D**	Ingress through cavity walls & floors	**D**	Vertical migration along future foundations and pooling at base
E	Inhalation and oral backgrounds	**E**	Inhalation	**E**	Migration through porous bedrock
-	-	**-**	-	**F**	Overland flow

4.5 Identified Receptors of Contamination

Human Health receptors include the following:

- End Users (residential land use scenario);
- Construction workers; and
- The general public and adjacent site users.

Controlled waters receptors include the following:

- Groundwater contained within the underlying Secondary A Aquifer in superficial deposits and Principal Aquifer in bedrock; and
- Surface Water – no surface water features on-site, off-site Rochdale Canal (30m N) and the River Medlock (150m S).

Other receptors include subsurface plastic (e.g. potable plastic water pipe) and building fabric (e.g. concrete foundations, etc).

4.6 Conceptual Site Model

4.6.1 Conceptual Model for Human Health Risk Assessment

A site conceptual model in the form of a linkage table for the purposes of a preliminary risk assessment for the human health of site occupants has been produced as a result of the probable contaminants, pathways and receptors identified above. A diagram of the site conceptual model is included within Appendix 2.

Conceptual Model for Human Health Assessment					
Sources of Contamination	**Pathway**	**Receptor**	**Hazard (severity)**	**Likelihood**	**Risk**
Possible Deep Made Ground	A B C E	End users General public	Effect on human health **(Medium)**	**Low Likelihood:** Deep Made Ground is anticipated to be present across site (c. 3.00m – 5.00m deep). Widespread contamination is not expected to be found across site, however, localised contaminative hotspots may be present. As the proposed development does not currently include soft landscaping or private gardens, contaminative pathway to the end users and general public are likely to be limited.	**Low to Moderate**
		Construction workers		**Low Likelihood, reduced to unlikely with best practice:** Construction workers will be at increased risk due to their acute interaction with soils and possible deep Made Ground across the site. However, the appropriate use of PPE, Good Practice and Health and Safety Measures will significantly reduce the risk.	**Low**
	D	End users and general public		**Unlikely:** No potential sources of VOCs have been identified. If localised contaminative hotspots of VOCs are present (i.e. from possible spillage from railway activities) given their relative mobility and volatility VOCs are unlikely to remain at significant concentrations.	**Low**
		Construction workers		**Unlikely:** Construction workers at increased risk if any disturbance of soil occurs as this may generate a temporary increase in the release of soil vapours, however risk remains low given the lack of a source of VOCs.	**Low**

4.6.2 Conceptual Model for Ground Gas Risk Assessment

A conceptual model in the form of a linkage table for the purposes of a preliminary risk assessment for ground gas has been produced as a result of the probable contaminants, pathways and targets identified above as follows:

Conceptual Model for Ground Gas Risk Assessment					
Source	**Pathway**	**Receptor**	**Hazard (severity)**	**Likelihood**	**Risk**
Possible Deep Made Ground	B D E	Human occupants Site Workers	Effect on human health **(Mild to Severe*)**	**Unlikely:** Deep Made Ground is anticipated to be present across the site, however it is likely to comprise granular materials and it is unlikely to contain significant organic-rich and putrescible materials. Consequently, the Made Ground is anticipated to be a very low ground gas generation source.	**Low**
		Building and Structures	Damage to building **(Mild)**		

*Due to the risk of explosion.

4.6.3 Conceptual Model for Controlled Waters Risk Assessment

A site conceptual model in the form of a linkage table for the purposes of a preliminary risk assessment for pollution of waters has been produced as a result of the probable contaminants, pathways and targets identified above as follows:

Conceptual Model for Controlled Waters Risk Assessment					
Source	**Pathway**	**Receptor**	**Hazard (severity)**	**Likelihood of Occurrence**	**Risk**
Possible Made Ground	A D E	Groundwater within the Secondary A and Principal Aquifers	Effects to controlled waters (**Medium)**	**Pre-Development Site** **Low Likelihood**: Deep Made Ground is anticipated to be present across site (expected to between c. 3.00 and 5.0m bgl), however, any contamination is likely to be localised and the concentrations are not anticipated to be significant. During RoC Consulting groundwater monitoring of the adjacent site, the groundwater table was identified at between 8.00m and 10.00m bgl, consequently, a contaminative pathway is unlikely. However, the potential contamination could potentially reach the sensitive aquifers via vertical migration through granular Made Ground and natural deposits. Based on the above discussion, the risk is deemed low due to the lack of feasible contaminative pathways.	**Low to Moderate**
				Post-Development Site **Unlikely:** Following development the site is likely to remain entirely hardstanding, therefore vertical migration will remain low. Furthermore, if any contamination is encountered, then remedial measures may be undertaken for (i.e. possible removal of source) further reducing the risk to controlled waters.	**Low**
	B C F	Surface water courses (none identified on site, Rochdale Canal (30m N) and River Medlock (150m S)	Effects to controlled waters: (**Mild**)	**Pre-Development Site** **Low likelihood**: As no surface water features are identified on site, no contaminative pathways exist, therefore the risk to site is deemed very low. However, a network of existing and relic drainage is anticipated on site associated with the historical site uses. Relict drainage may present a mode of migration for any potential contaminants to the sensitive receptors.	**Low**
				Post-Development Site **Unlikely**: Although sensitive surface water features are located in the vicinity of the site and hardstanding is present across the majority of the site, any contamination is believed to be present within the underlying site soils rather than above hardstanding. However, any contamination, currently present above the hardstanding, could reach directly into or through the existing drainage into the surface water courses.	**Very Low**

4.7 Preliminary Risk Assessment Summary

Human Health

Based on the human heath conceptual model the risk to human health is deemed low to moderate to end users. RoC Consulting identified elevated concentrations of PAHs on the adjacent site of 10-12 Whitworth Street West during their site investigation in 2016, consequently, the presence of similar concentrations of contaminants cannot be discounted. Although the risk to construction workers is increased due to their acute interaction with site soils, it is envisaged that with appropriate PPE and site management, risks to construction workers can be mitigated to low following a detailed risk assessment prior to the demolition and construction works commencing.

Ground Gas

Deep Made Ground is anticipated to be present across site, however it is anticipated to be granular and unlikely to contain organic-rich and putrescible materials. RoC Consult gas monitoring undertaken at the adjacent site revealed no significant concentrations of methane or carbon dioxide. Consequently, due to the lack of a reliable ground gas generating source, the risk is deemed low. It is likely that as part of the ground investigation, groundwater monitoring will be required. In this instance, ground gas monitoring could be completed as a matter of course to confirm the assessment of the risk as low.

If any organic rich Made Ground deposits are identified or if previously unrecorded potential ground gas sources are recorded during the ground investigation works, then ground gas monitoring may be required. The length and frequency of the ground gas monitoring regime and the sampling method, initial results and alterations to the conceptual model are subject to the findings of the ground investigation works and development constraints (i.e. development timescales and liaison with the local authority).

Controlled Waters

Sensitive receptors have been identified on site (Secondary A and Principal Aquifers) and sensitive off-site receptors have also been recognised (Rochdale Canal, 30m to

the south and the River Medlock, 150m to the south). Deep Made Ground is anticipated to be present across site (between c. 3.00m and 5.00m depth), however the contamination is not likely to be widespread and rather localised, and the concentrations of any potential contaminants are not expected to be significant. Groundwater monitoring undertaken by RoC Consulting for the adjacent 10-12 Whitworth Street West identified the bedrock groundwater table to be between c. 8.00 and 10.00m bgl; the risk to controlled waters is low to moderate.

If unrecorded contaminative sources are noted, the above conceptual models may require re-assessment.

4.8 Scope of Phase 2 Intrusive Geo-Environmental Ground Investigation

As a result of the preliminary risk assessment, a Phase 2 intrusive geo-environmental ground investigation is required to be carried out to quantify the identified risks. This intrusive ground investigation works should include the collection of appropriate samples across the site for appropriate chemical testing as detailed above.

Furthermore, to determine the geotechnical and geological properties of the underlying ground conditions, appropriate intrusive works and associated testing should be undertaken. The rationale and aims for these Phase 2 environmental, geotechnical and geological investigative works are detailed below.

In order to provide adequate assessment in terms of both environmental and geotechnical site parameters, ground investigation works will be required on a spatial basis and targeting the envelope of the existing on-site buildings as well as the area between the existing buildings and the existing Deansgate viaduct. Slot trenches constructed within the paved areas are also recommended to confirm the exact position of the on-site services.

It is likely that the ground investigation will require ‘staging’ given the potential access restrictions associated with the existing buildings.

The proposed initial ground investigation works should comprise a programme of deep boreholes (e.g. rotary core) and mechanically excavated trial pits.

The rationale for the exploratory holes is discussed below:

- To allow the collection of samples from the Made Ground and natural deposits for chemical laboratory testing (solid samples) for an appropriate suite of determinands and to determine the suitable concrete classification in associated with relevant guidance e.g. BRE Special Digest 1;
- To allow for the collection of bedrock core samples for appropriate chemical and geotechnical testing and to determine the depths to bedrock strata suitable for foundation construction;
- To determine the extent, composition and depth of any Made Ground deposits;
- To determine the nature, thickness and extent of superficial deposits;
- To determine depth to and condition of bedrock;
- To inspect the existing foundations of the on-site buildings to assess their extent and location;
- To enable geotechnical testing, including density testing (SPTs), hand shear vane (HSV) testing (if applicable) and undrained shear strengths of the underlying Made Ground and natural deposits for the purposes of sub-structure design; and
- To allow installation of ground water monitoring wells.

5.0 RECOMMENDATIONS

- As a result of the information gathered and the risks identified in this report, there is a low to moderate risk to human health on the basis that feasible contaminative linkages have been identified, likely to be located in localised areas. The risk to controlled waters is deemed low to moderate, due to feasible contaminative linkages identified via anticipated migration through existing and relic drainage present below site, as well as possible vertical migration through the granular Made Ground and Glaciofluvial Sheet Deposits.

- A low ground gas risk has been identified based on ground gas sources and previous RoC Consulting ground gas monitoring. On the basis that the site lies within an area where between less than 1% of homes are above the action level no radon protection measures are necessary.

- Due to geotechnical requirements and numerous potential geotechnical hazards, ground investigation works are required be undertaken in order to determine the ground conditions with a greater degree of certainty and allow design of the proposed development, drainage, services and immediate external areas to be undertaken. It is therefore recommended that exploratory holes are constructed. It may be necessary to ‘stage’ the investigation , dependant on where access is permitted across the site.

- From the results of the Phase 2 ground investigation work – if this report identifies a potential risk and / or a requirement for further detailed site-specific assessment, a Phase 3 environmental investigation report and / or a Remedial Strategy (informing on potential remediation solutions) may be required.

- The nature and extent of the proposed targeted chemical and environmental testing should be confirmed, if time / commercial constraints allow, with the relevant Local Authority Environmental Health Officer and the Environment Agency prior to

undertaking works on-site. Proceeding without agreement between regulatory authorities may result in further assessment being required.

- It should be noted that, if any visual or olfactory evidence of contamination is encountered during remediation or construction work, then the Local Authority Environmental Health Officer and Environment Agency should be contacted immediately in order to agree any necessary remediation measures.

- Given the anticipated widespread presence of services on-site, full service plans should be obtained and an underground utility survey should be undertaken. It is recommended that the presence and associated constraints of all site services are established prior to significant intrusive works beginning.

- It is recommended that the constraints of the Deansgate viaduct and delineating the southern site boundary are established prior to the construction works commencing. Furthermore, liaison with Network Rail should take place prior to the start of any intrusive works to establish any necessary ‘stand-off’ from Network Rail assets.

- A consultation with the country archaeologist is recommended due to items of archaeological interest being recorded historically in the vicinity of the site.

APPENDIX 1

LIMITATIONS OF INVESTIGATION WORK AND REPORT AND CONTAMINATED LAND LEGISLATIVE FRAMEWORK

LIMITATIONS OF REPORT

This consultancy report was compiled and carried out by IGE Consulting Limited ('IGE') for the client, as defined in the main report (the 'client'), on the basis of a defined programme and scope of works and the terms of a contract between IGE and the client. IGE undertook this with all reasonable skill and care, taking into account the limits of the scope of works required by the client, the prevailing site conditions, the time scale involved and the resources, including financial and manpower resources, agreed between IGE and the client. IGE cannot accept responsibility to any parties whatsoever, following the issue of this report, for any matters arising which may be considered outwith the agreed scope of works.

Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices. This report may not be relied upon, or transferred to, by any other party without the written agreement of its author. If a third party relies on this report, it does so wholly at its own and sole risk and IGE disclaims any liability to such parties.

It is IGE's understanding that this report is to be used for the purpose described in the 'Brief' section of this report. That purpose was a significant factor in determining the scope and the services to be provided. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without IGE's review and advice shall be at the client's sole and own risk.

The information contained in this report is protected by disclosure under Part 3 of the Environmental Information Regulations 2004 pursuant to the provisions of Regulation 12(5) without the consent in writing of a Director of IGE.

This report is a function of the date it was written and should be read in light of any subsequent changes in legislation, statutory requirements and industry practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of IGE. In the absence of such written advice of IGE, reliance on the report in the future shall be at the client's own and sole risk. Should IGE be requested to review the report in the future, IGE shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between IGE and the client.

The observations and conclusions described in this report are based solely upon the scope of works agreed between the client and IGE. IGE has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report. IGE is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the agreed scope of works. For the avoidance of doubt, this report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species (e.g. Japanese Knotweed). It is recommended that the client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the suspected presence asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace full and proper surveys.

Throughout the report the term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements) and the term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential contamination). However, it should be appreciated that this is an integrated investigation and these two main aspects are inter-related. The geo-environmental sections are written in broad agreement with BS 10175:2011+A2 2017.

LIMITATIONS OF INVESTIGATION WORK

Desk Study References

This report is based upon IGE's observations of existing physical conditions at the site gained from a walkover survey of the site together with IGE's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. Reliance has been placed on this publicly available data obtained from the sources identified in the main report. When using the information, it has been assumed that it is correct. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst IGE have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified. No responsibility can be accepted for errors within third party items presented in this report. IGE did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services. IGE is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to IGE and including the doing of any independent investigation of the information provided to IGE except when otherwise provided in the terms of the contract between the client and IGE.

Historical Mapping

Historical Ordnance Survey maps do not provide a comprehensive description of a site history. They provide details of the site from a date prior to the publication of the map (i.e. a snapshot in time). The period between map editions can be substantial (i.e. several decades). Not all map series are available for every date range in many areas of the UK and therefore there will be gaps in this mapped record for some sites. Potentially contaminative land uses could have been present and removed during such periods and may therefore not form a part of this particular record. In addition, there will be potentially contaminative land uses which are not identified on the map records such as small scale storage / use of hazardous materials, illegal / unlicensed waste disposal activities etc. Different map series identify different features utilising different symbols which can result in features that remain on-site being removed from maps. Some features are also not mapped for security reasons (e.g. airfields and other military installations). These areas are mostly shown as blank areas on historical maps.

Site Walkover

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 be made known or accessible.

Flooding

Flooding in this report is defined as flooding caused by the sea, ditches, rivers, streams, ponds, lakes, reservoirs and the like. It does not extend to flooding caused by surcharged piped drainage systems and investigations into flooding of this nature are excluded from this report.

Extent of Contamination Studies

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. The 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 reporting in full. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

Intrusive Investigation

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations, the potential exists for ground conditions to be encountered which are different to those considered in this report. The explored extent of the site area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters, based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Exploratory Holes

Where exploratory holes have been carried out as part of this investigation, the spacing has been determined to provide a reasonable indication of the general ground conditions across the site, but the number has ultimately been limited by commercial constraints. The findings of the exploratory holes relate specifically to the exploratory hole locations and are no absolute guarantee of the ground conditions between such locations. Due allowance should be made for the possibility of variation in conditions between exploratory hole locations.

Extent of Contamination Testing

The extent of contaminated land testing carried out on samples obtained from the site has been determined in accordance with the latest legal guidance issued by the government to provide, with reasonable certainty, the probable general levels of contamination present on site that could pose a significant hazard to human health or waters. The extent of site investigation works including chemical testing has also been limited by reasonable commercial constraints. Although extensive testing of samples has been carried out, the volume of samples taken for testing are a minute fraction of the total volume of soils and groundwater present on site. Therefore, there is a residual risk that undetected pockets of contamination may be present on site, situated between testing locations.

When investigating or developing potentially contaminated land it is important to recognise that sub-surface conditions may vary spatially and temporally. The absence of certain ground, ground gas, contamination or groundwater conditions at the positions tested is not a guarantee that such conditions do not exist anywhere across the site. 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. The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at or adjacent to the site.

Extent of Geo-Environmental Studies

This report is strictly limited to the nature of contamination contained within the ground and groundwater at the site. The report does not cover environmental aspects such as air or noise pollution and ground vibrations and the like. In addition, ecological matters relating to wildlife, flora and fauna have not been investigated as part of this report. In particular, the site has not been inspected for the presence or otherwise of invasive species e.g. Japanese Knotweed. It is recommended that the Client appoints a specialist in this subject to carry out a detailed inspection / survey of the site if its presence is suspected. Where mention has been made to the identification asbestos or asbestos-containing materials this is for indicative purposes only and does not constitute or replace a full and proper survey. If an Unexploded Ordnance (UXO) report has been obtained within the report, it has been so on the basis of Health and Safety concerns and no assessment has been made other than transcribing the recommendations of the sub-contractor contained within the report. In terms of a potential contaminative source, unless ordnance has been manufactured / stored on site, UXOs will only be determined as a contaminative source following a positive identification on site.

PLANNING CONTEXT

The National Planning Policy Framework (NPPF, 2023) states that the purpose of the planning system is to contribute to the achievement of sustainable development. In order to do this the planning system has three overarching objectives, one of which directly relates to the potential for pollution and contaminated land:

- *'**environmental objective** - to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy'.*

In accordance with this environmental objective, Paragraph 124 clarifies that 'making effective use of land' includes to:

- *'give substantial weight to the value of using suitable brownfield land within settlements for homes and other identified needs, and support appropriate opportunities to remediate despoiled, degraded, derelict, contaminated or unstable land'*.

In accordance with this environmental objective, Paragraph 180 clarifies that' conserving and enhancing the natural environment includes:

- *'preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability*'; and
- *'remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate'.*

Paragraph 189 of the NPPF states that planning policies and decisions for developments should also ensure that:

- *'a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the natural environment arising from that remediation)*'; and,
- '*after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990'*; and
- '*adequate site investigation information, prepared by a competent person, is available to inform these assessments'*.

This report has been prepared and authorised by staff that are competent as defined in the NPPF.

APPENDIX 2

FIGURES AND DRAWINGS

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

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

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

NOTES

The landscape drawn is indicative, refer to Landscape Architect's drawings for landscape strategy.

KEY

Application Boundary

REVISIONS

REV.	DATE	AMENDMENT
P01	18/11/24	Issued for Planning

KEYPLAN

CLIENT
Glenbrook WWS Limited

SHEPPARD ROBSON

77 Parkway Camden Town London NW1 7PU
T: +44 (0)20 7504 1700 E: enquiries@sheppardrobson.co.uk

PROJECT
2-4 Whitworth Street West

SCALE@A1	DATE	ORIGINATOR	CHECKED	AUTHORISED
1 : 500	18/11/24	MT	PC	TOB

DESCRIPTION
Site Plan Proposed

STAGE
Stage 2

STATUS	PURPOSE FOR ISSUE	SR NO.
S2	Planning	7196

DRAWING NO.	REV.
7196-SRA-XX-XX-DR-A-02011	P01

FOR GUIDANCE PURPOSES ONLY

Approximate Site Boundary

N

0 50 100 150 200 250 m

Rev	Drawn	Date	Description

Drawing Status:
Information

Contract: 2-4 Whitworth Street West, Manchester

For: Glenbrook WWS Limited, Maizelands Limited and Arringford Limited

Drawing Title:

Site Location Plan

IGE consulting

Office 16, Bartle House, Manchester, M2 3WQ
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk
Tel: 0161 914 9170

Scale: 1:2000 @A3	Date: Jun 2024	
Drawn: AS	Checked: AE	
Contract No. 4201	Drawing No. SI - 01	P1

FOR GUIDANCE PURPOSES ONLY

N

0 20 40 60 80 100 m

- Approximate Site Boundary
- Deansgate Railway Station (1849-2024)
- Manchester Central Station and Goods Stations (1891-1990)
- Garage (1955 - 1995)
- Works (1932-2010)
- Warehouses (1893-1992)
- Gaythorn Gas Works (1891-1985)
- Gaythorn Mill (1851-1980)
- Automobile Engineering Works (1948-2003)
- Gum and Starch Works (1908 - 1948)
- Union Foundry (1851-1891)
- Medlock Bridge Mill and Gaythorn Small Warehouse (1851 - 1891)
- Commercial Mill (1851-1891)
- Coal Yard (1851-1891)
- Cotton Mill and Indian Corn Mill (1851-1995)
- Trumpet Street Mill (1851-1891)
- Stone Yard (1851-1891)
- Smithy (1851-1893)
- Historical Pumps (1891)

Rochdale Canal (1805-2024)

- Open
- Culverted
- Rochdale Canal Locks (1805-2024)

Rev	Drawn	Date	Description

Drawing Status: Information

Contract: 2-4 Whitworth Street West, Manchester

For: Glenbrook WWS Limited, Maizelands Limited and Arringford Limited

Drawing Title: Site Features Plan

IGE consulting

Office 16, Bartle House, Manchester, M2 3WQ Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk
Tel: 0161 914 9170

Scale: 1:1000 @A3	Date: Jul 2024
Drawn: AS	Checked: AE

Contract No.	Drawing No.	
4201	SI - 02	P1

SOURCES

Sources
1. Possible Made Ground

Secondary Sources
2. Pooling beneath current and / or future foundations
3. Pooling in relative low points above low permeability deposits
4. Pooling within granular lenses within low permeability deposits

Ground Gas Sources
1. Possible Made Ground

PATHWAYS

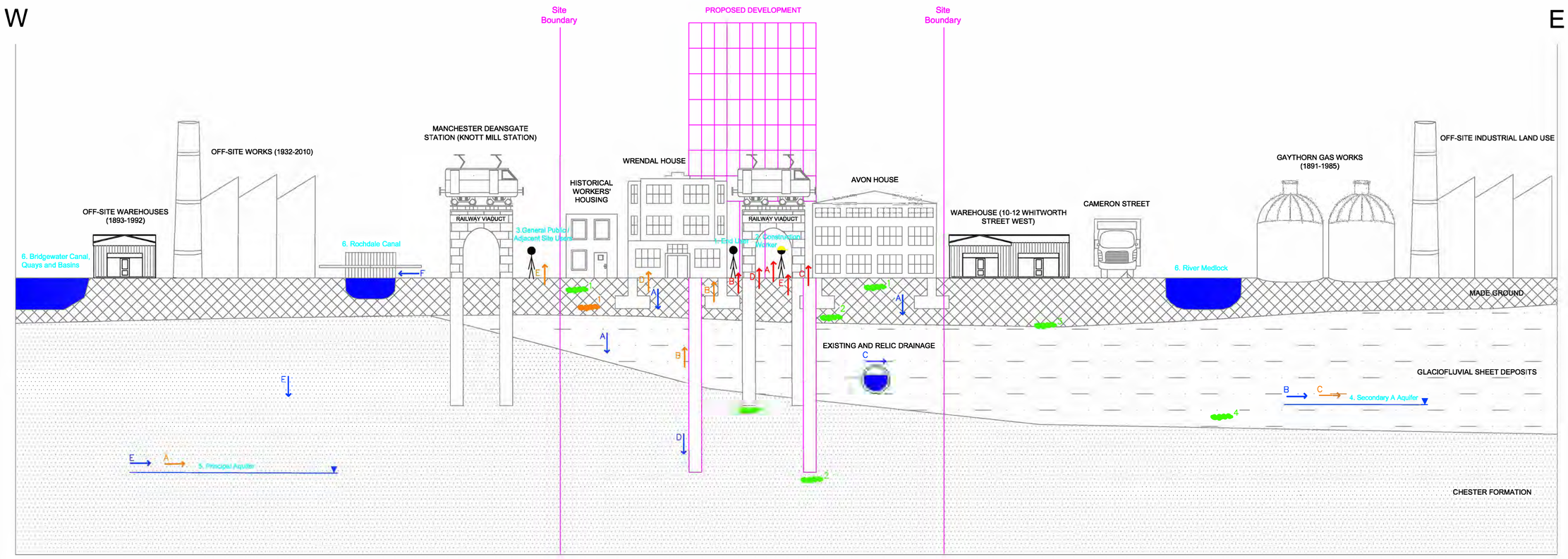
Pathways To Human Health
A. Ingestion of dust and soil
B. Dermal contact with dust and soil
C. Inhalation of dust
D. Inhalation of vapours
E. Inhalation and oral backgrounds

Pathways To Controlled Waters
A. Vertical migration athrough coarse Made Ground and coarse soils.
B. Lateral migration along low permeability natural soils & pooling at relative low points.
C. Lateral migration along historical drainage
D. Vertical migration along future foundations and pooling at base.
E. Migration through porous bedrock.
F. Overland flow.

Ground Gas Pathways
A. Migration through fractures and fissures in bedrock
B. Preferential migration along foundations & service ducts
C. Migration within groundwater
D. Ingress through cavity walls and floors
E. Inhalation of ground gas and vapours

RECEPTORS

Receptors
1. End user
2. Construction workers
3. General public / adjacent site users
4. Secondary A aquifer in superficial deposits
5. Principal aquifer in bedrock
6. Surface water - Rochdale Canal (30m N) and River Medlock (150m S)
7. Buildings and services



Notes

1 This drawings is indicative and not to scale.

2 This drawing is to be read in conjunction with all relevant Architects and Service Engineers drawings.

Key

Made Ground

Glaciofluvial Sheet Deposits

Chester Formation

Rev	Drawn	Date	Description

Drawing Status
INFORMATION

Contract
2-4 WHITWORTH STREET WEST, MANCHESTER

FOR: GLENBROOK WWS LIMITED, MAIZELANDS LIMITED AND ARRINGFORD LIMITED

Drawing Title
CONCEPTUAL SITE MODEL

IGE consulting

Office 16, Bartle House, Manchester, M2 3WQ
email: contact@igeconsulting.co.uk
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tel: 0161 914 9170

Scale	Date
NTS	JUL 2024
Drawn AS	**Checked** AE
Contract No. 4201	**Drawing No.** SI-03 P1

APPENDIX 3

WALKOVER SURVEY PHOTOGRAPHS AND PHOTOGRAPH LOCATION PLAN

FOR GUIDANCE PURPOSES ONLY

Approximate Site Boundary

Site Walkover Photograph Locations

N

Whitworth Street West

B6469

Bugle Street

Cameron Street

Hewitt Street

Arch 89

Arch 87

2

4

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

0 10 20 30 40 50 m

Rev	Drawn	Date	Description

Drawing Status: Information

Contract:

2-4 Whitworth Street, Manchester

For: Glenbrook Property

Drawing Title:

Site Walkover Photograph Location Plan

IGE consulting

Office 16, Bartle House, Manchester, M2 3WQ
Email: contact@igeconsulting.co.uk
Web: www.igeconsulting.co.uk
Tel: 0161 914 9170

Scale: 1:250 @A3	Date: Jul 2024	
Drawn: AS	Checked: AE	
Contract No. 4201	Drawing No. SI - 04	P1

SITE WALKOVER PHOTOGRAPHS – 2nd July 2024

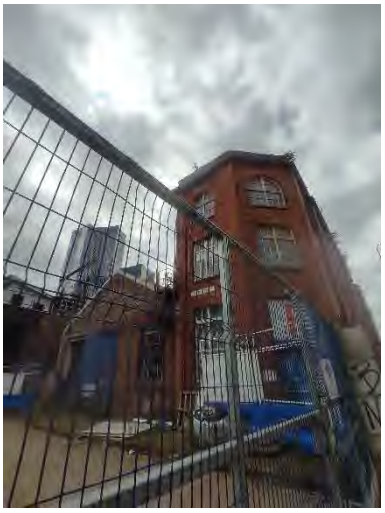


Figure 1 – The eastern site boundary and north-eastern site corner as seen from the corner of Whitworth and Cameron Street.



Figure 2 – The north-eastern site corner and the front of the eastern building with street lighting, looking south-west.



Figure 3 – The front of the eastern building at Whitworth Street West, looking south.



Figure 4 – A traffic light control and street lighting control access point in front of the eastern building, looking south.



Figure 5 – The eastern side of the western building at Whitworth Street West and the Rowendale Street bridge, looking south-west.



Figure 6 – The front of the western building at Whitworth Street West, looking south.

SITE WALKOVER PHOTOGRAPHS – 2nd July 2024



Figure 7 – Service cupboards on the public footpath in front of the western building, looking east.



Figure 8 – Manholes and drain grates along the western site boundary, looking south.



Figure 9 – The western building as seen from Bugle Street, looking east.



Figure 10 – Suspected material combustion near the south-western site corner, looking south-east.



Figure 11 – The western building at Whitworth Street West as seen from Platform 1 at Deansgate station, looking north-east.



Figure 12 – The rear of the easter building at Whitworth Street West as seen from Platform 1 at Deansgate station, looking north-west.

SITE WALKOVER PHOTOGRAPHS – 2nd July 2024

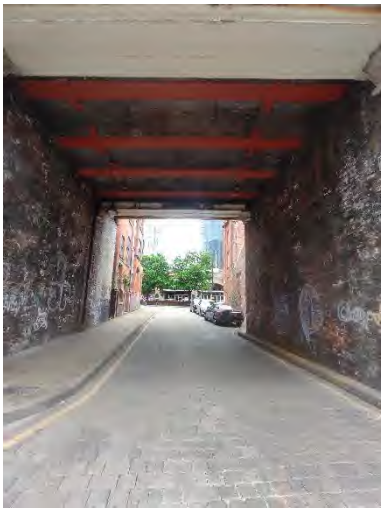


Figure 13 – Rowendale Street bridge as seen from Hewitt Street with the western and eastern buildings in the distance, looking north.

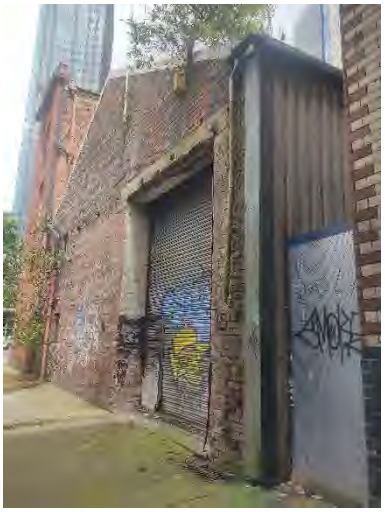


Figure 14 – The eastern side of the western building at Whitworth Street West as seen from Rowendale Street, looking north-east.



Figure 15 – Manholes and drain grates adjacent to the eastern building, as seen from Rowendale Street, looking north-east.



Figure 16 – The eastern building at Whitworth Street West as seen from Platform 1 at Deansgate station, looking north-east.



Figure 17 – The rear of the eastern building at Whitworth Street West as seen from Platform 1 at Deansgate station, looking north.



Figure 18 – Fly tipping along the eastern site boundary, looking north-west.

APPENDIX 4

HISTORICAL ORDNANCE SURVEY MAPS



Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: 1056 Scale Town Plan

Map date: **1851**

Scale: 1:1,056

Printed at: 1:1,056

N
W E
S

Surveyed 1849
Revised N/A
Edition 1851
Copyright N/A
Levelled N/A

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Production date: 20 June 2024

Map legend available at:
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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

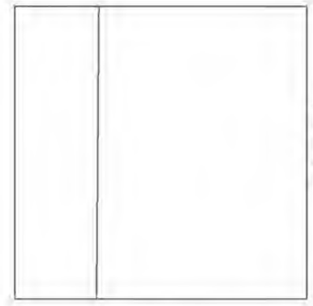
Map Name: County Series Town Plan

Map date: **1891**

Scale: 1:500

Printed at: 1:1,000

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

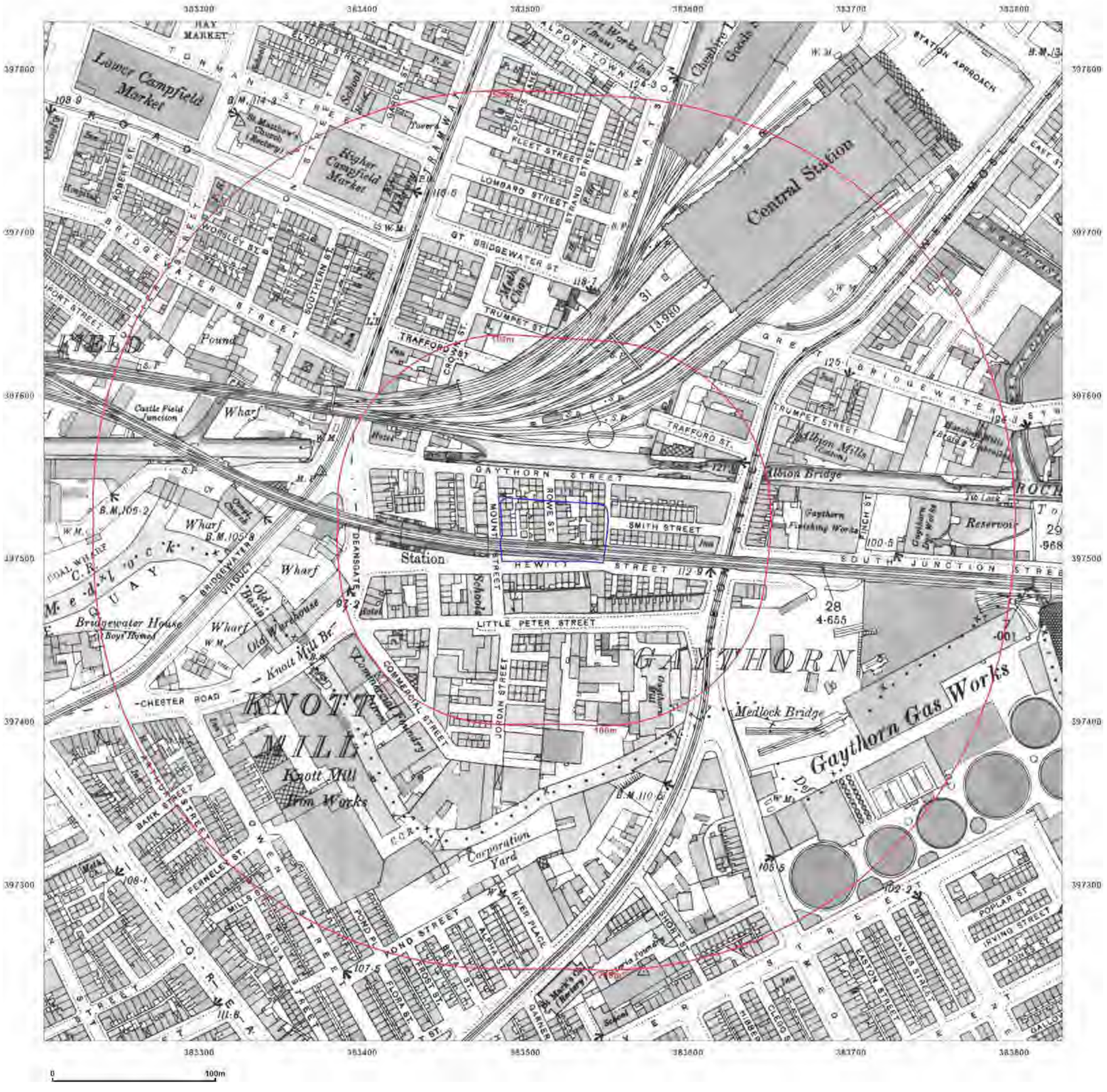
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Site Details:

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Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: County Series

Map date: **1893**

Scale: 1:2,500

Printed at: 1:2,500

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

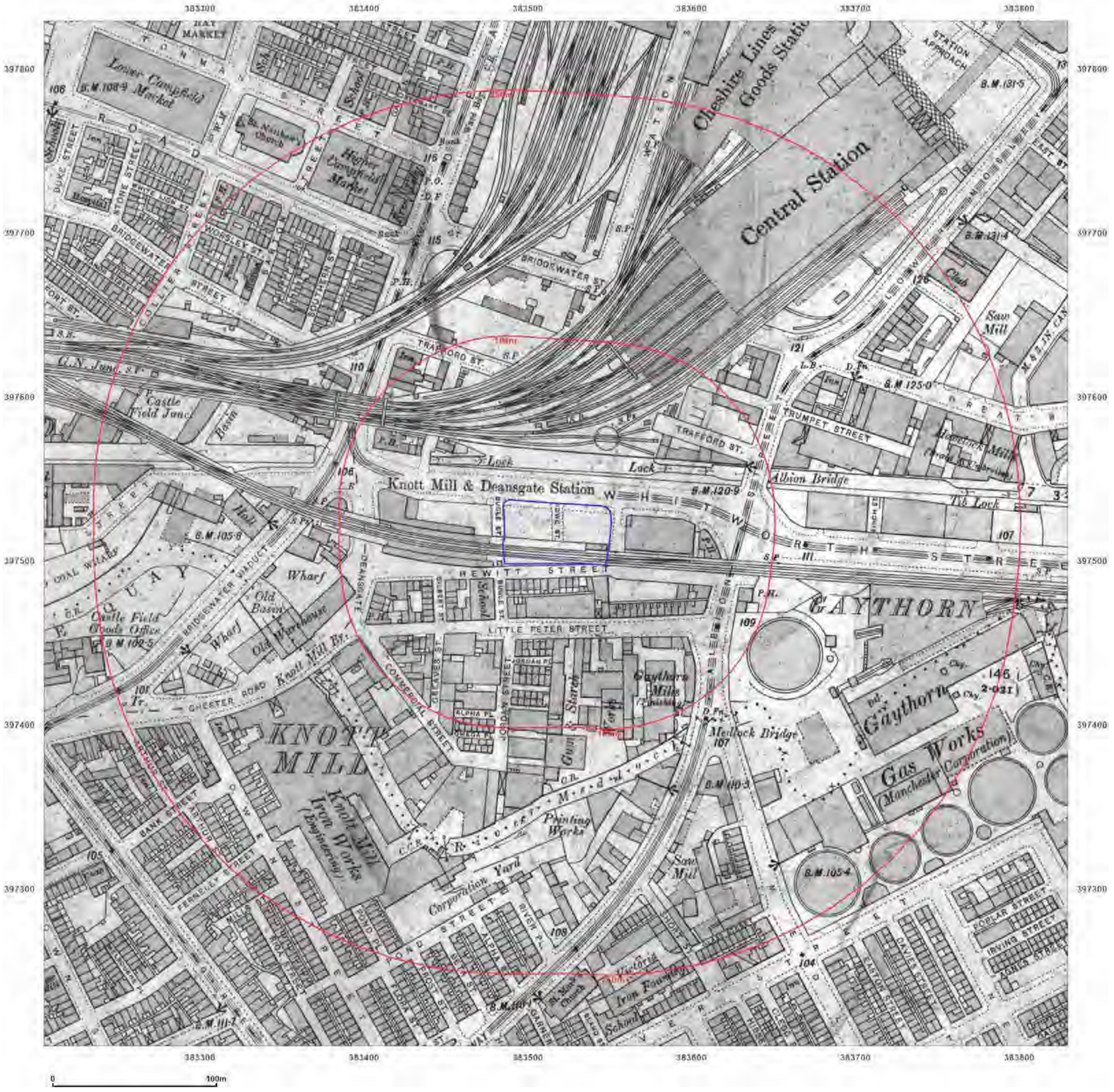
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Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: County Series

Map date: **1908**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1891
Revised 1905
Edition 1908
Copyright N/A
Levelled N/A

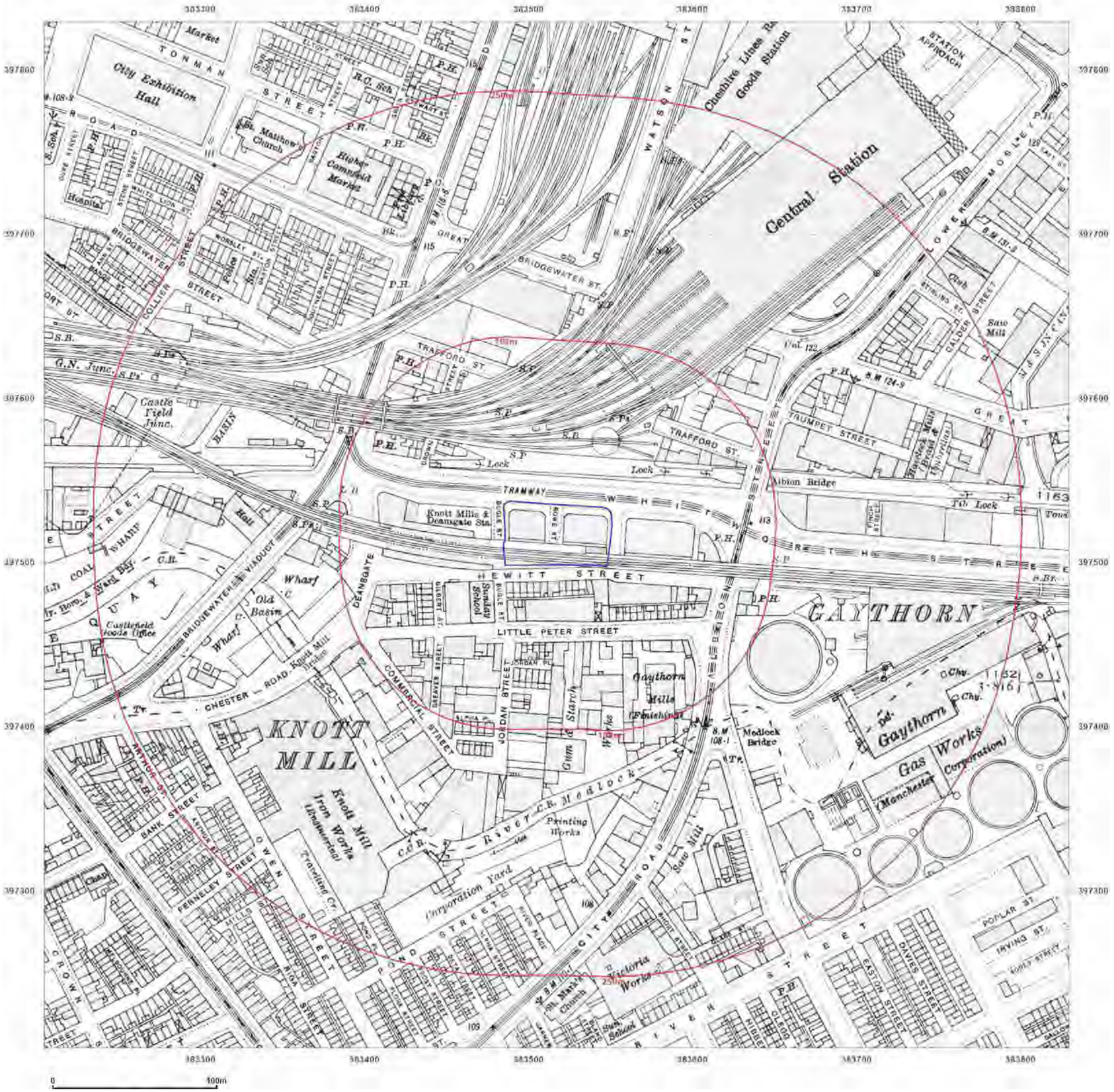
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Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: County Series

Map date: **1922**

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Printed at: 1:2,500

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

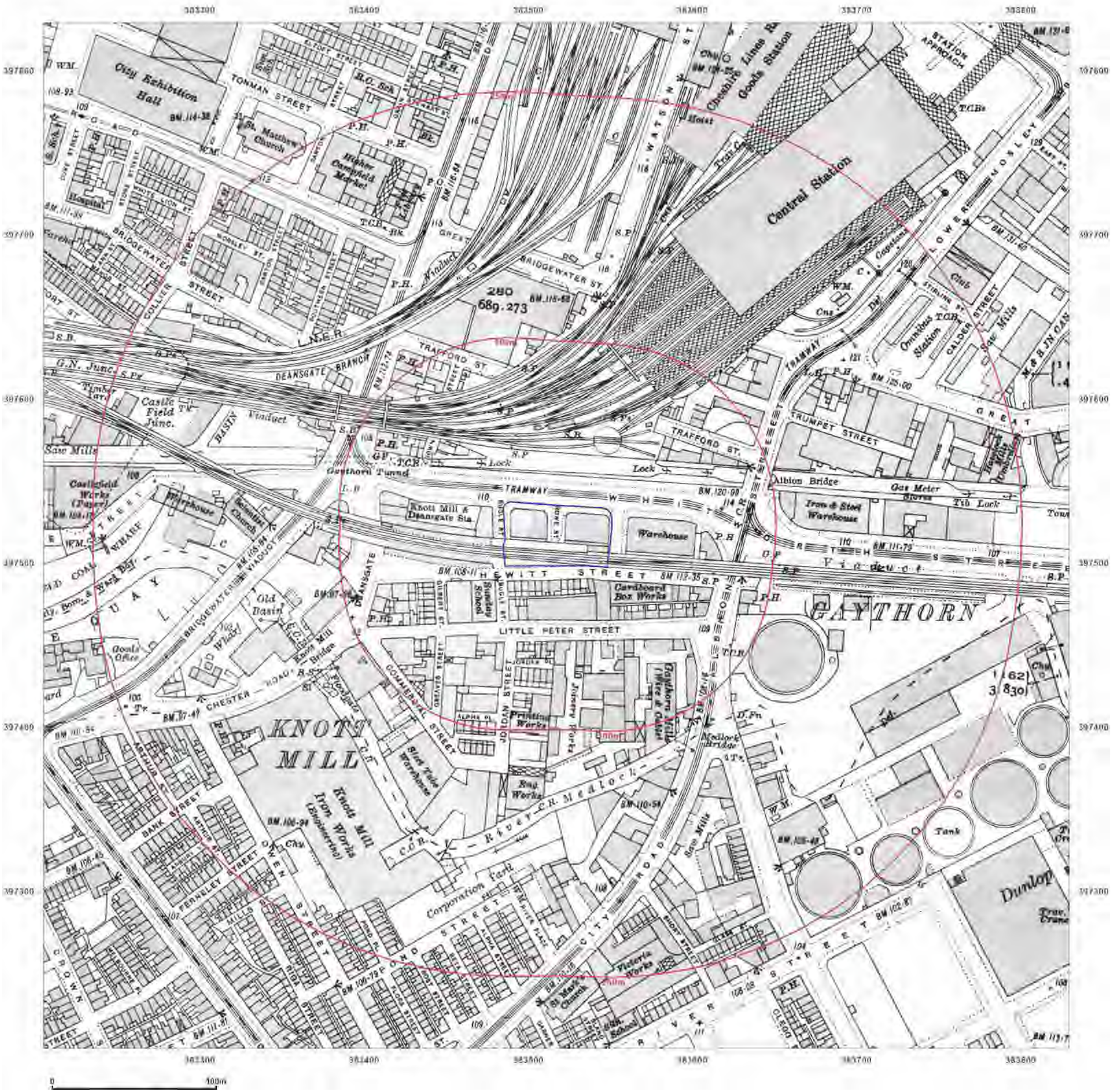
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Site Details:

4201 Whitworth Street,
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Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: County Series

Map date: **1932**

Scale: 1:2,500

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Surveyed 1873
Revised 1932
Edition N/A
Copyright N/A
Levelled 1927

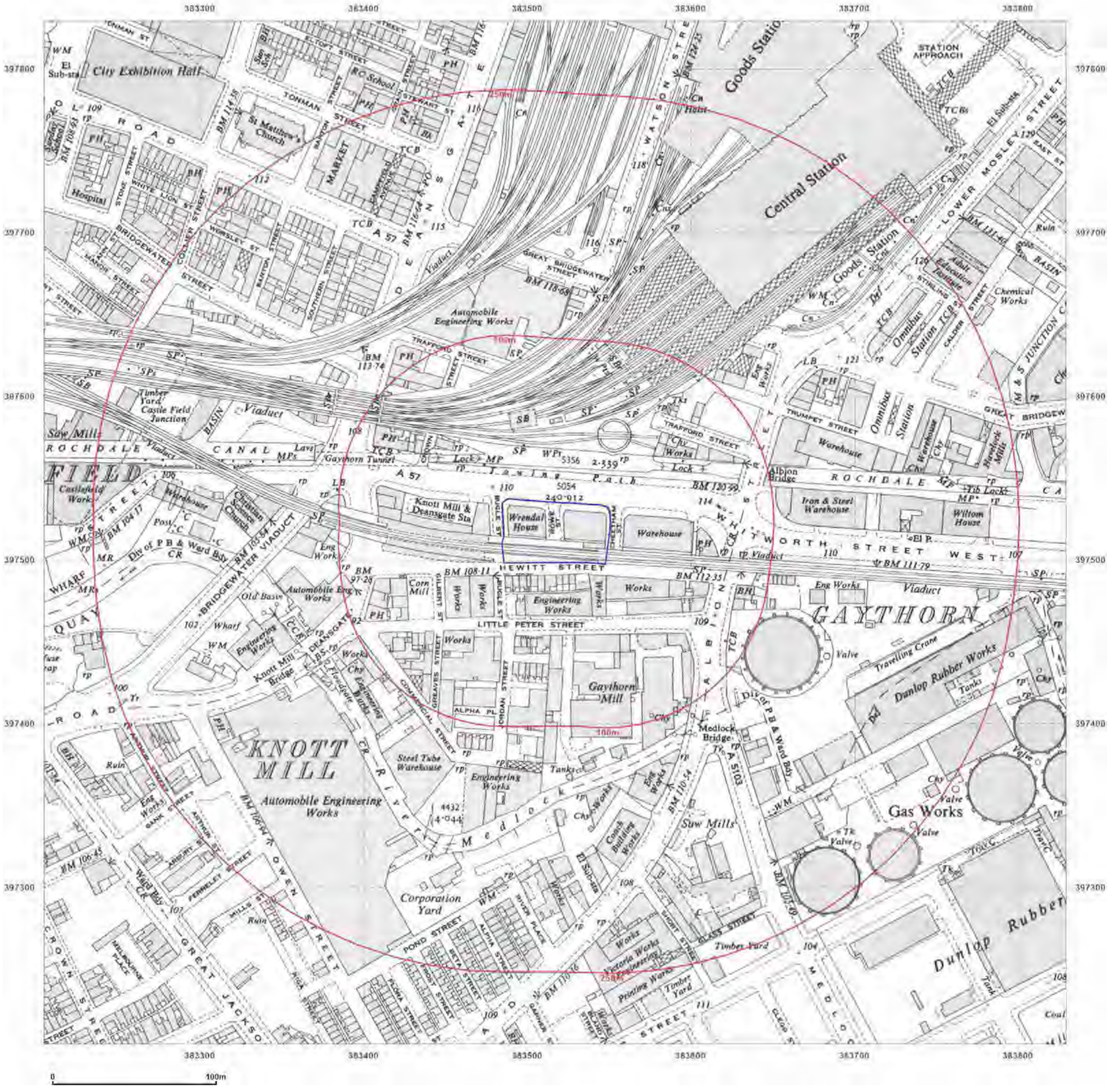
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Site Details:

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Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1948**

Scale: 1:2,500

Printed at: 1:2,500

N
W E
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Surveyed 1948
Revised 1948
Edition N/A
Copyright 1949
Levelled 1927

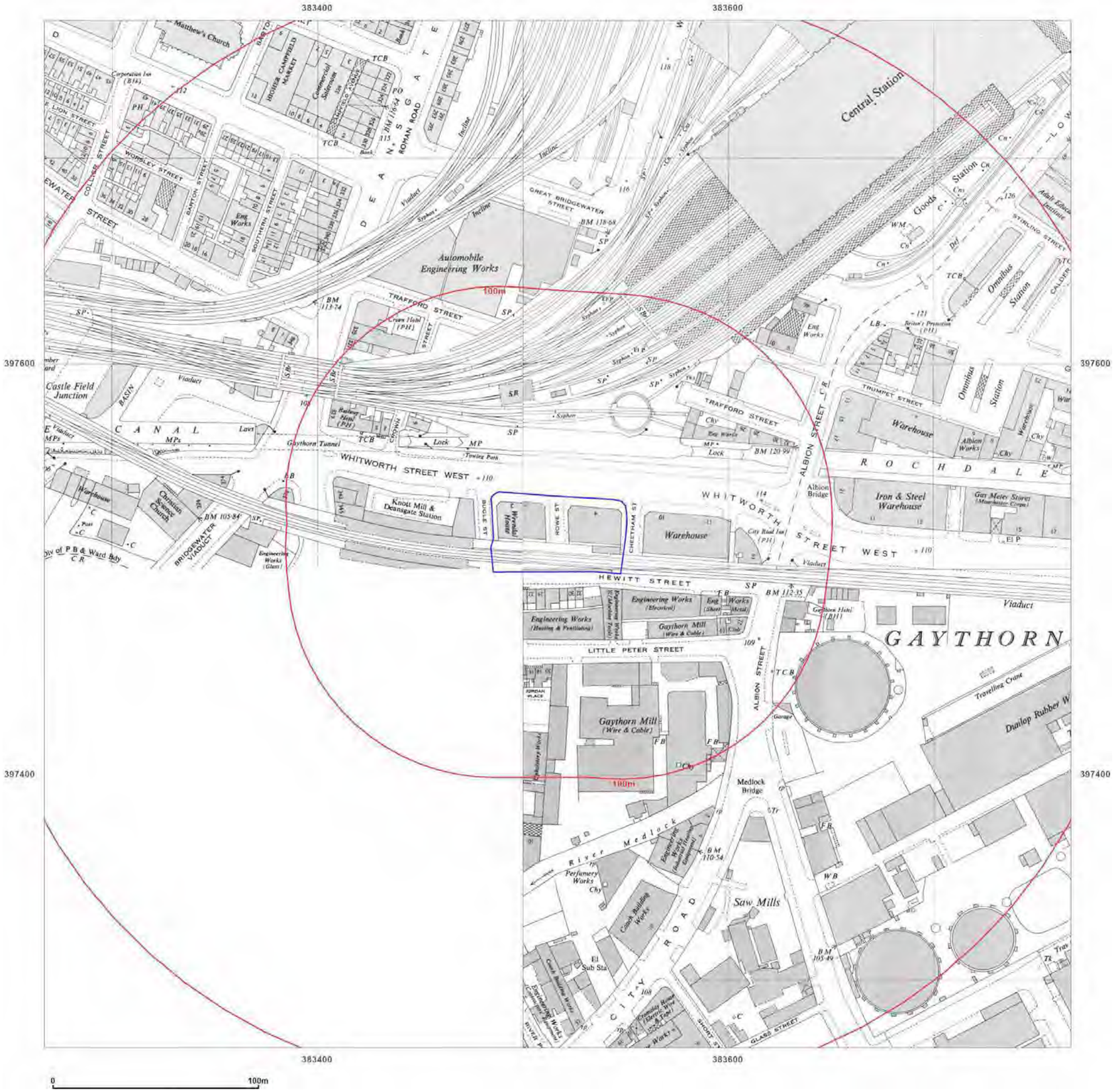
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Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

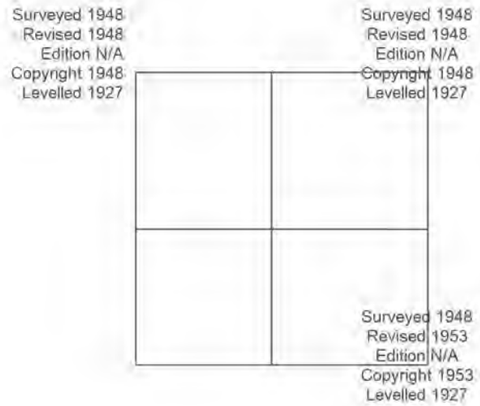
Map Name: National Grid

Map date: **1948-1953**

Scale: 1:1,250

Printed at: 1:2,000

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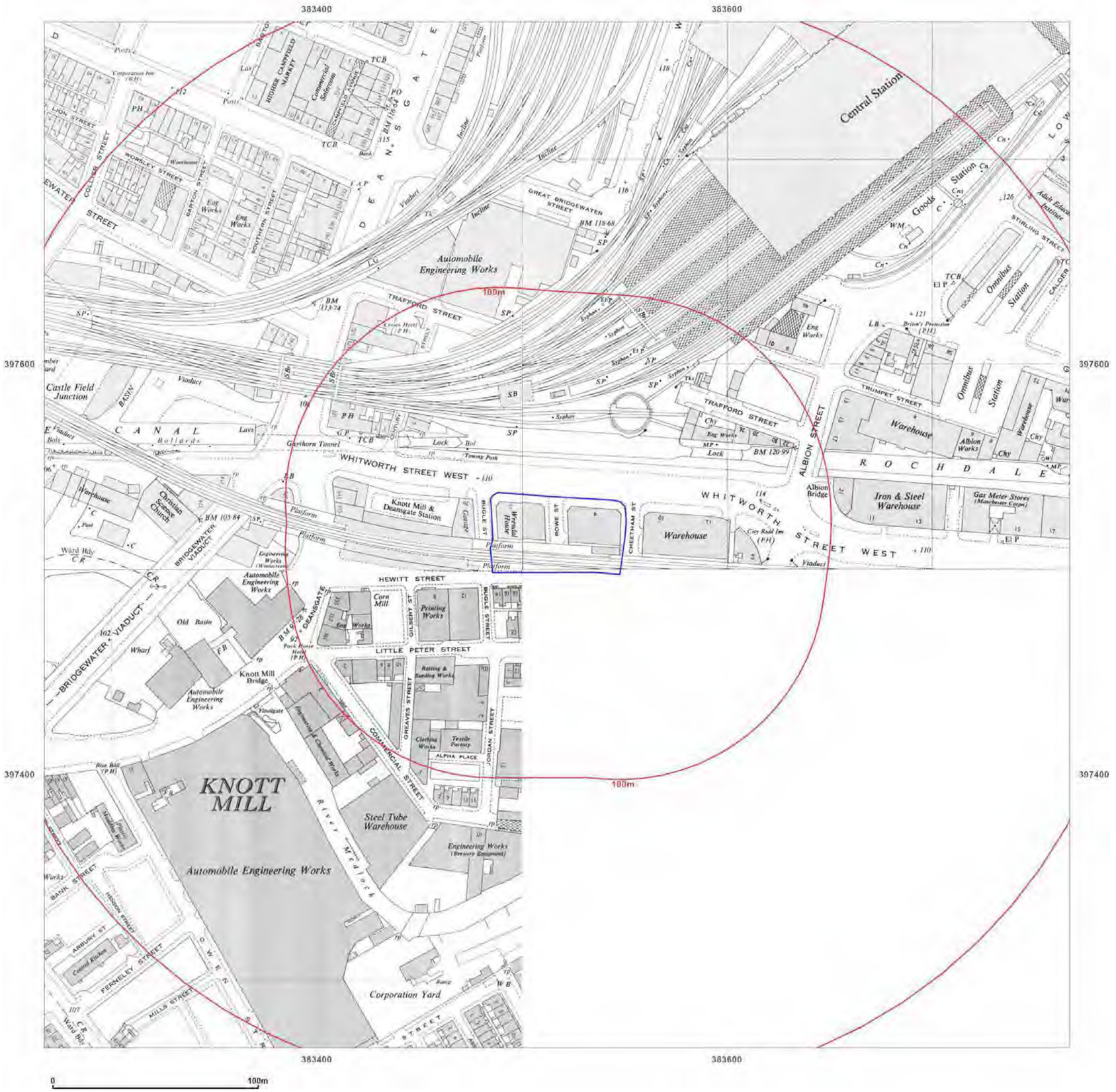
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Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1951-1955**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
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Surveyed 1948
Revised 1955
Edition N/A
Copyright 1955
Levelled 1927

Surveyed 1951
Revised 1951
Edition N/A
Copyright 1951
Levelled 1927

Surveyed 1953
Revised 1953
Edition N/A
Copyright 1954
Levelled 1927

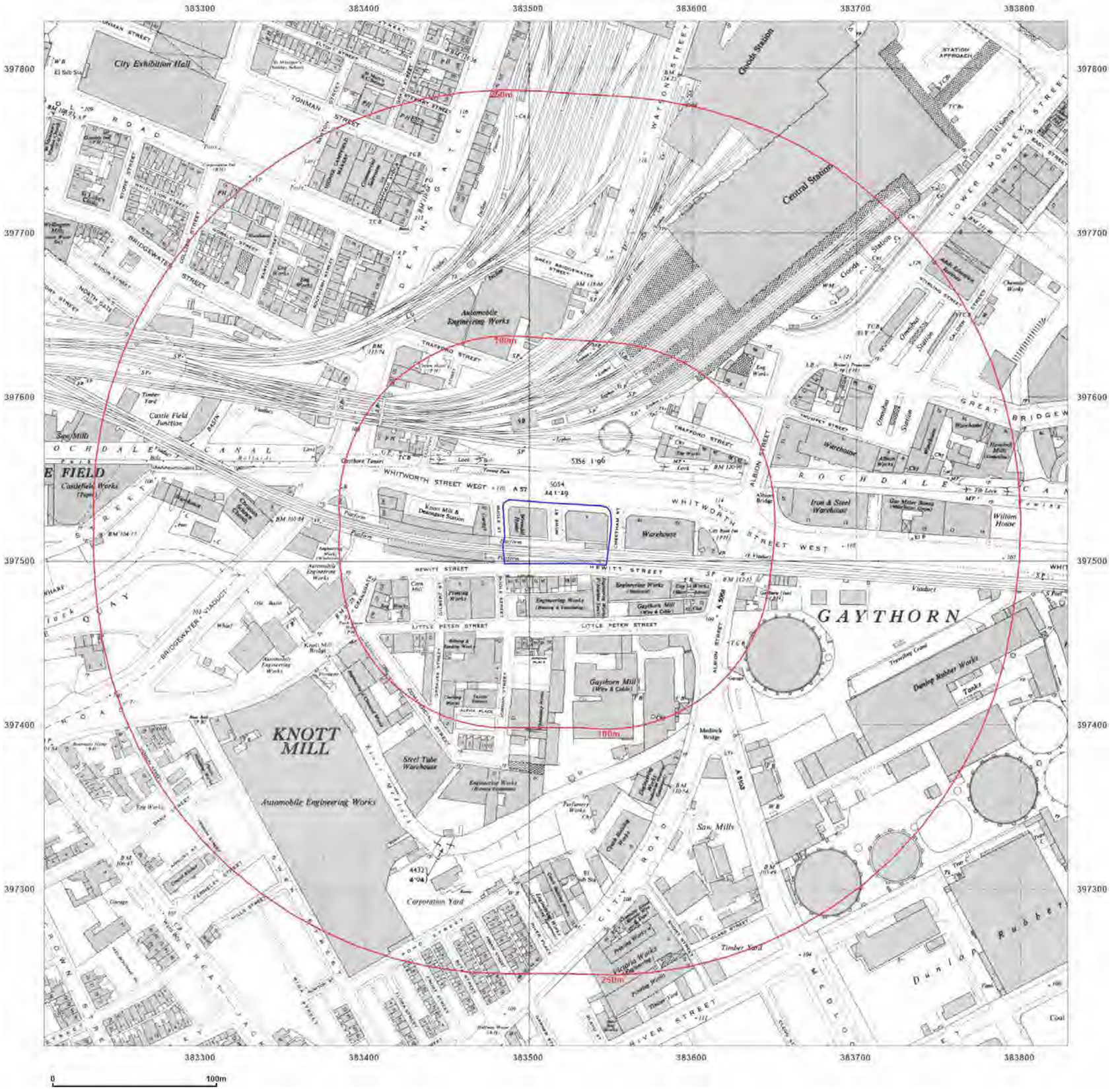
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Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1956**

Scale: 1:2,500

Printed at: 1:2,500

N
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Surveyed 1953
Revised 1953
Edition N/A
Copyright 1957
Levelled 1927

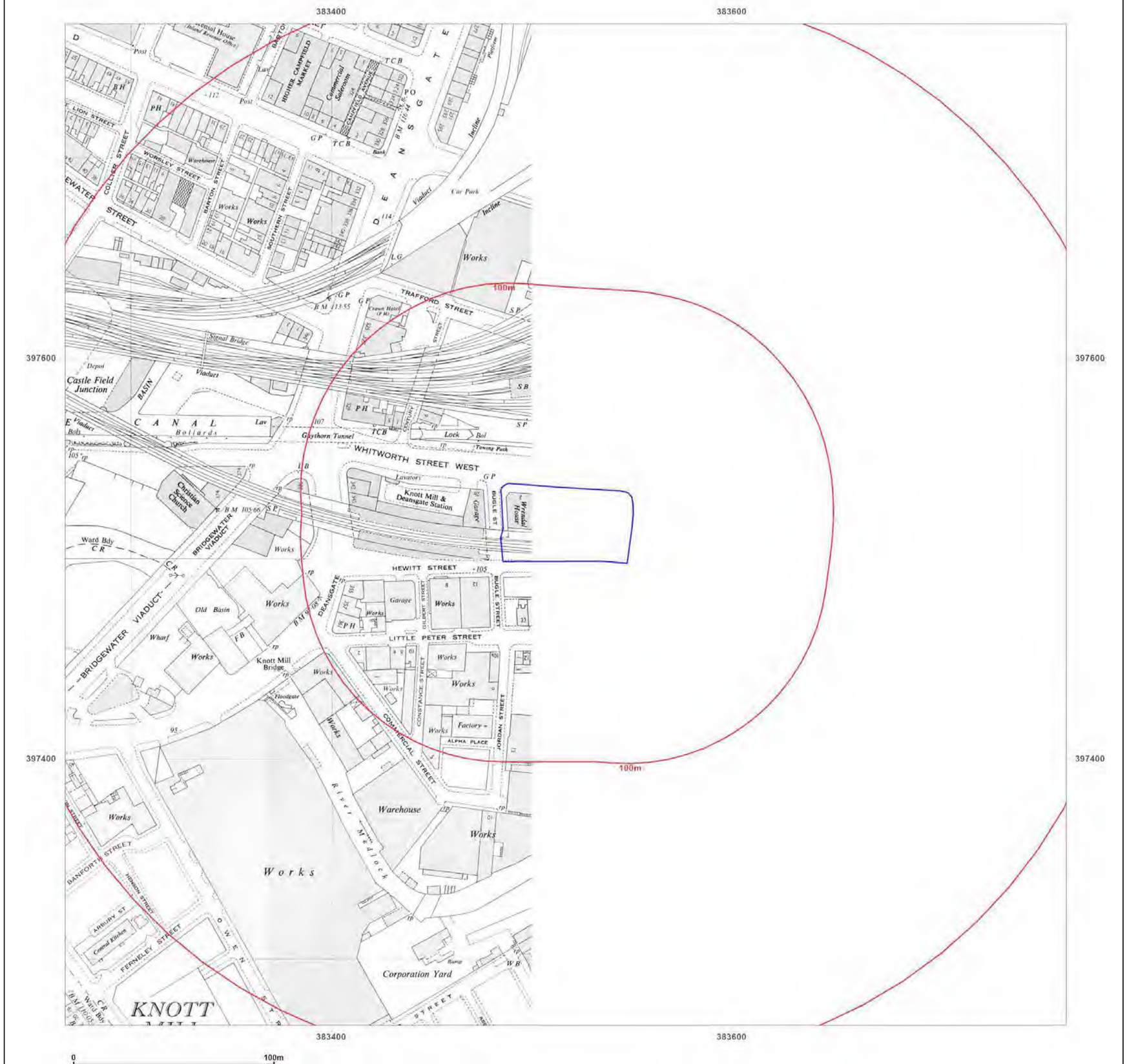
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Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1960-1963**

Scale: 1:1,250

Printed at: 1:2,000

N
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Surveyed 1948
Revised 1962
Edition N/A
Copyright 1963
Levelled 1958

Surveyed 1959
Revised 1959
Edition N/A
Copyright 1960
Levelled 1958

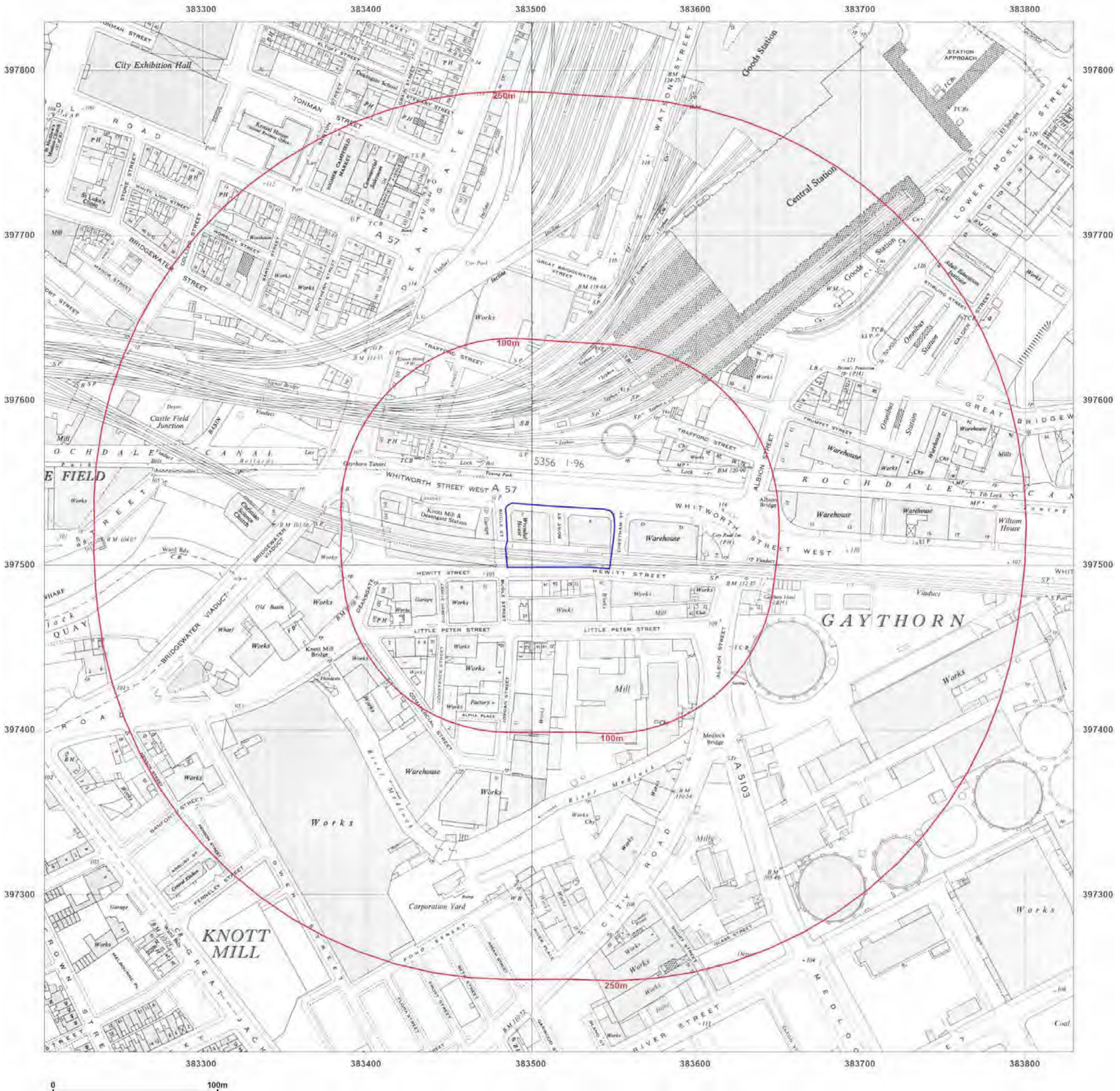
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Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1963**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1963
Revised 1963
Edition N/A
Copyright 1965
Levelled 1958

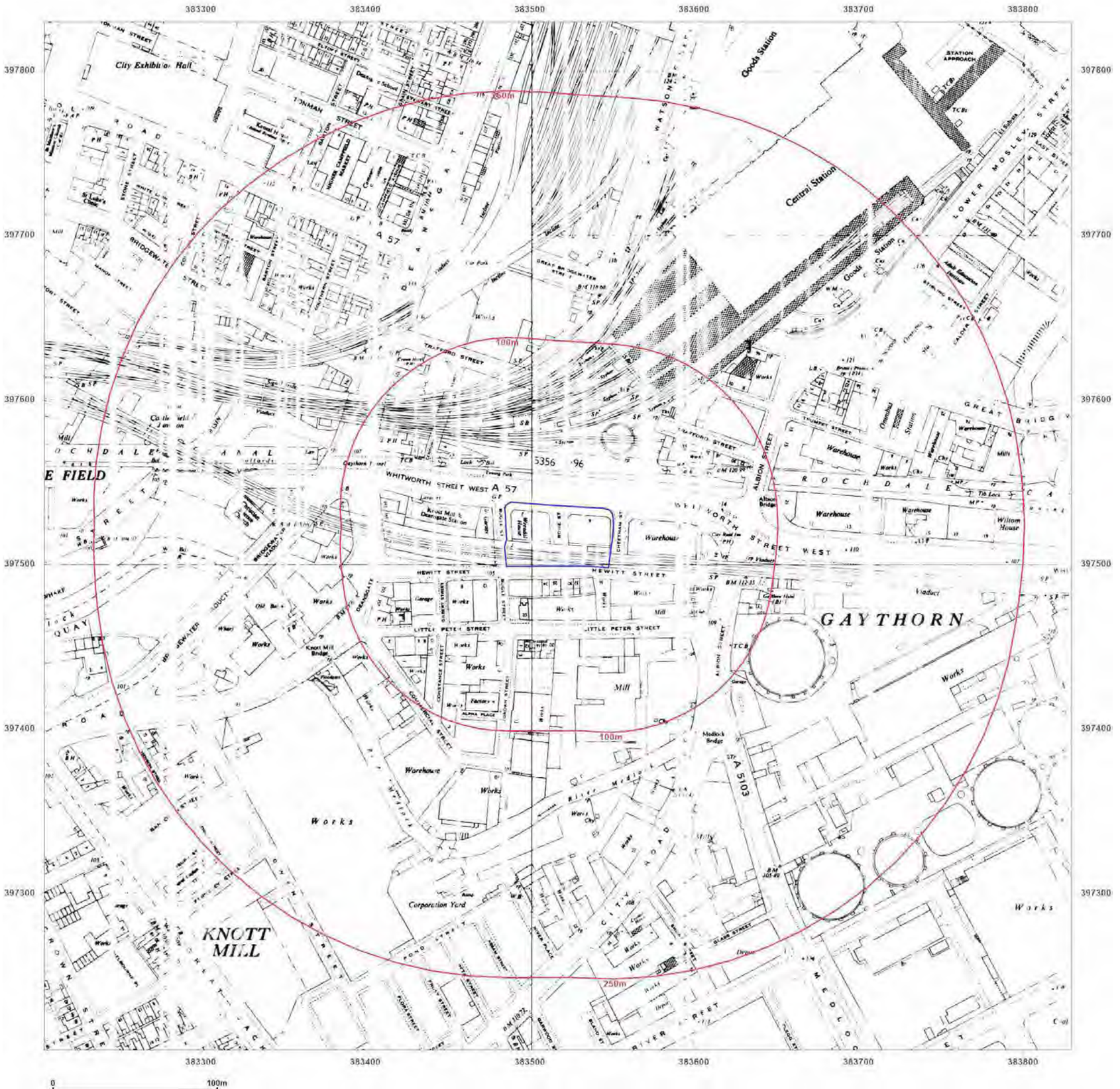
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Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1964**

Scale: 1:2,500

Printed at: 1:2,500

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

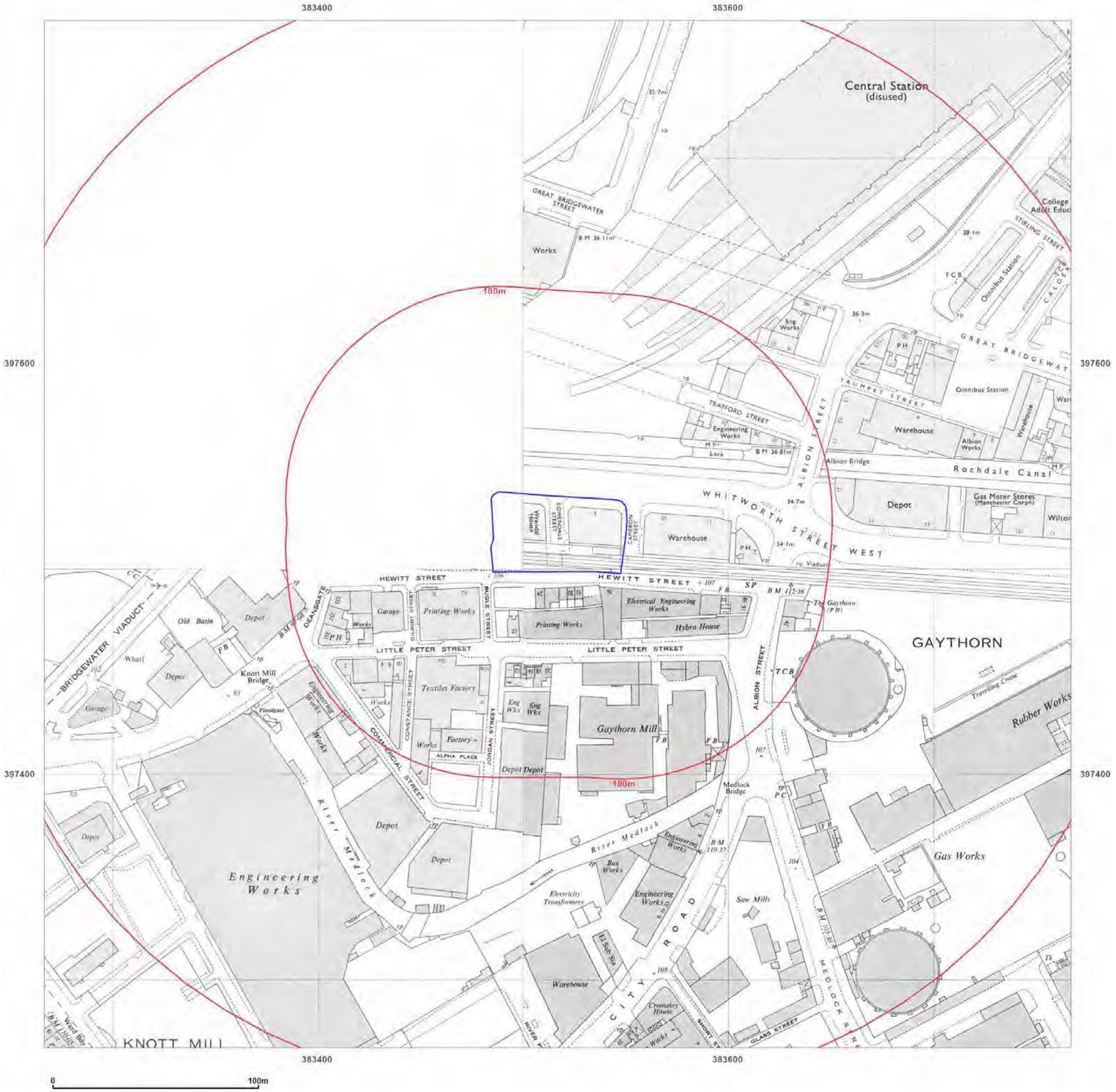
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Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1969-1973**

Scale: 1:1,250

Printed at: 1:2,000

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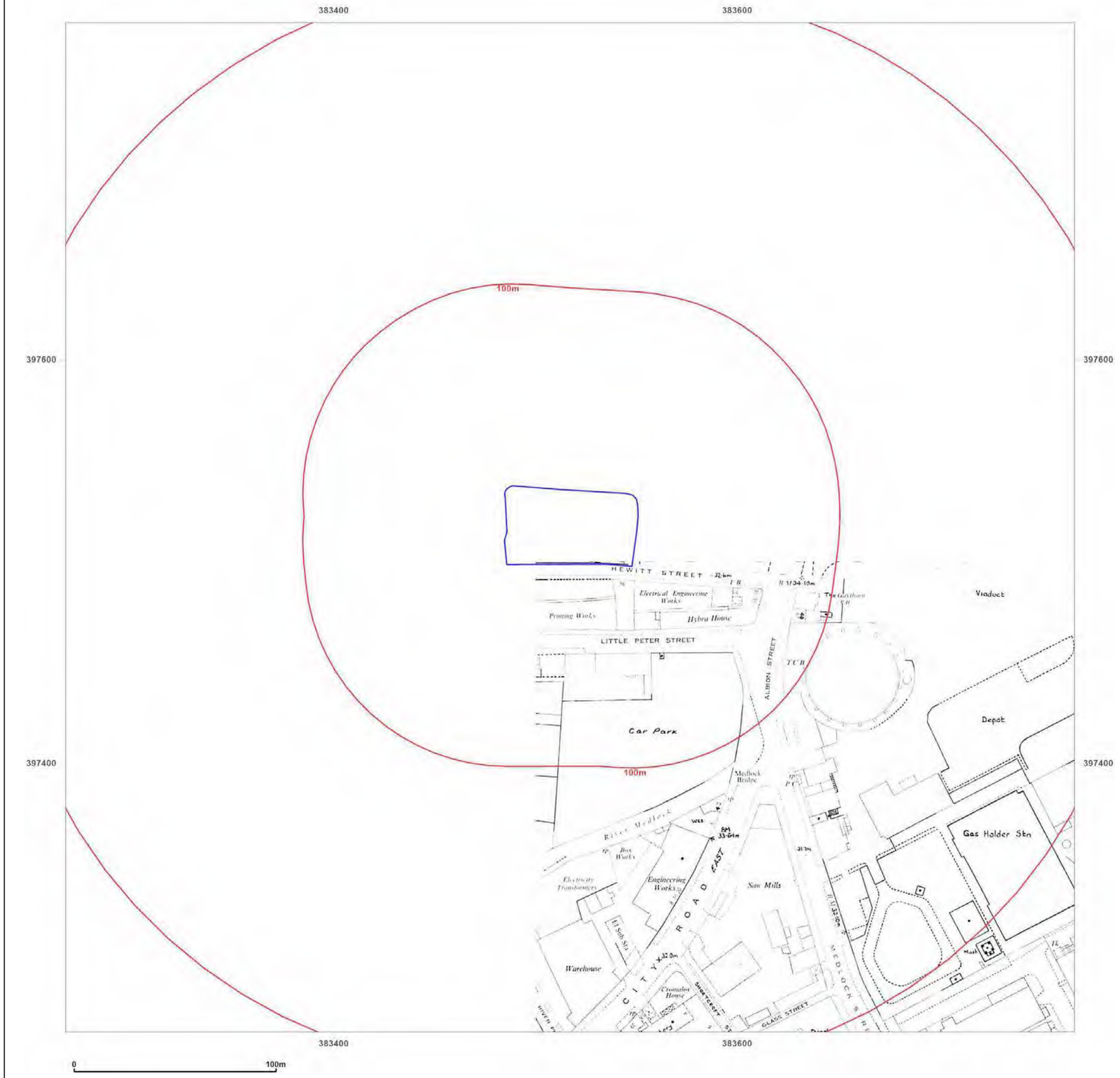
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Report Ref: GS-A18-3RL-F6M-9UY
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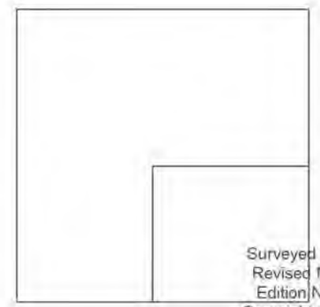
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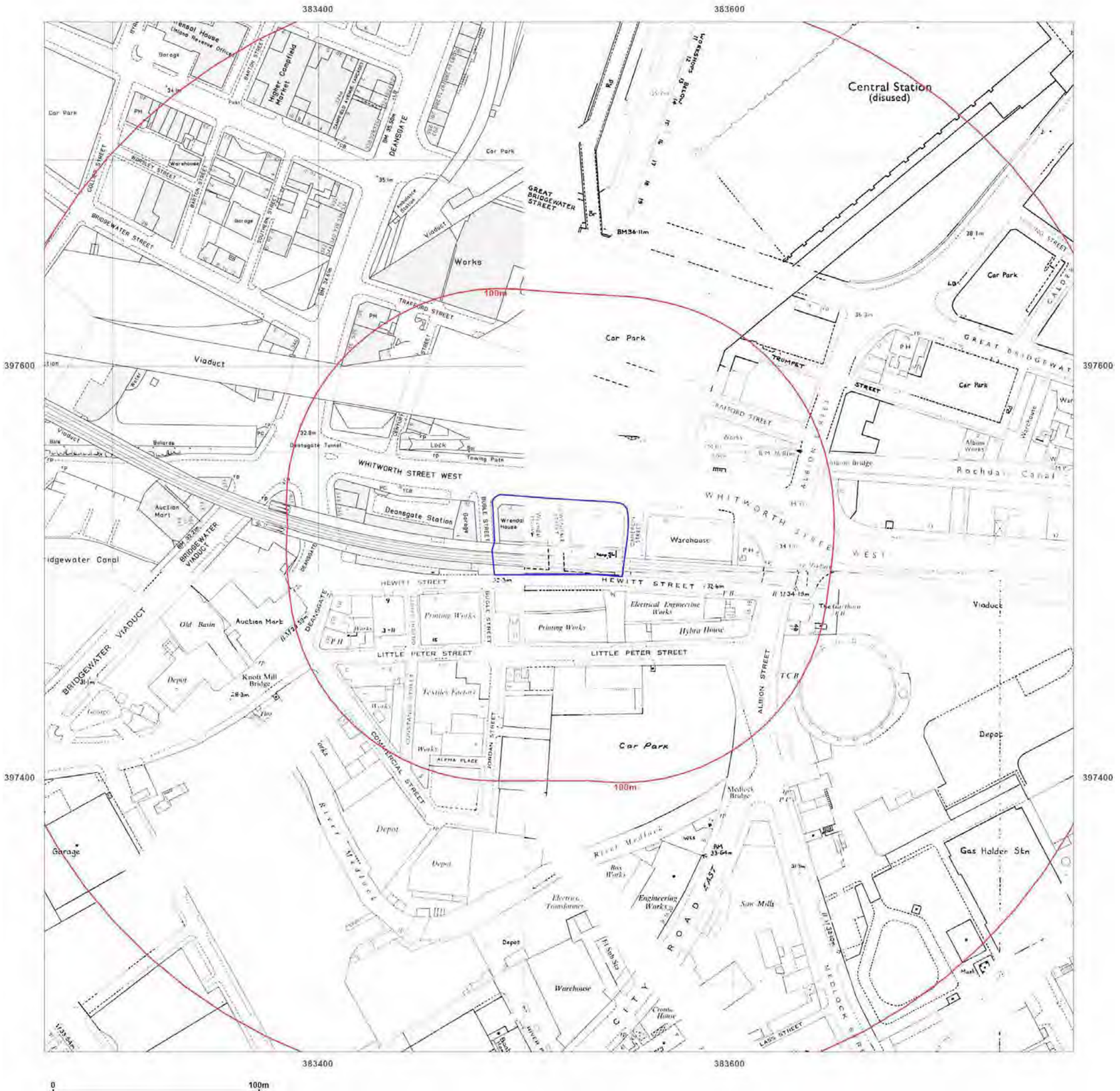
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Site Details:

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Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

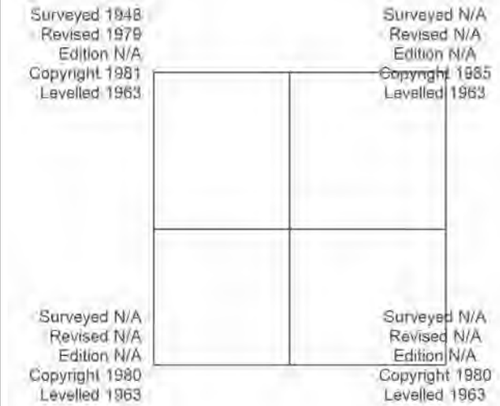
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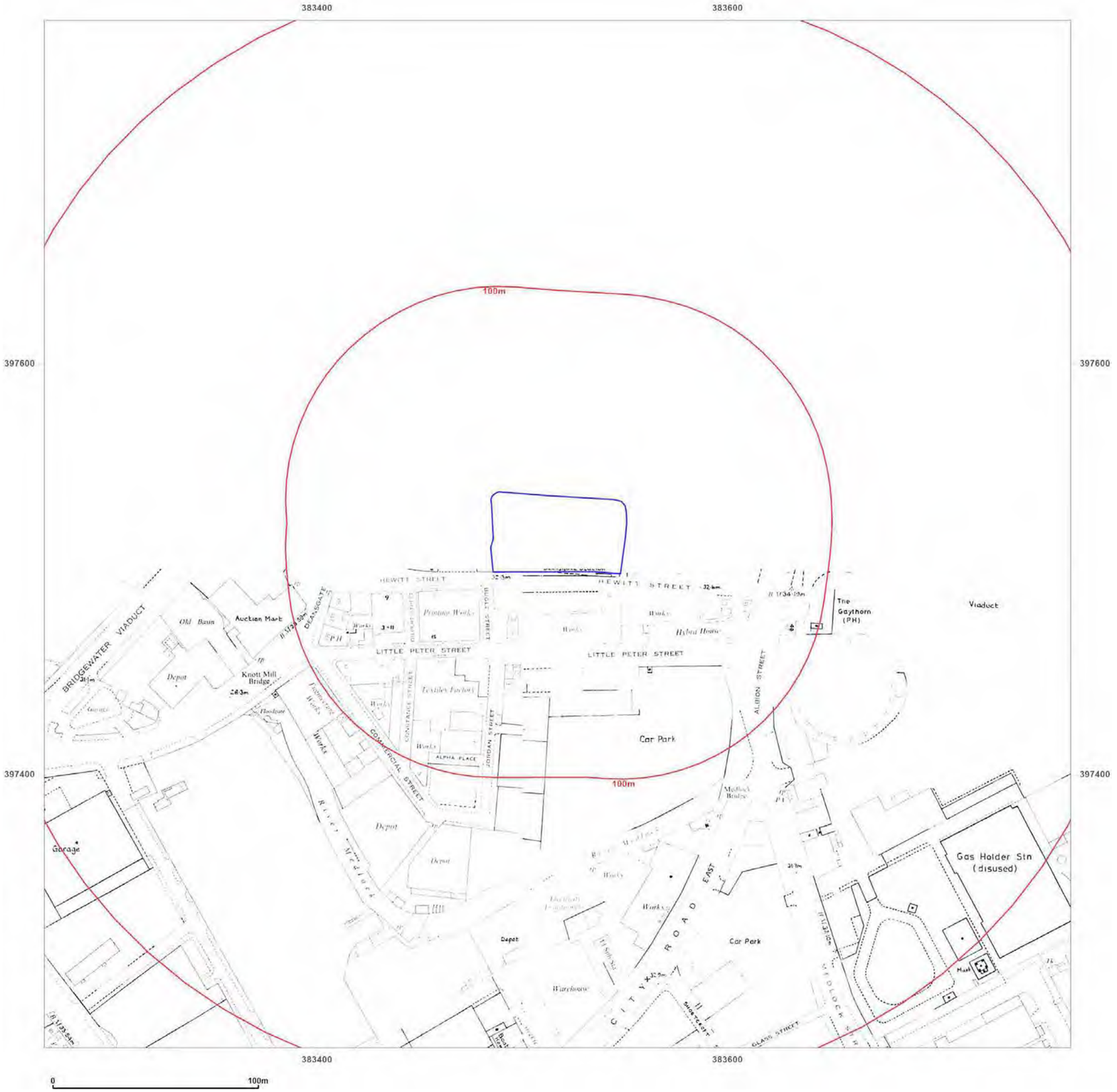
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Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

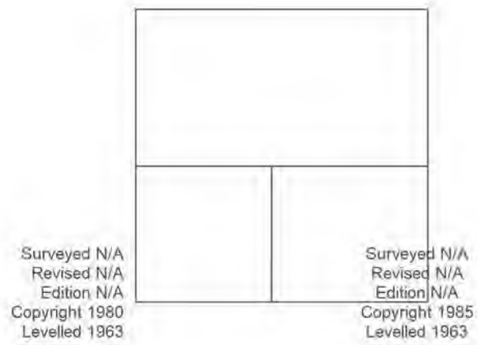
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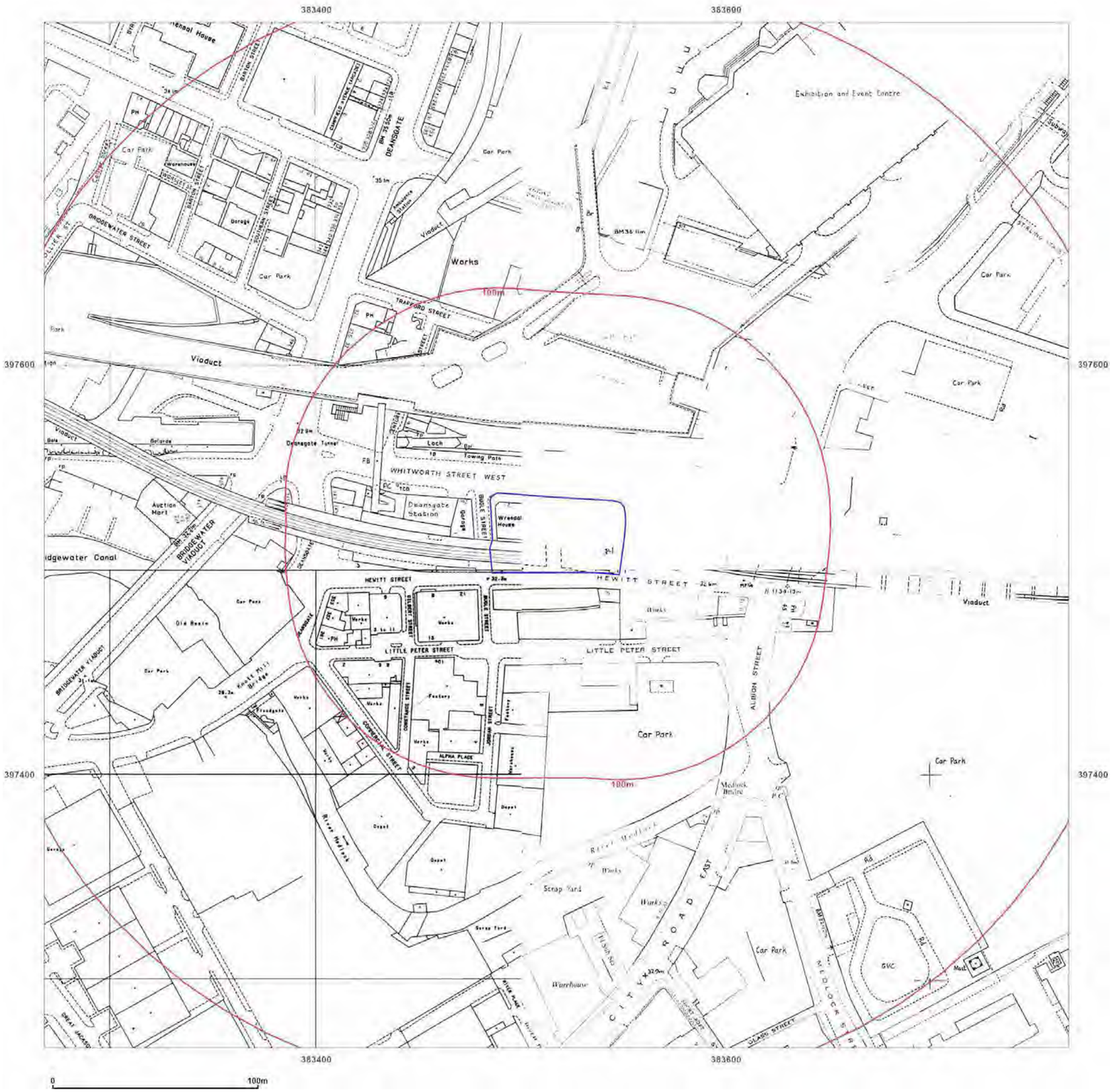
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Groundsure INSIGHTS

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Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
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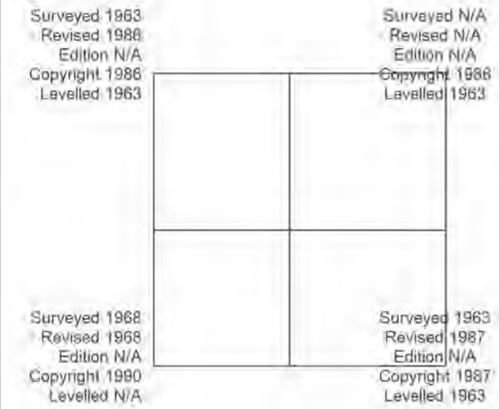
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Printed at: 1:2,000

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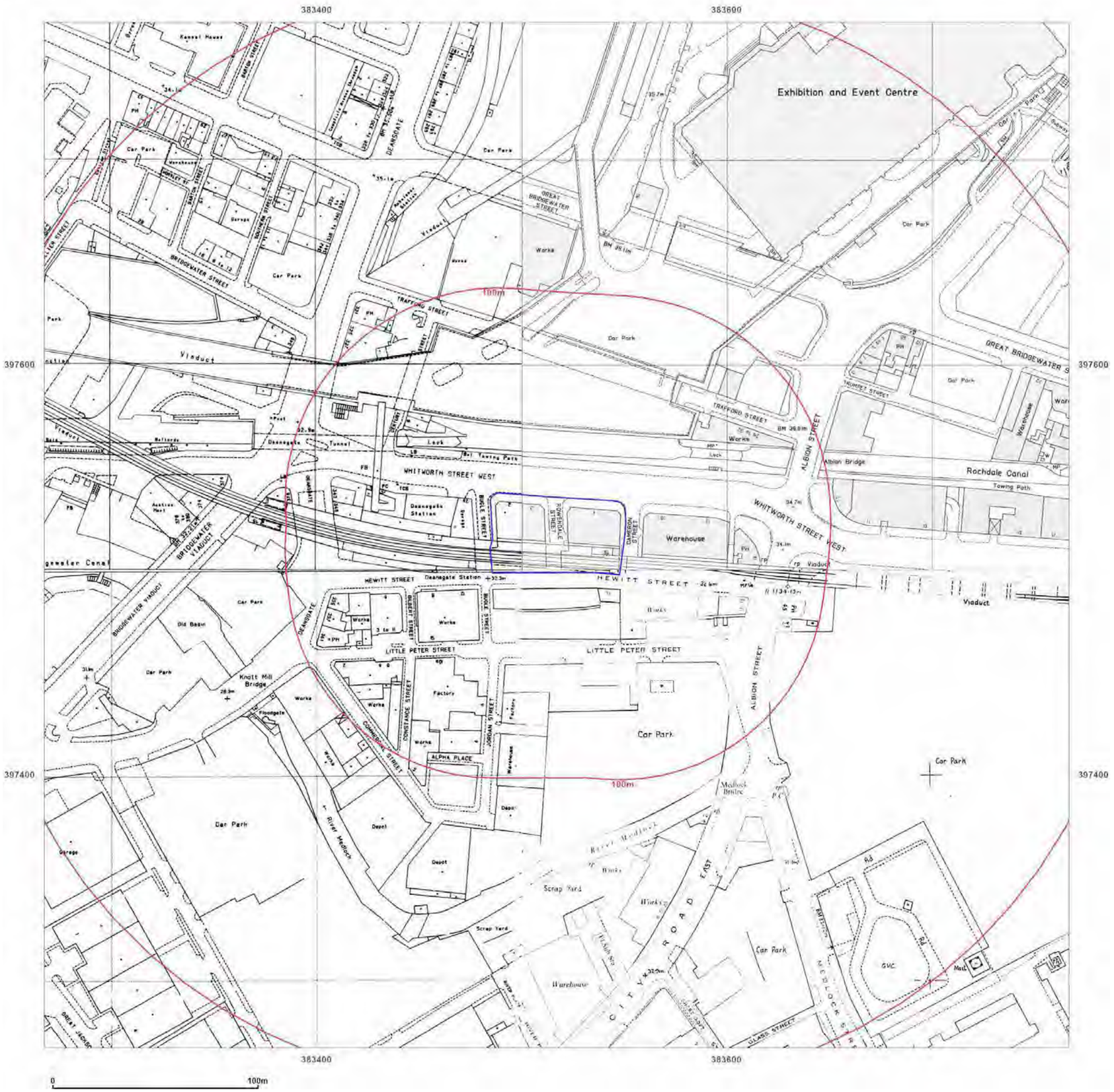
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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

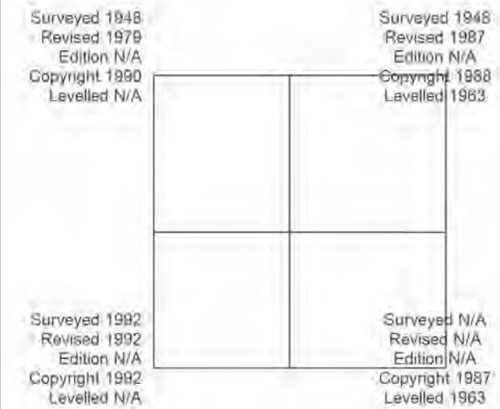
Map Name: National Grid

Map date: **1987-1992**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S



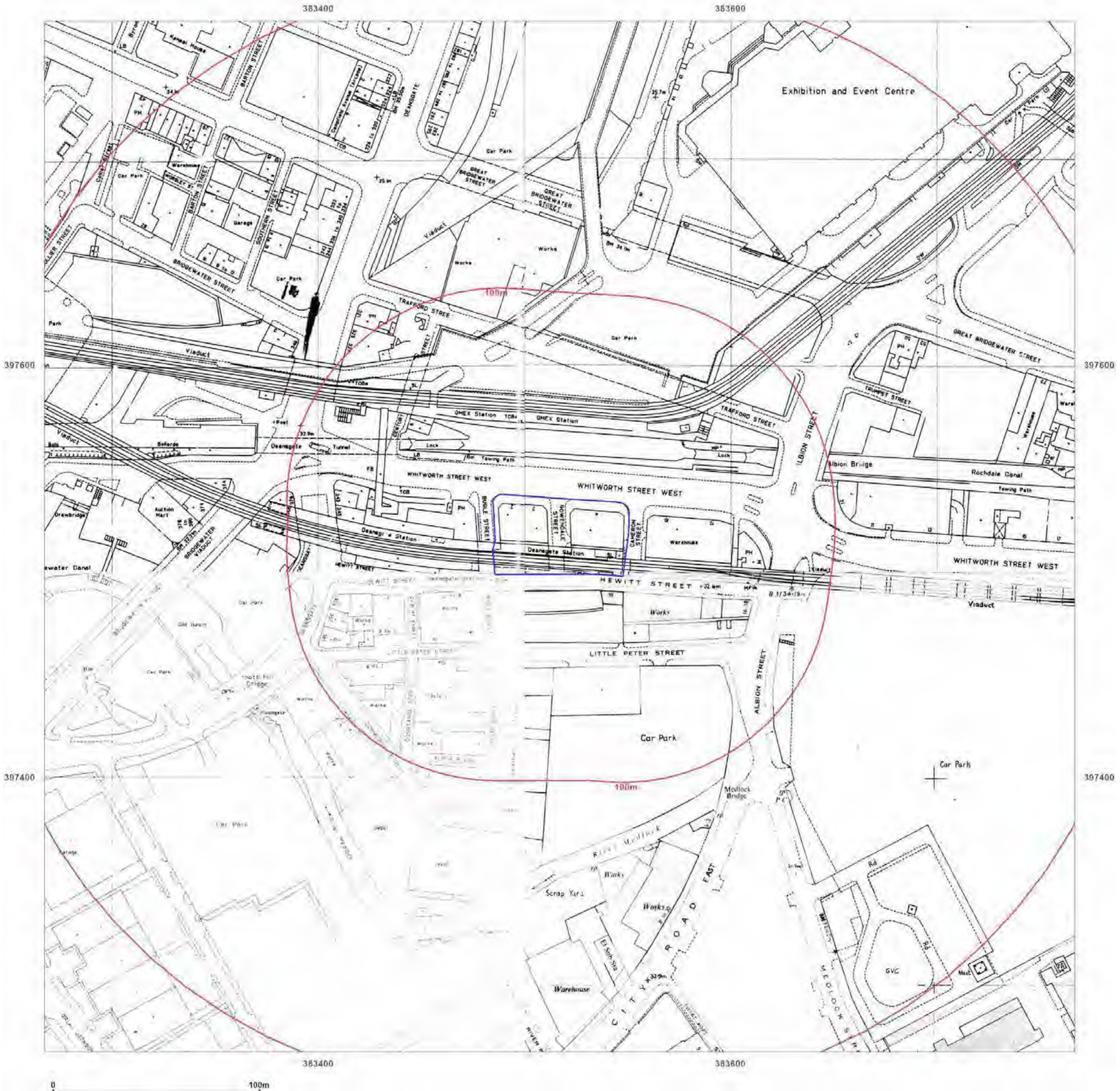
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Production date: 20 June 2024

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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

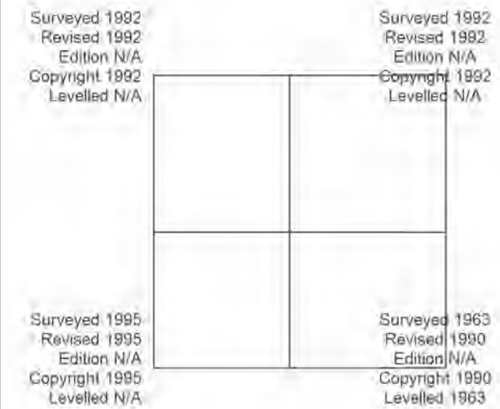
Map Name: National Grid

Map date: **1990-1995**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S



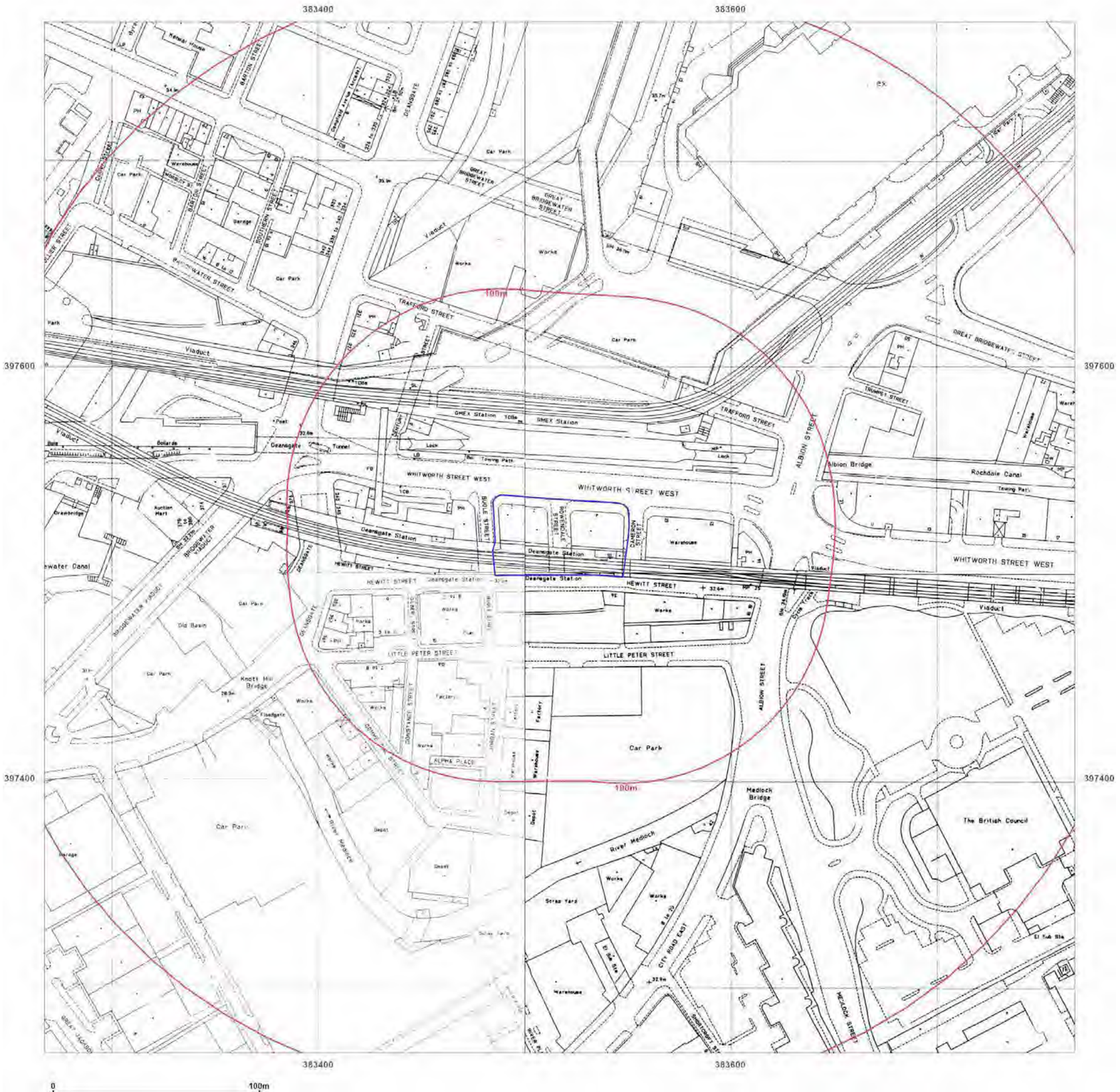
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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1992-1995**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

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

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

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

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

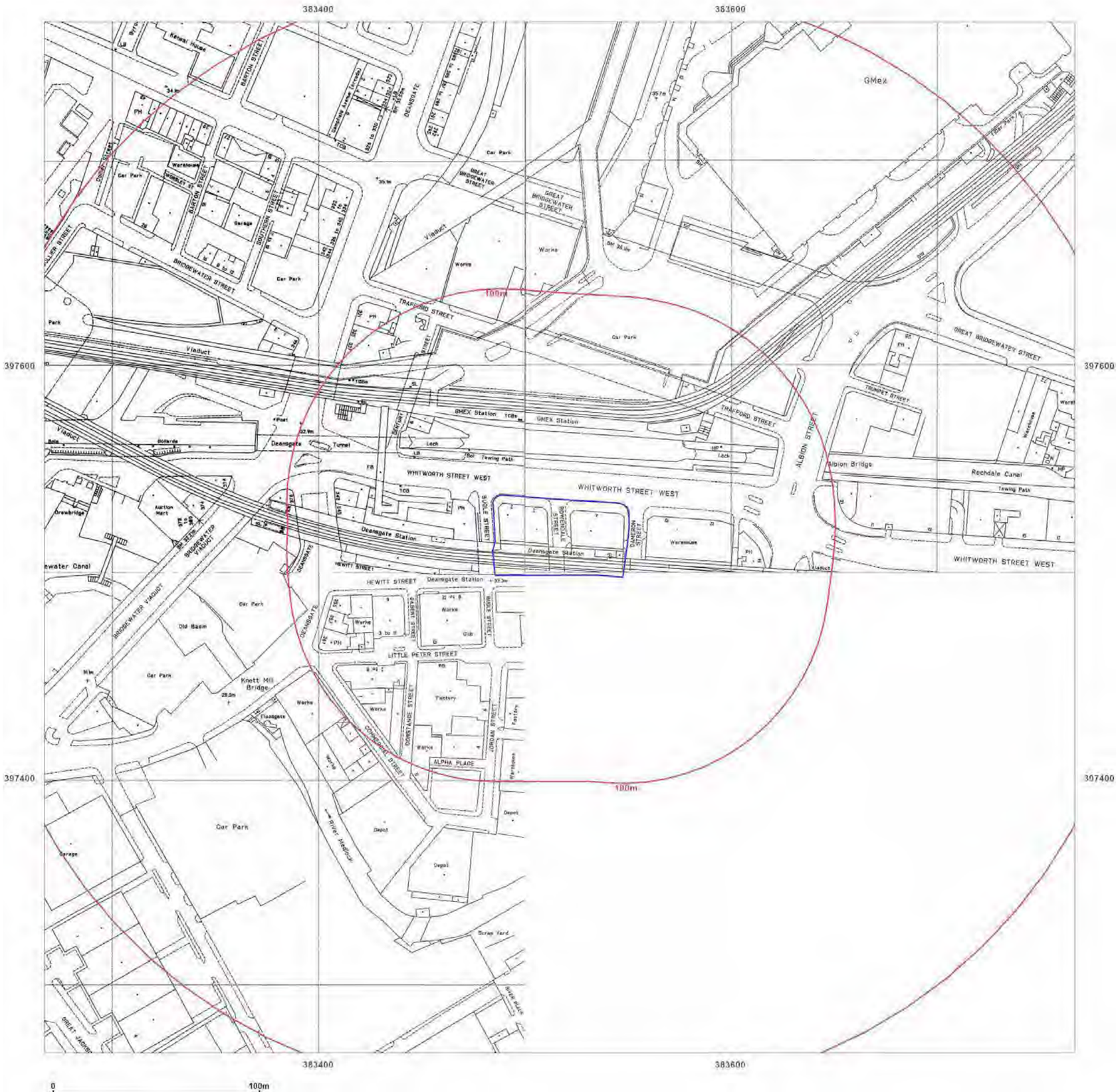
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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

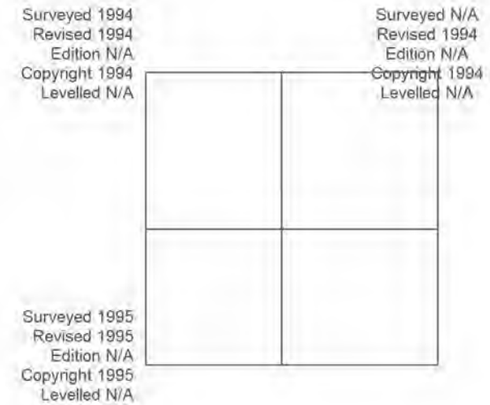
Map Name: National Grid

Map date: **1994-1995**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S



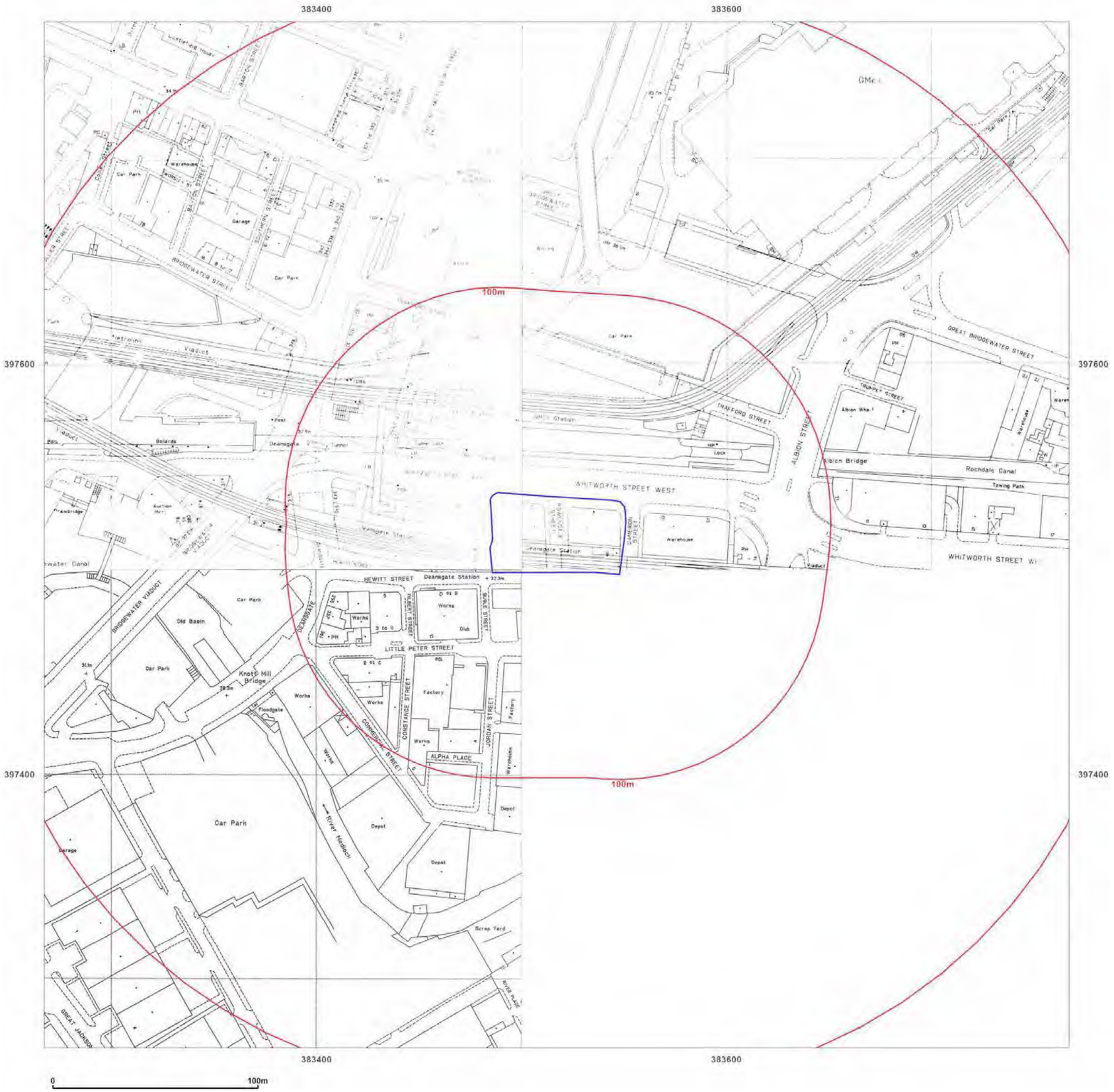
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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1995**

Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

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

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

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

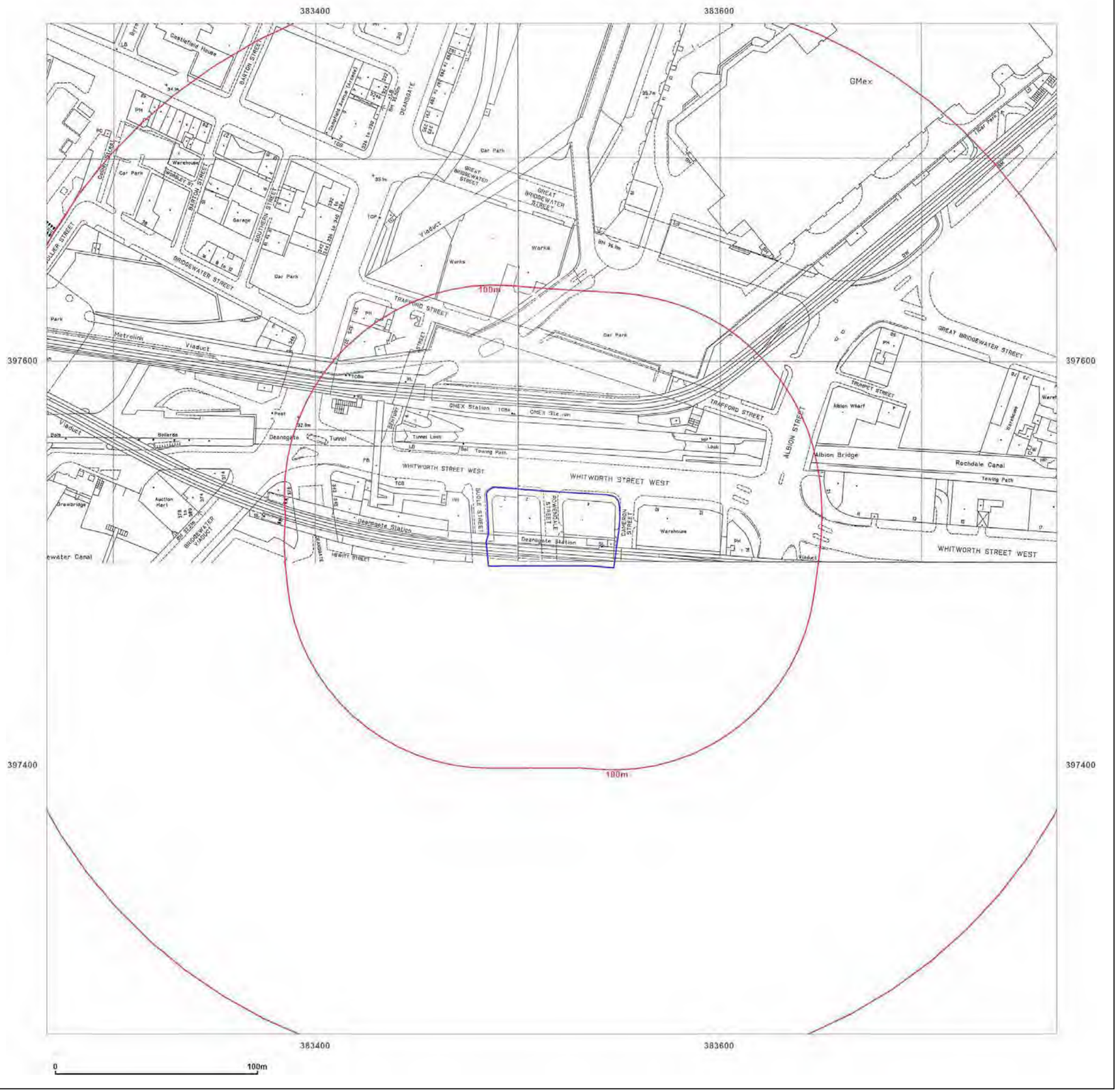
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Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1995**

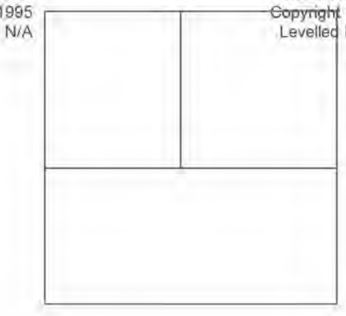
Scale: 1:1,250

Printed at: 1:2,000

N
W E
S

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

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



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Site Details:

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Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

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

N
W E
S



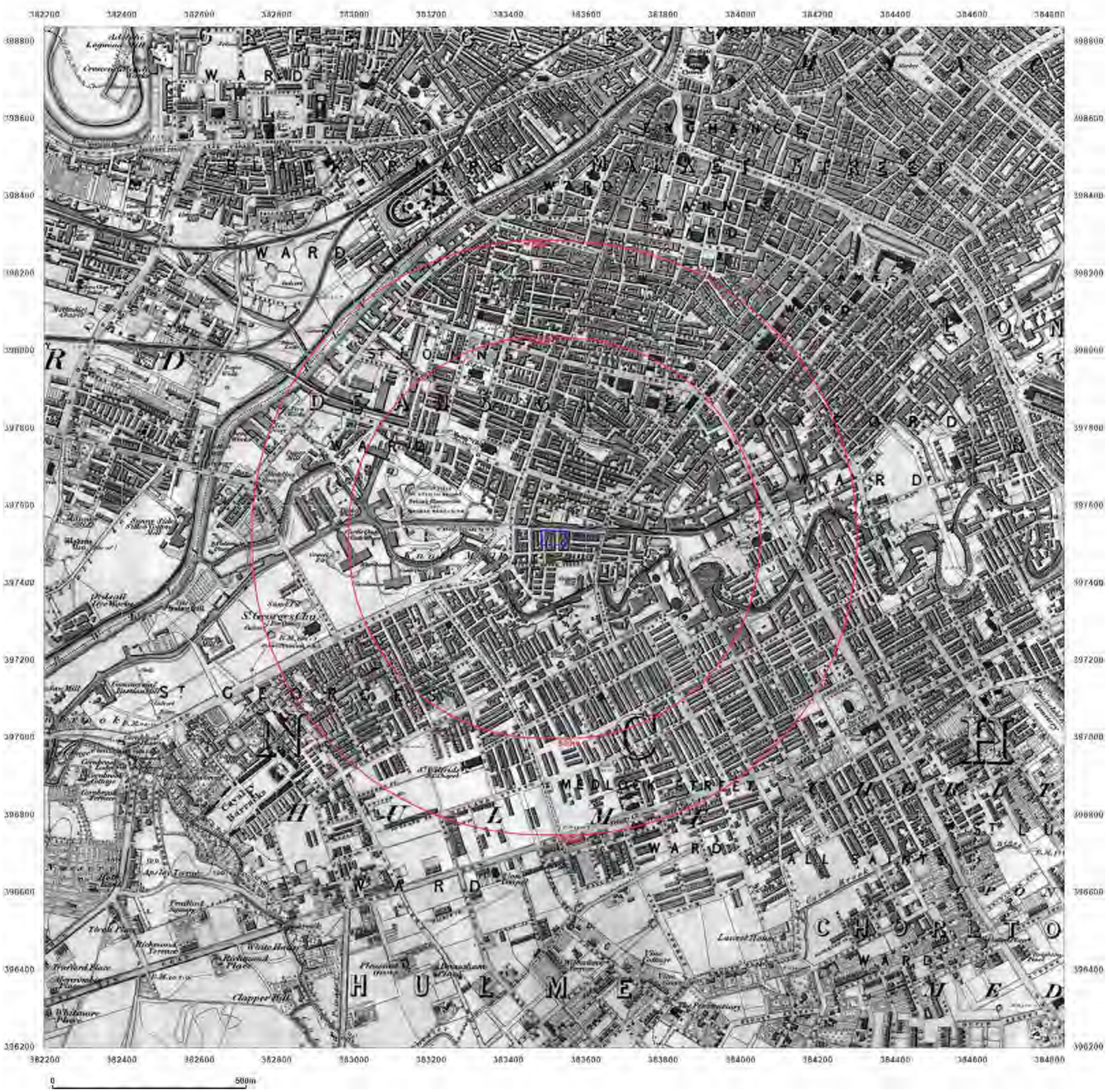
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Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

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

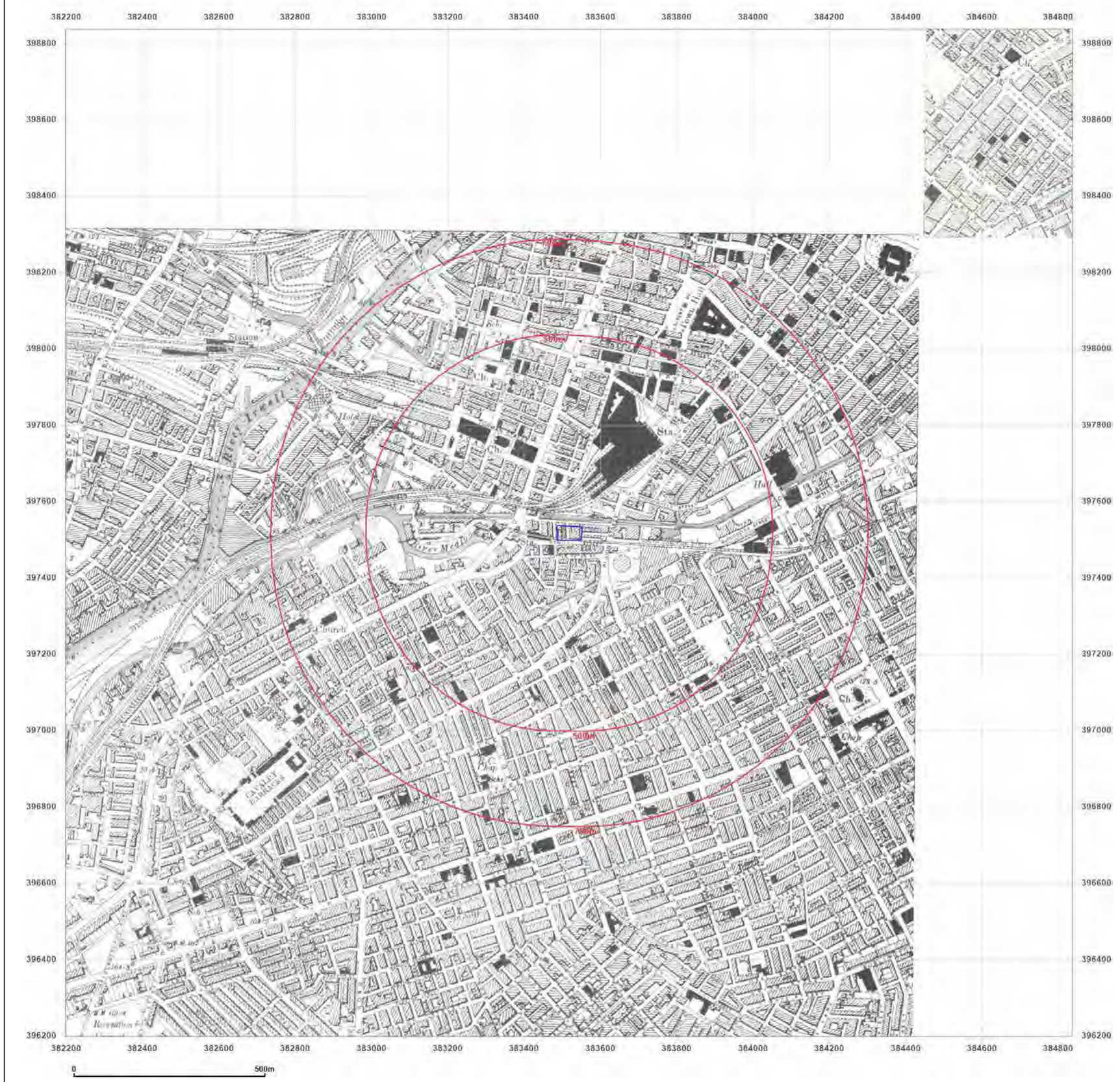
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Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

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

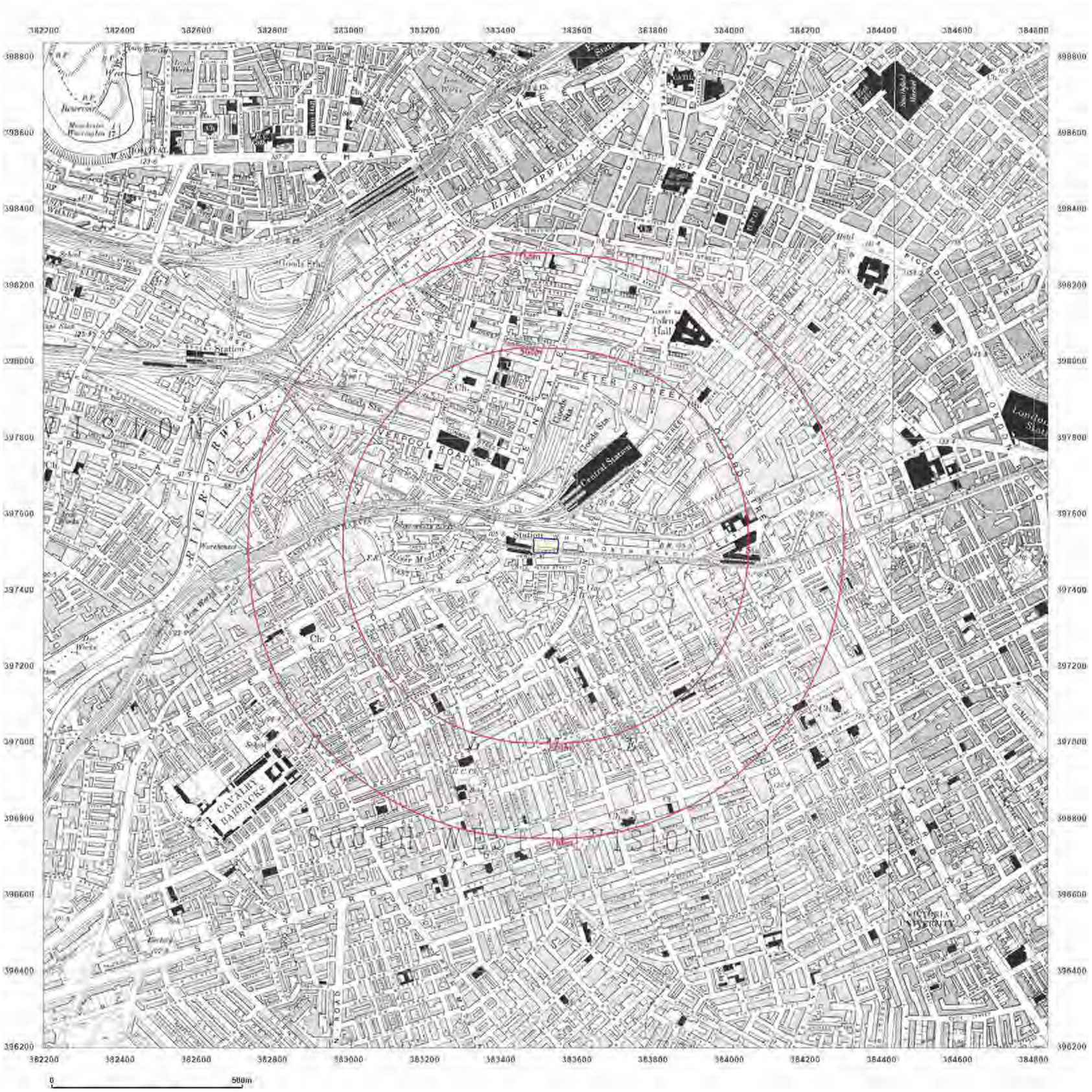
Surveyed 1894
Revised 1896
Edition 1896
Copyright N/A
Levelled N/A

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Site Details:

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Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

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

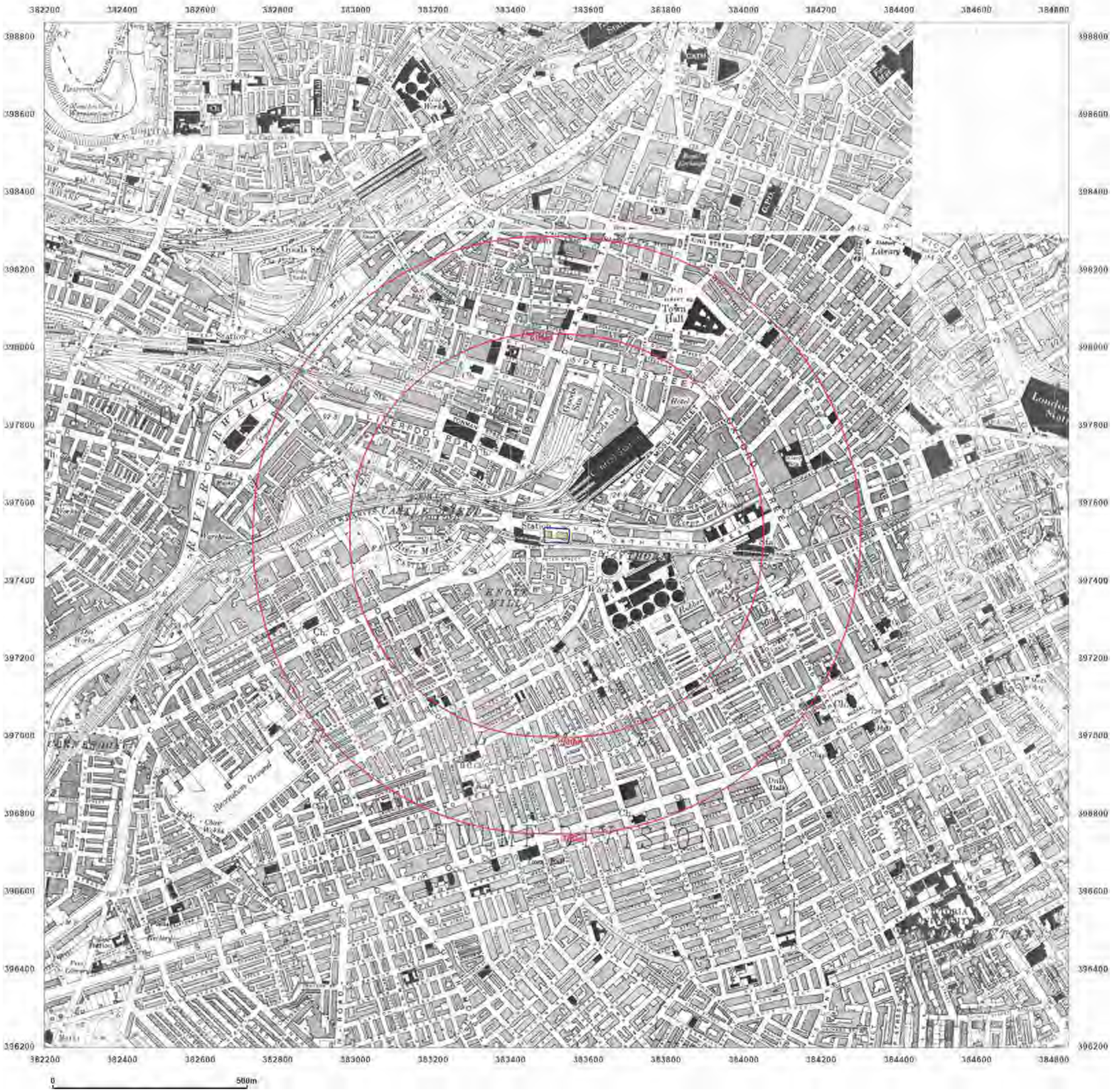
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Site Details:

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Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: County Series

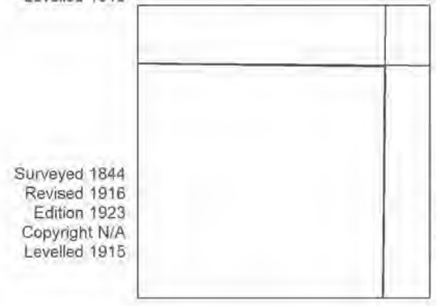
Map date: **1923**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

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



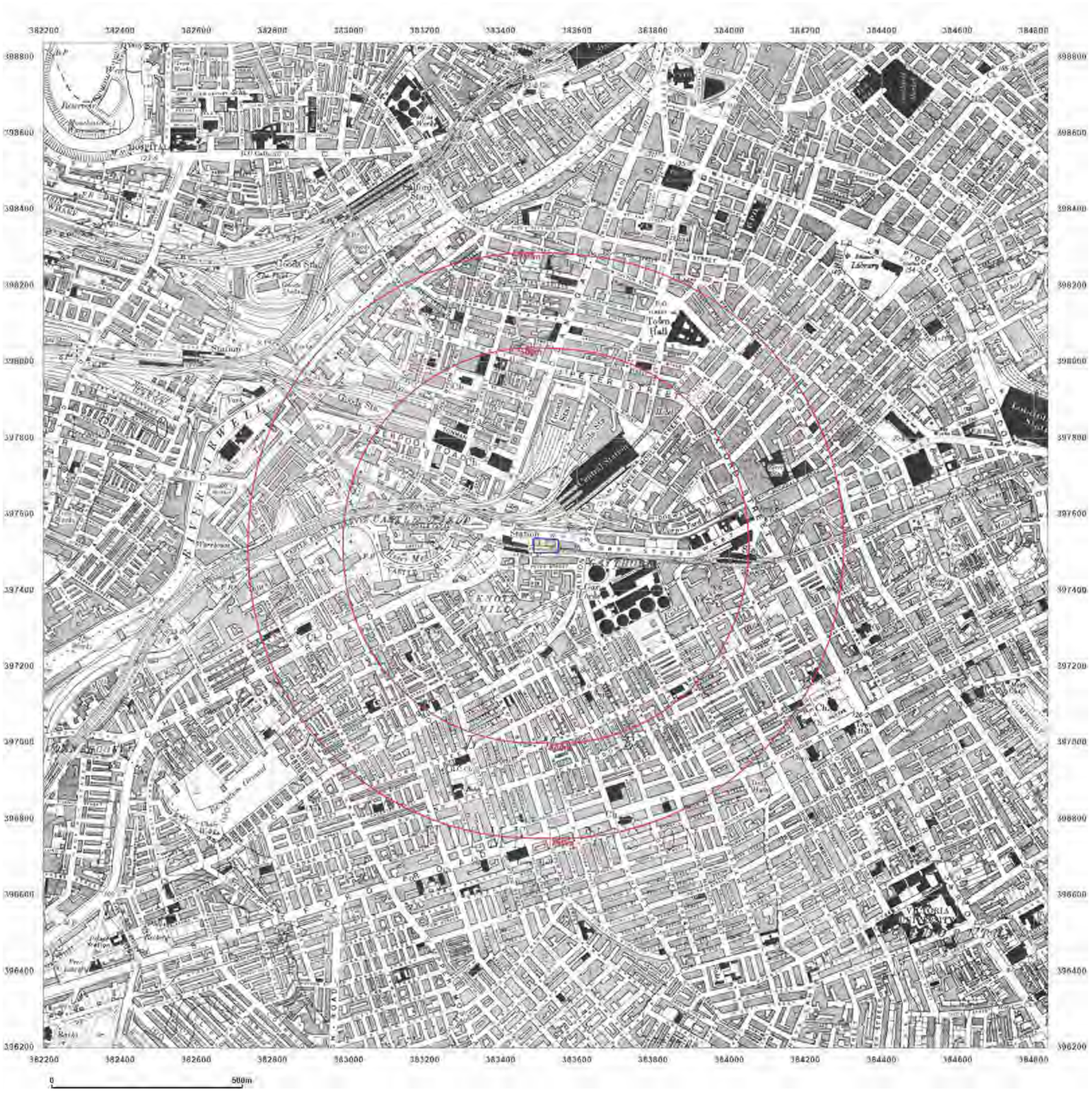
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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

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
Surveyed 1844 Levelled 1906
Revised 1916
Edition 1923
Copyright N/A
Levelled 1915

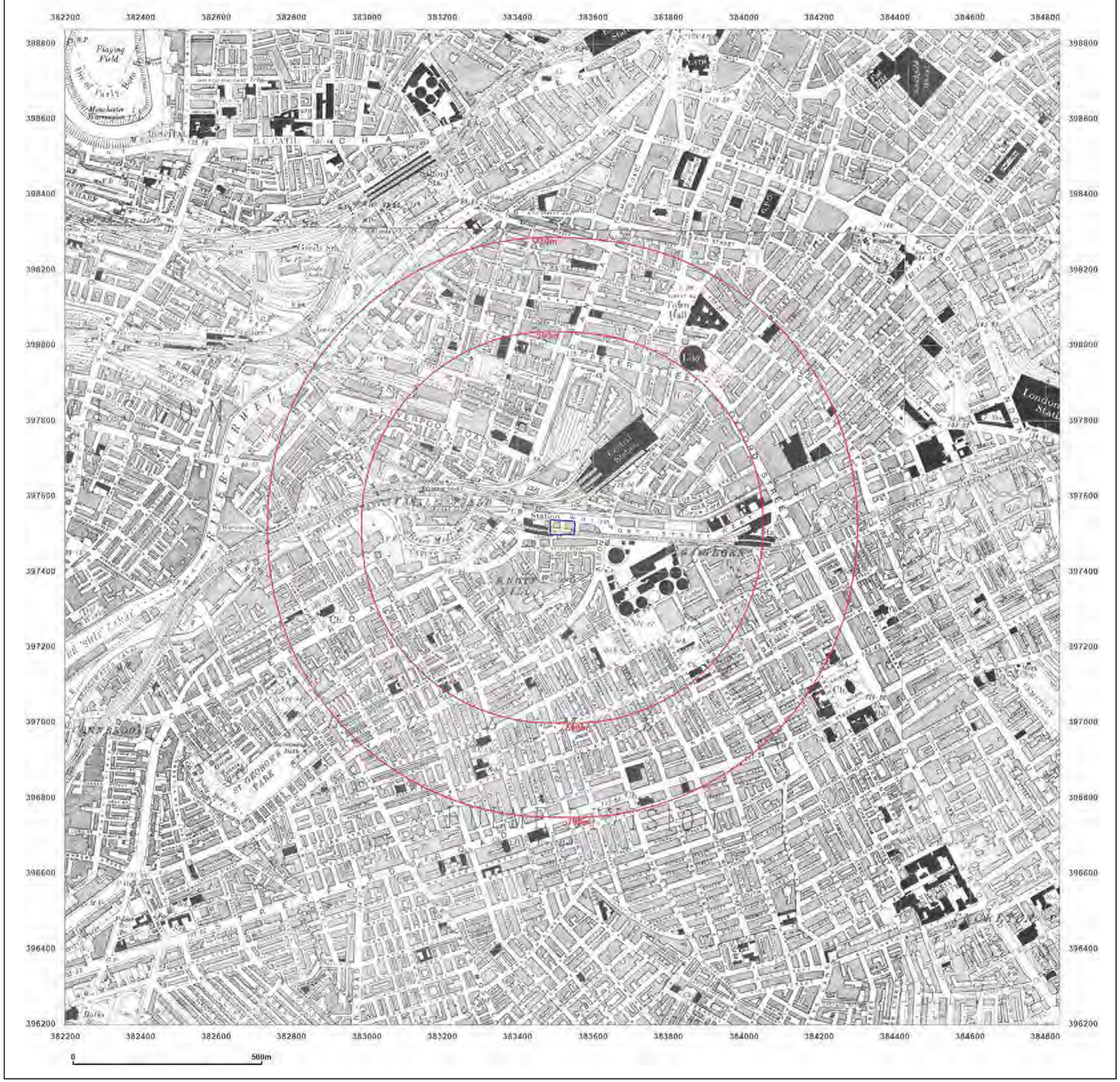
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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

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

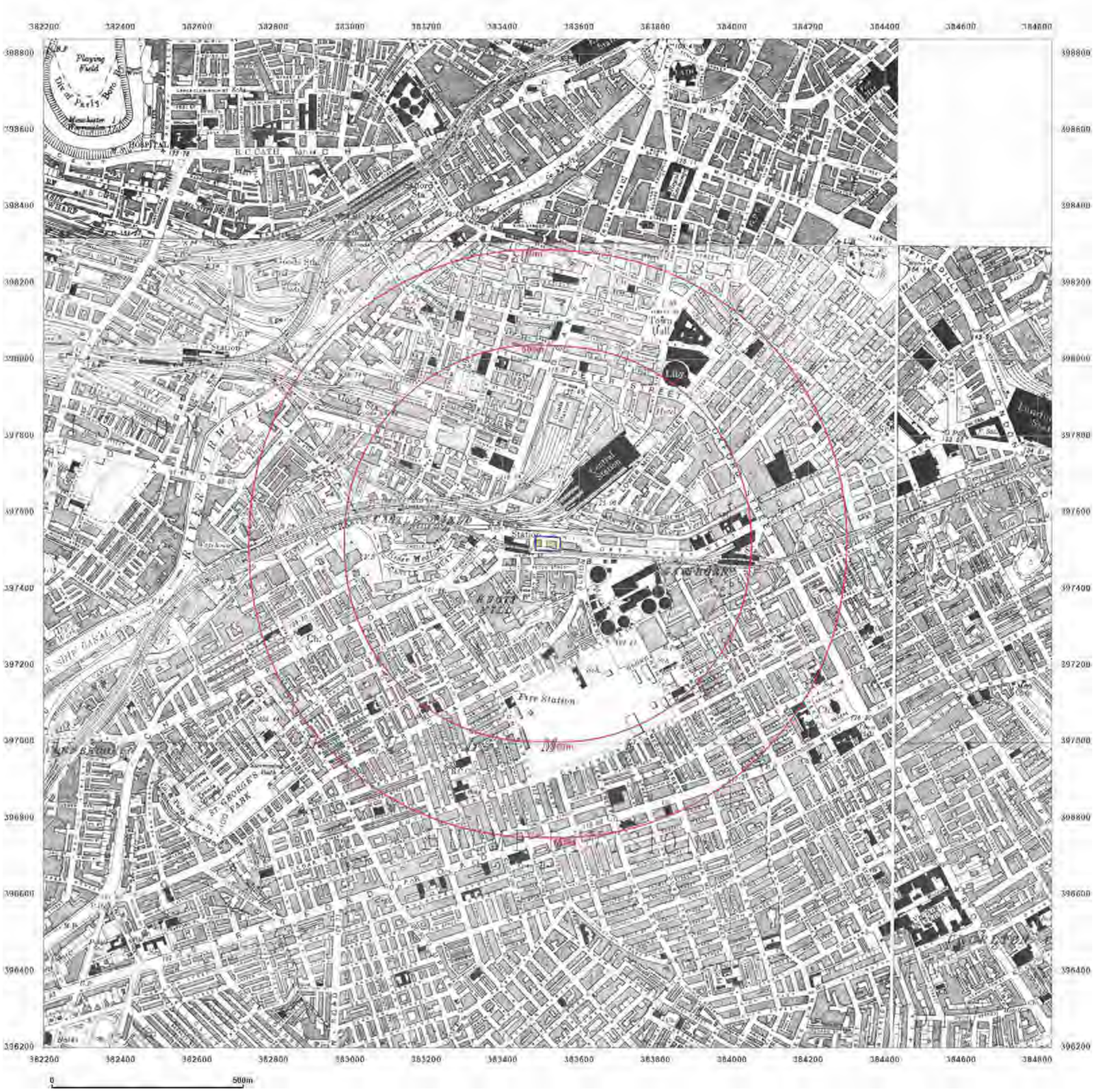
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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: County Series

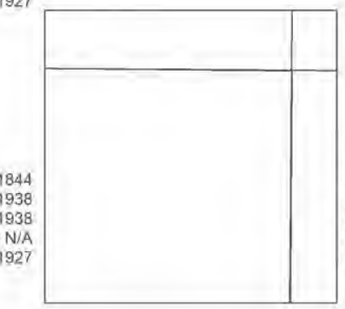
Map date: **1938**

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

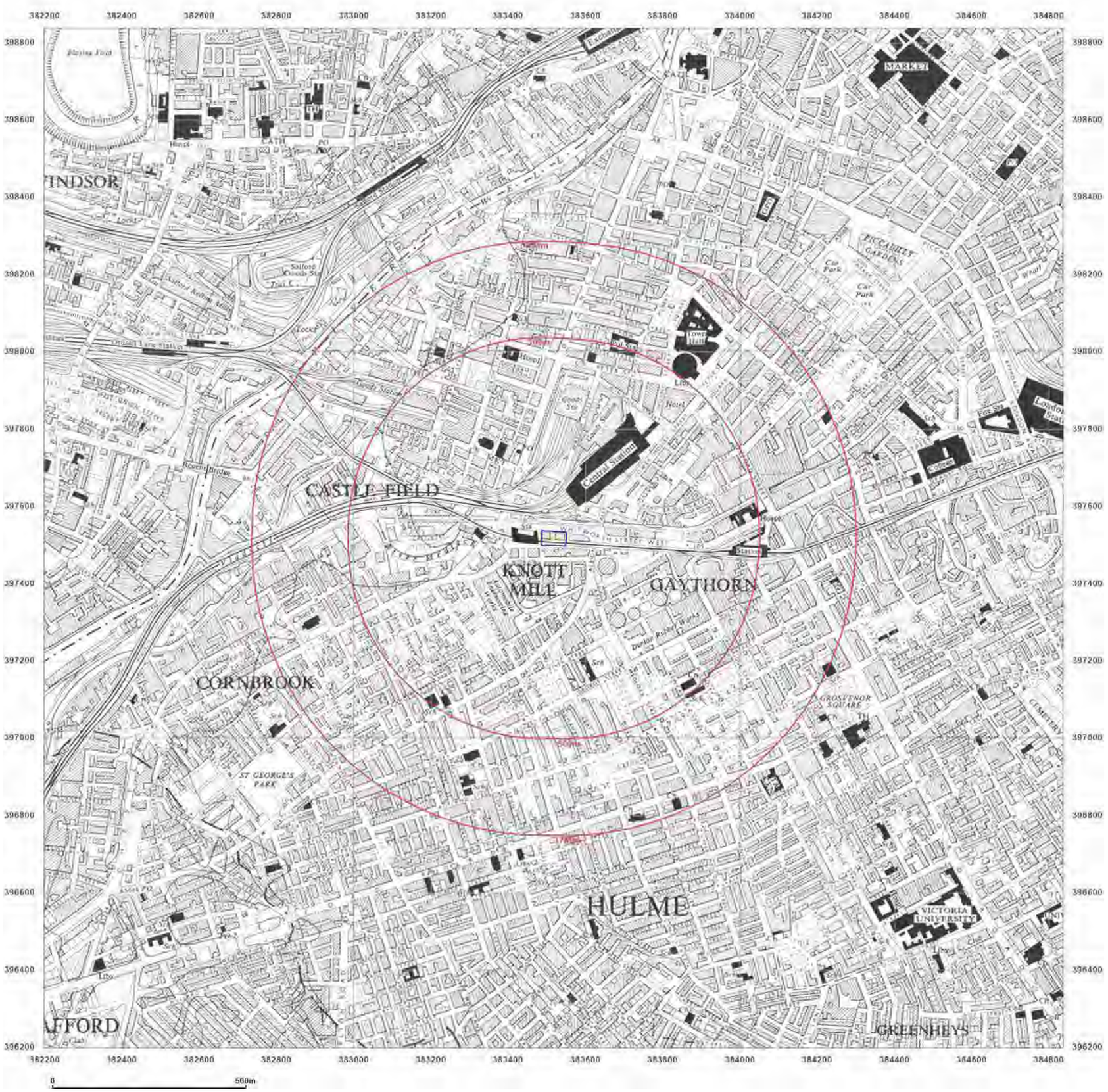
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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

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 1956
Levelled N/A

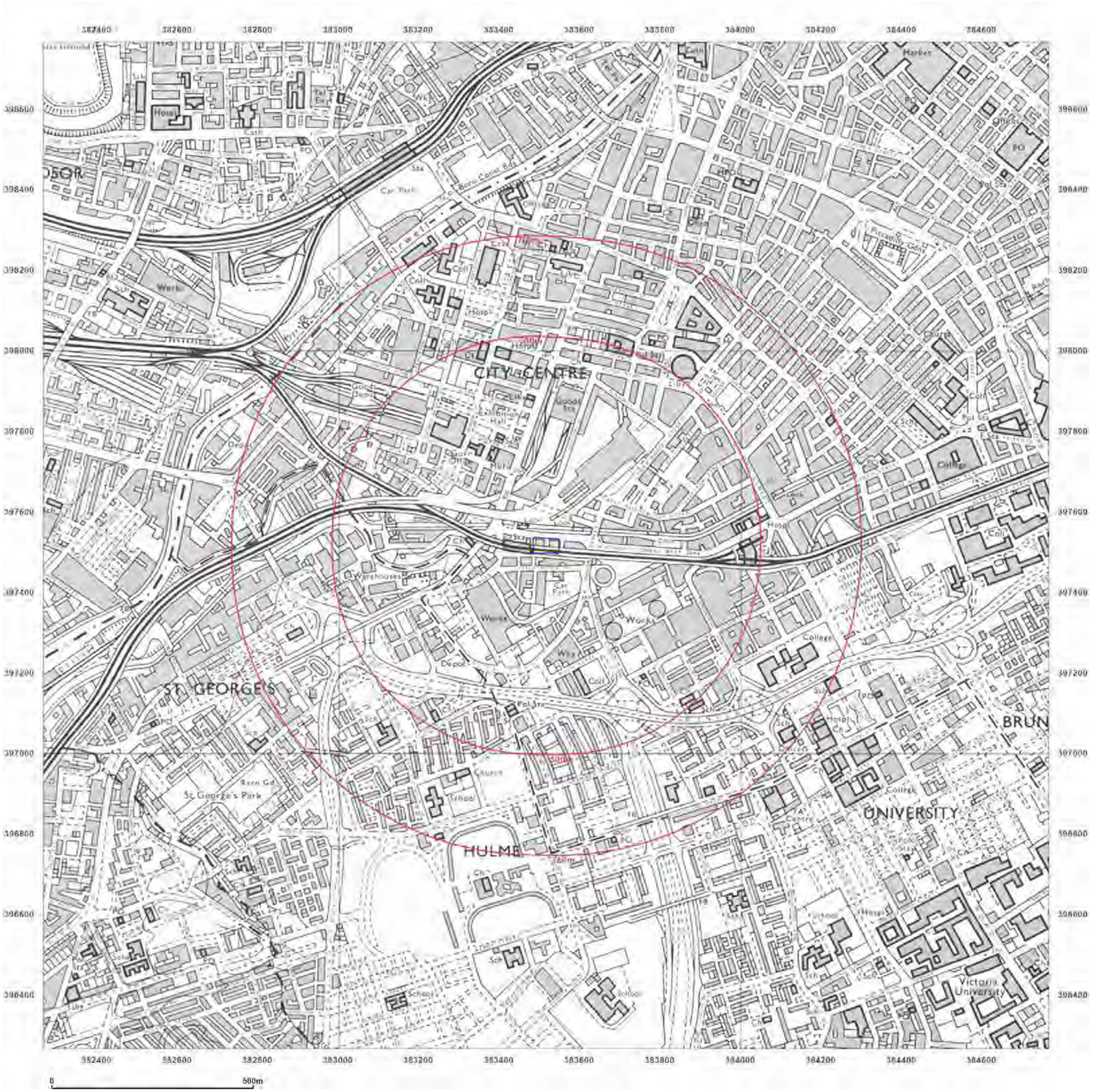
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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1972**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

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

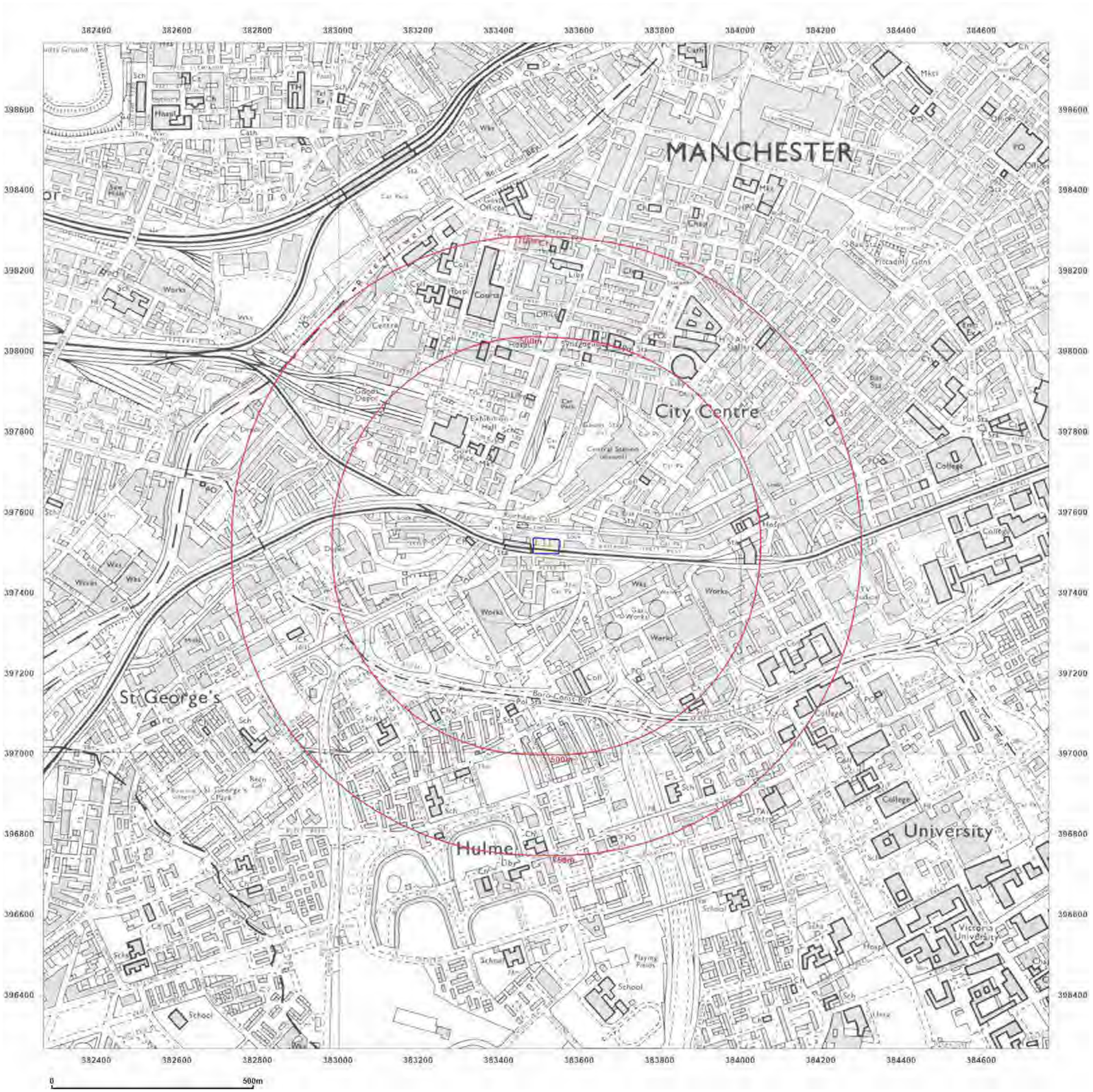
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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1980**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

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

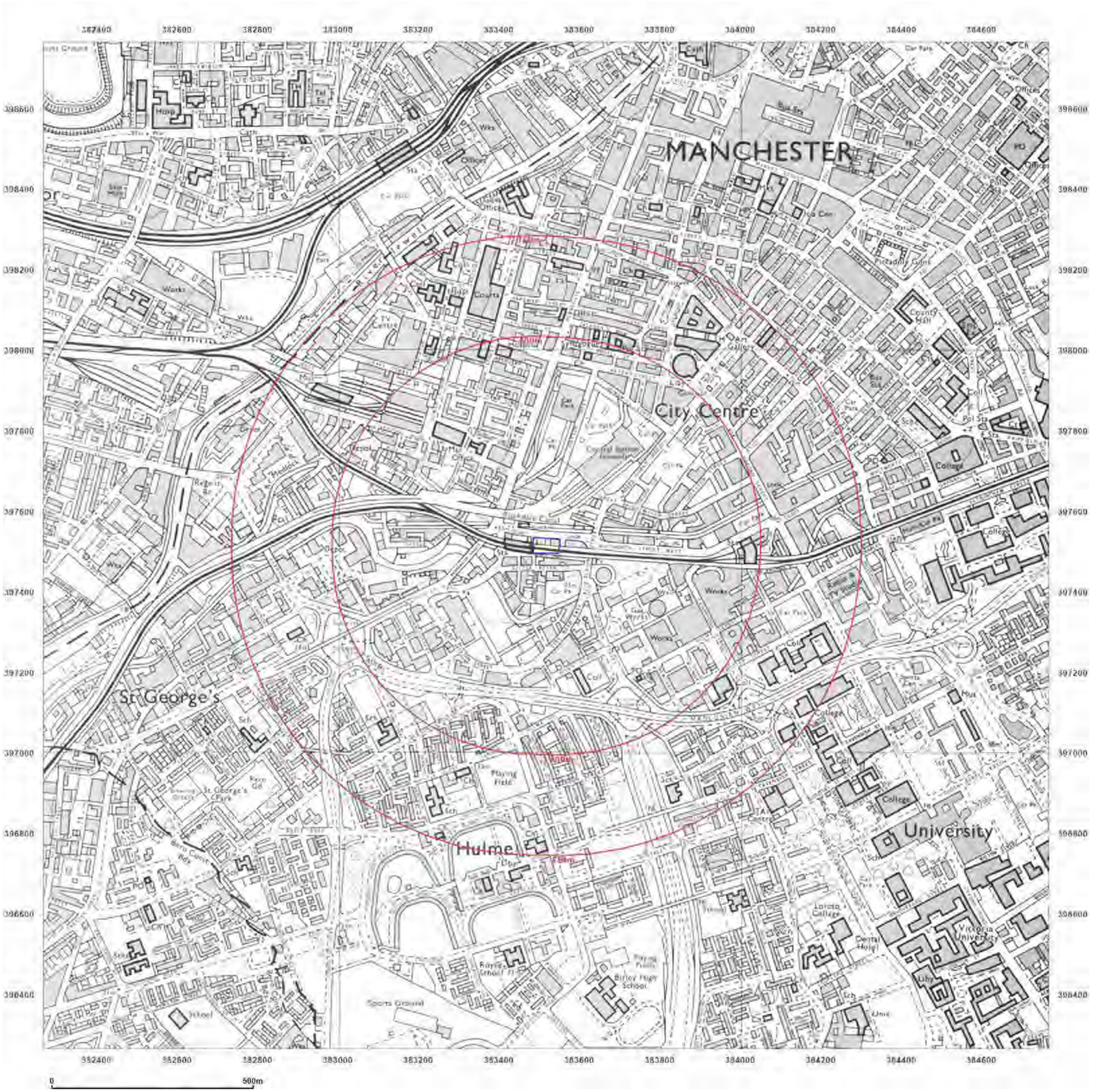
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Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1985**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

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

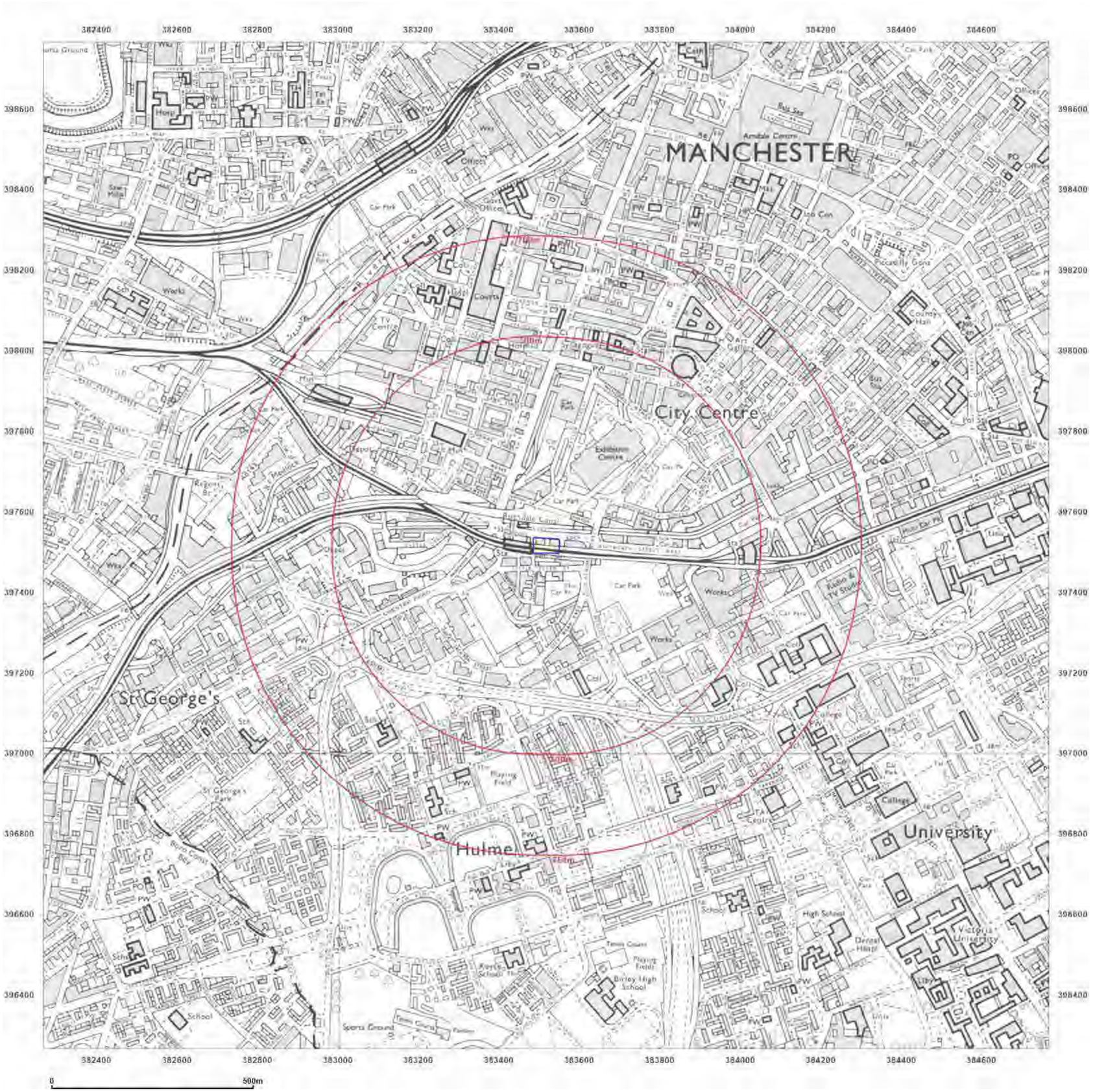
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Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **1988**

Scale: 1:10,000

Printed at: 1:10,000

N
W E
S

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

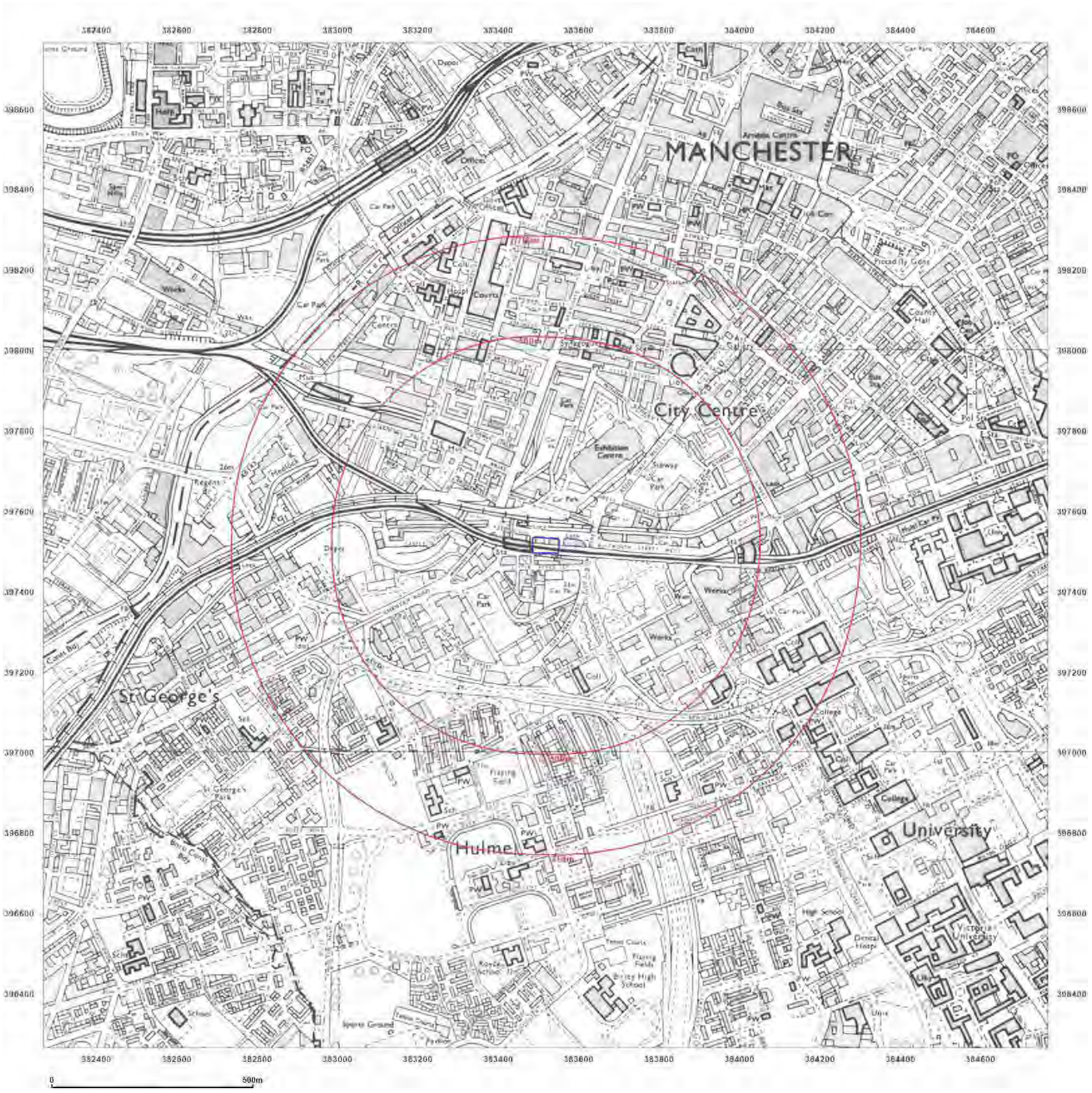
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Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

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

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



Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

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2001

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www.groundsure.com/sites/default/files/groundsure_legend.pdf



Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

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Production date: 20 June 2024

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Groundsure INSIGHTS

Site Details:

4201 Whitworth Street,
Manchester

Client Ref: 4201-200624
Report Ref: GS-A18-3RL-F6M-9UY
Grid Ref: 383517, 397517

Map Name: National Grid

Map date: **2024**

Scale: 1:10,000

Printed at: 1:10,000

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2024

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Production date: 20 June 2024

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APPENDIX 5

GROUNDSURE COMBINED ENVIRO + GEO INSIGHT REPORT

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

4201 Whitworth Street, Manchester

Order Details

Date: 20/06/2024

Your ref: 4201-200624

Our Ref: GS-IJN-N3I-HCD-ZC5

Site Details

Location: 383516 397517

Area: 0.24 ha

Authority: Manchester City Council ↗



Summary of findings p. 2 >

OS MasterMap site plan p.14 >

Aerial image p. 9 >

Insight User Guide ↗

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Certified B Corporation

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	0	12	60	115	-
22 >	1.2 >	Historical tanks >	0	0	49	64	-
27 >	1.3 >	Historical energy features >	0	0	18	32	-
29	1.4	Historical petrol stations	0	0	0	0	-
29 >	1.5 >	Historical garages >	0	3	9	19	-
31	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
32 >	2.1 >	Historical industrial land uses >	0	25	96	180	-
43 >	2.2 >	Historical tanks >	0	0	81	140	-
52 >	2.3 >	Historical energy features >	0	0	35	75	-
56	2.4	Historical petrol stations	0	0	0	0	-
56 >	2.5 >	Historical garages >	0	10	20	30	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
59	3.1	Active or recent landfill	0	0	0	0	-
59	3.2	Historical landfill (BGS records)	0	0	0	0	-
60	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
60	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
60 >	3.5 >	Historical waste sites >	0	0	7	9	-
62 >	3.6 >	Licensed waste sites >	0	0	0	1	-
63 >	3.7 >	Waste exemptions >	0	0	19	50	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
69 >	4.1 >	Recent industrial land uses >	1	3	21	-	-
71 >	4.2 >	Current or recent petrol stations >	0	0	0	1	-
71	4.3	Electricity cables	0	0	0	0	-
72	4.4	Gas pipelines	0	0	0	0	-
72	4.5	Sites determined as Contaminated Land	0	0	0	0	-

72	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
72	4.7	Regulated explosive sites	0	0	0	0	-
72	4.8	Hazardous substance storage/usage	0	0	0	0	-
73	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
73 >	4.10 >	Licensed industrial activities (Part A(1)) >	0	0	2	0	-
73 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	0	4	-
74	4.12	Radioactive Substance Authorisations	0	0	0	0	-
74 >	4.13 >	Licensed Discharges to controlled waters >	0	0	14	10	-
78	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
78	4.15	Pollutant release to public sewer	0	0	0	0	-
78	4.16	List 1 Dangerous Substances	0	0	0	0	-
79	4.17	List 2 Dangerous Substances	0	0	0	0	-
79	4.18	Pollution Incidents (EA/NRW)	0	0	0	0	-
79	4.19	Pollution inventory substances	0	0	0	0	-
79	4.20	Pollution inventory waste transfers	0	0	0	0	-
79	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
80 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
82 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
84 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
85	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
85	5.5	Groundwater vulnerability- local information	None (within 0m)				
86 >	5.6 >	Groundwater abstractions >	0	0	0	13	48
102 >	5.7 >	Surface water abstractions >	0	0	0	0	2
103 >	5.8 >	Potable abstractions >	0	0	0	0	9
105 >	5.9 >	Source Protection Zones >	0	0	1	0	-
105	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
106 >	6.1 >	Water Network (OS MasterMap) >	0	5	16	-	-

108 >	6.2 >	Surface water features >	0	1	6	-	-
108 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
109 >	6.4 >	WFD Surface water bodies >	0	1	1	-	-
109 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
111 >	7.1 >	Risk of flooding from rivers and the sea >	Low (within 50m)				
112	7.2	Historical Flood Events	0	0	0	-	-
112	7.3	Flood Defences	0	0	0	-	-
112	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
112	7.5	Flood Storage Areas	0	0	0	-	-
113 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
114	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
115 >	8.1 >	Surface water flooding >	1 in 1000 year, Greater than 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
117 >	9.1 >	Groundwater flooding >	Moderate-High (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
118	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
118	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
118	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
118	10.4	Special Protection Areas (SPA)	0	0	0	0	0
119	10.5	National Nature Reserves (NNR)	0	0	0	0	0
119	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
119	10.7	Designated Ancient Woodland	0	0	0	0	0
119	10.8	Biosphere Reserves	0	0	0	0	0
120	10.9	Forest Parks	0	0	0	0	0
120	10.10	Marine Conservation Zones	0	0	0	0	0
120	10.11	Green Belt	0	0	0	0	0
120	10.12	Proposed Ramsar sites	0	0	0	0	0

120	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
121	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
121	10.15	Nitrate Sensitive Areas	0	0	0	0	0
121 >	10.16 >	Nitrate Vulnerable Zones >	0	0	0	0	3
122 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
123	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
124	11.1	World Heritage Sites	0	0	0	-	-
125	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
125	11.3	National Parks	0	0	0	-	-
125 >	11.4 >	Listed Buildings >	0	2	17	-	-
126 >	11.5 >	Conservation Areas >	0	0	1	-	-
127 >	11.6 >	Scheduled Ancient Monuments >	0	0	1	-	-
127	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
128 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
129	12.2	Open Access Land	0	0	0	-	-
129	12.3	Tree Felling Licences	0	0	0	-	-
129	12.4	Environmental Stewardship Schemes	0	0	0	-	-
129	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
130	13.1	Priority Habitat Inventory	0	0	0	-	-
130	13.2	Habitat Networks	0	0	0	-	-
130	13.3	Open Mosaic Habitat	0	0	0	-	-
130	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
131 >	14.1 >	10k Availability >	Identified (within 500m)				
132 >	14.2 >	Artificial and made ground (10k) >	1	0	1	2	-
134 >	14.3 >	Superficial geology (10k) >	1	0	2	1	-

135	14.4	Landslip (10k)	0	0	0	0	-
136 >	14.5 >	Bedrock geology (10k) >	1	0	0	1	-
137 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	1	2	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
138 >	15.1 >	50k Availability >	Identified (within 500m)				
139 >	15.2 >	Artificial and made ground (50k) >	1	0	0	0	-
140 >	15.3 >	Artificial ground permeability (50k) >	1	0	-	-	-
141 >	15.4 >	Superficial geology (50k) >	1	0	2	1	-
142 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
142	15.6	Landslip (50k)	0	0	0	0	-
142	15.7	Landslip permeability (50k)	None (within 50m)				
143 >	15.8 >	Bedrock geology (50k) >	1	0	0	1	-
144 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
144 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	1	2	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
145 >	16.1 >	BGS Boreholes >	0	1	72	-	-
Page	Section	Natural ground subsidence >					
150 >	17.1 >	Shrink swell clays >	Negligible (within 50m)				
151 >	17.2 >	Running sands >	Very low (within 50m)				
152 >	17.3 >	Compressible deposits >	Very low (within 50m)				
153 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
154 >	17.5 >	Landslides >	Very low (within 50m)				
155 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
157	18.1	BritPits	0	0	0	0	-
158 >	18.2 >	Surface ground workings >	0	8	13	-	-
159	18.3	Underground workings	0	0	0	0	0
159	18.4	Underground mining extents	0	0	0	0	-
159	18.5	Historical Mineral Planning Areas	0	0	0	0	-

159	18.6	Non-coal mining	0	0	0	0	0
159 >	18.7 >	JPB mining areas >	Identified (within 0m)				
160	18.8	The Coal Authority non-coal mining	0	0	0	0	-
160	18.9	Researched mining	0	0	0	0	-
160	18.10	Mining record office plans	0	0	0	0	-
161	18.11	BGS mine plans	0	0	0	0	-
161 >	18.12 >	Coal mining >	Identified (within 0m)				
161	18.13	Brine areas	None (within 0m)				
161	18.14	Gypsum areas	None (within 0m)				
161	18.15	Tin mining	None (within 0m)				
162	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
163	19.1	Natural cavities	0	0	0	0	-
163	19.2	Mining cavities	0	0	0	0	0
163	19.3	Reported recent incidents	0	0	0	0	-
163	19.4	Historical incidents	0	0	0	0	-
164	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
165 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
167 >	21.1 >	BGS Estimated Background Soil Chemistry >	4	0	-	-	-
167 >	21.2 >	BGS Estimated Urban Soil Chemistry >	4	1	-	-	-
168	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
169	22.1	Underground railways (London)	0	0	0	-	-
169	22.2	Underground railways (Non-London)	0	0	0	-	-
170	22.3	Railway tunnels	0	0	0	-	-
170 >	22.4 >	Historical railway and tunnel features >	6	20	52	-	-
173	22.5	Royal Mail tunnels	0	0	0	-	-

173 >	22.6 >	Historical railways >	0	0	3	-	-
174 >	22.7 >	Railways >	3	10	14	-	-
175	22.8	Crossrail 1	0	0	0	0	-
175	22.9	Crossrail 2	0	0	0	0	-
175	22.10	HS2	0	0	0	0	-

Recent aerial photograph



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Capture Date: 18/10/2022

Site Area: 0.24ha

Recent site history - 2019 aerial photograph



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Capture Date: 22/04/2019

Site Area: 0.24ha

Recent site history - 2015 aerial photograph

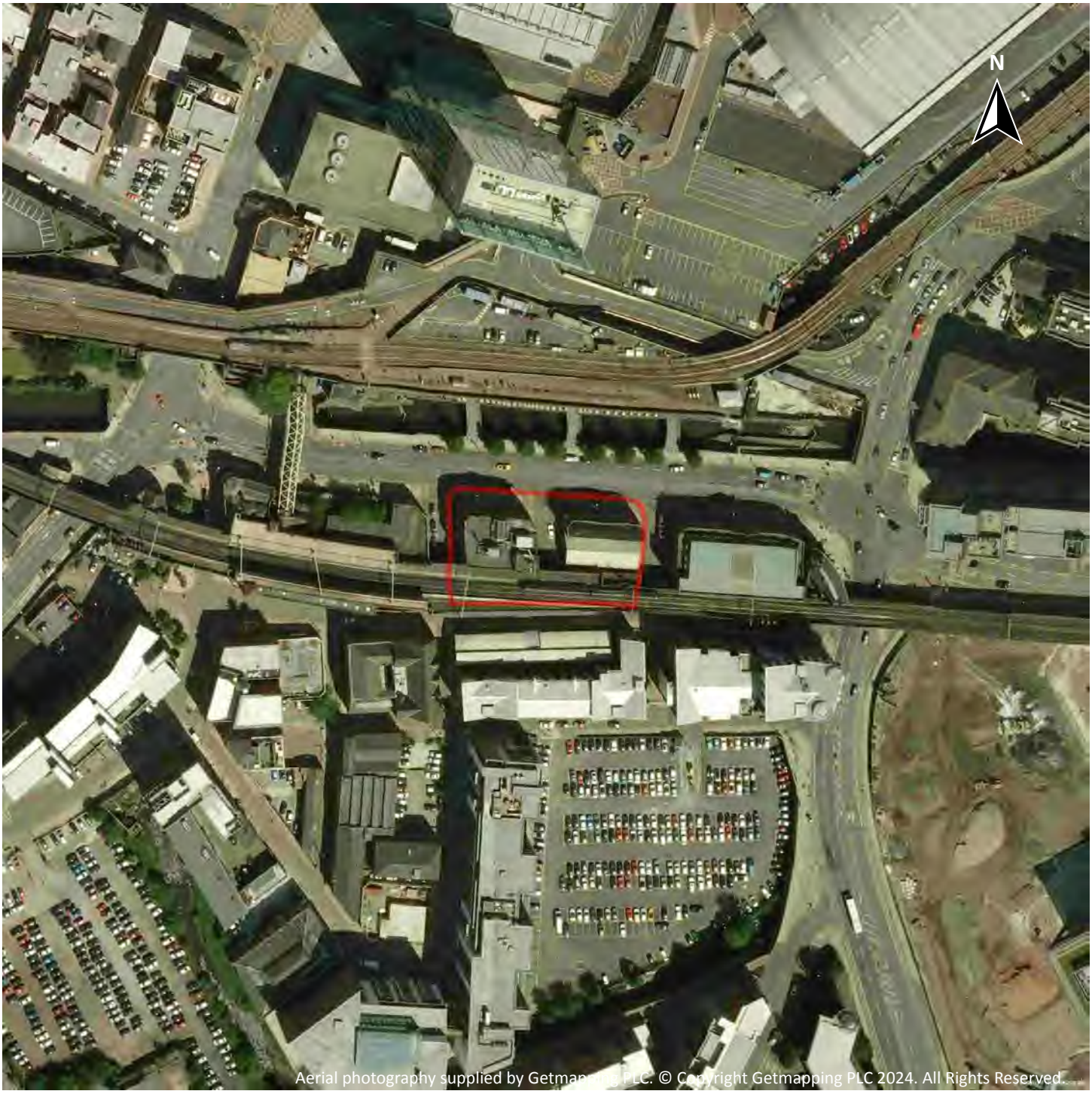


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Capture Date: 11/06/2015

Site Area: 0.24ha

Recent site history - 2009 aerial photograph

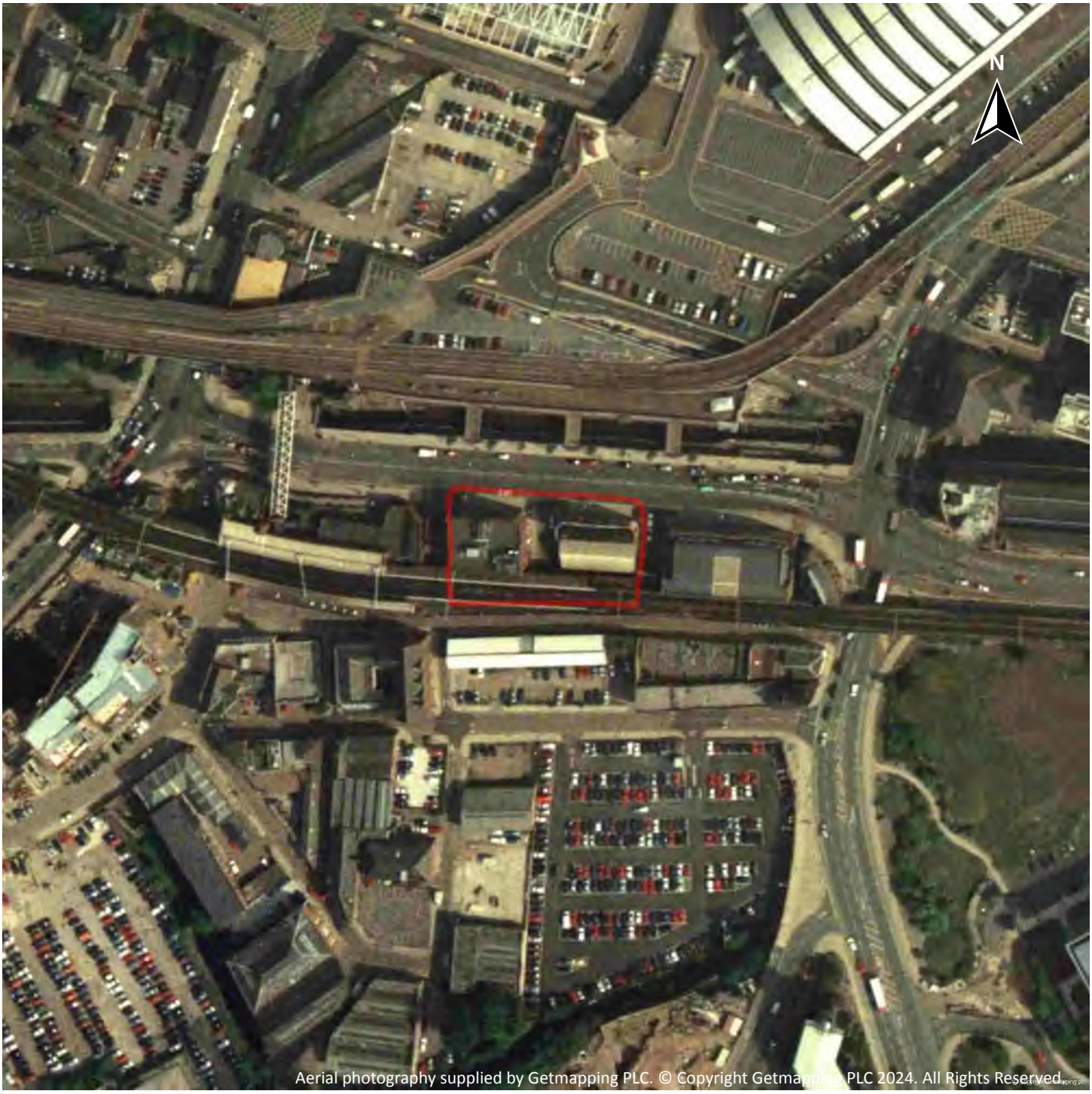


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Capture Date: 02/06/2009

Site Area: 0.24ha

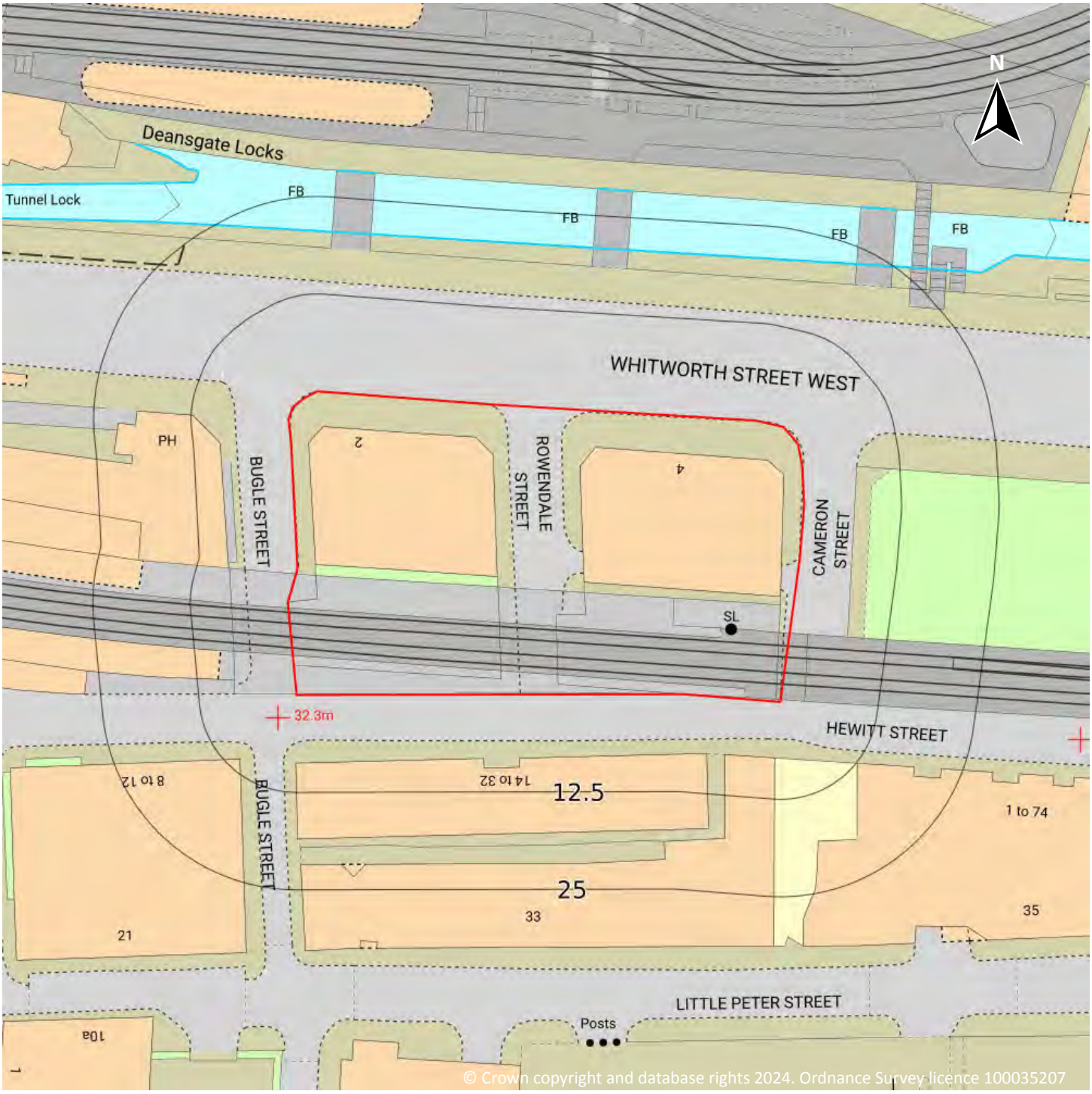
Recent site history - 2000 aerial photograph



Capture Date: 27/06/2000

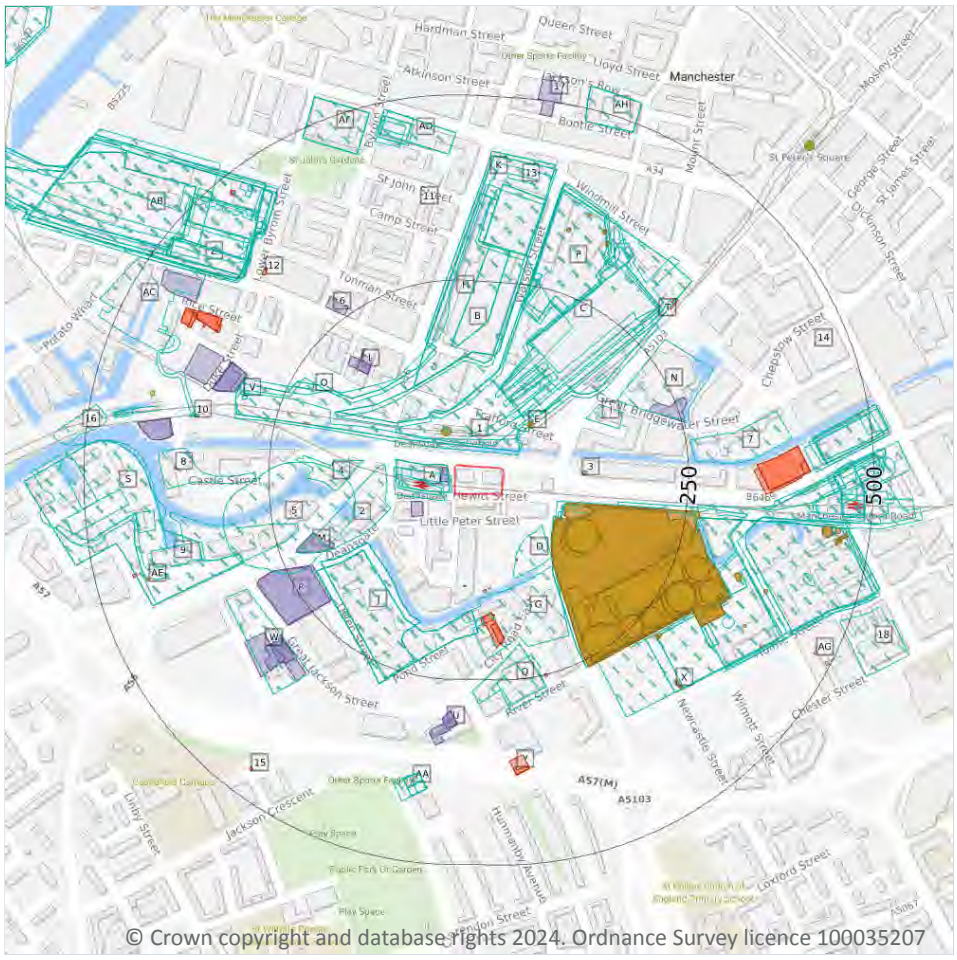
Site Area: 0.24ha

OS MasterMap site plan



Site Area: 0.24ha

1 Past land use



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1.1 Historical industrial land uses

Records within 500m	187

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
A	4m W	Railway Station	1985 - 1994	880682

ID	Location	Land use	Dates present	Group ID
A	7m W	Railway Station	1978	855265
A	7m W	Railway Station	1956 - 1971	962338
A	15m SW	Railway Station	1905 - 1938	975016
A	18m W	Railway Station	1896	899988
B	20m NE	Railway Sidings	1923	923309
B	25m NE	Railway Sidings	1905 - 1916	871753
B	25m NE	Railway Sidings	1932 - 1938	982150
B	29m NE	Railway Sidings	1956	917334
C	35m NW	Railway Sidings	1896	975593
1	40m N	Railway Building	1905 - 1938	978111
C	43m N	Disused Station	1978	925495
D	66m SE	Cotton Mill	1851	797881
C	70m NE	Railway Station	1905 - 1938	896284
C	72m NE	Railway Station	1956	888631
F	76m E	Unspecified Commercial/Industrial	1851 - 1896	849974
C	76m NE	Railway Station	1896	915817
F	77m SE	Unspecified Commercial/Industrial	1932 - 1938	872530
F	77m SE	Gas Works	1905 - 1923	927583
F	81m E	Unspecified Commercial/Industrial	1956	976686
F	84m E	Unspecified Works	1971	976313
2	89m W	Unspecified Commercial/Industrial	1851	796718
D	97m SE	Unspecified Tank	1956	940796
D	98m SE	Gasometer	1905 - 1923	885805
D	98m SE	Unspecified Tank	1932 - 1938	946195
D	100m SE	Unspecified Tank	1896	890603
D	104m SE	Unspecified Tank	1971	856760
D	104m SE	Unspecified Tank	1978 - 1985	858491
G	118m SE	Brewery	1851	822706

ID	Location	Land use	Dates present	Group ID
H	120m NW	Railway Sidings	1971	946450
H	120m NW	Railway Sidings	1985	958621
H	120m NW	Railway Sidings	1978	989903
4	123m W	Unspecified Commercial/Industrial	1851	796720
I	132m NE	Bus Station	1978	842916
B	132m N	Railway Building	1923	820272
D	134m SE	Railway Sidings	1896	794671
J	135m SW	Automobile Works	1956	813191
J	135m SW	Unspecified Works	1978	940175
J	135m SW	Unspecified Works	1971	948531
5	135m W	Quay	1905 - 1938	872988
J	146m SW	Unspecified Commercial/Industrial	1923	846058
J	146m SW	Unspecified Mill	1932 - 1938	877197
J	146m SW	Unspecified Commercial/Industrial	1905	896875
J	146m SW	Unspecified Mill	1916	904261
C	150m NE	Disused Station	1985	891253
F	160m SE	Unspecified Works	1978	921026
K	163m N	Railway Buildings	1923	833657
B	173m N	Railway Building	1923	820271
I	175m NE	Railway Building	1905 - 1938	985774
N	181m NE	Cotton Mills	1851	811452
O	181m NW	Railway Buildings	1905 - 1938	962263
F	188m SE	Gas Works	1985	894760
F	188m SE	Gas Works	1978	953907
P	202m N	Goods Station	1923	943574
Q	202m S	Unspecified Works	1971	830421
P	205m N	Goods Station	1932 - 1938	883356
P	205m N	Goods Station	1905 - 1916	938206

ID	Location	Land use	Dates present	Group ID
F	208m SE	Unspecified Tank	1851	825228
F	214m SE	Unspecified Tanks	1956	927953
F	214m SE	Gasometer	1978	910445
F	214m SE	Unspecified Tank	1971	973500
P	217m N	Goods Station	1956	923306
S	217m W	Quay	1851	846276
F	219m SE	Unspecified Tank	1932 - 1938	939747
F	219m SE	Gasometer	1905 - 1923	964160
F	219m SE	Unspecified Tanks	1896	952761
Q	220m S	Glass Works	1851	797987
F	233m E	Unspecified Tank	1851	825227
F	235m SE	Gasometer	1905 - 1923	967050
F	235m SE	Unspecified Tank	1932 - 1938	989404
F	244m SE	Unspecified Tank	1932 - 1938	864386
F	244m SE	Gasometer	1905 - 1923	911162
F	254m SE	Gasometer	1905 - 1923	856404
F	254m SE	Unspecified Tank	1932 - 1938	943763
7	255m E	Corporation Yard	1905 - 1938	920120
F	257m SE	Unspecified Tanks	1956	991069
F	257m SE	Rubber Works	1956	849382
F	257m SE	Gasometer	1978	909770
F	257m SE	Gasometer	1985	937412
F	257m SE	Unspecified Tank	1971	953873
F	263m E	Rubber Works	1923 - 1938	926915
F	263m E	Unspecified Commercial/Industrial	1905	944072
F	265m E	Railway Sidings	1905 - 1938	864885
F	265m SE	Unspecified Tank	1932 - 1938	893786
F	265m SE	Gasometer	1905 - 1923	961140

ID	Location	Land use	Dates present	Group ID
8	268m W	Slate Wharf	1851	837258
F	268m E	Rubber Works	1916	915281
T	282m NE	Railway Building	1932 - 1938	946173
K	282m N	Goods Station	1905 - 1938	846931
F	284m SE	Unspecified Works	1978	865006
F	284m SE	Unspecified Works	1985 - 1994	927569
K	290m N	Disused Goods Station	1978	814351
K	290m N	Goods Station	1956	945355
K	290m N	Goods Station	1971	945855
F	294m SE	Gasometer	1905 - 1923	889070
F	294m SE	Unspecified Tank	1932 - 1938	961454
V	295m W	Railway Building	1916	972538
V	295m W	Railway Building	1923	820260
S	299m W	Unspecified Depot	1978	853404
S	299m W	Unspecified Depot	1985 - 1994	921090
V	300m W	Railway Building	1932 - 1938	982027
F	301m SE	Unspecified Tank	1851	987864
W	302m SW	Unspecified Depot	1971	818414
F	325m E	Unspecified Commercial/Industrial	1896	857423
F	334m E	Unspecified Works	1985 - 1994	862878
F	334m E	Unspecified Works	1978	976366
F	343m SE	Unspecified Tank	1851	825246
9	348m W	Warehouse	1851	837278
F	352m E	Railway Sidings	1896	989778
10	352m W	Railway Building	1905 - 1923	846298
V	357m W	Unspecified Ground Workings	1851	800610
F	367m E	Railway Sidings	1985 - 1994	928139
AA	379m S	Police Station	1971	857014

ID	Location	Land use	Dates present	Group ID
AA	379m S	Police Station	1985	942388
AA	379m S	Police Station	1978	959949
AB	382m NW	Railway Sidings	1916 - 1938	893253
AB	382m NW	Railway Sidings	1894	920471
AB	384m NW	Railway Sidings	1923	921834
AA	385m S	Fire Station	1938	891974
13	386m N	Railway Buildings	1923	833653
Z	387m NW	Railway Building	1978	848652
Z	387m NW	Railway Building	1971	911620
Z	387m NW	Railway Building	1985	938373
Z	387m NW	Railway Sidings	1956	951082
AB	387m NW	Goods Depot	1978	893922
AB	387m NW	Goods Depot	1971	912312
AB	387m NW	Railway Sidings	1956	956450
Z	387m NW	Goods Sheds	1905 - 1938	958104
AB	387m NW	Railway Sidings	1932	936526
AB	387m NW	Railway Sidings	1905	984895
Z	388m NW	Railway Buildings	1896	833656
AB	388m NW	Railway Sidings	1896	979167
AA	389m S	Fire Station	1978	845320
AA	389m S	Fire Station	1985	871241
AA	389m S	Fire Station	1971	964050
AB	391m NW	Railway Sidings	1988 - 1994	962023
S	403m W	Unspecified Ground Workings	1851	800608
F	403m E	Railway Station	1905 - 1938	962635
Z	406m NW	Goods Station	1956	821661
V	407m W	Railway Buildings	1905	833631
S	407m W	Unspecified Warehouses	1971	812727

ID	Location	Land use	Dates present	Group ID
F	407m E	Hospital	1923	848326
Z	407m NW	Goods Sheds	1905 - 1938	880509
Z	409m NW	Railway Building	1978	907268
Z	409m NW	Railway Building	1985	923295
Z	409m NW	Railway Building	1971	983624
F	414m E	Hospital	1932 - 1938	949847
AC	415m NW	Unspecified Depot	1985 - 1988	896077
F	419m E	Railway Station	1896	887032
F	420m E	Coal Wharf	1851	794097
F	420m E	Railway Station	1956	923967
F	420m E	Hospital	1956 - 1971	915521
F	420m E	Hospital	1978	957282
AD	420m N	Hospital	1978	946410
AD	420m N	Hospital	1956 - 1971	988332
F	422m E	Unspecified Tanks	1851	815405
F	423m E	Hospital	1916	938342
V	436m W	Railway Building	1916 - 1923	906988
AD	436m N	Hospital	1916	943105
F	436m E	Gas Works	1851	802208
AD	437m N	Hospital	1923	963711
F	438m E	Unspecified Tank	1896	825247
AD	439m N	Hospital	1932 - 1938	946842
S	440m W	Warehouse	1851	837277
AF	441m N	Unspecified Works	1932 - 1938	898924
AF	441m N	Unspecified Commercial/Industrial	1905	935109
AF	441m N	Unspecified Commercial/Industrial	1923	991353
F	446m E	Railway Station	1988 - 1994	912150
V	446m W	Railway Building	1932 - 1938	878526

ID	Location	Land use	Dates present	Group ID
AB	446m NW	Unspecified Commercial/Industrial	1851	796722
F	447m E	Railway Station	1971	960776
F	447m E	Railway Station	1985	962611
F	447m E	Railway Station	1978	981767
AD	449m N	Hospital	1985 - 1988	928879
F	450m E	Railway Building	1956	820261
Z	457m NW	Railway Buildings	1932 - 1938	921932
AB	458m NW	Railway Sidings	1851	921813
Z	461m NW	Railway Building	1905 - 1923	869326
16	474m W	Timber Wharf	1851	811392
F	475m E	Tanks	1851	832185
AB	479m NW	Railway Sidings	1971	888837
AB	479m NW	Railway Sidings	1985	891167
AB	479m NW	Railway Sidings	1978	944715
AH	482m N	Police Station	1978	880849
AH	482m N	Police Station	1956 - 1971	884199
AH	482m N	Police Station	1985 - 1994	940998
18	488m E	Unspecified Mills	1916 - 1923	874195

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	113

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
E	68m NE	Tanks	1948	141151
E	68m NE	Tanks	1948 - 1979	130142
F	80m SE	Gas Works	1893 - 1908	148771
F	80m SE	Gas Works	1891	138194
F	82m SE	Gas Works	1922	148353
D	89m SE	Unspecified Tank	1891	115954
D	97m SE	Gasometer	1908 - 1922	137166
D	97m SE	Unspecified Tank	1932	149223
D	98m SE	Unspecified Tank	1953 - 1969	138911
D	98m SE	Unspecified Tank	1948 - 1979	134540
D	100m SE	Unspecified Tank	1980 - 1985	129756
3	106m E	Tanks	1891	106783
G	124m S	Unspecified Tank	1891	115779
G	125m S	Tanks	1948	106777
G	129m S	Tanks	1948	107130
B	139m N	Unspecified Tank	1979	134110
B	139m N	Unspecified Tank	1979	148049
D	144m SE	Unspecified Tank	1908 - 1932	134188
D	144m SE	Unspecified Tank	1953 - 1985	135604
D	144m SE	Unspecified Tank	1979	126042
F	155m SE	Gas Works	1948	138071
I	167m NE	Unspecified Tank	1891	115955
F	178m SE	Unspecified Tank	1969	140316
F	186m SE	Disused Gas Holder Station	1985	108346
F	186m SE	Gas Holder Station	1980	144973
F	197m SE	Tanks	1893	133419
F	198m SE	Tanks	1891	127920
O	206m W	Unspecified Tank	1932	115649

ID	Location	Land use	Dates present	Group ID
F	215m SE	Gasometer	1948	135027
F	215m SE	Unspecified Tank	1963 - 1979	141523
F	216m SE	Gasometer	1893 - 1969	129302
F	216m SE	Unspecified Tank	1953	145833
F	216m SE	Tanks	1932	107129
F	216m SE	Gasometers	1908 - 1922	124662
F	216m SE	Unspecified Tank	1948 - 1979	129606
F	219m SE	Unspecified Tank	1891	115953
F	225m E	Tanks	1953 - 1969	129358
F	225m E	Tanks	1948 - 1979	124597
F	229m SE	Unspecified Tank	1953 - 1979	137402
F	229m SE	Unspecified Tank	1979	115952
F	229m SE	Tanks	1948	147005
F	235m SE	Gasometer	1893 - 1948	135717
F	235m SE	Unspecified Tank	1963 - 1979	128106
F	235m SE	Unspecified Tank	1953	136419
F	242m E	Tanks	1979	106781
F	244m SE	Unspecified Tank	1893	147070
F	244m SE	Unspecified Tank	1953 - 1979	147656
F	247m SE	Gasometer	1893	138389
F	247m SE	Gasometer	1891	126443
F	251m SE	Unspecified Tank	1891 - 1893	143653
F	252m SE	Unspecified Tank	1953 - 1985	140482
F	253m E	Unspecified Tank	1948 - 1979	131914
F	256m SE	Gasometer	1893 - 1969	136753
F	257m SE	Gasometer	1891	124584
F	258m SE	Unspecified Tank	1963 - 1979	138510
F	258m SE	Gasometer	1948	142120

ID	Location	Land use	Dates present	Group ID
F	258m SE	Unspecified Tank	1953	134836
F	260m SE	Gas Holder	1980 - 1985	125516
F	263m E	Unspecified Tank	1891	115951
F	265m E	Unspecified Tank	1891	133313
F	265m SE	Gasometer	1891 - 1893	128004
F	267m E	Gasometer	1948	135973
F	267m E	Unspecified Tank	1963 - 1979	148209
F	267m E	Unspecified Tank	1953	127502
F	276m SE	Unspecified Tank	1893	125584
F	277m SE	Gasometer	1891	108523
F	282m SE	Unspecified Tank	1948 - 1990	148192
F	283m SE	Unspecified Tank	1998	124573
F	286m SE	Unspecified Tank	1893	123594
F	289m SE	Gasometer	1969	108524
F	289m SE	Unspecified Tank	1953 - 1985	147415
F	293m SE	Gasometer	1891 - 1893	138622
F	296m SE	Unspecified Tank	1963 - 1979	129031
F	296m SE	Gasometer	1948	144835
F	297m SE	Unspecified Tank	1953	128601
F	322m SE	Unspecified Tank	1987 - 1990	144099
F	327m SE	Unspecified Tank	1891 - 1893	137941
P	331m N	Unspecified Tank	1986 - 1999	144065
P	332m NE	Unspecified Tank	1986	147812
F	332m E	Unspecified Tank	1969 - 1998	138462
P	333m N	Unspecified Tank	1988	124833
F	333m E	Unspecified Tank	1980 - 1990	133041
P	334m NE	Unspecified Tank	1988 - 1999	136452
X	344m SE	Unspecified Tank	1948 - 1979	133333

ID	Location	Land use	Dates present	Group ID
P	345m NE	Unspecified Tank	1986 - 1999	148721
P	347m NE	Unspecified Tank	1988	133750
X	353m SE	Unspecified Tank	1980 - 1985	135450
11	358m N	Unspecified Tank	1891	115646
P	360m NE	Unspecified Tank	1988 - 1999	137115
F	372m SE	Unspecified Tank	1908	115778
F	378m E	Unspecified Tank	1893 - 1922	122317
F	404m SE	Unspecified Tank	1893 - 1922	143428
V	416m W	Unspecified Tank	1922	115648
AE	428m W	Unspecified Tank	1980	132153
AE	428m W	Unspecified Tank	1980	143849
AE	429m W	Unspecified Tank	1963	141829
AE	429m W	Unspecified Tank	1960	123914
AE	429m W	Unspecified Tank	1969	143958
F	435m E	Unspecified Tank	1893	115950
F	437m E	Gasometer	1891 - 1908	131372
F	453m E	Tanks	1953	106778
14	454m E	Unspecified Tank	1891	115956
F	454m E	Unspecified Tank	1922	115957
F	456m E	Unspecified Tank	1948 - 1953	145471
F	457m E	Tanks	1950	106780
F	457m E	Unspecified Tank	1955	135178
F	457m E	Unspecified Tank	1948 - 1953	135406
F	457m E	Unspecified Tank	1955	123253
F	462m E	Unspecified Tank	1948 - 1953	141893
F	463m E	Unspecified Tank	1955	135180
AG	472m SE	Unspecified Tank	1922	115781
AG	493m SE	Unspecified Tank	1948 - 1985	122344

ID	Location	Land use	Dates present	Group ID
AC	499m NW	Unspecified Tank	1963	133635

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**50**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
F	80m SE	Gas Works	1893 - 1908	79545
F	80m SE	Gas Works	1891	72601
F	82m SE	Gas Works	1922	81689
D	97m SE	Gasometer	1908 - 1922	65948
F	155m SE	Gas Works	1948	66529
G	160m S	Electricity Substation	1998	73868
G	160m S	Electricity Transformers	1969 - 1985	83603
G	172m S	Electricity Substation	1948 - 1979	78830
G	174m S	Electricity Substation	1969 - 1990	82938
F	186m SE	Disused Gas Holder Station	1985	59539
F	186m SE	Gas Holder Station	1980	77508
F	215m SE	Gasometer	1948	69283
F	216m SE	Gasometer	1893 - 1969	65691
F	216m SE	Gasometers	1908 - 1922	65853
F	235m SE	Gasometer	1893 - 1948	65525
F	247m SE	Gasometer	1893	75823
F	247m SE	Gasometer	1891	71699

ID	Location	Land use	Dates present	Group ID
Q	249m S	Electricity Substation	1998	62183
F	256m SE	Gasometer	1893 - 1969	68062
F	257m SE	Gasometer	1891	67026
F	258m SE	Gasometer	1948	71445
F	259m SE	Electricity Substation	1998	62182
F	260m SE	Gas Holder	1980 - 1985	70318
F	265m SE	Gasometer	1891 - 1893	80269
F	267m E	Gasometer	1948	78274
F	277m SE	Gasometer	1891	59716
F	289m SE	Gasometer	1969	59717
F	293m SE	Gasometer	1891 - 1893	71826
F	296m SE	Gasometer	1948	64845
T	313m NE	Electricity Substation	1948 - 1985	80627
F	338m E	Hydraulic Power Station	1932	78003
F	343m E	Hydraulic Power Station	1948 - 1973	64396
F	343m E	Hydraulic Power Station	1948 - 1979	64692
Y	352m S	Electricity Substation	1948 - 1979	83591
12	364m NW	Electricity Substation	1948 - 1995	75611
Z	366m NW	Electricity Substation	1979	77417
Y	367m S	Electricity Substation	1953	65840
Z	368m NW	Electricity Substation	1995	82695
Z	368m NW	Electricity Substation	1948 - 1979	80738
Z	387m NW	Electricity Substation	1948	82720
F	400m E	Electricity Substation	1948 - 1999	65682
Z	403m NW	Electricity Substation	1986	67819
Z	403m NW	Electricity Substation	1990	69796
Z	407m NW	Electricity Substation	1994 - 1995	83961
Z	407m NW	Electricity Substation	1981	80246

ID	Location	Land use	Dates present	Group ID
F	437m E	Gasometer	1891 - 1908	84082
AE	442m W	Electricity Substation	1995 - 1997	72564
15	460m SW	Electricity Substation	1997	65434
Z	472m NW	Electricity Substation	1986 - 1995	67220
Z	473m NW	Electricity Substation	1994 - 1995	65816

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	31

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 15 >**

ID	Location	Land use	Dates present	Group ID
A	8m W	Garage	1963 - 1981	26858
A	9m W	Garage	1986 - 1990	26912
A	45m W	Garage	1960 - 1969	25290
D	97m SE	Garage	1953 - 1979	24802
L	172m NW	Garage	1994 - 1995	24725
L	172m NW	Garage	1995	20992

ID	Location	Land use	Dates present	Group ID
L	172m NW	Garage	1981 - 1990	24287
M	177m SW	Garage	1980	25490
M	180m SW	Garage	1969	22918
N	213m E	Garage	1973	20296
R	215m SW	Garage	1980 - 1990	25615
R	219m SW	Garage	1995 - 1997	27082
6	253m NW	Garage	1981	20294
U	292m S	Garage	1960 - 1963	24336
U	293m S	Garage	1979	22408
U	302m S	Garage	1959	21005
W	303m SW	Garage	1980	21660
W	304m SW	Garage	1980 - 1990	24581
W	304m SW	Garage	1979	23209
W	304m SW	Garage	1963	21028
W	304m SW	Garage	1995 - 1997	24964
W	305m SW	Garage	1960 - 1969	25973
V	306m NW	Garage	1981 - 1986	26958
V	307m NW	Garage	1963	21869
V	314m NW	Garage	1963	21949
W	318m SW	Garage	1959	23792
V	344m NW	Garage	1981	20293
V	382m W	Garage	1963 - 1981	25923
V	384m W	Garage	1986	21682
Z	414m NW	Garage	1981 - 1990	24611
17	479m N	Garage	1948	20292

This data is sourced from Ordnance Survey / Groundsure.

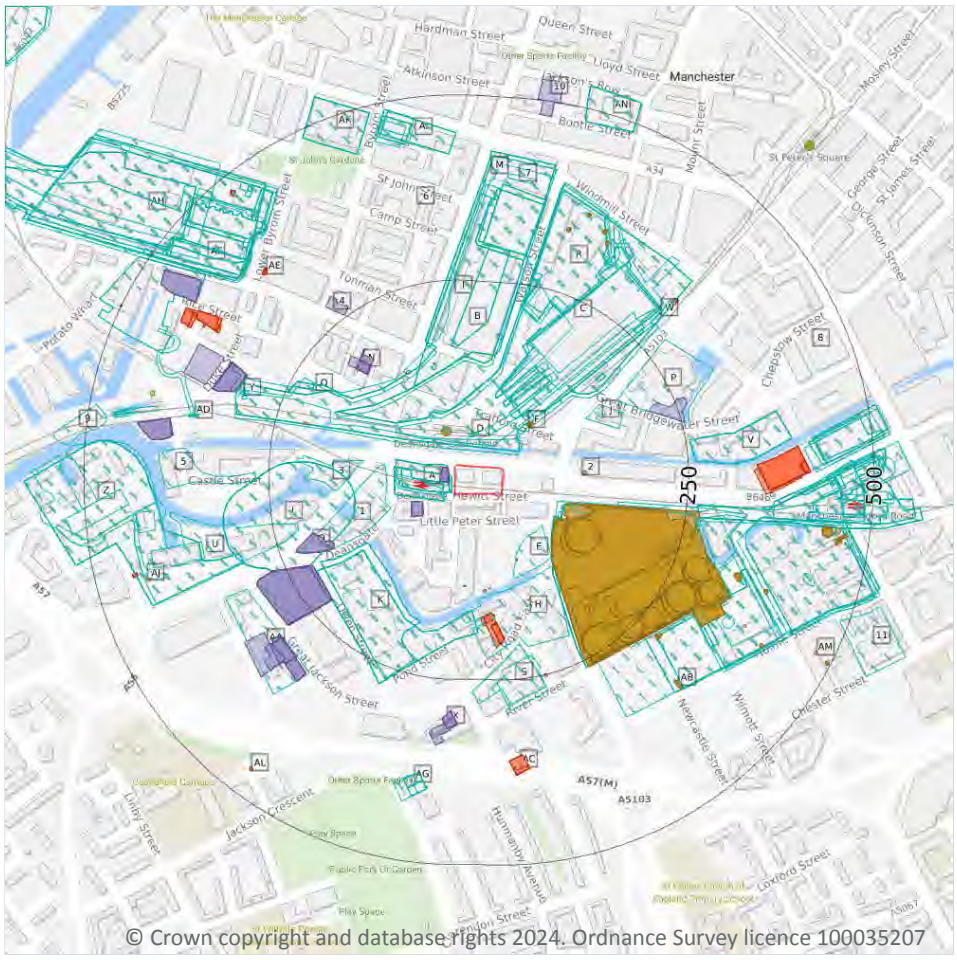
1.6 Historical military land

Records within 500m	0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



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Site Outline

Search buffers in metres (m)

- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

2.1 Historical industrial land uses

Records within 500m	301

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 32 >**

ID	Location	Land Use	Date	Group ID
A	4m W	Railway Station	1988	880682
A	4m W	Railway Station	1985	880682
A	4m W	Railway Station	1994	880682

ID	Location	Land Use	Date	Group ID
A	7m W	Railway Station	1971	962338
A	7m W	Railway Station	1956	962338
A	7m W	Railway Station	1978	855265
A	15m SW	Railway Station	1938	975016
A	15m SW	Railway Station	1932	975016
A	15m SW	Railway Station	1916	975016
A	15m SW	Railway Station	1905	975016
A	15m SW	Railway Station	1923	975016
A	18m W	Railway Station	1896	899988
B	20m NE	Railway Sidings	1923	923309
B	25m NE	Railway Sidings	1938	982150
B	25m NE	Railway Sidings	1932	982150
B	25m NE	Railway Sidings	1916	871753
B	25m NE	Railway Sidings	1905	871753
B	29m NE	Railway Sidings	1956	917334
C	35m NW	Railway Sidings	1896	975593
D	40m N	Railway Building	1938	978111
D	40m N	Railway Building	1932	978111
D	40m N	Railway Building	1916	978111
D	40m N	Railway Building	1905	978111
D	40m N	Railway Building	1923	978111
C	43m N	Disused Station	1978	925495
E	66m SE	Cotton Mill	1851	797881
C	70m NE	Railway Station	1938	896284
C	70m NE	Railway Station	1932	896284
C	70m NE	Railway Station	1916	896284
C	70m NE	Railway Station	1905	896284
C	70m NE	Railway Station	1923	896284

ID	Location	Land Use	Date	Group ID
C	72m NE	Railway Station	1956	888631
G	76m E	Unspecified Commercial/Industrial	1896	849974
C	76m NE	Railway Station	1896	915817
G	77m SE	Unspecified Commercial/Industrial	1938	872530
G	77m SE	Unspecified Commercial/Industrial	1932	872530
G	77m SE	Gas Works	1916	927583
G	77m SE	Gas Works	1905	927583
G	77m SE	Gas Works	1923	927583
G	81m E	Unspecified Commercial/Industrial	1956	976686
G	84m E	Unspecified Works	1971	976313
1	89m W	Unspecified Commercial/Industrial	1851	796718
E	97m SE	Unspecified Tank	1956	940796
E	98m SE	Gasometer	1916	885805
E	98m SE	Gasometer	1905	885805
E	98m SE	Unspecified Tank	1938	946195
E	98m SE	Unspecified Tank	1932	946195
E	98m SE	Gasometer	1923	885805
E	100m SE	Unspecified Tank	1896	890603
E	104m SE	Unspecified Tank	1971	856760
E	104m SE	Unspecified Tank	1978	858491
E	104m SE	Unspecified Tank	1985	858491
H	118m SE	Brewery	1851	822706
I	120m NW	Railway Sidings	1971	946450
I	120m NW	Railway Sidings	1978	989903
I	120m NW	Railway Sidings	1985	958621
3	123m W	Unspecified Commercial/Industrial	1851	796720
J	132m NE	Bus Station	1978	842916
B	132m N	Railway Building	1923	820272

ID	Location	Land Use	Date	Group ID
E	134m SE	Railway Sidings	1896	794671
K	135m SW	Unspecified Works	1971	948531
K	135m SW	Automobile Works	1956	813191
K	135m SW	Unspecified Works	1978	940175
L	135m W	Quay	1938	872988
L	135m W	Quay	1932	872988
L	135m W	Quay	1916	872988
L	135m W	Quay	1905	872988
L	135m W	Quay	1923	872988
K	146m SW	Unspecified Mill	1938	877197
K	146m SW	Unspecified Mill	1932	877197
K	146m SW	Unspecified Mill	1916	904261
K	146m SW	Unspecified Commercial/Industrial	1905	896875
K	146m SW	Unspecified Commercial/Industrial	1923	846058
C	150m NE	Disused Station	1985	891253
G	160m SE	Unspecified Works	1978	921026
M	163m N	Railway Buildings	1923	833657
B	173m N	Railway Building	1923	820271
J	175m NE	Railway Building	1938	985774
J	175m NE	Railway Building	1932	985774
J	175m NE	Railway Building	1916	985774
J	175m NE	Railway Building	1905	985774
J	175m NE	Railway Building	1923	985774
P	181m NE	Cotton Mills	1851	811452
Q	181m NW	Railway Buildings	1938	962263
Q	181m NW	Railway Buildings	1932	962263
Q	181m NW	Railway Buildings	1916	962263
Q	181m NW	Railway Buildings	1905	962263

ID	Location	Land Use	Date	Group ID
Q	181m NW	Railway Buildings	1923	962263
G	188m SE	Gas Works	1978	953907
G	188m SE	Gas Works	1985	894760
G	196m SE	Unspecified Commercial/Industrial	1851	849974
R	202m N	Goods Station	1923	943574
S	202m S	Unspecified Works	1971	830421
R	205m N	Goods Station	1938	883356
R	205m N	Goods Station	1932	883356
R	205m N	Goods Station	1916	938206
R	205m N	Goods Station	1905	938206
G	208m SE	Unspecified Tank	1851	825228
G	214m SE	Unspecified Tanks	1956	927953
G	214m SE	Unspecified Tank	1971	973500
G	214m SE	Gasometer	1978	910445
R	217m N	Goods Station	1956	923306
U	217m W	Quay	1851	846276
G	219m SE	Gasometer	1916	964160
G	219m SE	Gasometer	1905	964160
G	219m SE	Unspecified Tank	1938	939747
G	219m SE	Unspecified Tank	1932	939747
G	219m SE	Gasometer	1923	964160
G	219m SE	Unspecified Tanks	1896	952761
S	220m S	Glass Works	1851	797987
G	233m E	Unspecified Tank	1851	825227
G	235m SE	Gasometer	1916	967050
G	235m SE	Gasometer	1905	967050
G	235m SE	Unspecified Tank	1938	989404
G	235m SE	Unspecified Tank	1932	989404

ID	Location	Land Use	Date	Group ID
G	235m SE	Gasometer	1923	967050
G	244m SE	Gasometer	1916	911162
G	244m SE	Gasometer	1905	911162
G	244m SE	Unspecified Tank	1938	864386
G	244m SE	Unspecified Tank	1932	864386
G	244m SE	Gasometer	1923	911162
G	254m SE	Gasometer	1916	856404
G	254m SE	Gasometer	1905	856404
G	254m SE	Unspecified Tank	1938	943763
G	254m SE	Unspecified Tank	1932	943763
G	254m SE	Gasometer	1923	856404
V	255m E	Corporation Yard	1938	920120
V	255m E	Corporation Yard	1932	920120
V	255m E	Corporation Yard	1916	920120
V	255m E	Corporation Yard	1905	920120
V	255m E	Corporation Yard	1923	920120
G	257m SE	Unspecified Tanks	1956	991069
G	257m SE	Rubber Works	1956	849382
G	257m SE	Unspecified Tank	1971	953873
G	257m SE	Gasometer	1978	909770
G	257m SE	Gasometer	1985	937412
G	263m E	Rubber Works	1938	926915
G	263m E	Rubber Works	1932	926915
G	263m E	Unspecified Commercial/Industrial	1905	944072
G	263m E	Rubber Works	1923	926915
G	265m E	Railway Sidings	1938	864885
G	265m E	Railway Sidings	1932	864885
G	265m E	Railway Sidings	1916	864885

ID	Location	Land Use	Date	Group ID
G	265m E	Railway Sidings	1905	864885
G	265m E	Railway Sidings	1923	864885
G	265m SE	Gasometer	1916	961140
G	265m SE	Gasometer	1905	961140
G	265m SE	Unspecified Tank	1938	893786
G	265m SE	Unspecified Tank	1932	893786
G	265m SE	Gasometer	1923	961140
5	268m W	Slate Wharf	1851	837258
G	268m E	Rubber Works	1916	915281
W	282m NE	Railway Building	1938	946173
W	282m NE	Railway Building	1932	946173
M	282m N	Goods Station	1938	846931
M	282m N	Goods Station	1932	846931
M	282m N	Goods Station	1916	846931
M	282m N	Goods Station	1905	846931
M	282m N	Goods Station	1923	846931
G	284m SE	Unspecified Works	1988	927569
G	284m SE	Unspecified Works	1978	865006
G	284m SE	Unspecified Works	1985	927569
G	284m SE	Unspecified Works	1994	927569
M	290m N	Goods Station	1971	945855
M	290m N	Goods Station	1956	945355
M	290m N	Disused Goods Station	1978	814351
G	294m SE	Gasometer	1916	889070
G	294m SE	Gasometer	1905	889070
G	294m SE	Unspecified Tank	1938	961454
G	294m SE	Unspecified Tank	1932	961454
G	294m SE	Gasometer	1923	889070

ID	Location	Land Use	Date	Group ID
Y	295m W	Railway Building	1916	972538
Y	295m W	Railway Building	1923	820260
Z	299m W	Unspecified Depot	1988	921090
Z	299m W	Unspecified Depot	1978	853404
Z	299m W	Unspecified Depot	1985	921090
Z	299m W	Unspecified Depot	1994	921090
Y	300m W	Railway Building	1938	982027
Y	300m W	Railway Building	1932	982027
G	301m SE	Unspecified Tank	1851	987864
AA	302m SW	Unspecified Depot	1971	818414
G	325m E	Unspecified Commercial/Industrial	1896	857423
G	334m E	Unspecified Works	1988	862878
G	334m E	Unspecified Works	1978	976366
G	334m E	Unspecified Works	1985	862878
G	334m E	Unspecified Works	1994	862878
G	343m SE	Unspecified Tank	1851	825246
U	348m W	Warehouse	1851	837278
G	352m E	Railway Sidings	1896	989778
AD	352m W	Railway Building	1916	846298
AD	352m W	Railway Building	1905	846298
AD	352m W	Railway Building	1923	846298
Y	357m W	Unspecified Ground Workings	1851	800610
G	367m E	Railway Sidings	1988	928139
G	367m E	Railway Sidings	1985	928139
G	367m E	Railway Sidings	1994	928139
AG	379m S	Police Station	1971	857014
AG	379m S	Police Station	1978	959949
AG	379m S	Police Station	1985	942388

ID	Location	Land Use	Date	Group ID
AH	382m NW	Railway Sidings	1916	893253
AH	384m NW	Railway Sidings	1923	921834
AG	385m S	Fire Station	1938	891974
7	386m N	Railway Buildings	1923	833653
AF	387m NW	Railway Building	1971	911620
AF	387m NW	Railway Sidings	1956	951082
AF	387m NW	Railway Building	1978	848652
AF	387m NW	Railway Building	1985	938373
AH	387m NW	Goods Depot	1971	912312
AH	387m NW	Railway Sidings	1956	956450
AH	387m NW	Goods Depot	1978	893922
AF	387m NW	Goods Sheds	1938	958104
AF	387m NW	Goods Sheds	1932	958104
AF	387m NW	Goods Sheds	1916	958104
AF	387m NW	Goods Sheds	1905	958104
AF	387m NW	Goods Sheds	1923	958104
AH	387m NW	Railway Sidings	1938	893253
AH	387m NW	Railway Sidings	1932	936526
AH	387m NW	Railway Sidings	1905	984895
AF	388m NW	Railway Buildings	1896	833656
AH	388m NW	Railway Sidings	1896	979167
AG	389m S	Fire Station	1971	964050
AG	389m S	Fire Station	1978	845320
AG	389m S	Fire Station	1985	871241
AH	391m NW	Railway Sidings	1988	962023
AH	391m NW	Railway Sidings	1994	962023
Z	400m W	Quay	1851	846276
Z	403m W	Unspecified Ground Workings	1851	800608

ID	Location	Land Use	Date	Group ID
G	403m E	Railway Station	1938	962635
G	403m E	Railway Station	1932	962635
G	403m E	Railway Station	1916	962635
G	403m E	Railway Station	1905	962635
G	403m E	Railway Station	1923	962635
AF	406m NW	Goods Station	1956	821661
Y	407m W	Railway Buildings	1905	833631
Z	407m W	Unspecified Warehouses	1971	812727
G	407m E	Hospital	1923	848326
AF	407m NW	Goods Sheds	1938	880509
AF	407m NW	Goods Sheds	1932	880509
AF	407m NW	Goods Sheds	1916	880509
AF	407m NW	Goods Sheds	1905	880509
AF	407m NW	Goods Sheds	1923	880509
AF	409m NW	Railway Building	1971	983624
AF	409m NW	Railway Building	1978	907268
AF	409m NW	Railway Building	1985	923295
G	414m E	Hospital	1938	949847
G	414m E	Hospital	1932	949847
AF	415m NW	Unspecified Depot	1988	896077
AF	415m NW	Unspecified Depot	1985	896077
G	419m E	Railway Station	1896	887032
G	420m E	Coal Wharf	1851	794097
G	420m E	Railway Station	1956	923967
G	420m E	Hospital	1971	915521
G	420m E	Hospital	1956	915521
G	420m E	Hospital	1978	957282
AI	420m N	Hospital	1971	988332

ID	Location	Land Use	Date	Group ID
AI	420m N	Hospital	1956	988332
AI	420m N	Hospital	1978	946410
G	422m E	Unspecified Tanks	1851	815405
G	423m E	Hospital	1916	938342
Y	436m W	Railway Building	1916	906988
AI	436m N	Hospital	1916	943105
G	436m E	Gas Works	1851	802208
AI	437m N	Hospital	1923	963711
G	438m E	Unspecified Tank	1896	825247
AI	439m N	Hospital	1938	946842
AI	439m N	Hospital	1932	946842
Y	440m W	Railway Building	1923	906988
Z	440m W	Warehouse	1851	837277
AK	441m N	Unspecified Works	1938	898924
AK	441m N	Unspecified Works	1932	898924
AK	441m N	Unspecified Commercial/Industrial	1905	935109
AK	441m N	Unspecified Commercial/Industrial	1923	991353
G	446m E	Railway Station	1988	912150
G	446m E	Railway Station	1994	912150
Y	446m W	Railway Building	1938	878526
Y	446m W	Railway Building	1932	878526
AH	446m NW	Unspecified Commercial/Industrial	1851	796722
G	447m E	Railway Station	1971	960776
G	447m E	Railway Station	1978	981767
G	447m E	Railway Station	1985	962611
AI	449m N	Hospital	1988	928879
AI	449m N	Hospital	1985	928879
G	450m E	Railway Building	1956	820261

ID	Location	Land Use	Date	Group ID
AF	457m NW	Railway Buildings	1938	921932
AF	457m NW	Railway Buildings	1932	921932
AH	458m NW	Railway Sidings	1851	921813
AF	461m NW	Railway Building	1916	869326
AF	461m NW	Railway Building	1905	869326
AF	461m NW	Railway Building	1923	869326
9	474m W	Timber Wharf	1851	811392
G	475m E	Tanks	1851	832185
AH	479m NW	Railway Sidings	1971	888837
AH	479m NW	Railway Sidings	1978	944715
AH	479m NW	Railway Sidings	1985	891167
AN	482m N	Police Station	1971	884199
AN	482m N	Police Station	1956	884199
AN	482m N	Police Station	1988	940998
AN	482m N	Police Station	1978	880849
AN	482m N	Police Station	1985	940998
AN	482m N	Police Station	1994	940998
11	488m E	Unspecified Mills	1923	874195

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**221**

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

Features are displayed on the Past land use - un-grouped map on **page 32 >**

ID	Location	Land Use	Date	Group ID
F	68m NE	Tanks	1948	141151
F	68m NE	Tanks	1951	130142

ID	Location	Land Use	Date	Group ID
F	68m NE	Tanks	1948	130142
F	68m NE	Tanks	1979	130142
F	68m NE	Tanks	1963	130142
G	80m SE	Gas Works	1893	148771
G	80m SE	Gas Works	1908	148771
G	80m SE	Gas Works	1891	138194
G	82m SE	Gas Works	1922	148353
E	89m SE	Unspecified Tank	1891	115954
E	97m SE	Gasometer	1908	137166
E	97m SE	Gasometer	1922	137166
E	97m SE	Unspecified Tank	1932	149223
E	98m SE	Unspecified Tank	1969	138911
E	98m SE	Unspecified Tank	1953	138911
E	98m SE	Unspecified Tank	1979	134540
E	98m SE	Unspecified Tank	1963	134540
E	98m SE	Unspecified Tank	1948	134540
E	100m SE	Unspecified Tank	1980	129756
E	100m SE	Unspecified Tank	1980	129756
E	100m SE	Unspecified Tank	1985	129756
2	106m E	Tanks	1891	106783
H	124m S	Unspecified Tank	1891	115779
H	125m S	Tanks	1948	106777
H	129m S	Tanks	1948	107130
B	139m N	Unspecified Tank	1979	134110
B	139m N	Unspecified Tank	1979	148049
E	144m SE	Unspecified Tank	1908	134188
E	144m SE	Unspecified Tank	1922	134188
E	144m SE	Unspecified Tank	1932	134188

ID	Location	Land Use	Date	Group ID
E	144m SE	Unspecified Tank	1969	135604
E	144m SE	Unspecified Tank	1953	135604
E	144m SE	Unspecified Tank	1979	126042
E	146m SE	Unspecified Tank	1980	135604
E	146m SE	Unspecified Tank	1980	135604
E	146m SE	Unspecified Tank	1985	135604
G	155m SE	Gas Works	1948	138071
J	167m NE	Unspecified Tank	1891	115955
G	178m SE	Unspecified Tank	1969	140316
G	186m SE	Gas Holder Station	1980	144973
G	186m SE	Gas Holder Station	1980	144973
G	186m SE	Disused Gas Holder Station	1985	108346
G	197m SE	Tanks	1893	133419
G	198m SE	Tanks	1891	127920
Q	206m W	Unspecified Tank	1932	115649
G	215m SE	Unspecified Tank	1979	141523
G	215m SE	Unspecified Tank	1963	141523
G	215m SE	Gasometer	1948	135027
G	216m SE	Gasometer	1969	129302
G	216m SE	Unspecified Tank	1953	145833
G	216m SE	Gasometers	1908	124662
G	216m SE	Gasometers	1922	124662
G	216m SE	Tanks	1932	107129
G	216m SE	Unspecified Tank	1979	129606
G	216m SE	Unspecified Tank	1948	129606
G	217m SE	Gasometer	1893	129302
G	219m SE	Unspecified Tank	1891	115953
G	225m E	Tanks	1969	129358

ID	Location	Land Use	Date	Group ID
G	225m E	Tanks	1953	129358
G	225m E	Tanks	1969	124597
G	225m E	Tanks	1953	124597
G	226m E	Tanks	1979	124597
G	226m E	Tanks	1948	124597
G	229m SE	Unspecified Tank	1979	137402
G	229m SE	Unspecified Tank	1963	137402
G	229m SE	Unspecified Tank	1969	137402
G	229m SE	Unspecified Tank	1953	137402
G	229m SE	Unspecified Tank	1979	115952
G	229m SE	Tanks	1948	147005
G	235m SE	Gasometer	1893	135717
G	235m SE	Unspecified Tank	1979	128106
G	235m SE	Unspecified Tank	1963	128106
G	235m SE	Gasometer	1948	135717
G	235m SE	Unspecified Tank	1953	136419
G	242m E	Tanks	1979	106781
G	244m SE	Unspecified Tank	1893	147070
G	244m SE	Unspecified Tank	1979	147656
G	244m SE	Unspecified Tank	1963	147656
G	245m SE	Unspecified Tank	1953	147656
G	247m SE	Gasometer	1893	138389
G	247m SE	Gasometer	1891	126443
G	251m SE	Unspecified Tank	1893	143653
G	251m SE	Unspecified Tank	1891	143653
G	252m SE	Unspecified Tank	1969	140482
G	252m SE	Unspecified Tank	1953	140482
G	252m SE	Unspecified Tank	1979	140482

ID	Location	Land Use	Date	Group ID
G	252m SE	Unspecified Tank	1963	140482
G	253m E	Unspecified Tank	1969	131914
G	253m E	Unspecified Tank	1953	131914
G	253m E	Unspecified Tank	1979	131914
G	253m E	Unspecified Tank	1963	131914
G	253m E	Unspecified Tank	1948	131914
G	254m SE	Unspecified Tank	1980	140482
G	254m SE	Unspecified Tank	1980	140482
G	254m SE	Unspecified Tank	1985	140482
G	256m SE	Gasometer	1893	136753
G	257m SE	Gasometer	1891	124584
G	258m SE	Unspecified Tank	1979	138510
G	258m SE	Unspecified Tank	1963	138510
G	258m SE	Gasometer	1948	142120
G	258m SE	Gasometer	1969	136753
G	258m SE	Unspecified Tank	1953	134836
G	260m SE	Gas Holder	1980	125516
G	260m SE	Gas Holder	1980	125516
G	260m SE	Gas Holder	1985	125516
G	263m E	Unspecified Tank	1891	115951
G	265m E	Unspecified Tank	1891	133313
G	265m SE	Gasometer	1893	128004
G	266m SE	Gasometer	1891	128004
G	267m E	Unspecified Tank	1979	148209
G	267m E	Unspecified Tank	1963	148209
G	267m E	Gasometer	1948	135973
G	267m E	Unspecified Tank	1953	127502
G	276m SE	Unspecified Tank	1893	125584

ID	Location	Land Use	Date	Group ID
G	277m SE	Gasometer	1891	108523
G	282m SE	Unspecified Tank	1969	148192
G	282m SE	Unspecified Tank	1953	148192
G	282m SE	Unspecified Tank	1979	148192
G	282m SE	Unspecified Tank	1948	148192
G	283m SE	Unspecified Tank	1980	148192
G	283m SE	Unspecified Tank	1985	148192
G	283m SE	Unspecified Tank	1987	148192
G	283m SE	Unspecified Tank	1987	148192
G	283m SE	Unspecified Tank	1990	148192
G	283m SE	Unspecified Tank	1998	124573
G	286m SE	Unspecified Tank	1893	123594
G	289m SE	Gasometer	1969	108524
G	289m SE	Unspecified Tank	1953	147415
G	289m SE	Unspecified Tank	1979	147415
G	289m SE	Unspecified Tank	1963	147415
G	290m SE	Unspecified Tank	1980	147415
G	290m SE	Unspecified Tank	1985	147415
G	293m SE	Gasometer	1893	138622
G	295m SE	Gasometer	1891	138622
G	296m SE	Unspecified Tank	1979	129031
G	296m SE	Unspecified Tank	1963	129031
G	296m SE	Gasometer	1948	144835
G	297m SE	Unspecified Tank	1953	128601
G	322m SE	Unspecified Tank	1987	144099
G	322m SE	Unspecified Tank	1987	144099
G	322m SE	Unspecified Tank	1990	144099
G	327m SE	Unspecified Tank	1893	137941

ID	Location	Land Use	Date	Group ID
G	328m SE	Unspecified Tank	1891	137941
R	331m N	Unspecified Tank	1986	144065
R	332m NE	Unspecified Tank	1986	147812
G	332m E	Unspecified Tank	1998	138462
G	332m E	Unspecified Tank	1969	138462
R	333m N	Unspecified Tank	1988	124833
G	333m E	Unspecified Tank	1980	133041
G	333m E	Unspecified Tank	1980	133041
G	333m E	Unspecified Tank	1985	133041
G	333m E	Unspecified Tank	1987	133041
G	333m E	Unspecified Tank	1987	133041
G	333m E	Unspecified Tank	1990	133041
R	334m NE	Unspecified Tank	1988	136452
R	334m N	Unspecified Tank	1996	144065
R	334m N	Unspecified Tank	1995	144065
R	334m N	Unspecified Tank	1994	144065
R	334m N	Unspecified Tank	1999	144065
R	334m NE	Unspecified Tank	1996	136452
R	334m NE	Unspecified Tank	1995	136452
R	334m NE	Unspecified Tank	1994	136452
R	334m NE	Unspecified Tank	1999	136452
AB	344m SE	Unspecified Tank	1969	133333
AB	344m SE	Unspecified Tank	1953	133333
AB	344m SE	Unspecified Tank	1979	133333
AB	344m SE	Unspecified Tank	1948	133333
R	345m NE	Unspecified Tank	1986	148721
R	347m NE	Unspecified Tank	1988	133750
R	347m NE	Unspecified Tank	1996	148721

ID	Location	Land Use	Date	Group ID
R	347m NE	Unspecified Tank	1995	148721
R	347m NE	Unspecified Tank	1994	148721
R	347m NE	Unspecified Tank	1999	148721
AB	353m SE	Unspecified Tank	1980	135450
AB	353m SE	Unspecified Tank	1980	135450
AB	353m SE	Unspecified Tank	1985	135450
6	358m N	Unspecified Tank	1891	115646
R	360m NE	Unspecified Tank	1988	137115
R	360m NE	Unspecified Tank	1996	137115
R	360m NE	Unspecified Tank	1995	137115
R	360m NE	Unspecified Tank	1994	137115
R	360m NE	Unspecified Tank	1999	137115
G	372m SE	Unspecified Tank	1908	115778
G	378m E	Unspecified Tank	1893	122317
G	378m E	Unspecified Tank	1922	122317
G	404m SE	Unspecified Tank	1893	143428
G	404m SE	Unspecified Tank	1922	143428
Y	416m W	Unspecified Tank	1922	115648
AJ	428m W	Unspecified Tank	1980	132153
AJ	428m W	Unspecified Tank	1980	143849
AJ	429m W	Unspecified Tank	1963	141829
AJ	429m W	Unspecified Tank	1960	123914
AJ	429m W	Unspecified Tank	1969	143958
G	435m E	Unspecified Tank	1893	115950
G	437m E	Gasometer	1891	131372
G	437m E	Gasometer	1908	131372
G	453m E	Tanks	1953	106778
8	454m E	Unspecified Tank	1891	115956

ID	Location	Land Use	Date	Group ID
G	454m E	Unspecified Tank	1922	115957
G	456m E	Unspecified Tank	1953	145471
G	456m E	Unspecified Tank	1948	145471
G	457m E	Tanks	1950	106780
G	457m E	Unspecified Tank	1955	135178
G	457m E	Unspecified Tank	1955	135178
G	457m E	Unspecified Tank	1948	135406
G	457m E	Unspecified Tank	1953	135406
G	457m E	Unspecified Tank	1955	123253
G	462m E	Unspecified Tank	1948	141893
G	462m E	Unspecified Tank	1953	141893
G	463m E	Unspecified Tank	1955	135180
AM	472m SE	Unspecified Tank	1922	115781
AM	493m SE	Unspecified Tank	1980	122344
AM	493m SE	Unspecified Tank	1980	122344
AM	493m SE	Unspecified Tank	1985	122344
AM	493m SE	Unspecified Tank	1969	122344
AM	493m SE	Unspecified Tank	1953	122344
AM	493m SE	Unspecified Tank	1979	122344
AM	493m SE	Unspecified Tank	1963	122344
AM	493m SE	Unspecified Tank	1948	122344
AF	499m NW	Unspecified Tank	1963	133635
AF	499m NW	Unspecified Tank	1963	133635

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**110**

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

Features are displayed on the Past land use - un-grouped map on **page 32 >**

ID	Location	Land Use	Date	Group ID
G	80m SE	Gas Works	1893	79545
G	80m SE	Gas Works	1908	79545
G	80m SE	Gas Works	1891	72601
G	82m SE	Gas Works	1922	81689
E	97m SE	Gasometer	1908	65948
E	97m SE	Gasometer	1922	65948
G	155m SE	Gas Works	1948	66529
H	160m S	Electricity Substation	1998	73868
H	160m S	Electricity Transformers	1969	83603
H	161m S	Electricity Transformers	1980	83603
H	161m S	Electricity Transformers	1980	83603
H	161m S	Electricity Transformers	1985	83603
H	172m S	Electricity Substation	1953	78830
H	172m S	Electricity Substation	1979	78830
H	172m S	Electricity Substation	1948	78830
H	174m S	Electricity Substation	1969	82938
H	174m S	Electricity Substation	1980	82938
H	174m S	Electricity Substation	1980	82938
H	174m S	Electricity Substation	1985	82938
H	174m S	Electricity Substation	1987	82938
H	174m S	Electricity Substation	1987	82938
H	174m S	Electricity Substation	1990	82938
G	186m SE	Gas Holder Station	1980	77508

ID	Location	Land Use	Date	Group ID
G	186m SE	Gas Holder Station	1980	77508
G	186m SE	Disused Gas Holder Station	1985	59539
G	215m SE	Gasometer	1948	69283
G	216m SE	Gasometer	1969	65691
G	216m SE	Gasometers	1908	65853
G	216m SE	Gasometers	1922	65853
G	217m SE	Gasometer	1893	65691
G	235m SE	Gasometer	1893	65525
G	235m SE	Gasometer	1948	65525
G	247m SE	Gasometer	1893	75823
G	247m SE	Gasometer	1891	71699
S	249m S	Electricity Substation	1998	62183
G	256m SE	Gasometer	1893	68062
G	257m SE	Gasometer	1891	67026
G	258m SE	Gasometer	1948	71445
G	258m SE	Gasometer	1969	68062
G	259m SE	Electricity Substation	1998	62182
G	260m SE	Gas Holder	1980	70318
G	260m SE	Gas Holder	1980	70318
G	260m SE	Gas Holder	1985	70318
G	265m SE	Gasometer	1893	80269
G	266m SE	Gasometer	1891	80269
G	267m E	Gasometer	1948	78274
G	277m SE	Gasometer	1891	59716
G	289m SE	Gasometer	1969	59717
G	293m SE	Gasometer	1893	71826
G	295m SE	Gasometer	1891	71826
G	296m SE	Gasometer	1948	64845

ID	Location	Land Use	Date	Group ID
W	313m NE	Electricity Substation	1979	80627
W	313m NE	Electricity Substation	1963	80627
W	313m NE	Electricity Substation	1948	80627
W	313m NE	Electricity Substation	1951	80627
W	313m NE	Electricity Substation	1973	80627
W	313m NE	Electricity Substation	1948	80627
W	314m NE	Electricity Substation	1985	80627
G	338m E	Hydraulic Power Station	1932	78003
G	343m E	Hydraulic Power Station	1951	64396
G	343m E	Hydraulic Power Station	1973	64396
G	343m E	Hydraulic Power Station	1948	64396
G	343m E	Hydraulic Power Station	1979	64692
G	343m E	Hydraulic Power Station	1948	64692
AC	352m S	Electricity Substation	1979	83591
AC	352m S	Electricity Substation	1948	83591
AE	364m NW	Electricity Substation	1979	75611
AE	364m NW	Electricity Substation	1948	75611
AE	364m NW	Electricity Substation	1995	75611
AE	364m NW	Electricity Substation	1994	75611
AE	364m NW	Electricity Substation	1995	75611
AE	364m NW	Electricity Substation	1948	75611
AE	364m NW	Electricity Substation	1981	75611
AE	364m NW	Electricity Substation	1979	75611
AE	365m NW	Electricity Substation	1986	75611
AE	365m NW	Electricity Substation	1990	75611
AF	366m NW	Electricity Substation	1979	77417
AC	367m S	Electricity Substation	1953	65840
AF	368m NW	Electricity Substation	1995	82695

ID	Location	Land Use	Date	Group ID
AF	368m NW	Electricity Substation	1979	80738
AF	372m NW	Electricity Substation	1948	80738
AF	387m NW	Electricity Substation	1948	82720
G	400m E	Electricity Substation	1985	65682
G	401m E	Electricity Substation	1996	65682
G	401m E	Electricity Substation	1995	65682
G	401m E	Electricity Substation	1994	65682
G	401m E	Electricity Substation	1999	65682
G	401m E	Electricity Substation	1951	65682
G	401m E	Electricity Substation	1988	65682
G	401m E	Electricity Substation	1973	65682
G	401m E	Electricity Substation	1948	65682
G	402m E	Electricity Substation	1979	65682
AF	403m NW	Electricity Substation	1986	67819
AF	403m NW	Electricity Substation	1990	69796
AF	407m NW	Electricity Substation	1995	83961
AF	407m NW	Electricity Substation	1994	83961
AF	407m NW	Electricity Substation	1981	80246
G	437m E	Gasometer	1891	84082
G	437m E	Gasometer	1908	84082
AJ	442m W	Electricity Substation	1995	72564
AJ	442m W	Electricity Substation	1997	72564
AJ	442m W	Electricity Substation	1995	72564
AJ	442m W	Electricity Substation	1997	72564
AL	460m SW	Electricity Substation	1997	65434
AL	460m SW	Electricity Substation	1997	65434
AF	472m NW	Electricity Substation	1995	67220
AF	472m NW	Electricity Substation	1986	67220

ID	Location	Land Use	Date	Group ID
AF	472m NW	Electricity Substation	1990	67220
AF	473m NW	Electricity Substation	1995	65816
AF	473m NW	Electricity Substation	1994	65816

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	60

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

Features are displayed on the Past land use - un-grouped map on **page 32 >**

ID	Location	Land Use	Date	Group ID
A	8m W	Garage	1963	26858
A	8m W	Garage	1979	26858
A	8m W	Garage	1963	26858
A	8m W	Garage	1981	26858
A	8m W	Garage	1979	26858
A	9m W	Garage	1986	26912
A	9m W	Garage	1990	26912
A	45m W	Garage	1963	25290
A	46m W	Garage	1960	25290
A	46m W	Garage	1969	25290

ID	Location	Land Use	Date	Group ID
E	97m SE	Garage	1979	24802
E	97m SE	Garage	1963	24802
E	97m SE	Garage	1953	24802
N	172m NW	Garage	1995	24725
N	172m NW	Garage	1994	24725
N	172m NW	Garage	1995	20992
N	172m NW	Garage	1981	24287
N	173m NW	Garage	1986	24287
N	173m NW	Garage	1990	24287
O	177m SW	Garage	1980	25490
O	177m SW	Garage	1980	25490
O	180m SW	Garage	1969	22918
P	213m E	Garage	1973	20296
T	215m SW	Garage	1980	25615
T	215m SW	Garage	1980	25615
T	215m SW	Garage	1990	25615
T	219m SW	Garage	1995	27082
T	219m SW	Garage	1997	27082
T	219m SW	Garage	1995	27082
T	219m SW	Garage	1997	27082
4	253m NW	Garage	1981	20294
X	292m S	Garage	1963	24336
X	293m S	Garage	1979	22408
X	302m S	Garage	1960	24336
X	302m S	Garage	1959	21005
AA	303m SW	Garage	1980	21660
AA	304m SW	Garage	1980	24581
AA	304m SW	Garage	1990	24581

ID	Location	Land Use	Date	Group ID
AA	304m SW	Garage	1979	23209
AA	304m SW	Garage	1963	21028
AA	304m SW	Garage	1995	24964
AA	304m SW	Garage	1997	24964
AA	304m SW	Garage	1995	24964
AA	304m SW	Garage	1997	24964
AA	305m SW	Garage	1960	25973
AA	305m SW	Garage	1969	25973
Y	306m NW	Garage	1981	26958
Y	306m NW	Garage	1986	26958
Y	307m NW	Garage	1963	21869
Y	314m NW	Garage	1963	21949
AA	318m SW	Garage	1959	23792
Y	344m NW	Garage	1981	20293
Y	382m W	Garage	1963	25923
Y	383m W	Garage	1963	25923
Y	383m W	Garage	1981	25923
Y	384m W	Garage	1986	21682
AF	414m NW	Garage	1981	24611
AF	414m NW	Garage	1986	24611
AF	414m NW	Garage	1990	24611
10	479m N	Garage	1948	20292

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



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Site Outline

Search buffers in metres (m)

Historical waste sites

Licensed waste sites

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	16

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

Features are displayed on the Waste and landfill map on **page 59 >**

ID	Location	Address	Further Details	Date
B	140m S	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1987
B	140m S	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1987
B	140m S	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1990

ID	Location	Address	Further Details	Date
B	157m S	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1968
B	157m S	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1997
B	157m S	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1995
B	157m S	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1995
5	276m W	Site Address: N/A	Type of Site: Refuse Destructor Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1948
E	289m NE	Site Address: Manchester Central Convention, Windmill Street, Manchester, Greater Manchester, M2 3GX	Type of Site: Recycling Centre Planning application reference: 103313/FO/2013/C1 Description: Scheme comprises relocation of waste storage facility to allow creation of a business recycling centre and construction of screening. Data source: Historic Planning Application Data Type: Point	12/11/2013
H	357m W	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1979
H	357m W	Site Address: N/A	Type of Site: Scrap Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1986

ID	Location	Address	Further Details	Date
J	485m E	Site Address: N/A	Type of Site: Waste Paper Works Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1932
J	487m E	Site Address: N/A	Type of Site: Waste Paper Works Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1953
J	488m E	Site Address: N/A	Type of Site: Waste Paper Works Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1932
J	488m E	Site Address: N/A	Type of Site: Waste Paper Works Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1953
J	496m E	Site Address: N/A	Type of Site: Waste Paper Works Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1948

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

3.6 Licensed waste sites

Records within 500m	**1**

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

Features are displayed on the Waste and landfill map on **page 59 >**

ID	Location	Details		
8	467m E	Site Name: Terra Vac (uk) Ltd Site Address: Little Ireland Phase B, Great Marlborough Street, Manchester, M1 5NN Correspondence Address: Unit 7a, Whitwood Enterprise Park, Castleford, WF10 5PX	Type of Site: Mobile Plant Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TER003 EPR reference: - Operator: Terra Vac (uk) Ltd Waste Management licence No: 50191 Annual Tonnage: 0	Issue Date: 17/06/2002 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued

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

3.7 Waste exemptions

Records within 500m **69**

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

Features are displayed on the Waste and landfill map on **page 59 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	61m E	Axis Tower, Albion Street, Manchester, M1 5nz	WEX074989	Using waste exemption	Not on a farm	Use of waste in construction
A	88m SW	1, Alpha Place, Manchester, M15 4pp	WEX017965	Storing waste exemption	Not on a farm	Storage of waste in secure containers
A	88m SW	1, Alpha Place, Manchester, M15 4pp	WEX017965	Storing waste exemption	Not on a farm	Storage of waste in a secure place
2	102m NE	Axis Tower, Albion Street, Manchester, M1 5nz	WEX220537	Using waste exemption	Not on a farm	Use of waste in construction
3	129m E	Bam Project Office, First Street Plot 9a, Hulme Street, Manchester, M15 4rp	WEX338383	Using waste exemption	Not on a farm	Use of waste in construction
4	187m NW	6, Southern Street, Manchester, M3 4nj	WEX384675	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
C	217m E	Eversheds House 70 Great Bridgewater Street Manchester M1 5es	EPR/QE5657AK/A001	Using waste exemption	Non-agricultural waste only	Spreading waste on non-agricultural land to confer benefit

ID	Location	Site	Reference	Category	Sub-Category	Description
C	217m E	Eversheds House 70 Great Bridgewater Street Manchester M1 5es	EPR/QE5657AK/A001	Treating waste exemption	Non-agricultural waste only	Treatment of kitchen waste in a wormery
C	217m E	Eversheds House 70 Great Bridgewater Street Manchester M1 5es	EPR/QE5657AK/A001	Using waste exemption	Non-agricultural waste only	Use of mulch
D	233m NE	-	WEX346897	Treating waste exemption	Not on a farm	Screening and blending of waste
D	233m NE	-	WEX346897	Treating waste exemption	Not on a farm	Recovery of scrap metal
D	233m NE	-	WEX346897	Treating waste exemption	Not on a farm	Sorting mixed waste
D	233m NE	-	WEX346897	Treating waste exemption	Not on a farm	Treatment of waste food
D	233m NE	-	WEX346897	Treating waste exemption	Not on a farm	Treatment of kitchen waste in a wormery
D	233m NE	-	WEX346897	Using waste exemption	Not on a farm	Use of waste in construction
D	233m NE	-	WEX346897	Using waste exemption	Not on a farm	Use of waste in the construction of entertainment or educational installations etc
D	233m NE	-	WEX346897	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
D	233m NE	-	WEX346897	Storing waste exemption	Not on a farm	Storage of waste in secure containers
D	233m NE	-	WEX346897	Storing waste exemption	Not on a farm	Storage of waste in a secure place
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX217816	Storing waste exemption	Not on a farm	Storage of waste in a secure place
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX063339	Storing waste exemption	Not on a farm	Storage of waste in a secure place
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX220776	Using waste exemption	Not on a farm	Use of waste in construction
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX220776	Storing waste exemption	Not on a farm	Storage of waste in a secure place

ID	Location	Site	Reference	Category	Sub-Category	Description
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX220776	Storing waste exemption	Not on a farm	Storage of waste in secure containers
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX220776	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX220776	Using waste exemption	Not on a farm	Use of waste in the construction of entertainment or educational installations etc
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX075609	Treating waste exemption	Not on a farm	Sorting mixed waste
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX075609	Treating waste exemption	Not on a farm	Manual treatment of waste
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX075609	Treating waste exemption	Not on a farm	Treatment of waste food
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX075609	Treating waste exemption	Not on a farm	Treatment of kitchen waste in a wormery
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX075609	Treating waste exemption	Not on a farm	Screening and blending of waste
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX075609	Treating waste exemption	Not on a farm	Recovery of scrap metal
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX075609	Storing waste exemption	Not on a farm	Storage of waste in secure containers
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX075609	Storing waste exemption	Not on a farm	Storage of waste in a secure place
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX075609	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX075609	Using waste exemption	Not on a farm	Use of waste in construction
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX075609	Using waste exemption	Not on a farm	Use of waste in the construction of entertainment or educational installations etc
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX220776	Treating waste exemption	Not on a farm	Treatment of kitchen waste in a wormery
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX220776	Treating waste exemption	Not on a farm	Treatment of waste food
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX220776	Treating waste exemption	Not on a farm	Manual treatment of waste

ID	Location	Site	Reference	Category	Sub-Category	Description
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX220776	Treating waste exemption	Not on a farm	Sorting mixed waste
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX220776	Treating waste exemption	Not on a farm	Recovery of scrap metal
D	255m NE	Windmill Street, Manchester, M2 3gx	WEX220776	Treating waste exemption	Not on a farm	Screening and blending of waste
6	281m N	The Mews, Great Northern Warehouse 235 Deansgate Manchester M3 4en	EPR/BF0603EU/A001	Using waste exemption	Non-agricultural waste only	Use of waste in the construction of entertainment or educational installations etc
F	296m W	Bestway Panacea Holdings Limited, Bulk Registration For Bestway Panacea Holdings Limited For 108 Sites, M34lz	NRW-WME005755	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
F	297m W	Bestway National Chemists Ltd, Bestway National Chemists Ltd, Merchants Warehouse, 21 Castle Street, Manchester, M3 4lz	NRW-WME074524	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
F	297m W	Bestway National Chemists Ltd, Bulk Registration For Bestway National Chemists Ltd (107 Sites), M34lz	NRW-WME036650	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
E	316m NE	-	WEX210229	Storing waste exemption	Not on a farm	Storage of waste in a secure place
E	316m NE	Manchester Central Convention Co Petersfield Manchester Greater Manchester M2 3gx	EPR/ZF0434NE/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in secure containers
E	316m NE	Manchester Central Convention Co Petersfield Manchester Greater Manchester M2 3gx	EPR/ZF0434NE/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place
E	316m NE	Manchester Central Convention Co Petersfield Manchester Greater Manchester M2 3gx	EPR/ZF0434NE/A001	Treating waste exemption	Non-agricultural waste only	Preparatory treatments (baling, sorting, shredding etc)

ID	Location	Site	Reference	Category	Sub-Category	Description
E	316m NE	Manchester Central Convention Co Petersfield Manchester Greater Manchester M2 3gx	EPR/ZF0434NE/A001	Using waste exemption	Non-agricultural waste only	Use of waste in construction
E	316m NE	Manchester Central Convention Co Petersfield Manchester Greater Manchester M2 3gx	EPR/ZF0434NE/A001	Using waste exemption	Non-agricultural waste only	Use of waste in the construction of entertainment or educational installations etc
E	316m NE	Manchester Central Convention Co Petersfield Manchester Greater Manchester M2 3gx	EPR/ZF0434NE/A001	Treating waste exemption	Non-agricultural waste only	Sorting mixed waste
E	316m NE	Manchester Central Convention Co Petersfield Manchester Greater Manchester M2 3gx	EPR/ZF0434NE/A001	Treating waste exemption	Non-agricultural waste only	Manual treatment of waste
E	316m NE	Manchester Central Convention Co Petersfield Manchester Greater Manchester M2 3gx	EPR/ZF0434NE/A001	Treating waste exemption	Non-agricultural waste only	Treatment of waste food
E	316m NE	Manchester Central Convention Co Petersfield Manchester Greater Manchester M2 3gx	EPR/ZF0434NE/A001	Treating waste exemption	Non-agricultural waste only	Treatment of kitchen waste in a wormery
E	316m NE	Manchester Central Convention Co Petersfield Manchester Greater Manchester M2 3gx	EPR/ZF0434NE/A001	Treating waste exemption	Non-agricultural waste only	Screening and blending of waste
E	316m NE	Manchester Central Convention Co Petersfield Manchester Greater Manchester M2 3gx	EPR/ZF0434NE/A001	Treating waste exemption	Non-agricultural waste only	Recovery of scrap metal
G	317m W	-	WEX347217	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
G	317m W	-	WEX347217	Treating waste exemption	Not on a farm	Aerobic composting and associated prior treatment
E	319m NE	Manchester Central Convention Complex Petersfield Manchester M2 3gx	EPR/KE5983NV/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place

ID	Location	Site	Reference	Category	Sub-Category	Description
I	398m N	25 St. John Street Manchester M3 4dt	EPR/DE5245SP/A001	Treating waste exemption	Non-agricultural waste only	Sorting and de-naturing of controlled drugs for disposal
I	399m N	25, St. John Street, Manchester, M3 4dt	WEX243303	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
I	399m N	98, Harley Street, London, W1g 7hz	WEX099367	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
I	401m N	25 St John Street M34dt	EPR/FE5081QV/A001	Treating waste exemption	Non-agricultural waste only	Sorting and de-naturing of controlled drugs for disposal
7	403m NE	Windmill Green, 24 Mount Street, Manchester, M2 3nn	WEX105155	Using waste exemption	Not on a farm	Use of waste in construction
9	479m NE	Brazennose House M2 5pb	EPR/ZE5544KA/A001	Storing waste exemption	Non-agricultural waste only	Storage of waste in a secure place
10	482m NE	Oxford House, 16, Oxford Street, Manchester, M1 5ae	WEX331634	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal

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

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

Current or recent petrol stations

Part A(1) industrial activities

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

Licensed Discharges to controlled waters

4.1 Recent industrial land uses

Records within 250m	25

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 69 >**

ID	Location	Company	Address	Activity	Category
A	**On site**	**G T Autos**	**Arch 88, Hewitt Street, Manchester, Greater Manchester, M15 4GB**	**Vehicle Repair, Testing and Servicing**	**Repair and Servicing**
A	14m S	Integra Consulting	14-32, Hewitt Street, Manchester, Greater Manchester, M15 4GB	Structural Engineers	Engineering Services
1	24m E	Mancoco	84, Hewitt Street, Manchester, Greater Manchester, M15 4GB	Food and Beverage Industry Machinery	Industrial Products

ID	Location	Company	Address	Activity	Category
2	48m W	Deansgate Rail Station	Greater Manchester, M15	Railway Stations, Junctions and Halts	Public Transport, Stations and Infrastructure
3	54m NW	Deansgate-Castlefield (Mancheste r Metrolink)	Greater Manchester, M1	Tram, Metro and Light Railway Stations and Stops	Public Transport, Stations and Infrastructure
B	85m SW	Zerum	4, Jordan Street, Manchester, Greater Manchester, M15 4PY	Civil Engineers	Engineering Services
C	104m SW	Hulley & Kirkwood	2, Commercial Street, Manchester, Greater Manchester, M15 4RQ	Civil Engineers	Engineering Services
4	118m E	My P C Fix	Albion Wharf 19, Albion Street, Manchester, Greater Manchester, M1 5LN	Electrical Equipment Repair and Servicing	Repair and Servicing
D	130m S	Pest Control Manchester	14, Commercial Street, Manchester, Greater Manchester, M15 4PZ	Pest and Vermin Control	Contract Services
D	130m S	Adeptus Consulting	14, Commercial Street, Manchester, Greater Manchester, M15 4PZ	Car Ports and Steel Buildings	Industrial Products
B	131m SW	R O C Consulting	Commercial Wharf, 6, Commercial Street, Manchester, Greater Manchester, M15 4PZ	Industrial Engineers	Engineering Services
B	136m SW	Commercial Wharf	Greater Manchester, M15	Moorings and Unloading Facilities	Water
5	145m S	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
6	154m NW	Handpicked Accountants	340, Deansgate, Manchester, Greater Manchester, M3 4LY	Published Goods	Industrial Products
F	171m NE	Electricity Sub Station	Greater Manchester, M1	Electrical Features	Infrastructure and Facilities
7	176m N	Duffy Motors Manchester Ltd	Arch 16-17, Watson Street, Manchester, Greater Manchester, M3 4LP	Vehicle Repair, Testing and Servicing	Repair and Servicing
E	183m E	Corner House Publications	2, Tony Wilson Place, Manchester, Greater Manchester, M15 4FN	Distribution and Haulage	Transport, Storage and Delivery
H	188m N	Feather & Black Ltd	289-291, Deansgate, Manchester, Greater Manchester, M3 4EW	Beds and Bedding	Consumer Products
I	192m SE	W S P	8, First Street, Manchester, Greater Manchester, M15 4RP	Civil Engineers	Engineering Services

ID	Location	Company	Address	Activity	Category
I	192m SE	Gazprom Marketing & Energy	8, First Street, Manchester, Greater Manchester, M15 4RP	Fuel Distributors and Suppliers	Household, Office, Leisure and Garden
8	215m SE	Autotrader	Fourth Floor 1, Tony Wilson Place, Manchester, Greater Manchester, M15 4FN	Secondhand Vehicles	Motoring
9	215m E	Curtins	17-19, Whitworth Street West, Manchester, Greater Manchester, M1 5WG	Structural Engineers	Engineering Services
10	225m SW	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
H	231m N	Isovitality Nutriceuticals Ltd	275, Deansgate, Manchester, Greater Manchester, M3 4EL	Catering and Non Specific Food Products	Foodstuffs
H	231m N	Natural Flooring Solutions	275, Deansgate, Manchester, Greater Manchester, M3 4EL	Construction Completion Services	Construction Services

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m **1**

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 69 >**

ID	Location	Company	Address	LPG	Status
13	300m SW	OBSOLETE	14, Great Jackson Street, Castlefield, Manchester, Greater Manchester, M15 4NG	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m **0**

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	2

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 69 >**

ID	Location	Details	
J	212m NE	Operator: MANCHESTER HEAT NETWORK TRADECO LIMITED Installation Name: Manchester Civic Quarter Energy Centre EPR/JP3700BU Process: TRANCHE A SG PERMITTING DATE 1ST OCTOBER 2019 Permit Number: JP3700BU Original Permit Number: JP3700BU	EPR Reference: EPR/JP3700BU Issue Date: 20/08/2020 Effective Date: 20/08/2020 Last date noted as effective: 23/11/2023 Status: Effective
J	212m NE	Operator: MANCHESTER HEAT NETWORK TRADECO LIMITED Installation Name: Manchester Civic Quarter Energy Centre EPR/JP3700BU Process: NEW MEDIUM COMBUSTION PLANT Permit Number: JP3700BU Original Permit Number: JP3700BU	EPR Reference: EPR/JP3700BU Issue Date: 20/08/2020 Effective Date: 20/08/2020 Last date noted as effective: 23/11/2023 Status: Effective

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

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

Records within 500m	4

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 69 >**

ID	Location	Address	Details	
12	291m SW	Tom Garner Motors, A Branch of Robins & Day Ltd, Chester Rd, Manchester, M15 4GA	Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
15	334m SE	Jessop & Baird Ltd, Hulme St, M15 6AL	Process: Coating Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
17	404m SE	Dunlop Ltd, Cambridge St, M60 1PD	Process: Rubber Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
18	478m NE	The Laundry Shop, Unit 5, Peter House, Oxford Street, Manchester	Process: Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	**0**

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m	**24**

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

Features are displayed on the Current industrial land use map on **page 69 >**

ID	Location	Address	Details	
C	125m SW	DEANSGATE, L. PETER ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0157 Permit Version: 2 Receiving Water: TUNNEL TO MEDLOCK	Status: SURRENDERED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 18/07/2014

ID	Location	Address	Details	
C	125m SW	DEANSGATE, L. PETER ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0157 Permit Version: 1 Receiving Water: TUNNEL TO MEDLOCK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: 02/09/2010
C	138m SW	CHESTER ROAD/GREAT JACKSON ROAD CSO, 371 DEANSGATE, MANCHESTER, GREATER MANCHESTER, M15 4UP	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982719 Permit Version: 3 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 29/03/2021 Effective Date: 29/03/2021 Revocation Date: -
C	143m SW	CHESTER ROAD/GREAT JACKSON ROAD CSO, 371 DEANSGATE, MANCHESTER, GREATER MANCHESTER, M15 4UP	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0276 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 01/01/1995 Revocation Date: 01/12/1999
C	143m SW	CHESTER ROAD/GREAT JACKSON ROAD CSO, 371 DEANSGATE, MANCHESTER, GREATER MANCHESTER, M15 4UP	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982719 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: - Effective Date: 01/12/1999 Revocation Date: 28/03/2021
E	154m E	ALBION STREET/HEWITT ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982706 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: SURRENDERED UNDER EPR 2010 Issue date: - Effective Date: 30/09/1994 Revocation Date: 13/11/2019
E	154m E	ALBION STREET/HEWITT ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0251 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 01/01/1995 Revocation Date: 01/01/1995
F	170m E	TRUMPET STREET, SSO, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 01MAN0168 Permit Version: 1 Receiving Water: RIVER TIB CULVERT-MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 15/09/1993 Revocation Date: 15/09/1993

ID	Location	Address	Details	
B	177m SW	OWEN STREET, OWEN STREET, MANCHESTER, M15 4PZ	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: EPRFB3091RH Permit Version: 1 Receiving Water: THE RIVER MEDLOCK	Status: SURRENDERED UNDER EPR 2010 Issue date: 04/10/2016 Effective Date: 04/10/2016 Revocation Date: 02/07/2018
G	184m W	POTATO WHARF, OFF LIVERPOOL RD, MANCHESTER, GREATER MANCHESTER, M3 4LA	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 0175/5 Permit Version: 2 Receiving Water: CROWTON BROOK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/04/1991 Revocation Date: 31/12/1994
G	184m W	POTATO WHARF, OFF LIVERPOOL RD, MANCHESTER, GREATER MANCHESTER, M3 4LA	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 0175/5 Permit Version: 3 Receiving Water: CROWTON BROOK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/01/1995 Revocation Date: 30/06/1995
G	184m W	POTATO WHARF, OFF LIVERPOOL RD, MANCHESTER, GREATER MANCHESTER, M3 4LA	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 0175/5 Permit Version: 4 Receiving Water: CROWTON BROOK	Status: SURRENDERED UNDER EPR 2010 Issue date: - Effective Date: 01/07/1995 Revocation Date: 08/03/2016
G	184m W	POTATO WHARF, OFF LIVERPOOL RD, MANCHESTER, GREATER MANCHESTER, M3 4LA	Effluent Type: TRADE DISCHARGES - PROCESS EFFLUENT - NOT WATER COMPANY Permit Number: 0175/5 Permit Version: 1 Receiving Water: CROWTON BROOK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 20/01/1975 Revocation Date: 31/03/1991
G	184m W	POTATO WHARF, OFF LIVERPOOL RD, MANCHESTER, GREATER MANCHESTER, M3 4LA	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: 0175/5 Permit Version: 1 Receiving Water: CROWTON BROOK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 20/01/1975 Revocation Date: 31/03/1991

ID	Location	Address	Details	
11	252m E	GREAT BRIDGEWATER ST CSO (281WI), 80 GREAT BRIDGEWATER STREET, GREAT ANCOATS, MANCHESTER, GREATER MANCHESTER, M1 5JG	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 01MAN0163 Permit Version: 1 Receiving Water: RIVER TIB CULVERT	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 15/09/1993 Revocation Date: 15/09/1993
K	265m E	GREAT BRIDGEWATER ST CSO (281WI), 80 GREAT BRIDGEWATER STREET, GREAT ANCOATS, MANCHESTER, GREATER MANCHESTER, M1 5JG	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982707 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 30/09/1994 Revocation Date: 19/10/2020
K	265m E	GREAT BRIDGEWATER ST CSO (281WI), 80 GREAT BRIDGEWATER STREET, GREAT ANCOATS, MANCHESTER, GREATER MANCHESTER, M1 5JG	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0252 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 01/01/1995 Revocation Date: 01/01/1995
K	274m E	GREAT BRIDGEWATER ST CSO (281WI), 80 GREAT BRIDGEWATER STREET, GREAT ANCOATS, MANCHESTER, GREATER MANCHESTER, M1 5JG	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982707 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 20/10/2020 Effective Date: 20/10/2020 Revocation Date: -
L	298m E	WILMOTT ST AT RIVER ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0184 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: 18/10/1999
L	298m E	LOWER CAMBRIDGE ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0285 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 01/01/1995 Revocation Date: 15/11/1999
L	298m E	CAMBRIDGE STREET CSO 282D9, 1 CAMBRIDGE STREET, MANCHESTER, GREATER MANCHESTER, M1 5BW	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982721 Permit Version: 3 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 11/04/2018 Effective Date: 11/04/2018 Revocation Date: -

ID	Location	Address	Details	
L	314m E	CAMBRIDGE STREET CSO 282D9, 1 CAMBRIDGE STREET, MANCHESTER, GREATER MANCHESTER, M1 5BW	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982721 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: MODIFIED - (WRA 91 SCHED 10 - AS AMENDED BY ENV ACT 1995) Issue date: - Effective Date: 15/11/1999 Revocation Date: 10/04/2018
14	332m SE	NEWCASTLE ST/CHESTER ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0361 Permit Version: 1 Receiving Water: -	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: -
16	396m NW	RICE ST NEAR CASTLE ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 01MAN0171 Permit Version: 1 Receiving Water: BRIDGEWATER CANAL	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 15/09/1993 Revocation Date: 15/09/1993

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

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

4.17 List 2 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	0

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

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

4.19 Pollution inventory substances

Records within 500m	0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

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

4.20 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

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

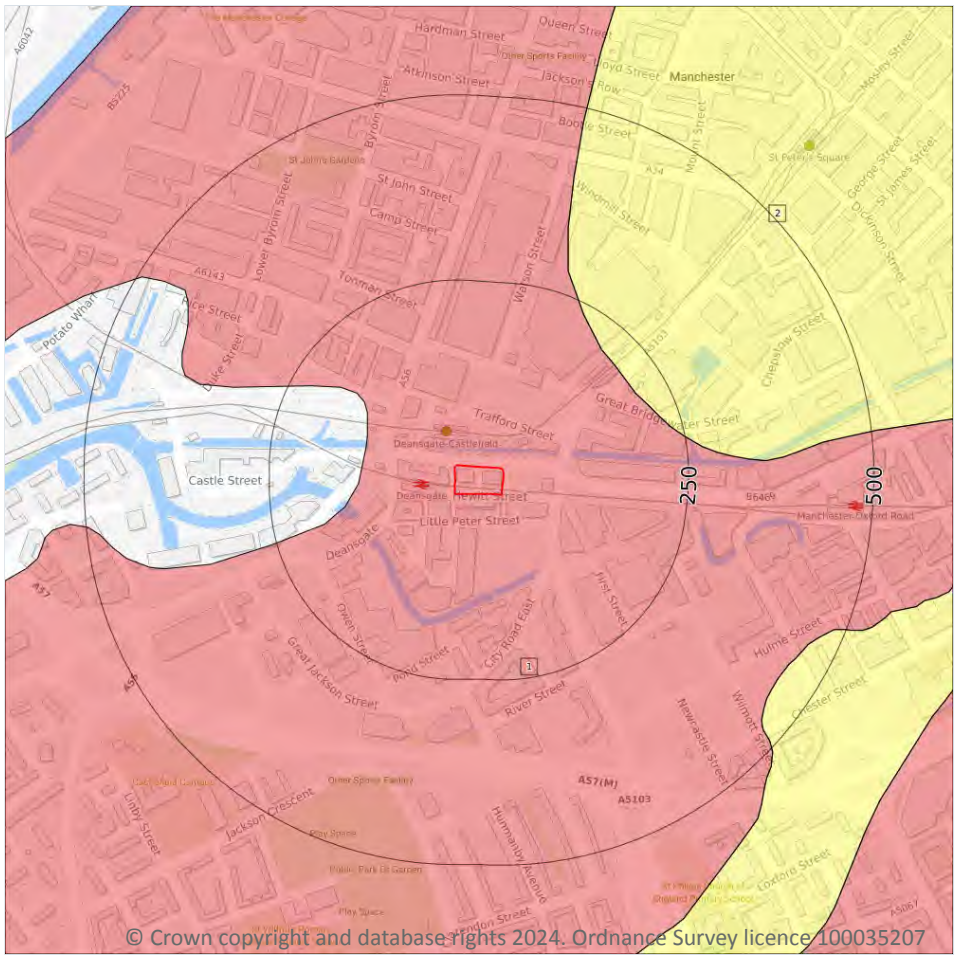
4.21 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

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

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

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

5.1 Superficial aquifer

Records within 500m	2

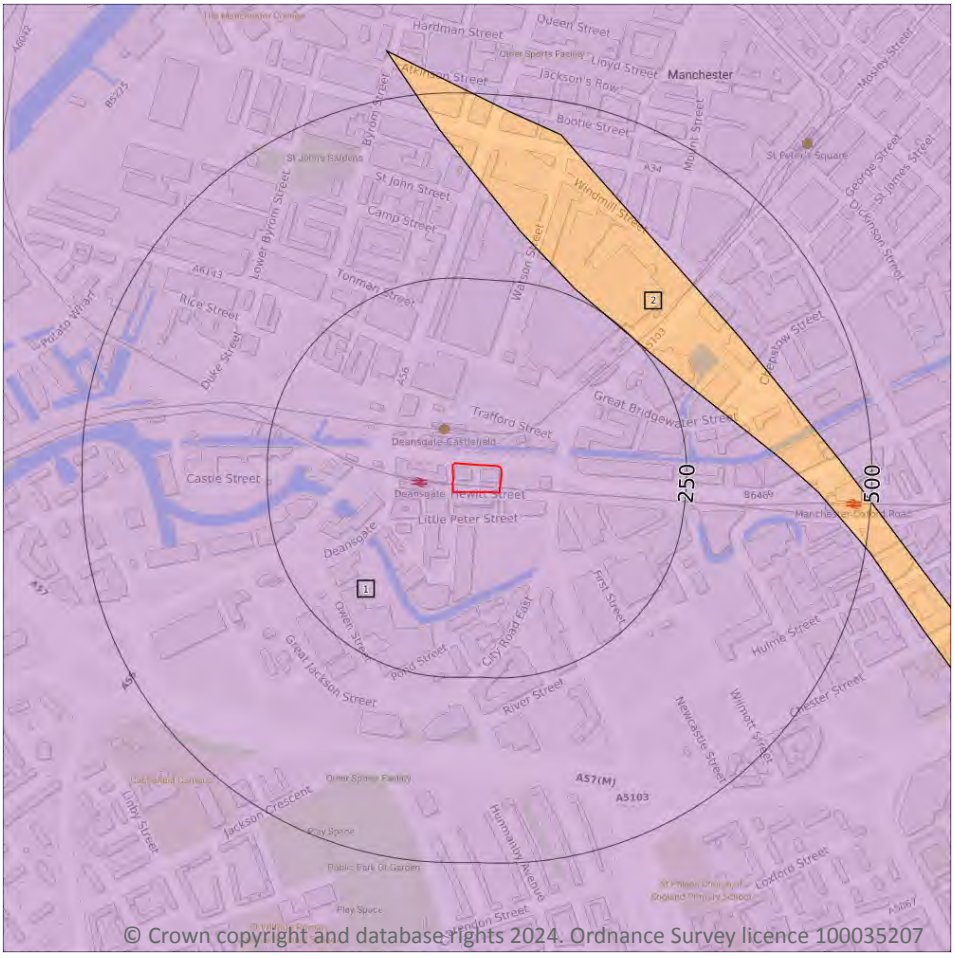
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 80 >**

ID	Location	Designation	Description
1	**On site**	**Secondary A**	**Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers**
2	206m NE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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

Bedrock aquifer



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Site Outline

Search buffers in metres (m)

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

5.2 Bedrock aquifer

Records within 500m	2

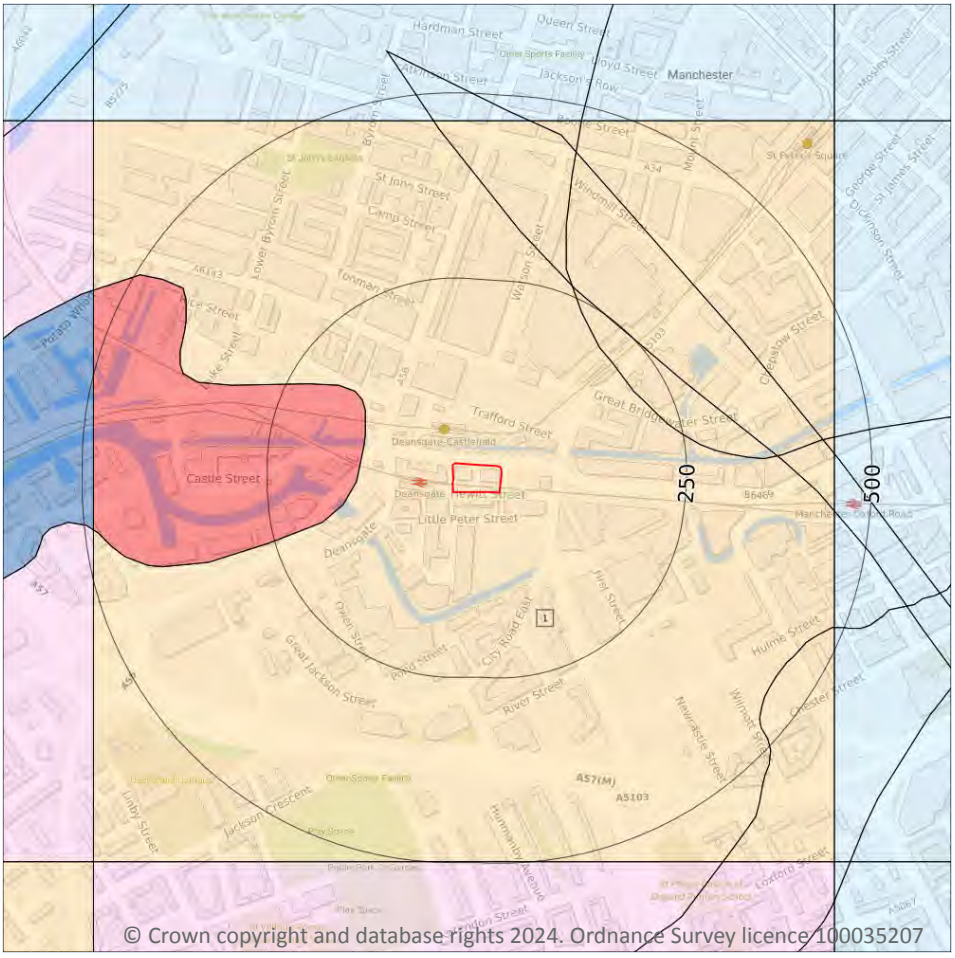
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 82 >**

ID	Location	Designation	Description
1	**On site**	**Principal**	**Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers**
2	249m NE	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

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

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	1

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 84 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: <90% Recharge potential: High**	**Vulnerability: High Aquifer type: Principal Flow mechanism: Well connected fractures**

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

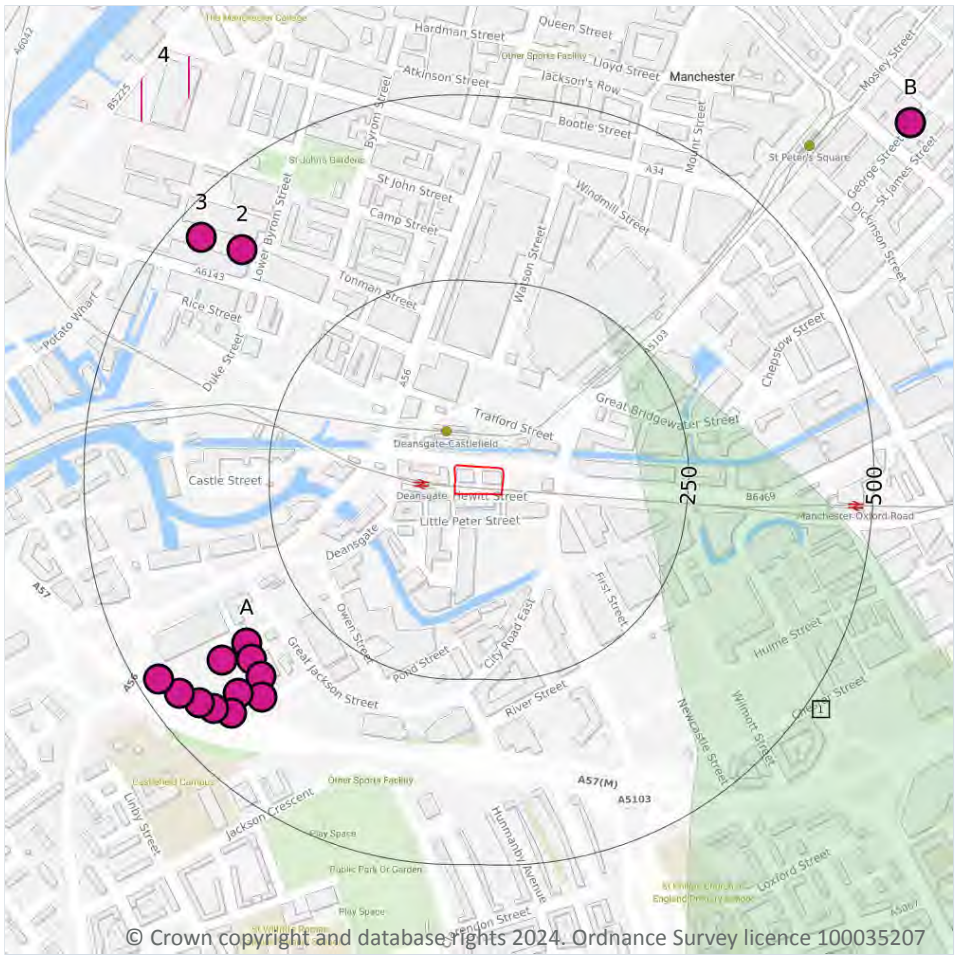
5.5 Groundwater vulnerability- local information

Records on site	0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones



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- Site Outline

Search buffers in metres (m)

- Source Protection Zone 1 — Inner catchment
- Source Protection Zone 2 — Outer catchment
- Source Protection Zone 3 — Total catchment
- Source Protection Zone 4 — Zone of Special Interest
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	61

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 86 >**

ID	Location	Details	
A	345m SW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW11 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383204 Northing: 397298	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
A	353m SW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW10 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383211 Northing: 397276	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
A	359m SW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW9 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383223 Northing: 397253	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
A	378m SW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW8 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383224 Northing: 397225	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -

ID	Location	Details	
A	386m SW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW6 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383171 Northing: 397275	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
A	397m SW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW5 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383193 Northing: 397230	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
2	410m NW	Status: Historical Licence No: NW/069/0004/021 Details: Heat Pump Direct Source: Ground Water - North West Region Point: CHESTER FORMATION AT SCIENCE MUSEUM (A) Data Type: Point Name: Science Museum Group Easting: 383198 Northing: 397829	Annual Volume (m^3): 346000 Max Daily Volume (m^3): 1728 Original Application No: NPS/WR/035329 Original Start Date: 31/03/2023 Expiry Date: 31/03/2024 Issue No: 1 Version Start Date: 31/03/2023 Version End Date: -
A	422m SW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW7 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383184 Northing: 397203	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -

ID	Location	Details	
A	436m SW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW4 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383159 Northing: 397210	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
A	445m SW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW3 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383140 Northing: 397217	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
A	459m SW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW2 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383113 Northing: 397230	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
3	461m NW	Status: Historical Licence No: NW/069/0004/021 Details: Heat Pump Direct Source: Ground Water - North West Region Point: CHESTER FORMATION AT SCIENCE MUSEUM (B) Data Type: Point Name: Science Museum Group Easting: 383143 Northing: 397845	Annual Volume (m^3): 346000 Max Daily Volume (m^3): 1728 Original Application No: NPS/WR/035329 Original Start Date: 31/03/2023 Expiry Date: 31/03/2024 Issue No: 1 Version Start Date: 31/03/2023 Version End Date: -

ID	Location	Details	
A	472m SW	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW1 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383085 Northing: 397249	Annual Volume (m^3): 260172 Max Daily Volume (m^3): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
4	594m NW	Status: Historical Licence No: NW/069/0004/019 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: Ground Water - North West Region Point: ST JOHNS MANCHESTER Data Type: Poly4 Name: Manchester Quays Development (MGY) Ltd Easting: 383094 Northing: 398099	Annual Volume (m^3): 543120 Max Daily Volume (m^3): 1488 Original Application No: - Original Start Date: 13/09/2019 Expiry Date: 31/12/2020 Issue No: 1 Version Start Date: 13/09/2019 Version End Date: -
-	662m N	Status: Historical Licence No: 2569007089 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: 2 BOREHOLES AT GARTSIDE STREET MANCHESTER Data Type: Line Name: HER MAJESTY'S COURT SERVICE Easting: 383335 Northing: 398310	Annual Volume (m^3): 200000 Max Daily Volume (m^3): 1179 Original Application No: - Original Start Date: 26/01/2005 Expiry Date: 31/03/2011 Issue No: 2 Version Start Date: 10/07/2008 Version End Date: -
B	722m NE	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT GEORGE ST, MANCHESTER" Data Type: Point Name: BRITISH TELECOM Easting: 384100 Northing: 398000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/01/1971 Version End Date: -

ID	Location	Details	
B	722m NE	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT GEORGE ST, MANCHESTER Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC Easting: 384100 Northing: 398000	Annual Volume (m^3): 1100 Max Daily Volume (m^3): 860 Original Application No: - Original Start Date: 01/04/1984 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date: -
-	752m SE	Status: Active Licence No: NW/069/0006/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University Easting: 384180 Northing: 397091	Annual Volume (m^3): 283240 Max Daily Volume (m^3): 1532 Original Application No: NPS/WR/015264 Original Start Date: 04/04/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date: -
-	752m SE	Status: Active Licence No: NW/069/0006/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University Easting: 384180 Northing: 397091	Annual Volume (m^3): 283240 Max Daily Volume (m^3): 1532 Original Application No: NPS/WR/015264 Original Start Date: 04/04/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date: -
-	767m W	Status: Active Licence No: NW/069/0004/022 Details: Dewatering Direct Source: Ground Water - North West Region Point: ABSTRACTION AREA AT TRINITY ISLANDS, MANCHESTER Data Type: Poly4 Name: Renaker Build Ltd Easting: 382705 Northing: 397822	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: NPS/WR/036441 Original Start Date: 05/09/2023 Expiry Date: 31/10/2024 Issue No: 1 Version Start Date: 05/09/2023 Version End Date: -

ID	Location	Details	
-	770m S	Status: Active Licence No: NW/069/0004/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University Easting: 383715 Northing: 396746	Annual Volume (m^3): 274115 Max Daily Volume (m^3): 751 Original Application No: NPS/WR/008077 Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/01/2015 Version End Date: -
-	770m S	Status: Active Licence No: NW/069/0004/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University Easting: 383715 Northing: 396746	Annual Volume (m^3): 274115 Max Daily Volume (m^3): 751 Original Application No: NPS/WR/008077 Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/01/2015 Version End Date: -
-	852m E	Status: Historical Licence No: NW0690006001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLES AT ORIGIN DEVELOPMENTS, MANCHESTER Data Type: Point Name: West Contracting Easting: 384378 Northing: 397733	Annual Volume (m^3): 139128 Max Daily Volume (m^3): 1010 Original Application No: - Original Start Date: 19/01/2009 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 19/01/2009 Version End Date: -
-	852m E	Status: Historical Licence No: NW/069/0006/001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLES AT ORIGIN DEVELOPMENTS, MANCHESTER Data Type: Point Name: West Contracting Easting: 384378 Northing: 397733	Annual Volume (m^3): 139128 Max Daily Volume (m^3): 1010 Original Application No: - Original Start Date: 19/01/2009 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 19/01/2009 Version End Date: -

ID	Location	Details	
-	1176m N	Status: Active Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT DIAL HOUSE CHAPEL STREET SALFORD Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC Easting: 383700 Northing: 398700	Annual Volume (m^3): 45 Max Daily Volume (m^3): 30 Original Application No: 2333 Original Start Date: 27/01/1971 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2007 Version End Date: -
-	1176m N	Status: Historical Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT DIAL HOUSE, CHAPEL ST, SALFORD" Data Type: Point Name: BRITISH TELECOM Easting: 383700 Northing: 398700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/01/1971 Version End Date: -
-	1176m N	Status: Historical Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT DIAL HOUSE, CHAPEL ST, SALFORD Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC Easting: 383700 Northing: 398700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 101 Version Start Date: 01/04/1984 Version End Date: -
-	1519m NW	Status: Active Licence No: 2569007085 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT HOPE STREET, SALFORD, MANCHESTER Data Type: Point Name: CEMEX UK MATERIALS LTD Easting: 382190 Northing: 398330	Annual Volume (m^3): 23000 Max Daily Volume (m^3): 115 Original Application No: NPS/WR/030716 Original Start Date: 01/11/2000 Expiry Date: - Issue No: 4 Version Start Date: 21/12/2018 Version End Date: -

ID	Location	Details	
-	1519m NW	Status: Historical Licence No: 2569007085 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT HOPE STREET, SALFORD, MANCHESTER" Data Type: Point Name: READY MIXED CONCRETE (NORTH WEST) LIMITED Easting: 382190 Northing: 398330	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 01/11/2000 Expiry Date: - Issue No: 1 Version Start Date: 01/11/2000 Version End Date: -
-	1620m S	Status: Active Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383865 Northing: 395909	Annual Volume (m^3): 227000 Max Daily Volume (m^3): 900 Original Application No: NPS/WR/015793 Original Start Date: 15/02/1966 Expiry Date: - Issue No: 103 Version Start Date: 08/05/2014 Version End Date: -
-	1620m S	Status: Active Licence No: 2569007007 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383865 Northing: 395909	Annual Volume (m^3): 227000 Max Daily Volume (m^3): 900 Original Application No: NPS/WR/015793 Original Start Date: 15/02/1966 Expiry Date: - Issue No: 103 Version Start Date: 08/05/2014 Version End Date: -
-	1636m S	Status: Historical Licence No: 2569007007 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER" Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/08/1995 Version End Date: -

ID	Location	Details	
-	1636m S	Status: Historical Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER" Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/08/1995 Version End Date: -
-	1636m S	Status: Historical Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/12/2003 Version End Date: -
-	1636m S	Status: Historical Licence No: 2569007007 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/12/2003 Version End Date: -
-	1636m S	Status: Historical Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383900 Northing: 395900	Annual Volume (m^3): 227000 Max Daily Volume (m^3): 900 Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 23/11/2009 Version End Date: -

ID	Location	Details	
-	1636m S	Status: Historical Licence No: 2569007007 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383900 Northing: 395900	Annual Volume (m^3): 227000 Max Daily Volume (m^3): 900 Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 23/11/2009 Version End Date: -
-	1670m S	Status: Historical Licence No: 2569007009 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER" Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -
-	1670m S	Status: Historical Licence No: 2569007009 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER" Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -
-	1670m S	Status: Historical Licence No: 2569007009 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m^3): 66826.2 Max Daily Volume (m^3): 372.772 Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -

ID	Location	Details	
-	1670m S	Status: Historical Licence No: 2569007009 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m^3): 66826.2 Max Daily Volume (m^3): 372.772 Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 103 Version Start Date: 19/07/2018 Version End Date: -
-	1678m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1678m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1678m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -

ID	Location	Details	
-	1678m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1678m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 2 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1678m N	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 2 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1689m E	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, BROADIE ST, ARDWICK, MANCHESTER" Data Type: Point Name: MOSELEY RUBBER CO LTD Easting: 385240 Northing: 397540	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 08/02/1966 Version End Date: -

ID	Location	Details	
-	1689m E	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, BROADIE ST, ARDWICK, MANCHESTER Data Type: Point Name: MOSELEY RUBBER CO LTD Easting: 385240 Northing: 397540	Annual Volume (m^3): 331858 Max Daily Volume (m^3): 909.2 Original Application No: - Original Start Date: 08/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 08/02/1966 Version End Date: -
-	1710m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1710m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1710m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -

ID	Location	Details	
-	1710m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1710m N	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 3 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1710m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 3 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1743m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -

ID	Location	Details	
-	1743m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1743m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1743m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1743m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 1 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -

ID	Location	Details	
-	1743m N	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 1 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m **2**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 86 >**

ID	Location	Details	
-	990m W	Status: Historical Licence No: 2569007053 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "R IRWELL AT IRWELL WORKS, ORDSALL LANE, SALFORD" Data Type: Point Name: CDS COMPUTER DESIGN SYSTEMS LTD Easting: 382500 Northing: 397400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 22/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1987 Version End Date: -
-	990m W	Status: Historical Licence No: 2569007053 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: R IRWELL AT IRWELL WORKS, ORDSALL LANE, SALFORD Data Type: Point Name: CDS COMPUTER DESIGN SYSTEMS LTD Easting: 382500 Northing: 397400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 22/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1987 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	**9**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 86 >**

ID	Location	Details	
-	1678m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1678m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1678m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 2 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -

ID	Location	Details	
-	1710m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1710m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1710m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 3 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1743m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -

ID	Location	Details	
-	1743m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1743m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 1 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	**1**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 86 >**

ID	Location	Type	Description
1	182m E	3	Total catchment

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m	**0**

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

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

6 Hydrology



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Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	21

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

Features are displayed on the Hydrology map on **page 106 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	24m NW	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal

ID	Location	Type of water feature	Ground level	Permanence	Name
B	24m NE	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal
A	25m N	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal
A	26m NW	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal
A	26m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	52m NW	Canal. A manmade watercourse for inland navigation.	Underground	Watercourse contains water year round (in normal circumstances)	Rochdale Canal
D	114m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medlock
2	115m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medlock
E	119m W	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal
E	126m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medlock
E	137m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medlock
E	155m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	River Medlock
E	170m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Medlock
E	181m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
E	189m W	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal
E	199m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Bridgewater Canal
G	199m W	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal
E	203m W	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Bridgewater Canal
F	208m W	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Bridgewater Canal
C	217m E	Lock or flight of locks. An enclosure in a canal or navigable river with gates and sluices at either end.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal
C	242m E	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	7

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

Features are displayed on the Hydrology map on **page 106 >**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 106 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	**On site**	**River**	**Medlock (Lumb Brook to Irwell)**	**GB112069061152**	**Roch Irk Medlock**	**Irwell**

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

6.4 WFD Surface water bodies

Records identified	**2**

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each water body listed.

Features are displayed on the Hydrology map on **page 106 >**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
B	24m NW	Canal	Rochdale Canal, western section	GB71210517 ↗	Moderate	Fail	Moderate	2019
3	116m SE	River	Medlock (Lumb Brook to Irwell)	GB112069061152 ↗	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site	**1**

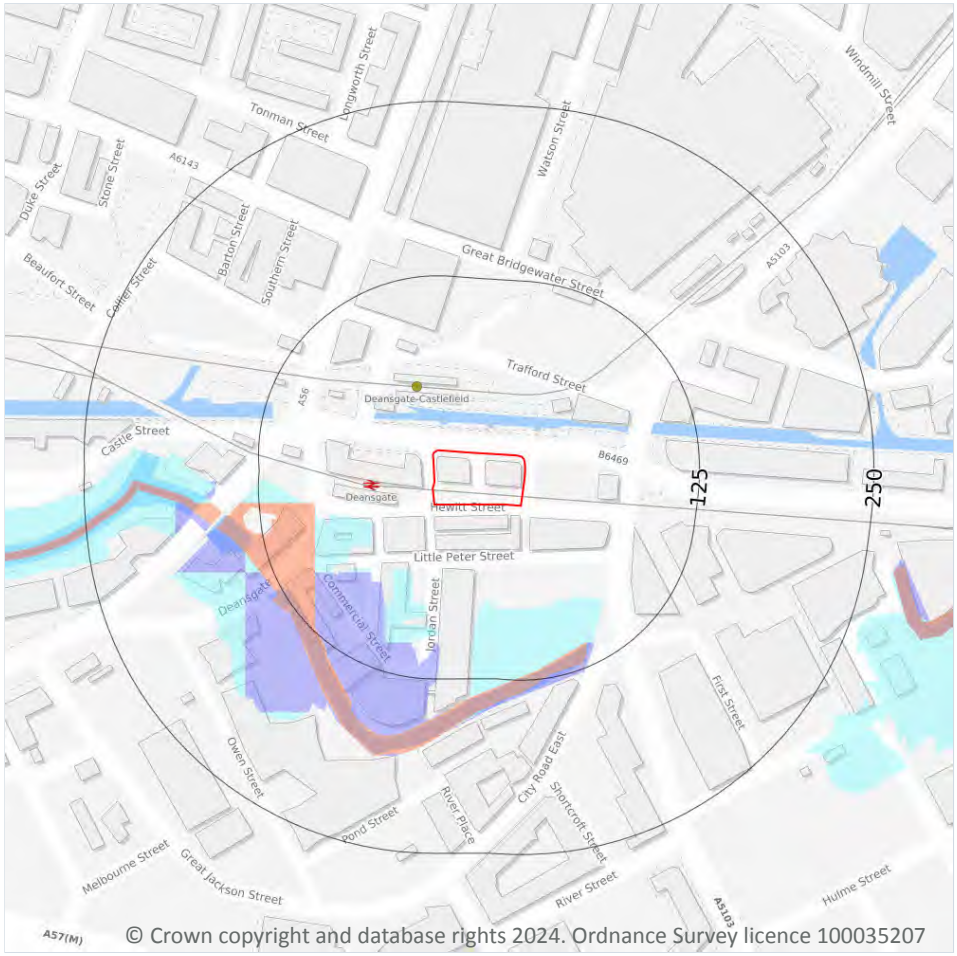
Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place. Click on the water body ID in the table to visit the EA Catchment Explorer to find out more about each groundwater body listed.

Features are displayed on the Hydrology map on **page 106 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	**On site**	**Manchester and East Cheshire Permo-Triassic Sandstone Aquifers**	**GB41201G101100** ↗	**Poor**	**Poor**	**Poor**	**2019**

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

7 River and coastal flooding



Site Outline

Search buffers in metres (m)

River and coastal flooding:

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

7.1 Risk of flooding from rivers and the sea

Records within 50m	2

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on **page 111 >**

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

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

7.2 Historical Flood Events

Records within 250m	**0**

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

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

7.3 Flood Defences

Records within 250m	**0**

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	**0**

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

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

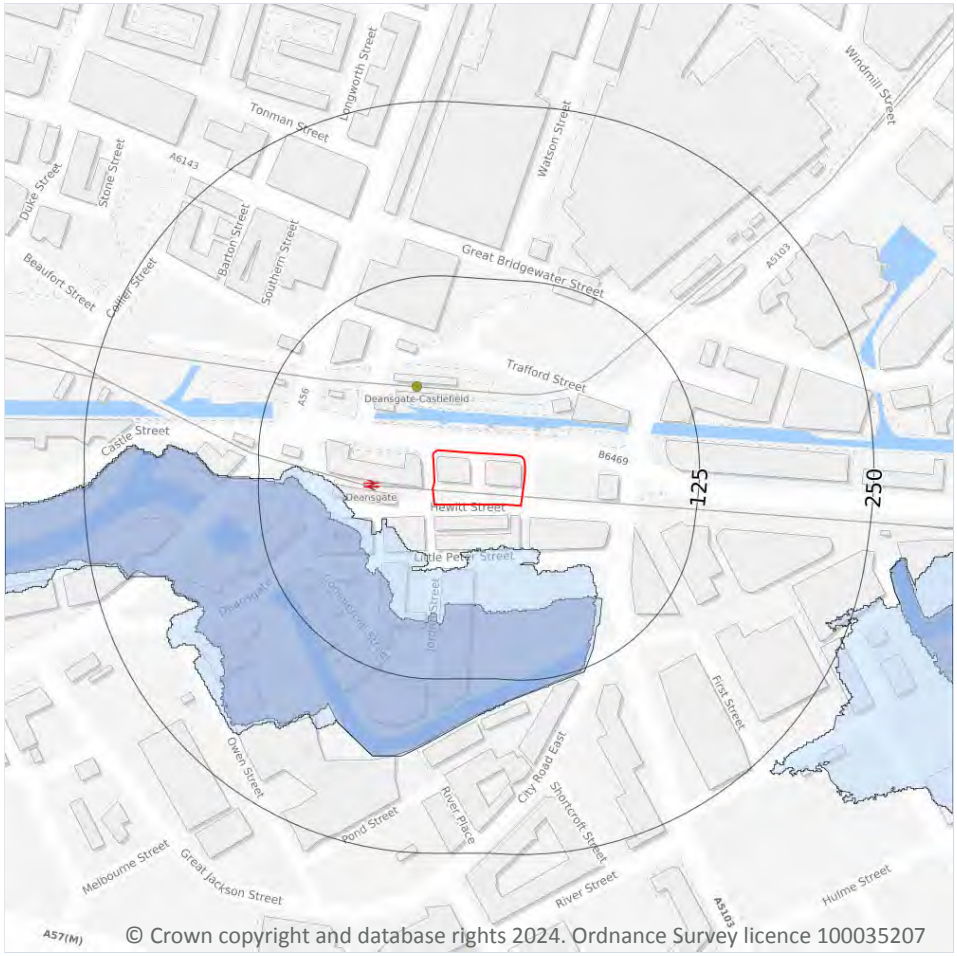
7.5 Flood Storage Areas

Records within 250m	**0**

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

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

River and coastal flooding - Flood Zones



Site Outline

Search buffers in metres (m)

Flood zone 2

Flood zone 3

7.6 Flood Zone 2

Records within 50m	1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

Features are displayed on the River and coastal flooding map on **page 111 >**

Location	Type
29m S	Zone 2 - (Fluvial /Tidal Models)

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

7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding



Site Outline

Search buffers in metres (m)

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

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

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

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

8.1 Surface water flooding

Highest risk on site	**Negligible**
Highest risk within 50m	**1 in 1000 year, Greater than 1.0m**

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

Features are displayed on the Surface water flooding map on **page 115 >**

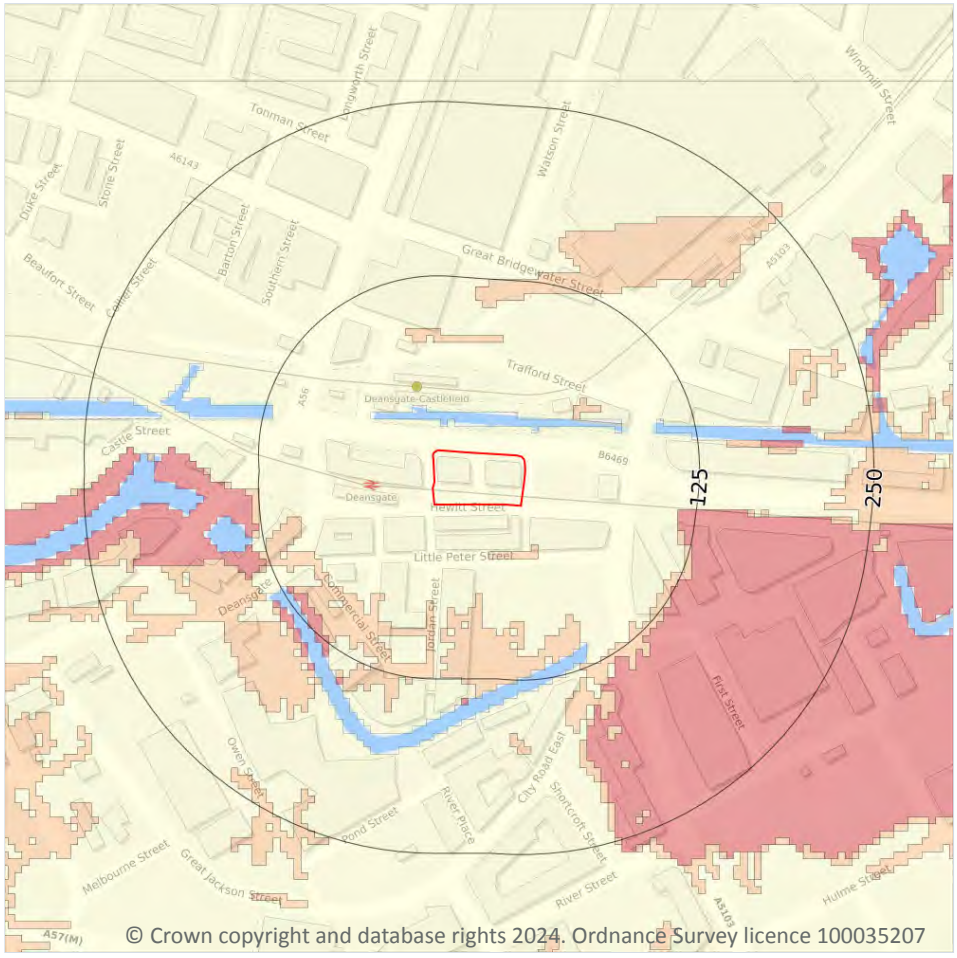
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



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9.1 Groundwater flooding

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

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 117 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	0

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m	0

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m	0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m	0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m	0

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

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m	0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

Special Protection Areas (SPAs) are areas designated (or 'classified') under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

Records within 2000m	3

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
1148m NE	River Irk (Moston Brook to River Irwell) NVZ	Surface Water	638	Existing
1166m NW	Irwell / Man. Ship Canal (Kearsley to Irlam Locks) NVZ	Surface Water	643	Existing
1179m NE	River Irk (Moston Brook to River Irwell) NVZ	Surface Water	638	Existing

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

SSSI Impact Zones and Units



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Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

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

10.17 SSSI Impact Risk Zones

Records on site	1

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 122 >**

ID	Location	Type of developments requiring consultation
1	**On site**	**Air pollution - Livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 4000m². Combustion - General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.**

This data is sourced from Natural England.

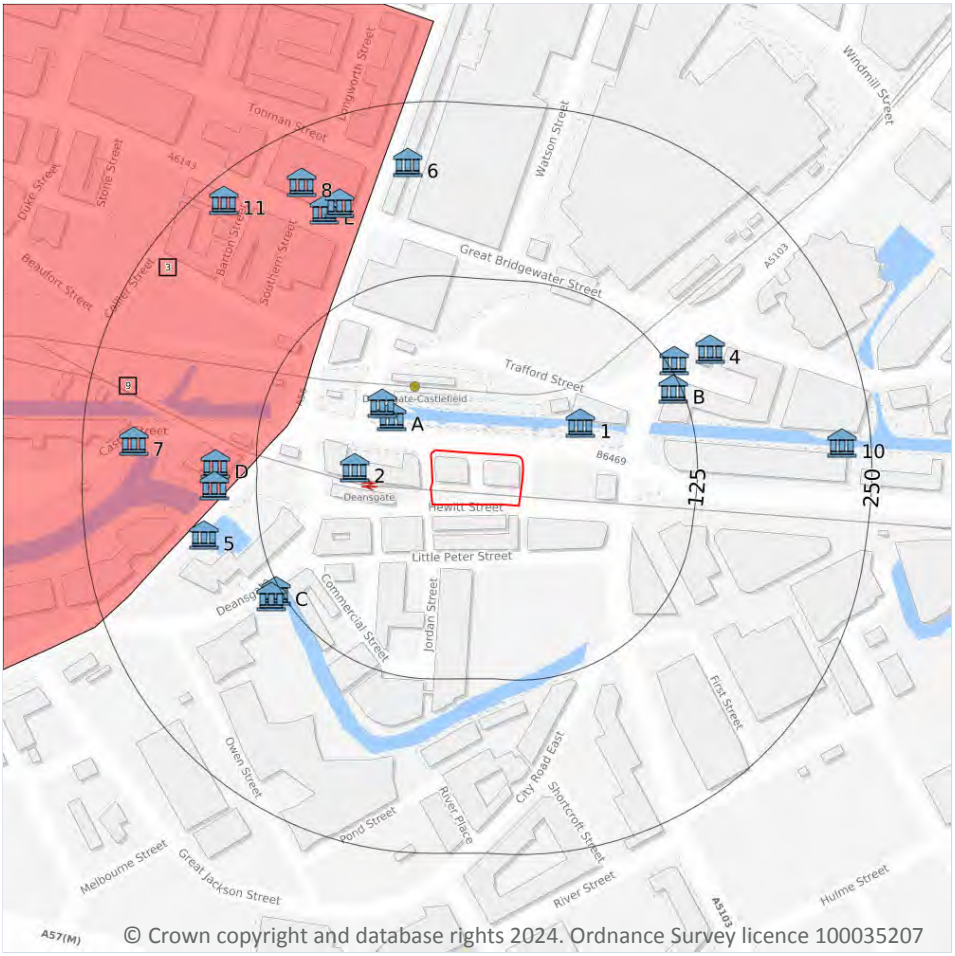
10.18 SSSI Units

Records within 2000m	0

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

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

11 Visual and cultural designations



Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m	0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m	19

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

Features are displayed on the Visual and cultural designations map on **page 124 >**

ID	Location	Name	Grade	Reference Number	Listed date
A	39m NW	Rochdale Canal Lock Number 91 At East End Of Gaythorn Tunnel	II	1247483	29/01/1986
1	49m NE	Rochdale Canal Lock Number 90, Approximately 30 Metres West Of Albion Bridge	II	1247482	06/06/1994
A	50m NW	Rochdale Canal Lock Keepers Cottage At Lock Number 91, Next To Gaythorn Tunnel	II	1247597	29/01/1986
2	55m W	Deansgate Station	II	1376146	20/08/1998

ID	Location	Name	Grade	Reference Number	Listed date
B	120m NE	13-17, Albion Street	II	1279694	03/10/1974
C	128m SW	Boundary Stone On Knott Mill Bridge	II	1282975	06/06/1994
B	130m NE	Manchester South Junction And Altrincham Railway Viaduct	II	1200837	06/06/1994
C	133m SW	Floodgate On East Side Of Knott Mill Bridge	II	1210156	06/06/1994
D	155m W	Former Congregational Chapel	II	1292311	20/06/1988
D	155m W	Electricity Junction Box In Castlefield Canal Basin, Manchester	II	1475255	29/09/2021
4	156m NE	The Britons Protection Ph The Britons Protection Public House	II	1292050	16/03/1990
5	165m W	Electricity Junction Box In Castlefield Canal Basin, Manchester	II	1475459	29/09/2021
E	190m NW	K6 Telephone Kiosk Beside South West Corner Of Number 330 Deansgate	II	1219441	29/10/1987
E	190m NW	Castlefield Information Centre	II	1200853	17/05/1974
6	207m N	235-291, Deansgate	II	1210103	28/02/1989
7	213m W	Electricity Junction Box On Castle Street, Manchester	II	1475254	29/09/2021
8	215m NW	Former Market Hall	II	1197915	17/05/1974
10	230m E	Rochdale Canal Lock Number 89 (Tib Lock), On South Side Of Havelock Mills	II	1247596	06/06/1994
11	235m NW	29-41, Liverpool Road	II	1219402	06/06/1994

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

11.5 Conservation Areas

Records within 250m **1**

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

Features are displayed on the Visual and cultural designations map on **page 124 >**

ID	Location	Name	District	Date of designation
3	101m NW	Castlefield	Manchester	13/10/1979

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

11.6 Scheduled Ancient Monuments

Records within 250m	1

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

Features are displayed on the Visual and cultural designations map on **page 124 >**

ID	Location	Ancient monument name	Reference number
9	220m W	Remains of eastern wall of the Roman fort	1001953

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

11.7 Registered Parks and Gardens

Records within 250m	0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

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

12 Agricultural designations



12.1 Agricultural Land Classification

Records within 250m	1

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 128 >**

ID	Location	Classification	Description
1	**On site**	**Urban**	-

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

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

12.3 Tree Felling Licences

Records within 250m	0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



14.1 10k Availability

Records within 500m	1

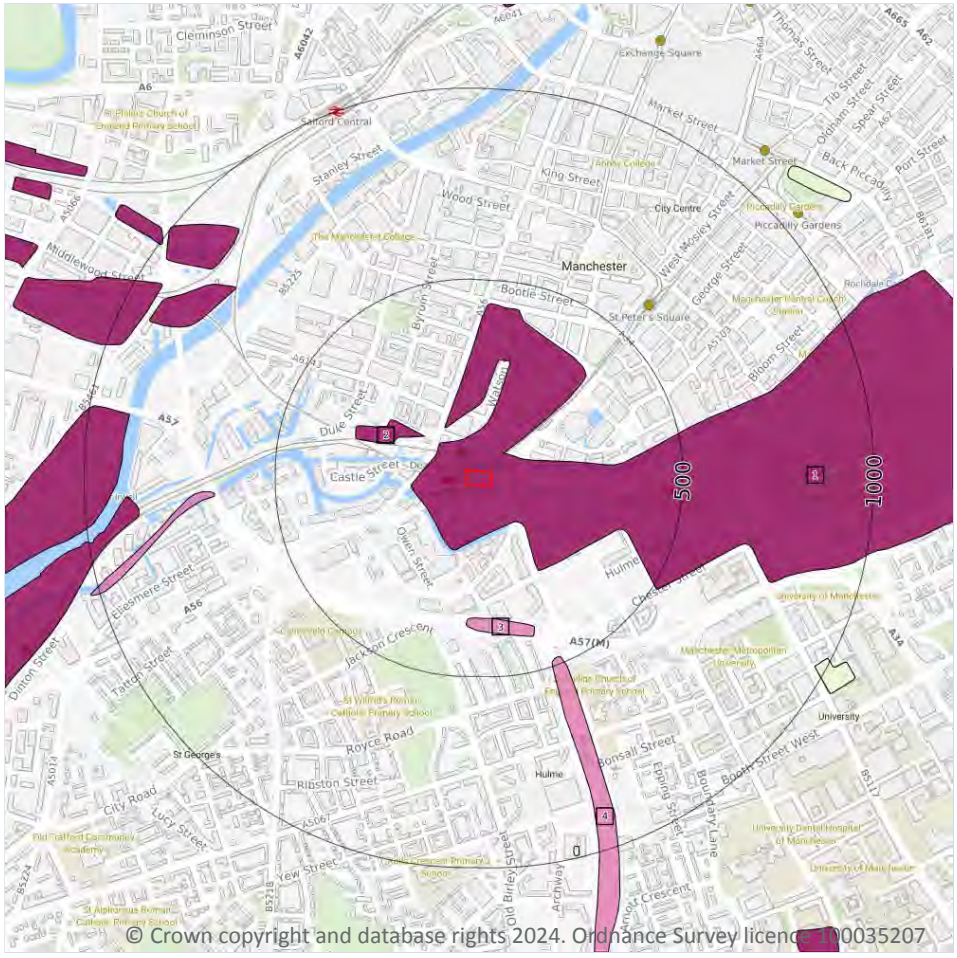
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 131 >**

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

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

- Reclaimed ground
- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

14.2 Artificial and made ground (10k)

Records within 500m	4

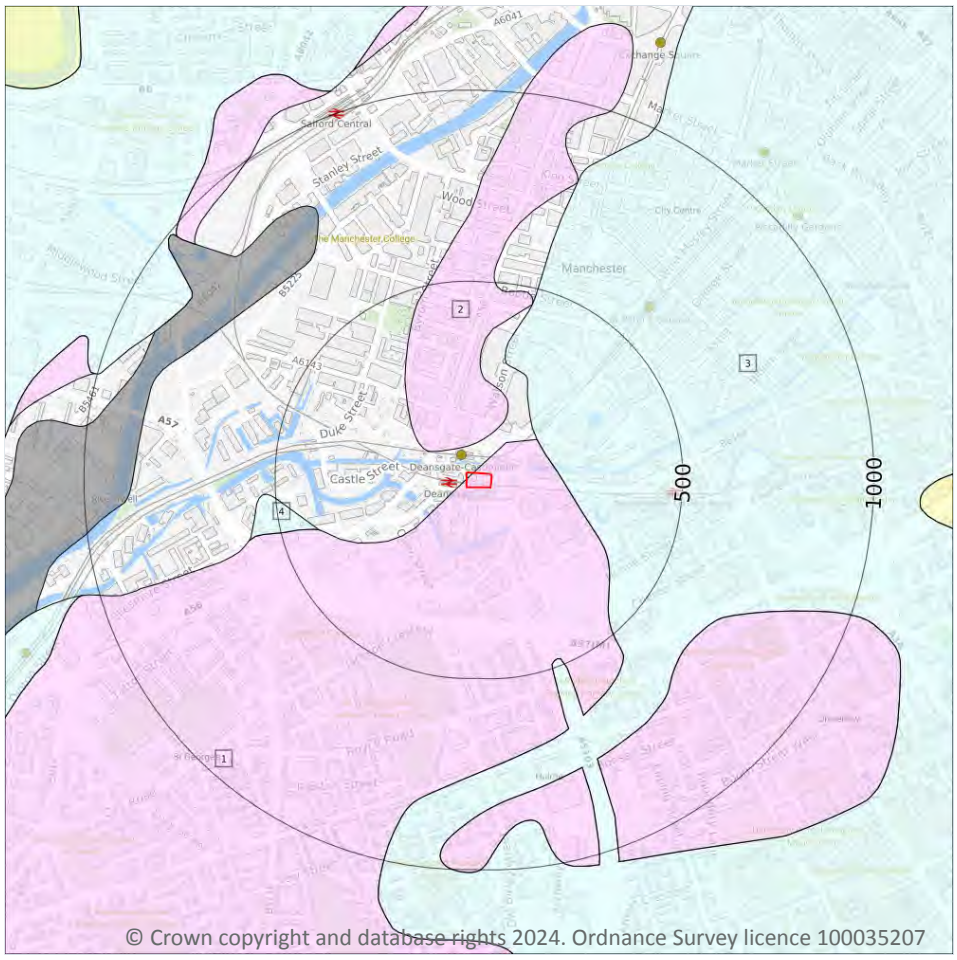
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 132 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**Made Ground (Undivided)**	**Artificial Deposit**
2	143m NW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	347m S	WGR-VOID	Worked Ground (Undivided)	Void
4	481m SE	WGR-VOID	Worked Ground (Undivided)	Void

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



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Site Outline

Search buffers in metres (m)

Landslip (10k)

Superficial geology (10k)
Please see table for more details.

14.3 Superficial geology (10k)

Records within 500m **4**

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 134 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**GFSDD-XSV**	**Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel**	**Sand And Gravel**
2	67m NW	GFSDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
3	150m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
4	402m W	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

Bedrock geology (10k)
Please see table for more details.

14.5 Bedrock geology (10k)

Records within 500m	2

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 136 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**CPB-SDST**	**Chester Pebble Beds Formation - Sandstone**	**Early Triassic Epoch**
3	270m NE	MM-MDST	Manchester Marls Formation - Mudstone	Late Permian Epoch [Obsolete name]

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	3

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 136 >**

ID	Location	Category	Description
2	56m NW	LANDFORM	Buried channel or valley margin
4	364m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
5	367m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



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Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

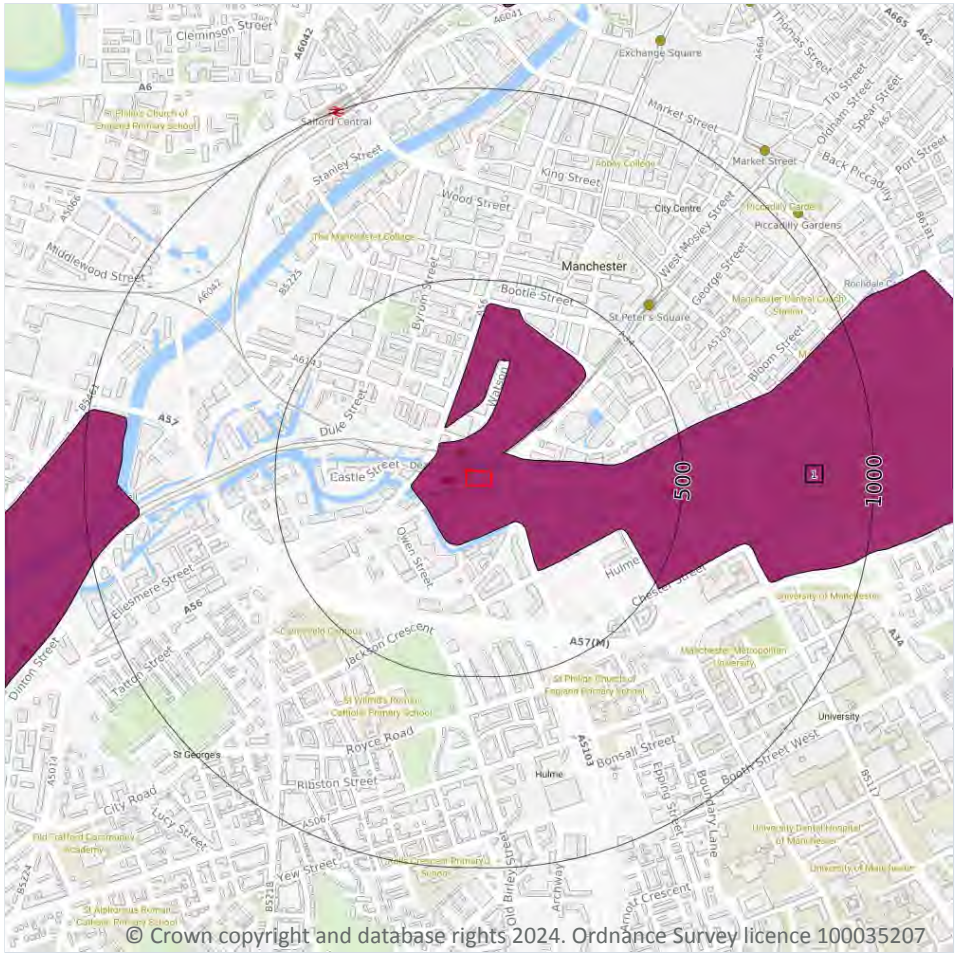
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 138 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW085_manchester_v4

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground



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15.2 Artificial and made ground (50k)

Records within 500m	1

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 139 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**MADE GROUND (UNDIVIDED)**	**ARTIFICIAL DEPOSIT**

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

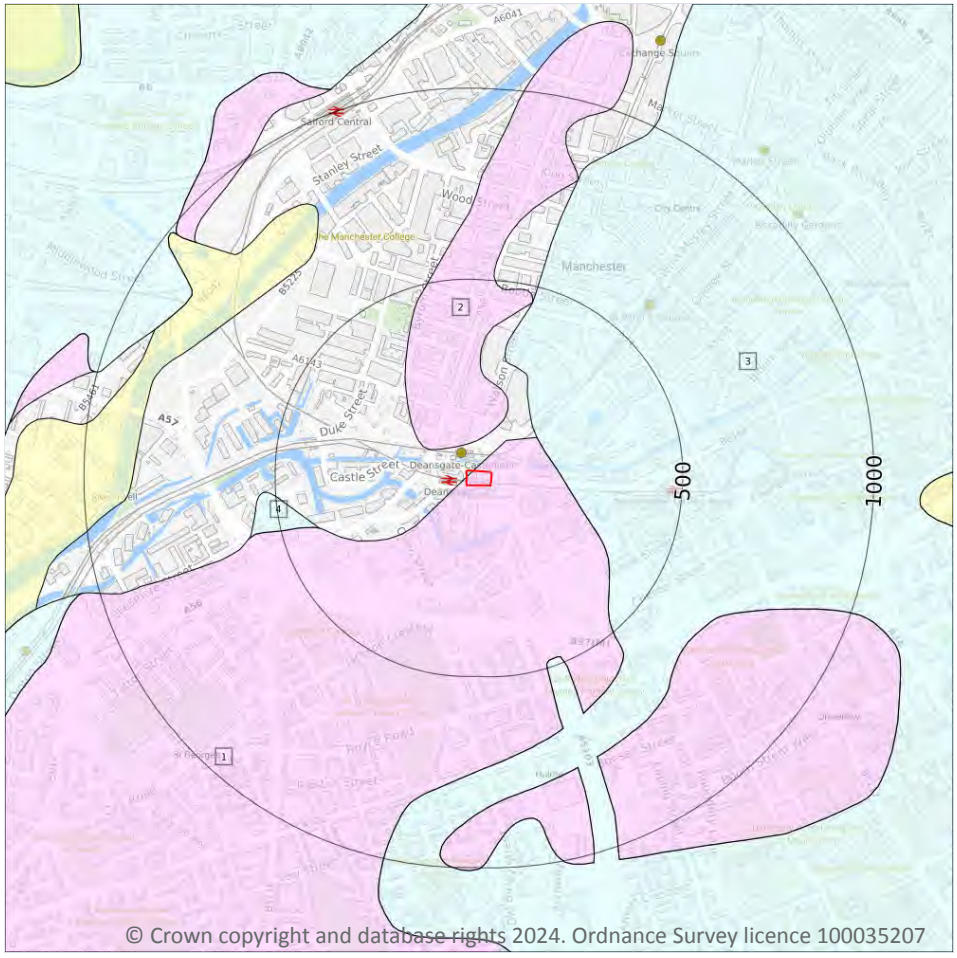
Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**Very High**	**Low**

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



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Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m **4**

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 141 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**GFSDD-XSV**	**GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN**	**SAND AND GRAVEL**
2	67m NW	GFSDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
3	149m NE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
4	402m W	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

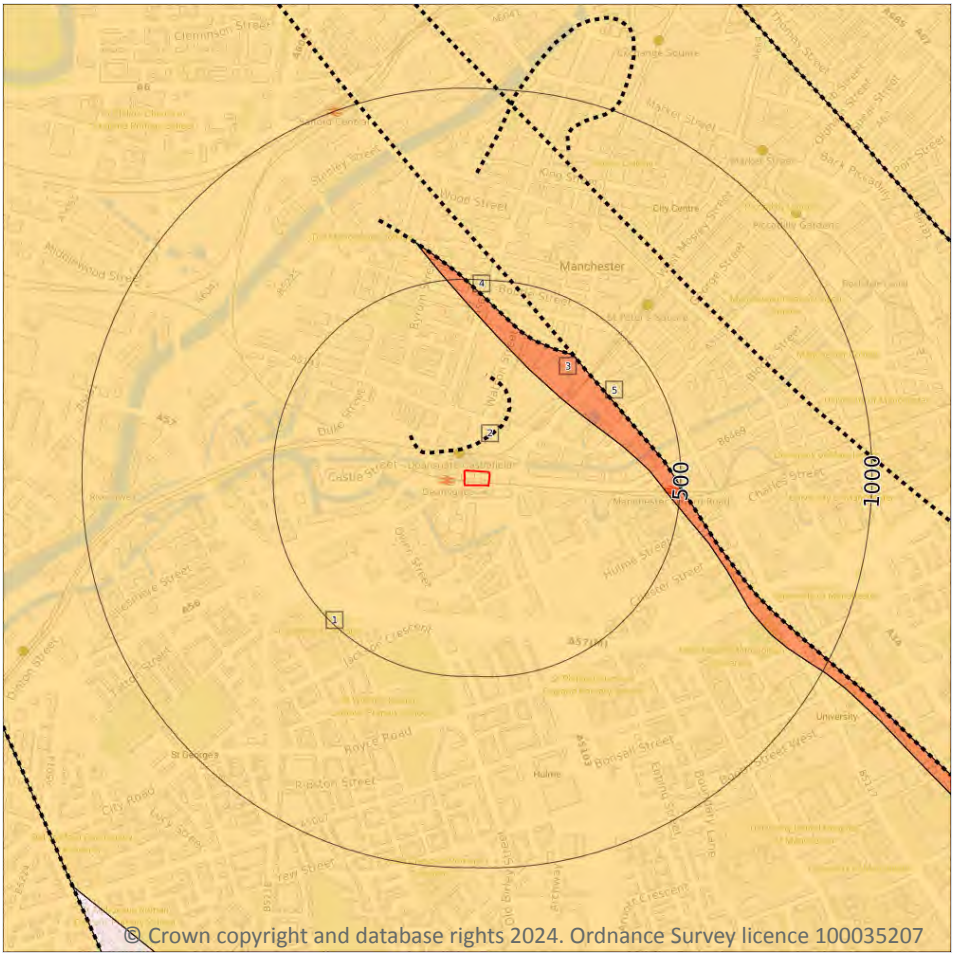
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m	2

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 143 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**CHES-SDST**	**CHESTER FORMATION - SANDSTONE**	**OLENEKIAN**
3	270m NE	MM-MDST	MANCHESTER MARLS FORMATION - MUDSTONE	-

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**High**	**Moderate**

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	3

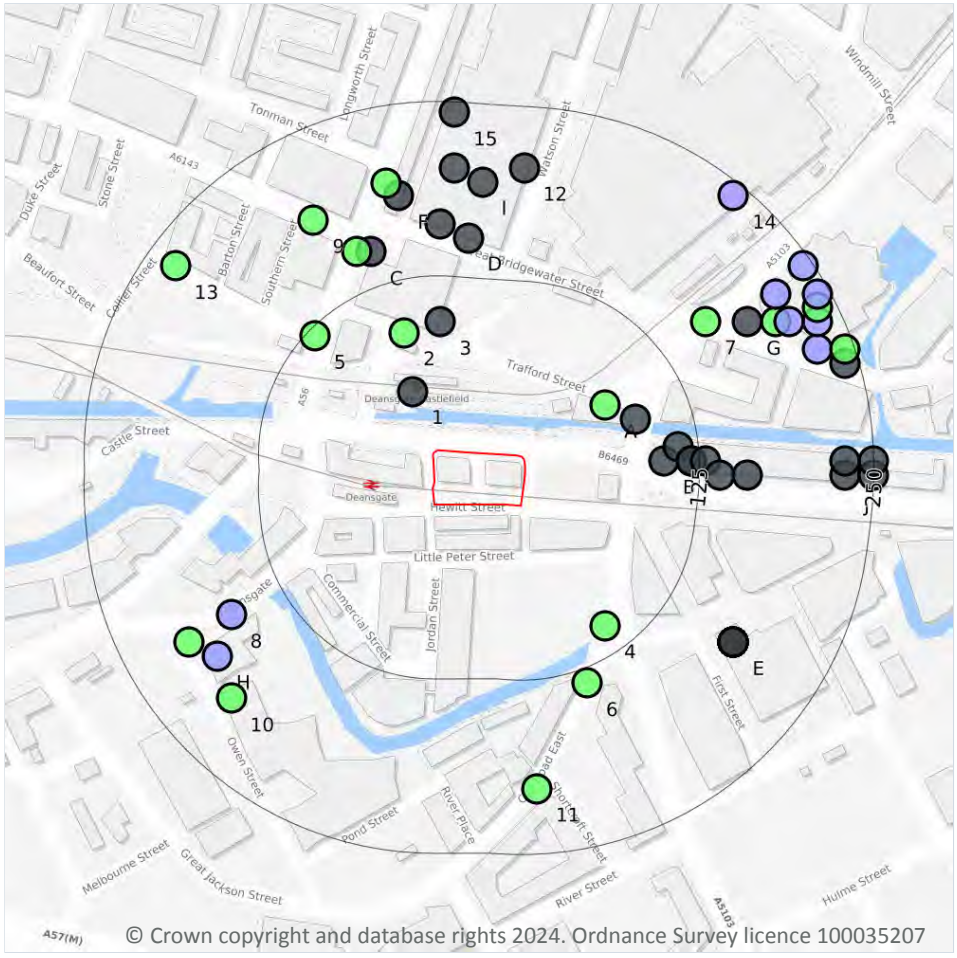
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 143 >**

ID	Location	Category	Description
2	56m NW	LANDFORM	Approximate margin of buried (superficial deposit-filled) channel or valley
4	363m NE	FAULT	Fault, inferred
5	367m NE	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



16.1 BGS Boreholes

Records within 250m	73

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on **page 145 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	46m NW	383470 397580	FESTIVAL MARKETPLACE 3/1	-	Y	N/A
A	70m NE	383608 397570	MANCHESTER CORP. B.SEWER	14.02	N	1042261 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	85m E	383630 397560	GREAT BRIDGEWATER STREET 1	-	Y	N/A
2	88m NW	383464 397622	MANCHESTER CORP. B.SEWER	12.5	N	1042262 ↗
3	92m N	383490 397630	FESTIVAL MARKETPLACE 3/2	-	Y	N/A
B	100m E	383650 397530	HACIENDA SITE WHITWORTH STREET MANCHESTER WS01	-	Y	N/A
4	105m SE	383608 397412	MANCHESTER CORP. B.SEWER	11.28	N	1042260 ↗
B	110m E	383660 397540	HACIENDA SITE WHITWORTH STREET MANCHESTER WS02	-	Y	N/A
B	120m E	383670 397530	HACIENDA SITE WHITWORTH STREET MANCHESTER WS03	-	Y	N/A
B	120m E	383670 397530	HACIENDA SITE WHITWORTH STREET MANCHESTER WS04	-	Y	N/A
5	120m NW	383400 397620	BRIDGEWATER STREET / RICE STREET MAIN DRAINAGE 1	12.0	N	1045617 ↗
B	130m E	383680 397530	HACIENDA SITE WHITWORTH STREET MANCHESTER WS05	-	Y	N/A
6	136m SE	383595 397371	MANCHESTER CORP. B.SEWER	11.28	N	1042259 ↗
B	139m E	383690 397520	HACIENDA SITE WHITWORTH STREET MANCHESTER WS06	-	Y	N/A
C	150m NW	383440 397680	FESTIVAL MARKETPLACE TP 3/1	-	Y	N/A
D	153m N	383510 397690	FESTIVAL MARKETPLACE 1/8	-	Y	N/A
C	154m NW	383430 397680	CITY CENTRE - PHASE 2 29	12.5	N	1043527 ↗
B	159m E	383710 397520	HACIENDA SITE WHITWORTH STREET MANCHESTER WS07	-	Y	N/A
D	162m N	383490 397700	FESTIVAL MARKETPLACE TP 1/8	-	Y	N/A
7	163m NE	383680 397630	LOWER MOSLEY STREET PHASE 2 A	14.5	N	13469181 ↗
8	166m SW	383340 397420	LOWER MEDLOCK UCSO'S CONTRACT 1 MAN 0276 304	9.1	N	1043415 ↗
E	181m SE	383700 397400	GAYTHORN GASWORKS M16	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M18	-	Y	N/A

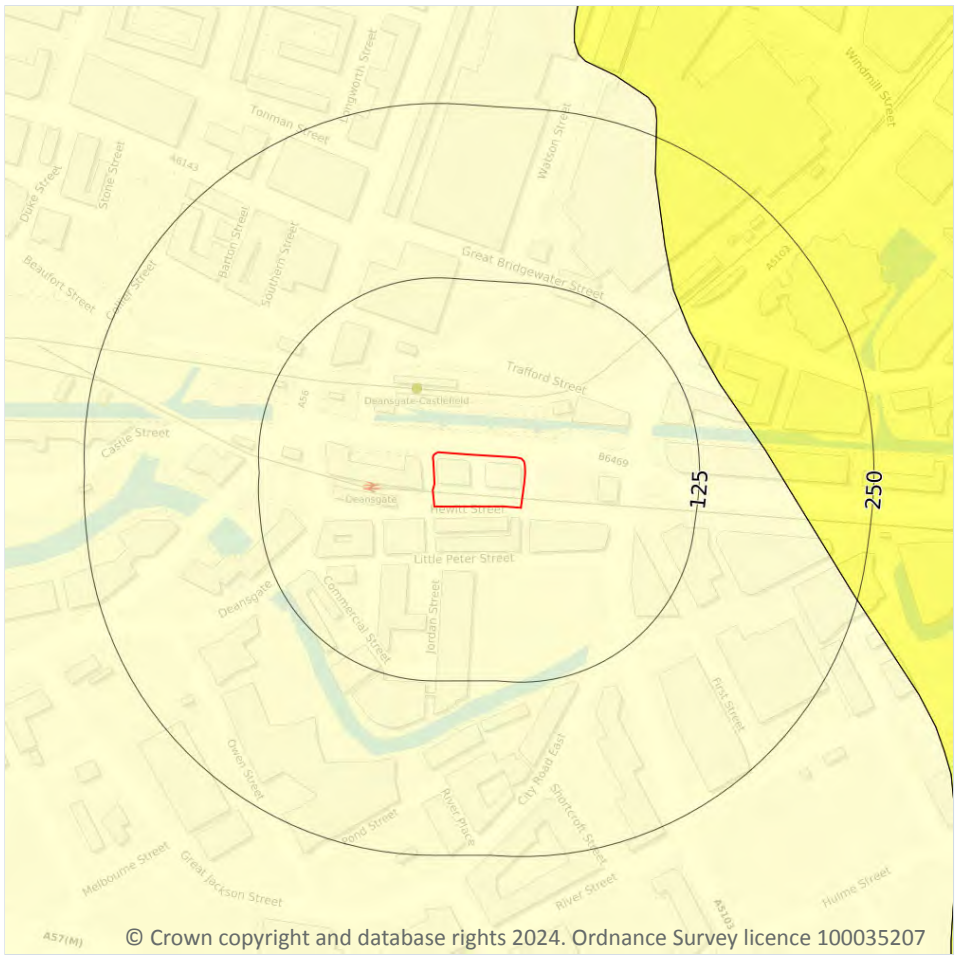
ID	Location	Grid reference	Name	Length	Confidential	Web link
E	181m SE	383700 397400	GAYTHORN GASWORKS M2	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M5	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS R2	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS R2	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M15	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M1	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M7	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M6	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M11	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M12A	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M13	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M14	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M3	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M7A	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M8	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M9	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M17	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS R1	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M4	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M10	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS R1	-	Y	N/A
E	181m SE	383700 397400	GAYTHORN GASWORKS M12	-	Y	N/A
F	184m N	383460 397720	FESTIVAL MARKETPLACE 1/7	-	Y	N/A
9	188m NW	383399 397703	MANCHESTER CORP. E.SEWER	12.5	N	1042233 ↗
G	188m NE	383710 397630	GREAT BRIDGEWATER STREET 2	-	Y	N/A
H	190m SW	383330 397390	LOWER MEDLOCK UCSO'S CONTRACT 1 MAN 0276 305	9.3	N	1043416 ↗
I	194m N	383520 397730	FESTIVAL MARKETPLACE TP 1/6	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
F	195m N	383451 397729	MANCHESTER CORP. DEANSGATE	10.67	N	1042210 ↗
10	201m SW	383340 397360	LOWER MEDLOCK UCSO'S CONTRACT 1 MAN 0276 302	12.11	N	1043413 ↗
H	202m SW	383310 397400	LOWER MEDLOCK UCSO'S CONTRACT 1 MAN 0276 303	10.59	N	1043414 ↗
I	203m N	383500 397740	FESTIVAL MARKETPLACE TP 1/7	-	Y	N/A
11	203m S	383559 397295	MANCHESTER CORP. B.SEWER	11.28	N	1042258 ↗
G	206m NE	383730 397630	GT BRIDGEWATER ST 109	30.0	N	1042749 ↗
12	206m N	383550 397740	FESTIVAL MARKETPLACE 1/6	-	Y	N/A
G	214m NE	383740 397630	GT BRIDGEWATER ST TP 103	2.0	N	1042758 ↗
G	216m NE	383730 397650	GT BRIDGEWATER ST TP 101	2.0	N	1042756 ↗
G	224m E	383760 397610	GT BRIDGEWATER ST TP 106	3.0	N	1042761 ↗
13	229m NW	383300 397670	BRIDGEWATER STREET / RICE STREET MAIN DRAINAGE 2	12.0	N	1045618 ↗
J	229m E	383780 397520	WHITWORTH STREET WEST MANCHESTER 1	-	Y	N/A
J	229m E	383780 397530	WHITWORTH STREET WEST MANCHESTER 2	-	Y	N/A
G	232m NE	383760 397630	GT BRIDGEWATER ST TP 105	3.0	N	1042760 ↗
G	237m NE	383760 397640	GT BRIDGEWATER ST 108	30.0	N	1042748 ↗
G	240m E	383780 397600	GREAT BRIDGEWATER STREET 4/4A	-	Y	N/A
14	241m NE	383700 397720	LOWER MOSLEY STREET PHASE 2 B	5.0	N	13469182 ↗
G	241m NE	383760 397650	GT BRIDGEWATER ST TP 104	3.0	N	1042759 ↗
15	243m N	383500 397780	FESTIVAL MARKETPLACE 1/5	-	Y	N/A
G	243m E	383780 397610	GT BRIDGEWATER ST 111	21.0	N	1042751 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
G	244m NE	383750 397670	GT BRIDGEWATER ST TP 102	2.0	N	1042757 ↗
J	249m E	383800 397520	WHITWORTH STREET WEST MANCHESTER 4	-	Y	N/A
J	249m E	383800 397530	WHITWORTH STREET WEST MANCHESTER 3	-	Y	N/A

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m	1

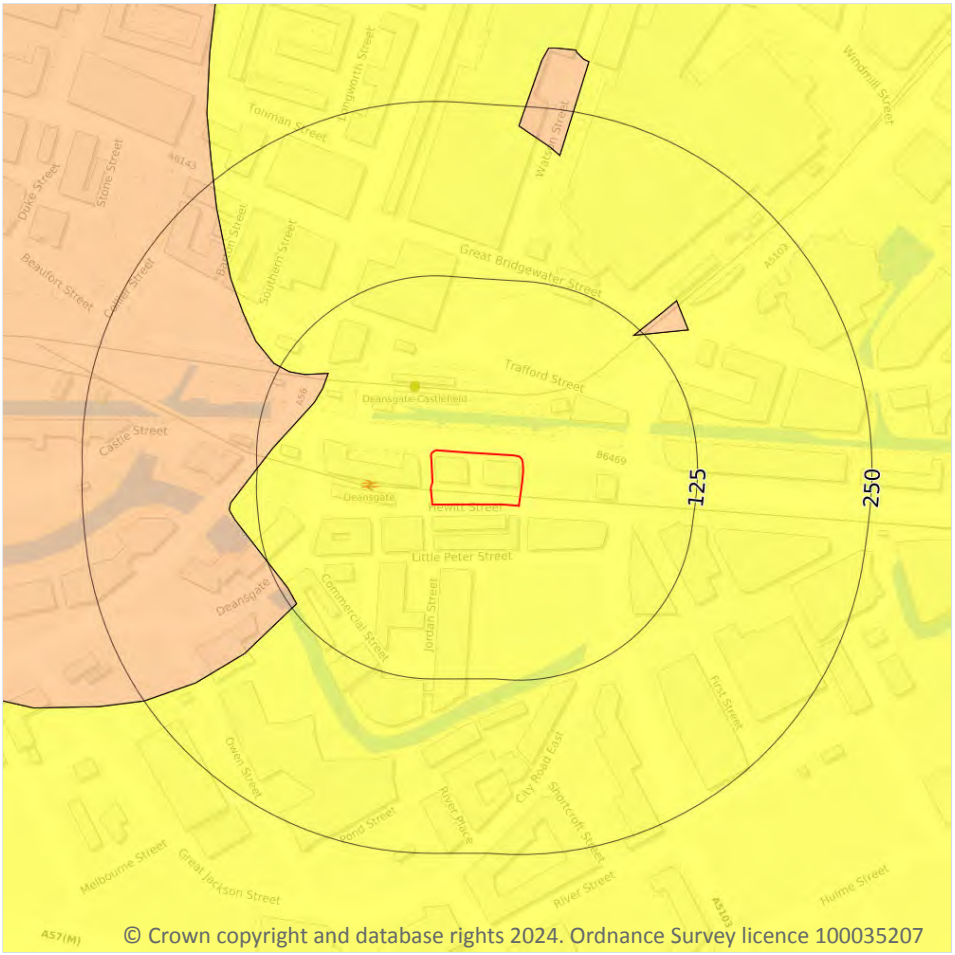
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 150 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

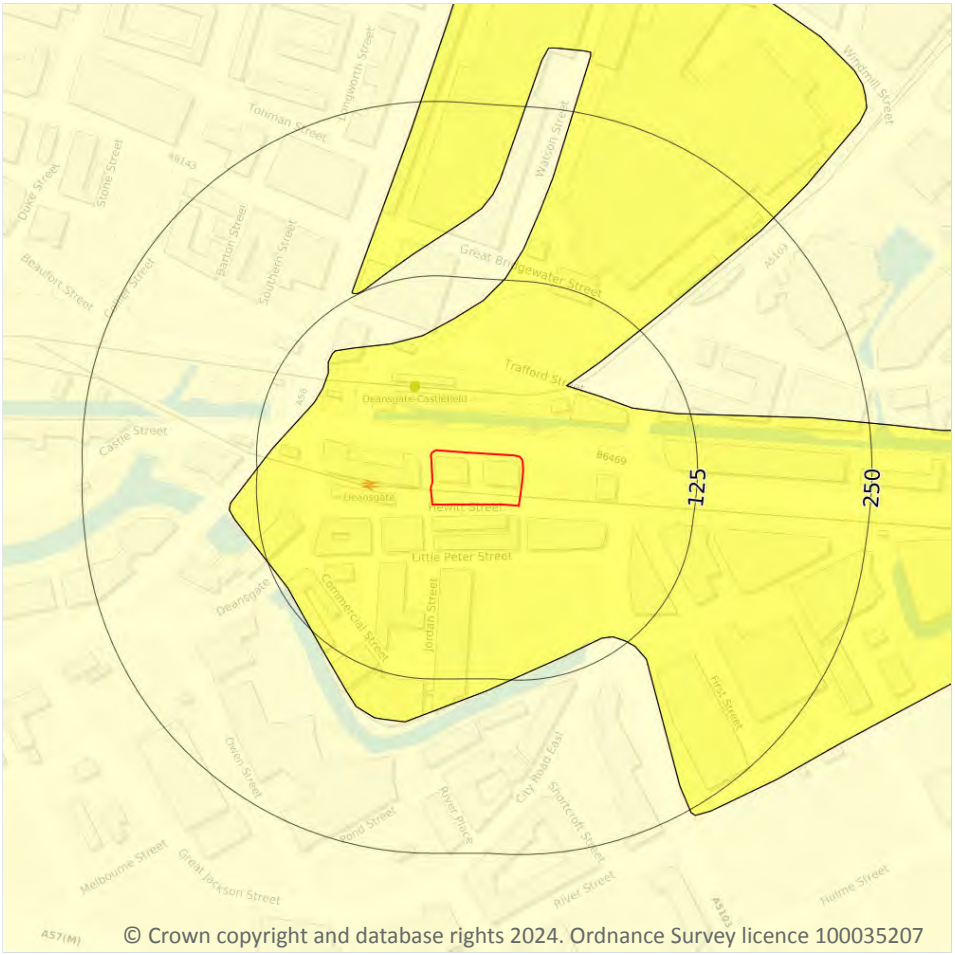
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 151 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

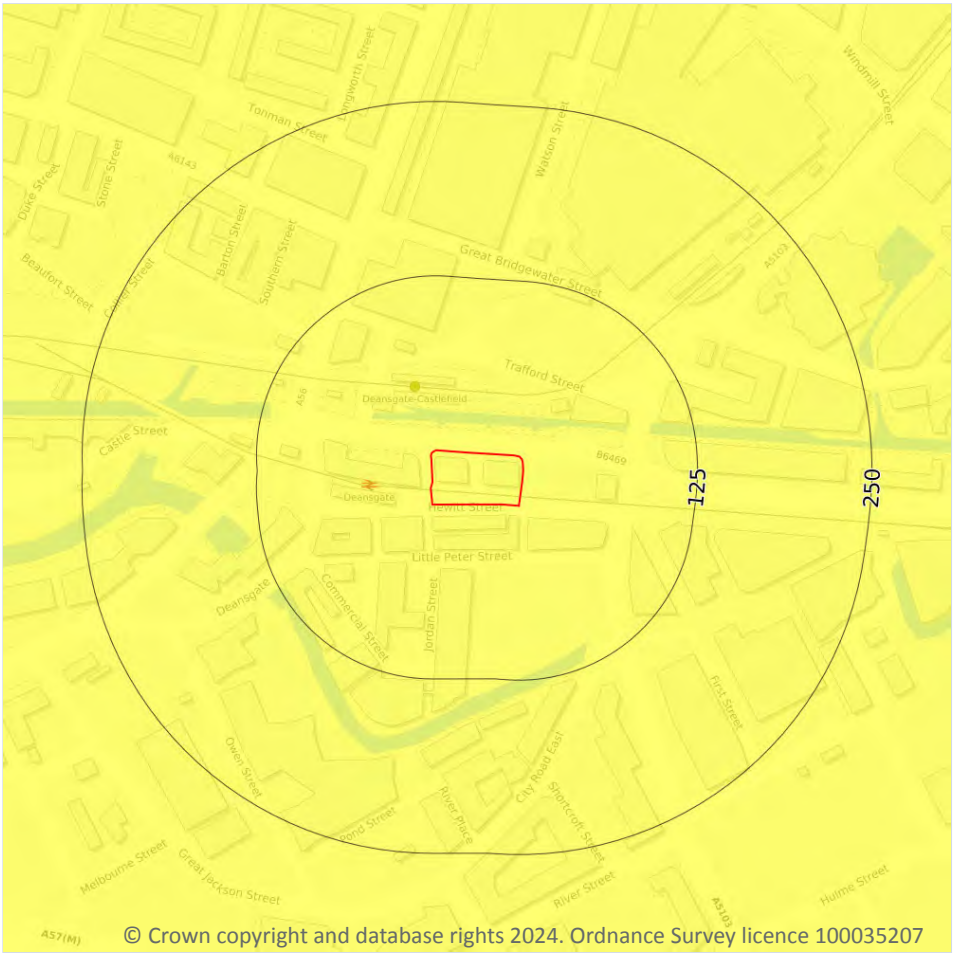
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 152 >**

Location	Hazard rating	Details
On site	**Very low**	**Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

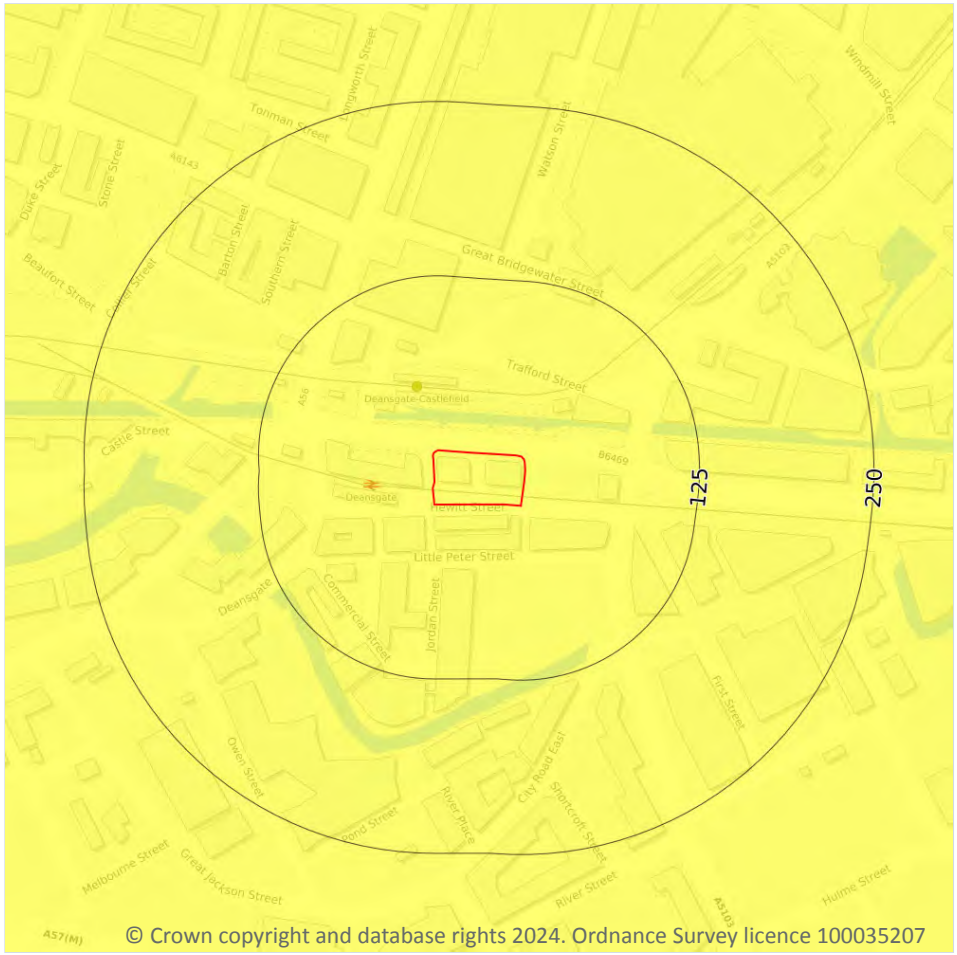
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 153 >**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



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17.5 Landslides

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Landslides map on **page 154 >**

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

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

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 155 >**

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

This data is sourced from the British Geological Survey.

18 Mining and ground workings



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Site Outline

Search buffers in metres (m)

- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	21

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on **page 157 >**

ID	Location	Land Use	Year of mapping	Mapping scale
A	12m NW	Canal	1938	1:10560
A	12m NW	Canal	1932	1:10560
A	12m NW	Canal	1916	1:10560
A	12m NW	Canal	1905	1:10560
A	12m NW	Canal	1923	1:10560
A	16m NE	Canal	1988	1:10000
1	17m NW	Canal	1896	1:10560
2	19m NW	Canal	1956	1:10560
B	108m SE	Canal	1971	1:10000
B	108m SE	Canal	1978	1:10000
B	108m SE	Canal	1985	1:10000
B	108m SE	Canal	1994	1:10000
C	135m W	Quay	1938	1:10560
C	135m W	Quay	1932	1:10560
C	135m W	Quay	1916	1:10560
C	135m W	Quay	1905	1:10560
C	135m W	Quay	1923	1:10560
3	188m S	Pond	1851	1:10560
4	210m E	Pond	1851	1:10560
D	217m W	Quay	1851	1:10560
5	221m SE	Pond	1851	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m	0

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

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	1

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

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	**0**

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

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	**0**

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

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	**0**

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

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	1

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

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

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0

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

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

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

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

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

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

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

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m	0

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

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

This data is sourced from Groundsure.

19.5 National karst database

Records within 500m	0

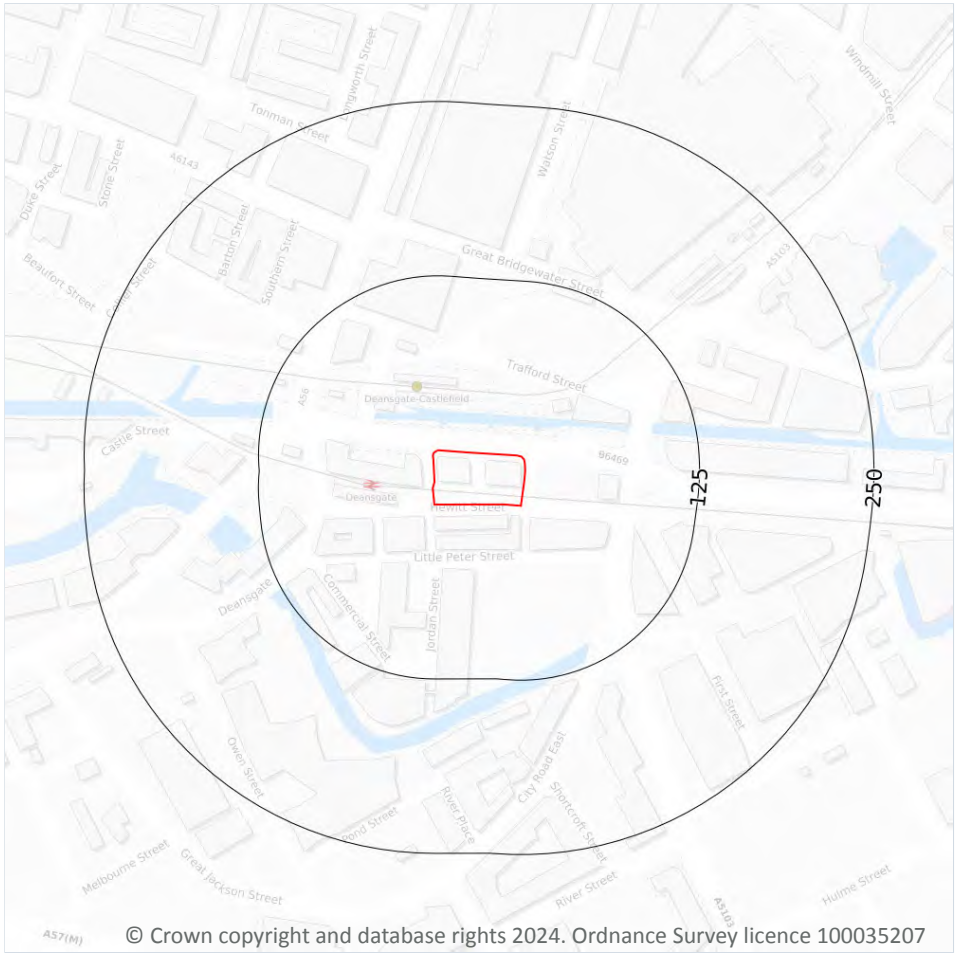
This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.

20 Radon



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Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site	1

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

Features are displayed on the Radon map on **page 165 >**

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

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

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m	4

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km^2. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km^2; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 - 200 mg/kg**	**60 - 120 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	5

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	**16**	**2.8**	**53**	**36**	**0.3**	**63**	**28**	**23**	**6**
On site	**17**	**3**	**147**	**101**	**0.4**	**64**	**34**	**24**	**10**

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	**17**	**3**	**270**	**185**	**0.3**	**58**	**35**	**22**	**11**
On site	**18**	**3.2**	**47**	**32**	**0.3**	**70**	**29**	**24**	**6**
49m E	16	2.8	61	42	0.5	66	26	22	5

This data is sourced from the British Geological Survey.

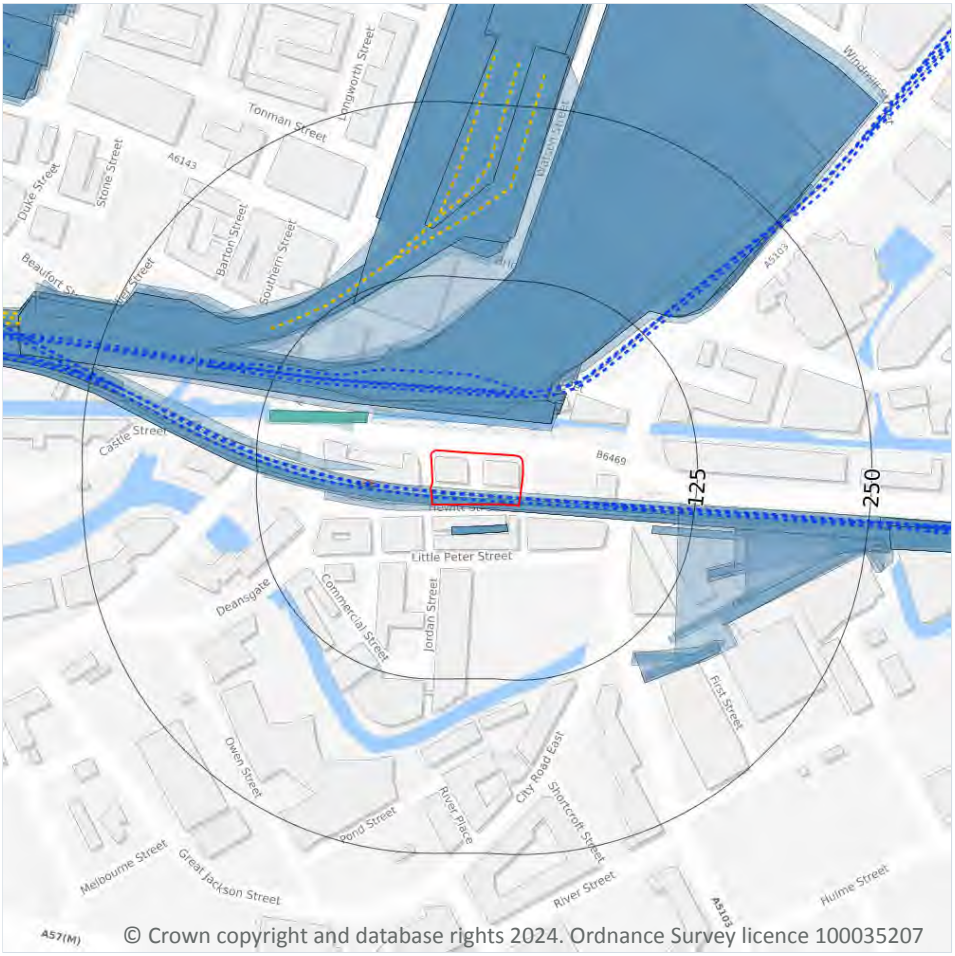
21.3 BGS Measured Urban Soil Chemistry

Records within 50m	**0**

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

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects



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22.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	78

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

Features are displayed on the Railway infrastructure and projects map on **page 169 >**

Location	Land Use	Year of mapping	Mapping scale
On site	**Railway Sidings**	**1893**	**2500**
On site	**Railway Sidings**	**1908**	**2500**
On site	**Railway Sidings**	**1922**	**2500**
On site	**Railway Sidings**	**1932**	**2500**
On site	**Railway**	**1922**	**-**
On site	**Railway**	**1932**	**-**
14m SE	Railway Sidings	1980	1250
14m SE	Railway Sidings	1985	1250
14m SE	Railway Sidings	1987	1250
14m SE	Railway Sidings	1990	1250
20m NE	Railway Sidings	1923	10560
25m NE	Railway Sidings	1938	10560
25m NE	Railway Sidings	1932	10560
25m NE	Railway Sidings	1916	10560
25m NE	Railway Sidings	1905	10560
28m NE	Railway Sidings	1891	500
29m NE	Railway Sidings	1956	10560

Location	Land Use	Year of mapping	Mapping scale
31m NE	Railway Sidings	1963	2500
31m NE	Railway Sidings	1948	2500
31m NE	Railway Sidings	1979	2500
32m N	Railway Sidings	1951	1250
32m N	Railway Sidings	1948	1250
33m N	Railway Sidings	1955	-
35m NW	Railway Sidings	1896	10560
39m N	Railways	1893	-
42m N	Railway Sidings	1891	500
51m NW	Tunnel	1948	2500
51m NW	Tunnel	1979	2500
51m NW	Tunnel	1963	2500
51m NW	Tunnel	1995	1250
51m NW	Tunnel	1994	1250
51m NW	Tunnel	1955	-
52m NW	Tunnel	1948	1250
52m NW	Tunnel	1963	1250
52m NW	Tunnel	1979	1250
52m NW	Tunnel	1981	1250
53m NW	Tunnel	1932	-
59m W	Tunnel	1932	2500
61m NW	Tunnel	1986	1250
61m NW	Tunnel	1990	1250
67m N	Railway Sidings	1891	500
70m NW	Railway Sidings	1948	1250
71m NW	Railway Sidings	1979	1250
72m NW	Railway Sidings	1955	-
81m N	Railway Sidings	1891	500

Location	Land Use	Year of mapping	Mapping scale
114m E	Railways	1893	-
120m NW	Railway Sidings	1971	10000
120m NW	Railway Sidings	1978	10000
120m NW	Railway Sidings	1985	10000
122m N	Railway Sidings	1891	500
122m NW	Railway Sidings	1948	1250
123m NW	Railway Sidings	1963	2500
124m N	Railway Sidings	1891	500
124m NW	Railway Sidings	1963	1250
129m NE	Railway Sidings	1891	500
133m SE	Railway Sidings	1893	2500
134m SE	Railway Sidings	1896	10560
135m SE	Railway Sidings	1891	500
138m NE	Railway Sidings	1891	500
141m E	Railway Sidings	1893	2500
144m E	Railway Sidings	1891	500
148m NE	Railway Sidings	1891	500
150m N	Railway Sidings	1979	1250
150m N	Railway Sidings	1955	-
153m N	Railway Sidings	1951	1250
153m N	Railway Sidings	1948	1250
156m NE	Railway Sidings	1891	500
159m NE	Railway Sidings	1951	1250
159m NE	Railway Sidings	1948	1250
160m NE	Railway Sidings	1963	2500
164m NW	Railway Sidings	1955	-
171m N	Railway	1933	-
181m NW	Railway Sidings	1979	1250

Location	Land Use	Year of mapping	Mapping scale
182m N	Railway Sidings	1973	1250
225m N	Railway Sidings	1973	1250
236m NE	Railway	1893	-
243m N	Railway Sidings	1979	1250
244m N	Railway Sidings	1955	-

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	3

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

Features are displayed on the Railway infrastructure and projects map on **page 169 >**

Location	Description
130m NW	Dismantled
138m N	Dismantled
167m N	Dismantled

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	27

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

Features are displayed on the Railway infrastructure and projects map on page 169 >

Location	Name	Type
On site	**Manchester and Ordsall Lane Junction Branch**	**rail**
On site	**Manchester and Ordsall Lane Junction Branch**	**rail**
On site	**Not given**	**Multi Track**
5m E	Not given	Multi Track
42m NE		light_rail
42m NE		light_rail
44m NE	Not given	Multi Track
45m E		rail
46m N		light_rail
46m N		light_rail
46m NW		light_rail
46m NE		light_rail
46m NE		light_rail
68m NE	Not given	Multi Track
98m NW	Not given	Multi Track
119m W	Not given	Multi Track
137m NW	Metrolink	light_rail
137m NW	Metrolink	light_rail
170m NW		light_rail
171m NW		light_rail
202m E		rail
228m W	Manchester and Ordsall Lane Junction Branch	rail
228m W	Manchester and Allerton Junction Line	rail
230m W	Manchester and Allerton Junction Line	rail

Location	Name	Type
230m W	Manchester and Ordsall Lane Junction Branch	rail
234m W	Not given	Multi Track
234m W	Not given	Multi Track

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m	0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m	0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.

Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see https://www.groundsure.com/sources-reference ↗.

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: www.groundsure.com/terms-and-conditions-april-2023/ ↗.

APPENDIX 6

BGS BOREHOLE LOGS, BGS MINERAL RESOURCES MAP FOR GREATER MANCHESTER AND GREATER MANCHESTER MINERAL SAFEGUARDING MAPS

British Geological Survey

BGS ID: 1042261 : BGS Reference: SJ89NW119
British National Grid (27700) : 383608,397570

62

G.S.M. Nos. 122-126

SJ89NW 21-125

(B11867) Wt. 17852—2164—5,000 12/35 Gp. 189. O.A.

SECTION OF Bores & Shafts at Irwell Storm Relief Overflow Sewer, Cornbrook, Manchester.

Maps: One-inch 82. Six-inch 104 S.W.E. County Lancs.

Height above O.D. Latitude Longitude

SJ89NW 116-120

) Wt. 5991—S.33 2000 6/22 Gp. 147

SECTION OF Manholes in B. Sewer at Manchester cont.

Maps: One-inch Six-inch 104 S.W.E. County

Height above O.D. Latitude Longitude

Communicated by Date of sinking

Made by Dip of Strata

	Thickness. M	Thickness. ft		Depth from Surface. M	Depth from Surface. ft	
No. 116 Junction of City Road & Slot St.						
Stone, clay & sand	3·66	12	–	3·66	12	–
Sand & ballast	3·05	10	–	6·71	22	–
Sandstone.	4·57	15	–	11·28	37	–
No. 117 South side of Medlock Bridge, City Road.						
Sand, clay, & stones	3·66	12	–	3·66	12	–
Sand & ballast.	3·35	11	–	7·01	23	–
Sandstone.	4·27	14	–	11·28	37	–
No. 118 North side of Medlock Bridge, City Road.						
Sand, clay & stones	3·66	12	–	3·66	12	–
Sand & ballast	3·35	11	–	7·01	23	–
Sandstone.	4·27	14	–	11·28	37	–
No. 119 Traff. & Street, off Albion St.						
Clay, sand & stones	4·57	15	–	4·57	15	–
Sand & ballast	4·88	16	–	9·45	31	–
Sandstone.	4·57	15	–	14·02	46	–
No. 120 Trafford St. off Deansgate.						
Sand, clay & stones	4·57	15	–	4·57	15	–
Ballast & sand.	4·57	15	–	9·14	30	–
Sandstone.	3·35	11	–	12·50	41	–

Contact BGS: ngdc@bgs.ac.uk

British Geological Survey — Natural Environment Research Council

Office of the Deputy Prime Minister — Creating sustainable communities

GREATER MANCHESTER

(comprising the Cities of Manchester and Salford and the Metropolitan Boroughs of Bolton, Bury, Oldham, Rochdale, Stockport, Tameside, Trafford and Wigan)

Mineral Resource Information in Support of National, Regional and Local Planning

Mineral Resources

Scale 1:100 000

Compiled by D.J. Minchin, D.G. Cameron, D.J. Evans, G.K. Lott, S.F. Hobbs and D.E. Highley.
Project Leader: D.E. Highley.
Digital cartography by N.A. Spencer, British Geological Survey.

Published 2006.

This map comprises part of a summary of the 'Mineral Resources of the North-West England Region'.
For more information see www.mineralsUK.com

BIBLIOGRAPHIC REFERENCE

Minchin D J, and 5 others. 2006. Mineral Resource Information for National, Regional and Local Planning: Greater Manchester (comprising the Cities of Manchester and Salford and Metropolitan Boroughs of Bolton, Bury, Oldham, Rochdale, Stockport, Tameside, Trafford and Wigan). *British Geological Survey Commissioned Report CR/05/182N.*

Production of this map was commissioned and funded by the Office of the Deputy Prime Minister (Contract MP0677).

SAND & GRAVEL

Superficial deposits

- Sub-alluvial: Inferred resources
- River Terrace deposits
- Glaciofluvial deposits

PEAT

SANDSTONE

Carboniferous: Millstone Grit and Pennine Coal Measures

BRICK CLAY

- Brick clay and Fireclay coincident with coal bearing strata - Shallow Coal/ Unproductive Coal Measures

COAL

- Area of shallow coal
- Opencast coal: worked area

Carboniferous: Pennine Coal Measures

MINERAL PLANNING PERMISSION (as at 01.01.06)

Source: Mineral Planning Authorities

- Surface planning permission (valid and expired)
- Underground planning permission other than coal (valid and expired)

MINERAL WORKINGS

- Harwood — Active site
- *Cowbury Dale* — Inactive (including yet to be worked), worked-out and/or restored site

Mineral commodity

Cl	Clay & Shale	San	Sand
Co	Coal	Sec	Secondary aggregate
CR	Crushed Rock	SiS	Silica Sand
Fr	Fireclay	Sst	Sandstone
Gas	Natural Gas	Sg	Sand and Gravel
Min	Mineral, unspecified		
■	Active rail aggregate depot		

ENVIRONMENTAL DESIGNATIONS (as at 06/07/05)

- National nature conservation designations (SSSIs and NNRs)
- International nature conservation designations (SACs, SPAs and Ramsar sites)
- National Park: Peak District (part)
- + Scheduled Monument

ADMINISTRATIVE AREAS

- Mineral Planning Authority (National Parks are also MPAs)

Aims and Limitations

The purpose of the maps in this series is to show the broad distribution of those mineral resources which may be of current or potential economic interest and to relate these to selected nationally-recognised planning designations. The maps are intended to assist in the consideration and preparation of development plan policies in respect of mineral extraction and the protection of important mineral resources against sterilisation. They bring together a wide range of information, much of which is scattered and not always available in a convenient form.

The maps have been produced by the collation and interpretation of mineral resource data principally held by the British Geological Survey. Information on the extent of mineral planning permissions has been obtained from the relevant Mineral Planning Authority (MPA). Some of these permissions may have lapsed or expired. The status of individual areas can be ascertained from the appropriate MPA. Location information on national planning designations has been obtained from the appropriate statutory body (Countryside Agency, English Nature and English Heritage). For further information the relevant body should be contacted.

The mineral resource data presented are based on the best available information, but are not comprehensive and their quality is variable. The inferred boundaries shown are, therefore, approximate. Mineral resources defined on the map delineate areas within which potentially workable minerals may occur. These areas are not of uniform potential and also take no account of planning constraints that may limit their working. The economic potential of specific sites can only be proved by a detailed evaluation programme. Such an investigation is an essential precursor to submitting a planning application for mineral working. Extensive areas are shown as having no mineral resource potential, but some isolated mineral workings may occur in these areas. The presence of these operations generally reflect very local or specific situations.

The maps are intended for general consideration of mineral issues and not as a source of detailed information on specific sites. The maps should not be used to determine individual planning applications or in taking other decisions on the acquisition or use of a particular piece of land, although they may give useful background information which sets a specific proposal within context.

BRICK CLAY (including FIRECLAY)

Brick clay is the term used to describe 'clay and shale' used in the manufacture of structural clay products, such as facing and engineering bricks, pavers, clay tiles and vitrified clay pipes. These clays may also be used in cement manufacture, as a source of constructional fill and for lining and sealing landfill sites. Brick manufacture is the largest tonnage use in England. Clay bricks are versatile construction materials and one of the most visible components of the built environment. They make an important contribution to local architectural styles.

Brick clays are essentially mudstones of different geological ages and compositions. Their mineralogy, chemistry and physical properties are critical to determining their suitability for the manufacture of structural clay products. These properties affect the forming behaviour of the clay (the process of shaping the ware) and also its behaviour during drying and firing. They will also determine the technical properties of the fired product, such as strength, water absorption (porosity) and frost resistance, and thus its durability and performance in service and, importantly, its architectural appearance, such as colour and texture. Most facing bricks, engineering bricks and related clay-based building products are manufactured in large automated factories. These represent a high capital investment and are therefore increasingly dependent on raw material with predictable and consistent firing characteristics in order to achieve high yields of saleable products. Blending different clays to achieve improved durability and to provide a range of fired colours and textures is an increasingly common feature of the brick industry. Continuity of supply of consistent raw materials is of paramount importance.

In Manchester, brick clay has been produced for local consumption from small brick pits for over two hundred years. Historically, a variety of clays were extracted for 'common' brick making, including boulder clay, Triassic Mercia Mudstone and mudstones from the Pennine Lower and Middle Coal Measures. Fireclay, the fine-grained seatearths that commonly underlie coal seams, was mined alongside coal in opencast and deep mines for use in pipe making. With the demise of the 'common' brick and consolidation of the brick industry, most of these clay quarries closed. Today, one active clay quarry remains at Harwood, northeast of Bolton, working the Pennine Lower Coal Measures. This quarry produces high quality brick clay for use in facing, engineering and paving bricks but has no associated brickworks. The clay is delivered to a brickworks at Denton, in Tameside, which has no associated quarry and sources clay from a variety of locations, mainly from a site in Glossop, approximately 13 km away in Derbyshire.

Pennine Coal Measures mudstones, which occur interbedded with siltstone, sandstone, coal seams and seatearths, are the principal brick clay resource in North West England. Resources occur across the north and east of the county but are currently only worked in Bolton. The clay mineralogy of Coal Measures mudstones is dominated by kaolinite and illite which tend to provide optimum firing characteristics. Carbon and sulphur contents are also critical to firing performance. Excessive amounts of either may lead to firing problems and sulphur may also give unacceptable emission levels, although blending of clays may reduce these problems. In general, carbon and sulphur contents should be less than 1.5 per cent and 0.2 per cent respectively. Both fireclays and mudstones occur in association with opencast coal, with which they may be worked. However, this is only rarely the case because of the variable quality of the clay, particularly of the fireclays, and due to operational and planning difficulties. Fireclays have relatively low iron content compared to other brick clays and they are primarily valued for the manufacture of buff-coloured bricks and pavers. There is no current fireclay extraction in the area.

PEAT

Peat is an unconsolidated deposit of compressed plant remains in a water-saturated environment such as a bog or fen. Bogs occur in areas where inputs of water (almost exclusively from precipitation) have a low nutrient content and where the rainfall is sufficient to maintain the ground surface in a waterlogged condition. The vegetation is characterised by acid-tolerant plant communities in which the moss genus *Sphagnum* is dominant. The two main types of bog are (i) raised bogs, characteristic of flat underlying topography and found on plains and broad valley floors and (ii) blanket bogs, which occur mainly in upland areas where conditions are suitably cool and wet. Many lowland raised bogs have been designated as sites of international and national conservation areas. Peat is dug in England mainly from raised lowland bogs, almost entirely (98 per cent) for horticultural use, either as growing media or as a soil improver. Areas of upland blanket peat are not worked and therefore not shown.

Peat is being extracted from three sites on Chat Moss to the west and north west of Irlam on the Wigan/Salford boundary. The peat deposits cover an area of 2587 ha of raised bogs up to 9 m thick on a flat underlying topography. Planning permission for peat extraction covers 305 ha, both in the Wigan and Salford districts. Smaller lowland peat deposits such as Carrington Moss and Ashton Moss cover approximately two square kilometres each, but are not worked.

Many of the peat deposits have been worked extensively in the past and today a large percentage of these areas have been 'reclaimed' to agricultural land. Due to the unavailablity of up to date linework defining the extent of the reclamation, the entire resource as mapped is shown on the face of the map.

PLANNING PERMISSIONS FOR MINERAL EXTRACTION

The extent of all known extant and former planning permissions for mineral working is shown on the map, irrespective of their current planning or operational status. The polygons were supplied as digital files by the Greater Manchester Geological Unit, and also were digitised by BGS from Plotting Sheets and other documents supplied by Wigan, Rochdale and Bury Metropolitan Councils. In addition, planning permission information was digitally acquired from Ministry of Housing and Local Government maps for the area and incorporated in the data. This data has been checked and amended by the local Authorities shown below. Any queries regarding the sites shown should be directed to these authorities at the addresses shown below. The polygons cover active, former and restored mineral workings and, occasionally, unworked deposits.

Planning Permissions represent areas where a commercial decision to work mineral has been made, a successful application has been dealt with through the provisions of the Town and Country Planning legislation and the permitted reserve will have been depleted to a greater or lesser extent. Current planning status is not qualified on the map but is available in the underlying database.

Contact addresses:

Bolton Metropolitan Borough Council, Environment Department, Town Hall, Bolton BL1 1RU, Tel: 01204 522311, Fax: 01204 387153, web address: www.bolton.gov.uk

Bury Metropolitan Borough Council, Development and Environmental Services Department, Craig House, 5 Bank Street, Bury BL9 0DN, Tel: 0161 253 5000, Fax: 0161 253 5290, web address: www.bury.gov.uk

Greater Manchester Geological Unit, University of Manchester, Oxford Road, Manchester M13 9PL, Tel: 0161 275 7150, Fax: 0161 275 7151, web address: www.gmgu.org.uk

Oldham Metropolitan Borough Council, Environmental Services Department, PO Box 30, Civic Centre, West Street, Oldham OL1 1UQ, Tel: 0161 911 3000, Fax: 0161 911 3104, web address: www.oldham.gov.uk

Rochdale Metropolitan Borough Council, Planning Services and Environmental Department, PO Box 32, Telegraph House, Baillie Street, Rochdale OL16 1JH, Tel: 01706 647474, Fax: 01706 864185, web address: www.rochdale.gov.uk

Salford City Council, Development Services Directorate, Planning & Building Control Division, Civic Centre, Chorley Road, Swinton M27 5BW, Tel: 0161 794 4711, Fax: 0161 727 8269, web address: www.salford.gov.uk

Stockport Metropolitan Borough Council, Environment and Economic Development Division, Hygarth House, 103 Wellington Road South, Stockport SK1 3TT, Tel: 0161 480 4949, Fax: 0161 953 0013, web address: www.stockport.gov.uk

Tameside Metropolitan Borough Council, Environmental Services Department, Council Offices, Wellington Road, Ashton under Lyne OL6 6DL, Tel: 0161 342 8355, Fax: 0161 342 3111, web address: www.tameside.gov.uk

Trafford Metropolitan Borough Council, Trafford Town Hall, Talbot Road, Stretford, Manchester M32 0YY, Tel: 0161 912 1212, Fax: 0161 912 4490, web address: www.trafford.gov.uk

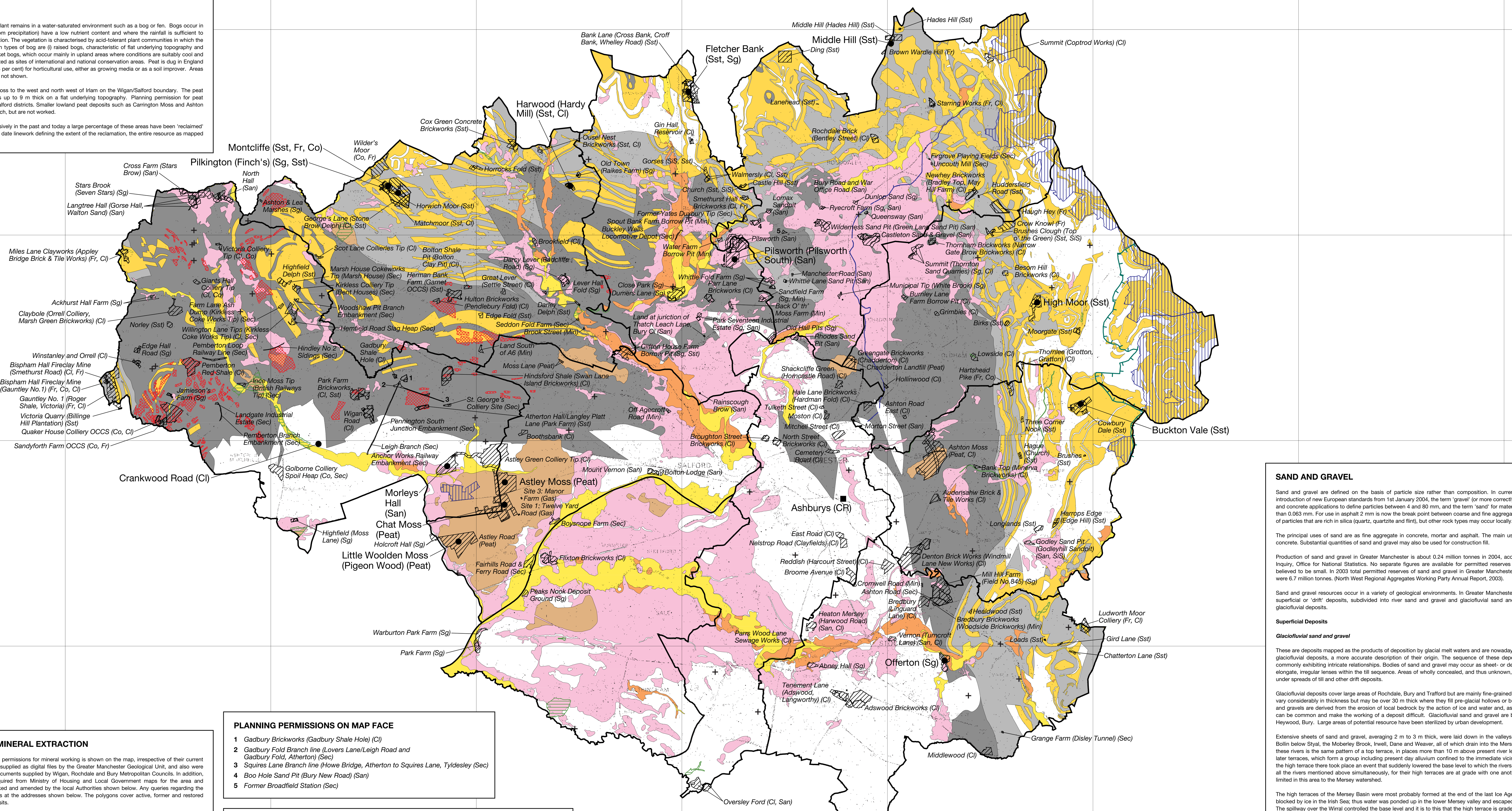
Wigan Metropolitan Borough Council, Borough Planning Department, Civic Buildings, New Market Street, Wigan WN1 1RP, Tel: 01942 244991, Fax: 01942 404222, web address: www.wiganmbc.gov.uk

COAL

The area lies predominantly within the South Lancashire Coalfield. The coal-bearing strata of the Pennine Lower and Middle Coal Measures (Upper Carboniferous) generally dip to the southwest and west. The South Lancashire Coalfield crops out across an area of approximately 970 km², stretching from Rochdale in the east to St Helens in the west. A spur runs southwards from Rochdale to just south of Stockport. In the east and north, older Namurian strata are present at outcrop and to the west and south, Permo-Triassic strata unconformably overlie the Coal Measures. To the south, the coalfield deepens significantly to greater than 3000 m below Ordnance Datum beneath Permo-Triassic strata and passes into the Cheshire Basin. A substantial portion of the coalfield is covered by urban development.

Coal seams are numerous with in excess of 36 named coal seams, which vary laterally in both thickness and composition, chiefly by variation in the number of dirt partings present within the seam. Coals are mainly present within the Pennine Lower and Middle Coal Measures, with a few additional coals in the lower part of the Pennine Upper Coal Measures. The main coal-bearing interval typically varies from about 590 m in the west to 880 m in the east. The lower part of the Pennine Lower Coal Measures, below the Arley seam, typically contains coals that are thin and of variable quality. The rest of the Pennine Lower and Middle Coal Measures form the most important coal-bearing interval, with a number of coals in excess of 2 m in thickness. Coals from the Pennine Upper Coal Measures are generally thin, the exception being the Worsley Four Foot, which can be up to 1.6 m in thickness. Coal rank ranges from high to medium volatile.

There are no operating deep mines in the area, the last, Parkside, was closed in 1993. Any future commercial interest in coal extraction is likely to be confined to coal that can be recovered by surface mining. Historic opencast mining has occurred in the Wigan Coalfield, which has been mined for seven centuries, and across the north of the area. Opencast mining in the east has been limited by the steeper dip of the strata in this area. Recent, small-scale opencast production has been confined to the Wigan Coalfield, but there has been no production since 2000. Although there is potential for further opencast mining this is reduced by a number of factors. Firstly the basal part of the Pennine Lower Coal Measures does not contain many thick seams. Hence areas on the northern and eastern flank of the coalfield are probably not economically viable. Secondly there are thick drift deposits (up to 50 m in places) across the coalfield and, thirdly, much of the area is sterilised by urban development. Areas of shallow coal resources and former opencast worked areas are shown on the map.



PLANNING PERMISSIONS ON MAP FACE

1. Gadbury Brickworks (Gadbury Shale Hole) (Cl)
2. Gadbury Fold Branch line (Lovers Lane/Leigh Road and Gadbury Fold, Atherton) (Sec)
3. Squires Lane Branch line (Howe Bridge, Atherton to Squires Lane, Tyldesley (Sec)
4. Boo Hole Sand Pit (Bury New Road) (San)
5. Former Broadfield Station (Sec)

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English Nature, Northminster House, Northminster, Peterborough, PE1 1UA, Tel: 01733 455000, Fax: 01733 455103, Web page: www.english-nature.org.uk

Positions of Scheduled Monuments at 25th September 2003 as supplied by English Heritage.
The majority of monuments are plotted using a centred NGR symbol. Consequently the actual area and/or length of a monument protected by the legal constraints of scheduling cannot be represented here. Monuments scheduled since that date are not accounted for. ©Copyright English Heritage.
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The Coal Authority, 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG, Tel: 01623 427162, Fax: 01623 638338, Web page: www.coal.gov.uk

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CRUSHED ROCK AGGREGATES

A variety of hard rocks are, when crushed, suitable for use as aggregates. Their technical suitability for different applications depends on their physical characteristics, such as crushing strength and resistance to impact and abrasion. Higher quality aggregates are required for coating with bitumen for road surfacing, or for mixing with cement to produce concrete. For applications such as constructional fill and drainage media, with less demanding specifications, lower quality materials are acceptable.

The crushed rock aggregate resources of Greater Manchester are confined to Carboniferous sandstones, which are relatively extensive but do not provide a source of high quality aggregate.

Sandstone

The Carboniferous sandstones of the Millstone Grit and Pennine Coal Measures of Greater Manchester have traditionally been extensively used as a source of building stone and today both disused and working quarries are a common feature of the landscape.

Carboniferous sandstones consist of sand-sized particles, with minor pebbles, composed dominantly of quartz, but also with some feldspar, which are cemented by silica, to a greater or lesser extent. The sandstones are typically buff-coloured, although locally grey, and vary from fine- to coarse-grained.

Most of the sandstones are too weak and porous to make good quality aggregate for roadstone and concrete, but maybe suitable for fill and for the production of manufactured sand to produce reconstituted stone products.

There are currently 7 working sandstone quarries working Carboniferous sandstones in Greater Manchester. Most quarries produce blockstone or a range of masonry products and some produce crushed aggregate for less demanding specifications.

There are many sandstones of Carboniferous age, However the Haslingden Flags, the Fletcher Bank Grit, Kinderscout Grit (Millstone Grit), Ousel Nest Grit and Old Lawrence Rock (Pennine Lower Coal Measures) are the most extensively worked. Production of sandstone in Greater Manchester was just over 1 million tonnes in 2004. Permitted reserves are of the order of 20 million tonnes.

SAND AND GRAVEL

Sand and gravel are defined on the basis of particle size rather than composition. In current commercial practice, following the introduction of new European standards from 1st January 2004, the term 'gravel' (or more correctly coarse aggregate) is used for general and concrete applications to define particles between 4 and 80 mm, and the term 'sand' for material that is finer than 4 mm, but coarser than 0.063 mm. For use in asphalt 2 mm is now the break point between coarse and fine aggregate. Most sand and gravel is composed of particles that are rich in silica (quartz, quartzite and flint), but other rock types may occur locally.

The principal uses of sand are as fine aggregate in concrete, mortar and asphalt. The main use of gravel is as coarse aggregate in concrete. Substantial quantities of sand and gravel may also be used for construction fill.

Production of sand and gravel in Greater Manchester is about 0.24 million tonnes in 2004, according to the Annual Minerals Raised Inquiry, Office for National Statistics. No separate figures are available for permitted reserves in Greater Manchester but these are believed to be small. In 2003 total permitted reserves of sand and gravel in Greater Manchester, Merseyside, Halton and Warrington were 6.7 million tonnes. (North West Regional Aggregates Working Party Annual Report, 2003).

Sand and gravel resources occur in a variety of geological environments. In Greater Manchester these resources occur mainly within superficial or 'drift' deposits, subdivided into river sand and gravel and glaciofluvial sand and gravel; the most important are the glaciofluvial deposits.

Superficial Deposits

Glaciofluvial sand and gravel

These are deposits mapped as the products of deposition by glacial melt waters and are nowadays commonly labelled on BGS maps as glaciofluvial deposits, a more accurate description of their origin. The sequence of these deposits is complex with mappable units commonly exhibiting intricate relationships. Bodies of sand and gravel may occur as sheet- or delta-like layers above till deposits or as elongate, irregular lenses within the till sequence. Areas of wholly concealed, and thus unknown, bodies of sand and gravel may occur under spreads of till and other drift deposits.

Glaciofluvial deposits cover large areas of Rochdale, Bury and Trafford but are mainly fine-grained and are largely devoid of gravel. They vary considerably in thickness but may be over 30 m thick where they fill pre-glacial hollows or buried valleys or form moraines. Sands and gravels are derived from the erosion of local bedrock by the action of ice and water and, as such, mudstones and coal fragments can be common and make the working of a deposit difficult. Glaciofluvial sand and gravel are being worked at Pilsworth South pit in Heywood, Bury. Large areas of potential resource have been sterilized by urban development.

Extensive sheets of sand and gravel, averaging 2 m to 3 m thick, were laid down in the valleys of the Mersey west of Stockport, the Bollin below Styal, the Moberley Brook, Irwell, Dane and Weaver, all of which drain into the Mersey Estuary. In the lower reaches of all these rivers is the same pattern of a top terrace, in places more than 10 m above present river level, and very wide compared with the later terraces, which form a sequence including present day alluvium confined to the immediate vicinity of the river. After the formation of the high terrace there took place an event that suddenly lowered the base level to which the rivers were being graded. This happened to all the rivers mentioned above simultaneously, for their high terraces are at grade with one another. This high terrace phenomenon is limited in this area to the Mersey watershed.

The high terraces of the Mersey Basin were most probably formed at the end of the last Ice Age when the mouth of the river was still blocked by ice in the Irish Sea; thus water was ponded up in the lower Mersey valley and escaped over the neck of the Wirral peninsula. The spillway over the Wirral controlled the base level and it is to this that the high terrace is graded to. The sudden fall in the base level of the rivers took place when the last glacial ice melted and the present Mersey channel became open. The high terrace is currently being worked along with more recent river terraces of the River Goyt in Offerton Quarry near Stockport.

River Sand and Gravel (terrace and sub-alluvial deposits)

Resources occur in both raised river terrace sequences flanking the modern floodplains and in floodplain terrace deposits associated with, and underlying, present day alluvium. This sequence of deposits are best developed along the Rivers Mersey, Irwell, Croal and Roch with a succession of deposits formed representing accumulations of sand and gravel in response to falling sea level in Pleistocene times. Less developed terrace deposits occur along the River Tame, Middle Brook, Hey Brook and Moss Brook. The deposits typically consist of upwardly fining and laterally graded spreads of gravel, sand, silt and clay. Alluvium deposits in the area are usually thin and of little significance when compared to the sands and gravels of the high terrace. The composition of river sand and gravel generally reflects the rocks drained by the river and its tributaries. In this case it is mainly Carboniferous sandstones and mudstone, which are weak and friable and only suitable for low-grade uses such as construction fill.

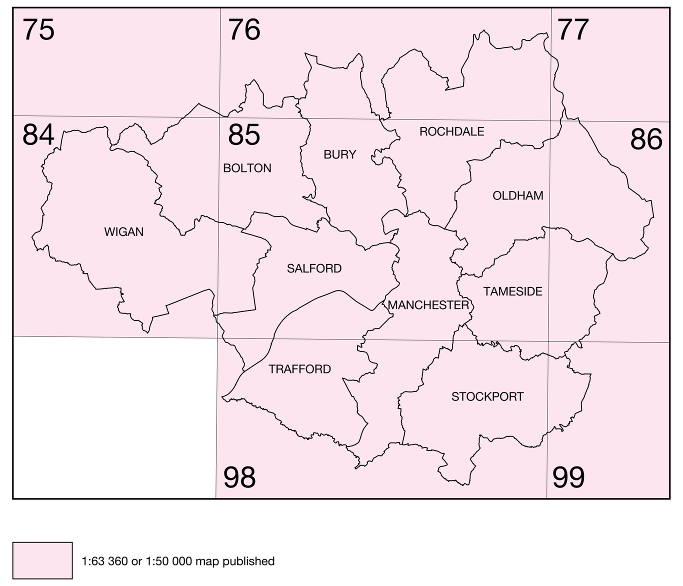
Blown sand

Overlying the glacial till is an irregular, discontinuous layer of wind blown sand referred to as the Shirdley Hill Sand. The sand, which is typically only about 1 to 1.3 m thick, although locally thicker, is younger than the glacial deposits and lies immediately beneath a cover of topsoil. The sand is characteristically uniform in both composition and grain size distribution, reflecting its wind-blown origin. Most of the sand particles fall in the range 0.5 mm to 0.1 mm, which is unsuitable for construction use. The Shirdley Hill Sand was formerly worked in St Helens and Lancashire for glass sand, and particularly for flat glass manufacture. However, these operations ceased in the mid-1970s. A number of thin spreads of blown sand resembling Shirdley Hill Sand have been noted on the terraces of the Mersey and Bollin but are too thin to be considered economic. Wind-blown sands are generally too fine-grained and uniform size for aggregate use. They are therefore not shown on the map.

Bedrock deposits

Additional resources of sand and gravel may be won from exploiting suitable bedrock deposits. Triassic sandstones of the Sherwood Sandstone Group are being worked at Morleys Hall Quarry, southeast of Leigh, to produce sand for mortar and asphalt. The Sherwood Sandstone has been deeply weathered in places by a tropical climate during pre-glacial times. The upper part of the sandstone, immediately below the drift cover, is sometimes weathered to the extent that the cementing material between the sand grains has disintegrated leaving the original quartz grains in the form of sand that can be worked without substantial crushing. The weathered portions of the Sherwood Sandstone usually do not have an ideal particle size distribution for use in mortar, concrete or asphalt and usually the sand is too fine grained or too weak for use as concrete aggregate. Difficulties in removing overburden in the form of glacial till and extra treatment in crushing, however minor, together with washing and slime removal can often make the resource uneconomic compared to more easily worked glacial sands. The Sherwood Sandstone is, therefore, rarely worked and is not shown on the map.

BGS maps covering Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan



1:63 360 or 1:50 000 map published

Current digital availability of these sheets can be found on the British Geological Survey website: www.bgs.ac.uk

BUILDING STONE

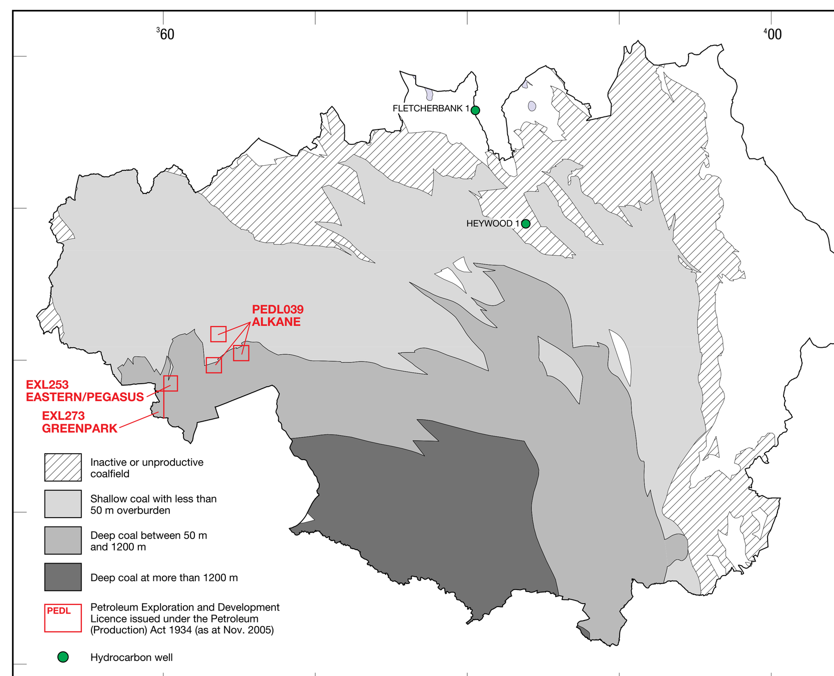
Natural stone is the traditional building material of Britain and the built environment is perhaps the most visible aspect of our cultural heritage. Production and usage of natural stone has declined since the high point of the industry in the late 19th Century, largely because of competition from cheaper alternatives, such as brick and concrete. However, more recently there has been an increased interest in natural stone and the prospects for the industry remain buoyant.

A wide range of rock types is used as building stones. In the area these comprise building sandstones, principally of Carboniferous and Permo-Triassic age. The working of local sandstones for block stone, flagstone and roofing 'slate' was very widespread in the past and almost every Carboniferous sandstone outcrop shows evidence of quarrying. However, currently only four quarries in the area are working Carboniferous sandstone for building stone.

The oldest rocks that were quarried for building stone and flagstone are from the Millstone Grit Group (Carboniferous) which crops out along the northern and eastern margins of the area. The principal sandstone quarries were located around Littleborough (Calderbrook and Long Lees) in the Huddersfield White Rock; at Stalybridge (Buckton Moor) in the Kinderscout Grit; around Horwich (Smithills Moor), Ramsbottom (Quarlton, Crowthorne, Limefield, Baldingstone, Holcombe, Rooley, Asworth), Milnrow, Gee Cross and Marple Bridge in the Rough Rock.

Quarrying of the Pennine Lower Coal Measures sandstones was extensive e.g. at Whitworth (Middle Hill, Hades Hill and Higher Slack), Burnt House Moor (Pinfold); near Bolton (Doffcocker, Moor Gate, Ridgeway in the Ouzel Nest Grit); and near Stalybridge. The Pennine Middle Coal Measures sandstones were quarried at Oldham Edge, Farnworth and Peel Hall. The small outcrop of Pennine Upper Coal Measures at Collyhurst (Worsley Delf Rock) was also an important source of building stone in the past.

The red Permian and Triassic sandstones at Collyhurst (Appleby Group) and Timperley (Sherwood Sandstone Group) were worked for building stone to a limited extent in the past.



HYDROCARBONS

Conventional Oil and Gas

Greater Manchester is perceived as having poor hydrocarbon prospectivity. Permo-Triassic strata in the south of the area form the Cheshire Basin. This is linked to the offshore East Irish Sea Basin, within which hydrocarbons (mainly gas) have been discovered in a number of fields. Oil has also been produced from the Douglas and Lennox fields. There is also the presence of the small enigmatic Formby Oilfield onshore to the west in Merseyside. The oilfield is thought to owe its existence to the breaching and migration from a deeper (older) Carboniferous trap and is capped by glacial boulder clay.

Carboniferous strata (Namurian mudstones and Westphalian Coal Measures) provide source rock potential both in Greater Manchester area and surrounding districts and the wider area has attracted interest from oil companies. Exploration has been ongoing for many years, with many kilometres of seismic reflection data acquired and hydrocarbon exploration wells drilled. Many of these wells have tested Triassic prospects within the Cheshire Basin, but have proved to be dry. Within the Greater Manchester area, the Fletcherbank 1 and Heywood 1 wells (see Table below) tested Carboniferous plays. Both wells were plugged and abandoned as dry, although Heywood had minor hydrocarbon shows.

Perhaps the best prospects, therefore, represent intra-Carboniferous plays with accumulations that have been little disturbed since their formation and charging. The yields from such plays would be small and the current hydrocarbon licence situation reflects the fact that prospectivity in Greater Manchester is not presently perceived as great. Indeed, the four small licence blocks presently operated are from former larger licence block areas and relate not to oil exploration, but to coalbed methane or mine gas (methane) development (see below).

Hydrocarbon exploration wells in Greater Manchester

Exploration Well	Drilling date	Original operator	Current licence area and operator	Status
Fletcherbank 1	1958-59	Steel Brothers Company Ltd	Open acreage	Plugged and abandoned, dry
Heywood 1	1984	BP Development Company Ltd	open acreage	Plugged and abandoned, dry, minor hydrocarbon shows

Abandoned Mine Methane (AMM), Coal Mine Methane (CMM) and Coalbed Methane (CBM) potential

During the process of coal formation through the conversion of plant matter into coal, gases are produced which are either adsorbed onto the coal or dispersed into pore spaces around the coal seam. The generic term for this gas is coalbed methane (CBM). The majority of the gas is attached to the coal surface in micropores. However, during mining the coal is destressed or fractured which releases significant quantities of CBM. Further gas is released during the life of the mine and after mining has ceased. This gas is an environmental hazard but it is also a potential source of energy. This potential depends on the gas content, permeability and total thickness of the coal present.

CBM can be exploited in various ways:

- Extraction from operational mines for safety reasons prior to it entering the mine air stream (coal mine methane - CMM).
- Coal extracted from abandoned mines (abandoned mine methane - AMM).
- Extraction from virgin or unmined coal from surface boreholes (virgin coalbed methane - VCBM)

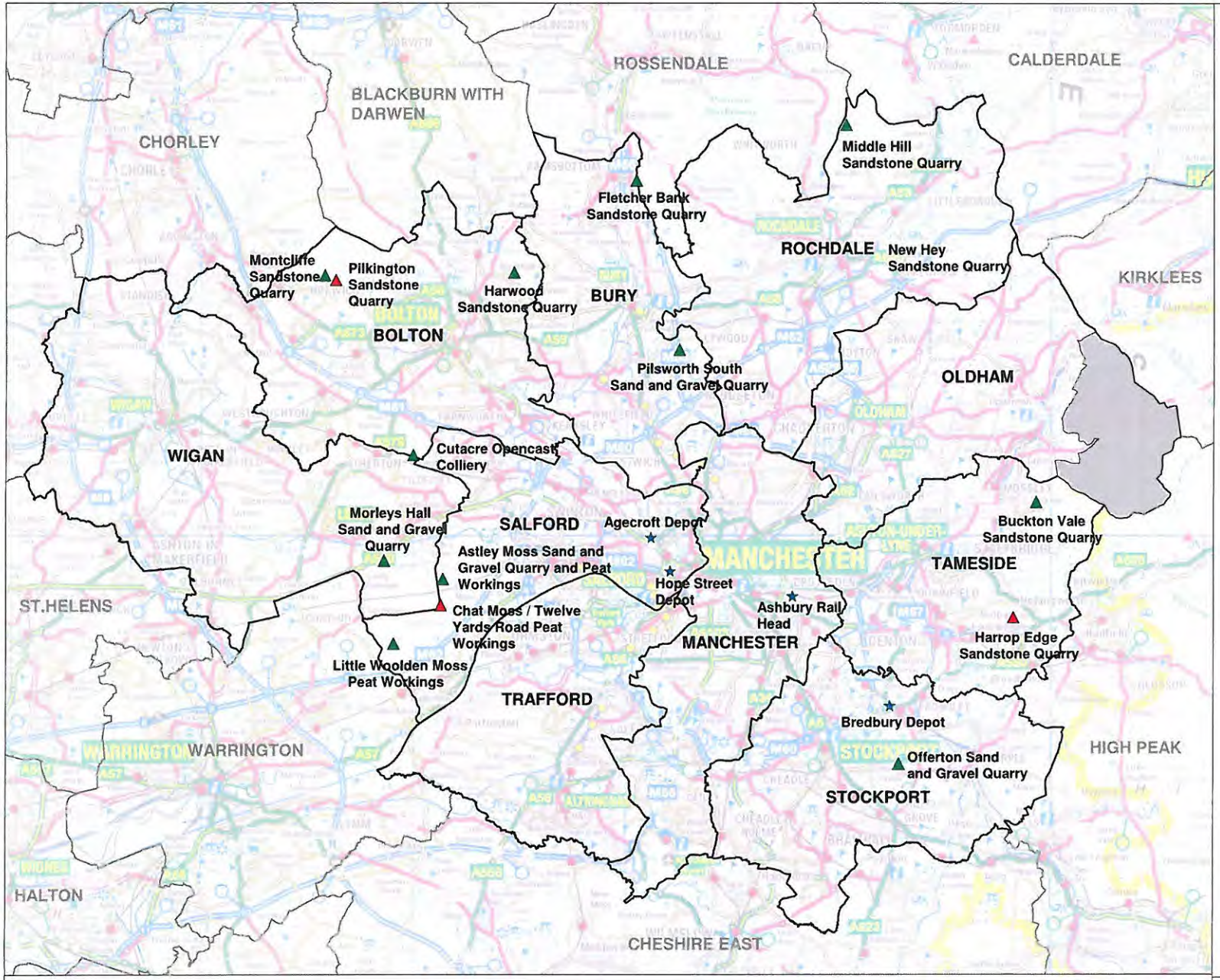
There are no operational coal mines in the area and thus there is no CMM potential.

The Pennine Lower and Middle Coal Measures of the South Lancashire coalfield comprise a succession up to 880 m thick, with 36 named coals present, attaining a maximum seam thickness of >3 m and producing 20-25 m total coal thickness. Historically, gas has been encountered in the coalfield, with some seams noted for their 'coal gas' (the fuel gas produced from a high-volatile bituminous coal). The coals are high to medium, volatile bituminous types with methane contents of up to 9.53 m^3 per tonne of coal, and average methane contents of 8.2m^3 per tonne of coal.

The concept of Abandoned Mine Methane capture in the UK goes back to the 1950s when Old Boston Mine in the Lancashire Coalfield was sealed and then tapped to supply gas to the adjacent Wood Colliery. This previously successful scheme has perhaps been influential in the interest generated in Abandoned Mine Methane (AMM), Coal Mine Methane (CMM) and CoalBed Methane (CBM) in the South Lancashire and North Wales coalfield areas over recent years.

Old Boston Mine lies just to the west of the area. Currently, the small licence areas EXL253 (Eastern/Pegasus) and PEDL039 (Alkane Energy) representing AMM and CBM interests in the west of the county, adjacent to the Old Boston Mine area, represent the retained areas of formerly much larger licence block areas. The relinquishment of large areas of these licence blocks perhaps suggests that prospects for AMM (and CBM) in the area are not now perceived as particularly good. This may be because any former mines are long abandoned and thus are likely to be flooded, provide poor yields, or that the financial/taxation scheme is unhelpful at present.

In the USA, coalbed methane is produced from virgin coals containing 7 or more m^3 of methane per tonne of coal. The average gas content of the coals in the South Lancashire Coalfield is 8.2 m^3 of methane per tonne of coal, which is above the economic threshold in America. However, the South Lancashire Coalfield has been heavily worked and CBM development from virgin coal seams may only be a prospect in unmined areas.



Greater Manchester Districts

Neighbouring District Boundaries

Peak District National Park - although located within Oldham it is not part of the Minerals Plan area

Inactive Mineral Extraction Sites

Active Mineral Extraction Sites

Rail Depots

Inactive sites are those which have not been worked at any point within the previous year. In this case January - December 2010.

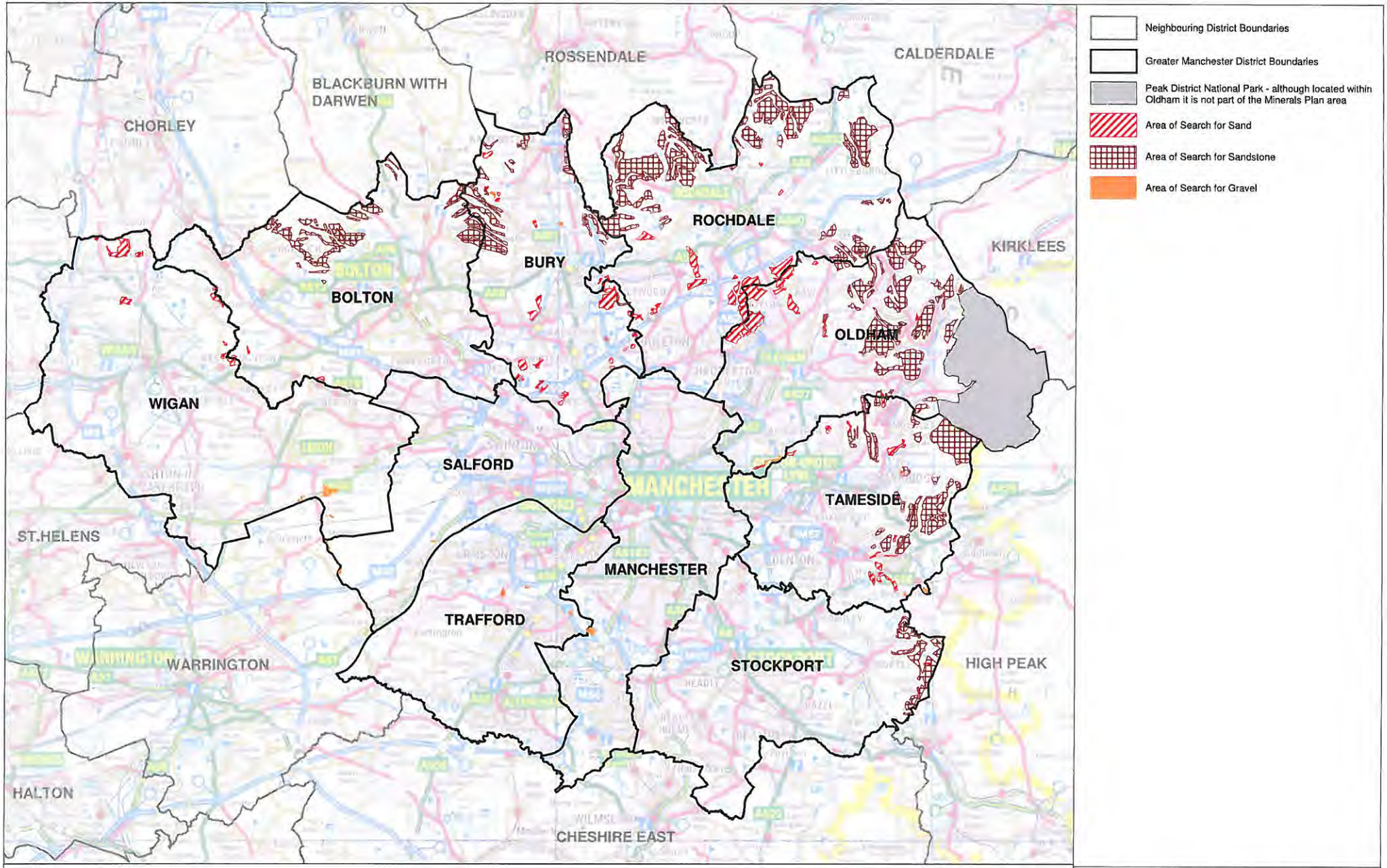
The following quarries have been identified by the English Heritage BGS Strategic Stone Study (SSS) as being important for maintaining and repairing historic buildings:

Buckton Vale
Harwood Quarry
Fletcher Bank Quarry
Middle Hill Quarry
Montcliffe Quarry

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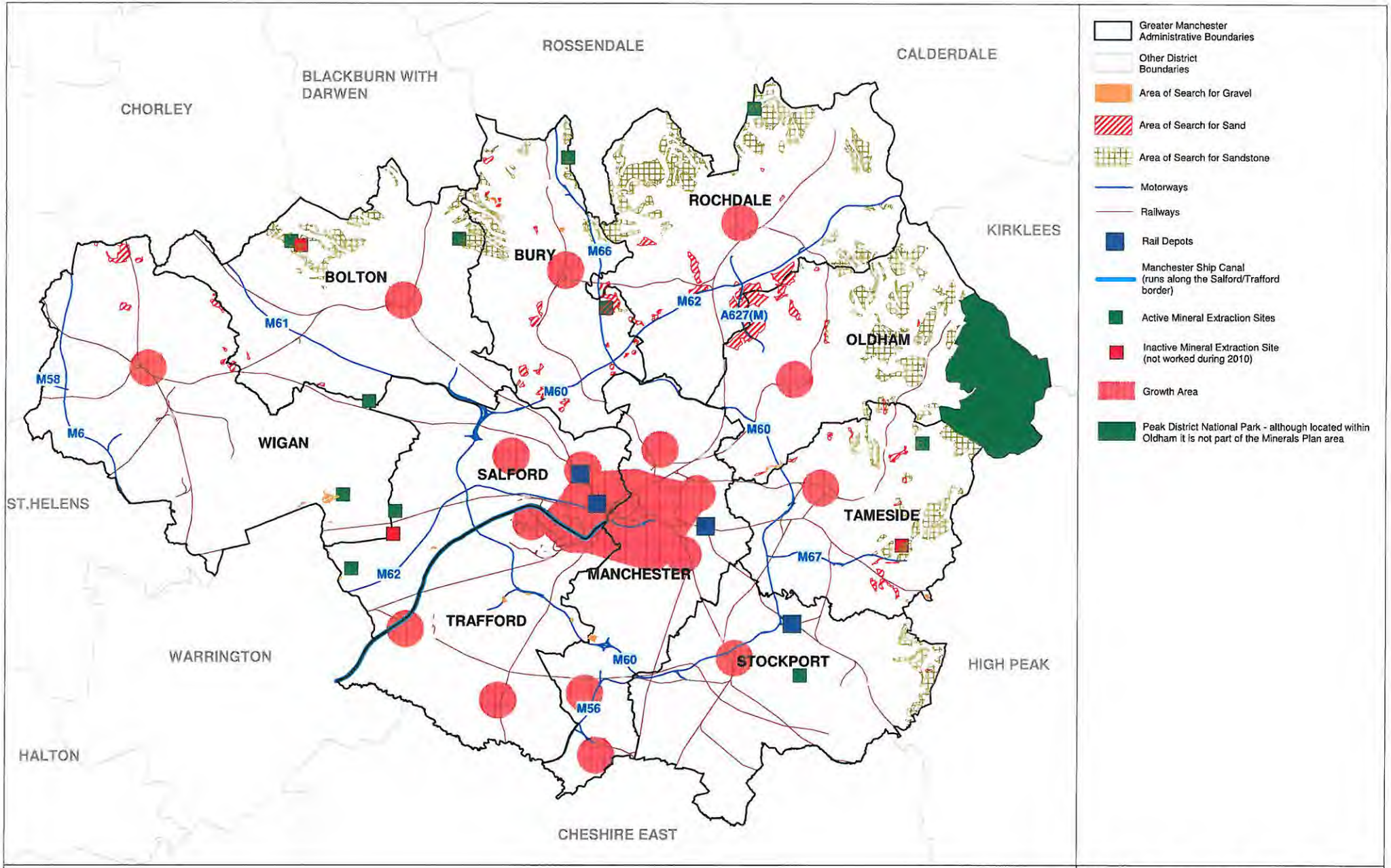
Map 1 - Existing Quarries with planning permission and Rail Depots used for minerals transportation within Greater Manchester



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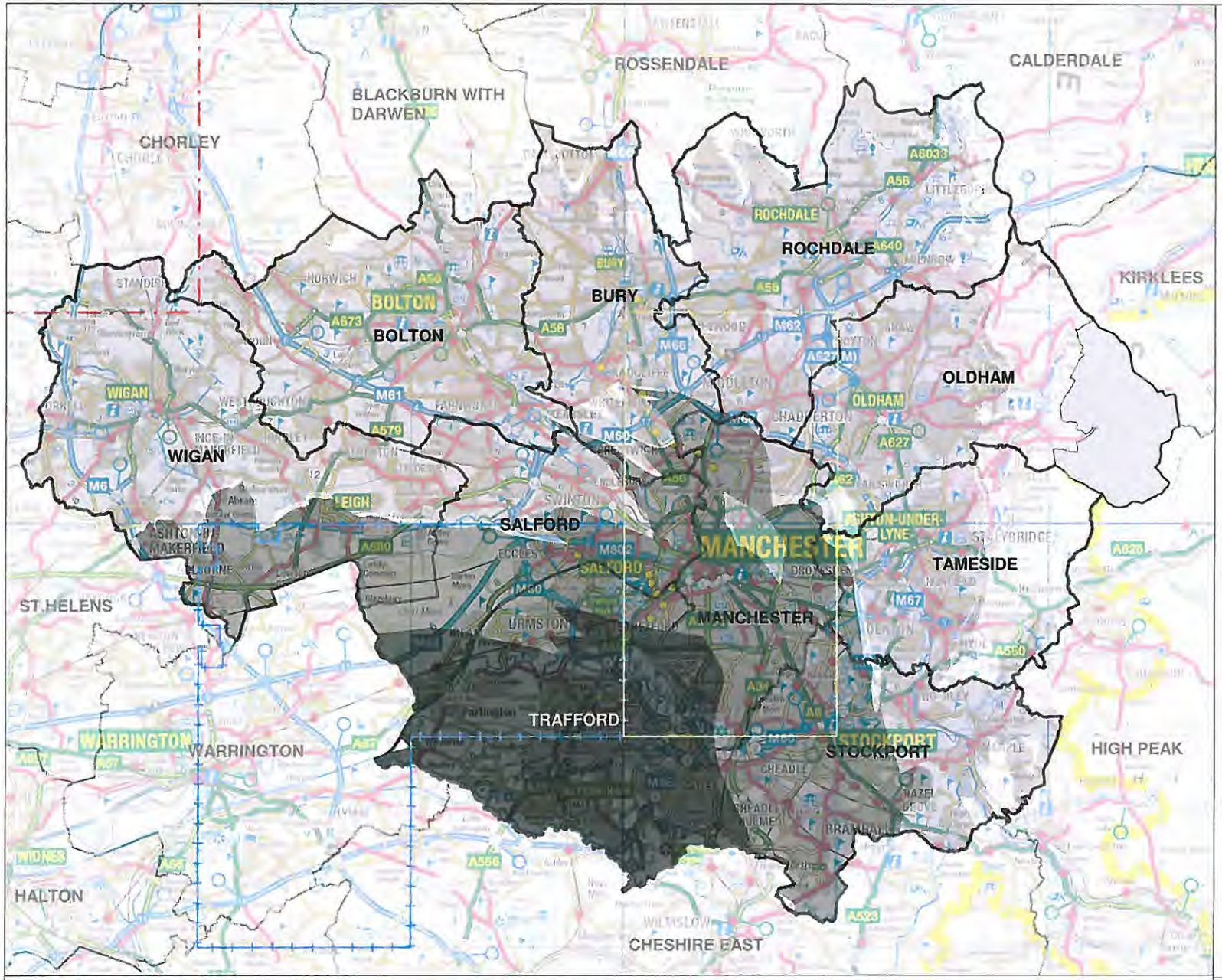
Map 2 - Areas of Search for Minerals in Greater Manchester



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Map 2a - Greater Manchester Spatial Distribution of Mineral Sites and Rail Depots with Key Locational Criteria



Greater Manchester Districts

Neighbouring District Boundaries

PEDL 165

PEDL 166

PEDL 193

Deep Coal Resource (1,200m +) - potential for Coal Bed Methane and other unconventional gas resource

Shallow Coal Resource (50 - 1,200m) - potential for Coal Bed Methane and other unconventional gas resource

Workable Surface Coal Resource

Peak District National Park - although located within Oldham it is not part of the Minerals Plan area

The extent of the coalfield with reserves at depths of 200 - 1,500m have potential for Coal Bed Mathane Extraction

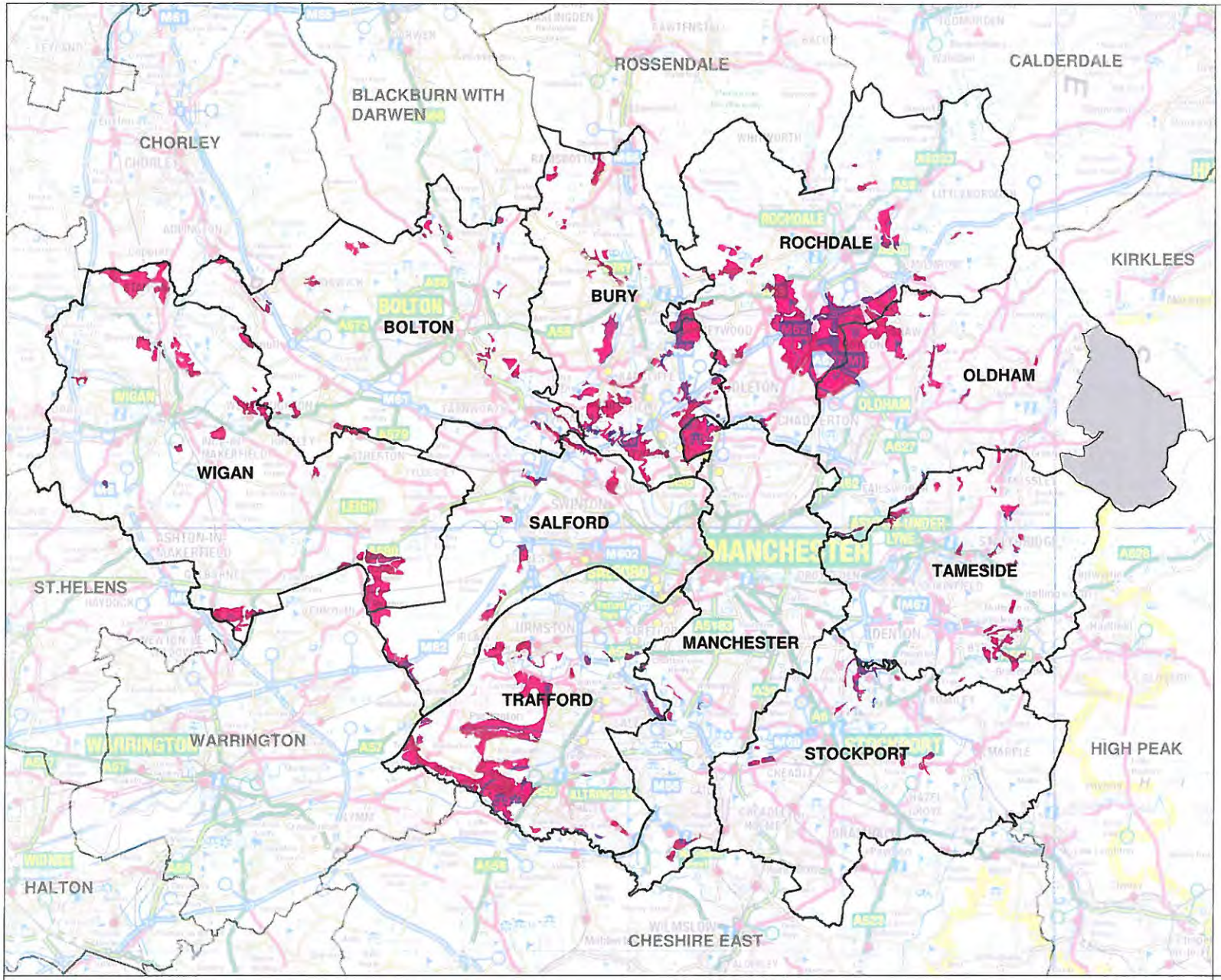
Information on PEDLs was up to date at time of Publication. For up to date PEDL information please refer to the Department of Energy and Climate Change (DECC)

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Map 3 - Coal Resource and Petroleum Exploration Development Licenses (PEDLs) in Greater Manchester



Greater Manchester Districts

Neighbouring District Boundaries

Mineral Safeguarding Area for Sand and Gravel

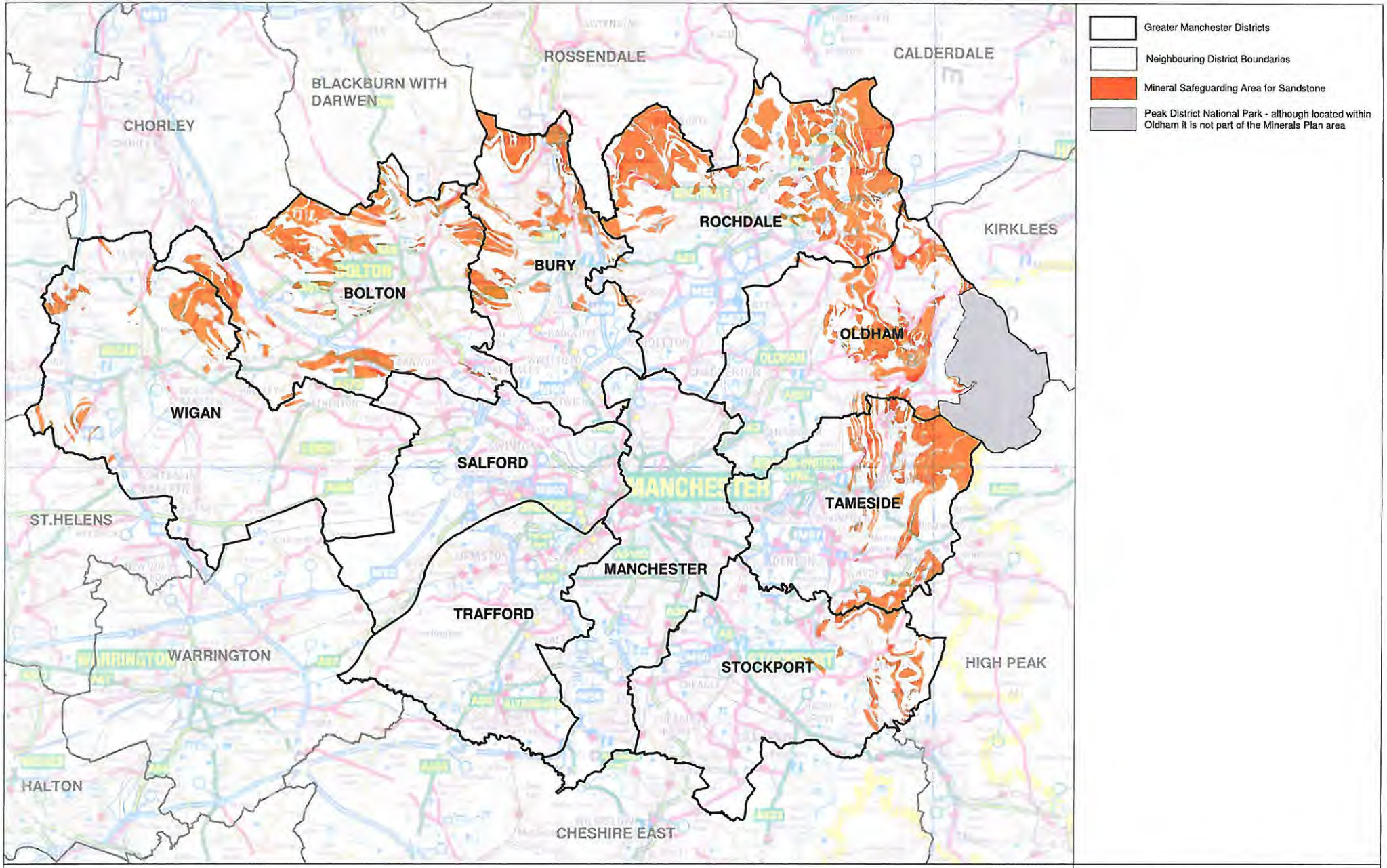
Peak District National Park - although located within Oldham it is not part of the Minerals Plan area

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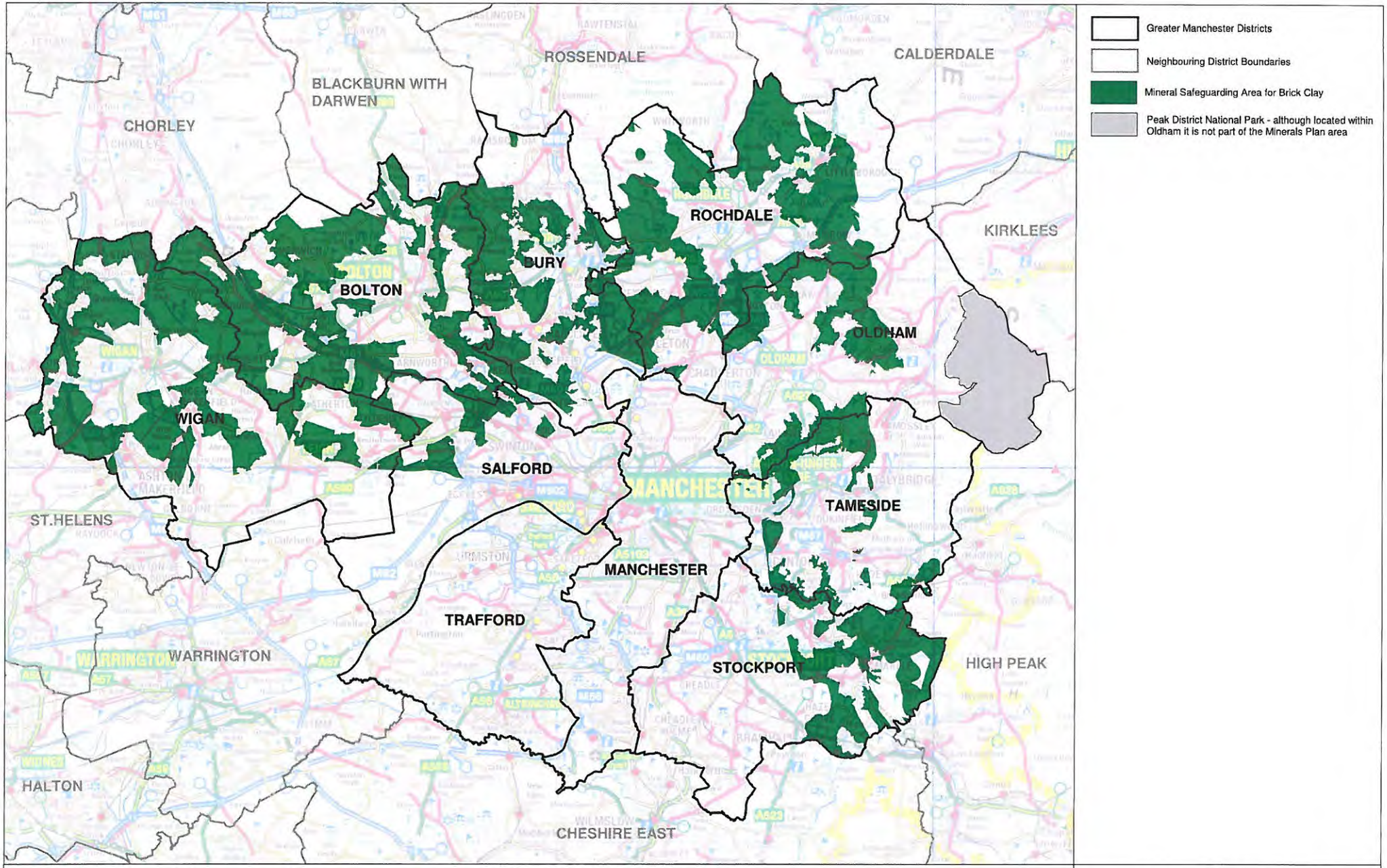
Map 4 - Mineral Safeguarding Area for Glaciofluvial Sand and Gravel



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Map 5 - Mineral Safeguarding Area for Sandstone

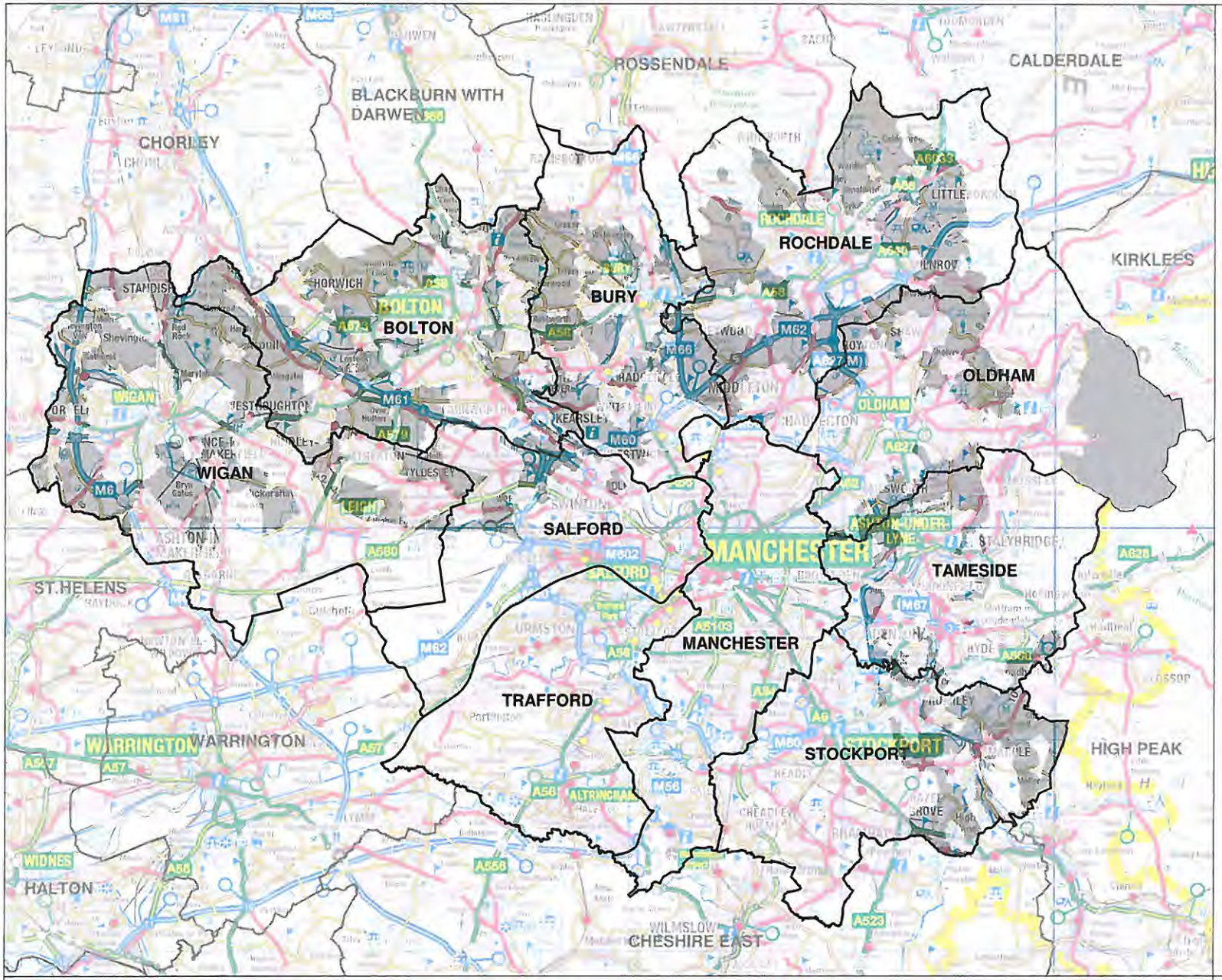


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Map 6 - Mineral Safeguarding Area for Brick Clay



Greater Manchester Districts

Neighbouring District Boundaries

Mineral Safeguarding Area for Coal

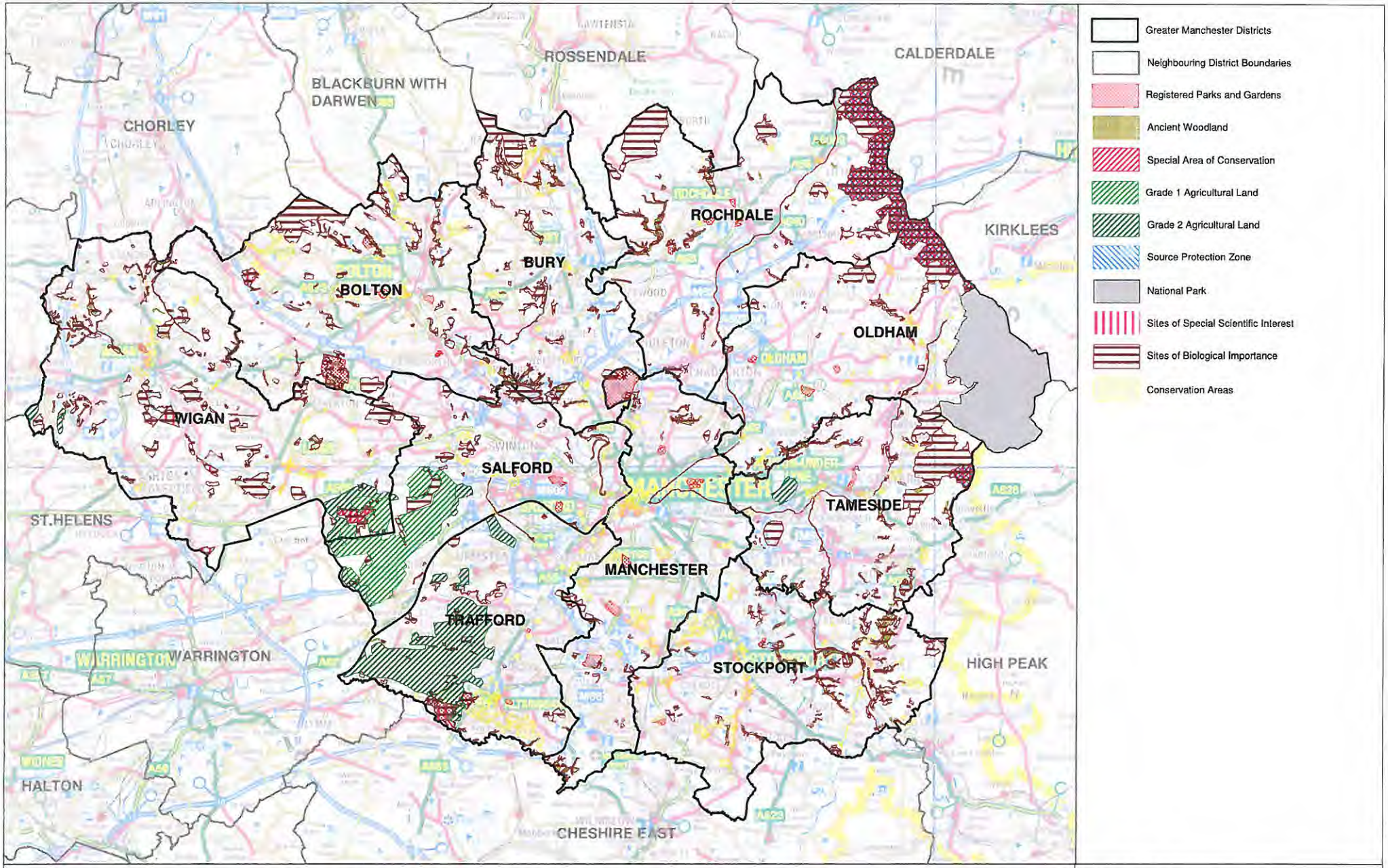
Peak District National Park - although located within Oldham it is not within the Minerals Plan area

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Map 7 - Mineral Safeguarding Area for Coal

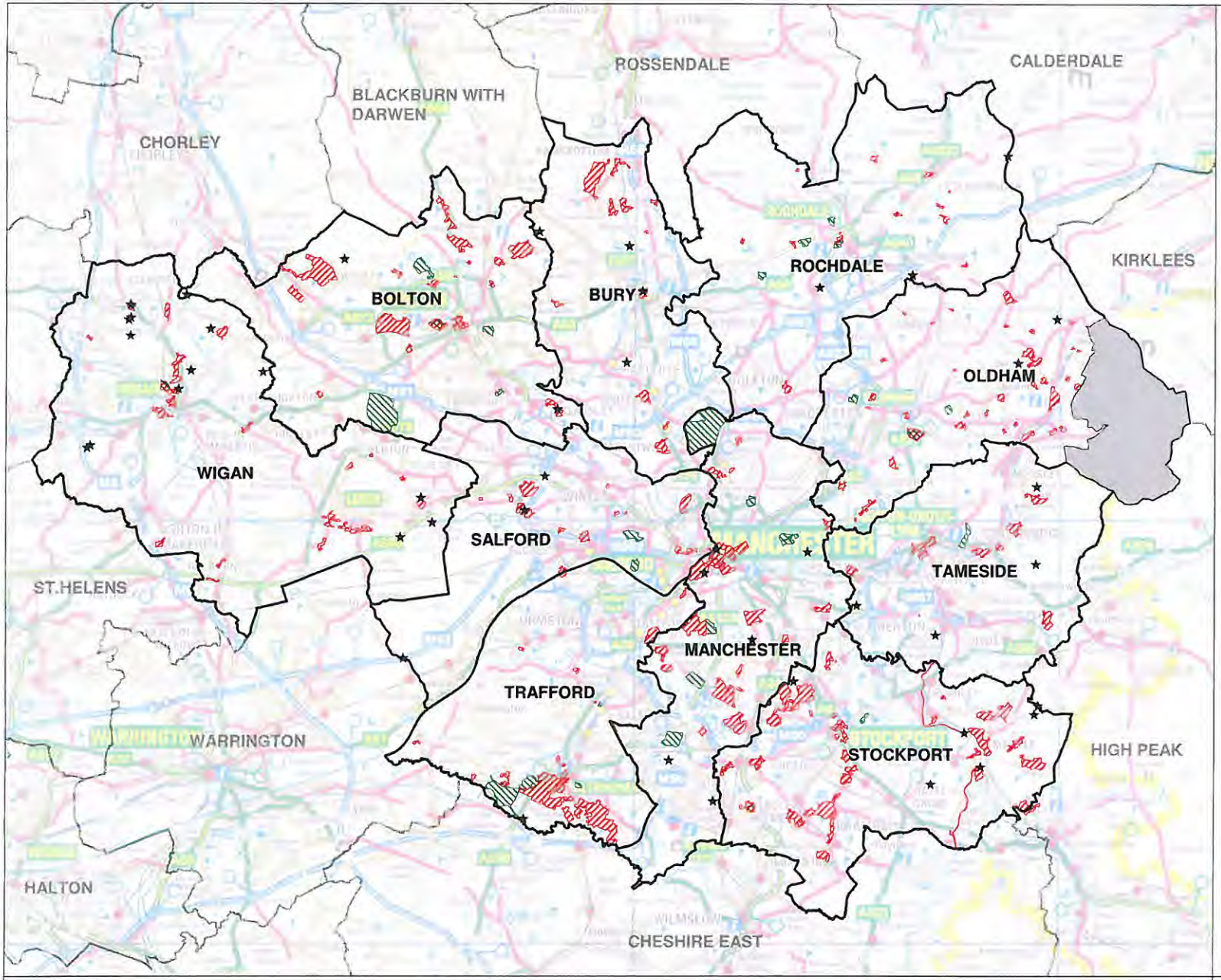


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Map 8 - Environmental Designations within Greater Manchester



Greater Manchester Districts

Neighbouring District Boundaries

Peak District National Park - although located within Oldham it is not included within the Minerals Plan area

Conservation Areas

Scheduled Ancient Monuments

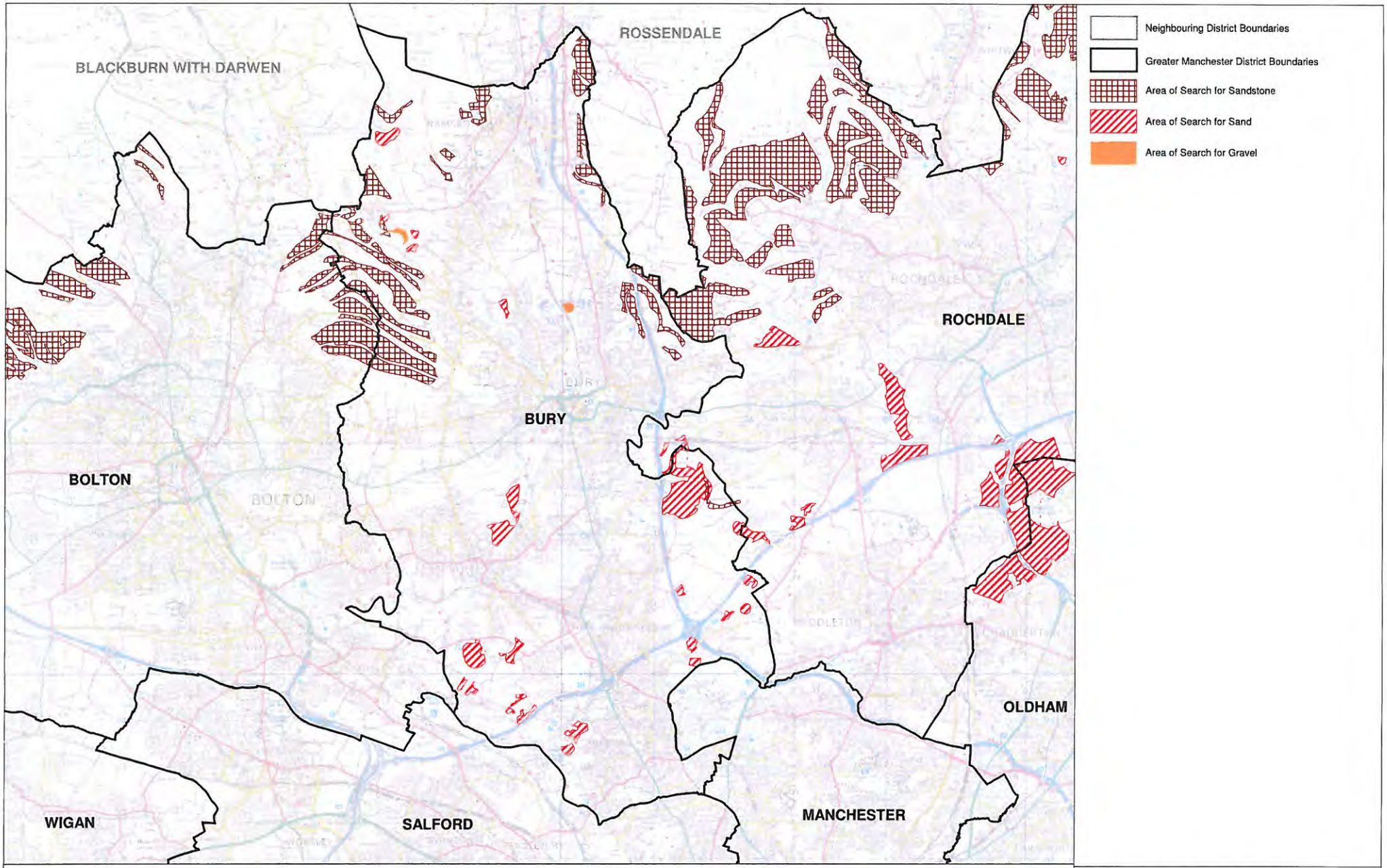
Registered Parks and Gardens

There are numerous Listed Buildings within the Greater Manchester sub-region which would be seen as a constraint to developing land. They have not been included on this map as it would make the map un-readable due to the high quantity of them.

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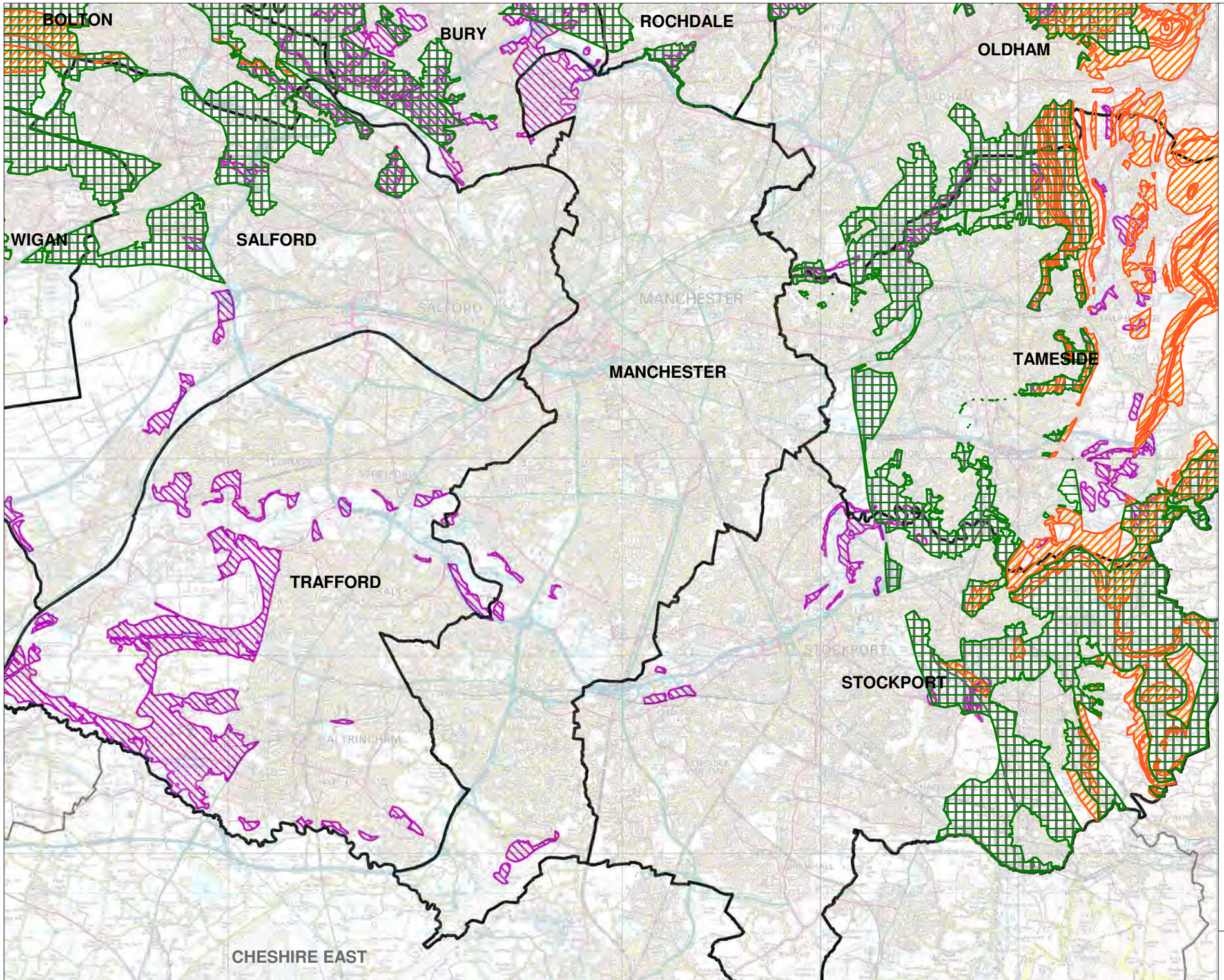
Map 9 - Designated Sites of Historical Importance



Map 11 Areas of Search for Aggregates in Bury

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MAP 22 MANCHESTER

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1cm = 1km

All Mineral Safeguarding Areas in Manchester

APPENDIX 7

ZETICA UXO RISK MAP AND A PRELIMINARY RISK ASSESSMENT REPORT

UNEXPLODED BOMB RISK MAP

SITE LOCATION

Map Centre: 383511,397530



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

LEGEND

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

Miltary | **Industry** | **UXO find** | **Other**

Transport | **Docks** | **Luftwaffe targets**

Utilities | **Bombing decoy** | **Airfields**

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

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

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

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

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

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

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

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

If I have any questions, who do I contact?

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

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

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

STAGE 1 PRELIMINARY UXO RISK ASSESSMENT

Report Ref: PRA-24-2493 | **Author:** ER | **Reviewer:** CB

Client: IGE Consulting Ltd.
Project: 2-4 Whitworth Street, Manchester
Date: 25/06/2024

BRIMSTONE
Innovation Centre Medway, Maidstone Road, Chatham, ME5 9FD
020 7117 2492
www.brimstoneuxo.com

INTRODUCTION

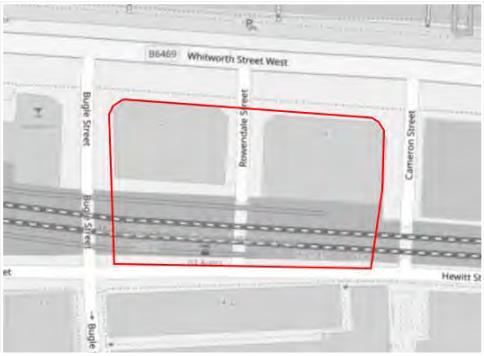
The Stage 1 Preliminary Risk Assessment is an initial screening assessment designed to highlight any sources of unexploded ordnance (UXO) with the potential to contaminate a given site.
The aim of the Stage 1 assessment is to identify or discount the need for further detailed research - a Stage 2 Detailed UXO Risk Assessment.
This desktop assessment has been researched and written by a dedicated Researcher / Risk Assessor and produced in accordance with the CIRIA C681 Guidelines: 'Unexploded Ordnance, a Guide for the Construction Industry' (published in 2009).
In preparation for this assessment, original wartime records, historic OS mapping and the *Brimstone UXO Sources Database* have been reviewed. The latter incorporates multiple datasets plotting the positions of a variety of domestic military sites and confirmed historic German bombing targets.

The Stage 1 Preliminary Risk Assessment considers the following:

1. The Proposed Works
2. Enemy Action During WWI and WWII
3. British / Allied Military Activity
4. Historic Site Occupancy
5. Risk Mitigating Factors

THE SITE

The Site (approximately centred on the National Grid Ref: SJ 83517 97524) is located within the area of Deansgate in Greater Manchester, approximately 20m east of Deansgate railway station.
The Site comprises two multi-storey structures in the northern extent and a raised railway line and hardstanding in the south. Rowendale Street intersects the central extent of the Site, leading to Hewitt Street.
The Site is bound to the north by Whitworth Street West, to the east by Cameron Street, to the south by Hewitt Street, and to the west by Bugle Street.



THE PROPOSED WORKS

SI works will comprise four boreholes to 35m bgl, 12 trial pits and six trenches to unspecified depths, constructed within the paved areas.
Development works will include the demolition of the existing buildings and the construction of a 43-storey building.

ENEMY ACTION DURING WWI AND WWII

Potential Source of UXO	Significant?	Details	
WWI German Bombing	✗	No air raids affected Manchester during WWI.	
WWII German Bombing	✓	British District Bombing Density Statistics	The Site was located within the WWII-era County Borough of Manchester, which sustained 27 bombs / 1,000 acres, a low-to-moderate bombing density.

		Evidence of Bomb Strikes / Damage	A bomb and damage map for Manchester, covering bombing between 1940-1941, records no HE bombs and two incendiary bomb 'showers' within an approximate 300m radius of the Site; the closest IB shower is plotted approximately 130m west of the Site. This source also records multiple areas of damage in the surrounding area of the Site, with the closest recorded to a structure approximately 75m south-west. Note, this source does not provide a comprehensive overview of bombing incidents within Manchester due to its limited date range. Bomb census tracings for Manchester do not record any bomb strikes within the vicinity of the Site. However, it should be noted that these tracings are poorly scaled and do not contain a lot of detail. Subsequently, the precise location of the Site and local bomb strikes could not be confirmed. Blitz Britain by Graham Phythian records an IB on 22nd December 1940 as impacting Whitworth Street; however, the precise location of the damage / area of impact was not recorded although it is not believed to have affected the Site. A comparison of pre- (1938) and post- (1948) WWII OS mapping and consultation of post-WWII (1946) aerial photography does not reveal any immediately obvious evidence of bomb damage, with the structures on Site and in the immediate surrounds remaining externally intact. Repair works appear to have been conducted to railway tracks approximately 65m north-west in the aerial image.
		Local Bombing Decoy Sites	None within a significant distance of the Site. The closest was located approximately 8.5km to the south-east.
		Local German Bombing Targets	Luftwaffe target photography identifies Manchester Central Station, approximately 150m north-east of the Site and a gas works and gas supply instillation approximately 375m south-east, as primary bombing targets.
WWII German Cross Channel Artillery Shelling	×	n/a	

BRITISH / ALLIED MILITARY ACTIVITY		
Potential Source of UXO	**Significant?**	**Details**
WWII Home Guard (HG) Activity	×	Soldiers of the 47th, 49th and 56th Lancashire (Manchester) and the 57th (21 GPO), 58th (22 GPO), and 59th (23 GPO) Lancashire HG Battalions will have been active locally during WWII. However, such troops are unlikely to have utilised the Site due to its developed nature.

Site Requisitioned for Wartime Military Use	×	n/a
Existing or Historic Army or RAF Training Area / Weapons Range	×	n/a
Existing or Historic Military Bases and Other Installations	×	n/a
Existing or Historic Munitions or Explosives Factories	×	n/a
Existing or Historic Military Defensive Fortifications	×	n/a
WWII Light and / or Heavy Anti-Aircraft (LAA and HAA) Fire	×/✓	Numerous (>30) permanent HAA batteries were active within a range of the Site during WWII. Luftwaffe activity in the region was somewhat frequent. Therefore, these guns are likely to have fired a notable amount of ammunition in the vicinity of the Site. Given this, it is possible that an unexploded AA shell struck the Site, although this is considered unlikely due to its largely developed nature during WWII.
Pipe-Mined Locations and Beach Minefields	×	n/a
UXO Finds	×	An incident occurred on 24th October 2018, in which an unexploded tank cartridge was discovered on a building site on New Quay Street, approximately 710m north-west of the Site. The device was later safely removed by an EOD team from the military.[1]
SITE HISTORY		
What was the Site occupancy historically, especially during WWI and WWII?	During WWII, the Site comprised two structures in the northern extent of the Site, potentially warehouses / storage areas. Train tracks encompassed the central extent of the Site and hardstanding in the south.	
RISK MITIGATING FACTORS		
Post-Conflict Ground Works	The Site appears to have retained its pre-war composition and no significant post-conflict ground works are anticipated to have occurred, although potential modernisation / general maintenance, disturbing WWII-era soil to very shallow (<1m bgl) depths may have occurred.	

[1] https://www.independent.co.uk/news/uk/home-news/manchester-city-centre-evacuated-bomb-tank-shell-cartridge-new-quay-street-latest-a8599581.html

Likelihood of UXO Remaining	The risk associated with (any) very shallow buried UXO may have been partially mitigated. However, the risk associated with (any) shallow (1-2m bgl) and deep (>2m bgl) buried UXO almost certainly remains unmitigated.

CONCLUSIONS

German UXO:

- The Site was located within the WWII-era County Borough of Manchester, which sustained 27 bombs / 1,000 acres, a low-to-moderate bombing density. The Site was situated in the vicinity of multiple primary bombing targets; the closest was Manchester Central Station, approximately 150m north-east, and a gas works and gas supply installation, approximately 375m south-east of the Site.
- A bomb plot damage map (1940-1941) does not record any HE bomb strikes within an approximate 300m radius of the Site. The closest incident, an incendiary bomb 'shower', is plotted 130m west of the Site. Multiple areas of damage are also recorded in the surrounding area, with the closest recorded approximately 75m south-west.
- Bomb census tracings for Manchester do not record any bomb strikes in the vicinity of the Site; although, it should be noted that these tracings are poorly scaled and contain limited detail, and therefore the precise location of the Site and local bomb strikes could not be confirmed. Furthermore, a written account refers to an IB 'shower' as impacting Whitworth Street in which the Site is located; however, the precise location of this strike could not be determined.
- Post-WWII aerial photography and a comparison of pre- and post-WWII OS mapping has not displayed any immediately obvious evidence of bomb damage on Site or in the immediate surrounds, with no cratering or structural clearance / damage identifiable. The structures / infrastructure on Site appear to have survived externally intact; indeed, the current footprint of the Site is largely consistent with that present during WWII.
- As a result of the above, wartime ground cover on Site is anticipated to have been conducive to the visual detection of UXBs i.e. undamaged properties. Evidence of bomb damage / UXBs is likely to have been clear and obvious and will likely have been noticed and reported at the time. Furthermore, access levels to the Site are anticipated to have been frequent during WWII given the lack of identifiable damage, as well as the Site's situation in an urbanised areas being bound by further structures / infrastructure and roadways which also display no immediately obvious evidence of significant damage occurring. This further heightens the likelihood of a UXB strike being observed and reported at the time.
- In summary, as no evidence of bombing / damage occurring on Site has been identified, combined with the wartime ground cover being largely conducive to the visual detection of UXBs and access levels anticipated to have been frequent, therefore, the risk of encountering UXBs on Site is not considered to be elevated above the 'background level' for this area of the country.

British / Allied UXO:

- No evidence of significant military activity specifically on Site has been found and none is likely to have occurred.
- Numerous (30>) HAA batteries were active within a range of the Site during WWII. It is possible that an unexploded AA shell struck the Site; however, as above, any incidents would likely have been observed and dealt with at the time of occurrence.

RECOMMENDATIONS

SI Works	A Stage 2 Detailed Risk Assessment is not considered necessary prior to SI works commencing. However, the possibility of UXO remaining on Site cannot be completely ruled out at desktop stage. Therefore, a **UXO Safety Briefing** to all personnel conducting ground works would be considered prudent.
Development Works	

APPENDIX 8

COAL AUTHORITY CONSULTANTS COAL MINING REPORT

The Coal Authority

Consultants

Coal Mining Report

4201 Whitworth Street, Manchester
Greater Manchester

Date of enquiry:	**21 June 2024**
Date enquiry received:	**21 June 2024**
Issue date:	**21 June 2024**
Our reference:	**51003432566001**
Your reference:	**GS-MWY-A3U-VQS-RWE**

Consultants

Coal Mining Report

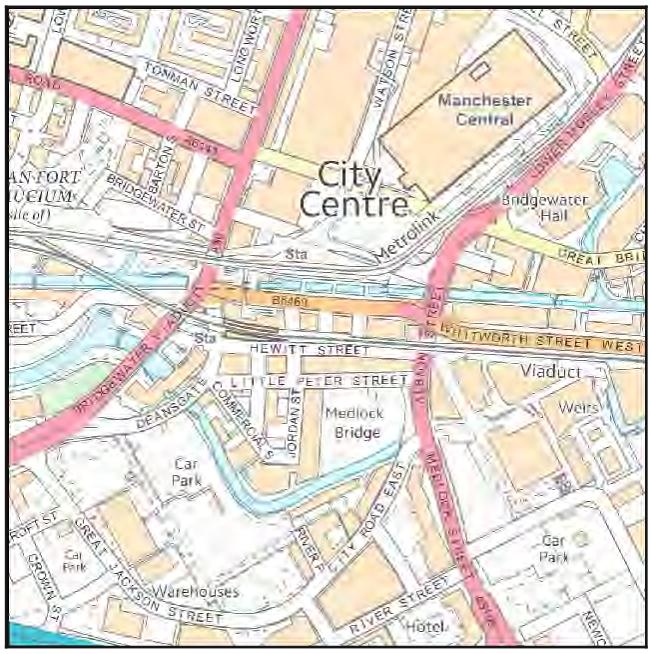
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GROUNDSURE LIMITED

Enquiry address

4201 Whitworth Street, Manchester
Greater Manchester



Approximate position of property

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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
No past mining recorded.

Probable unrecorded shallow workings
None.

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

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

Abandoned mine plan catalogue numbers
None available.

Outcrops
No outcrops recorded.

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

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

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

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Section 2 – Investigative or remedial activity

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

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

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

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

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

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

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

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

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Section 3 – Licensing and future mining activity

Future underground mining
None recorded.

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

Court orders
None recorded.

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

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

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

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

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Section 4 – Further information

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

Future development

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

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

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Section 5 – Data definitions

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

Past underground coal mining

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

Probable unrecorded shallow workings

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

Spine roadways at shallow depth

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

Mine entries

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

Abandoned mine plan catalogue numbers

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

Outcrops

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

Geological faults, fissures and breaklines

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

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

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

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

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

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

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

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

Mine gas
Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

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

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

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

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

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

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

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

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

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

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The Coal Authority

Summary of findings

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

Key

Approximate position of the enquiry boundary shown



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

APPENDIX 9

BRITAIN FROM ABOVE PHOTOGRAPHS



www.britainfromabove.org.uk/image/EPW062697 © Historic England



www.britainfromabove.org.uk/image/EPW062700 © Historic England



www.britainfromabove.org.uk/image/EPW062708 © Historic England



www.britainfromabove.org.uk/image/EPW062710 © Historic England

APPENDIX 10

KATHRYN SATHER AND ASSOCIATES HISTORICAL RECORDS

Plans 9265 & 69

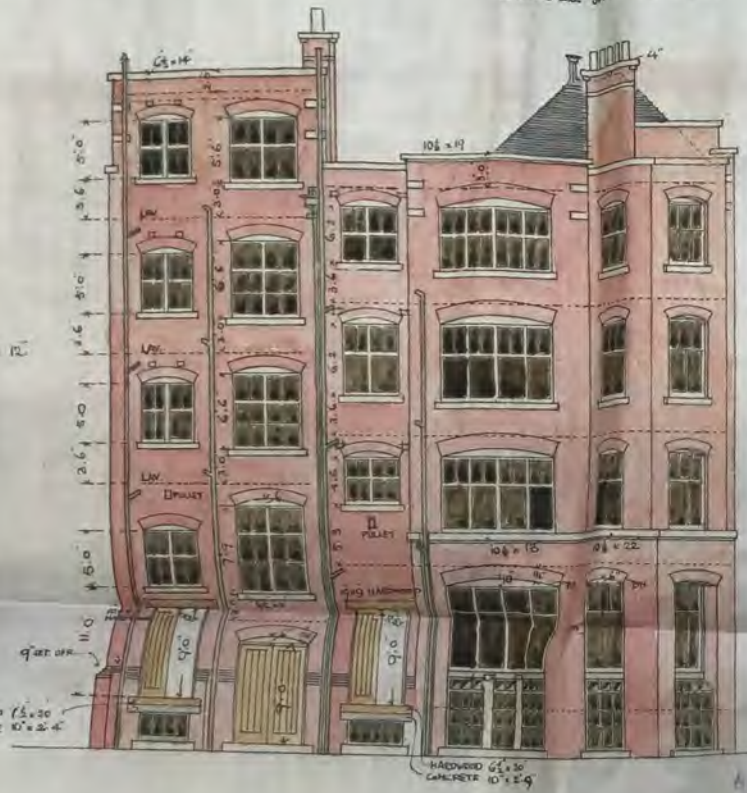
I. ANDREW, ESQ
WAREHOUSE, WHITWORTH ST WEST

9265

SCALE: EIGHT FEET TO ONE INCH

Alfd. McConnell & A.J. Ondrea
Architects
2 Victoria St. Manchester

GAUGE OF BRICKWORK: 4 COURSES





ROWE STREET

WHITWORTH STREET WEST

BASEMENT

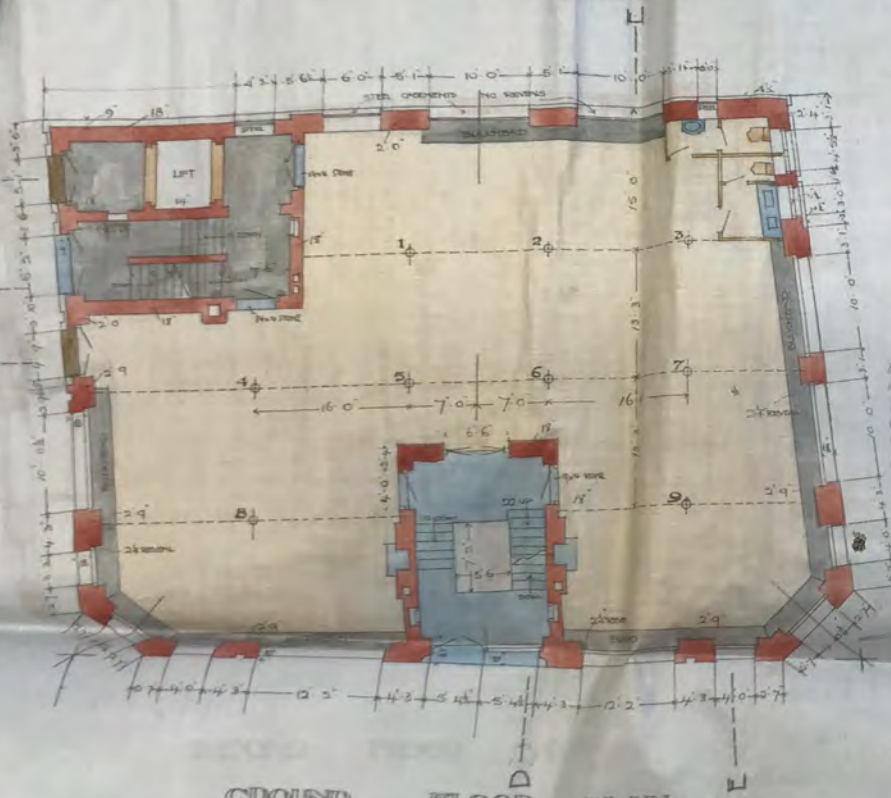
DATUM

L. ANDREW. ESQ. WAREHOUSE, WHITWORTH ST WEST.

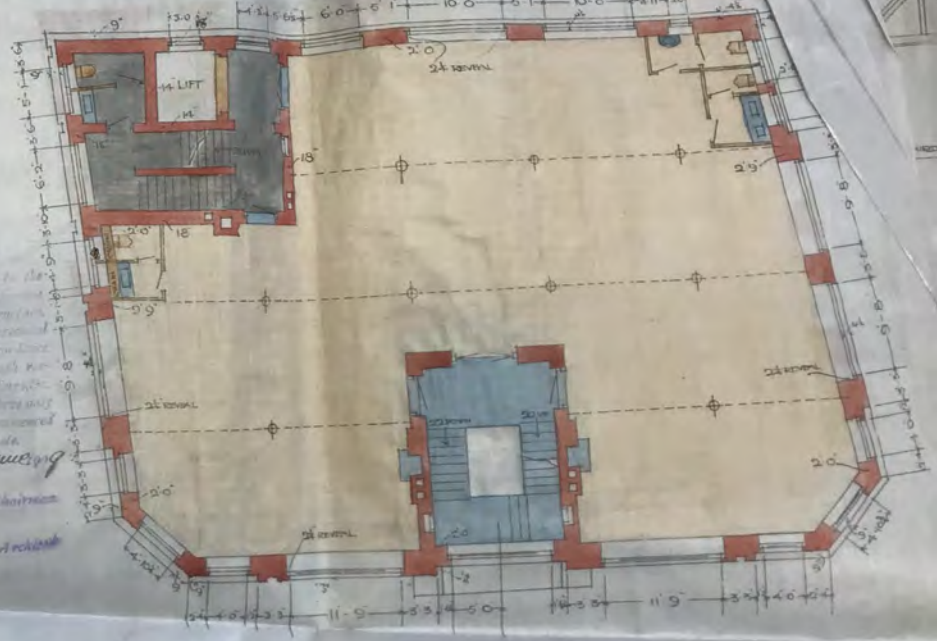
SCALE EIGHT FEET TO ONE INCH.

H.B. Mebbullock & Alf. Andrew
Architects
2 Victoria Street, Manchester

9265



GROUND FLOOR PLAN.



FIRST FLOOR PLAN.

City of Manchester.

Approved as far as relates to the Bye-Laws only and without responsibility as to the stability of the structure. The building shall not be occupied in any part until the whole is completed in accordance with the Bye-Laws in force with respect to New Streets and Buildings. This approval to remain in force only in case the buildings are commenced within two years from this date.

Dated this 23 day of June 1899

Chairman

Henry Price Architect

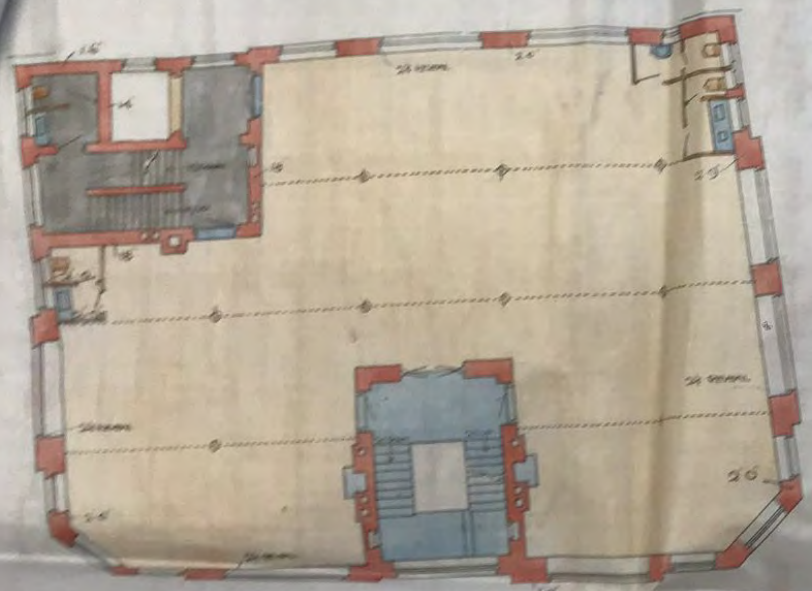
Vent flues to be provided to WCs

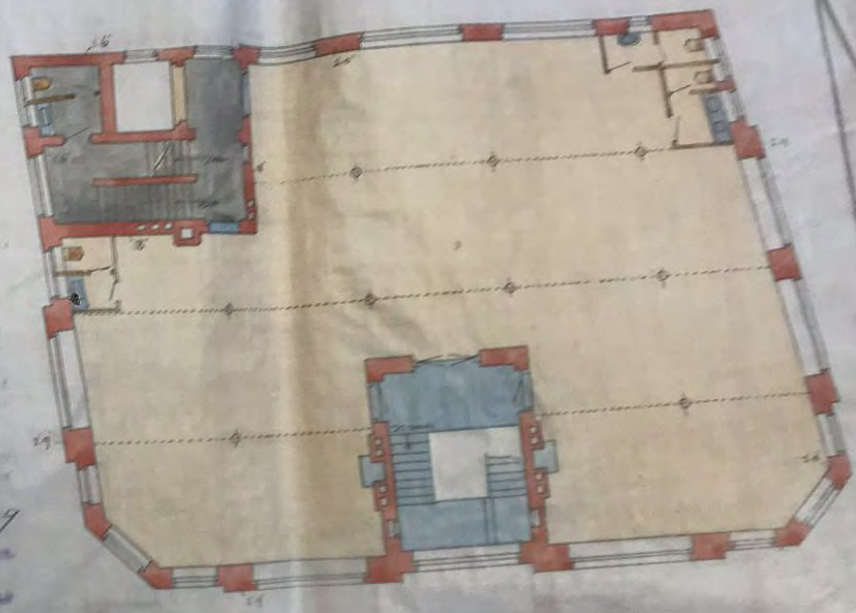
L. ANDREW. ESQ

WAREHOUSE, WHITWORTH ST WEST

SCALE: EIGHT FEET TO ONE INCH

9265





City of Manchester.

SECOND FLOOR PLAN.

THIRD FLOOR PLAN

GOODS LIFT. SECTION A

GOODS STAIR SECTION B.

MAIN STAIR SECTION D

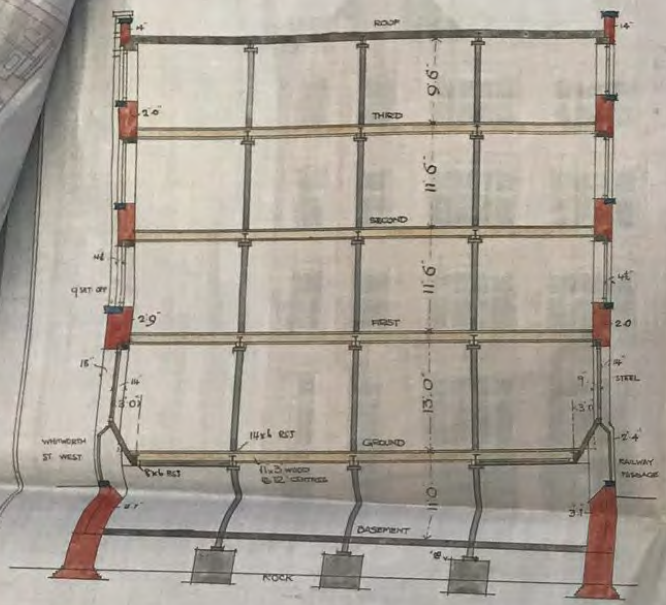
I. ANDREW. ESQ

WAREHOUSE. WHITWORTH ST WEST

SCALE. EIGHT FEET TO ONE INCH.

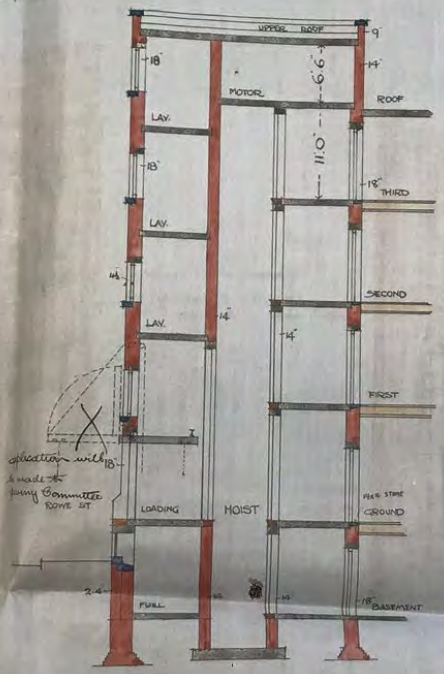
Sth McInstosh & Andrews
Architects
2 Victoria Sts. Manchester.

9265

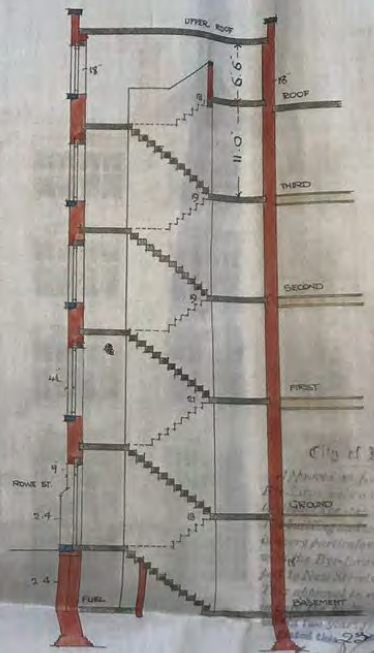


WARE ROOM. SECTION E

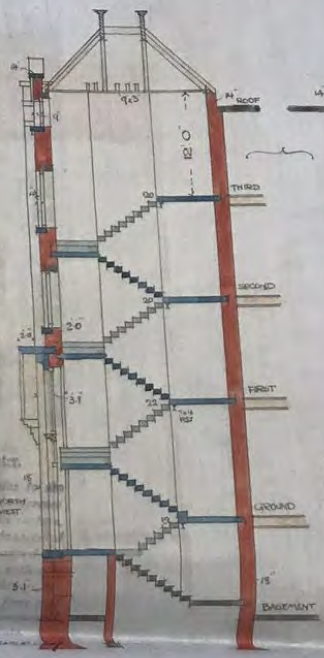
Horizontal & vertical damp course in Pennine Rock or other stones.



GOODS LIFT. SECTION A



GOODS STAIR SECTION B.



MAIN STAIR SECTION D



WARE ROOM

City of Manchester.

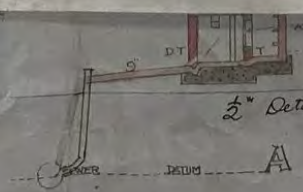
Approved as to the Plans and Particulars so far as they relate to the Bye-Laws in force with respect to New Streets and Buildings.

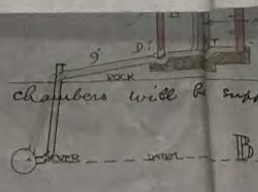
Chairman.

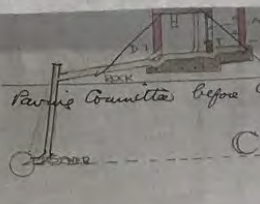
Henry Lee Surveyor to the Council

5.59

ALL EXTERNAL AND INTERNAL [illegible] BRICKWORK







½" Details of these Chambers will be supplied to the Paving Committee before Construction.

5.22

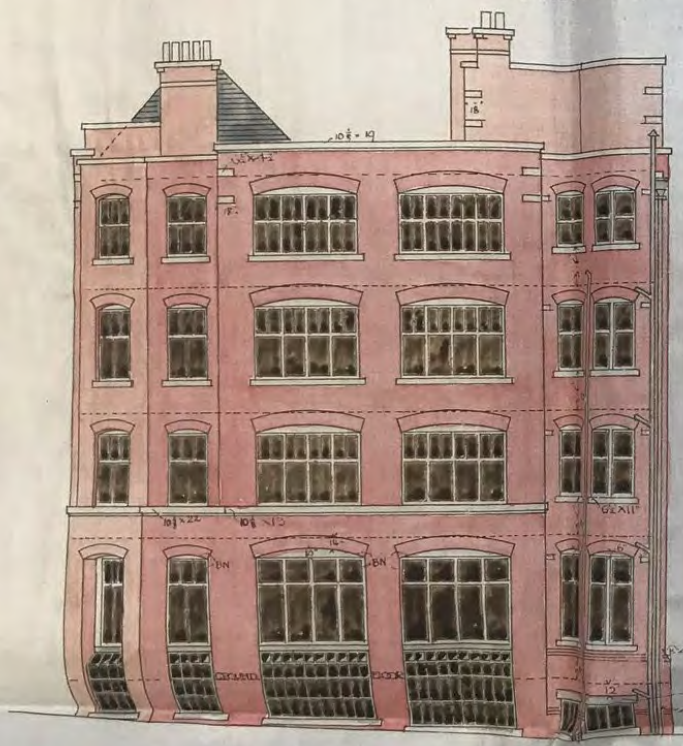
L. ANDREW. ESQ

WAREHOUSE. WHITWORTH ST WEST

9265

SCALE: EIGHT FEET TO ONE INCH

H.G. McCulloch & Alf. Andrews
Architects
2 Victoria Street Manchester





Projections not to exceed 12"
all downpipes to be in chases
to a height of 12-0 above footpath.

City of Manchester

Approved so far as relates to the Bye-Laws only and without reference to strength or stability of the structure. The building and work to be executed in every particular in strict accordance with the Bye-Laws in force with respect to New Streets and Buildings &c. This approval to remain in force only if Case of Buildings not commenced within three years from this date.

Dated the 28th day of January 1897

Chairman

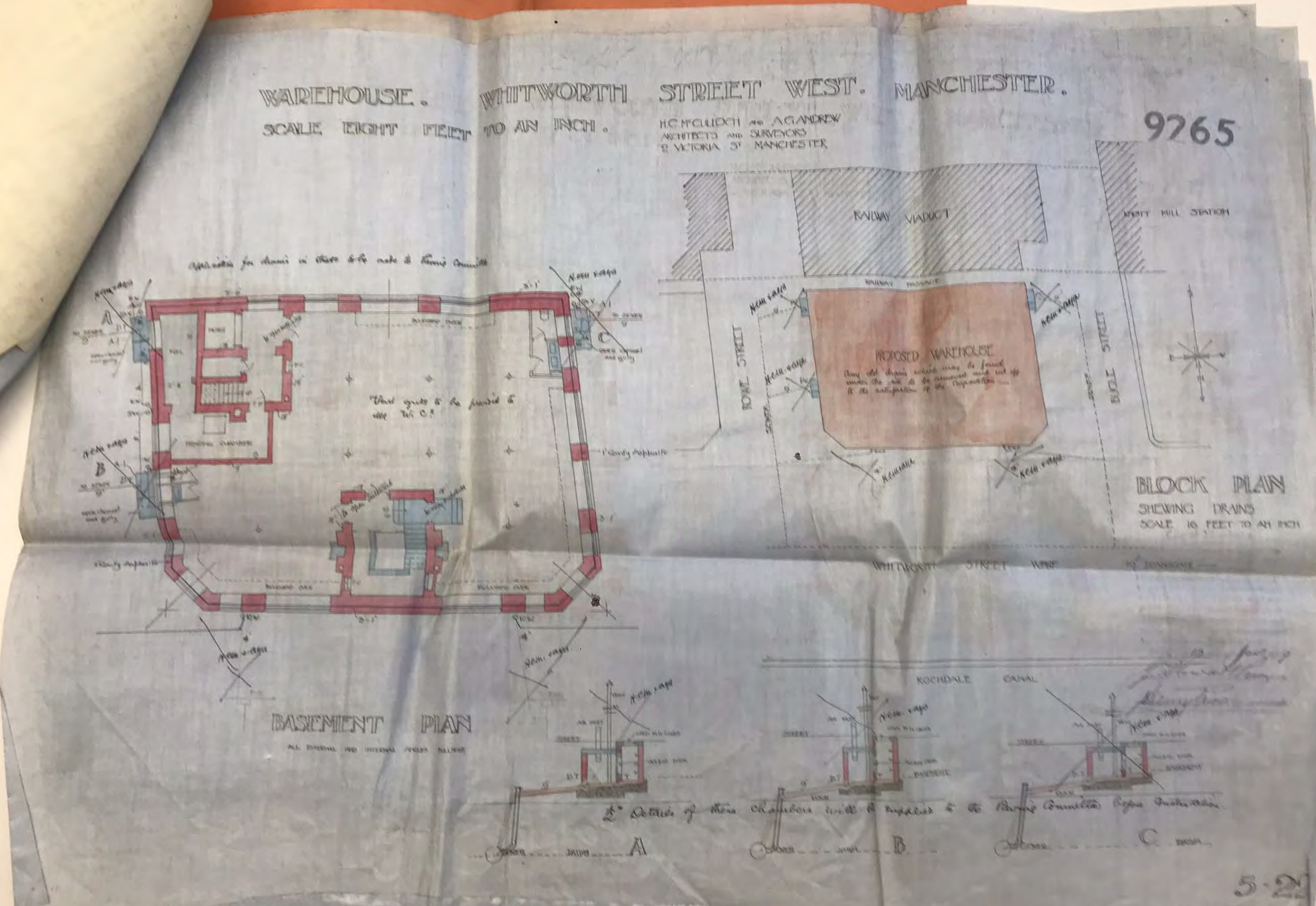
City Architect

BASEMENT

BUGLE STREET

RAILWAY PASSAGE

DATUM


WAREHOUSE. WHITWORTH STREET WEST. MANCHESTER.
SCALE EIGHT FEET TO AN INCH.
H.C. McCULLOCH AND A.G. ANDREW
ARCHITECTS AND SURVEYORS
2 VICTORIA ST MANCHESTER
9765
RAILWAY VIADUCT
KNOTT MILL STATION
RAILWAY PASSAGE
ROWE STREET
BUGLE STREET
PROPOSED WAREHOUSE
BLOCK PLAN
SHEWING DRAINS
SCALE 16 FEET TO AN INCH
WHITWORTH STREET WEST
BASEMENT PLAN
1" Gravity Asphalte
ROCHDALE CANAL
A
B
C
5-2

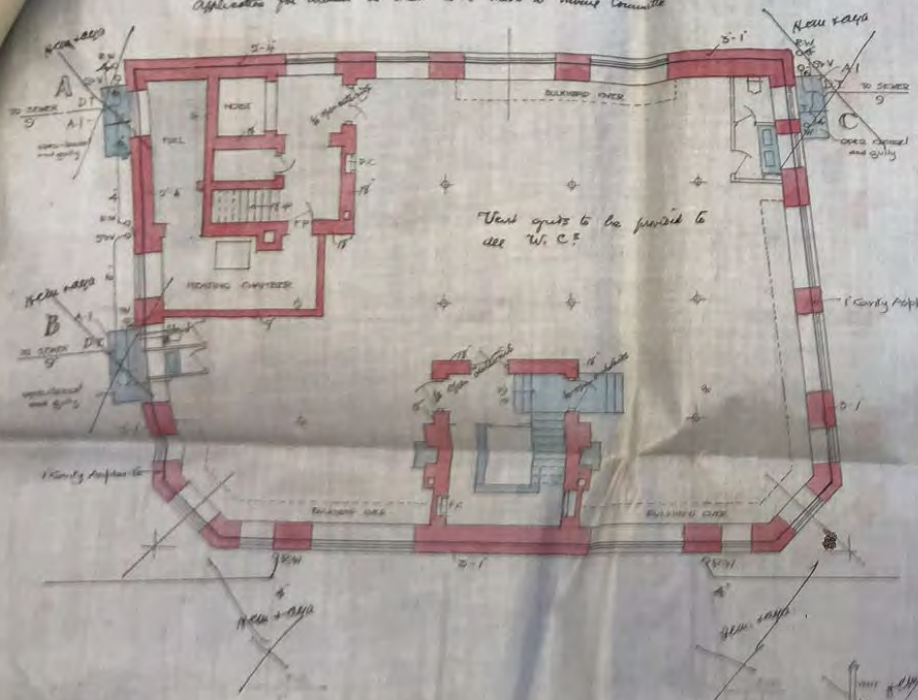
WAREHOUSE. WHITWORTH STREET WEST. MANCHESTER.

SCALE EIGHT FEET TO AN INCH.

H.C. McCULLOCH and A.G. ANDREW
ARCHITECTS and SURVEYORS
2 VICTORIA ST MANCHESTER

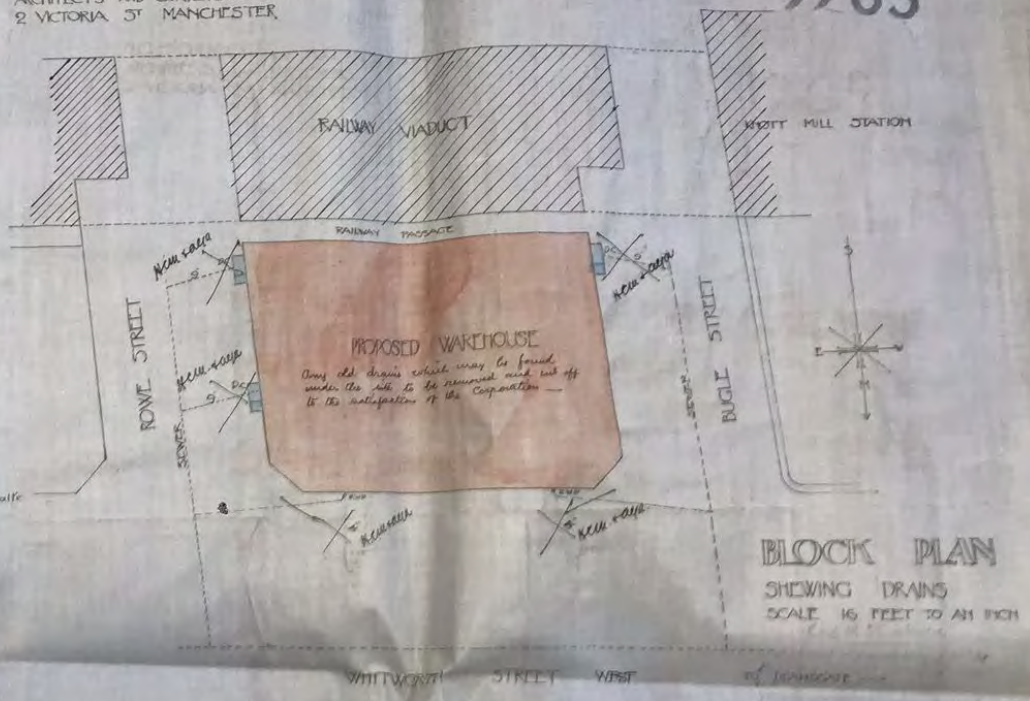
9765

Application for drains in streets to be made to Paving Committee



BASEMENT PLAN

All Drains and Internal Soil Pipes



BLOCK PLAN
SHEWING DRAINS
SCALE 16 FEET TO AN INCH



A



B



C

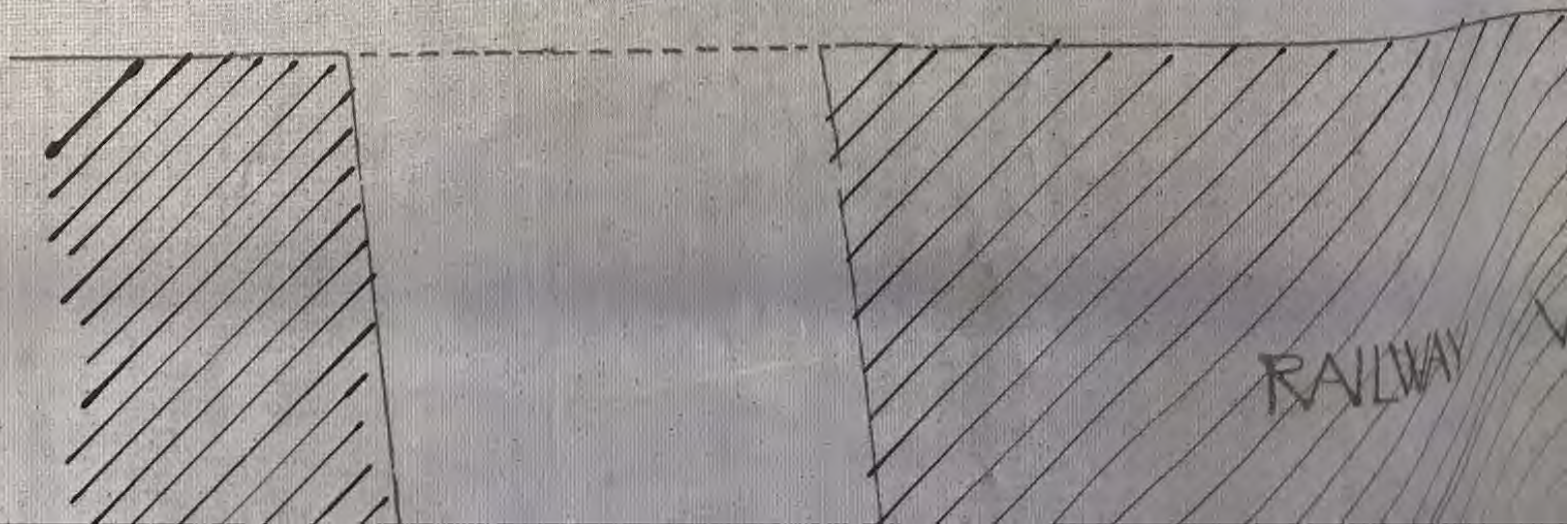
½" Details of these all drains will be supplied to the Paving Committee before Construction.

12 June 09

5-22

TH STREET WEST. M

H.C. McCULLOCH AND A.G. ANDREW
ARCHITECTS AND SURVEYORS
2 VICTORIA ST MANCHESTER

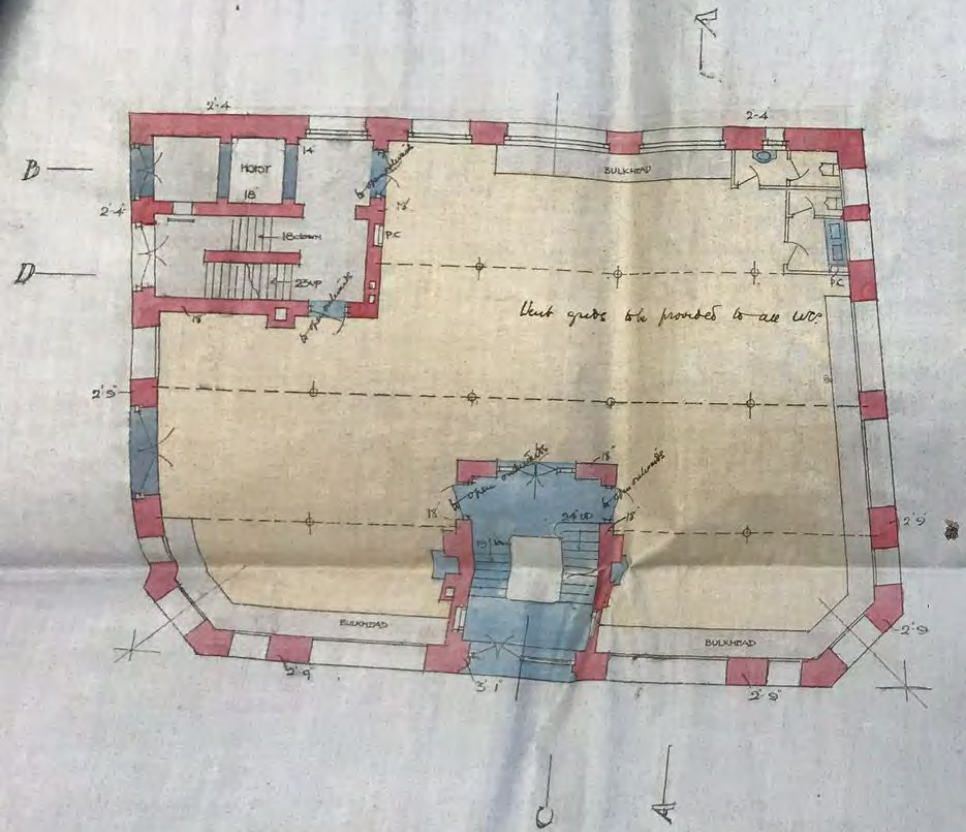


WAREHOUSE. WHITWORTH STREET WEST. MANCHESTER.

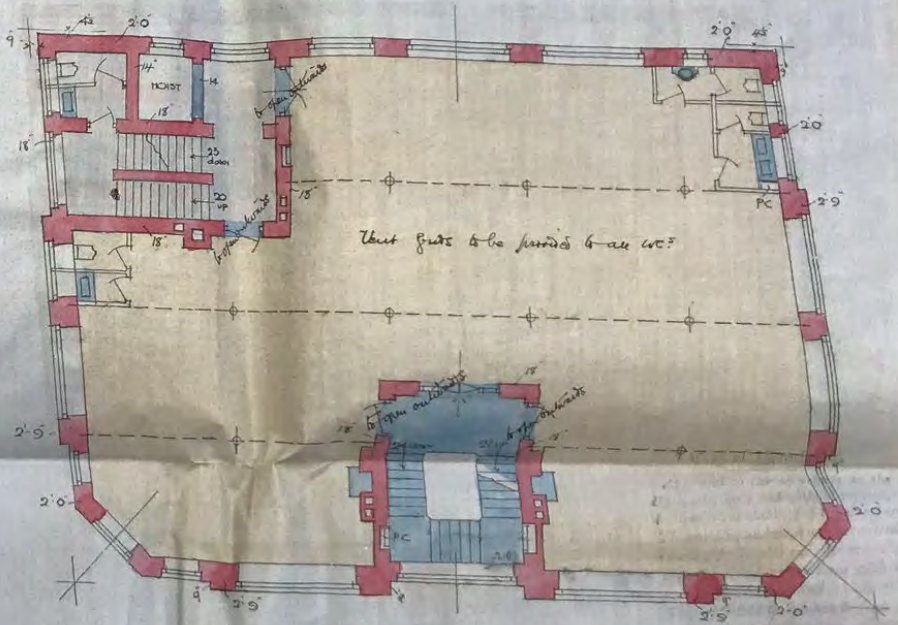
SCALE EIGHT FEET TO AN INCH.

H.C. McCULLOCH AND A.G. ANDREW
ARCHITECTS AND SURVEYORS
2 VICTORIA ST MANCHESTER

9265



GROUND FLOOR PLAN



13 Jan 9

J. Howarth

Henry Ives

FIRST FLOOR PLAN

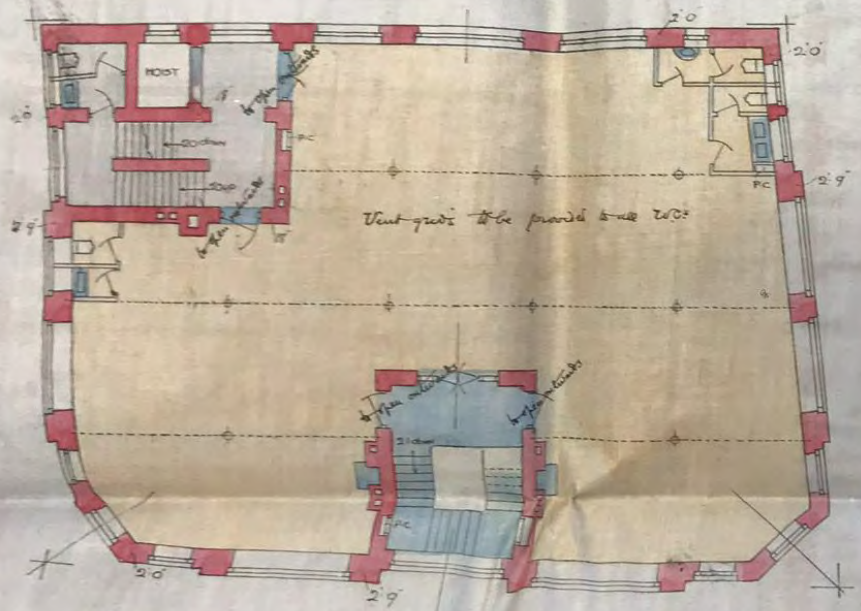
5.23

WAREHOUSE. WHITWORTH STREET WEST. MANCHESTER.

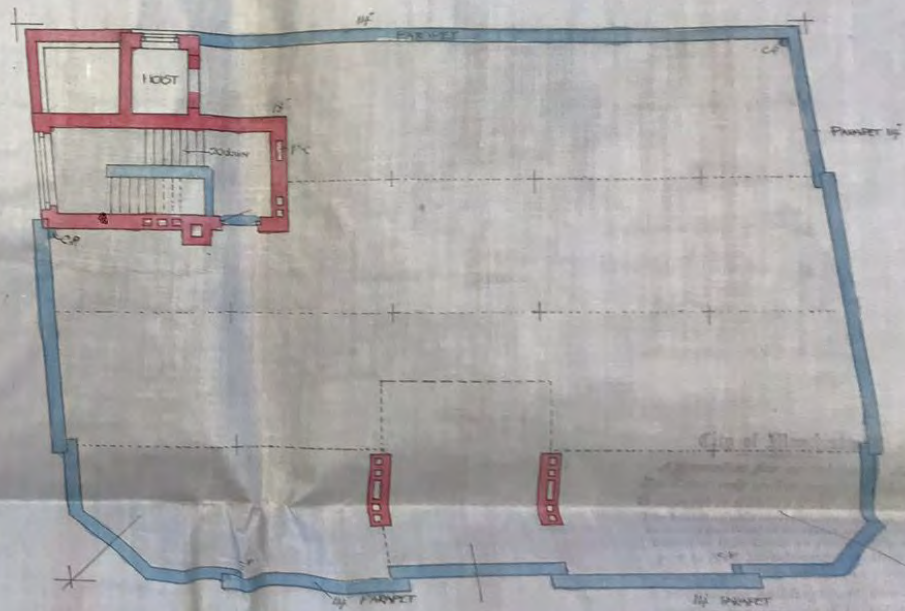
SCALE EIGHT FEET TO AN INCH.

H.C. M'CULLOCH AND A.G. ANDREW
ARCHITECTS AND SURVEYORS
2 VICTORIA ST. MANCHESTER.

9265



SECOND FLOOR PLAN



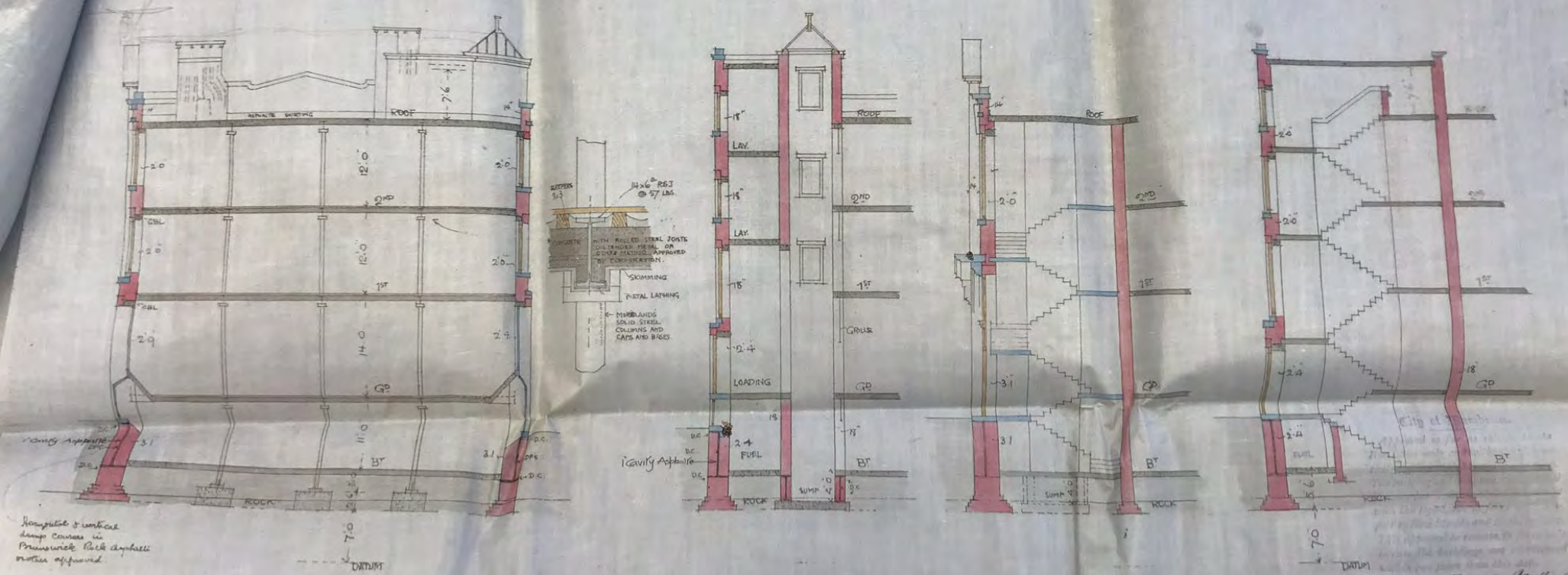
ROOF PLAN

WAREHOUSE. WHITWORTH STREET WEST. MANCHESTER.

SCALE EIGHT FEET TO AN INCH.

H.C. McCULLOCH and A.G. ANDREW
ARCHITECTS and SURVEYORS
2 VICTORIA ST MANCHESTER

9265



Horizontal & vertical damp courses in Penruwick Patch Asphalte mortar approved.

SECTION A·A B· C· D·

13 Jan 4

5·2

WAREHOUSE. WHITWORTH STREET WEST. MANCHESTER.

SCALE EIGHT FEET TO AN INCH.

H.C. McCULLOCH AND A.G. ANDREW
ARCHITECTS AND SURVEYORS
2 VICTORIA ST MANCHESTER

9265





13 Jan. 9

J. Howarth

Henry Tice

5.27

WAREHOUSE. WHITWORTH STREET WEST. MANCHESTER.

SCALE EIGHT FEET TO AN INCH.

H.C. McCULLOCH and A.G. ANDREW
ARCHITECTS AND SURVEYORS
2 VICTORIA ST MANCHESTER

9265



Projections not to exceed 12"



Projections not to exceed 24"

All dampproofs to be in chases 6" a height of 12.0 above footpath

ROWE STREET

WHITWORTH STREET WEST

5.26

Survey

Prog. No. 9265

THE CORPORATION OF THE CITY OF MANCHESTER.

I hereby give you Notice that it is my intention to erect certain Buildings in this City, and the following particulars relate thereto, namely:—

SUBJECT		PARTICULARS
Christian and Surname in *full*, Address, and Occupation of person for whom Buildings to be erected.	1	Llewelyn Andrew, Merchant 2 Carr Street, Blackfriars Street, Manches
Name and Address of Architect.	2	W.G. McCulloch and A.G. Andrew 2 Victoria Street, Manchester
Description of Buildings and of the Materials to be used in construction of same.	3	Brick Stone, Concrete, steel.
Situation of Buildings.	4	Whitworth Street West, Bugle Street and Rowe Street Knott Mill
Level or intended Level of Ground Floor, with reference to surface or Street.	5	Average 3'-0"
Intended use of Buildings.	6	Warehouse
Width of Streets or Open Space opposite Buildings.	7	Whitworth Street West 75'-0" Bugle St 36 Rowe Street 36.0
Size and Description of Drains.	8	9" 6" or 4" glazed socketted earthenwar
Inclination of Drains.	9	1 in 60
Description of Outlet to Drains.	10	Sewers
How supplied with Water.	11	Corporation
Description of Closet Accommodation.	12	Pedestal W.C.
Intended number of persons to be employed in Buildings to be used as Warehouses, &c.	13	25 Males 15 Females

CIV. 10.14

Prog. No. 12...

CORPORATION OF THE CITY OF MANCHESTER.

I hereby give you Notice that it is my intention to erect certain Buildings in this City, that the following particulars relate thereto, namely :—

No.	SUBJECT	PARTICULARS
1	Christian and Surname in *full*, Address, and Occupation of person for whom Buildings to be erected.	1 Messrs Hallen Industrial Motors Ltd. Knott Mill. Manchester
2	Name and Address of Architect.	2 Cyril G. Hinchen 8, Exchange St. Manchester
3	Description of Buildings and of the Materials to be used in construction of same.	3 Brick, reinforced concrete, slate & usual materials
4	Situation of Buildings.	4 Whitworth Street West Manchester
5	Level or intended Level of Ground Floor, with reference to surface or Street.	5 12" above crown of street
6	Intended use of Buildings.	6 Offices & garage
7	Width of Streets or Open Space opposite Buildings.	7 75'-0"
8	Size and Description of Drains.	8 4" & 6" glazed earthenware socketted pipes
9	Inclination of Drains.	9 1 in 40
10	Description of Outlet to Drains.	10 Existing sewers Rowe & Cheetham St.
11	How supplied with Water.	11 Corporation supply
12	Description of Closet Accommodation.	12 One on G.F. : one of mezzanine & 2 on 2nd floor
13	Intended number of persons to be employed in Buildings to be used as Warehouses, &c.	13 12 Males ..... Females
14	Intended number of persons to be employed in Factory or Workshop.	14

AND I herewith deliver at the Offices of your Architect complete Plans and Sections, *duly signed*, of every floor of such intended Building, drawn to a scale of not less than one inch to every eight feet, showing the [illegible]

8, EXCHANGE STREET,
MANCHESTER.

June 19th, 1914.

...,
...provements Committee,
Town Hall,
MANCHESTER.

CITY ENGINEER'S & ARCHITECT'S OFFICE
RECEIVED
19 JUN 1914
IMPROVEMENT & BUILDINGS BRANCH

Dear Sir,

Re Halley's. Motor Garage .

I herewith forward you Drawings shewing the revised Emergency Staircase, in connection with the first and second floor at the above garage.

I pointed out to your surveyor that the whole building would not be used by more than one dozen people or so, and to build a second stone Staircase for this number greatly cripples the floor space of the Garage where every inch of space is required.

To overcome this difficulty, I have seen the Highways Department and I think they would be willing to allow us to erect an Iron Staircase externally, plans of which I herewith forward for your consideration.

CEA/EM

Yours faithfully, Cyril E. Ainley

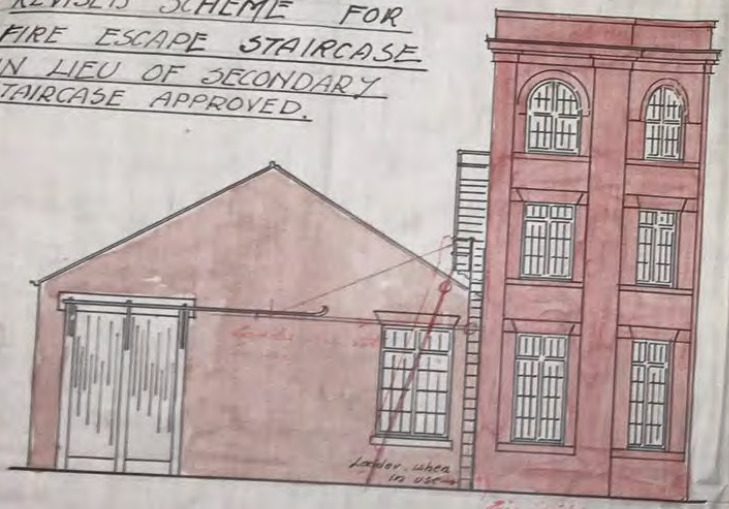
12083
232

HALLEY'S INDUSTRIAL MOTORS LTD

GARAGE IN WHITWORTH ST. WEST. M/C.

12083

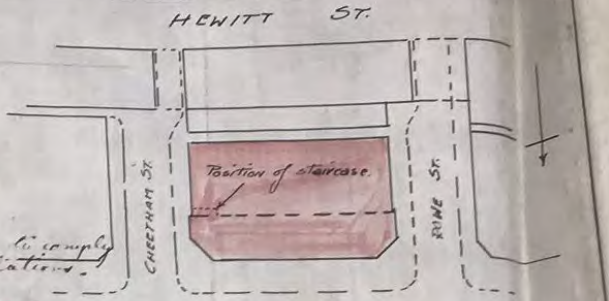
REVISED SCHEME FOR FIRE ESCAPE STAIRCASE IN LIEU OF SECONDARY STAIRCASE APPROVED.



ELEVATION TO CHEETHAM ST.



BACK ELEVATION.



BLOCK PLAN.

Application will be made to Paving Committee for permission to put Ladder over Street.

Approved by the Council of Manchester.

This approval is given as far as it relates to the Bye-Laws only and without reference to strength or stability of the structure. The building and work must be executed in every particular in strict accordance with the Bye-Laws in force with respect to New Streets and Buildings &c. This approval to remain in force only in case the buildings are commenced within two years from this date.

Dated this 22 nd day of July 1914.

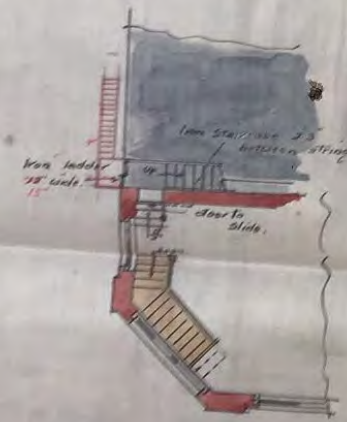
Chairman

Town Clerk

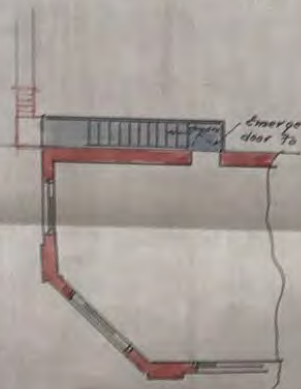


GROUND FLOOR PLAN.

SCALE :- 8 FEET TO AN INCH.



1st. FLOOR PLAN.



2nd. FLOOR PLAN.

Cyril S. Hurley
Architect
8 Exchange St.
Manchester.
JUNE 18th 14.

MOTOR GARAGE
WHITWORTH ST. WEST, MANCHESTER. — FOR HALEY'S INDUSTRIAL MOTORS LTD —

SCALE = 8 FEET TO AN INCH.

12083



SECTION B.B.



BLOCK PLAN



FRONT ELEVATION

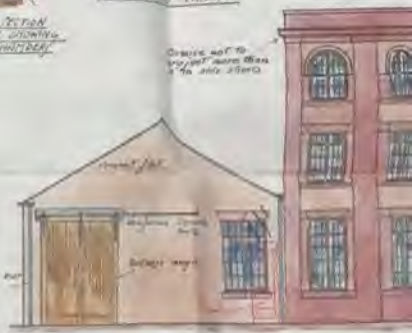


ELEVATION OF ANGLE

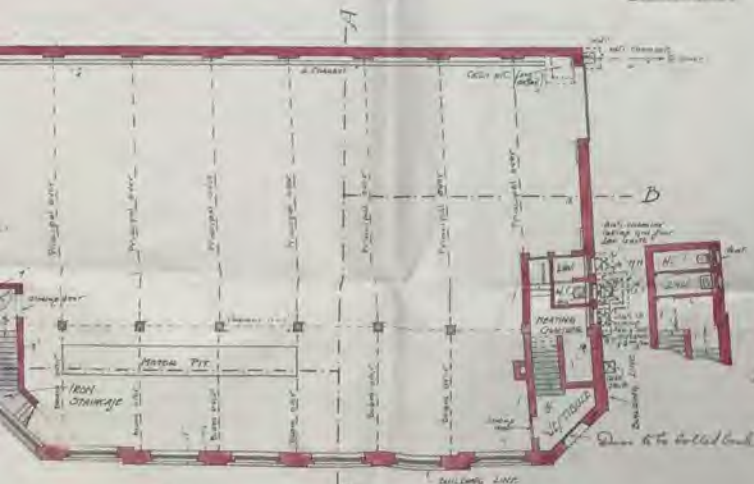
ELEVATION TO ROWE ST.



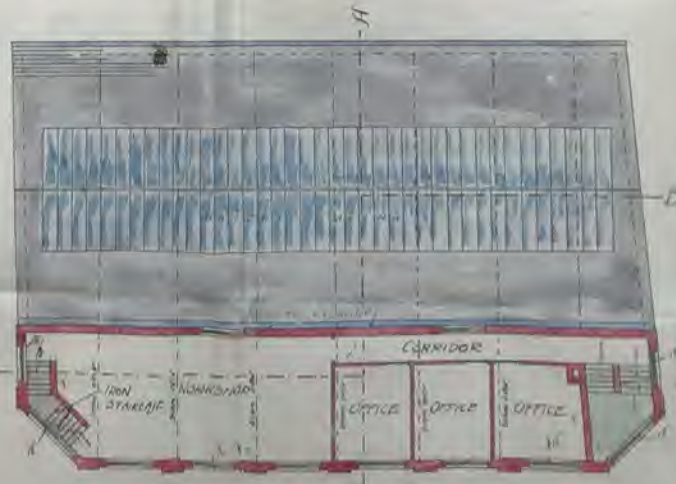
SECTION A.A



ELEVATION TO CHEETHAM ST.



GROUND FLOOR PLAN



FIRST FLOOR PLAN



SECTION THRO' PIT



SECOND FLOOR PLAN

City of Manchester.

Approved in so far as relates to the Bye-Laws only and without reference to strength or stability of the structure of building and work must be executed in every particular in strict accordance with the Bye-Laws in force with respect to New Streets and Buildings, &c. This approval to remain in force for one year from this date.

Dated this 23rd day of April 1914

John Knight Chairman

Henry Short City Architect

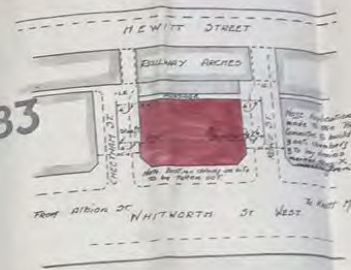
MOTOR GARAGE
WHITWORTH ST. WEST, MANCHESTER. — FOR HALLEY'S INDUSTRIAL MOTORS LTD —.

SCALE = 8 FEET TO AN INCH.

12083



SECTION B.B.



BLOCK PLAN SCALE 1/200

SECTION THRO' CHIMNEY

SECTION THRO' PIT

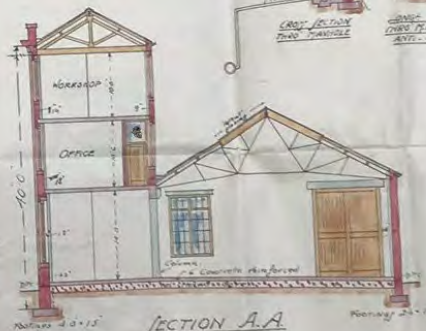


FRONT ELEVATION

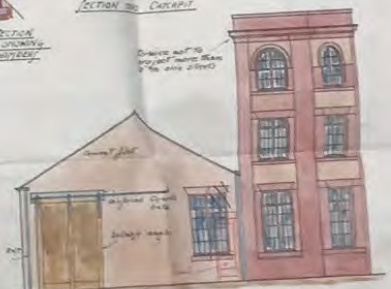


ELEVATION OF ANGLE

ELEVATION TO ROWE ST.



SECTION A.A



ELEVATION TO CHEETHAM ST.

City of Manchester.

Approved as far as relates to the Bye-Laws only and without reference to strength or stability of the structure. The building and work must be executed in every particular in strict accordance with the Bye-Laws in force with respect to New Streets and Buildings &c. This approval to remain in force only unless the buildings are commenced within five years from this date.

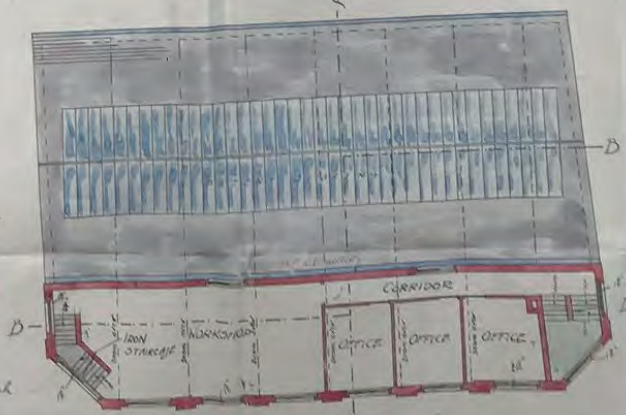
Dated this 22nd day of APR 1914

Chairman

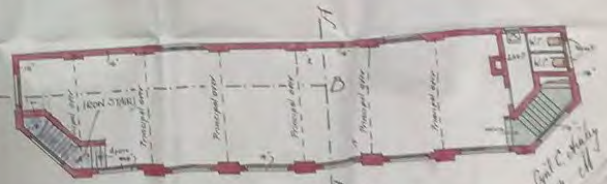
City Architect



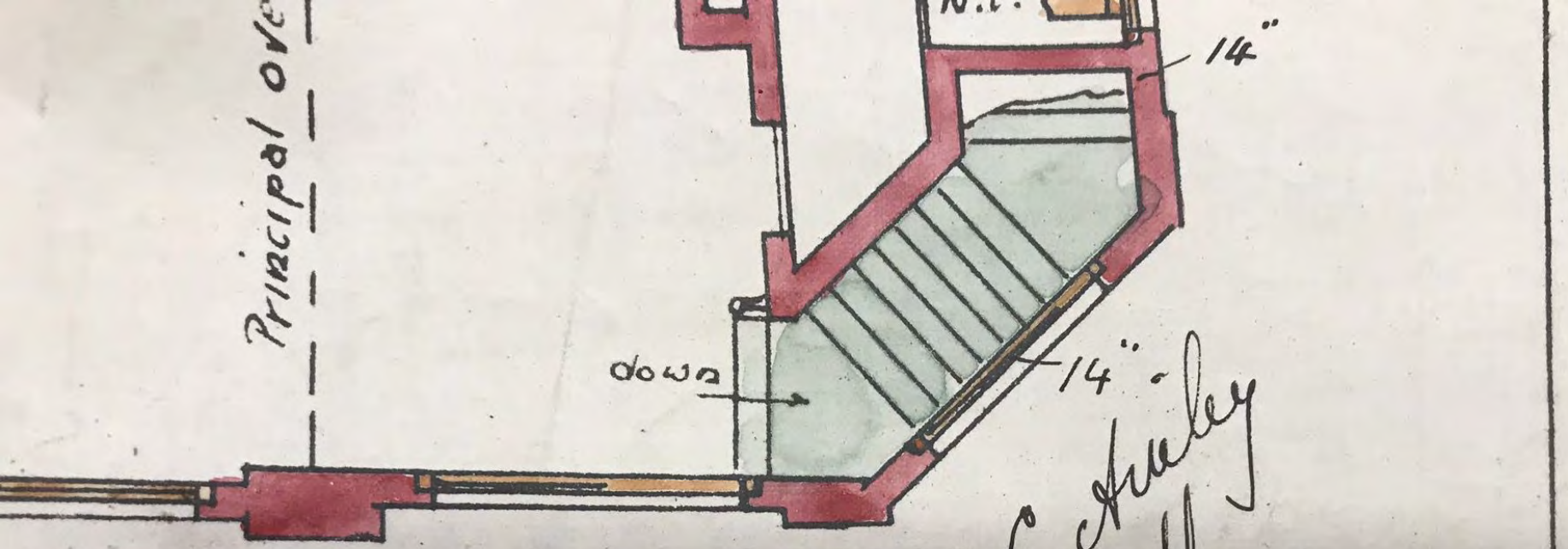
GROUND FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN



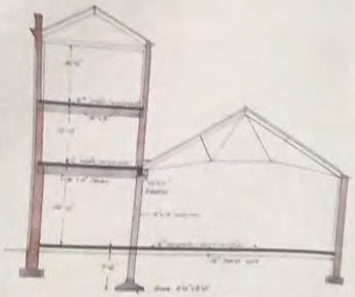
N

Cyril C. Ainley
M. A.

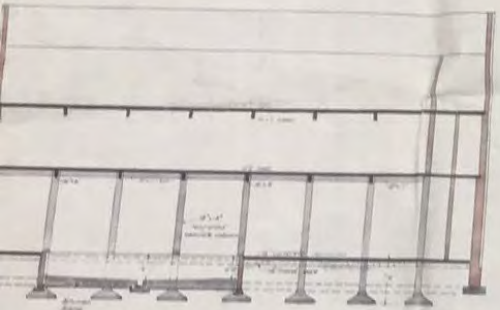
Cyril C. Ainley
architect
8 Exchange St.
Manchester.

april. 1914.

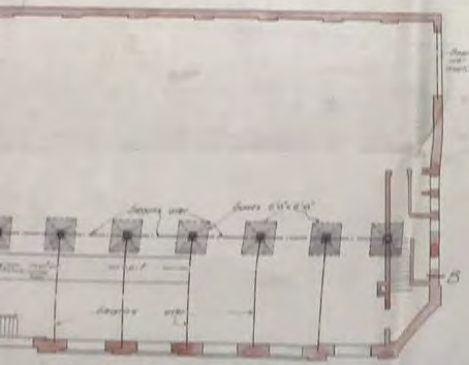
12083



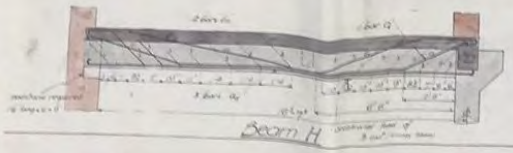
Cross Section



Section BB

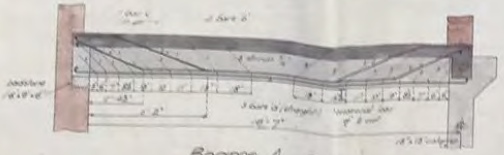


Ground Floor Plan

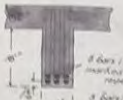


Beam H

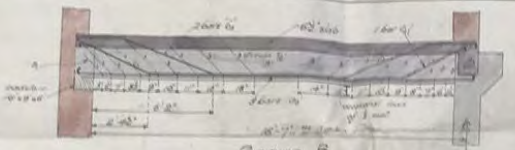




Beams A 2 No's



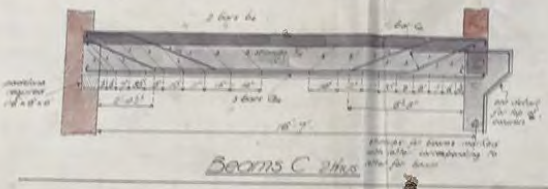
Section



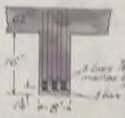
Beam B



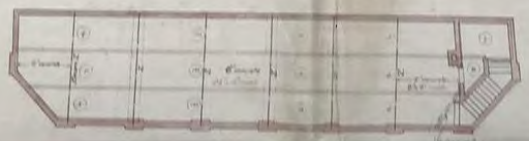
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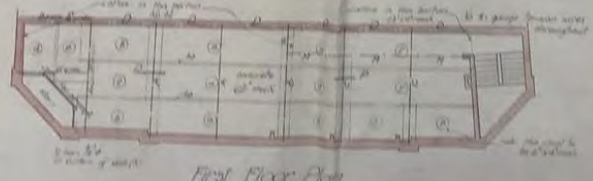
Beams C 2 No's



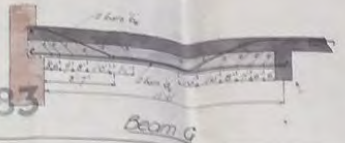
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2nd Floor Plan



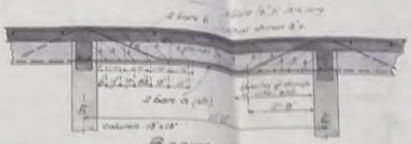
First Floor Plan



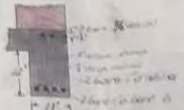
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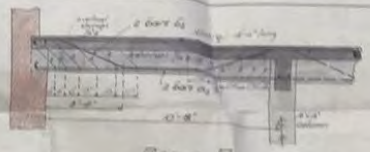
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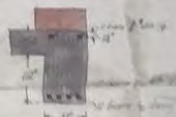
Beams D 6 No's



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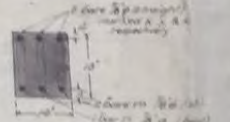
Beam E



Section

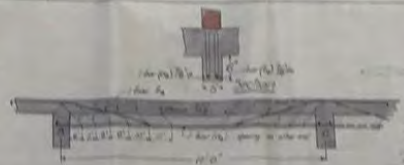


Beams F 2 No's

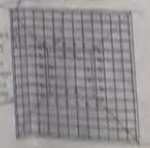


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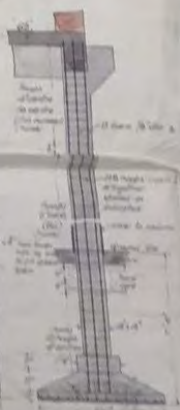
2nd Floor Beams Z 6 No's



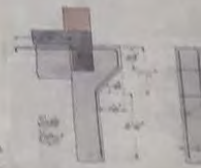
Beams M 3 No's



Box of Base



Elevation of Column





Column Section

GARAGE for HALLEN'S INDUSTRIAL HOMES LTD
NORTHCOTE ST. WEST, MANCHESTER
Structural Concrete Details

P.D. JOHNSON, CLAPHAM MOORE & PARTNERS
CHARTERED CONSULTING ENGINEERS

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