

Unite Students and Manchester Metropolitan University

Cambridge Hall, Manchester

Geotechnical and Geoenvironmental Desk Study

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This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Appendix A – Groundsure Report
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Executive Summary

Ove Arup and Partners Ltd (Arup) has been commissioned by Unite Students and Manchester Metropolitan University to undertake a Geotechnical and Geoenvironmental Desk Study for the proposed development at Cambridge Halls of Residence, Cavendish Street, Manchester (the site).

Previous development on the site includes terraced residential buildings shown on the earliest historical map records (1848), timber yards, and a warehouse. A tramway operated through the site from the 1880s until it was dismantled in the 1940s. The warehouse and residential properties were demolished by the 1960s. The site was undeveloped in the 1980s, understood to be university playing fields. The most recent development, student accommodation, was constructed by the late 1990s and still remains on site today.

Based on geological mapping and historical ground investigation, ground conditions are expected to consist of made ground underlain by glacial sand and gravels followed by glacial till. Below these deposits, bedrock is encountered as a highly to moderately weathered sandstone around 6.8m to 9.9mbgl.

The made ground at the site is a potential source of contamination. Historical ground investigation conducted prior to the development of the student accommodation did not encounter any significant contamination and remediation was not required to enable the current development. Any residual risks associated with the site history will be assessed during ground investigation.

Obstructions have been reported in the historical ground investigation information for the site, where intact brick walls encountered at 2mbgl in the north of the site associated with the former residential development and a concrete slab at 4mbgl in the south of the site associated with the former warehouse development. The presence of potentially intact concrete slabs or other substructures may constrain the construction of foundations. It is anticipated that some enabling works, including obstruction removal, would have been conducted prior to development of the student accommodation building in the late 1990's however the extent of enabling works carried out is not known.

Three United Utilities sewers are present on site, aligned northeast to southwest, the most notable is a 1950mm diameter brick lined sewer located at an invert level of approximately 12mbgl in the centre of the site. The layout of new foundations will have to adhere to United Utilities wayleaves and foundations should be designed to not adversely load any of the sewers.

Based on extensive experience of nearby sites, the underlying sandstone will provide a suitable founding material for piled foundations and is the most likely solution for the proposed development. At this stage, it is considered likely that a bored cast in situ piling solution will be most appropriate with piles socketed into the underlying sandstone, dependent on the thickness of the weathered profile.

The Preliminary UXO Risk Assessment has assigned a 'High' Preliminary Risk Level and a Stage 2 Detailed UXO Risk Assessment is recommended prior to any intrusive works on the site.

Ground investigation will be required to confirm the stratigraphy and develop a better understanding of the geoenvironmental and geotechnical risks at the site and provide data for foundation design. Significant access constraints have been identified; this needs to be considered during the design of the ground investigation.

1. Introduction

1.1 Commission and scope

Ove Arup and Partners Ltd (Arup) has been commissioned by the Unite Students and Manchester Metropolitan University to undertake a Geotechnical and Geoenvironmental Desk Study to inform the Cambridge Hall development in Manchester.

The objective of the Geotechnical and Geoenvironmental Desk Study is to review available historical, geotechnical and geoenvironmental information pertaining to the site and the nearby surrounding area, highlighting any potential ground related risks to the proposed development. The Desk Study also aims to inform the scope and preliminary design of an intrusive ground investigation and identify any constraints relating to the ground investigation. It is intended that this document can also be submitted to the Manchester City Council to support the planning application.

1.2 Sources of information

The following sources of data and information has been reviewed as part of this desk study:

- Groundsure Geo and Enviro Insight reports (July 2024) [1][2];
- Groundsure Map Insights report (July 2024) [3];
- British Geological Survey (BGS) geological mapping and adjacent borehole records available via the online GeoIndex viewer [4];
- Igne Preliminary Unexploded Ordinance Risk Assessment report (July 2024) [5];
- Department of Environment (DoE) Industry profiles (published in 1995) [6];

Details of the sources used are indicated in subsequent sections and are provided in the references section. Supporting information has been included in the appendices where appropriate.

1.3 Report structure

This report has the following structure:

- Section 2: Provides a description of the site in its current condition;
- Section 3: Documents the known site history and the geological and geoenvironmental setting;
- Section 4: Provides a summary of the key geoenvironmental constraints identified in relation to the proposed development;
- Section 5: Provides a summary of the key geotechnical constraints identified in relation to the proposed development;
- Section 6: Presents the geotechnical and geoenvironmental risk register; and
- Section 7: Presents conclusions of this assessment and recommendations for ground investigation.

1.4 Use and limitations of the report

This report was prepared by Arup on behalf of Unite Students and Manchester Metropolitan University (the Client) for Cambridge Hall, Manchester. It considers our client's instructions and requirements and addresses their priorities at the time. This report is not intended for, and should not be relied on by, any third party and no responsibility is undertaken to any third party in relation to it.

All reasonable skill, care and diligence have been exercised within the timescale available and in accordance with the technical requirements of the brief. Notwithstanding the efforts made by the professional team in preparing the report it is possible that other ground contamination or conditions as yet undetected may exist and consequently reliance on this report must be limited accordingly.

2. Site description

2.1 Site location and extent

The site is situated south of Manchester City Centre and approximately 100m south of the A57(M) Mancunian Way. The site is bounded to the north by Manchester Metropolitan University Faculty of Business and Law, to the west by the A5067 Road and Higher Cambridge Street, to the east by Lower and Higher Chatham Street and to the south by Boundary Street W.

The site is rectangular in shape covering an estimated 0.82ha and is centred on National Grid Reference SJ 84157 96972. Most of the site houses a student accommodation building with three distinct courtyard areas and Cavendish Street runs through the centre of the site.

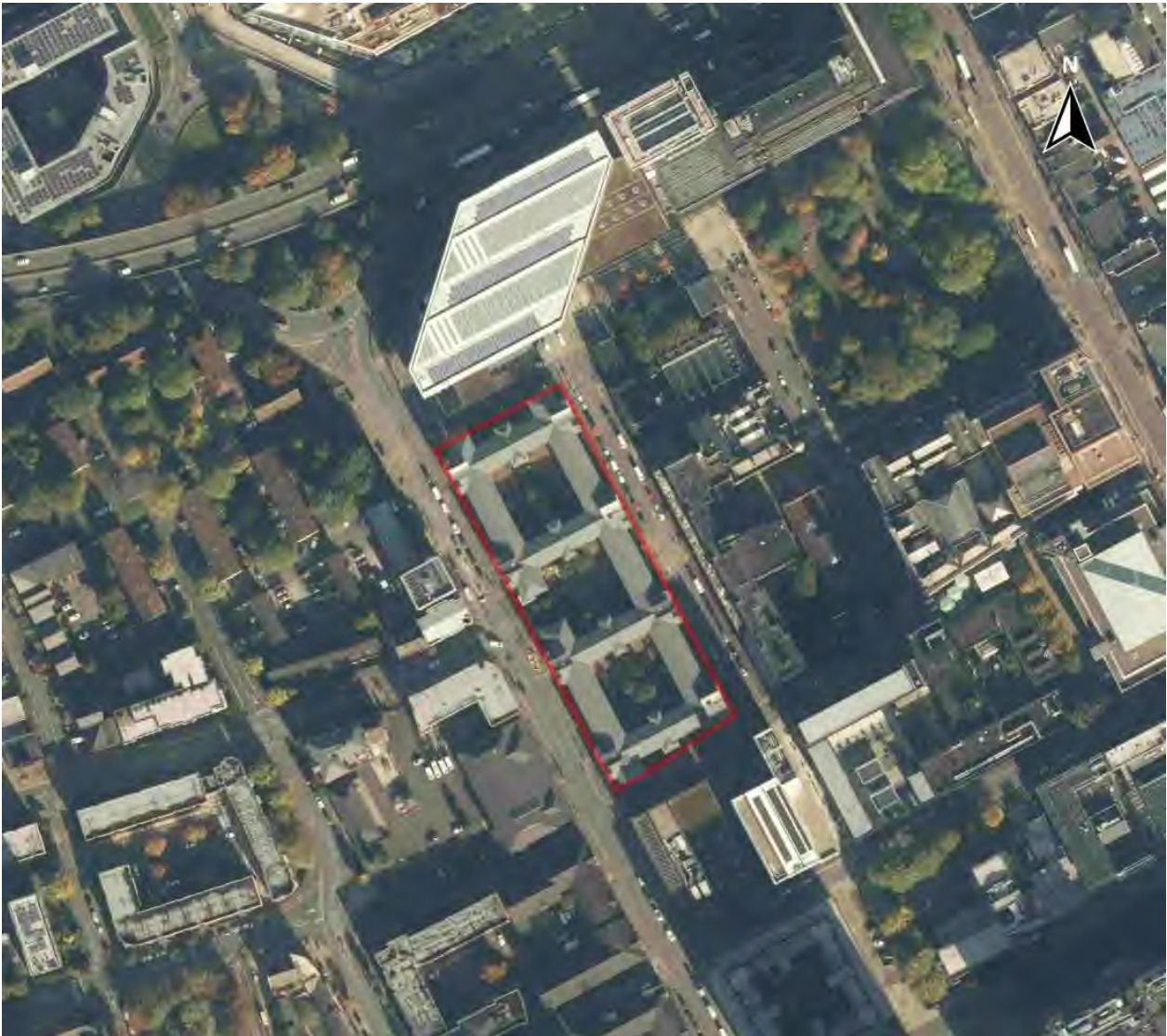


Figure 1: Site location

2.2 Topography

The topography of the site has been interpreted from Ordnance Survey Terrain 50 DTM data. The site is relatively flat and ranges between 36mOD to 37mOD.

2.3 Utilities and drainage

Following client discussions with United Utilities and information received [10], a large brick sewer is known to run through the centre of the site, additionally there is a foul sewer on a parallel alignment. Further north, another sewer passes beneath the existing building. The location of the sewers is shown in Figure 2.

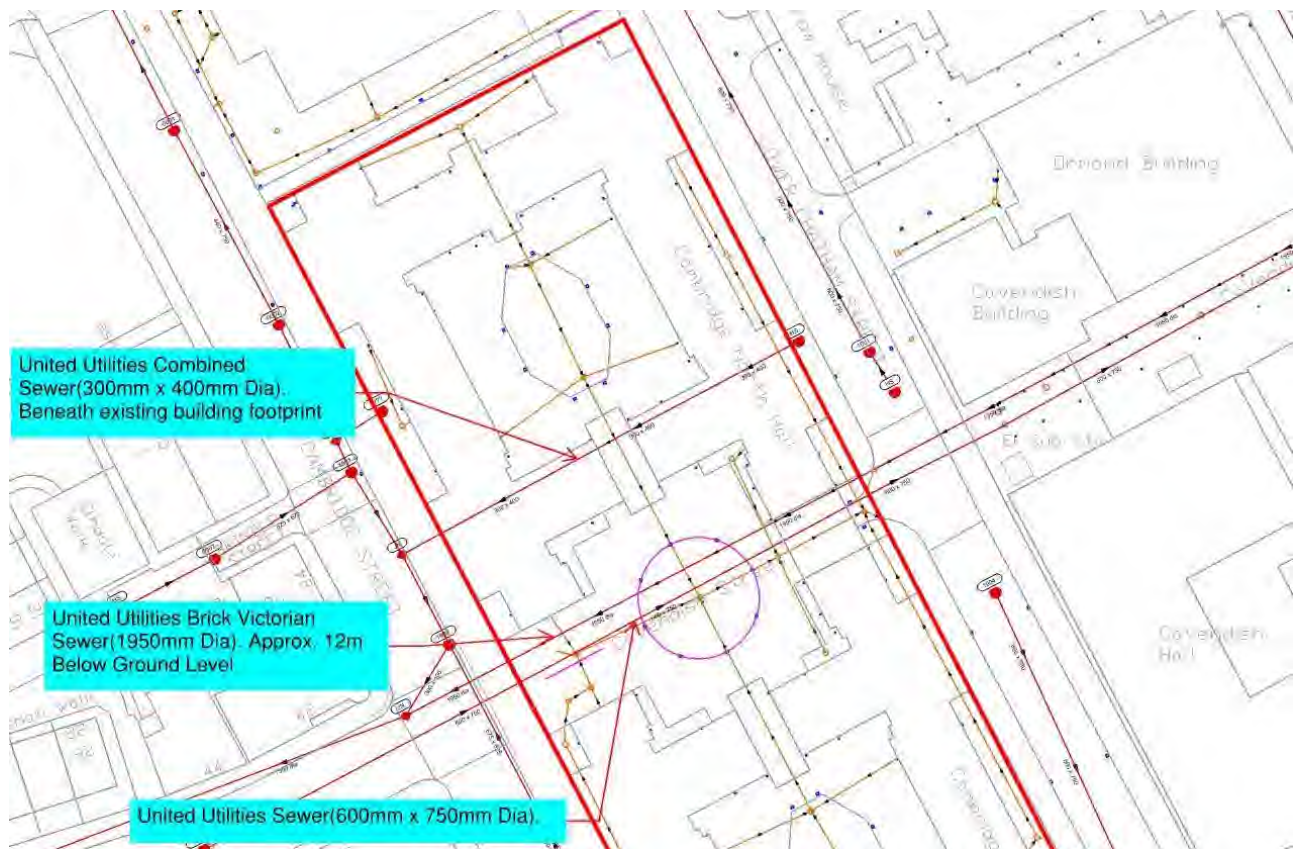


Figure 2 United Utilities assets present on site

The nearest manhole chamber from available United Utilities information reports that the invert level of the manhole chamber is 24.38mOD and the cover level is 36.64mOD for the deeper 1950mm brick lined Victorian sewer. The sewer has 10.31m of cover and the invert level is 12.26m below ground level from the nearest manhole information, the invert and cover levels on the site itself may be slightly different.

The shallower 300mm x 400mm diameter sewer in the north has a cover level of 36.55mOD and an invert level of 33.01mOD from the nearest manhole information. The sewer has 3.14m of cover and the invert level is 3.54m below ground level from the nearest manhole information, the invert and cover levels on the site itself may be slightly different.

No information on cover or depths is held for the 600mm x 750mm United Utilities sewer.

2.4 Proposed development

The proposed development comprises demolition of the existing halls of residence and erection of two buildings of 30 and 24 storeys above ground, plus basement and rooftop plant levels, comprising purpose-built student accommodation with internal and external rooftop communal amenity space (Sui Generis). Ground floor usage will be commercial and community space (Flexible Use Classes E, F1 or F2). The development also includes hard and soft landscaping and associated highway works.



Figure 3 Indicative layout of proposed development

3. Site history and environmental setting

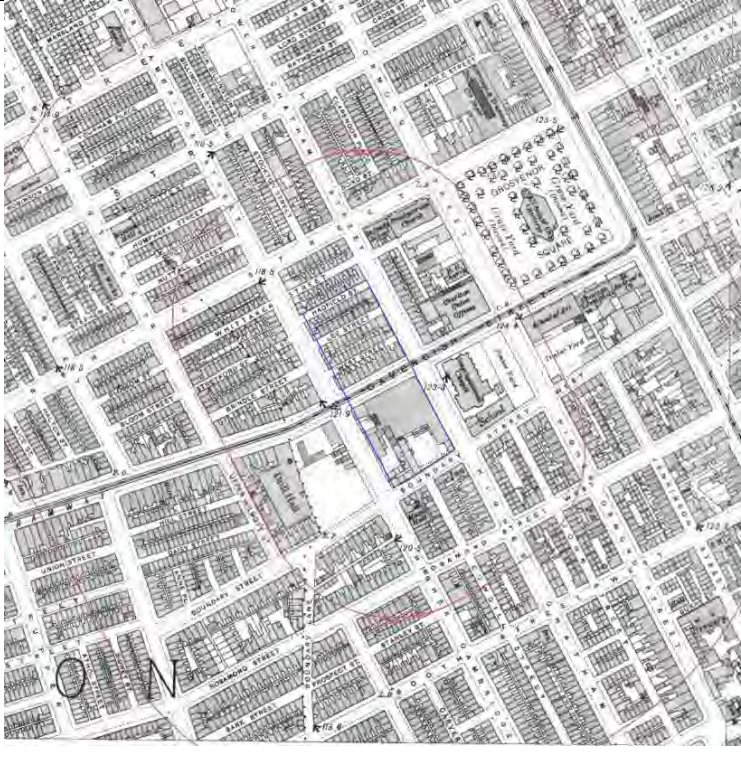
3.1 Site history

The history of the site has been summarised below based on historical mapping and aerial photography (from Groundsure and Google Earth Pro). The following information has been reviewed:

- Published Ordnance Survey (OS) mapping dating from 1848 to 2024 obtained from Groundsure [3];
- Town Plans of England and Wales / Scotland viewed on the National Library of Scotland website [7];
- Google Earth imagery dating from 2000 to 2021;

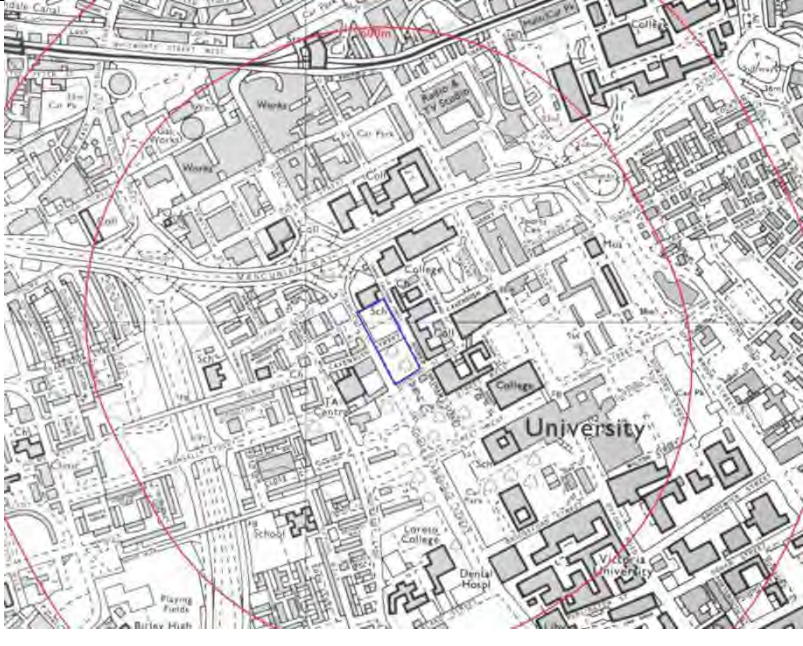
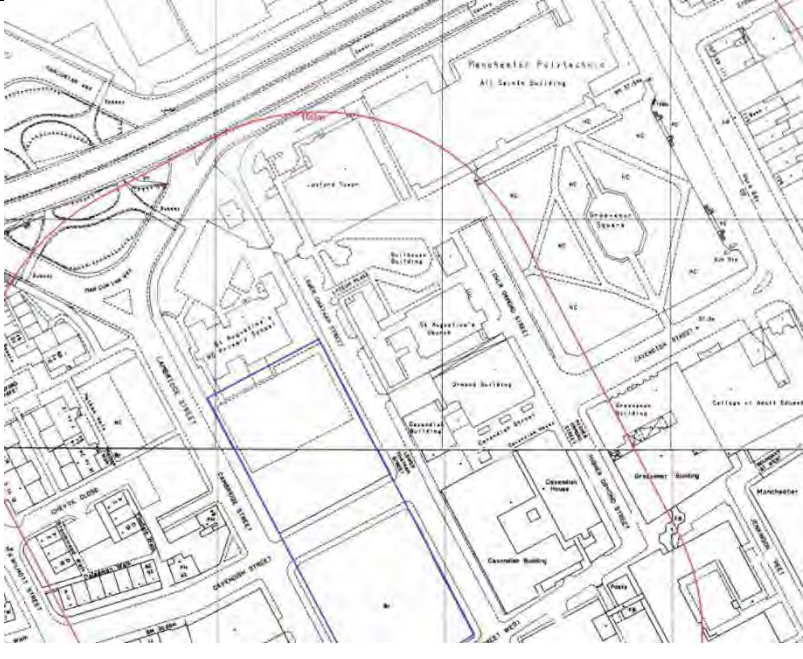
Table 1: Summary of site history

Year	Map/aerial image extract	Observations
1848 County Series 1:10,560		The site consists of terraced residential buildings. The surrounding land is in a residential area.
1851 Scale Town Plan 1:1,056		The northern half of the site consists of terraced residential buildings. In the south, a park, timber yards and some terraced residential buildings are present. The site is split by Cavendish Street. Four pumps are present within the site. There are more timber, stone and slate yards to the west of the site, a brewery and storehouse to the south, and a college and church to the east.

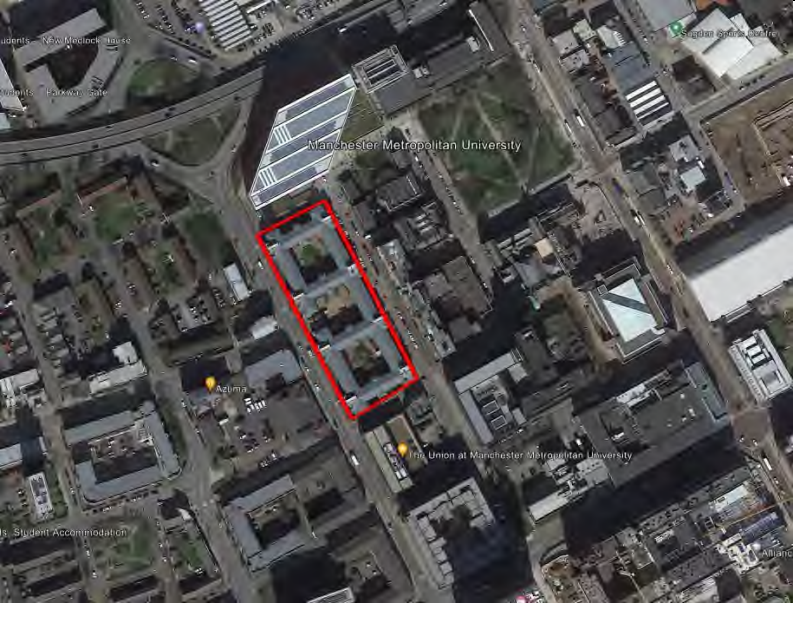
1889-93 County Series 1:2,500		Additional residential buildings have been built in the northern section of the site. A tramway goes through the middle of the site along Cavendish Street. A Carriage & Tramway Depot is located 150m northeast of the site. The southern section of the site is occupied by a large unspecified building. Directly east of the site is a school, chapel and timber yard, with offices on the opposite side of Cavendish Street. A drill hall is shown to the west of the site.
1908 County Series 1:2,500		There has been a change in the footprint for the unspecified building situated in the south of the site. There is no significant change for the remainder of the site.

1922 County Series 1:2,500		The building situated in the south of the site is now labelled as a warehouse. The types of goods stored is not known.
1948-53 National Grid 1: 1,250		The tramway running through the site and along Cavendish Street is no longer present. Some of the residential houses surrounding the site to the north and to the west have now been demolished. A hospital and garage have been constructed east of the site. Two buildings south of the site are now listed as works.

1951-55 National Grid 1:1,250		Some of the terraced buildings located in the north of the site are no longer present.
1961- 1962 National Grid 1: 1,250		The warehouse present in the south of the site has been demolished, which is now shown as a vacant plot of land.
1965-70 National Grid 1:1,250		Most of the terraced residential buildings present in the north of the site have been demolished. St Augustine's RC Primary School is present north and adjacent to the site. Mancunian Way has been built 100m north of the site, with subways underneath.

1981-85 National Grid 1:10,000		Both north and south of the site are shown to be vacant, understood to be playing fields. Trees are annotated in the southern area of the site. Manchester Metropolitan University buildings are shown in the surrounding area.
1987-92 National Grid 1:1,250		No significant changes are observed on site. An electricity substation is present approximately 200m east of the site. Various buildings have been built around the site, namely the Loxford Tower and Manchester Polytechnic (Manchester Metropolitan University)

2000 Google Earth Imagery		Cambridge Hall student accommodation has been built. Cavendish Street is no longer shown, the alignment through the site is still accessed by pedestrians and cyclists. There is an open car park directly south of the site.
2009 Google Earth Imagery		St Augustine's RC Primary School has been demolished. Loxford Tower has been demolished and an open car park is now present on site.

2017 Google Earth Imagery		Manchester Metropolitan University Business School has been constructed directly north of the site. The area south of the site that was formerly a car park has been developed into Manchester Metropolitan University buildings.
2023 Google Earth Imagery		No significant change.

3.1.1 Summary

The 1848 Ordnance Survey map showed the north of the site being occupied by terraced residential buildings. By 1851, timber yards are shown in the south of the site and in the early 1900s, a large warehouse was built in the south of the site. A tramway operated through the site from the 1880s until it was dismantled in 1940s. The warehouse and residential properties were demolished by 1960s. The site was undeveloped in the 1980s, understood to be university playing fields. By the year 2000, a student accommodation building occupied the site with no further change being observed on the site to date. The surrounding area has seen electric substations, car parks, schools, a garage, and a hospital.

3.2 Geology

The following sources of information have been reviewed:

- British Geological Survey (BGS) GeoIndex online viewer [4];
- Groundsure GeoInsight report [1];
- BGS Solid and Drift Map Sheet SJ89NW [8];

3.2.1 Made ground

Given the history of the site, which includes the presence of multiple buildings dating back to the earliest mapping and their subsequent demolition, made ground is anticipated to be present.

3.2.2 Superficial deposits

Available BGS mapping shows the site to be underlain by superficial Glaciofluvial Sheet Deposits of sand and gravel. The older 1976 1:10,000 map indicates gravel to be thin and patchy over boulder clay (Glacial Till).

3.2.3 Solid geology

Bedrock at the site is sandstone of the Chester Pebble Beds Formation of the Sherwood Sandstone Group. The stratigraphically older Manchester Marls Formation is mapped 200m east of the site, close to the West Manchester Fault.

3.3 Historical ground investigation data

3.3.1 BGS borehole records

The BGS online borehole database provides access to scans of borehole logs for historical ground investigations across the UK. A summary of nearby records is shown below.

Table 2: Summary of nearby borehole records.

Borehole ID	Location	Year	Comment
SJ89NW4180	100m NE	2008	Geothermal borehole drilled to 92m. It encountered 1m of made ground, 6m of superficial materials (including 4m of alluvium) and a very weathered bedrock at a depth of 7mbgl. Marl underlies the sandstone strata and is encountered at a depth around 36mbgl. Groundwater was encountered at approximately 9mbgl.
SJ89NW4197	100m N	2009	This borehole encountered 2m of made ground, 9.7m of superficial materials (sand and gravel overlying clay). Weathered sandstone was encountered at a depth of 11.7mbgl. Marl underlies the sandstone strata and is encountered at a depth around 36.5mbgl. Groundwater was encountered at approximately 8.51mbgl.
SJ89NW4196	60m N	2009	This borehole encountered 2.6m of made ground, 11.3m of superficial materials (sand, gravel and clay). Weathered sandstone was encountered at a depth of 13.9mbgl. Marl underlies the sandstone strata and starts to be encountered at a depth of 32mbgl. Groundwater was encountered at approximately 14.32mbgl.

3.3.2 Arup local knowledge

Arup has local knowledge of the area, having undertaken several desk studies and ground investigations at neighbouring sites. The plan of nearby Arup sites is shown in Figure 4.

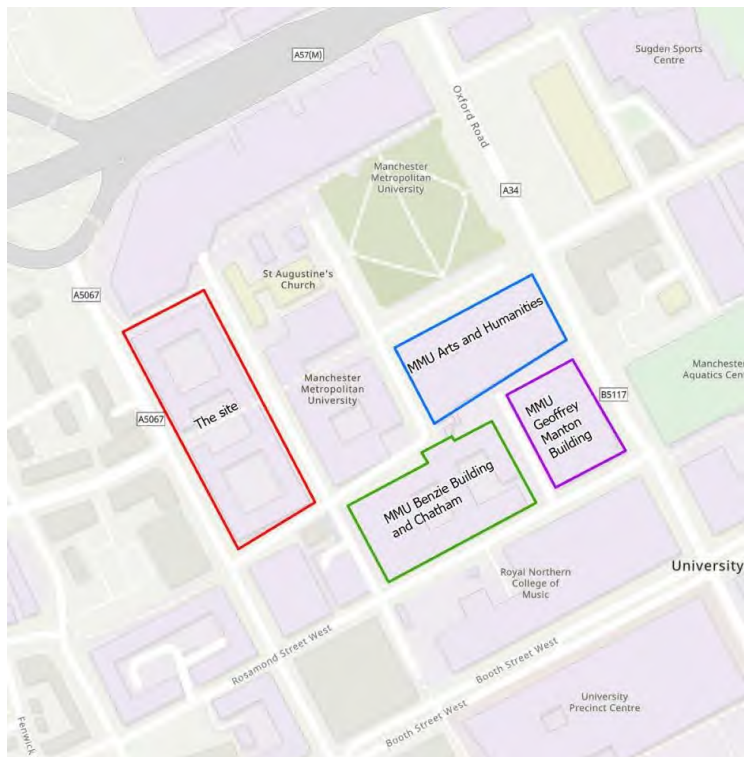


Figure 4 Arup nearby sites

MMU Halls of Residence (located within the site boundary)

Ground investigation conducted on the development site in 1993/1994 by Exploration Associates and LTG Ground Engineering for the existing buildings present comprised nine trial pits and three cable percussive boreholes ranging in depth from 8m to 11m. Made Ground was encountered to a depth of between 1m and 4m. This was described as demolition rubble mixed with reworked glacial material. This was underlain by Glacial Sands and Gravels which in turn overlie Glacial Till. The Glacial Sands and Gravels comprise medium dense granular deposits and the base of the Sands and Gravels is between 3m and 4m below ground level. The Till comprises stiff brown silty clay. Sandstone bedrock was encountered at depths between of 6.8m and 9.9m across the site. Ground water level was not recorded during the investigation.

MMU Benzie Building and Chatham Tower

Ground investigation conducted approximately 50m southeast of the site in 2010 by Ian Farmer Associates included three boreholes with rotary coring follow on, ten window samples and twelve trial pits. The ground investigation revealed a variable thickness of made ground (1.2m to 2.4m) across the site. This was underlain in places by a thin layer of Sands and Gravels (0.2m to 0.5m) over Glacial Till (0.8m to 3.6m). Sandstone bedrock was encountered at depths ranging from 3.4m to 4.6m below ground level. Generally, no visual or olfactory evidence of contamination was encountered within the bulk of the Made Ground or within the underlying strata. However, hotspots of hydrocarbons were noted to be present in the Made Ground in samples obtained adjacent to pipe work associated with a former oil tank in the basement to the Chatham Tower building. Groundwater was not encountered during the investigation and the installations remained dry during the monitoring period. Gas monitoring did not reveal elevated levels of ground gas on the site.

Geoffrey Manton Building

Ground investigation conducted approximately 150m southeast of the site in 1993 by Exploration Associates included five cable percussive boreholes with rotary coring follow on. The deepest borehole was 25m deep (base of hole 12.97mOD). Thirteen trial pits were also completed ranging in depth between 1.4m and 4.2m.

The boreholes and trial pits encountered Made Ground to a depth of between 1.15 to 2.6m bgl. This is underlain by fluvio-glacial sheet deposits, comprising medium dense sand and gravels, to depths between 2.8m and 3.3mbgl. The top of the sandstone bedrock was encountered between 3.2mbgl and 4.2mbgl across the site. Two boreholes proved the base of the sandstone as being between 20.7m (17.27mOD) and 19.5m (18.44mOD) below ground respectively. Beneath this is a weathered moderately weak siltstone. Gas and groundwater monitoring wells were installed in the boreholes on completion. The data from this indicates a groundwater level of 11m below ground level.

MMU Arts and Humanities

Ground investigation conducted approximately 150m east of the site in 2016/2017 by Resource and Environmental Consultants (REC) limited included windowless sampling, trial pits and seven cable percussive boreholes with rotary coring follow on. The exploratory holes encountered Made Ground to a depth between 1.0 to 4.5m bgl. This was underlain by Glacial Till (up to 3.5m thick) followed by sandstone bedrock encountered at depths ranging from 4.2 to 7.1m bgl. Underlying the sandstone strata, the Manchester Marls Formation was encountered at depths ranging from 9.5 to 18.5m bgl. The top of the Manchester Marl was encountered at shallow depths in the eastern portion of the site and appeared to dip in a westerly direction. Groundwater levels from monitoring ranged between 9.0 to 11.9m bgl.

3.3.3 Summary

From Arup's local knowledge, the site is expected to have made ground (up to around 4.5m thick) present underlain by glacial sands and gravels (around 2m thick) followed by glacial till (up to around 6m thick). Bedrock described as a highly to moderately weathered sandstone is anticipated to be encountered around 6.8m to 9.9mbgl. Marl is expected to underlie the sandstone at around 32 to 36mbgl. Groundwater level is anticipated to be present circa 9 to 12mbgl based on data from the historical ground investigations conducted in the area.

3.4 Radon

The Groundsure Report indicates that there is a low risk from radon at the site, with less than 1% of properties exceeding the Radon Action Level. Therefore, no radon protective measures are deemed necessary for the site.

3.5 Hydrology and hydrogeology

The bedrock geology is classified as a Principal Aquifer. These are layers with 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.

With regards to superficial deposits, these are designated as Secondary A. These are permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

Groundwater abstractions are shown to be licensed within 2km of the site with the nearest being approximately 55m north of the site. The site is located within Source Protection Zone 3.

There are no surface water bodies nearby the site.

3.6 Flooding

The EA flood mapping indicates the risk of flooding from rivers and the sea. From this, the southwestern corner of the site is within flood zone 2 (medium probability).

The highest risk of surface water flooding is a 1 in 30-year rainfall event where surface water levels could be between 0.1m and 0.3m in height. The risk of flooding from groundwater is reported as moderate-high.

3.7 Environmental permits and incidents

Data on environmental permits, waste exemptions, licensed industrial activities and reported pollution incidents are included in the Groundsure report[1][2]. Waste exemptions are listed in the surrounding area,

associated with nearby site development. Nearby environmental permits and waste exemptions are not considered to significantly impact the site or the proposed development.

3.8 Landfills

No active or former landfills are recorded on site.

A former wastepaper works present in 1950s is shown within 500m of the site (277m north), although it is considered not to significantly impact the site or proposed development.

3.9 Unexploded ordnance (UXO)

A Stage 1 Preliminary UXO Risk Assessment was carried out by specialists Igne [5].

Two bomb strikes were recorded on the site causing serious damage to the large building in the southern section of the site and at least ten bomb strikes have been recorded within 300m of the site.

The site has initially been given a High Preliminary Risk Level and further discussion is presented in Section 5.

4. Preliminary geoenvironmental assessment

4.1 Approach

Land contamination can present an environmental liability and a constraint to site development. The principal UK legislation related to land contamination is contained within Part 2A of the Environmental Protection Act 1990. Only land where unacceptable risks are clearly identified, after a risk assessment has been undertaken in accordance with guidance, should be considered as meeting the Part 2A definition of contaminated land. In England policy relevant to site development is set out in National Planning Policy Framework (NPPF) (updated September 2023).

The central objectives of the land contamination regime across the UK are the prevention of significant harm, promotion of sustainable development and a “suitable for use” approach to land remediation. It is founded upon the promotion of a risk assessment approach to managing land contamination, focusing on establishing where risks to human health or the wider environment are unacceptable, and then taking appropriate and cost-effective action to deal with these risks.

Across the UK a source-pathway-receptor approach to contamination risk assessment and management is applied based upon the development of a conceptual model for the site, which identifies potential pollutant linkages. The “source” is defined as any contamination on the site, which may impact one or more “receptors”, including people, plants, ecosystems, building materials and water resources. For there to be a contaminant linkage, and therefore a potential risk, there must be a “pathway” between the source and the given receptor. The conceptual site model (CSM) is used to articulate and systematically guide assessment of risks associated with contamination at the site.

For the purposes of this CSM, understanding of the site history and anticipated ground conditions have been used to identify the potential risks to human health and the groundwater environment.

This preliminary geoenvironmental risk assessment has been prepared to inform decisions related to possible sources of contamination identified at the site. The risk assessment follows the UK approach to assessing contaminated land as outlined in the Land Contamination: Risk Management guidance [9].

4.2 Possible sources

The site has historically housed residential buildings, a tramway, timber yards, a park and warehouse. The current site use is a building used for student accommodation. The surrounding area has seen electric substations, car parks, schools, and a hospital.

Where available, the Department of Environment (DoE) Industry Profiles [6] were used to identify possible contaminants associated with historical land uses and are summarised in Table 3.

Table 3: Possible contaminants based on sources of historical land use

Possible Source	Potential Contaminants	Comments
Made ground beneath site associated with historical development	Asbestos Heavy metals Extremes of pH Hydrocarbons Polycyclic aromatic hydrocarbons (PAHs) Ground gas (methane, carbon dioxide, hydrogen sulphide)	A range of contaminants can be associated with made ground. Demolished buildings/facilities of fill derived from demolition activities may contain asbestos.
General contaminants associated with past land use in the surrounding	Heavy Metals Hydrocarbons Asbestos Polycyclic aromatic	Contamination from offsite sources can potentially move laterally along buried services etc.

land including car parks, hospital and a school	hydrocarbons (PAHs)	
Timber yards ¹	Creosotes Phenolics Organic Solvents Asbestos	Coating of timber products may have been undertaken within the timber yards.
Electric substations	Polychlorinated biphenyls (PCBs)	Compounds commonly used in former substations and may be present on site due to nearby former substations.
¹ DoE Industrial Profile: Timber treatment works		

4.3 Receptors

The proposed development involves the demolition and construction of a building providing student accommodation. Potential receptors both during construction and after completion of the development include:

- Construction workers and site neighbours during development;
- Future site users and maintenance/ ground workers of the new development;
- Groundwater within the Principal aquifer (Bedrock) and Secondary A aquifer (Superficial); and
- Building materials

4.4 Pathways

Potential pathways that may be present during construction and operational phases of development include:

- Human health – ingestion of soils or dust;
- Human health – inhalation of dust, vapour or ground gas;
- Human health – dermal contact with soils, surface water and groundwater;
- Controlled waters – leaching of contaminants from soils into groundwater;
- Controlled waters – migration of dissolved phase contamination within groundwater;
- Ground gas – ingress of ground gas into buildings; and
- Building materials – direct contact with soils and/or groundwater.

4.5 Contamination assessment

4.5.1 Soil human health risks

Made ground is anticipated to be present. The proposed site use limits the potential that future site users will come into contact with the soils on site, with the exception of areas of soft landscaping.

Where made ground is present at shallow depth beneath any soft landscaping there is a risk that site users could come into contact with contamination via dermal contact, inhalation and ingestion pathways. However, this would be mitigated by the provision of clean cover system in all landscaped areas and therefore risks to future site users are considered to be low.

The biggest risk from interaction with soil on site arises during the construction works. There is a possibility that, if contaminated, the made ground may pose a short-term risk to human health for the construction workforce via potential exposure pathways including dermal contact, dust/fibre inhalation and ingestion pathways outdoors, and inhalation of gases. There is also a possible risk to site neighbours during

construction via dust/fibre inhalation exposure pathways. Such risks can be mitigated by the contractor following standard good practice during construction and adoption of adequate health and safety procedures.

Historical ground investigation conducted prior to the development of the existing halls of residence did not encounter any significant contamination and remediation was not required to enable the current development. Any residual risks associated with the site history is to be identified during ground investigation.

4.5.2 Controlled waters risk

Any contamination potentially present in made ground and superficial deposits may pose a risk to controlled waters through leaching and transport in groundwater.

Piling or deeper excavations may create a pathway that may allow the vertical migration of dissolved contamination to unimpacted groundwater at greater depth (Chester Pebble Beds Formation). Significant contamination is not anticipated, and the risk is considered low. The extent of soil contamination will be identified during ground investigation.

If significant contamination is encountered during ground investigation a foundation works risk assessment may be required.

4.5.3 Ground gas risk

The made ground on this site is most likely to comprise demolition materials from former buildings on the site and therefore the presence of significant organic content is unlikely.

Ground investigation should assess the extent of degradable materials. Ground gas monitoring could be carried out to determine the ground gas regime, but only if a potential source of hazardous gas is identified.

4.5.4 Buried structures and services

Buried structures and services may be at risk from corrosion or degradation as a result of the direct contact with contaminants in made ground and, for example, naturally elevated sulphate levels.

These risks can be mitigated by the selection of appropriate materials for buried serviced and concrete design. Risks to buried structures and services requires assessment in the context of ground contamination at the site.

4.5.5 Summary of conceptual site model

A summary of the plausible pollutant linkages requiring assessment in relation to the site is presented in Table 4 below.

Table 4: Summary of conceptual model (post-development)

Sources		Pathways		Receptors	Comments
Made ground	→	Dermal contact with soils	→	Site workers during construction	Ground investigation is recommended to assess whether contaminated soils are present. Appropriate site management protocols to be adopted during construction and maintenance works.
		Ingestion of soil, fibres or dust	→	Maintenance workers Future site users Users of future site (only in soft landscaping areas),	
		Inhalation of soil vapours and ground gases	→	Site workers during construction and site neighbours	

Sources		Pathways		Receptors	Comments
		Inhalation of soil and soil dust	→	Maintenance workers Future site users Users of future site (only in soft landscaping areas),	A clean cover system may be required in soft landscaping areas.
Leachable contaminants in the made ground		Vertical migration of dissolved phase contamination	→	Groundwater within bedrock geology (Principal Aquifer) and Superficial Deposits (Secondary A Aquifer)	Significant contamination is not anticipated on site. Sampling and analysis to be undertaken during ground investigation.
Ground gases	→	Accumulation of gases in confined spaces producing asphyxiation and explosion risk	→	Users of future site buildings	No potential source of hazardous ground gas identified. Ground gas monitoring will only be considered if significant volume of degradable material identified during ground investigation.
Soils or groundwater aggressive to building materials	→	Contact with aggressive soils and groundwater	→	Buried water supply pipes	Ground investigation is recommended to assess whether contaminated soils are present. Selection of appropriate materials for buried services.

5. Engineering considerations

5.1 Ground model

The ground model below summarises the ground conditions from available historical ground investigation data.

Table 5: Ground model

Strata	Description	Top mgbf (Elevation mOD)	Base mgbf (Elevation mOD)	Thickness (m)
Made Ground	Mixed demolition rubble, generally used to backfill former terrace basements. Working platform likely to have been placed for construction of the existing buildings.	0.0 (36.5 to 37.6)	1.0 to 4.7 (35.7 to 36.4)	1.0 to 4.7
Glacial Deposits (sands and gravels)	Firm yellow brown mottled grey silty slightly sandy CLAY over loose to medium dense slightly orange brown slightly silty SAND AND GRAVEL with some cobbles.	1.0 to 1.7 (35.7 to 36.4)	3.0 to 3.5 (31.9 to 34.4)	1.8 to 2.3
Glacial Deposits (till)	Stiff to very stiff brown silty CLAY with a little subangular to rounded fine to medium gravel of mixed lithology. Locally firm.	3.0 to 3.5 (31.9 to 34.4)	6.8 to 9.9 (26.8 to 29.8)	2.1 to 6.2
Sandstone	Orange brown fine to medium grained SANDSTONE, weak, highly to moderately weathered in the upper few metres.	6.8 to 9.9 (26.8 to 29.8)	32.0 to 36.0 (4.5 to 0.5)	Circa 25.0
Manchester Marl	Extremely weak to weak reddish brown moderately to highly weathered occasionally completely weathered mudstone	32.0 to 36.0 (4.5 to 0.5)	Not proven	Not proven
Notes: - It is anticipated that sandstone is encountered as being weathered becoming less weathered with depth - Estimated elevation and depths have been obtained from historical ground investigation.				

5.2 Buried obstructions, soft ground and voids

Residential buildings were present in the north of the site dating back since the earliest mapping date (1848) and a large building inferred to be a warehouse constructed in the south of the site in the late 1890s. The site was redeveloped in the mid-1990s to provide student accommodation for the Manchester Metropolitan University.

From the historical ground investigation information, intact brick walls were encountered in three trial pits in the north of the site, at depths of approximately 2m below ground level. This could be associated with intact buried structures (infilled cellars and basements) associated with the former residential development.

In the south of the site, an intact concrete slab was encountered in one exploratory hole location at approximately 4m below ground level, potentially associated with a basement to the former warehouse. This slab was not encountered across the entire footprint of the former warehouse and may only be still intact within the southeast of the site.

Made ground was encountered up to 4.7m thick described as being demolition rubble mixed with reworked glacial material, which has been interpreted as backfilled basements. Voids may be associated with any period of uncontrolled backfilling, redundant utilities or any partially infilled basements associated with historical development. Historical poor backfilling of made ground may lead to the presence of shallow localised soft spots that may not have been dealt with prior to construction of the existing buildings.

Obstructions associated with the existing building foundations will also be present, the foundation arrangement of the existing student accommodation is not known at this stage, but is thought most likely to comprise pad footings bearing onto the glacial soils.

Buried obstructions, soft spots and voids may impact temporary works and foundation solutions, and their presence should be investigated using trial pitting as part of an intrusive ground investigation.

5.3 Shallow groundwater

The groundwater level is at indicative level of 9 to 12mbgl from nearby ground investigation information. However, given the historical development at the site, there is potential for the presence of shallow perched ground water contained within the made ground and residual substructures.

The ground investigation should include the installation of standpipes to allow ground water levels to be determined and monitored.

5.4 Foundations

The choice of foundation solution will depend on the imposed loads from the structure and the depth to bedrock.

The Made Ground is likely to be variable in composition and strength and is considered unsuitable as a foundation stratum.

Glacial Deposits are anticipated to be present beneath the site, with varying thicknesses of granular and cohesive materials reported across the site. Given the anticipated significant building loads, it is considered unlikely that these materials will be suitable for supporting shallow foundations for the main structure.

Based on extensive experience of nearby sites, the underlying sandstone will provide a suitable founding material for piled foundations and is the most likely solution for the proposed development.

At this stage it is considered likely that a bored or cast in situ piling solution will be most appropriate with piles socketed into the underlying sandstone, dependent on the thickness of the weathered profile.

Three United Utilities sewers are present on site, aligned northeast to southwest (see Section 2.3). The most notable of the sewers is a 1950mm diameter brick lined sewer located at an invert level of approximately 12mbgl in the centre of the site. The foundations will have to adhere to United Utilities wayleaves and foundation depths should be designed to not adversely load the deep brick lined sewer.

Consideration needs to be given to noise and vibration during piling operations, particularly due to the nearby sewers, selection of a continuous flight auger technique will mitigate this concern provided that obstructions within the ground can be managed.

5.5 Earthworks

Site levels are constrained by the adjacent roads on three sides of the site and the MMU Faculty of Business and Law building. In addition, no basement structure is currently proposed for the development, although incoming services will likely require substantial trenches.

A period of enabling works may be required if obstructions are widely found present across the site following ground investigation. Such works would target the removal or penetration of obstructions to de-risk the site in advance of the construction of foundations.

5.6 UXO

The site has initially been given a High Preliminary Risk Level from the Stage 1 Preliminary UXO Risk Assessment. The removal of the tramway sidings in the late 1940s, demolition of the residential buildings and warehouse in the 1960s may have been associated with WWII bomb damage.

Although historical bomb damage has been reported at the site, there remains the potential for further unexploded ordnance at the site.

A Stage 2 Detailed UXO Risk Assessment is required prior to any intrusive works being undertaken to clarify the UXO risk to proposed works.

Dependant on the findings of the Detailed UXO Risk Assessment, a watching brief from a UXO specialist is likely required during ground investigation.

6. Geotechnical and geoenvironmental risk register

Register reference – Cambridge Hall, Manchester Geotechnical and Geoenvironmental Risk Register

Project Cambridge Hall, Manchester

Job number 303452-00

**Package/
topic**

Design stage Desk Study – For Information

Remember: Avoid – Reduce – Control and communicate relevant information to others

Date (+ initials)	Area/location of risk exposure	Description of hazard and risk exposure	Mitigation of risk (potential or achieved)	A	R	C	Further action	By	Status
									Active/closed
15/07/24 ZO	Site wide	Buried obstructions or voids impacting time and cost of ground investigation and construction activities.	Ground investigation to assess extent of buried obstructions on site.			✓	Once risk is established during ground investigation, potential enabling works to remove obstructions in advance of construction	Arup/ Contract or	Active
15/07/24 ZO	Site wide	Risk of clashing with utilities during ground investigation and construction works.	Obtain utility plans/GPR survey in advance of ground investigation.			✓	Designer to avoid known services where possible. Contractor to take appropriate precautions during works.	Client/ Contract or	Active
15/07/24 ZO	Site wide	Contamination causing risk to human health of workers during construction and future site users during operation.	Undertake ground investigation to collect soil samples for geoenvironmental testing.			✓	Undertake risk assessment on basis of ground investigation findings.	Arup/ Contract or	Active
15/07/24 ZO	Site wide	Migration of contamination into underlying aquifer due to foundation piling.	Undertake ground investigation to collect soil/water samples for geoenvironmental testing.			✓	If evidence of significant soil contamination is encountered, prepare a piling works risk assessment.	Arup/ Contract or	Active
15/07/24 ZO	Site wide	Shallow groundwater impacting construction works	Undertake groundwater monitoring during ground investigation			✓		Arup/ Contract or	Active
15/07/24 ZO	Site wide	Risk of encountering unexploded ordnance (UXO) during ground investigation and construction	Detailed UXO Risk Assessment to be carried out			✓	Follow recommendations of Stage 2 Detailed UXO Risk Assessment.	Arup/ Contract or	Active

Register reference – Cambridge Hall, Manchester Geotechnical and Geoenvironmental Risk Register

Project Cambridge Hall, Manchester

Job number 303452-00

**Package/
topic**

Design stage Desk Study – For Information

Remember: Avoid – Reduce – Control and communicate relevant information to others

Date (+ initials)	Area/location of risk exposure	Description of hazard and risk exposure	Mitigation of risk (potential or achieved)	A	R	C	Further action	By	Status
									Active/closed
		works.							
15/07/24 ZO	Site wide	Ground gases affecting any construction workers within excavations during ground investigation or construction works.	Gas monitoring included within ground investigation proposals.			✓	To be reviewed following ground investigation.	Arup/ Contract or	Active
15/07/24 ZO	Site wide	Potentially high sulphate concentration in the ground can attack any proposed buried infrastructure.	Collect samples for BRE Special Digest 1 testing.			✓	Concrete sulphate class to be designed following ground investigation	Arup/ Contract or	Active
29/07/24 SC	Centre of the site	Foundation works adversely loading the deep 1950mm diameter sewer, resulting in collapse	Foundations are to be designed to minimise additional loads on the sewer			✓	Foundation technique should be selected to minimise vibration in close proximity to the sewer	Arup/ Contract or	Active

7. Conclusions and recommendations

7.1 Conclusions

The site is expected to have made ground (up to 4.7m thick) present underlain by glacial sands and gravels (1.8-2.3m thick) followed glacial till (up to 6.15m thick). Bedrock described as a highly to moderately weathered sandstone is anticipated to be encountered around 6.8m to 9.9mbgl. Groundwater level is anticipated to be present circa 9 to 12mbgl based on data from the historical ground investigations conducted in the area.

The 1848 Ordnance Survey map showed the north of the site being occupied by terraced residential buildings. By 1851, timber yards are shown in the south of the site and in the early 1900s, a large warehouse was built in the south of the site. A tramway operated through the site from the 1880s until it was dismantled in 1940s. The warehouse and residential properties were demolished by 1960s. The site was undeveloped in the 1980s, understood to be university playing fields. By the year 2000, a student accommodation building occupied the site with no further change being observed on the site to date. The surrounding area has seen electric substations, car parks, schools, a garage, and an hospital.

The made ground is a potential source of contamination. Historical ground investigation conducted prior to the development of the existing halls of residence did not encounter any significant contamination and remediation was not required to enable the current development. Any residual risks associated with the site history is to be identified during ground investigation.

Obstructions have been reported in the historical ground investigation information for the site, where intact brick walls encountered at 2mbgl in the north of the site associated with the former residential development and a concrete slab at 4mbgl in the south of the site associated with the former warehouse development. The presence of potentially intact concrete slabs or other substructures may constrain the construction of foundations. Ground investigation is recommended to identify these obstructions and the most appropriate methods of dealing with them. A period of enabling works may be required if obstructions are widely found present across the site following ground investigation. Such works would target the removal or penetration of obstructions to de-risk the site in advance of the construction of foundations.

Three United Utilities sewers are present on site, aligned northeast to southwest (see Section 2.3). The most notable of the sewers is a 1950mm diameter brick lined sewer located at an invert level of approximately 12mbgl in the centre of the site. The foundations will have to adhere to United Utilities wayleaves and foundation depths should be designed to not adversely load the deep brick lined sewer.

Based on extensive experience of nearby sites, the underlying sandstone will provide a suitable founding material for piled foundations and is the most likely solution for the proposed development. At this stage it is considered likely that a bored or cast in situ piling solution will be most appropriate with piles socketed into the underlying sandstone.

The Preliminary UXO Risk Assessment has assigned a 'High' Preliminary Risk Level and a Stage 2 Detailed UXO Risk Assessment is recommended prior to any intrusive works on the site.

7.2 Recommended outline scope of ground investigation

It is recommended that a development specific intrusive ground investigation specific is undertaken.

Ground investigation objectives include the following:

- 1) Characterise the thickness and nature of made ground;
- 2) Investigate the nature, extent and depths of the buried obstructions and/or voids;
- 3) Characterise the nature of natural superficial materials and bedrock to inform foundation design;
- 4) Assess soil contamination to inform contamination risk assessment and soil re-use or disposal routes;

- 5) Assess groundwater levels and, if soil contamination is encountered, investigate groundwater contamination via sampling from standpipes.

Access prior to demolition of the existing building will be a major constraint. Mobilising rigs and other exploration equipment into most of the site requires consideration of the available access routes and headroom in working areas. It is recommended that two phases of ground investigation are considered. The first phase should be undertaken prior to demolition of the existing structures on site to examine key constraints to development e.g. extent of obstructions and to allow a programme of sampling and chemical testing to inform a preliminary contamination risk assessment of the site. Where possible, information on the depth to rockhead will be collected as part of this investigation but the depth of investigation may be limited by limited access and the type of plant used e.g. hand excavation or window sampling. Information from the first phase of investigation will inform the planning application for the new development.

The second phase of investigation should be undertaken post demolition when access will be available to a wider area of the site. The second phase of investigation should include deep boreholes including rotary coring into the underlying sandstone to collect data on the depth and nature of bedrock. This will provide data for the design of piled foundation solutions.

If ground investigation can only be conducted in a single phase before demolition works, there will be limitations in the quality of information that can be obtained from the ground investigation due to access restraints. This may result in a broader scope for the enabling works and a more conservative foundation design.

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- [2] Groundsure Enviro Insight report (2024) Report reference: GS-3GV-IYB-YV9-QOJ
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Appendix A

Groundsure Report

Site Details:

CAMBRIDGE NORTH HALL,
CAVENDISH STREET,
MANCHESTER, M15 6TT

Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: County Series

Map date: 1848

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1845
Revised N/A
Edition 1848
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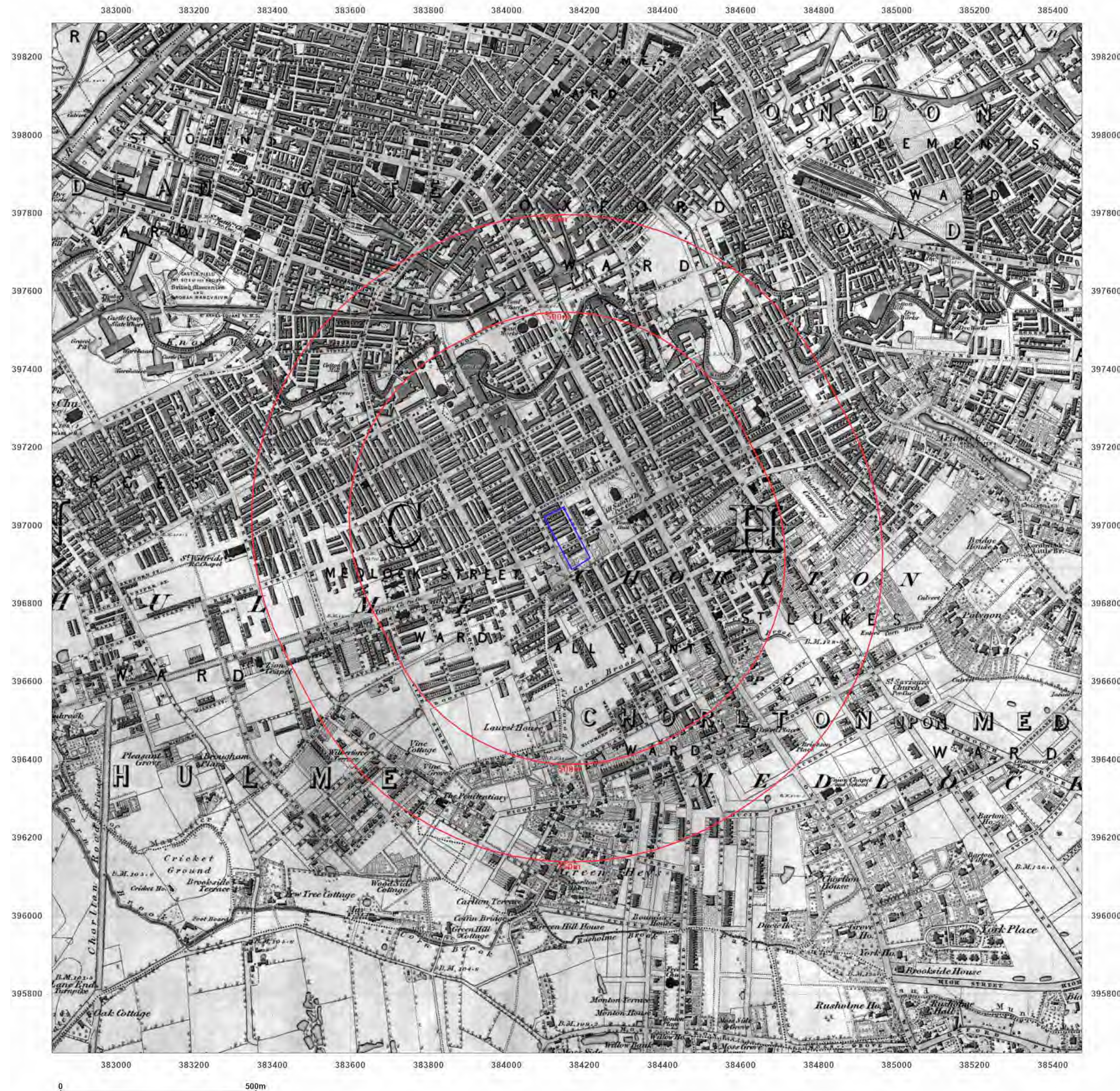


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Site Details:

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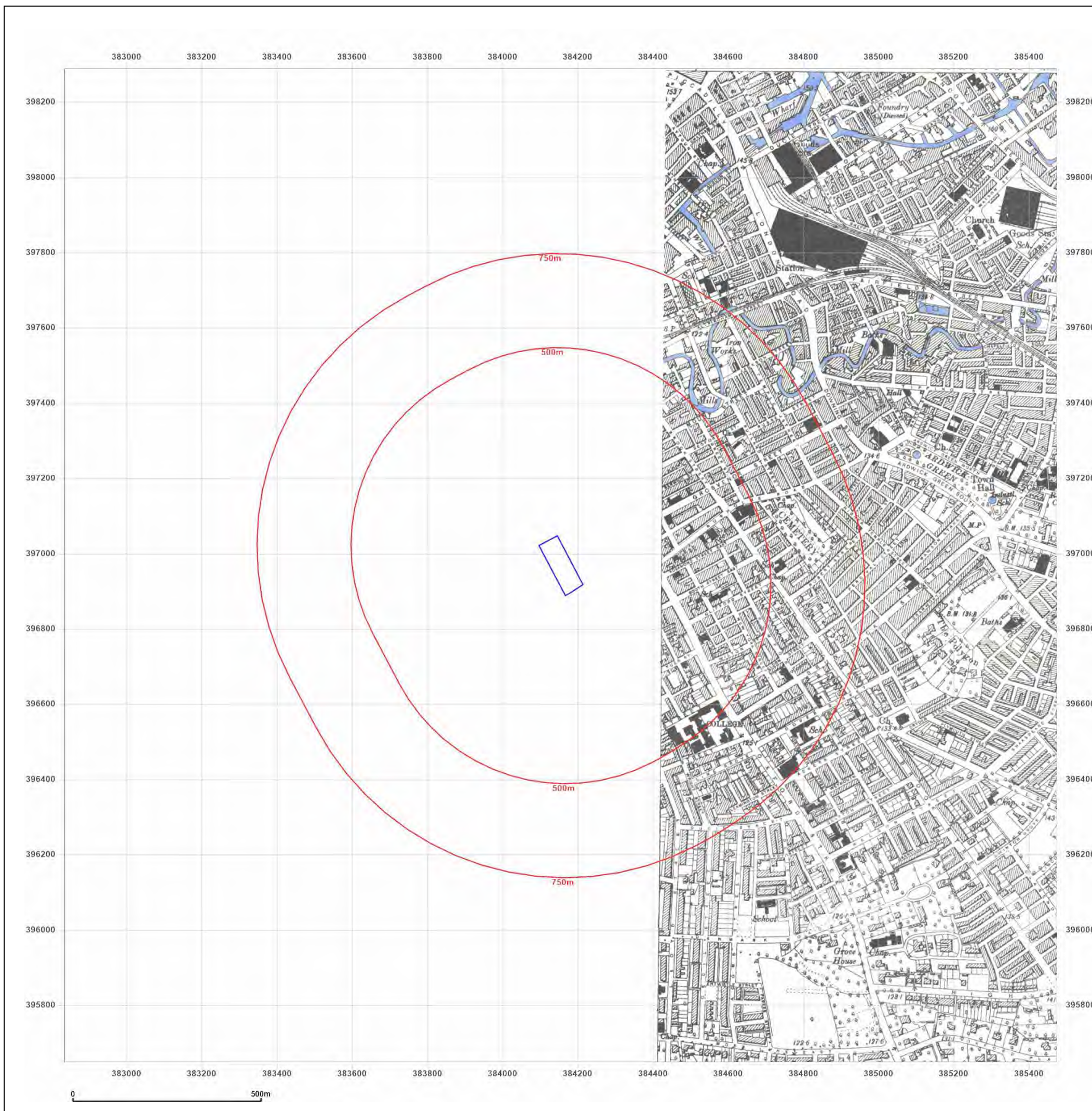


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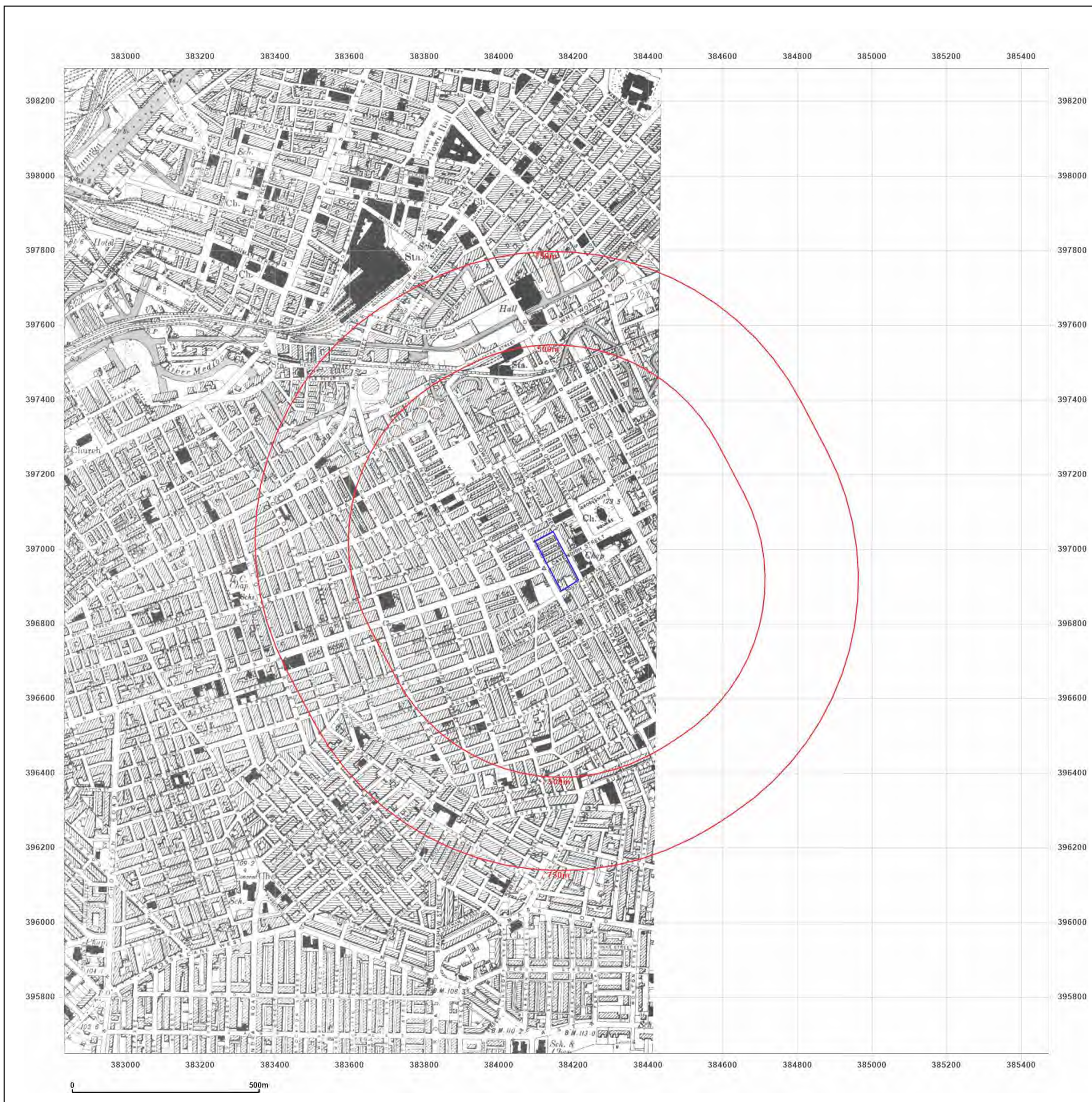


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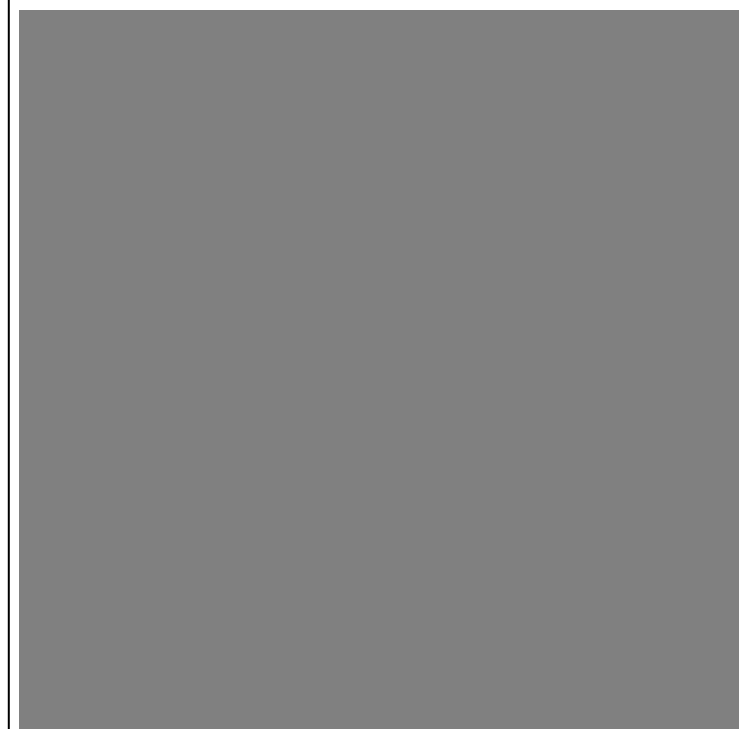
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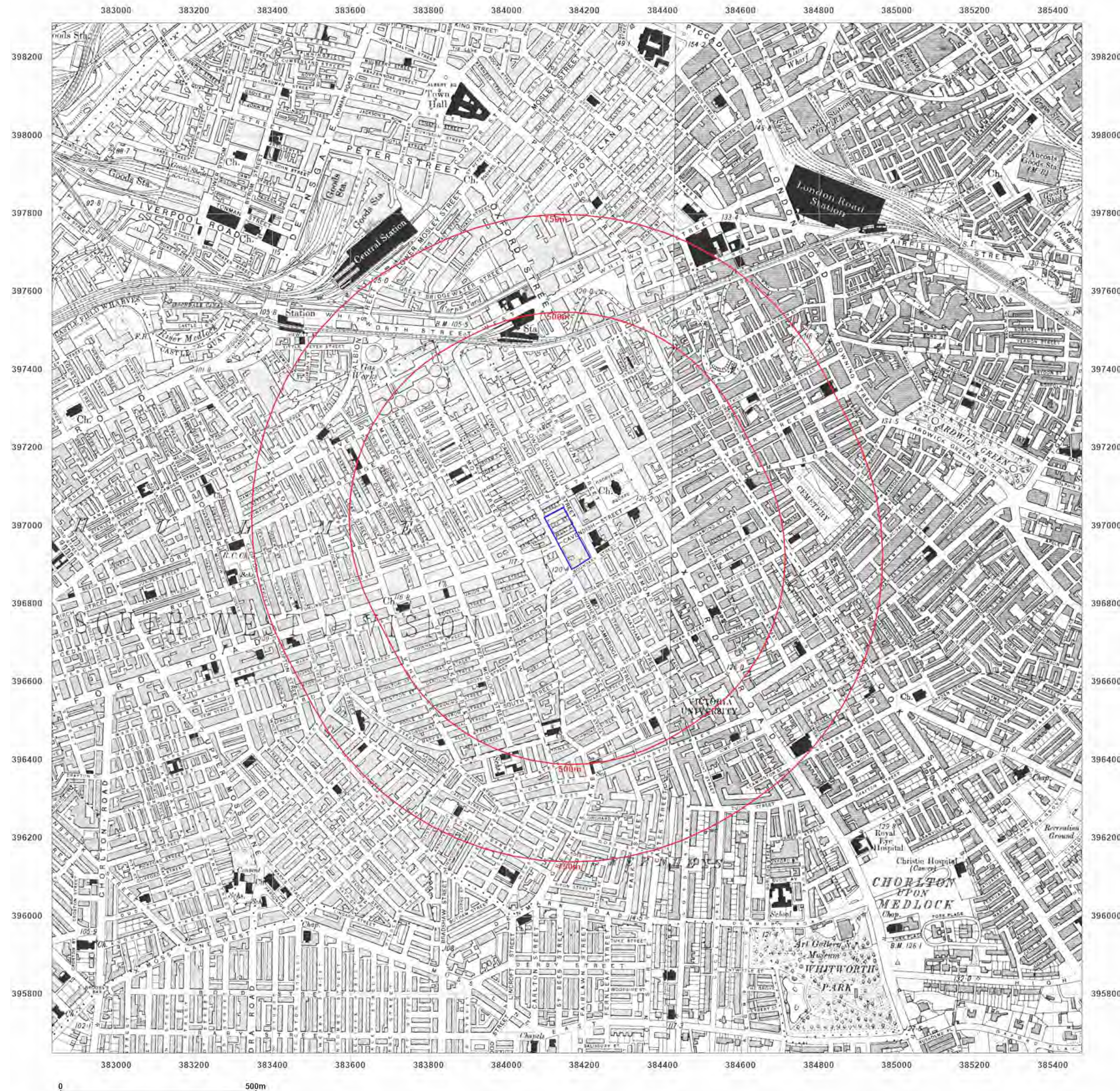


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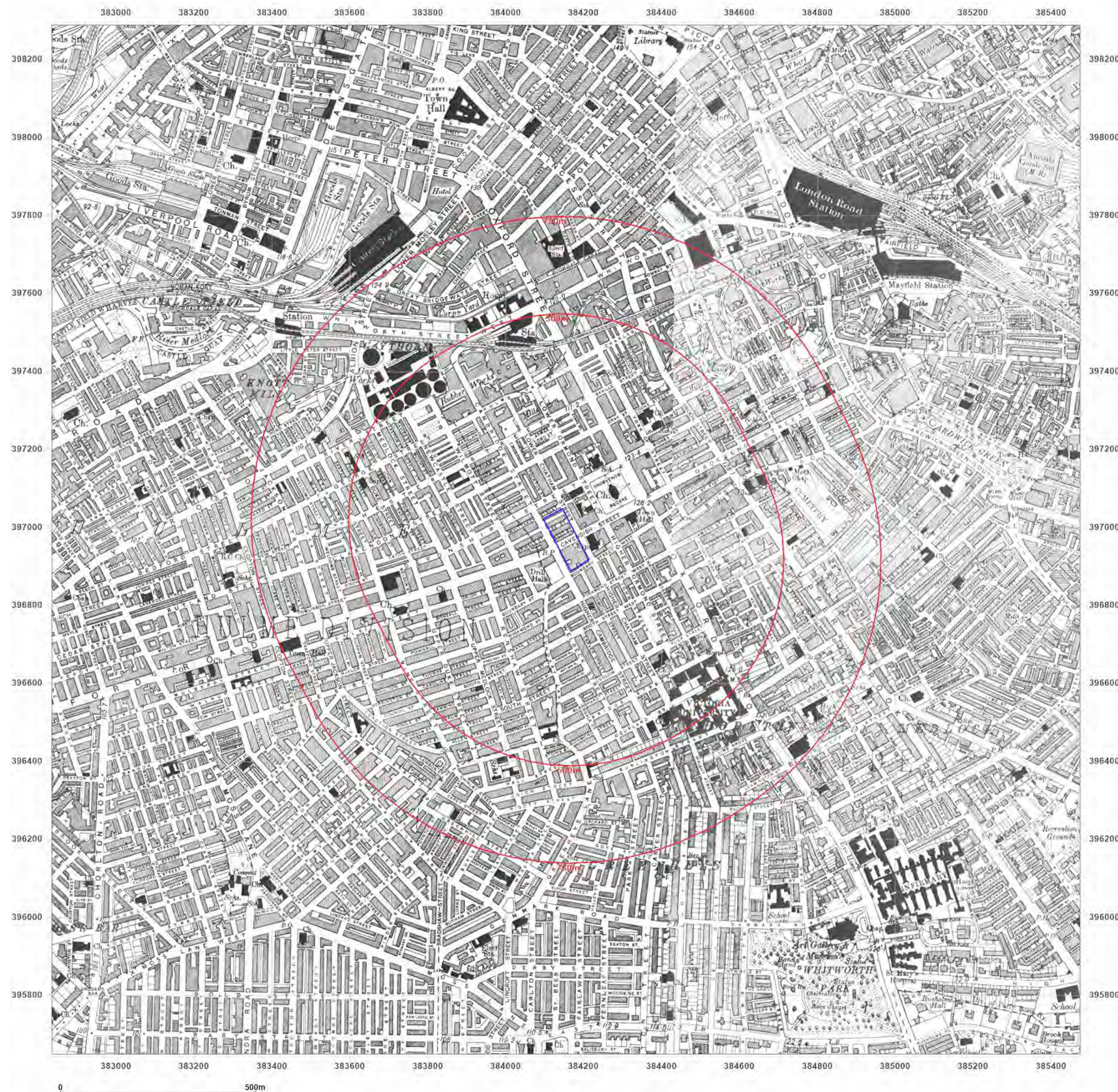


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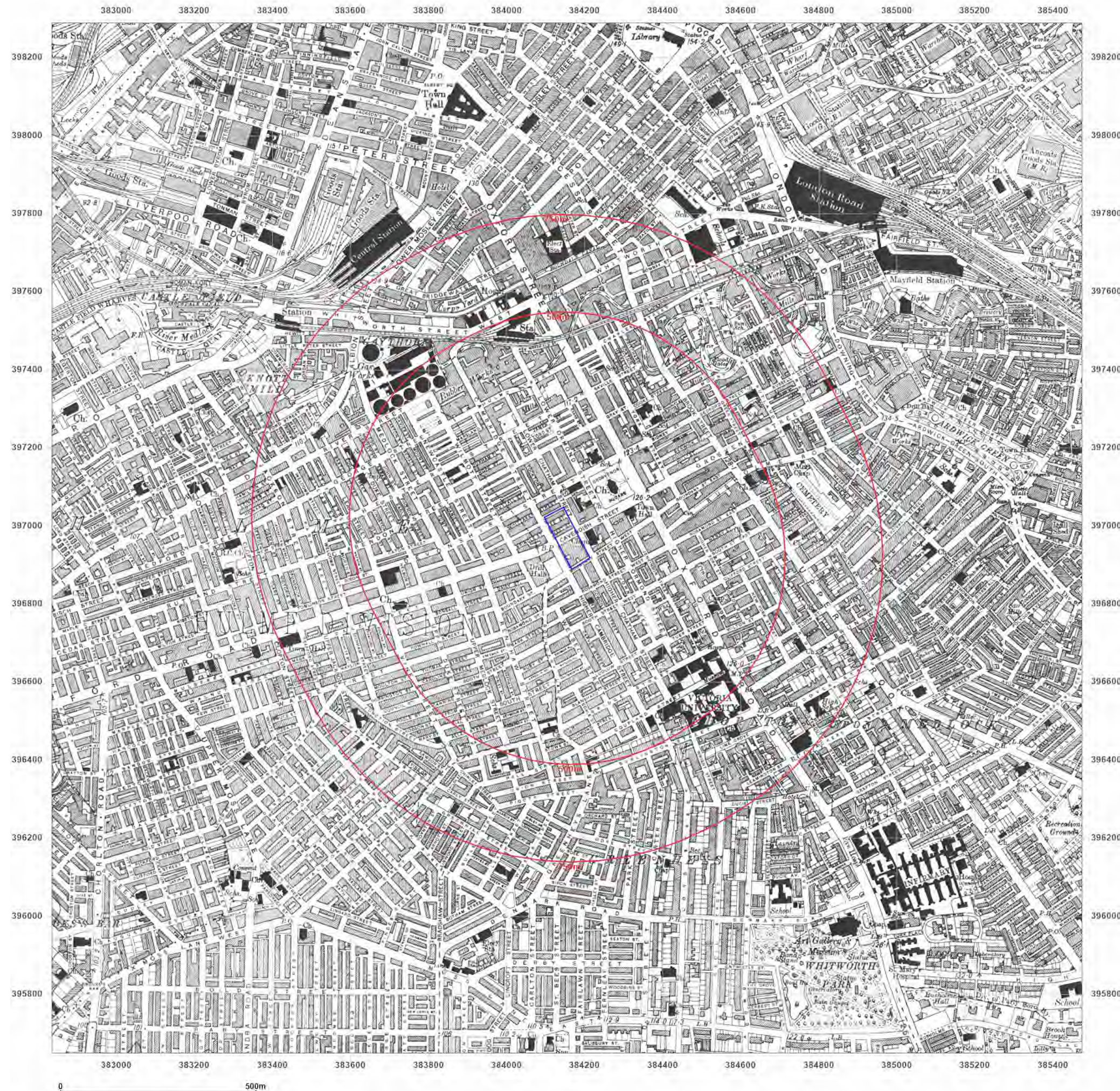


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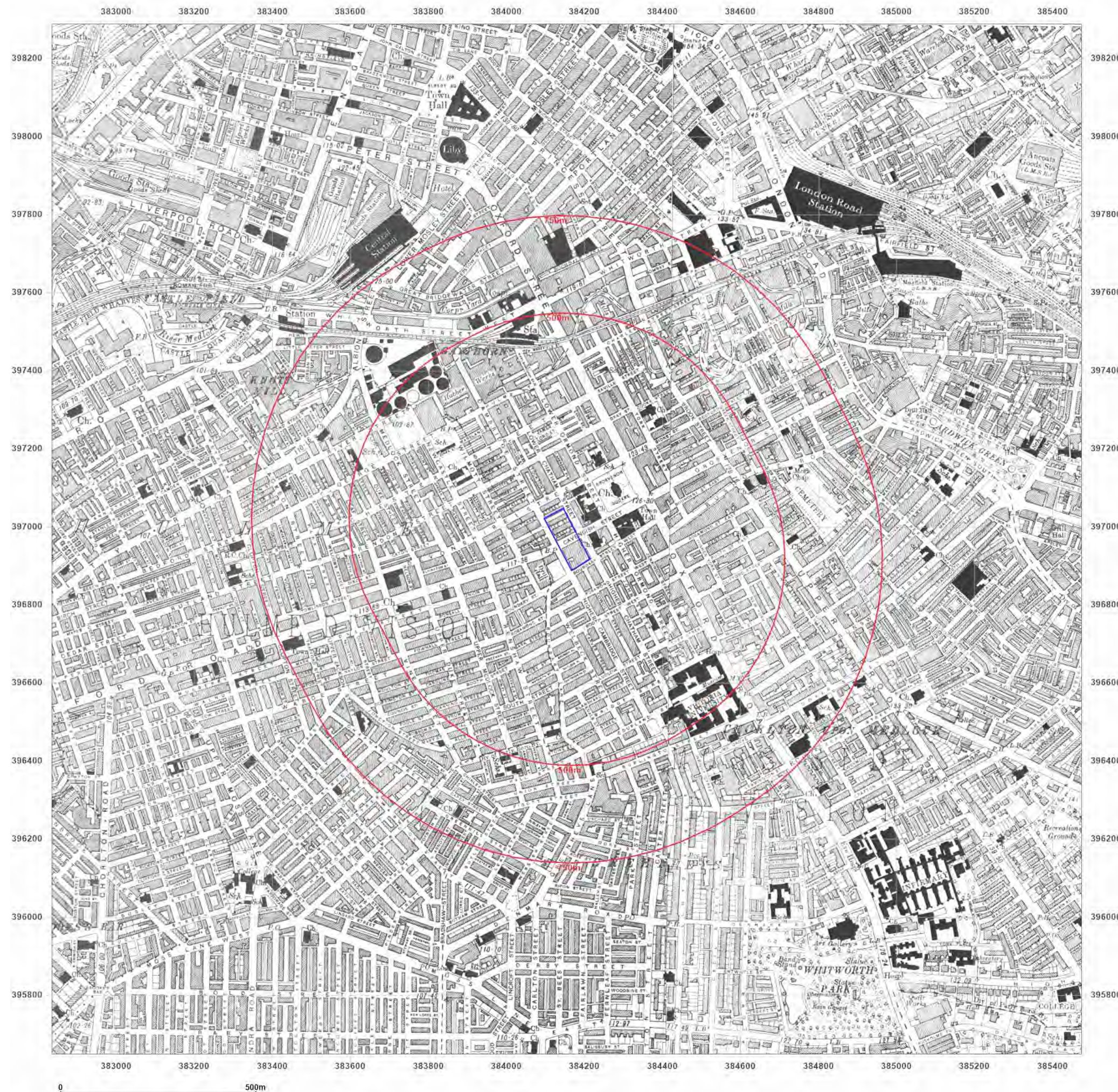


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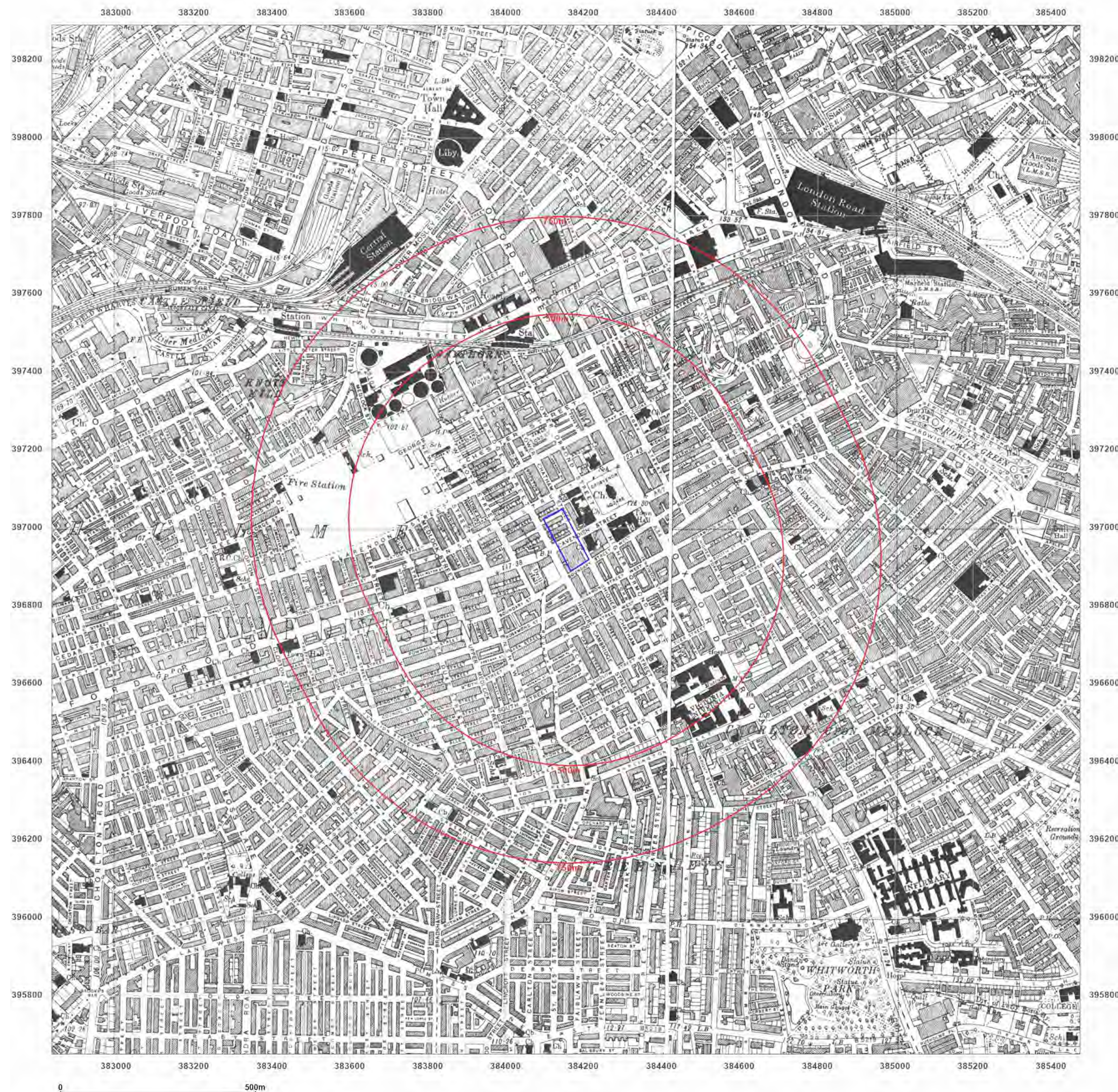


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Map Name: Provisional

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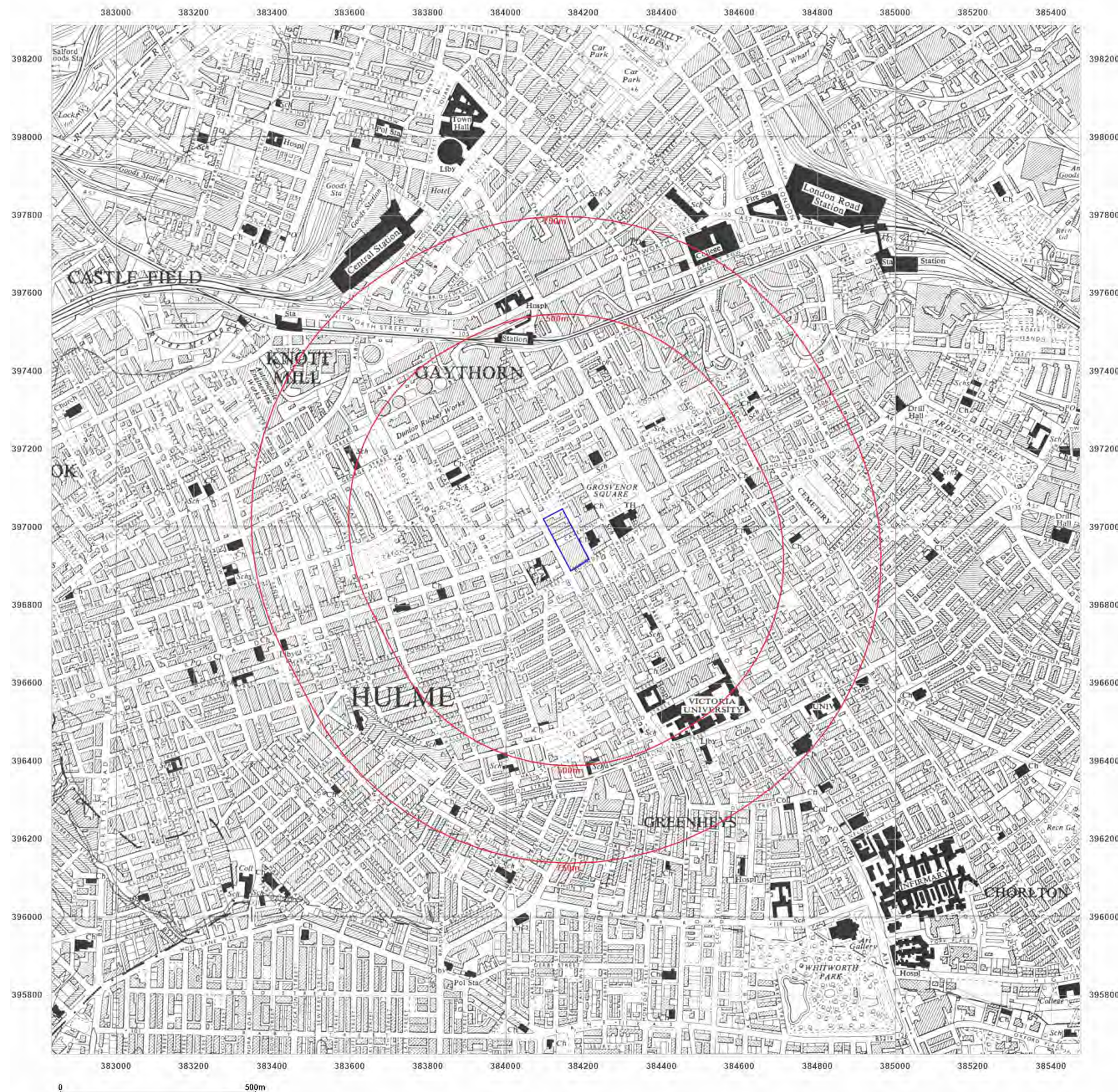


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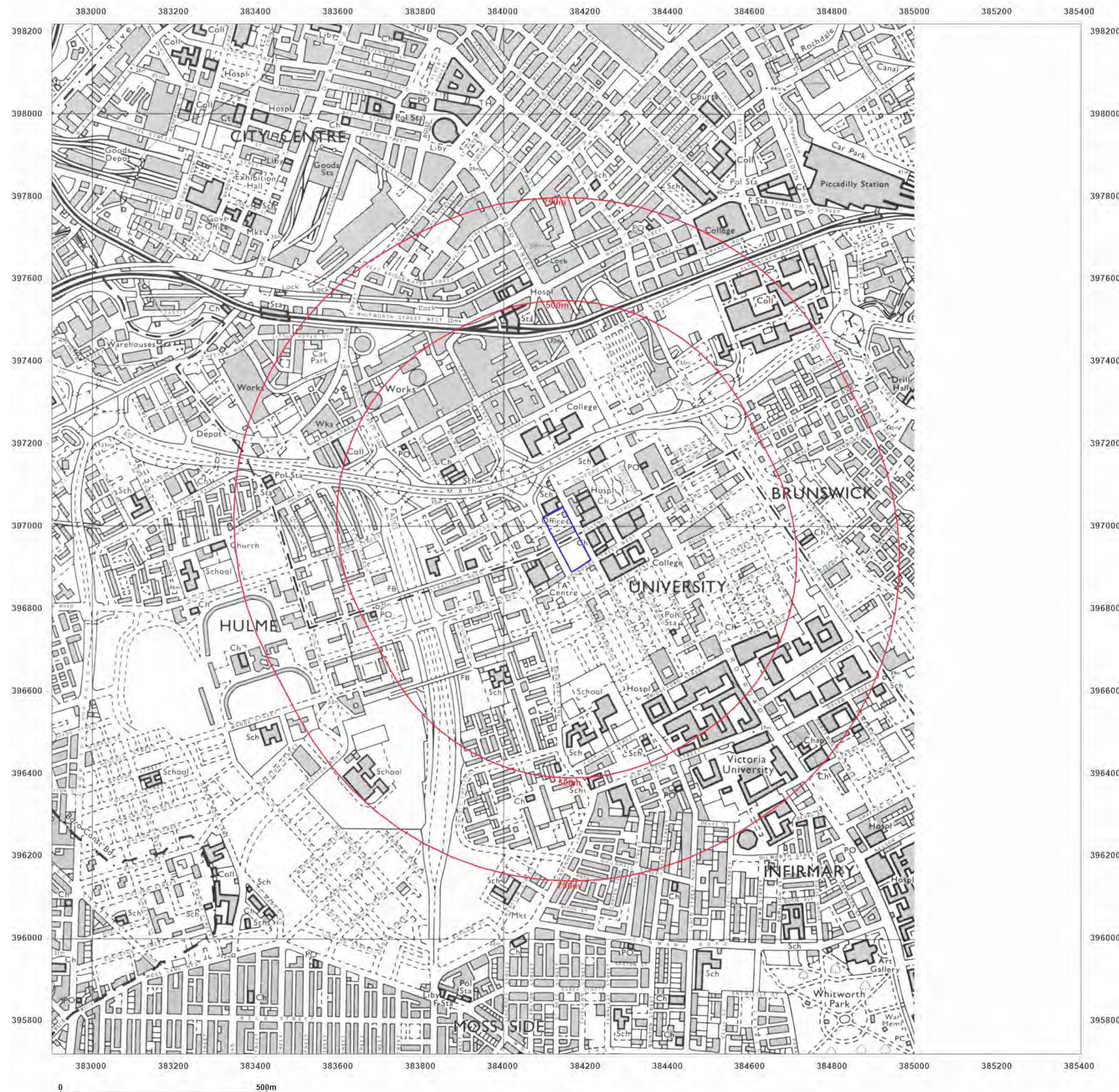


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Map Name: National Grid

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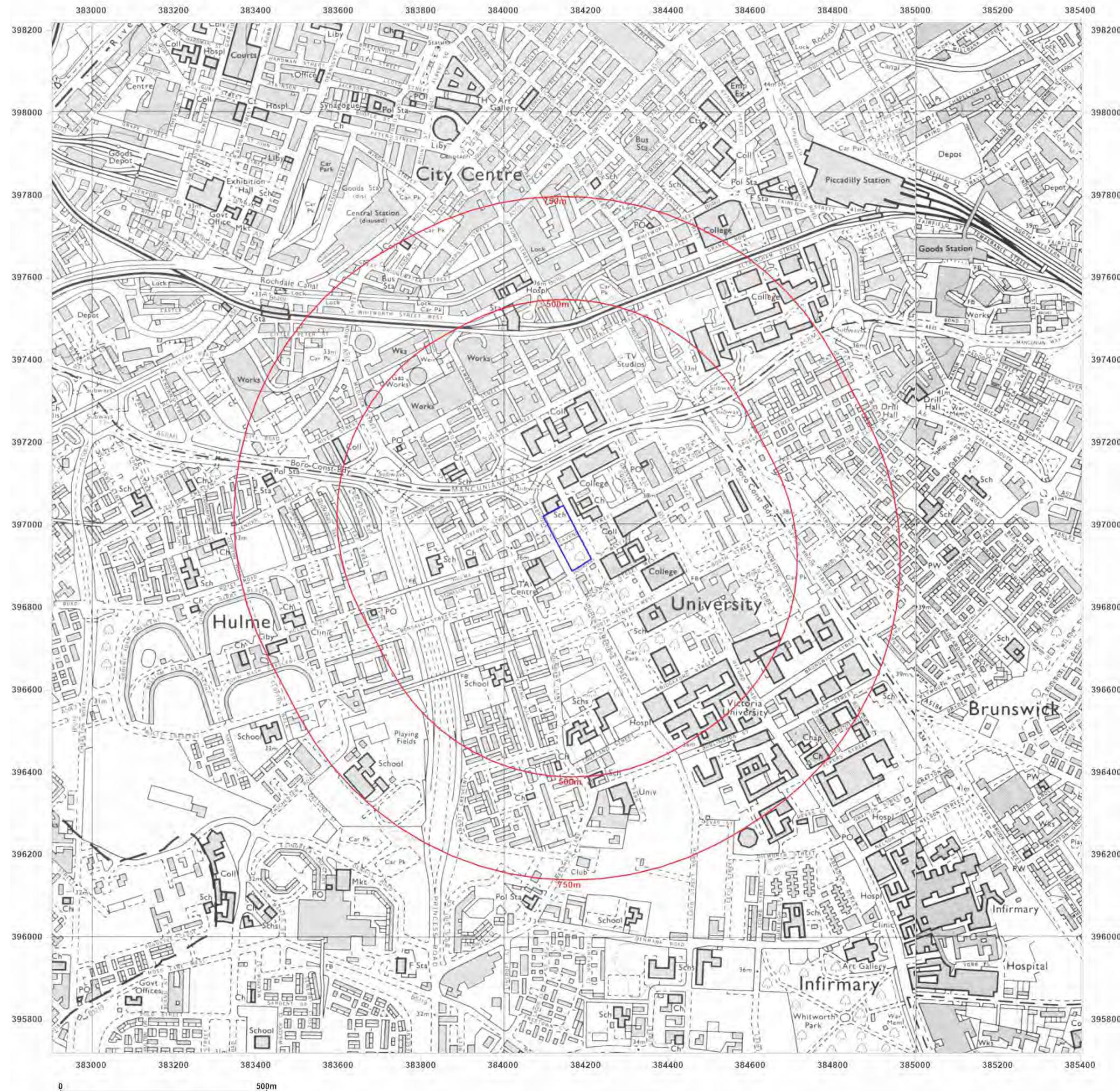


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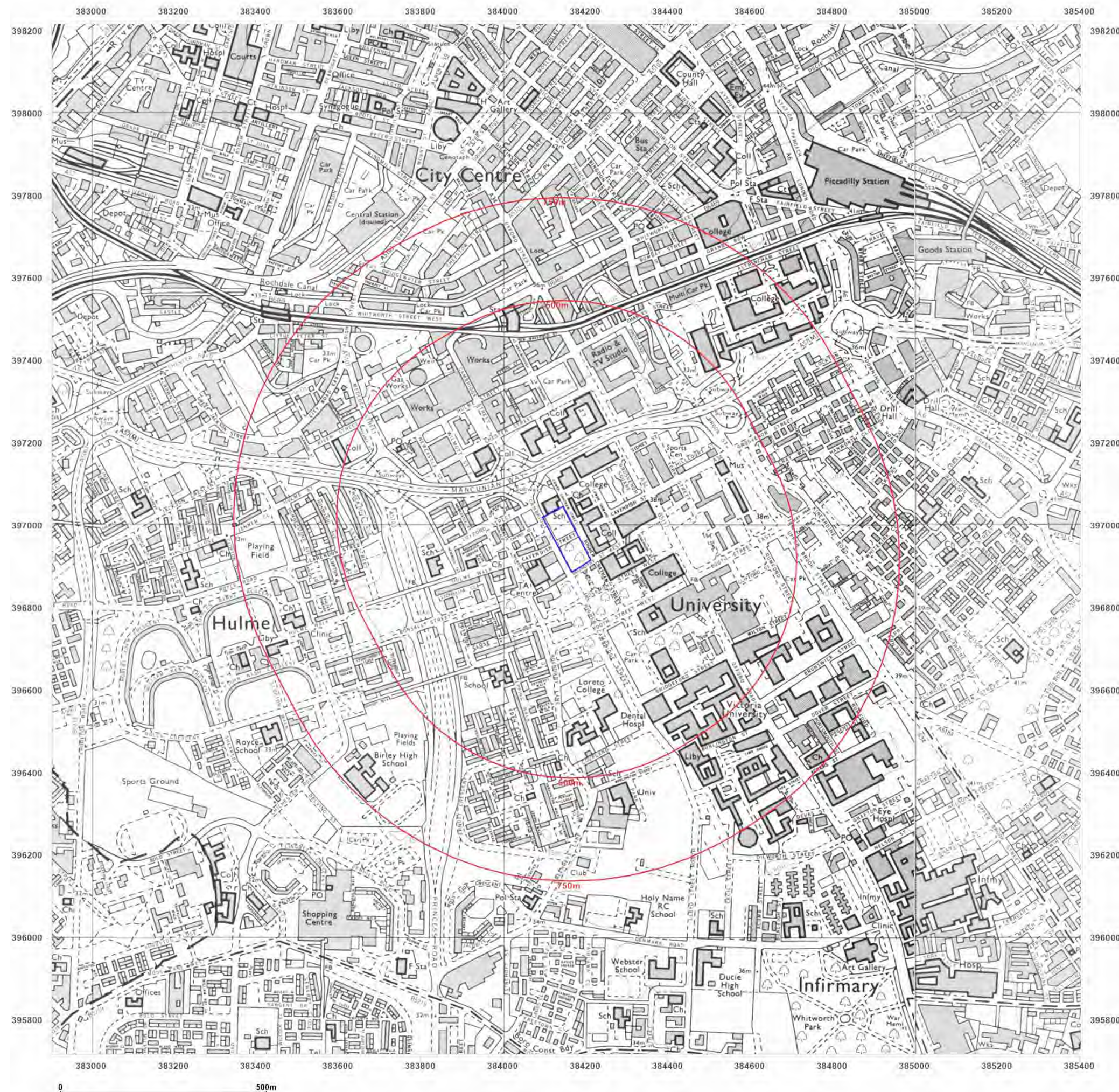


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Production date: 09 July 2024

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Site Details:

CAMBRIDGE NORTH HALL,
CAVENDISH STREET,
MANCHESTER, M15 6TT

Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1988-1991

Scale: 1:10,000

Printed at: 1:10,000



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

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

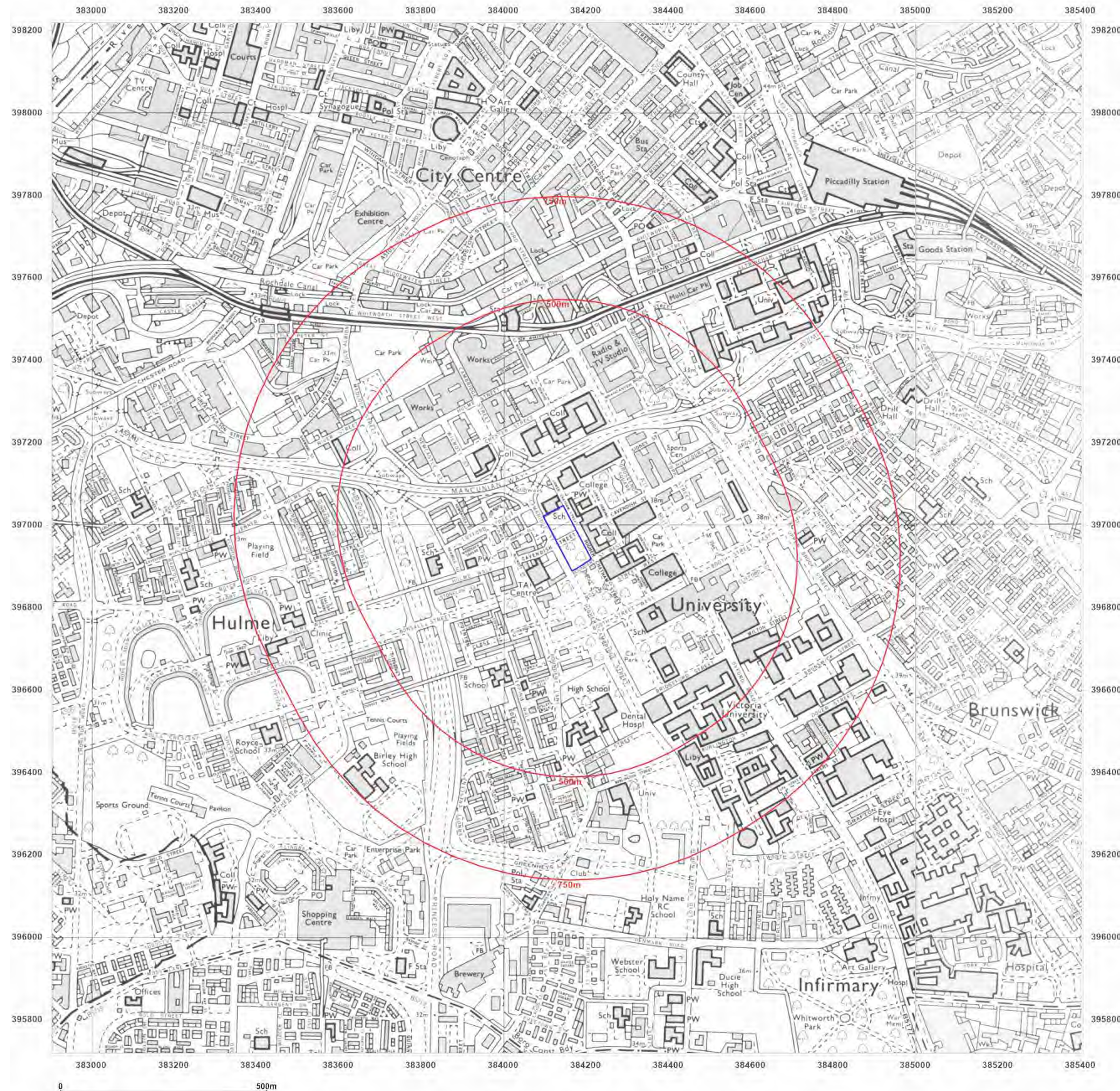


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MANCHESTER, M15 6TT

Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1994

Scale: 1:10,000

Printed at: 1:10,000



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

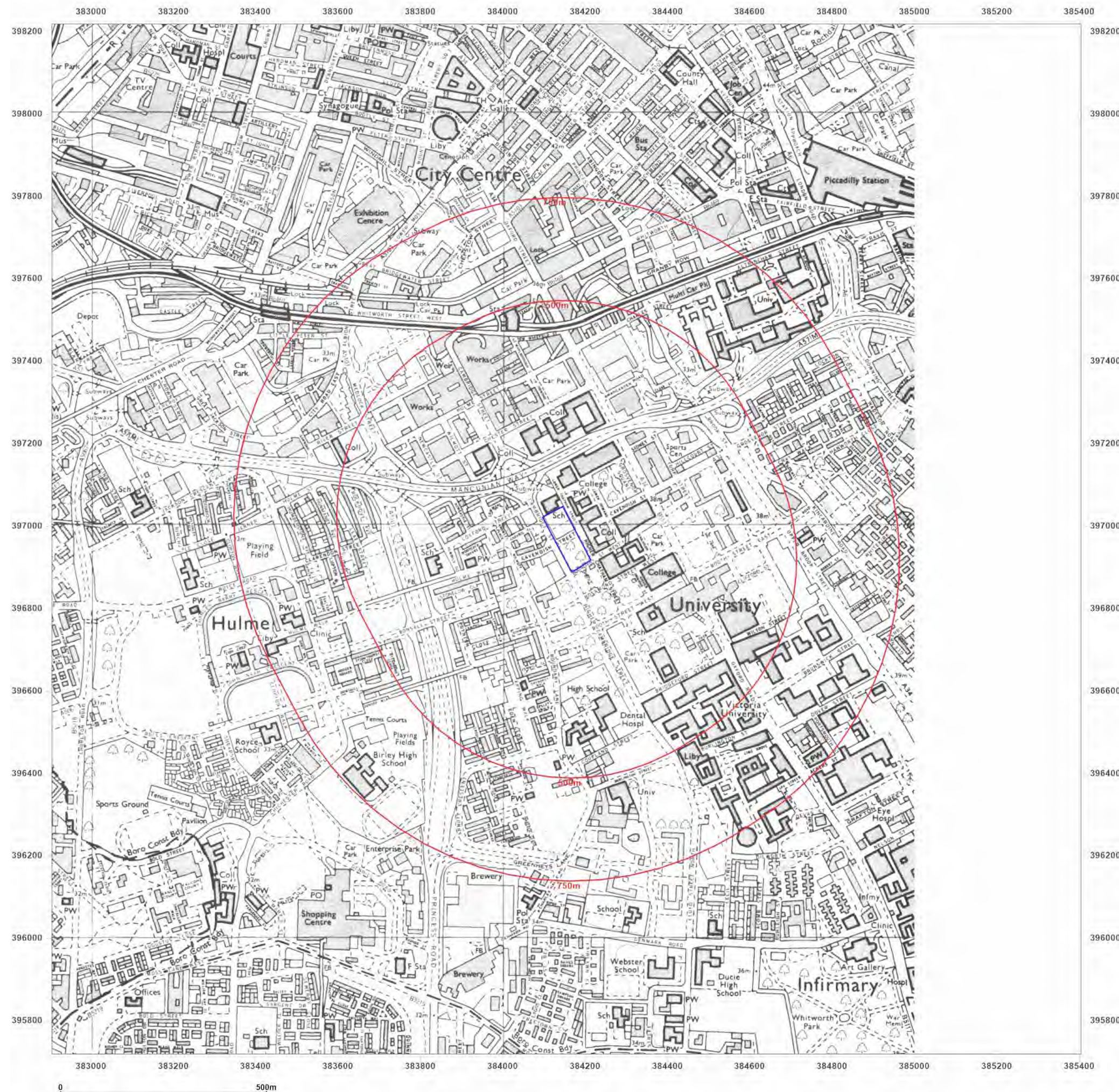


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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000



2001



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MANCHESTER, M15 6TT

Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



2010



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MANCHESTER, M15 6TT

Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 2024

Scale: 1:10,000

Printed at: 1:10,000



2024



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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: 1056 Scale Town Plan

Map date: 1851

Scale: 1:1,056

Printed at: 1:1,056



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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: County Series

Map date: 1889-1893

Scale: 1:2,500

Printed at: 1:2,500



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

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

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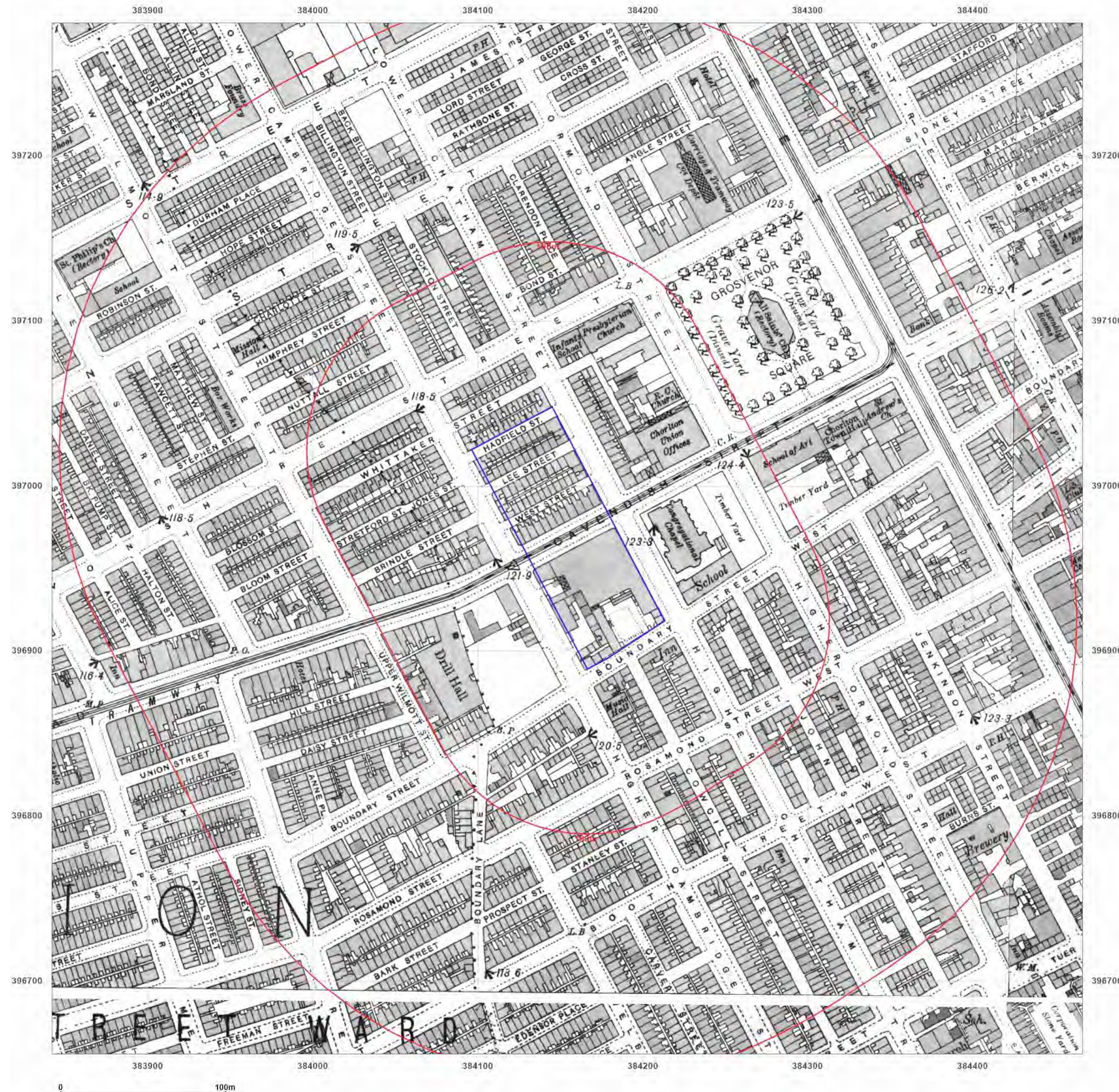


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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: County Series

Map date: 1908

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1908
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Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

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

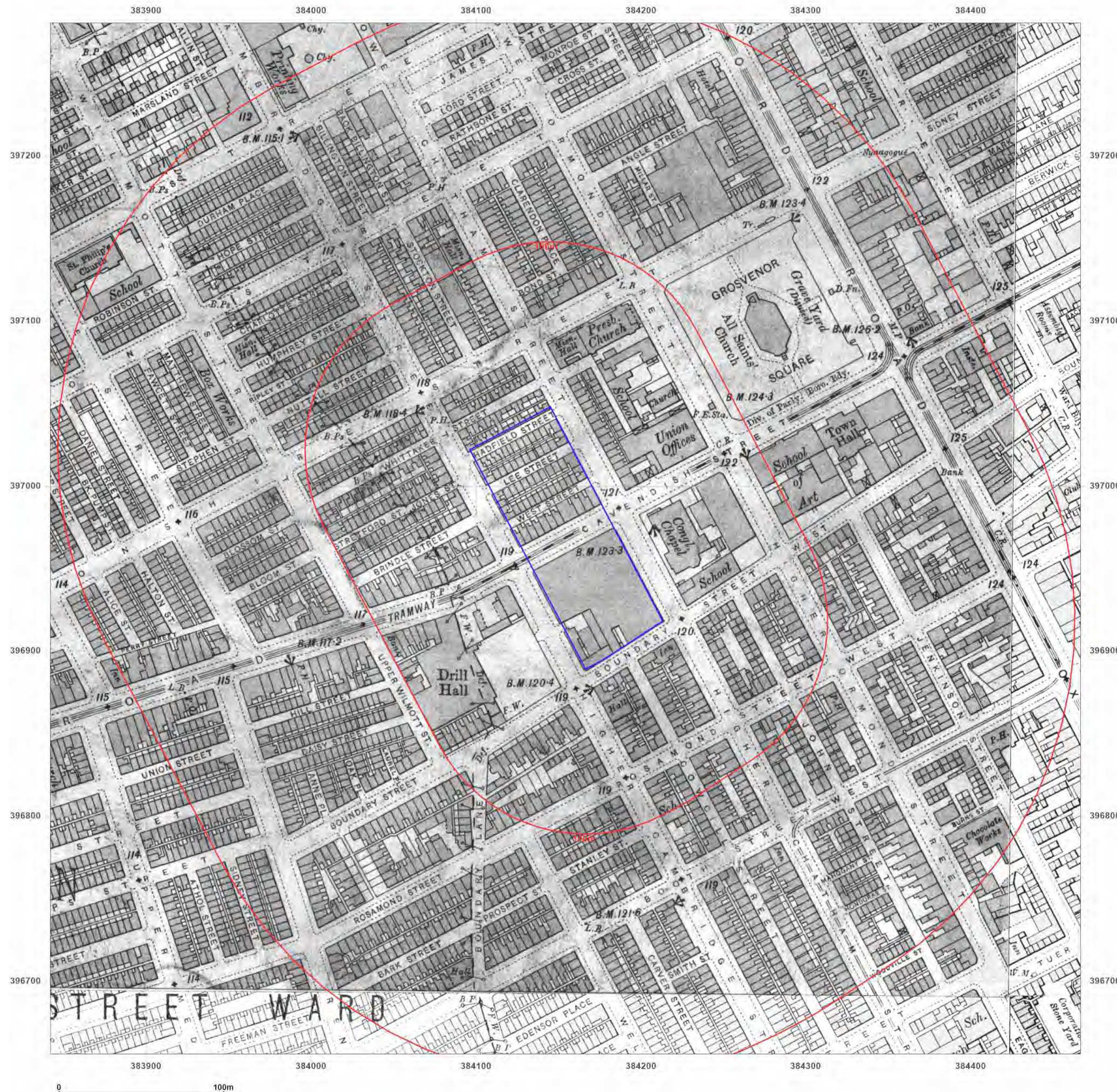


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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: County Series

Map date: 1922

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1922
Revised 1922
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Surveyed 1922
Revised 1922
Edition N/A
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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: County Series

Map date: 1932-1933

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1932
Revised 1932
Edition N/A
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Revised 1932
Edition N/A
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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1949-1950

Scale: 1:2,500

Printed at: 1:2,500



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

Surveyed 1948
Revised 1948
Edition N/A
Copyright 1950
Levelled 1929

Surveyed 1949
Revised 1949
Edition N/A
Copyright N/A
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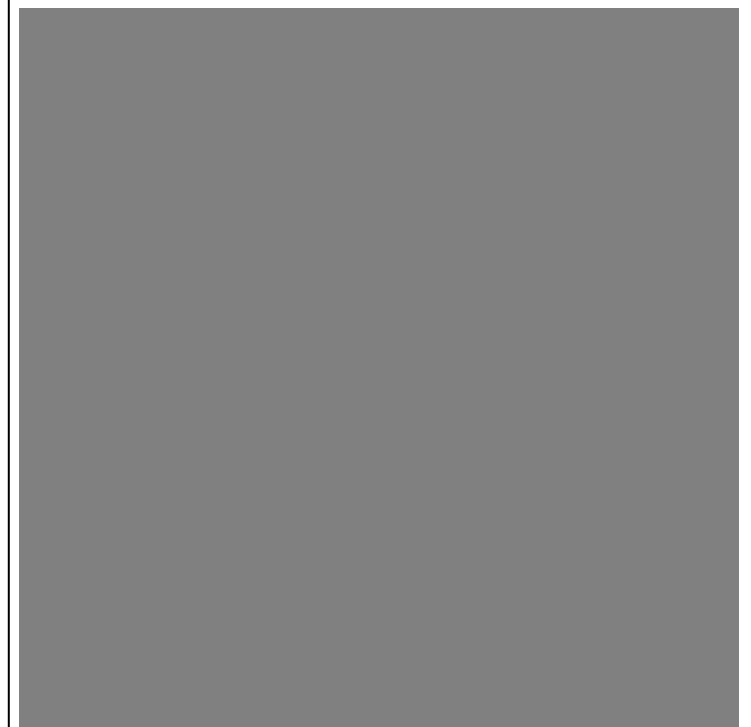
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Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1952-1954

Scale: 1:1,250

Printed at: 1:2,000

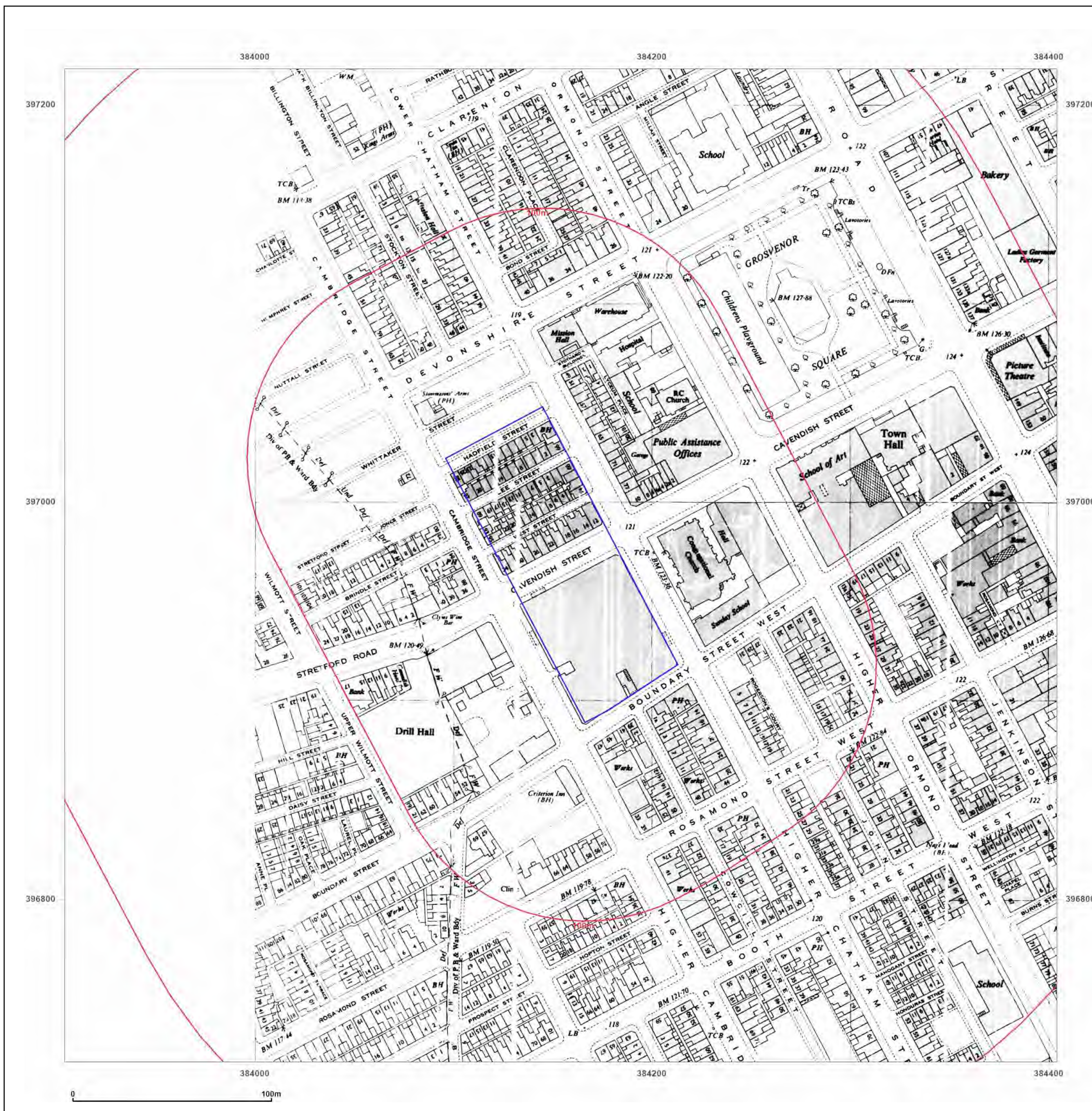


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MANCHESTER, M15 6TT

Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1952-1954

Scale: 1:1,250

Printed at: 1:2,000

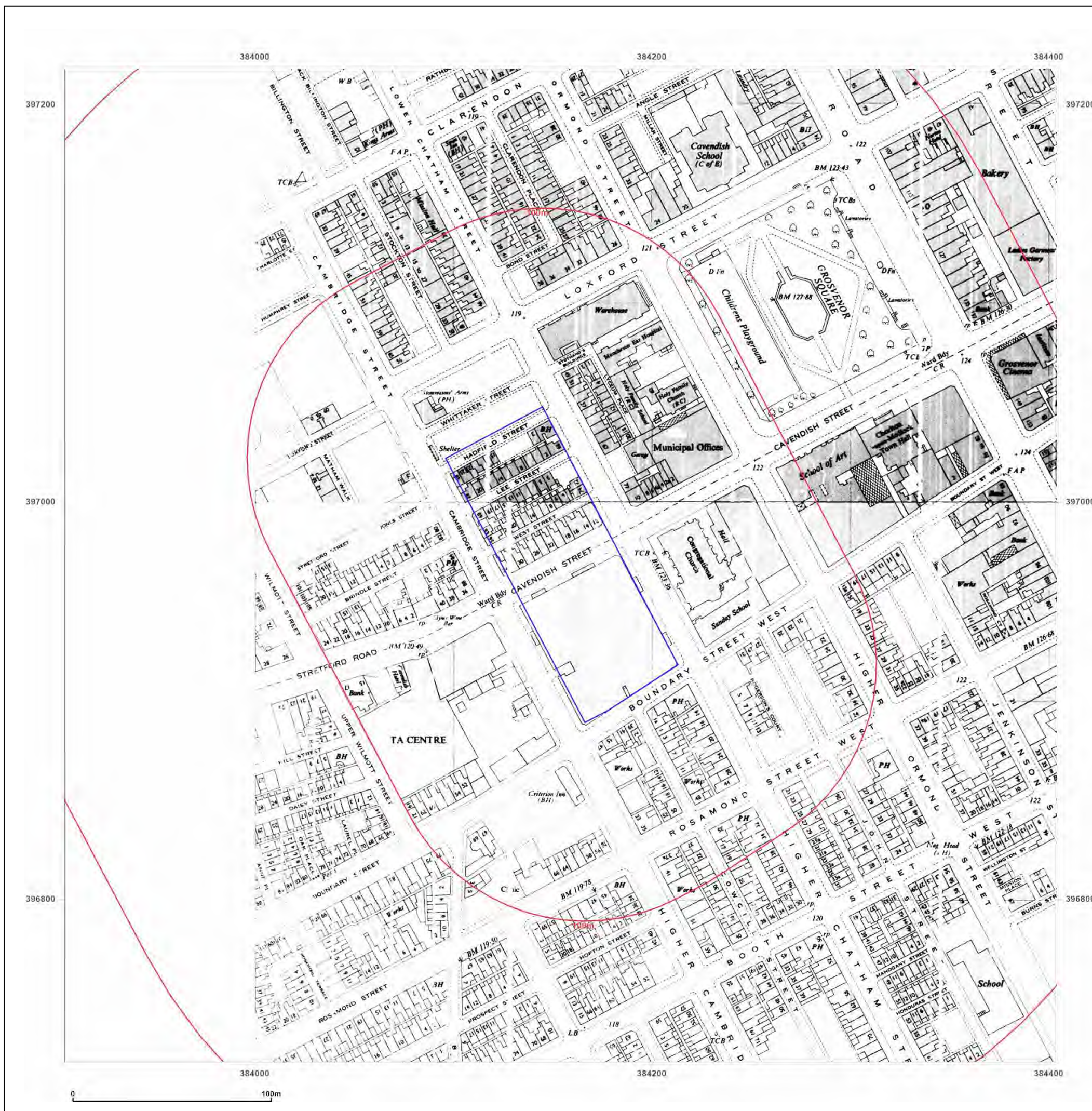


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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1951-1955

Scale: 1:1,250

Printed at: 1:2,000

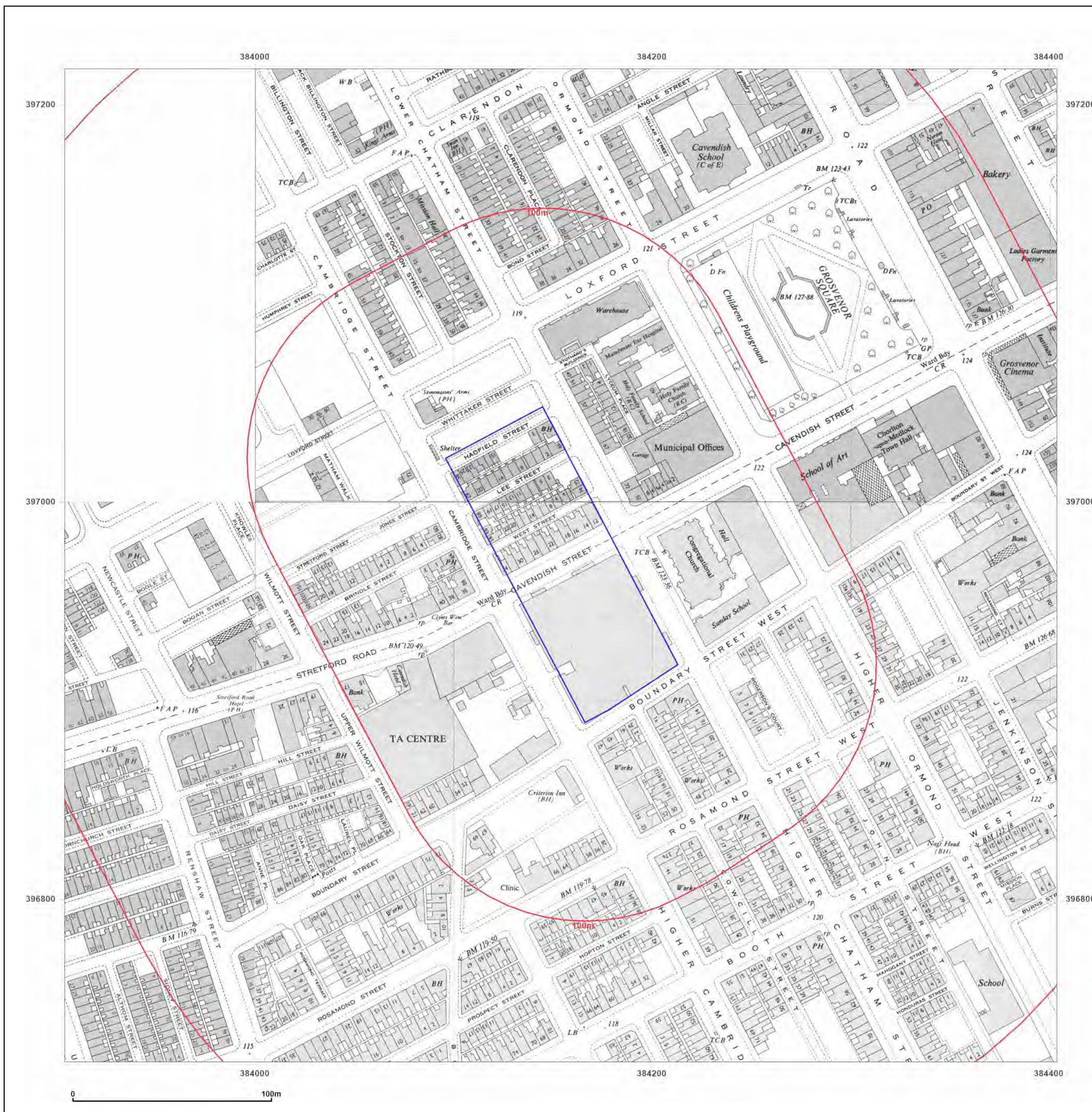


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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1951-1955

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1953
Revised 1953
Edition 1955
Copyright N/A
Levelled 1929

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

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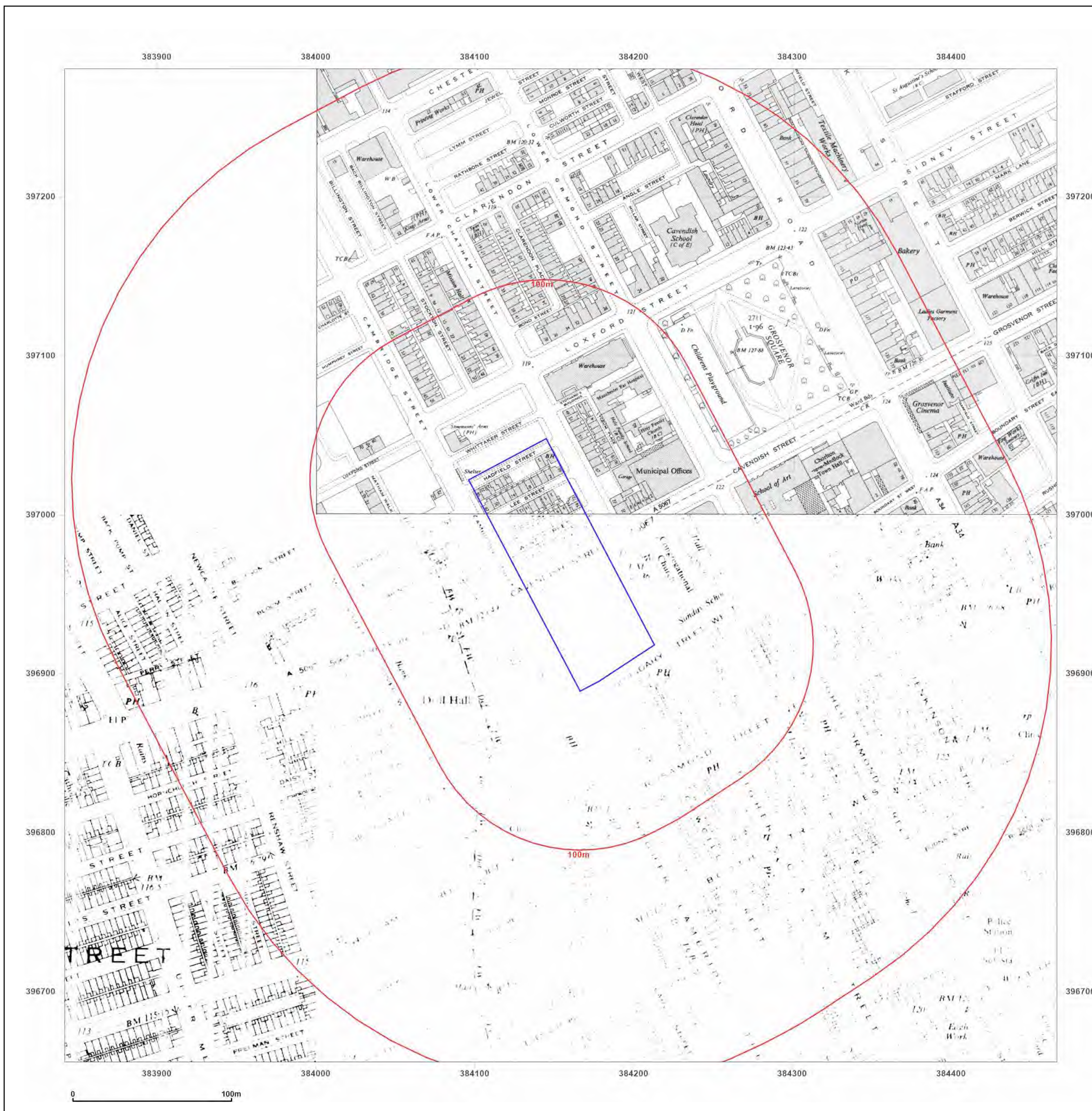


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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

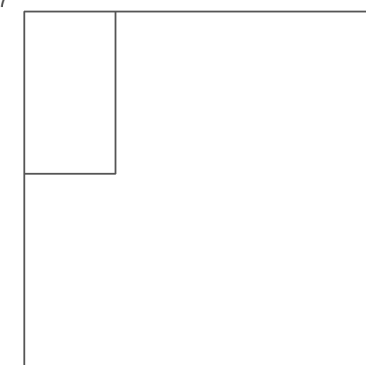
Map date: 1957

Scale: 1:2,500

Printed at: 1:2,500



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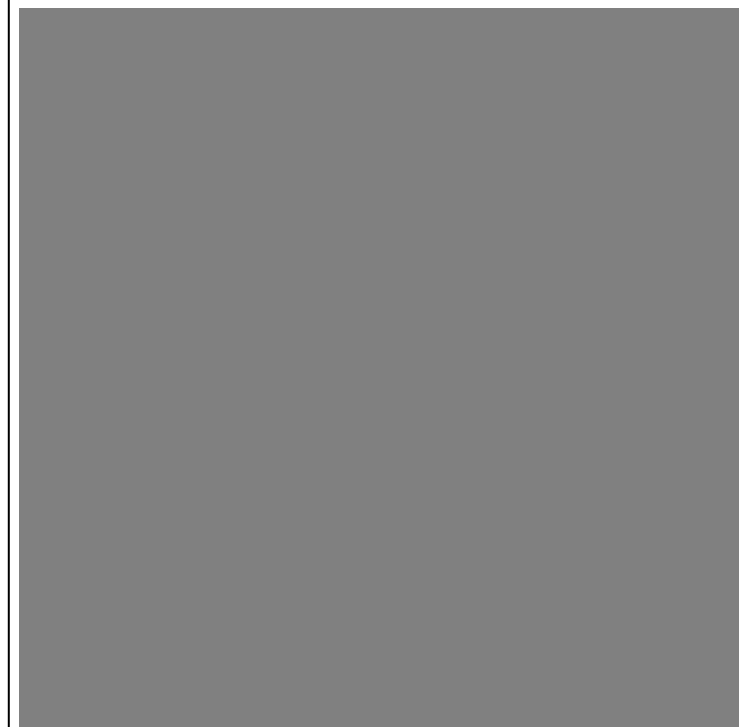
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Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1961-1962

Scale: 1:1,250

Printed at: 1:2,000

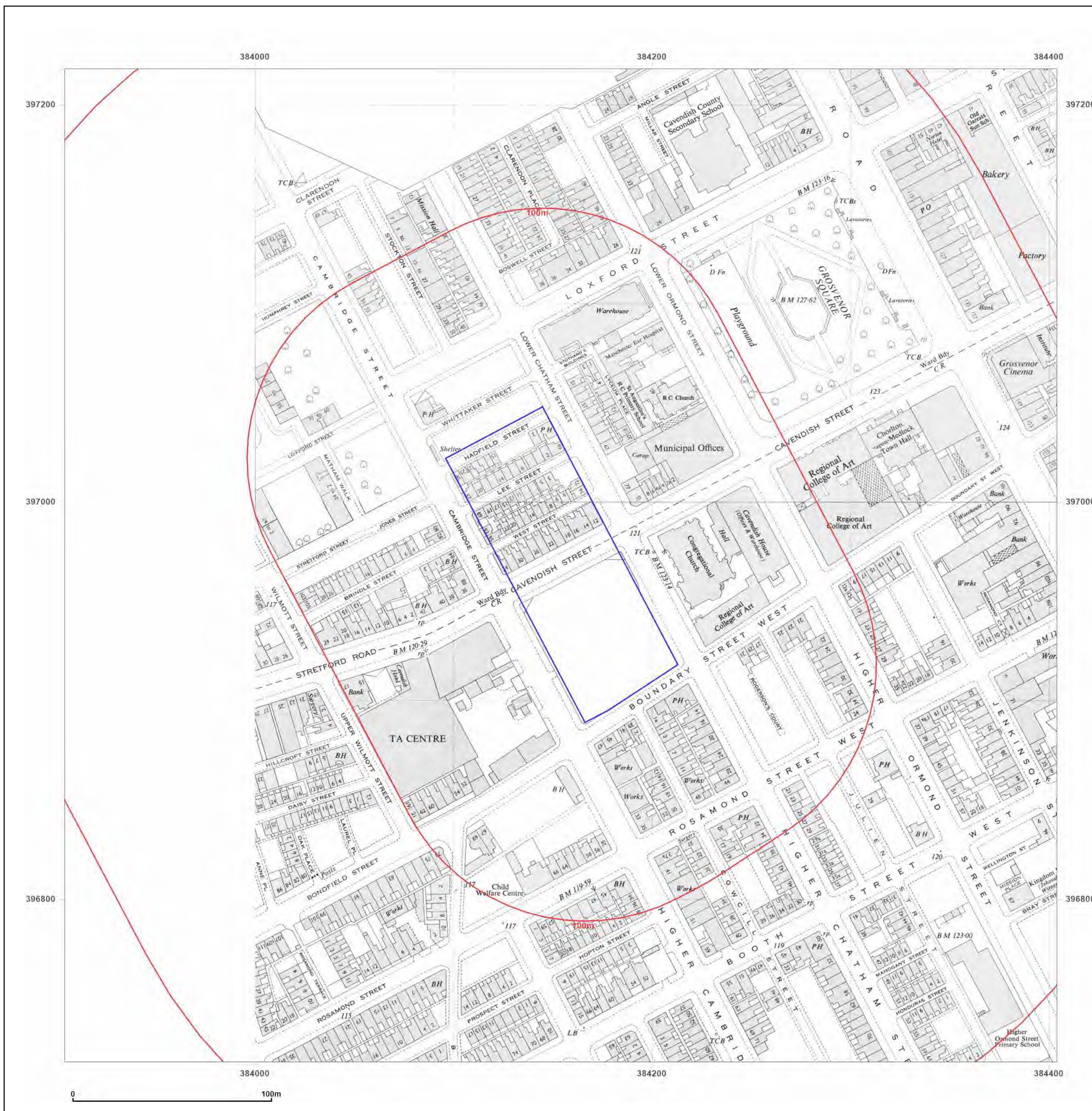


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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1963-1965

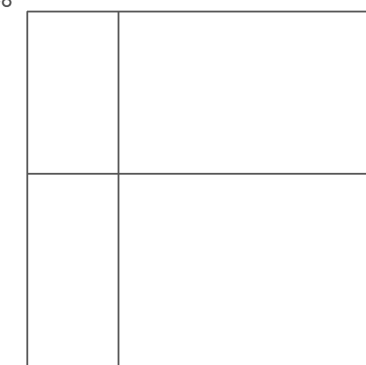
Scale: 1:2,500

Printed at: 1:2,500



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Revised 1963
Edition 1965
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Levelled 1958

Surveyed 1963
Revised 1963
Edition 1965
Copyright 1965
Levelled 1959



Surveyed 1961
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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1965-1970

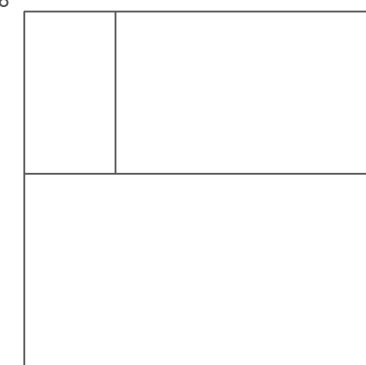
Scale: 1:2,500

Printed at: 1:2,500



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

Surveyed 1968
Revised 1968
Edition N/A
Copyright 1970
Levelled 1964

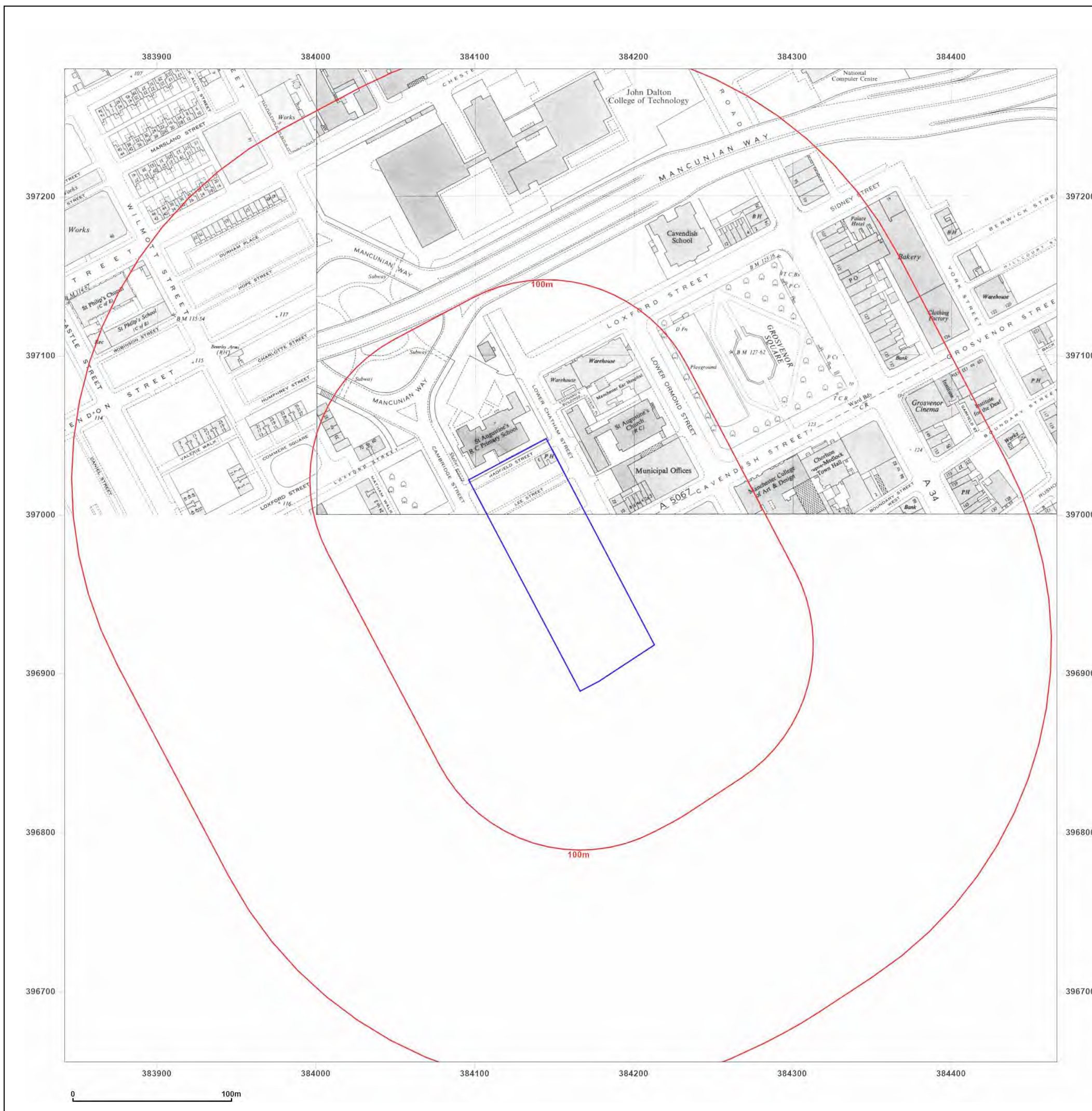


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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

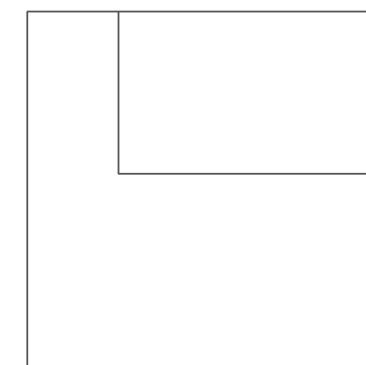
Map date: 1970

Scale: 1:2,500

Printed at: 1:2,500



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Revised N/A
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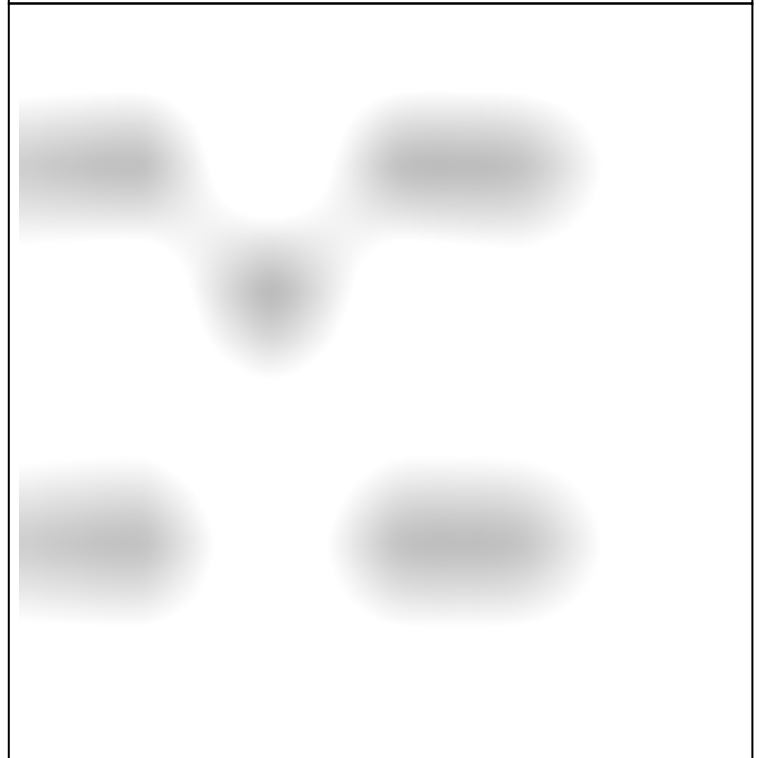
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Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1969-1974

Scale: 1:1,250

Printed at: 1:2,000

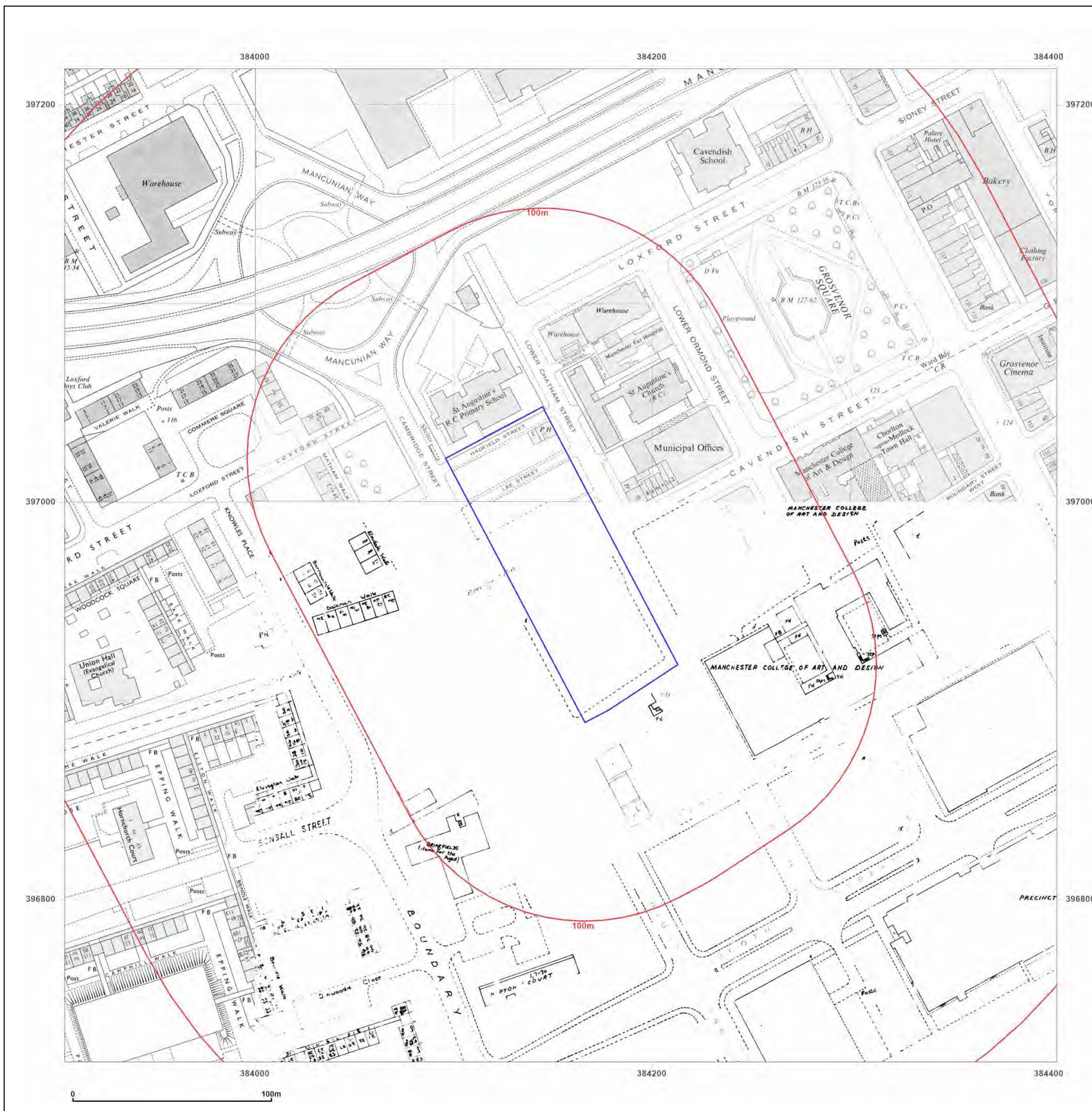


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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1975-1980

Scale: 1:1,250

Printed at: 1:2,000

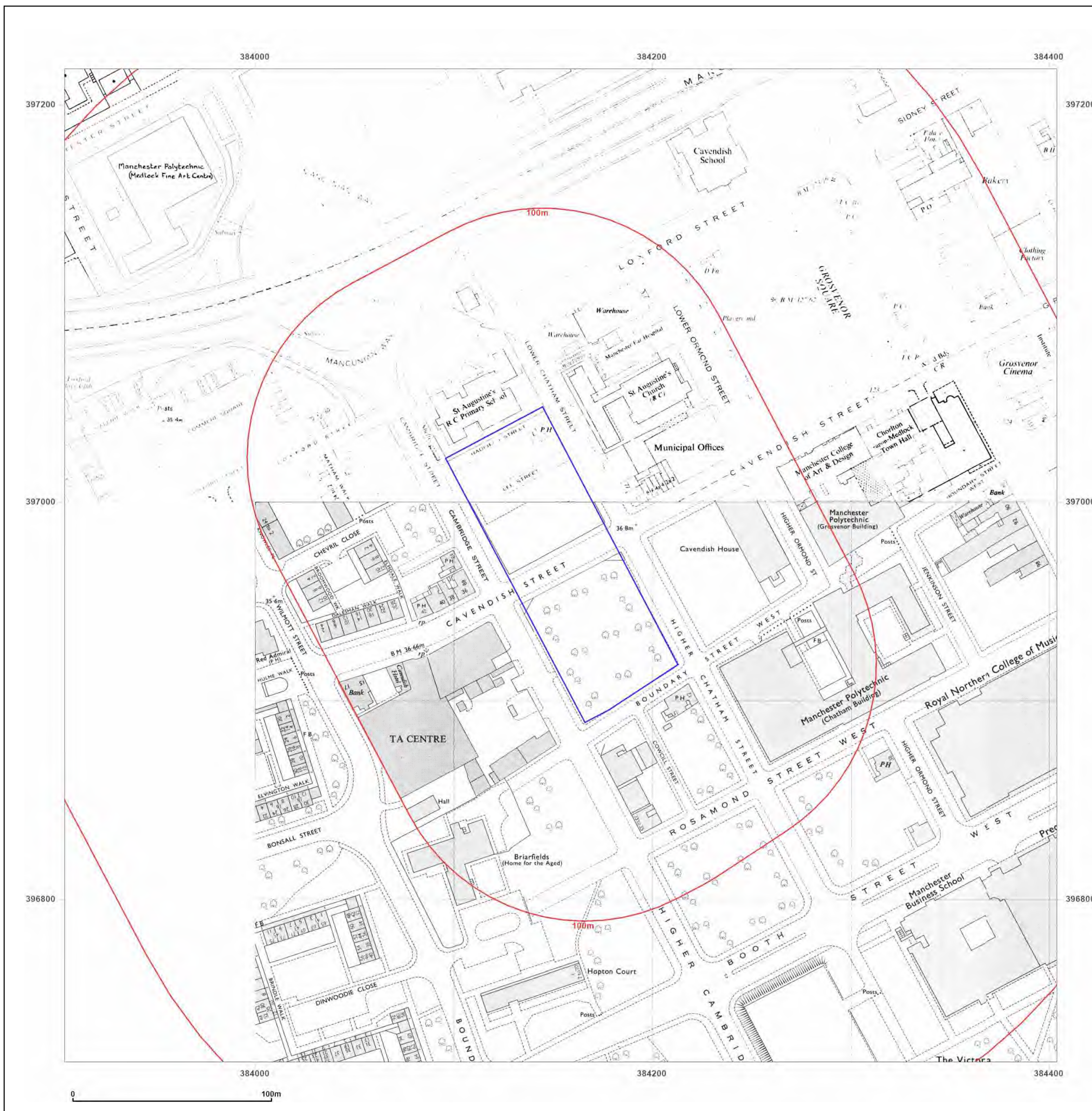


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Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1980-1985

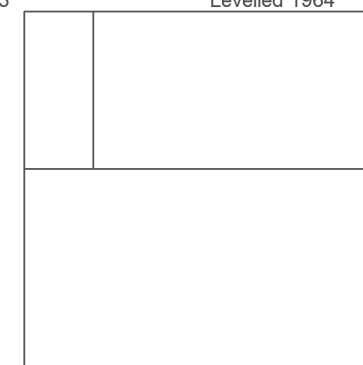
Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
Revised N/A
Edition N/A
Copyright 1980
Levelled 1963

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

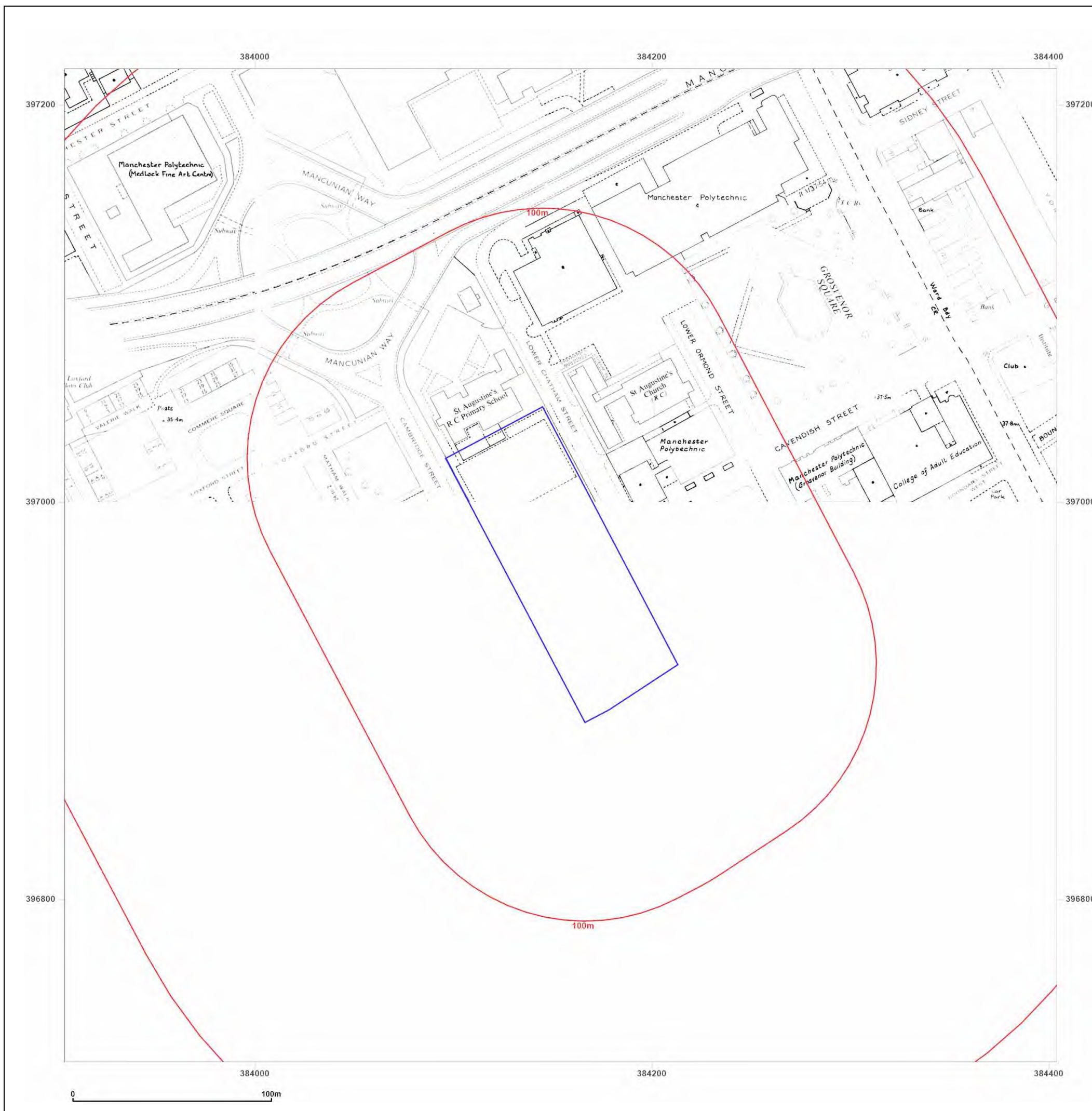


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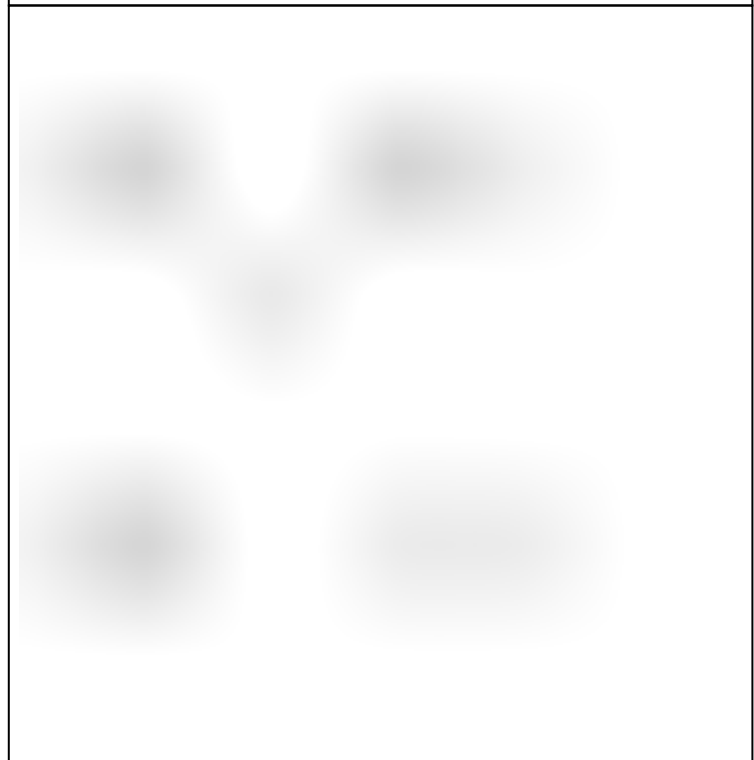
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Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1985-1990

Scale: 1:1,250

Printed at: 1:2,000

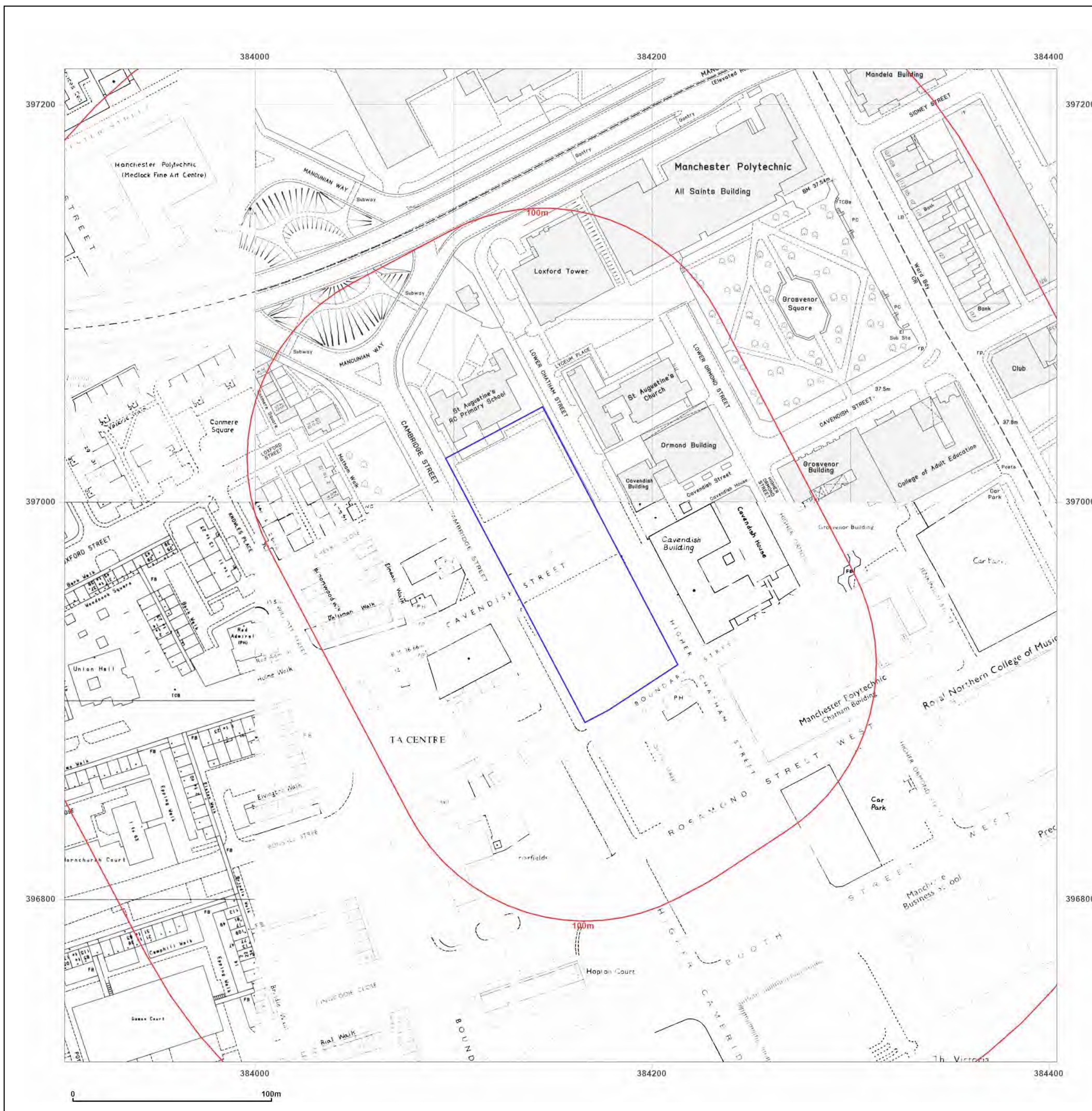


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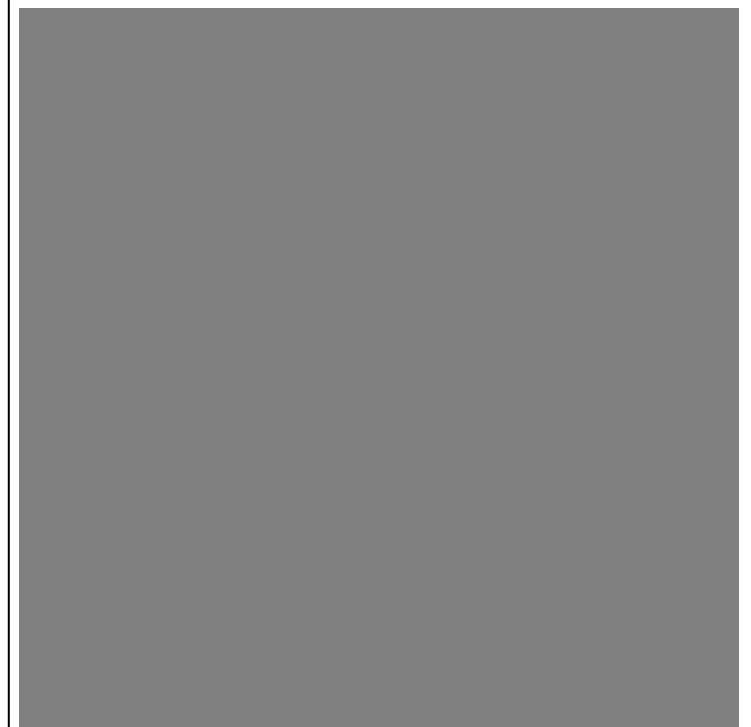
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Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1987-1992

Scale: 1:1,250

Printed at: 1:2,000



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



Site Details:

CAMBRIDGE NORTH HALL,
CAVENDISH STREET,
MANCHESTER, M15 6TT

Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1987-1992

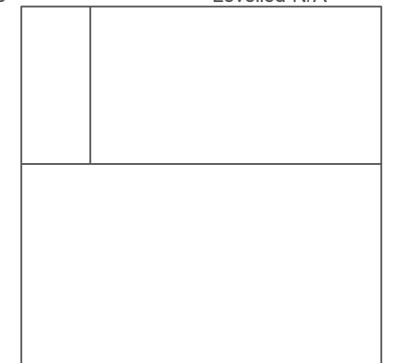
Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1963
Revised 1987
Edition N/A
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Levelled 1963

Surveyed N/A
Revised N/A
Edition N/A
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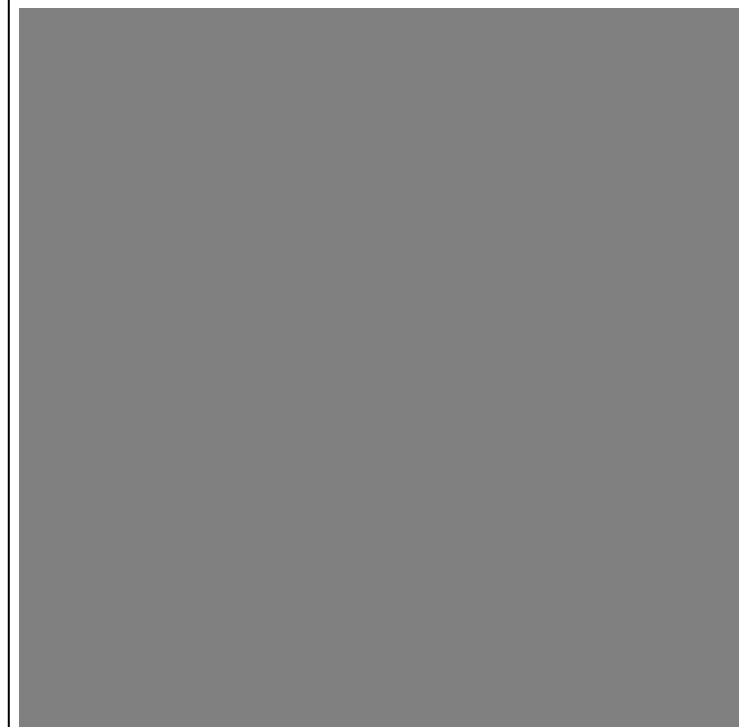
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Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1992-1995

Scale: 1:1,250

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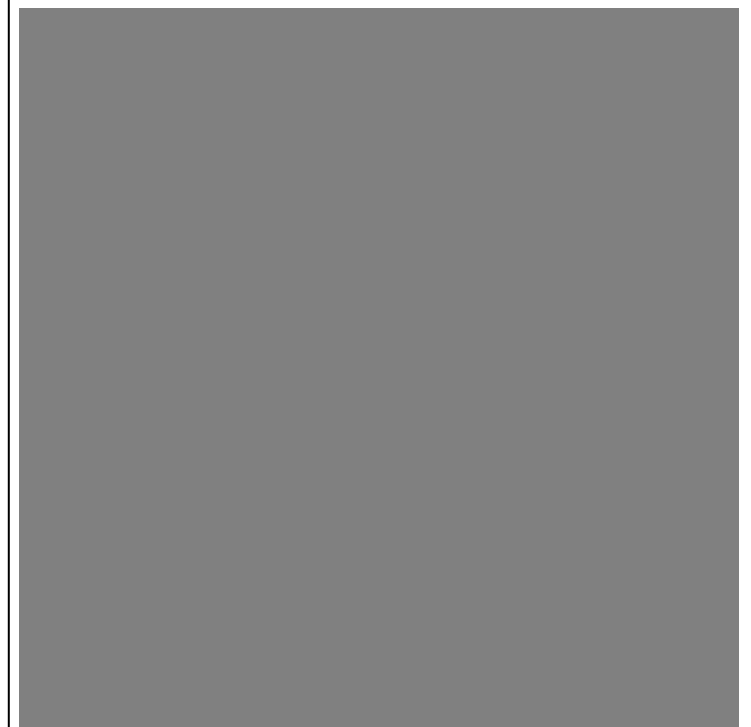
Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: National Grid

Map date: 1990-1995

Scale: 1:1,250

Printed at: 1:2,000



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Site Details:

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MANCHESTER, M15 6TT

Client Ref: 303452-00
Report Ref: GS-EKO-SRE-W7V-DNV
Grid Ref: 384154, 396968

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



2003



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CAMBRIDGE NORTH HALL, CAVENDISH STREET, MANCHESTER, M15 6TT

Order Details

Date: 09/07/2024
Your ref: 303452-00
Our Ref: GS-3GV-IYB-YV9-QOJ

Site Details

Location: 384167 396966
Area: 0.82 ha
Authority: [Manchester City Council](#) ↗



Summary of findings

[p. 2 >](#) **Aerial image**

[p. 9 >](#)

OS MasterMap site plan

[p.14 >](#) [Insight User Guide](#) ↗

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	1	2	74	-
18 >	1.2 >	Historical tanks >	0	0	0	94	-
22 >	1.3 >	Historical energy features >	0	0	2	45	-
24	1.4	Historical petrol stations	0	0	0	0	-
24 >	1.5 >	Historical garages >	0	5	1	12	-
25	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
26 >	2.1 >	Historical industrial land uses >	0	1	3	119	-
31 >	2.2 >	Historical tanks >	0	0	0	154	-
37 >	2.3 >	Historical energy features >	0	0	3	70	-
40	2.4	Historical petrol stations	0	0	0	0	-
40 >	2.5 >	Historical garages >	0	7	3	27	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
42	3.1	Active or recent landfill	0	0	0	0	-
42	3.2	Historical landfill (BGS records)	0	0	0	0	-
43	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
43	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
43 >	3.5 >	Historical waste sites >	0	0	0	5	-
44 >	3.6 >	Licensed waste sites >	0	0	0	1	-
44 >	3.7 >	Waste exemptions >	0	1	17	24	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
49 >	4.1 >	Recent industrial land uses >	0	2	11	-	-
50 >	4.2 >	Current or recent petrol stations >	0	0	0	1	-
51	4.3	Electricity cables	0	0	0	0	-
51	4.4	Gas pipelines	0	0	0	0	-
51	4.5	Sites determined as Contaminated Land	0	0	0	0	-



51	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
51	4.7	Regulated explosive sites	0	0	0	0	-
52	4.8	Hazardous substance storage/usage	0	0	0	0	-
52	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
52	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
52 >	4.11 >	<u>Licensed pollutant release (Part A(2)/B) ></u>	0	0	0	2	-
53 >	4.12 >	<u>Radioactive Substance Authorisations ></u>	0	0	6	12	-
56 >	4.13 >	<u>Licensed Discharges to controlled waters ></u>	0	0	2	33	-
61	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
61	4.15	Pollutant release to public sewer	0	0	0	0	-
61	4.16	List 1 Dangerous Substances	0	0	0	0	-
61	4.17	List 2 Dangerous Substances	0	0	0	0	-
61 >	4.18 >	<u>Pollution Incidents (EA/NRW) ></u>	0	0	0	1	-
62	4.19	Pollution inventory substances	0	0	0	0	-
62	4.20	Pollution inventory waste transfers	0	0	0	0	-
62 >	4.21 >	<u>Pollution inventory radioactive waste ></u>	0	0	0	1	-
Page	Section	<u>Hydrogeology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
64 >	5.1 >	<u>Superficial aquifer ></u>	Identified (within 500m)				
66 >	5.2 >	<u>Bedrock aquifer ></u>	Identified (within 500m)				
68 >	5.3 >	<u>Groundwater vulnerability ></u>	Identified (within 50m)				
69	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
69	5.5	Groundwater vulnerability- local information	None (within 0m)				
70 >	5.6 >	<u>Groundwater abstractions ></u>	0	0	2	2	38
81 >	5.7 >	<u>Surface water abstractions ></u>	0	0	0	0	2
82	5.8	Potable abstractions	0	0	0	0	0
82 >	5.9 >	<u>Source Protection Zones ></u>	1	0	0	0	-
82	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	<u>Hydrology ></u>	On site	0-50m	50-250m	250-500m	500-2000m
83	6.1	Water Network (OS MasterMap)	0	0	0	-	-



83	6.2	Surface water features	0	0	0	-	-
84 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
84 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
85 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
86 >	7.1 >	Risk of flooding from rivers and the sea >	Low (within 50m)				
87	7.2	Historical Flood Events	0	0	0	-	-
87	7.3	Flood Defences	0	0	0	-	-
87	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
87	7.5	Flood Storage Areas	0	0	0	-	-
88 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
89	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
90 >	8.1 >	Surface water flooding >	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding >					
92 >	9.1 >	Groundwater flooding >	Moderate-High (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
93	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
93	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
93	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
93	10.4	Special Protection Areas (SPA)	0	0	0	0	0
94	10.5	National Nature Reserves (NNR)	0	0	0	0	0
94	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
94	10.7	Designated Ancient Woodland	0	0	0	0	0
94	10.8	Biosphere Reserves	0	0	0	0	0
95	10.9	Forest Parks	0	0	0	0	0
95	10.10	Marine Conservation Zones	0	0	0	0	0
95	10.11	Green Belt	0	0	0	0	0
95	10.12	Proposed Ramsar sites	0	0	0	0	0



95	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
96	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
96	10.15	Nitrate Sensitive Areas	0	0	0	0	0
96 >	10.16 >	Nitrate Vulnerable Zones >	0	0	0	0	3
97 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
98	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
99	11.1	World Heritage Sites	0	0	0	-	-
100	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
100	11.3	National Parks	0	0	0	-	-
100 >	11.4 >	Listed Buildings >	0	1	8	-	-
101	11.5	Conservation Areas	0	0	0	-	-
101	11.6	Scheduled Ancient Monuments	0	0	0	-	-
101	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
102 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
103	12.2	Open Access Land	0	0	0	-	-
103	12.3	Tree Felling Licences	0	0	0	-	-
103	12.4	Environmental Stewardship Schemes	0	0	0	-	-
103	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
104	13.1	Priority Habitat Inventory	0	0	0	-	-
104	13.2	Habitat Networks	0	0	0	-	-
104	13.3	Open Mosaic Habitat	0	0	0	-	-
104	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
105 >	14.1 >	10k Availability >	Identified (within 500m)				
106 >	14.2 >	Artificial and made ground (10k) >	0	0	2	2	-
108 >	14.3 >	Superficial geology (10k) >	1	0	2	1	-



109	14.4	Landslip (10k)	0	0	0	0	-
110 >	14.5 >	Bedrock geology (10k) >	1	0	1	0	-
111 >	14.6 >	Bedrock faults and other linear features (10k) >	0	0	1	0	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
112 >	15.1 >	50k Availability >	Identified (within 500m)				
113 >	15.2 >	Artificial and made ground (50k) >	0	0	1	0	-
114	15.3	Artificial ground permeability (50k)	0	0	-	-	-
115 >	15.4 >	Superficial geology (50k) >	1	0	2	1	-
116 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
116	15.6	Landslip (50k)	0	0	0	0	-
116	15.7	Landslip permeability (50k)	None (within 50m)				
117 >	15.8 >	Bedrock geology (50k) >	1	0	1	0	-
118 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
118 >	15.10 >	Bedrock faults and other linear features (50k) >	0	0	1	0	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
119 >	16.1 >	BGS Boreholes >	0	13	49	-	-
Page	Section	Natural ground subsidence >					
123 >	17.1 >	Shrink swell clays >	Negligible (within 50m)				
124 >	17.2 >	Running sands >	Very low (within 50m)				
125 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
126 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
127 >	17.5 >	Landslides >	Very low (within 50m)				
128 >	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
130	18.1	BritPits	0	0	0	0	-
130	18.2	Surface ground workings	0	0	0	-	-
130	18.3	Underground workings	0	0	0	0	0
130	18.4	Underground mining extents	0	0	0	0	-
131	18.5	Historical Mineral Planning Areas	0	0	0	0	-



131	18.6	Non-coal mining	0	0	0	0	0
131 >	18.7 >	JPB mining areas >	Identified (within 0m)				
131	18.8	The Coal Authority non-coal mining	0	0	0	0	-
132	18.9	Researched mining	0	0	0	0	-
132	18.10	Mining record office plans	0	0	0	0	-
132	18.11	BGS mine plans	0	0	0	0	-
132 >	18.12 >	Coal mining >	Identified (within 0m)				
133	18.13	Brine areas	None (within 0m)				
133	18.14	Gypsum areas	None (within 0m)				
133	18.15	Tin mining	None (within 0m)				
133	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes >	On site	0-50m	50-250m	250-500m	500-2000m
134	19.1	Natural cavities	0	0	0	0	-
135 >	19.2 >	Mining cavities >	0	0	0	0	1
135	19.3	Reported recent incidents	0	0	0	0	-
135	19.4	Historical incidents	0	0	0	0	-
136	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
137 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
139 >	21.1 >	BGS Estimated Background Soil Chemistry >	3	0	-	-	-
139 >	21.2 >	BGS Estimated Urban Soil Chemistry >	5	3	-	-	-
140	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
141	22.1	Underground railways (London)	0	0	0	-	-
141	22.2	Underground railways (Non-London)	0	0	0	-	-
141	22.3	Railway tunnels	0	0	0	-	-
141	22.4	Historical railway and tunnel features	0	0	0	-	-
141	22.5	Royal Mail tunnels	0	0	0	-	-

142	22.6	Historical railways	0	0	0	-	-
142	22.7	Railways	0	0	0	-	-
142	22.8	Crossrail 1	0	0	0	0	-
142	22.9	Crossrail 2	0	0	0	0	-
142	22.10	HS2	0	0	0	0	-

Recent aerial photograph



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Capture Date: 18/10/2022

Site Area: 0.82ha



Recent site history - 2019 aerial photograph



Capture Date: 22/04/2019

Site Area: 0.82ha



Recent site history - 2015 aerial photograph



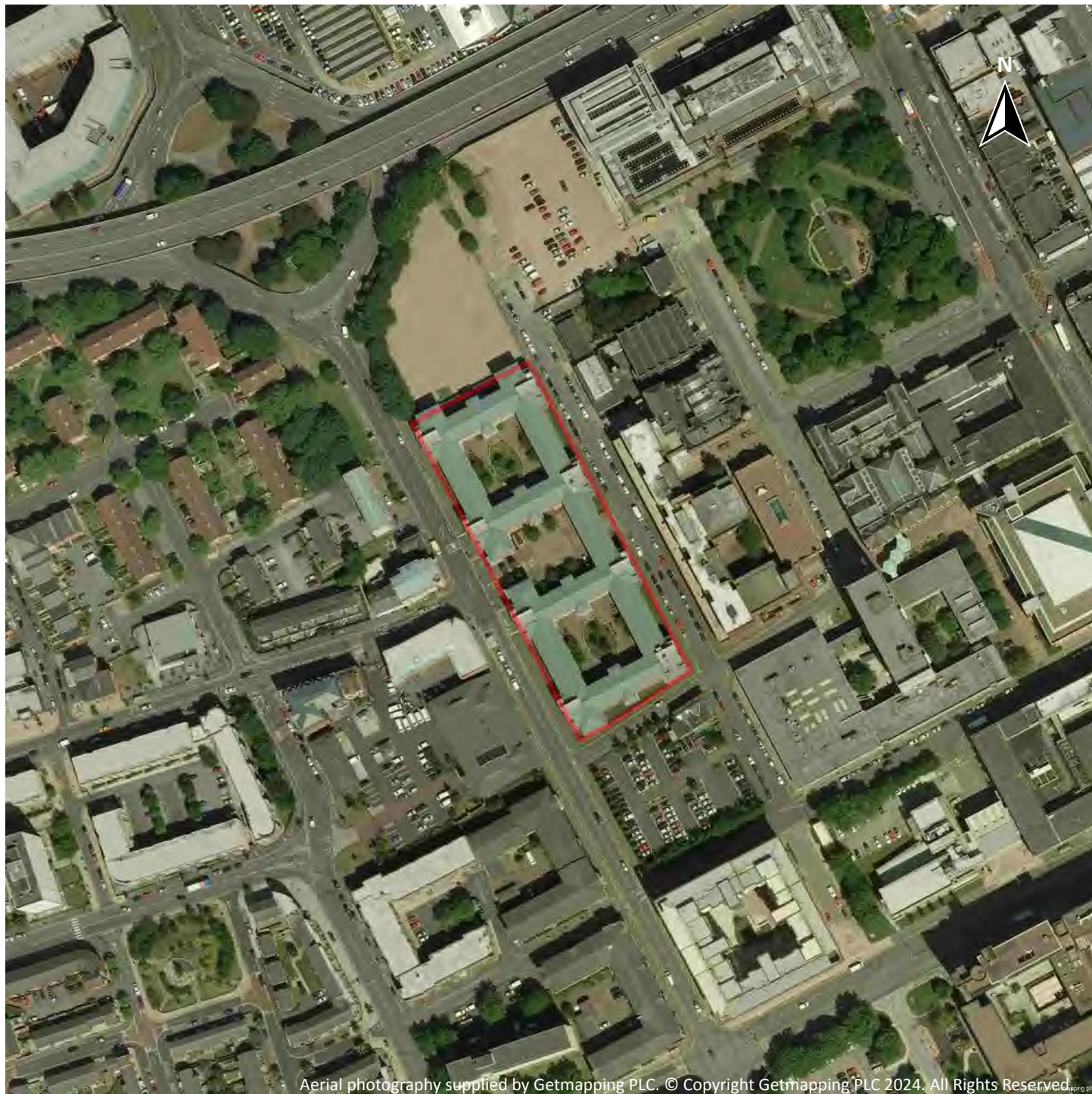
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Capture Date: 11/06/2015

Site Area: 0.82ha



Recent site history - 2009 aerial photograph



Capture Date: 02/06/2009

Site Area: 0.82ha



Recent site history - 2000 aerial photograph



Capture Date: 27/06/2000

Site Area: 0.82ha



OS MasterMap site plan

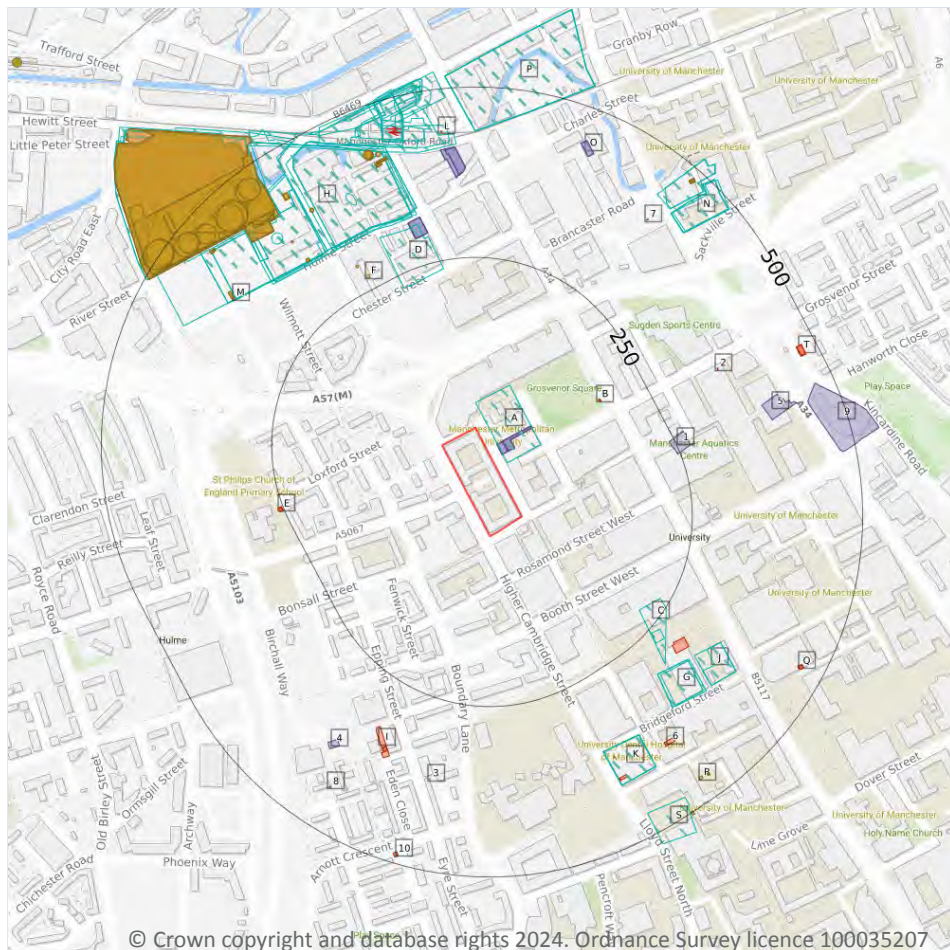


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Site Area: 0.82ha



1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks
- Historical energy features
- Historical garages

1.1 Historical industrial land uses

Records within 500m

77

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	18m N	Hospital	1972	852919



ID	Location	Land use	Dates present	Group ID
C	220m SE	Unspecified Works	1916	834958
D	229m N	Unspecified Mills	1916 - 1923	920381
C	256m SE	Police Station	1972	858799
G	306m SE	Corporation Yard	1934 - 1938	903501
G	306m SE	Corporation Yard	1915	975730
G	310m SE	Corporation Yard	1923	889227
H	322m N	Rubber Works	1923	965876
H	324m N	Rubber Works	1916	922757
H	325m N	Unspecified Commercial/Industrial	1896	1008574
J	325m SE	Hospital	1934 - 1938	863071
H	326m N	Unspecified Works	1985 - 1994	892981
H	326m N	Unspecified Works	1980	946286
H	326m N	Unspecified Commercial/Industrial	1905	879196
H	326m N	Rubber Works	1932 - 1938	994093
H	330m NW	Unspecified Commercial/Industrial	1848 - 1896	983292
H	331m NW	Rubber Works	1956	973654
H	331m NW	Unspecified Works	1985 - 1994	928815
H	331m NW	Unspecified Works	1980	976327
J	335m SE	Hospital	1915	911149
K	357m SE	Hospital	1985 - 1994	880437
K	357m SE	Hospital	1980	896413
K	357m SE	Hospital	1956 - 1972	913242
H	371m NW	Unspecified Tanks	1848	819192
H	380m NW	Unspecified Tank	1848	849452
H	412m N	Railway Sidings	1905 - 1938	859983
H	413m NW	Unspecified Commercial/Industrial	1932 - 1938	924691
H	413m NW	Gas Works	1905 - 1923	968250
H	415m NW	Unspecified Tank	1848	996644



ID	Location	Land use	Dates present	Group ID
H	415m NW	Unspecified Commercial/Industrial	1956	1002925
H	416m NW	Unspecified Tanks	1896	958691
H	418m N	Railway Sidings	1985 - 1994	879821
H	418m N	Railway Station	1905 - 1938	935895
N	419m NE	Unspecified Mills	1915	903006
N	419m NE	Unspecified Mills	1934 - 1938	939880
N	419m NE	Unspecified Mills	1890	950972
H	420m NW	Unspecified Tanks	1956	1009741
H	420m NW	Unspecified Tank	1932 - 1938	937983
H	420m NW	Gasometer	1905 - 1923	946404
N	422m NE	Unspecified Mills	1923	971281
H	422m NW	Unspecified Works	1972	881829
H	423m NW	Gas Works	1980	888421
H	423m NW	Gas Works	1985	923545
H	423m N	Unspecified Tank	1896	849969
H	426m N	Railway Station	1956	999761
H	427m N	Railway Station	1896	957144
N	429m NE	Unspecified Works	1923	929582
N	431m NE	Unspecified Works	1915	977780
H	432m NW	Gasometer	1985	897602
H	432m NW	Unspecified Tank	1972	913097
H	432m NW	Gasometer	1980	917421
H	433m N	Railway Station	1972	903819
H	433m N	Railway Station	1980	931454
H	433m N	Railway Station	1985	982166
P	435m N	Unspecified Commercial/Industrial	1923	910139
P	435m N	Unspecified Commercial/Industrial	1905	951830
P	435m N	Unspecified Mills	1932 - 1938	992472



ID	Location	Land use	Dates present	Group ID
P	435m N	Unspecified Mills	1916	993089
H	436m NW	Unspecified Tank	1932 - 1938	921791
H	436m NW	Gasometer	1905 - 1923	924805
H	437m N	Railway Station	1988 - 1994	991843
H	451m NW	Gasometer	1905 - 1923	939619
H	451m NW	Unspecified Tank	1932 - 1938	1009278
H	454m NW	Unspecified Tank	1932 - 1938	991708
H	454m NW	Gasometer	1905 - 1923	1001145
H	458m N	Gas Works	1848	852813
H	461m NW	Unspecified Tanks	1956	993648
H	464m NW	Unspecified Tank	1932 - 1938	887495
H	464m NW	Gasometer	1905 - 1923	961359
S	467m SE	Brewery	1923	808325
H	471m N	Tanks	1848	827416
H	474m N	Railway Sidings	1896	993937
H	477m NW	Unspecified Tank	1972	871635
H	477m NW	Gasometer	1980	936391
H	483m NW	Unspecified Tank	1932 - 1938	876704
H	483m NW	Gasometer	1905 - 1923	922201
H	491m N	Railway Building	1956	854219

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

94

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 ungrouped 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	267m NW	Unspecified Tank	1949 - 1985	151969
F	289m NW	Unspecified Tank	1922	115714
H	333m NW	Unspecified Tank	1893	129815
H	333m NW	Unspecified Tank	1922	131267
3	366m S	Unspecified Tank	1891	115707
H	369m NW	Unspecified Tank	1908	114953
K	371m SE	Unspecified Tank	1891	115129
M	372m NW	Unspecified Tank	1980 - 1985	141556
M	375m NW	Unspecified Tank	1949 - 1957	139489
M	376m NW	Unspecified Tank	1969	154955
H	392m NW	Unspecified Tank	1922	135180
H	392m NW	Unspecified Tank	1893	145665
7	395m NE	Unspecified Tank	1891	115134
H	400m NW	Gas Works	1893 - 1908	129043
H	400m NW	Gas Works	1922	138279
H	400m NW	Gas Works	1891	146932
H	409m N	Unspecified Tank	1953	156072
H	409m N	Unspecified Tank	1948	142178
H	409m N	Tanks	1950	108894
H	409m N	Unspecified Tank	1955	152417
H	409m N	Tanks	1953	108483
H	413m N	Unspecified Tank	1953	140978
H	413m N	Unspecified Tank	1948	143136
H	413m N	Unspecified Tank	1955	155695
H	414m N	Unspecified Tank	1955	153467
H	414m NW	Gas Works	1949	128464
H	414m N	Unspecified Tank	1953	149069
H	414m N	Unspecified Tank	1948	133077



ID	Location	Land use	Dates present	Group ID
H	415m NW	Unspecified Tank	1891 - 1893	145005
H	418m NW	Tanks	1932	108716
H	418m NW	Gasometers	1908 - 1922	153355
H	418m NW	Unspecified Tank	1957 - 1965	133065
H	418m NW	Gasometer	1949	136042
H	419m NW	Unspecified Tank	1953	138538
H	419m NW	Gasometer	1891 - 1893	156214
H	420m NW	Unspecified Tank	1987 - 1990	144190
H	422m N	Unspecified Tank	1922	115713
H	422m N	Gasometer	1908	148893
H	423m N	Gasometer	1891	135547
H	423m NW	Disused Gas Holder Station	1985	126184
H	423m NW	Gas Holder Station	1980	155526
H	424m N	Unspecified Tank	1893	115711
H	424m NW	Unspecified Tank	1969	142299
H	426m NW	Unspecified Tank	1980 - 1990	126732
H	427m NW	Unspecified Tank	1969	154747
H	427m NW	Unspecified Tank	1998	149018
8	435m SW	Unspecified Tank	1891	115708
H	435m NW	Unspecified Tank	1957 - 1965	141299
H	435m NW	Gasometer	1949	142179
H	435m NW	Gas Holder	1980 - 1985	137601
H	436m NW	Unspecified Tank	1953	138289
H	436m NW	Gasometer	1893 - 1969	149968
L	436m N	Unspecified Tank	1953	140936
H	436m NW	Gasometer	1891	152905
L	437m N	Unspecified Tank	1955	142095
H	438m NW	Unspecified Tank	1998	153520



ID	Location	Land use	Dates present	Group ID
H	438m NW	Unspecified Tank	1949 - 1957	137028
H	438m NW	Unspecified Tank	1969 - 1990	140651
H	441m NW	Unspecified Tank	1893	149484
H	448m NW	Gasometer	1891	114291
H	451m NW	Gasometer	1893	139247
H	452m NW	Unspecified Tank	1893	154854
H	453m NW	Unspecified Tank	1980 - 1985	151024
H	453m NW	Unspecified Tank	1953 - 1965	145295
H	453m NW	Gasometer	1969	114290
H	455m NW	Unspecified Tank	1957 - 1965	127332
H	455m NW	Gasometer	1949	135711
H	455m NW	Gasometer	1891	141539
H	455m NW	Gasometer	1891 - 1893	130887
H	455m NW	Unspecified Tank	1953	131749
H	460m NW	Unspecified Tank	1957 - 1965	134264
H	460m NW	Gasometer	1949	136972
H	461m NW	Gasometer	1893	144817
H	462m NW	Unspecified Tank	1953	137941
R	463m SE	Unspecified Tank	1949	115113
R	465m SE	Unspecified Tank	1948	131212
R	465m SE	Unspecified Tank	1951	155173
H	472m NW	Unspecified Tank	1953 - 1985	142137
H	474m NW	Unspecified Tank	1891 - 1893	129472
H	477m NW	Unspecified Tank	1953 - 1965	130539
N	477m NE	Unspecified Tank	1948	143473
N	478m NE	Unspecified Tank	1955	128239
N	478m NE	Tanks	1969 - 1970	130218
N	478m NE	Tanks	1962	146793



ID	Location	Land use	Dates present	Group ID
H	478m NW	Unspecified Tank	1893	147641
N	479m NE	Unspecified Tank	1950 - 1953	127228
H	479m NW	Gasometer	1949	140020
H	479m NW	Unspecified Tank	1957 - 1965	143015
H	481m NW	Unspecified Tank	1953	131493
H	481m NW	Gasometer	1893 - 1969	150127
H	495m NW	Unspecified Tank	1953 - 1969	143010
S	498m SE	Unspecified Tank	1964 - 1977	135402
H	499m NW	Tanks	1891	126769
H	499m NW	Tanks	1893	151285

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	47
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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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on [page 15 >](#)

ID	Location	Land use	Dates present	Group ID
B	178m NE	Electricity Substation	1990	66731
B	178m NE	Electricity Substation	1995 - 1998	72444
E	252m W	Electricity Substation	1973	78909
E	252m W	Electricity Substation	1995 - 1997	86061
E	253m W	Electricity Substation	1990	72684
C	290m SE	Electricity Substation	1948 - 1951	85102
I	322m SW	Electricity Substation	1976	83870
I	344m S	Electricity Substation	1995	70843

ID	Location	Land use	Dates present	Group ID
I	344m S	Electricity Substation	1997	75125
2	354m NE	Electricity Substation	1987	64532
6	392m SE	Electricity Substation	1976 - 1997	75515
H	400m NW	Gas Works	1922	84456
H	400m NW	Gas Works	1893 - 1908	86780
H	400m NW	Gas Works	1891	73990
K	402m SE	Electricity Substation	1976	85410
K	403m SE	Electricity Substation	1995	73417
K	403m SE	Electricity Substation	1997	75094
H	414m NW	Gas Works	1949	79857
H	418m NW	Gasometers	1908 - 1922	79709
H	418m NW	Gasometer	1949	90192
H	419m NW	Gasometer	1891 - 1893	73168
H	422m N	Gasometer	1908	91082
H	423m N	Gasometer	1891	77992
H	423m NW	Disused Gas Holder Station	1985	68843
H	423m NW	Gas Holder Station	1980	74476
H	435m NW	Gasometer	1949	88747
H	435m NW	Gas Holder	1980 - 1985	90352
H	436m NW	Gasometer	1893 - 1969	79524
H	436m NW	Gasometer	1891	77969
H	448m NW	Gasometer	1891	68520
H	451m NW	Gasometer	1893	84792
H	453m NW	Gasometer	1969	68519
H	455m NW	Gasometer	1949	76936
H	455m NW	Gasometer	1891	77434
H	455m NW	Gasometer	1891 - 1893	86689
H	460m NW	Gasometer	1949	74834



ID	Location	Land use	Dates present	Group ID
Q	460m SE	Electricity Substation	1987	89212
H	461m NW	Gasometer	1893	91928
Q	462m SE	Electricity Substation	1989	87185
H	462m NW	Electricity Substation	1998	65849
Q	463m SE	Electricity Substation	1992	82347
T	472m E	Electricity Substation	1984 - 1998	87358
T	472m NE	Electricity Substation	1948 - 1955	69652
T	472m NE	Electricity Substation	1970	92464
H	479m NW	Gasometer	1949	87070
H	481m NW	Gasometer	1893 - 1969	81639
10	483m S	Electricity Substation	1977 - 1993	87317

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0
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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 ungrouped 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	18
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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 ungrouped 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	16m NE	Garage	1965	27960
A	17m NE	Garage	1962	28911
A	25m NE	Garage	1948	26397
A	27m NE	Garage	1953	24511
A	27m NE	Garage	1955	30641
1	242m E	Garage	1962 - 1965	30209
D	291m N	Garage	1985 - 1987	25586
D	291m N	Garage	1962 - 1969	26876
D	291m N	Garage	1970	24700
L	368m N	Garage	1948 - 1962	23262
L	368m N	Garage	1969 - 1998	31003
L	372m N	Garage	1955 - 1985	23928
L	372m N	Garage	1990	27184
4	373m SW	Garage	1955	22502
5	388m E	Garage	1954	22735
O	431m N	Garage	1948	27019
O	431m N	Garage	1953 - 1955	24059
9	452m E	Garage	1984 - 1998	27156

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

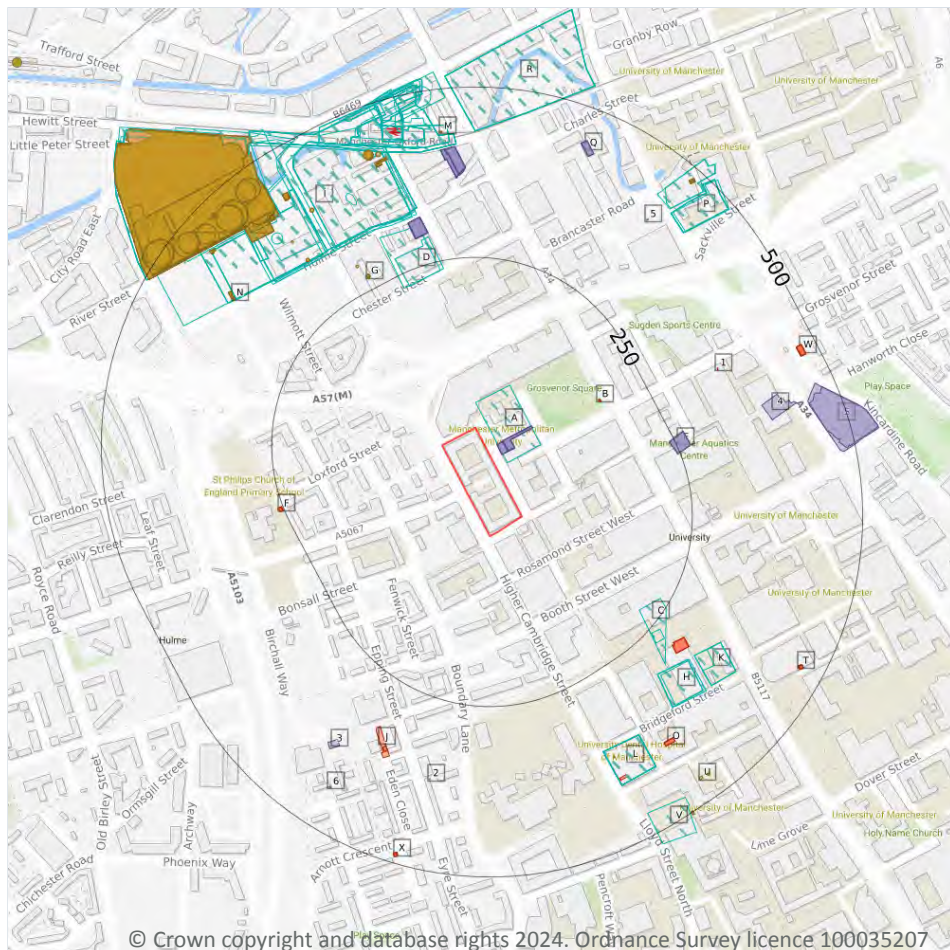
0

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



- 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

123

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 26 >](#)

ID	Location	Land Use	Date	Group ID
A	18m N	Hospital	1972	852919
C	220m SE	Unspecified Works	1916	834958
D	229m N	Unspecified Mills	1916	920381



ID	Location	Land Use	Date	Group ID
D	230m N	Unspecified Mills	1923	920381
C	256m SE	Police Station	1972	858799
H	306m SE	Corporation Yard	1938	903501
H	306m SE	Corporation Yard	1934	903501
H	306m SE	Corporation Yard	1915	975730
H	310m SE	Corporation Yard	1923	889227
I	322m N	Rubber Works	1923	965876
I	324m N	Rubber Works	1916	922757
I	325m N	Unspecified Commercial/Industrial	1896	1008574
K	325m SE	Hospital	1938	863071
K	325m SE	Hospital	1934	863071
I	326m N	Unspecified Works	1988	892981
I	326m N	Unspecified Works	1980	946286
I	326m N	Unspecified Works	1985	892981
I	326m N	Unspecified Works	1994	892981
I	326m N	Rubber Works	1938	994093
I	326m N	Rubber Works	1932	994093
I	326m N	Unspecified Commercial/Industrial	1905	879196
I	330m NW	Unspecified Commercial/Industrial	1896	983292
I	331m NW	Rubber Works	1956	973654
I	331m NW	Unspecified Works	1988	928815
I	331m NW	Unspecified Works	1980	976327
I	331m NW	Unspecified Works	1985	928815
I	331m NW	Unspecified Works	1994	928815
K	335m SE	Hospital	1915	911149
I	348m NW	Unspecified Commercial/Industrial	1848	983292
L	357m SE	Hospital	1972	913242
L	357m SE	Hospital	1956	913242



ID	Location	Land Use	Date	Group ID
L	357m SE	Hospital	1988	880437
L	357m SE	Hospital	1980	896413
L	357m SE	Hospital	1985	880437
L	357m SE	Hospital	1994	880437
I	371m NW	Unspecified Tanks	1848	819192
I	380m NW	Unspecified Tank	1848	849452
I	412m N	Railway Sidings	1938	859983
I	412m N	Railway Sidings	1932	859983
I	412m N	Railway Sidings	1916	859983
I	412m N	Railway Sidings	1905	859983
I	412m N	Railway Sidings	1923	859983
I	413m NW	Unspecified Commercial/Industrial	1938	924691
I	413m NW	Unspecified Commercial/Industrial	1932	924691
I	413m NW	Gas Works	1916	968250
I	413m NW	Gas Works	1905	968250
I	413m NW	Gas Works	1923	968250
I	415m NW	Unspecified Tank	1848	996644
I	415m NW	Unspecified Commercial/Industrial	1956	1002925
I	416m NW	Unspecified Tanks	1896	958691
I	418m N	Railway Sidings	1988	879821
I	418m N	Railway Sidings	1985	879821
I	418m N	Railway Sidings	1994	879821
I	418m N	Railway Station	1938	935895
I	418m N	Railway Station	1932	935895
I	418m N	Railway Station	1916	935895
I	418m N	Railway Station	1905	935895
I	418m N	Railway Station	1923	935895
P	419m NE	Unspecified Mills	1938	939880



ID	Location	Land Use	Date	Group ID
P	419m NE	Unspecified Mills	1934	939880
P	419m NE	Unspecified Mills	1915	903006
P	419m NE	Unspecified Mills	1890	950972
I	420m NW	Unspecified Tanks	1956	1009741
I	420m NW	Gasometer	1916	946404
I	420m NW	Gasometer	1905	946404
I	420m NW	Unspecified Tank	1938	937983
I	420m NW	Unspecified Tank	1932	937983
I	420m NW	Gasometer	1923	946404
P	422m NE	Unspecified Mills	1923	971281
I	422m NW	Unspecified Works	1972	881829
I	423m NW	Gas Works	1980	888421
I	423m NW	Gas Works	1985	923545
I	423m N	Unspecified Tank	1896	849969
I	426m N	Railway Station	1956	999761
I	427m N	Railway Station	1896	957144
P	429m NE	Unspecified Works	1923	929582
P	431m NE	Unspecified Works	1915	977780
I	432m NW	Unspecified Tank	1972	913097
I	432m NW	Gasometer	1980	917421
I	432m NW	Gasometer	1985	897602
I	433m N	Railway Station	1972	903819
I	433m N	Railway Station	1980	931454
I	433m N	Railway Station	1985	982166
R	435m N	Unspecified Mills	1938	992472
R	435m N	Unspecified Mills	1932	992472
R	435m N	Unspecified Mills	1916	993089
R	435m N	Unspecified Commercial/Industrial	1905	951830



ID	Location	Land Use	Date	Group ID
R	435m N	Unspecified Commercial/Industrial	1923	910139
I	436m NW	Gasometer	1916	924805
I	436m NW	Gasometer	1905	924805
I	436m NW	Unspecified Tank	1938	921791
I	436m NW	Unspecified Tank	1932	921791
I	436m NW	Gasometer	1923	924805
I	437m N	Railway Station	1988	991843
I	437m N	Railway Station	1994	991843
I	451m NW	Gasometer	1916	939619
I	451m NW	Gasometer	1905	939619
I	451m NW	Unspecified Tank	1938	1009278
I	451m NW	Unspecified Tank	1932	1009278
I	451m NW	Gasometer	1923	939619
I	454m NW	Gasometer	1916	1001145
I	454m NW	Gasometer	1905	1001145
I	454m NW	Unspecified Tank	1938	991708
I	454m NW	Unspecified Tank	1932	991708
I	454m NW	Gasometer	1923	1001145
I	458m N	Gas Works	1848	852813
I	461m NW	Unspecified Tanks	1956	993648
I	464m NW	Gasometer	1916	961359
I	464m NW	Gasometer	1905	961359
I	464m NW	Unspecified Tank	1938	887495
I	464m NW	Unspecified Tank	1932	887495
I	464m NW	Gasometer	1923	961359
V	467m SE	Brewery	1923	808325
I	471m N	Tanks	1848	827416
I	474m N	Railway Sidings	1896	993937



ID	Location	Land Use	Date	Group ID
I	477m NW	Unspecified Tank	1972	871635
I	477m NW	Gasometer	1980	936391
I	483m NW	Gasometer	1916	922201
I	483m NW	Gasometer	1905	922201
I	483m NW	Unspecified Tank	1938	876704
I	483m NW	Unspecified Tank	1932	876704
I	483m NW	Gasometer	1923	922201
I	491m N	Railway Building	1956	854219

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	154
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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 26 >](#)

ID	Location	Land Use	Date	Group ID
G	267m NW	Unspecified Tank	1957	151969
G	267m NW	Unspecified Tank	1965	151969
G	267m NW	Unspecified Tank	1949	151969
G	268m NW	Unspecified Tank	1969	151969
G	268m NW	Unspecified Tank	1953	151969
G	268m NW	Unspecified Tank	1980	151969
G	268m NW	Unspecified Tank	1980	151969
G	268m NW	Unspecified Tank	1985	151969
G	289m NW	Unspecified Tank	1922	115714
I	333m NW	Unspecified Tank	1893	129815
I	333m NW	Unspecified Tank	1922	131267
2	366m S	Unspecified Tank	1891	115707



ID	Location	Land Use	Date	Group ID
I	369m NW	Unspecified Tank	1908	114953
L	371m SE	Unspecified Tank	1891	115129
N	372m NW	Unspecified Tank	1980	141556
N	372m NW	Unspecified Tank	1980	141556
N	372m NW	Unspecified Tank	1985	141556
N	375m NW	Unspecified Tank	1957	139489
N	375m NW	Unspecified Tank	1949	139489
N	376m NW	Unspecified Tank	1969	154955
N	376m NW	Unspecified Tank	1953	139489
I	392m NW	Unspecified Tank	1893	145665
I	392m NW	Unspecified Tank	1922	135180
5	395m NE	Unspecified Tank	1891	115134
I	400m NW	Gas Works	1893	129043
I	400m NW	Gas Works	1922	138279
I	400m NW	Gas Works	1891	146932
I	409m N	Unspecified Tank	1953	156072
I	409m N	Unspecified Tank	1948	142178
I	409m N	Unspecified Tank	1955	152417
I	409m N	Tanks	1950	108894
I	409m N	Tanks	1953	108483
I	412m NW	Gas Works	1908	129043
I	413m N	Unspecified Tank	1953	140978
I	413m N	Unspecified Tank	1948	143136
I	413m N	Unspecified Tank	1955	155695
I	413m N	Unspecified Tank	1955	155695
I	414m N	Unspecified Tank	1955	153467
I	414m NW	Gas Works	1949	128464
I	414m N	Unspecified Tank	1953	149069



ID	Location	Land Use	Date	Group ID
I	414m N	Unspecified Tank	1948	133077
I	415m NW	Unspecified Tank	1893	145005
I	415m NW	Unspecified Tank	1891	145005
I	418m NW	Gasometers	1908	153355
I	418m NW	Gasometers	1922	153355
I	418m NW	Tanks	1932	108716
I	418m NW	Unspecified Tank	1957	133065
I	418m NW	Unspecified Tank	1965	133065
I	418m NW	Gasometer	1949	136042
I	419m NW	Unspecified Tank	1953	138538
I	419m NW	Gasometer	1893	156214
I	419m NW	Gasometer	1891	156214
I	420m NW	Unspecified Tank	1987	144190
I	420m NW	Unspecified Tank	1987	144190
I	420m NW	Unspecified Tank	1990	144190
I	422m N	Unspecified Tank	1922	115713
I	422m N	Gasometer	1908	148893
I	423m N	Gasometer	1891	135547
I	423m NW	Gas Holder Station	1980	155526
I	423m NW	Gas Holder Station	1980	155526
I	423m NW	Disused Gas Holder Station	1985	126184
I	424m N	Unspecified Tank	1893	115711
I	424m NW	Unspecified Tank	1969	142299
I	426m NW	Unspecified Tank	1980	126732
I	426m NW	Unspecified Tank	1980	126732
I	426m NW	Unspecified Tank	1985	126732
I	426m NW	Unspecified Tank	1987	126732
I	426m NW	Unspecified Tank	1987	126732



ID	Location	Land Use	Date	Group ID
I	426m NW	Unspecified Tank	1990	126732
I	427m NW	Unspecified Tank	1969	154747
I	427m NW	Unspecified Tank	1998	149018
6	435m SW	Unspecified Tank	1891	115708
I	435m NW	Unspecified Tank	1957	141299
I	435m NW	Unspecified Tank	1965	141299
I	435m NW	Gasometer	1949	142179
I	435m NW	Gas Holder	1980	137601
I	435m NW	Gas Holder	1980	137601
I	435m NW	Gas Holder	1985	137601
I	436m NW	Gasometer	1969	149968
I	436m NW	Unspecified Tank	1953	138289
M	436m N	Unspecified Tank	1953	140936
I	436m NW	Gasometer	1891	152905
M	437m N	Unspecified Tank	1955	142095
I	438m NW	Unspecified Tank	1998	153520
I	438m NW	Gasometer	1893	149968
I	438m NW	Unspecified Tank	1957	137028
I	438m NW	Unspecified Tank	1949	137028
I	438m NW	Unspecified Tank	1980	140651
I	438m NW	Unspecified Tank	1985	140651
I	438m NW	Unspecified Tank	1987	140651
I	438m NW	Unspecified Tank	1987	140651
I	438m NW	Unspecified Tank	1990	140651
I	439m NW	Unspecified Tank	1969	140651
I	439m NW	Unspecified Tank	1953	137028
I	441m NW	Unspecified Tank	1893	149484
I	448m NW	Gasometer	1891	114291



ID	Location	Land Use	Date	Group ID
I	451m NW	Gasometer	1893	139247
I	452m NW	Unspecified Tank	1893	154854
I	453m NW	Unspecified Tank	1980	151024
I	453m NW	Unspecified Tank	1985	151024
I	453m NW	Unspecified Tank	1957	145295
I	453m NW	Unspecified Tank	1965	145295
I	453m NW	Gasometer	1969	114290
I	453m NW	Unspecified Tank	1953	145295
I	455m NW	Unspecified Tank	1957	127332
I	455m NW	Unspecified Tank	1965	127332
I	455m NW	Gasometer	1949	135711
I	455m NW	Gasometer	1891	141539
I	455m NW	Gasometer	1891	130887
I	455m NW	Unspecified Tank	1953	131749
I	456m NW	Gasometer	1893	130887
I	460m NW	Unspecified Tank	1957	134264
I	460m NW	Unspecified Tank	1965	134264
I	460m NW	Gasometer	1949	136972
I	461m NW	Gasometer	1893	144817
I	462m NW	Unspecified Tank	1953	137941
U	463m SE	Unspecified Tank	1949	115113
U	465m SE	Unspecified Tank	1948	131212
U	465m SE	Unspecified Tank	1951	155173
I	472m NW	Unspecified Tank	1980	142137
I	472m NW	Unspecified Tank	1980	142137
I	472m NW	Unspecified Tank	1985	142137
I	473m NW	Unspecified Tank	1969	142137
I	473m NW	Unspecified Tank	1953	142137



ID	Location	Land Use	Date	Group ID
I	473m NW	Unspecified Tank	1957	142137
I	473m NW	Unspecified Tank	1965	142137
I	474m NW	Unspecified Tank	1891	129472
I	474m NW	Unspecified Tank	1893	129472
I	477m NW	Unspecified Tank	1957	130539
I	477m NW	Unspecified Tank	1965	130539
I	477m NW	Unspecified Tank	1953	130539
P	477m NE	Unspecified Tank	1948	143473
P	478m NE	Unspecified Tank	1955	128239
P	478m NE	Unspecified Tank	1955	128239
P	478m NE	Tanks	1969	130218
P	478m NE	Tanks	1962	146793
P	478m NE	Tanks	1970	130218
I	478m NW	Unspecified Tank	1893	147641
P	479m NE	Unspecified Tank	1950	127228
P	479m NE	Unspecified Tank	1953	127228
I	479m NW	Unspecified Tank	1957	143015
I	479m NW	Unspecified Tank	1965	143015
I	479m NW	Gasometer	1949	140020
I	481m NW	Gasometer	1969	150127
I	481m NW	Unspecified Tank	1953	131493
I	483m NW	Gasometer	1893	150127
I	495m NW	Unspecified Tank	1969	143010
I	495m NW	Unspecified Tank	1953	143010
I	495m NW	Unspecified Tank	1957	143010
I	495m NW	Unspecified Tank	1965	143010
V	498m SE	Unspecified Tank	1964	135402
V	499m SE	Unspecified Tank	1977	135402



ID	Location	Land Use	Date	Group ID
I	499m NW	Tanks	1891	126769
I	499m NW	Tanks	1893	151285

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

73

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 26 >](#)

ID	Location	Land Use	Date	Group ID
B	178m NE	Electricity Substation	1990	66731
B	178m NE	Electricity Substation	1995	72444
B	178m NE	Electricity Substation	1998	72444
F	252m W	Electricity Substation	1973	78909
F	252m W	Electricity Substation	1995	86061
F	252m W	Electricity Substation	1997	86061
F	253m W	Electricity Substation	1990	72684
C	290m SE	Electricity Substation	1948	85102
C	290m SE	Electricity Substation	1951	85102
C	290m SE	Electricity Substation	1949	85102
J	322m SW	Electricity Substation	1976	83870
J	344m S	Electricity Substation	1995	70843
J	344m S	Electricity Substation	1997	75125
1	354m NE	Electricity Substation	1987	64532
O	392m SE	Electricity Substation	1995	75515
O	392m SE	Electricity Substation	1997	75515
O	392m SE	Electricity Substation	1976	75515
I	400m NW	Gas Works	1893	86780



ID	Location	Land Use	Date	Group ID
I	400m NW	Gas Works	1922	84456
I	400m NW	Gas Works	1891	73990
L	402m SE	Electricity Substation	1976	85410
L	403m SE	Electricity Substation	1995	73417
L	403m SE	Electricity Substation	1997	75094
I	412m NW	Gas Works	1908	86780
I	414m NW	Gas Works	1949	79857
I	418m NW	Gasometers	1908	79709
I	418m NW	Gasometers	1922	79709
I	418m NW	Gasometer	1949	90192
I	419m NW	Gasometer	1893	73168
I	419m NW	Gasometer	1891	73168
I	422m N	Gasometer	1908	91082
I	423m N	Gasometer	1891	77992
I	423m NW	Gas Holder Station	1980	74476
I	423m NW	Gas Holder Station	1980	74476
I	423m NW	Disused Gas Holder Station	1985	68843
I	435m NW	Gasometer	1949	88747
I	435m NW	Gas Holder	1980	90352
I	435m NW	Gas Holder	1980	90352
I	435m NW	Gas Holder	1985	90352
I	436m NW	Gasometer	1969	79524
I	436m NW	Gasometer	1891	77969
I	438m NW	Gasometer	1893	79524
I	448m NW	Gasometer	1891	68520
I	451m NW	Gasometer	1893	84792
I	453m NW	Gasometer	1969	68519
I	455m NW	Gasometer	1949	76936



ID	Location	Land Use	Date	Group ID
I	455m NW	Gasometer	1891	77434
I	455m NW	Gasometer	1891	86689
I	456m NW	Gasometer	1893	86689
I	460m NW	Gasometer	1949	74834
T	460m SE	Electricity Substation	1987	89212
I	461m NW	Gasometer	1893	91928
T	462m SE	Electricity Substation	1989	87185
I	462m NW	Electricity Substation	1998	65849
T	463m SE	Electricity Substation	1992	82347
W	472m E	Electricity Substation	1984	87358
W	472m NE	Electricity Substation	1998	87358
W	472m NE	Electricity Substation	1954	69652
W	472m NE	Electricity Substation	1970	92464
W	472m NE	Electricity Substation	1970	92464
W	472m NE	Electricity Substation	1970	92464
W	472m NE	Electricity Substation	1970	92464
W	472m NE	Electricity Substation	1948	69652
W	472m NE	Electricity Substation	1955	69652
W	472m NE	Electricity Substation	1970	92464
W	472m NE	Electricity Substation	1950	69652
W	472m NE	Electricity Substation	1955	69652
I	479m NW	Gasometer	1949	87070
I	481m NW	Gasometer	1969	81639
I	483m NW	Gasometer	1893	81639
X	483m S	Electricity Substation	1977	87317
X	484m S	Electricity Substation	1985	87317
X	484m S	Electricity Substation	1985	87317
X	485m S	Electricity Substation	1993	87317

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**37**

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 26 >](#)

ID	Location	Land Use	Date	Group ID
A	16m NE	Garage	1965	27960
A	16m NE	Garage	1965	27960
A	17m NE	Garage	1962	28911
A	25m NE	Garage	1948	26397
A	27m NE	Garage	1953	24511
A	27m NE	Garage	1955	30641
A	27m NE	Garage	1955	30641
E	242m E	Garage	1965	30209
E	242m E	Garage	1965	30209
E	243m E	Garage	1962	30209
D	291m N	Garage	1985	25586
D	291m N	Garage	1965	26876
D	291m N	Garage	1965	26876
D	291m N	Garage	1987	25586
D	291m N	Garage	1969	26876
D	291m N	Garage	1962	26876

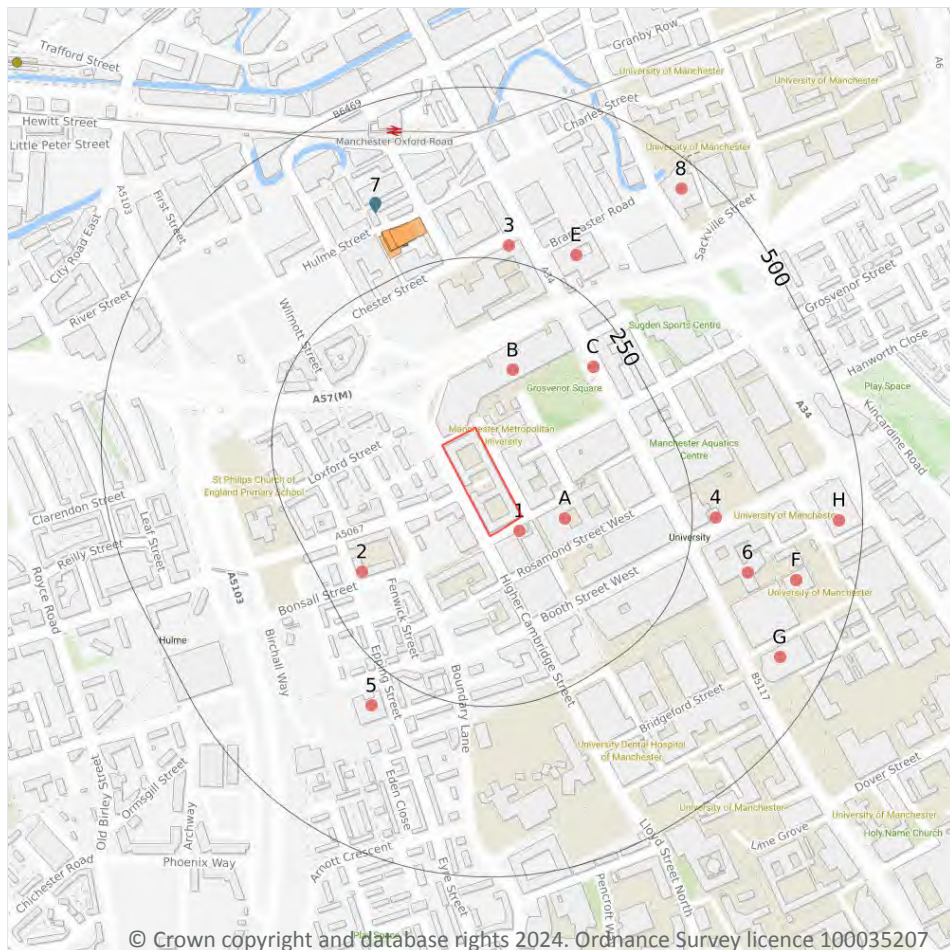


ID	Location	Land Use	Date	Group ID
D	291m N	Garage	1970	24700
M	368m N	Garage	1987	31003
M	368m N	Garage	1969	31003
M	368m N	Garage	1948	23262
M	368m N	Garage	1953	23262
M	368m N	Garage	1962	23262
M	368m N	Garage	1995	31003
M	368m N	Garage	1998	31003
M	372m N	Garage	1990	27184
M	372m N	Garage	1985	23928
M	373m N	Garage	1965	23928
M	373m N	Garage	1965	23928
M	373m N	Garage	1970	23928
3	373m SW	Garage	1955	22502
M	373m N	Garage	1955	23928
4	388m E	Garage	1954	22735
Q	431m N	Garage	1948	27019
Q	431m N	Garage	1953	24059
Q	432m N	Garage	1955	24059
S	452m E	Garage	1998	27156
S	453m E	Garage	1984	27156

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- 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**5**

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 42 >](#)

ID	Location	Address	Further Details	Date
D	277m N	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
D	286m N	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	1955
D	286m N	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



ID	Location	Address	Further Details	Date
D	287m N	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
D	287m N	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
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Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on [page 42 >](#)

ID	Location	Details		
7	357m N	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	42
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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 42 >](#)



ID	Location	Site	Reference	Category	Sub-Category	Description
1	16m SE	12, Higher Chatham Street, Manchester, M15 6ed	WEX196171	Using waste exemption	Not on a farm	Use of waste in construction
A	63m SE	-	WEX356610	Using waste exemption	Not on a farm	Spreading of plant matter to confer benefit
A	63m SE	-	WEX356610	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
A	63m SE	-	WEX356610	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	63m SE	-	WEX356610	Using waste exemption	Not on a farm	Use of mulch
A	63m SE	-	WEX356610	Disposing of waste exemption	Not on a farm	Depositing samples of waste for the purposes of testing or analysing them
B	100m N	All Saints, Grosvenor Square, Manchester, M15 6bh	WEX228932	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
B	100m N	All Saints, Grosvenor Square, Manchester, M15 6bh	WEX228932	Disposing of waste exemption	Not on a farm	Depositing samples of waste for the purposes of testing or analysing them
B	100m N	All Saints, Grosvenor Square, Manchester, M15 6bh	WEX083555	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
B	100m N	All Saints, Grosvenor Square, Manchester, M15 6bh	WEX083555	Disposing of waste exemption	Not on a farm	Depositing samples of waste for the purposes of testing or analysing them
2	191m SW	Oxford Court, Flat D1, 2, Bonsall Street, Manchester, M15 6dg	WEX163913	Using waste exemption	Not on a farm	Use of waste in construction
C	194m NE	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Storing waste exemption	Both agricultural and non-agricultural waste	Storage of waste in secure containers
C	194m NE	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Storing waste exemption	Both agricultural and non-agricultural waste	Storage of waste in a secure place



ID	Location	Site	Reference	Category	Sub-Category	Description
C	194m NE	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Treating waste exemption	Both agricultural and non-agricultural waste	Preparatory treatments (baling, sorting, shredding etc)
C	194m NE	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Treating waste exemption	Both agricultural and non-agricultural waste	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
C	194m NE	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Treating waste exemption	Both agricultural and non-agricultural waste	Mechanical treatment of end-of-life tyres
C	194m NE	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Treating waste exemption	Both agricultural and non-agricultural waste	Recovery of scrap metal
C	194m NE	Transfer Station Europa Gate Manchester M17 1du	EPR/DF0804PP /A001	Treating waste exemption	Non-agricultural waste only	Manual treatment of waste
3	271m N	John Dalton Building Chester Street Manchester M1 5gd	EPR/VF0005U T/A001	Disposing of waste exemption	Non-agricultural waste only	Depositing samples of waste for the purposes of testing or analysing them
4	284m E	National Graphene Institute Booth Street East Manchester M13 9ss	EPR/GE5751R U/A001	Using waste exemption	Non-agricultural waste only	Use of waste in construction
E	293m N	Circle Square Plot 14 - (Russells Construction Site), Brancaster Road, Manchester, M1 7ed	WEX144388	Using waste exemption	Not on a farm	Use of waste in construction
E	293m N	Circle Square Plot 14 - (Russells Construction Site), Brancaster Road, Manchester, M1 7ed	WEX144388	Treating waste exemption	Not on a farm	Screening and blending of waste
5	304m SW	33, Epping Street, Manchester, M15 6pa	WEX398525	Using waste exemption	Not on a farm	Use of waste in the construction of entertainment or educational installations etc
6	341m E	Oxford Road, Manchester, M13 9gh	WEX281629	Treating waste exemption	Not on a farm	Aerobic composting and associated prior treatment



ID	Location	Site	Reference	Category	Sub-Category	Description
F	413m E	Michael Smith Building Oxford Road Manchester M13 9pl	EPR/XE5784LB /A001	Treating waste exemption	Non- agricultural waste only	Treatment of kitchen waste in a wormery
F	413m E	Michael Smith Building Oxford Road Manchester M13 9pl	EPR/XE5784LB /A001	Using waste exemption	Non- agricultural waste only	Spreading waste on non- agricultural land to confer benefit
F	413m E	Oxford Road, Manchester, M13 9pl	WEX034895	Using waste exemption	Not on a farm	Use of waste in construction
F	413m E	Oxford Road Manchester M13 9pl	WEX006036	Storing waste exemption	Not on a farm	Storage of waste in a secure place
F	413m E	Oxford Road Manchester M13 9pl	WEX006029	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
F	413m E	Oxford Road Manchester M13 9pl	WEX006497	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
F	413m E	Michael Smith Building, Oxford Road, Manchester, M13 9pl	WEX029843	Treating waste exemption	Not on a farm	Treatment of kitchen waste in a wormery
F	413m E	Michael Smith Building, Oxford Road, Manchester, M13 9pl	WEX029843	Using waste exemption	Not on a farm	Spreading waste on non- agricultural land to confer benefit
G	431m SE	Oxford Road, Manchester, M13 9pl	WEX301809	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
G	431m SE	Oxford Road, Manchester, M13 9pl	WEX301817	Storing waste exemption	Not on a farm	Storage of waste in a secure place
G	431m SE	Oxford Road, Manchester, M13 9pl	WEX301824	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
G	431m SE	Oxford Road, Manchester, M13 9pl	WEX167792	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
G	431m SE	Oxford Road, Manchester, M13 9pl	WEX167831	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
G	431m SE	Oxford Road, Manchester, M13 9pl	WEX167918	Storing waste exemption	Not on a farm	Storage of waste in a secure place

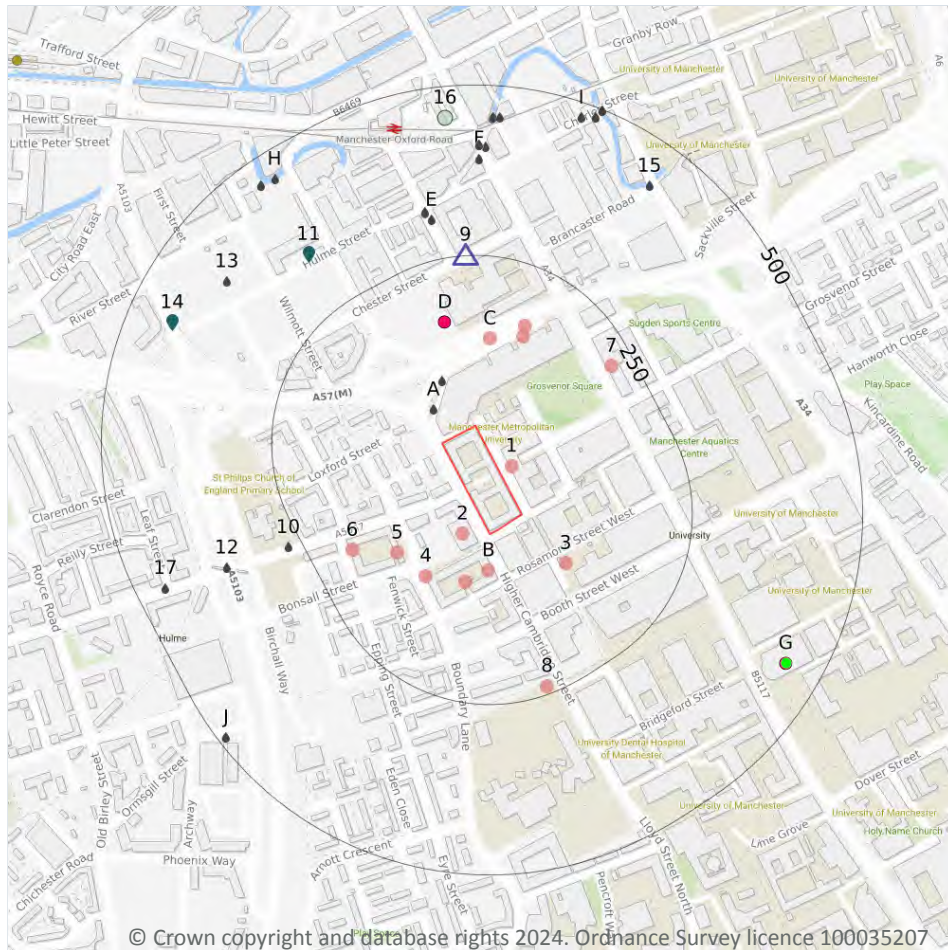


ID	Location	Site	Reference	Category	Sub-Category	Description
8	462m NE	-	WEX264013	Treating waste exemption	Not on a farm	Sorting and de-naturing of controlled drugs for disposal
H	465m E	-	WEX322402	Using waste exemption	Not on a farm	Spreading waste on non-agricultural land to confer benefit
H	465m E	-	WEX285535	Treating waste exemption	Not on a farm	Aerobic composting and associated prior treatment
H	465m E	-	WEX313299	Disposing of waste exemption	Not on a farm	Depositing samples of waste for the purposes of testing or analysing them

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
- Licensed pollutant release (Part A(2)/B)
- Radioactive Substance Authorisations
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)
- Pollution inventory radioactive waste

4.1 Recent industrial land uses

Records within 250m

13

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 49](#) >

ID	Location	Company	Address	Activity	Category
1	19m NE	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
2	35m S	Territorial Army Centre	Training Core University Barracks, Boundary Lane, Manchester, Greater Manchester, M15 6DH	Armed Services	Central and Local Government



ID	Location	Company	Address	Activity	Category
B	53m S	Muprint	Unit 1, 28, Higher Cambridge Street, Manchester, Greater Manchester, M15	Published Goods	Industrial Products
B	79m S	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
3	96m SE	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
4	112m SW	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
C	130m N	Gantry	Greater Manchester, M1	Travelling Cranes and Gantries	Industrial Features
5	133m SW	Crane	Greater Manchester, M15	Travelling Cranes and Gantries	Industrial Features
C	149m N	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
C	163m N	Gantry	Greater Manchester, M15	Travelling Cranes and Gantries	Industrial Features
6	190m SW	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities
7	217m NE	The Woodward Workshop	123, Oxford Road, Manchester, Greater Manchester, M1 7DU	Sports and Leisure Equipment Repair	Repair and Servicing
8	238m S	Electricity Sub Station	Greater Manchester, M15	Electrical Features	Infrastructure and Facilities

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 49 >](#)

ID	Location	Company	Address	LPG	Status
9	251m N	OBSOLETE	2-4, Lower Ormond Street, Manchester, Greater Manchester, M1 5QF	Not Applicable	Obsolete

This data is sourced from Experian.



4.3 Electricity cables

Records within 500m	0
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High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0
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High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0
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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
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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
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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

0

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

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

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

Records within 500m

2

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 49](#) >

ID	Location	Address	Details	
11	340m NW	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
14	434m NW	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

This data is sourced from Local Authority records.



4.12 Radioactive Substance Authorisations

Records within 500m

18

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

Features are displayed on the Current industrial land use map on [page 49](#) >

ID	Location	Address	Details	
D	158m N	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester, Greater Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AC9688 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Superseded By Variation
D	158m N	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester, Greater Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AC9688 Date of approval: 16/10/1994	Effective from: 16/10/1994 Last date of update: 01/01/2015 Status: Superseded By Variation
D	158m N	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester, Greater Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AC9688 Date of approval: 09/03/1995	Effective from: 09/04/1995 Last date of update: 01/01/2015 Status: Superseded By Variation
D	158m N	Manchester Metropolitan University, John Dalton Building, Chester Street, Manchester, Greater Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AC9688 Date of approval: 01/12/2003	Effective from: 01/01/2004 Last date of update: 01/01/2015 Status: Superseded By Variation
D	158m N	John Dalton Building, Chester Street, Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: CA1464 Date of approval: 17/02/2006	Effective from: 17/03/2006 Last date of update: 01/01/2020 Status: Issued
D	158m N	John Dalton Building, Chester Street, Manchester, M1 5GD	Operator: Manchester Metropolitan University Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: BL0324 Date of approval: 23/05/2001	Effective from: 23/05/2001 Last date of update: 01/01/2020 Status: Issued



ID	Location	Address	Details	
G	444m SE	University Of Manchester, South Campus,oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: BX8556 Date of approval: 27/01/2006	Effective from: 27/01/2006 Last date of update: 06/04/2006 Status: Effective
G	444m SE	University Of Manchester, South Campus,oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: BX8556 Date of approval: 22/08/2006	Effective from: 22/08/2006 Last date of update: 01/10/2006 Status: Effective
G	444m SE	University Of Manchester, Oxford Road, Manchester, Greater Manchester, M13 9PL	Operator: University Of Manchester Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AD0155 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Revoked/cancelled
G	444m SE	Victoria University Of Manchester,oxford Road, Manchester, Greater Manchester, M13 9PL	Operator: Victoria University Of Manchester Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AP8713 Date of approval: 16/08/1999	Effective from: 16/08/1999 Last date of update: 01/01/2015 Status: Superseded By Variation
G	444m SE	Central Manchester University Hospitals Nhs Foundation Trust, Radiological Protection Service,327 Oxford Road, Manchester, M13 9PL	Operator: Central Manchester University Hospitals Nhs Foundation Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AP9353 Date of approval: 06/03/1998	Effective from: 06/03/1998 Last date of update: 01/01/2015 Status: Superseded By Variation
G	444m SE	Central Manchester University Hospitals Nhs Foundation Trust, Radiological Protection Service,327 Oxford Road, Manchester, M13 9PL	Operator: Central Manchester University Hospitals Nhs Foundation Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AP9353 Date of approval: 19/11/2001	Effective from: 19/11/2001 Last date of update: 01/01/2015 Status: Superseded By Variation



ID	Location	Address	Details	
G	444m SE	Central Manchester University Hospitals Nhs Foundation Trust, Radiological Protection Service, 327 Oxford Road, Manchester, M13 9PL	Operator: Central Manchester University Hospitals Nhs Foundation Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AP9353 Date of approval: 19/09/2005	Effective from: 19/09/2005 Last date of update: 01/01/2015 Status: Superseded By Variation
G	444m SE	Central Manchester University Hospitals Nhs Foundation Trust, Radiological Protection Service, 327 Oxford Road, Manchester, M13 9PL	Operator: Central Manchester University Hospitals Nhs Foundation Trust Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AP9353 Date of approval: 26/10/2006	Effective from: 26/10/2006 Last date of update: 01/01/2015 Status: Superseded By Variation
G	444m SE	University Of Manchester, South Campus, Oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: BX8548 Date of approval: 01/10/2004	Effective from: 01/10/2004 Last date of update: 01/01/2015 Status: Effective
G	444m SE	University Of Manchester, South Campus, Oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: BX8564 Date of approval: 02/09/2004	Effective from: 01/10/2004 Last date of update: 01/01/2015 Status: Superseded By Variation
G	444m SE	University Of Manchester, South Campus, Oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: BX8564 Date of approval: 28/06/2005	Effective from: 22/07/2005 Last date of update: 01/01/2015 Status: Superseded By Variation
G	444m SE	University Of Manchester, South Campus, Oxford Road, Manchester, M13 9PL	Operator: University Of Manchester Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: BX8564 Date of approval: 08/12/2006	Effective from: 03/12/2007 Last date of update: 01/01/2015 Status: Effective

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



4.13 Licensed Discharges to controlled waters

Records within 500m

35

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 49](#) >

ID	Location	Address	Details	
A	50m NW	GSHP AT MANCHESTER METROPOLITAN UNI, MANCHESTER METROPOLITAN UNI, LOWER CHATHAM STREET, MANCHESTER, M15 6BH	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRDP3526GN Permit Version: 1 Receiving Water: GROUNDWATERS	Status: NEW ISSUED UNDER EPR 2010 Issue date: 23/08/2010 Effective Date: 01/04/2011 Revocation Date: -
A	81m N	GSHP AT MANCHESTER METROPOLITAN UNI, MANCHESTER METROPOLITAN UNI, LOWER CHATHAM STREET, MANCHESTER, M15 6BH	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRDP3526GN Permit Version: 1 Receiving Water: GROUNDWATERS	Status: NEW ISSUED UNDER EPR 2010 Issue date: 23/08/2010 Effective Date: 01/04/2011 Revocation Date: -
10	270m W	HULME WALK, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0362 Permit Version: 1 Receiving Water: -	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: -
E	308m N	CHESTER STREET CSO, JUNCTION OF CHESTER STREET/, LOWER OSMOND STREET, MANCHESTER, M1 5QF	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016983278 Permit Version: 1 Receiving Water: THE RIVER MEDLOCK	Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 19/02/1999 Effective Date: 01/12/1999 Revocation Date: 08/07/2018
E	320m N	LOWER ORMOMD ST/HULME ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0282 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: 09/08/2019
E	322m N	CHESTER STREET CSO, JUNCTION OF CHESTER STREET/, LOWER OSMOND STREET, MANCHESTER, M1 5QF	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016983278 Permit Version: 2 Receiving Water: THE RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 09/07/2018 Effective Date: 09/07/2018 Revocation Date: -



ID	Location	Address	Details	
12	364m W	HULME WALK/PRINCESS RD, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0363 Permit Version: 1 Receiving Water: -	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: -
F	392m N	OXFORD RD, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0342 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: 19/12/1999
13	395m NW	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: -
F	409m N	OXFORD ROAD/GROSVENOR STREET CSO, 137 OXFORD ROAD, MANCHESTER, GREATER MANCHESTER, M1 7DZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0189 Permit Version: 4 Receiving Water: RIVER MEDLOCK VIA SWS	Status: VARIED UNDER EPR 2010 Issue date: 29/03/2021 Effective Date: 29/03/2021 Revocation Date: -
F	412m N	OXFORD/NEW WAKEFIELD ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0165 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/01/1995 Revocation Date: 31/03/1998
F	412m N	OXFORD ROAD/GROSVENOR STREET CSO, 137 OXFORD ROAD, MANCHESTER, GREATER MANCHESTER, M1 7DZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0189 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: 02/09/2010
F	412m N	OXFORD ROAD/GROSVENOR STREET CSO, 137 OXFORD ROAD, MANCHESTER, GREATER MANCHESTER, M1 7DZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0189 Permit Version: 3 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 05/02/2016 Effective Date: 05/02/2016 Revocation Date: 28/03/2021



ID	Location	Address	Details	
F	412m N	OXFORD ROAD/GROSVENOR STREET CSO, 137 OXFORD ROAD, MANCHESTER, GREATER MANCHESTER, M1 7DZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0189 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 04/02/2016
15	434m NE	BBC VEHICLE MAINTENANCE BASE SWO, PRITCHARD STREET, MANCHESTER, GREATER MANCHESTER	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991346 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 22/09/1994 Revocation Date: 22/09/1994
F	451m N	MALLARD STREET/CHARLES STREET CSO, MALLARD STREET, MANCHESTER, GREATER MANCHESTER, M1 6EY	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982736 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 10/07/2020 Effective Date: 10/07/2020 Revocation Date: -
F	452m N	MALLARD STREET/CHARLES STREET CSO, MALLARD STREET, MANCHESTER, GREATER MANCHESTER, M1 6EY	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982736 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: 09/07/2020
F	452m N	MEDLOCK ST(OFF CHARLES ST), MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0343 Permit Version: 1 Receiving Water: -	Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 01/01/1995 Revocation Date: 01/01/1995
F	453m N	YORK ST/CHARLES ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0281 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: 09/08/2019
17	458m W	HULME WALK/LEAF STREET, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0364 Permit Version: 1 Receiving Water: -	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: -



ID	Location	Address	Details	
H	459m NW	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 SCHD 10 - AS AMENDED BY ENV ACT 1995) Issue date: - Effective Date: 15/11/1999 Revocation Date: 10/04/2018
H	462m NW	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
H	462m NW	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
H	462m NW	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: -
I	477m N	112-116 PRINCESS STREET, MANCHESTER, GREATER MANCHESTER	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991403 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 24/04/1989 Revocation Date: 31/03/1992
I	477m N	112-116 PRINCESS STREET, MANCHESTER, GREATER MANCHESTER	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991403 Permit Version: 3 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 11/02/1993 Revocation Date: 01/11/1994
I	477m N	112-116 PRINCESS STREET, MANCHESTER, GREATER MANCHESTER	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991403 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/04/1992 Revocation Date: 10/02/1993
I	484m N	CHARLES STREET CSO, 7 CHARLES STREET, MANCHESTER, M1 7EN	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0183 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 31/03/2018



ID	Location	Address	Details	
I	484m N	CHARLES STREET CSO, 7 CHARLES STREET, MANCHESTER, M1 7EN	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0183 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: 02/09/2010
I	484m N	CHARLES STREET CSO, 7 CHARLES STREET, MANCHESTER, M1 7EN	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0183 Permit Version: 3 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 19/03/2018 Effective Date: 01/04/2018 Revocation Date: -
J	488m SW	MANCHESTER METROPOLITAN UNIVERSITY, BIRLEY FIELDS CAMPUS, HULME, MANCHESTER, M15 6BH	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRUB3936AX Permit Version: 1 Receiving Water: GROUNDWATER VIA A BOREHOLE	Status: NEW ISSUED UNDER EPR 2010 Issue date: 14/08/2013 Effective Date: 14/08/2013 Revocation Date: -
J	488m SW	MANCHESTER METROPOLITAN UNIVERSITY, BIRLEY FIELDS CAMPUS, HULME, MANCHESTER, M15 6BH	Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: EPRUB3936AX Permit Version: 1 Receiving Water: GROUNDWATER VIA A BOREHOLE	Status: NEW ISSUED UNDER EPR 2010 Issue date: 14/08/2013 Effective Date: 14/08/2013 Revocation Date: -
I	497m N	CHARLES ST PRINCESS ST CSO 28116, 106 PRINCESS STREET, MANCHESTER, M1 6NG	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0166 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 31/03/2018
I	497m N	WHITWORTH ST/SACKVILLE ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0253 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/01/1995 Revocation Date: 01/01/2017
I	497m N	CHARLES ST PRINCESS ST CSO 28116, 106 PRINCESS STREET, MANCHESTER, M1 6NG	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0166 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: 02/09/2010

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**1**

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

Features are displayed on the Current industrial land use map on [page 49 >](#)

ID	Location	Details	
16	454m N	Incident Date: 12/07/2001 Incident Identification: 15886 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0
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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
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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	1
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The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

Features are displayed on the Current industrial land use map on [page 49 >](#)

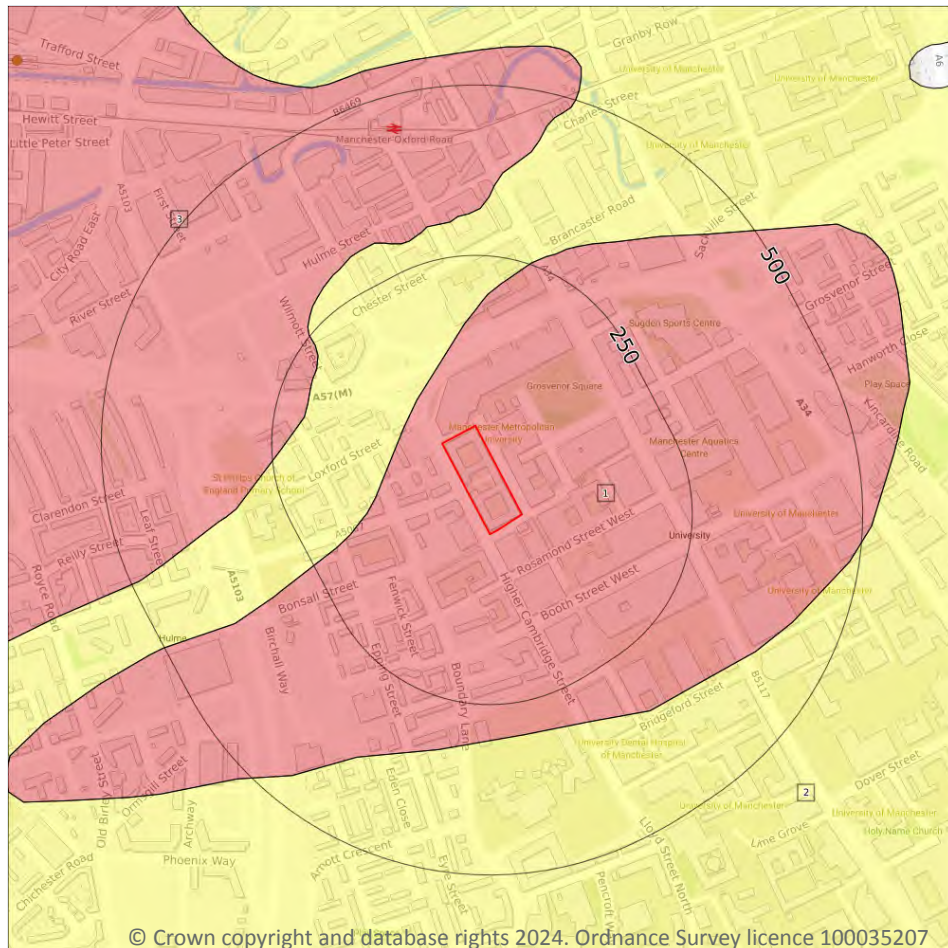
ID: G, Location: 444m SE, Permit: BX8564
 Operator: UNIVERSITY OF MANCHESTER
 Address: SOUTH CAMPUS OXFORD ROAD MANCHESTER M13 9PL
 Releases:

Route	Substance	Quantity released
Wastewater	Tritium	--
Air	Tritium	--
Wastewater	Sulphur 35	--
Wastewater	Total Alpha	--
Wastewater	Total Beta/Gamma (Excl Tritium)	--

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

3

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on [page 64 >](#)

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	61m NW	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type



ID	Location	Designation	Description
3	205m W	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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



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

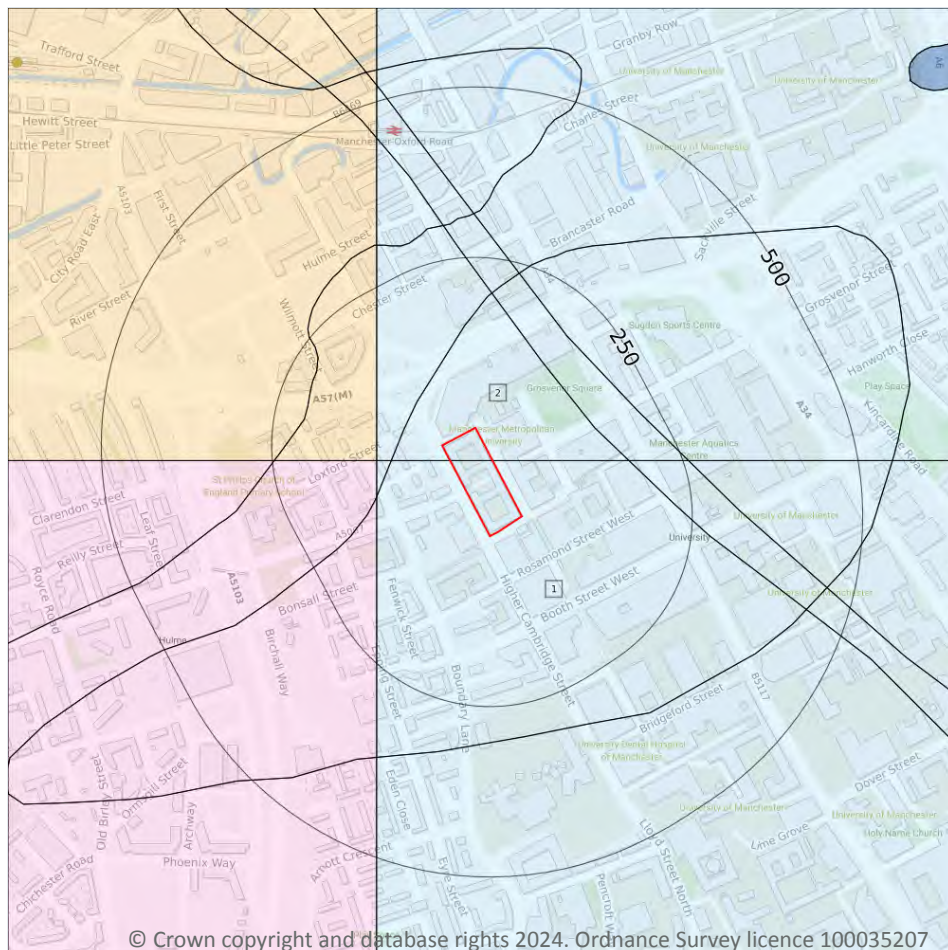
Records within 500m	2
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ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	137m NE	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons 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

2

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 68](#) >

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

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0
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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.

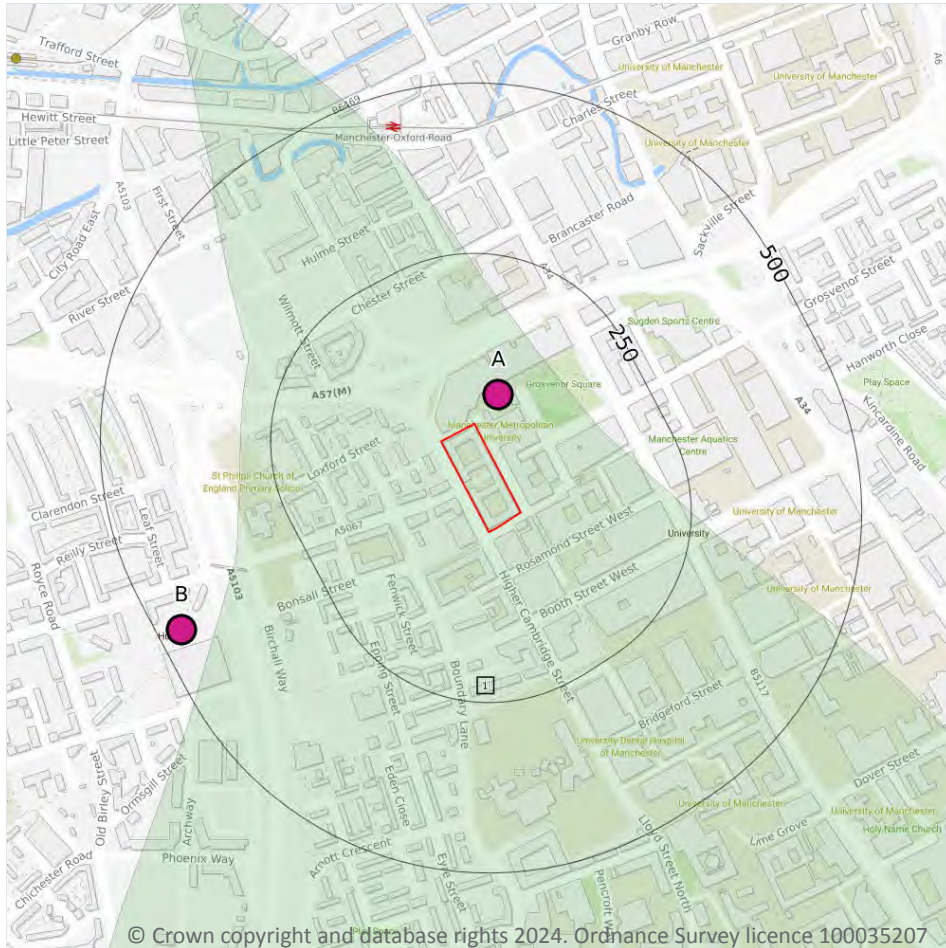
5.5 Groundwater vulnerability- local information

Records on site	0
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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



- 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
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

42

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 70 >](#)



ID	Location	Details	
A	55m N	Status: Active Licence No: NW/069/0006/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University Easting: 384180 Northing: 397091	Annual Volume (m ³): 283240 Max Daily Volume (m ³): 1532 Original Application No: NPS/WR/015264 Original Start Date: 04/04/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date: -
A	55m N	Status: Active Licence No: NW/069/0006/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University Easting: 384180 Northing: 397091	Annual Volume (m ³): 283240 Max Daily Volume (m ³): 1532 Original Application No: NPS/WR/015264 Original Start Date: 04/04/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date: -
B	465m SW	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: -
B	465m SW	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: -



ID	Location	Details	
-	723m N	Status: Historical Licence No: NW0690006001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLES AT ORIGIN DEVELOPMENTS, MANCHESTER Data Type: Point Name: West Contracting Easting: 384378 Northing: 397733	Annual Volume (m ³): 139128 Max Daily Volume (m ³): 1010 Original Application No: - Original Start Date: 19/01/2009 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 19/01/2009 Version End Date: -
-	723m N	Status: Historical Licence No: NW/069/0006/001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLES AT ORIGIN DEVELOPMENTS, MANCHESTER Data Type: Point Name: West Contracting Easting: 384378 Northing: 397733	Annual Volume (m ³): 139128 Max Daily Volume (m ³): 1010 Original Application No: - Original Start Date: 19/01/2009 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 19/01/2009 Version End Date: -
-	895m W	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: -
-	903m W	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: -



ID	Location	Details	
-	920m W	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: -
-	926m W	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: -
-	929m W	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: -
-	933m W	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: -



ID	Location	Details	
-	953m N	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT GEORGE ST, MANCHESTER" Data Type: Point Name: BRITISH TELECOM Easting: 384100 Northing: 398000	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/01/1971 Version End Date: -
-	953m N	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT GEORGE ST, MANCHESTER Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC Easting: 384100 Northing: 398000	Annual Volume (m ³): 1100 Max Daily Volume (m ³): 860 Original Application No: - Original Start Date: 01/04/1984 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date: -
-	955m W	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: -
-	958m W	Status: Historical Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW6 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383171 Northing: 397275	Annual Volume (m ³): 260172 Max Daily Volume (m ³): 712.8 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -



ID	Location	Details	
-	975m W	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: -
-	1004m W	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: -
-	1024m 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: -
-	1024m 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: -



ID	Location	Details	
-	1024m 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: -
-	1024m 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: -
-	1024m 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: -
-	1024m 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: -



ID	Location	Details	
-	1025m 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: -
-	1025m 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: -
-	1036m W	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: -
-	1198m NE	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, BROADIE ST, ARDWICK, MANCHESTER" Data Type: Point Name: MOSELEY RUBBER CO LTD Easting: 385240 Northing: 397540	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 08/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 08/02/1966 Version End Date: -



ID	Location	Details	
-	1198m NE	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, BROADIE ST, ARDWICK, MANCHESTER Data Type: Point Name: MOSELEY RUBBER CO LTD Easting: 385240 Northing: 397540	Annual Volume (m ³): 331858 Max Daily Volume (m ³): 909.2 Original Application No: - Original Start Date: 08/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 08/02/1966 Version End Date: -
-	1207m 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: -
-	1259m 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: -
-	1387m 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: -



ID	Location	Details	
-	1403m NW	Status: Historical Licence No: 2569007089 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: 2 BOREHOLES AT GARTSIDE STREET MANCHESTER Data Type: Line Name: HER MAJESTY'S COURT SERVICE Easting: 383335 Northing: 398310	Annual Volume (m ³): 200000 Max Daily Volume (m ³): 1179 Original Application No: - Original Start Date: 26/01/2005 Expiry Date: 31/03/2011 Issue No: 2 Version Start Date: 10/07/2008 Version End Date: -
-	1405m SW	Status: Historical Licence No: 2569007009 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER" Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -
-	1405m SW	Status: Historical Licence No: 2569007009 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER" Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -
-	1405m SW	Status: Historical Licence No: 2569007009 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m ³): 66826.2 Max Daily Volume (m ³): 372.772 Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -



ID	Location	Details	
-	1405m SW	Status: Historical Licence No: 2569007009 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m ³): 66826.2 Max Daily Volume (m ³): 372.772 Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 103 Version Start Date: 19/07/2018 Version End Date: -
-	1509m E	Status: Historical Licence No: NW/069/0004/005 Details: Heat Pump Direct Source: Ground Water - North West Region Point: AREA OF ABSTRACTION - LOWER CARBONIFEROUS LIMESTONE Data Type: Poly4 Name: G T Energy UK Limited Easting: 385729 Northing: 396778	Annual Volume (m ³): 2049840 Max Daily Volume (m ³): 8640 Original Application No: - Original Start Date: 17/01/2013 Expiry Date: 16/01/2037 Issue No: 2 Version Start Date: 11/06/2013 Version End Date: -
-	1521m NW	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: -
-	1710m 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: -



ID	Location	Details	
-	1710m 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: -
-	1710m 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: -

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 70](#) >

ID	Location	Details	
-	1640m 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: -



ID	Location	Details	
-	1640m 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	0
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Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

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

5.9 Source Protection Zones

Records within 500m	1
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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 70 >](#)

ID	Location	Type	Description
1	On site	3	Total catchment

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

5.10 Source Protection Zones (confined aquifer)

Records within 500m	0
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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



- 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

0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

0

Covering rivers, streams and lakes (some overlap with OS 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.



This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1
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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 83](#) >

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

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

6.4 WFD Surface water bodies

Records identified	1
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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 83](#) >

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	1544m NW	River	Irwell / Manchester Ship Canal (Irk to confluence with Upper Mers	GB112069061452 ↗	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 83](#) >

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

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



7 River and coastal flooding



- Site Outline
- Search buffers in metres (m)
- River and coastal flooding:
- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m

1

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

Features are displayed on the River and coastal flooding map on [page 86](#) >

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

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

7.2 Historical Flood Events

Records within 250m	0
----------------------------	----------

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

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

7.3 Flood Defences

Records within 250m	0
----------------------------	----------

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0
----------------------------	----------

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

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

7.5 Flood Storage Areas

Records within 250m	0
----------------------------	----------

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

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



River and coastal flooding - Flood Zones



- Site Outline
- Search buffers in metres (m)
- Flood zone 2
- Flood zone 3

7.6 Flood Zone 2

Records within 50m

1

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

Features are displayed on the River and coastal flooding map on [page 86](#) >

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

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

7.7 Flood Zone 3

Records within 50m

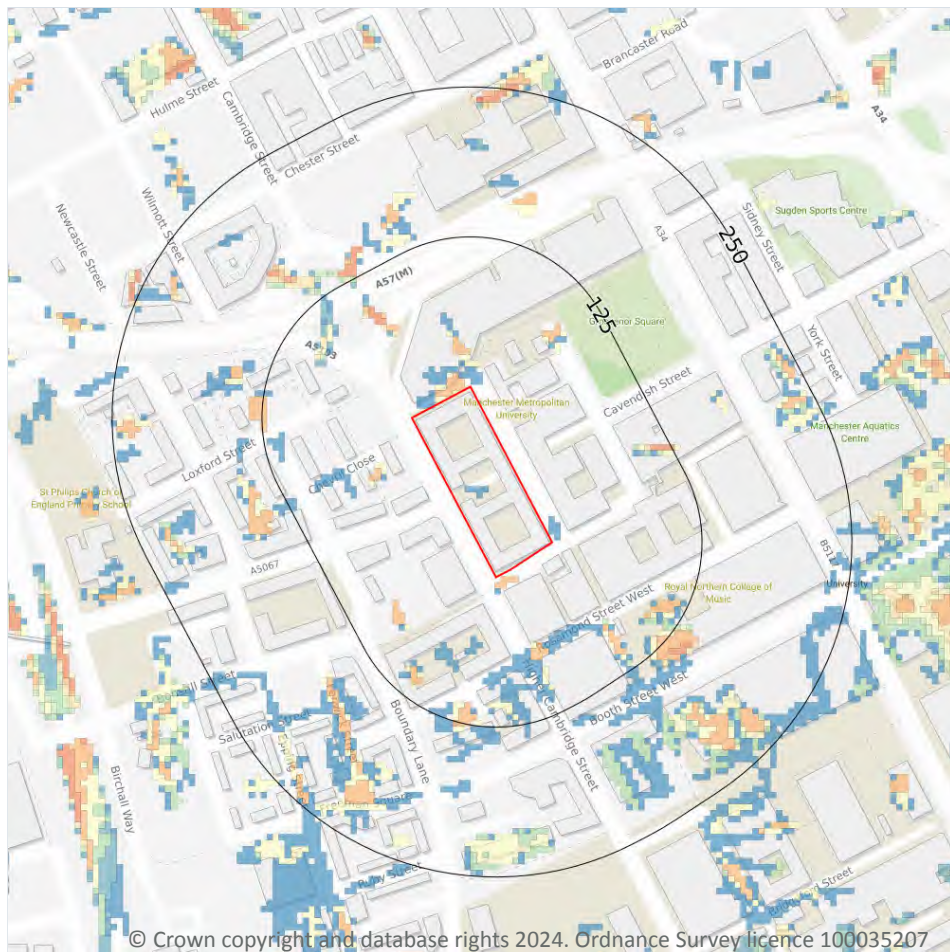
0

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

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



8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period

- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

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

Features are displayed on the Surface water flooding map on [page 90 >](#)

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.

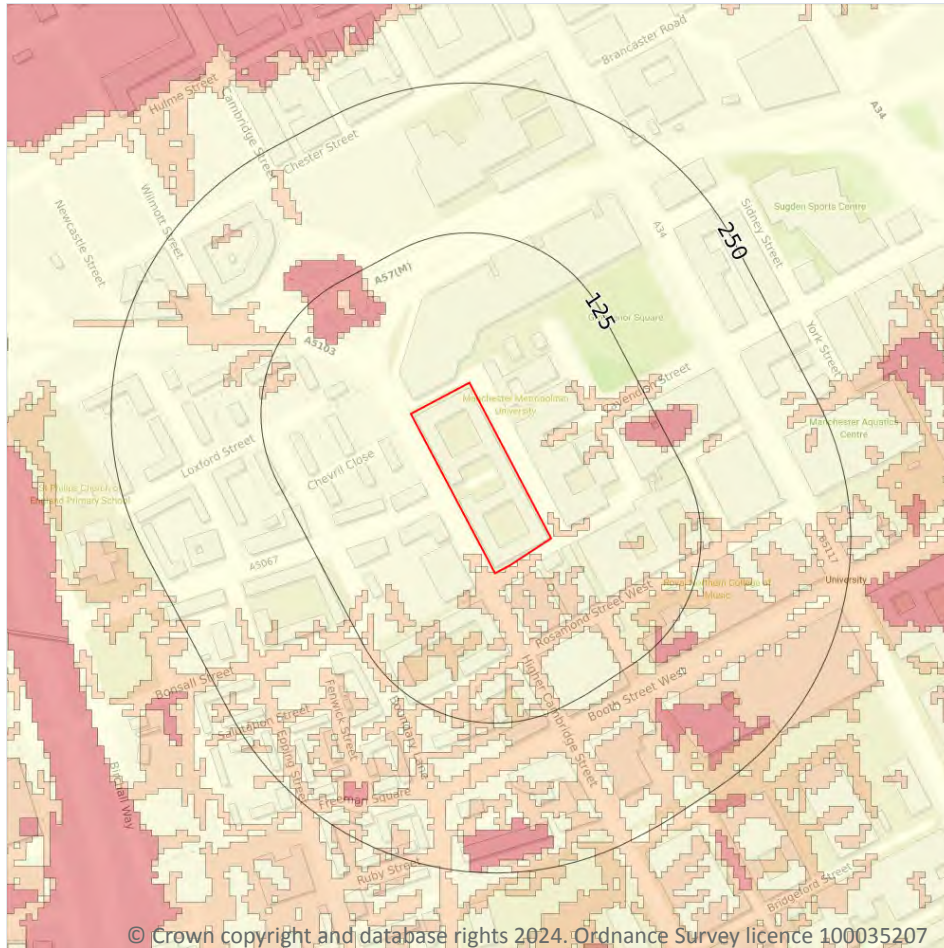
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.1m and 0.3m
1 in 250 year	Between 0.1m and 0.3m
1 in 100 year	Between 0.1m and 0.3m
1 in 30 year	Between 0.1m and 0.3m

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

- High
- Moderate - High
- Moderate
- Low
- Negligible

9.1 Groundwater flooding

Highest risk on site

Moderate-High

Highest risk within 50m

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 92 >](#)

This data is sourced from Ambiantal 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**

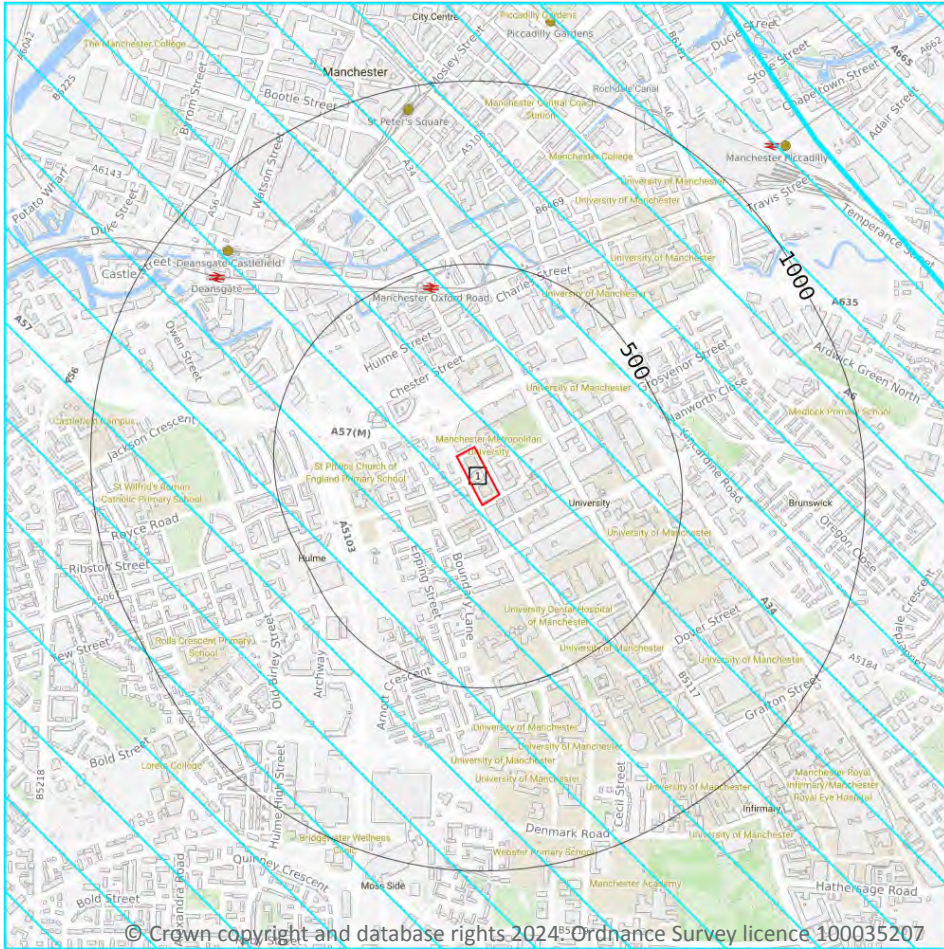
Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
1361m N	River Irk (Moston Brook to River Irwell) NVZ	Surface Water	638	Existing
1553m N	River Irk (Moston Brook to River Irwell) NVZ	Surface Water	638	Existing
1869m N	Irwell / Man. Ship Canal (Kearsley to Irlam Locks) NVZ	Surface Water	643	Existing

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



SSSI Impact Zones and Units



- Site Outline
- Search buffers in metres (m)
- SSSI Impact Risk Zones
- SSSI Units
- Not recorded
- Favourable
- Unfavourable - Recovering
- Unfavourable - No change
- Unfavourable - Declining
- Partially destroyed
- Destroyed

10.17 SSSI Impact Risk Zones

Records on site

1

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

Features are displayed on the SSSI Impact Zones and Units map on [page 97](#) >

ID	Location	Type of developments requiring consultation
1	On site	Air pollution - Livestock & poultry units with floorspace > 500m ² , slurry lagoons & digestate stores > 4000m ² . 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

9

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 99](#) >

ID	Location	Name	Grade	Reference Number	Listed date
1	39m N	Roman Catholic Church Of St Augustine	II	1392331	16/11/2007
2	59m NE	Ormond Building, Manchester Metropolitan University (Formerly Municipal Offices)	II	1219718	03/10/1974
3	64m E	Righton Building	II	1197781	11/06/1991
4	68m NE	Former Manchester Ear Hospital	II	1197922	03/10/1974
5	105m E	Grosvenor Building, Manchester Metropolitan University Faculty Of Art And Design	II	1293192	03/10/1974



ID	Location	Name	Grade	Reference Number	Listed date
6	151m NE	Former Town Hall Facade To Mabel Tylecote Building, Manchester Metropolitan University	II	1283062	25/02/1952
7	219m N	Dalton Statue In Forecourt Of Dalton College	II	1197791	03/10/1974
A	221m NE	Former Grosvenor Picture Palace	II	1218431	03/10/1974
A	239m NE	Adult Deaf And Dumb Institute (Former)	II	1200839	03/10/1974

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

11.5 Conservation Areas

Records within 250m

0

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

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

11.6 Scheduled Ancient Monuments

Records within 250m

0

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

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

11.7 Registered Parks and Gardens

Records within 250m

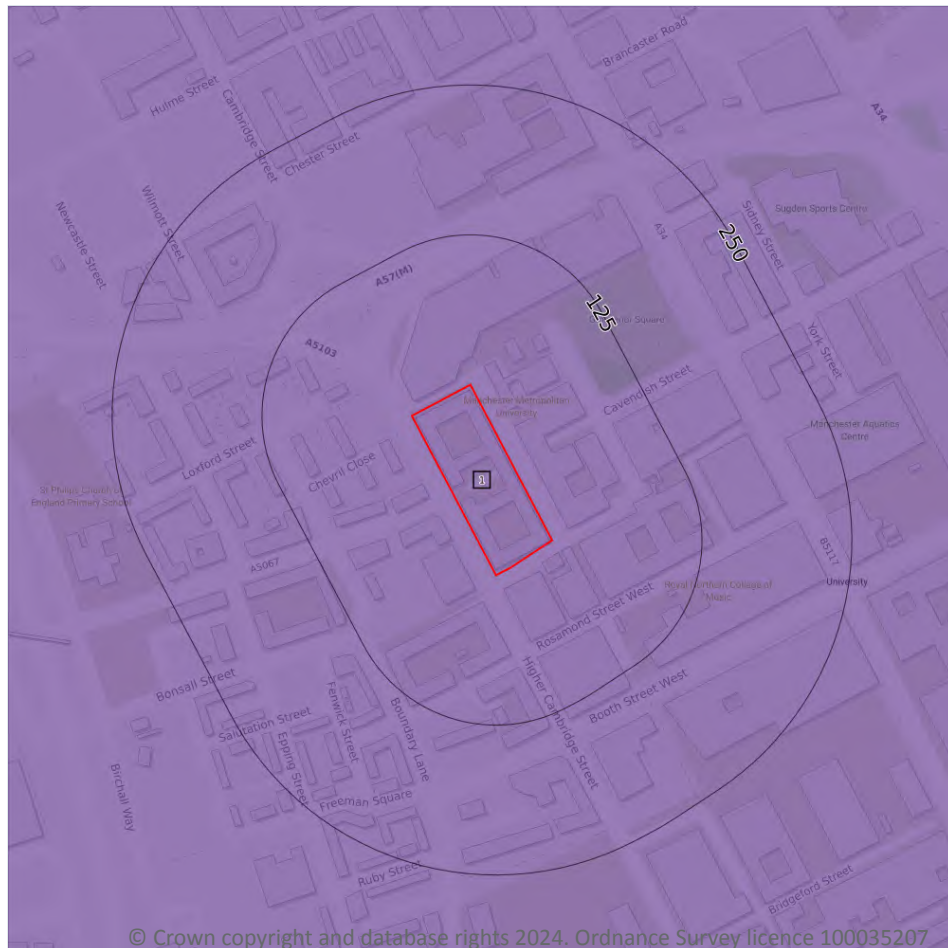
0

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

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



12 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m

1

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

Features are displayed on the Agricultural designations map on [page 102](#) >

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



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

1

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

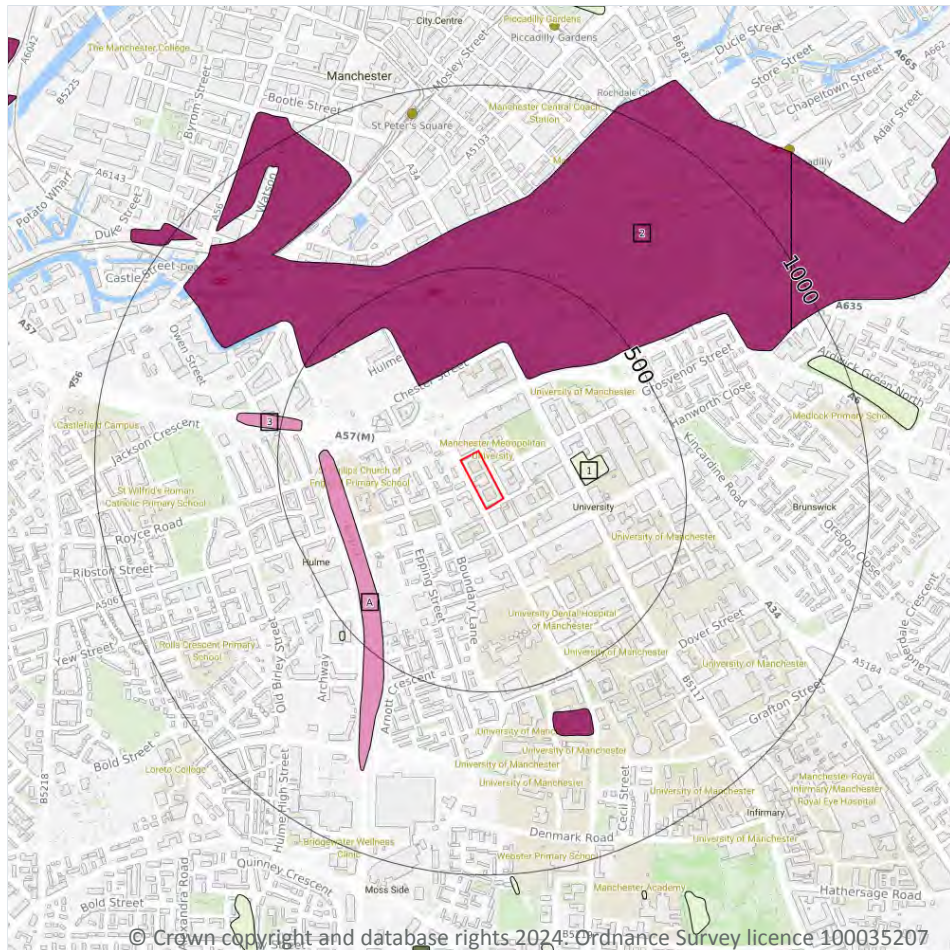
Features are displayed on the Geology 1:10,000 scale - Availability map on [page 105](#) >

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 106](#) >

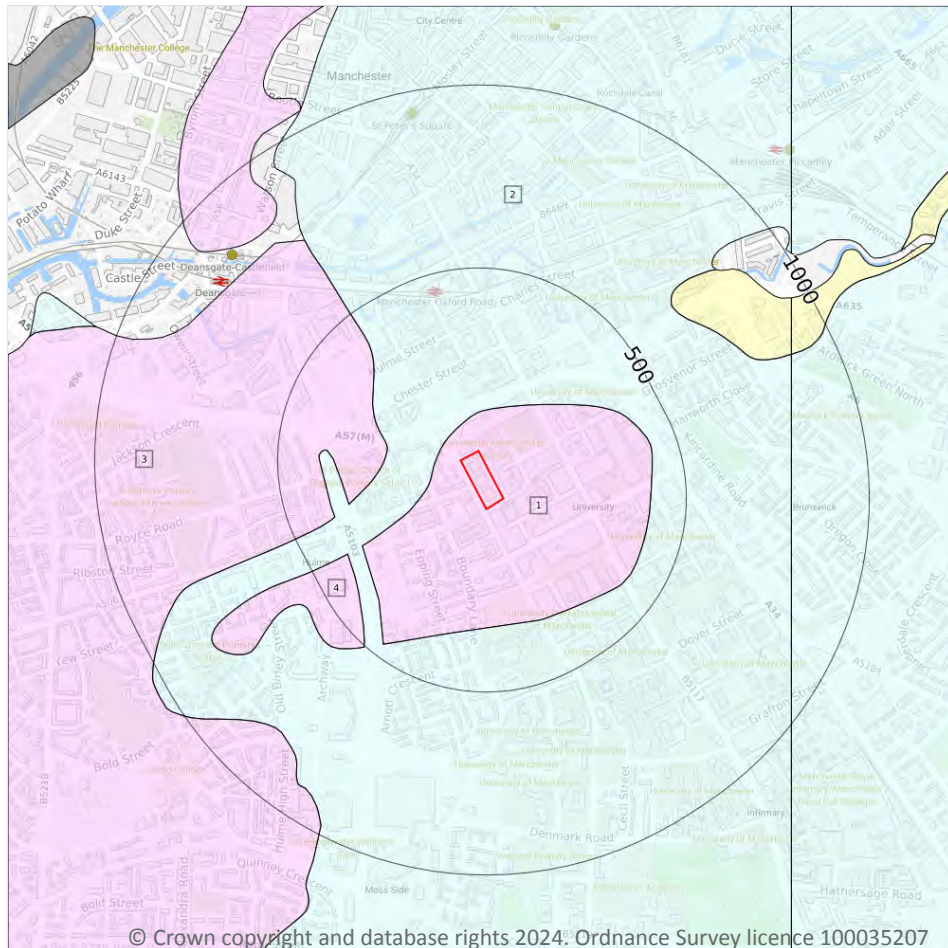
ID	Location	LEX Code	Description	Rock description
1	211m E	WMGR-ARTDP	Infilled Ground	Artificial Deposit
2	232m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
A	327m W	WGR-VOID	Worked Ground (Undivided)	Void
3	443m W	WGR-VOID	Worked Ground (Undivided)	Void



This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



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 108](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	GFSD-DXSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
2	62m NW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
3	203m W	GFSD-DXSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
4	392m SW	GFSD-DXSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel



This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

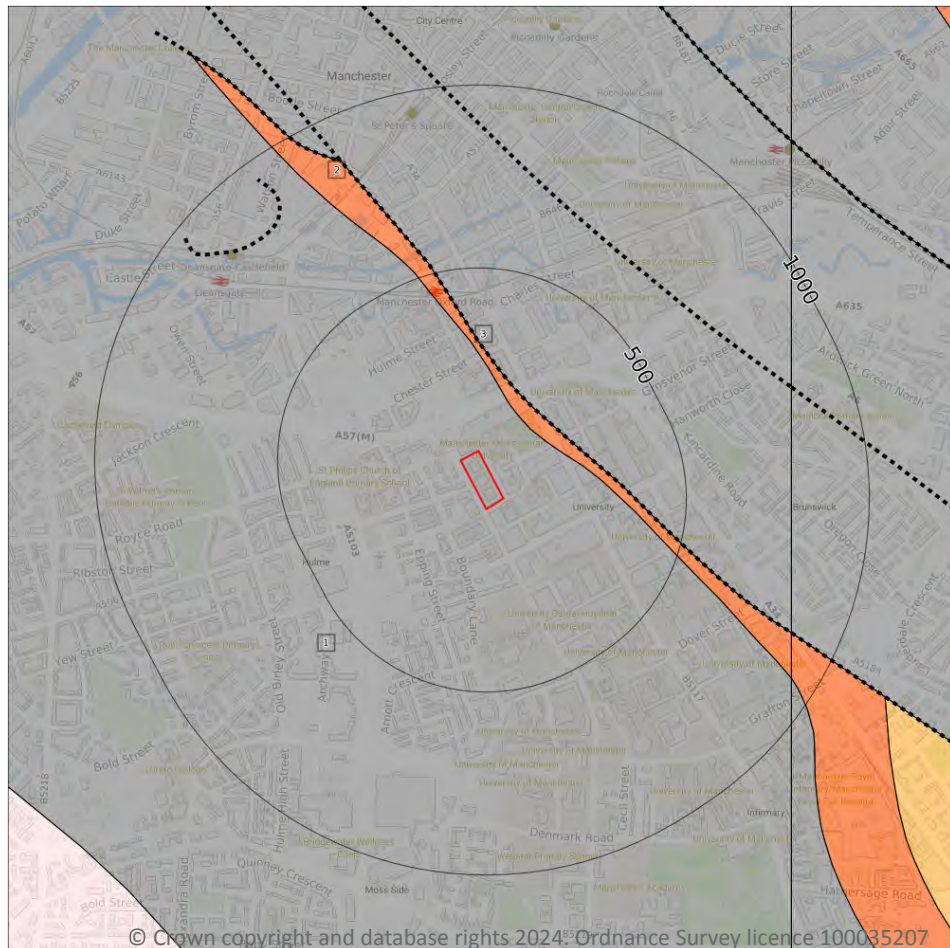
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m

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 110](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	CPB-SDST	Chester Pebble Beds Formation - Sandstone	Early Triassic Epoch
2	146m 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

1

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 110](#) >

ID	Location	Category	Description
3	189m 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



— 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.

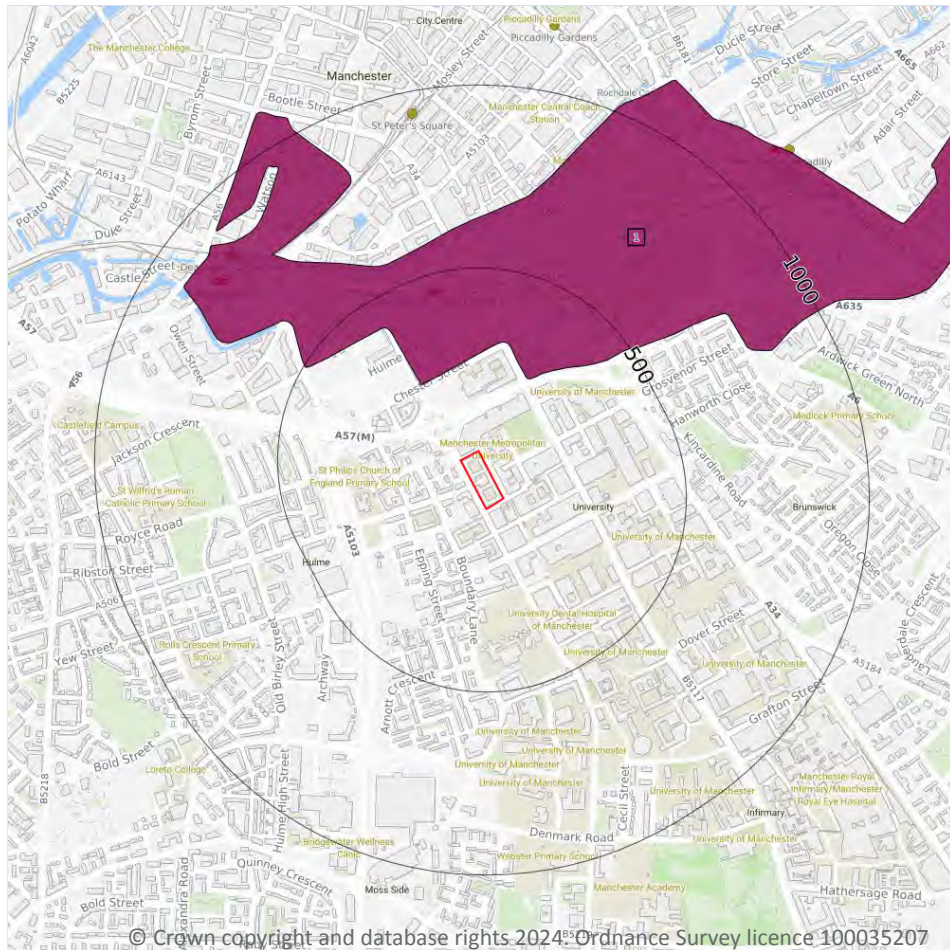
Features are displayed on the Geology 1:50,000 scale - Availability map on [page 112](#) >

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



- Site Outline
- Search buffers in metres (m)
- Made ground
 - Worked ground
 - Infilled ground
 - Disturbed ground
 - Landscaped ground

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 113](#) >

ID	Location	LEX Code	Description	Rock description
1	232m N	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

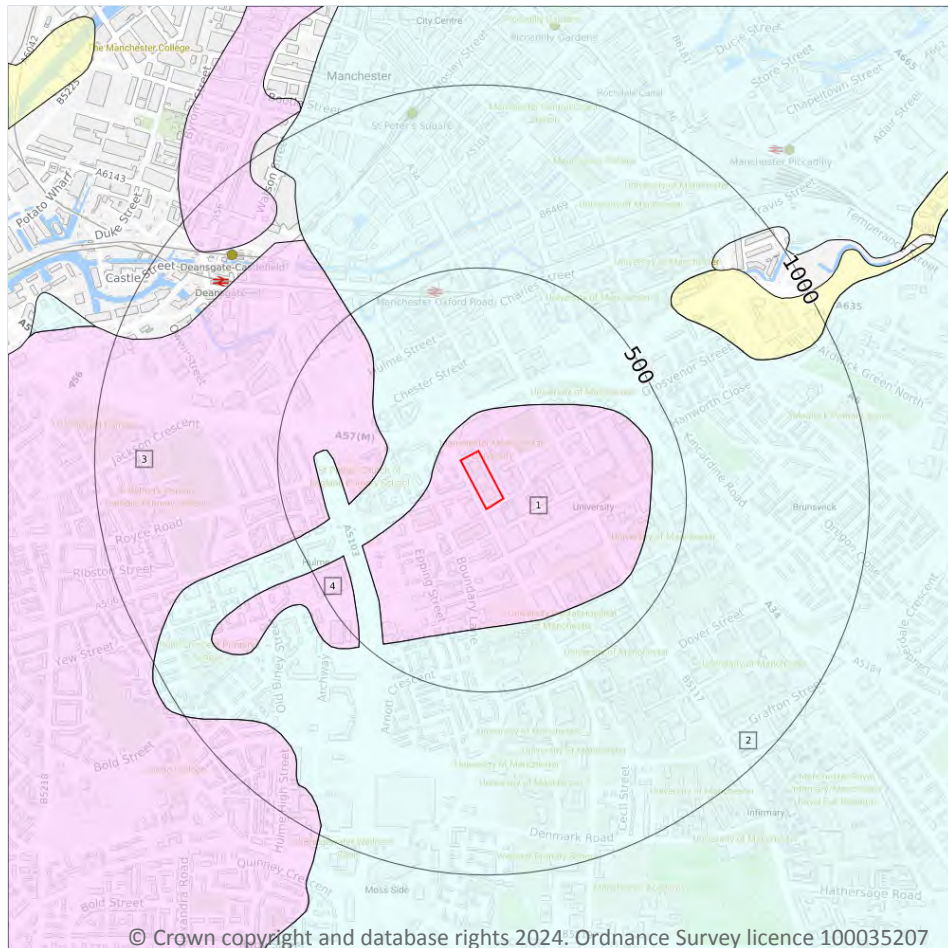
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

4

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on [page 115](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	GFSD-D-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
2	63m NW	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
3	202m W	GFSD-D-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
4	405m SW	GFSD-D-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL



This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m

1

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

Records within 50m

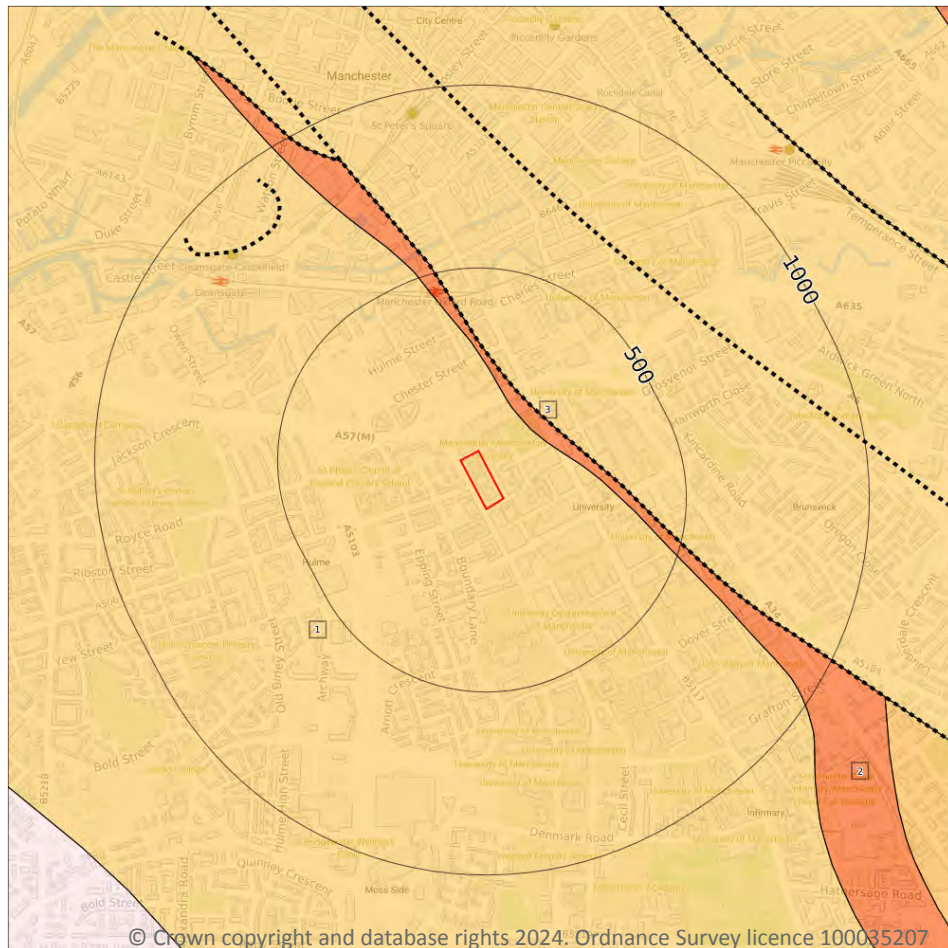
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



— 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 117](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	CHES-SDST	CHESTER FORMATION - SANDSTONE	OLENEKIAN
2	146m 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

1

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

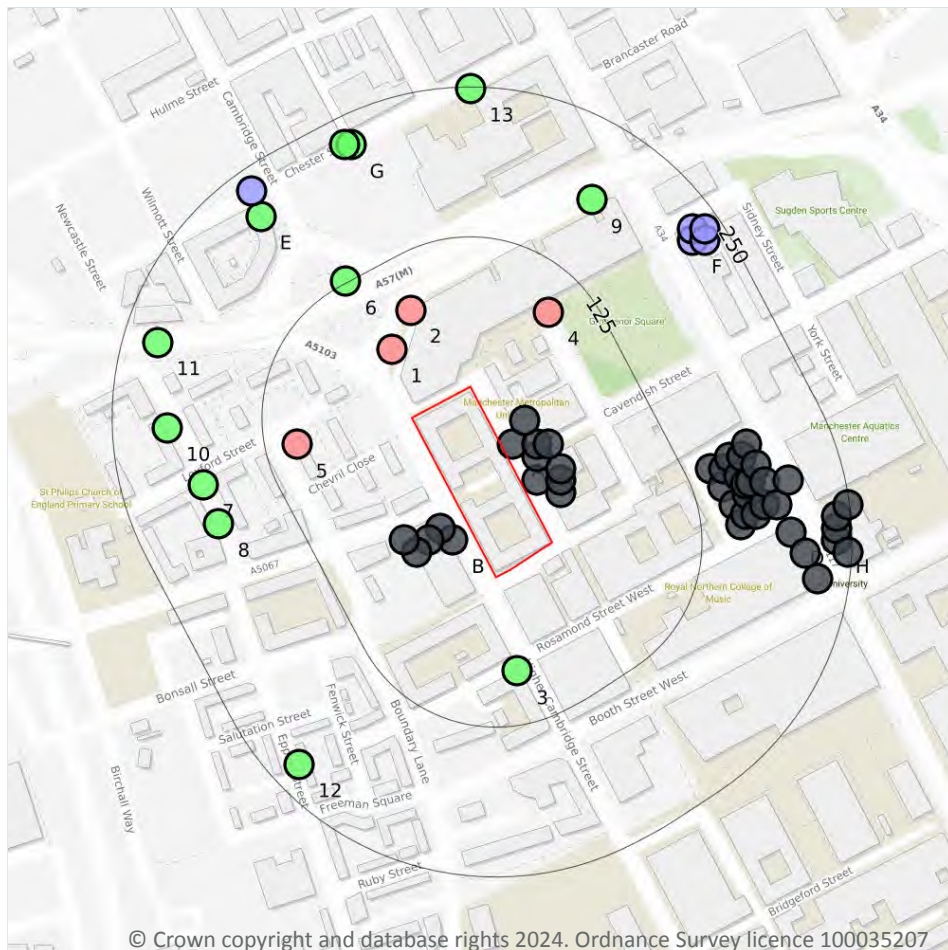
Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 117](#) >

ID	Location	Category	Description
3	189m NE	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

- Confidential
- 0 - 10m
- 10 - 30m
- 30m+
- Unknown

16.1 BGS Boreholes

Records within 250m

62

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 119 >](#)

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	9m NE	384180 397000	MANCHESTER METRO' UNIVERS' TP 9	-	Y	N/A
A	13m E	384200 396970	MANCHESTER METRO' UNIVERS' TP 2	-	Y	N/A
B	18m SW	384130 396920	HIGHER CAMBRIDGE ST MANCHESTER TP 4	-	Y	N/A



ID	Location	Grid reference	Name	Length	Confidential	Web link
B	22m SW	384120 396930	HIGHER CAMBRIDGE ST MANCHESTER TP 1	-	Y	N/A
A	22m NE	384200 396990	MANCHESTER METRO' UNIVERS' TP 6	-	Y	N/A
A	26m E	384220 396960	MANCHESTER METRO' UNIVERS' TP 1	-	Y	N/A
A	27m NE	384200 397000	MANCHESTER METRO' UNIVERS' TP 7	-	Y	N/A
A	27m NE	384190 397020	MANCHESTER METRO' UNIVERS' TP 8	-	Y	N/A
A	30m E	384220 396970	MANCHESTER METRO' UNIVERS' TP 4	-	Y	N/A
A	35m E	384220 396980	MANCHESTER METRO' UNIVERS' TP 3	-	Y	N/A
B	35m SW	384110 396920	HIGHER CAMBRIDGE ST MANCHESTER TP 5	-	Y	N/A
A	35m NE	384210 397000	MANCHESTER METRO' UNIVERS' TP 5	-	Y	N/A
B	49m SW	384100 396910	HIGHER CAMBRIDGE ST MANCHESTER TP 3	-	Y	N/A
B	53m SW	384090 396920	HIGHER CAMBRIDGE ST MANCHESTER TP 2	-	Y	N/A
1	58m NW	384079 397079	MANCHESTER METROPOLITAN UNIVERSITY BH 2	100.0	N	18662695 ↗
2	80m NW	384095 397112	MANCHESTER METROPOLITAN UNIVERSITY BH 3	107.0	N	18662697 ↗
3	80m S	384184 396811	MANCHESTER CORP. SEWER WORKS NO.4, HULME	14.17	N	1042161 ↗
4	90m N	384210 397110	MANCHESTER METROPOLITAN UNIVERSITY	92.0	N	18293103 ↗
5	99m W	384000 397000	DYE WORKS OLD GARRATT MANCHESTER	98.76	N	1045463 ↗
6	126m NW	384041 397136	MANCUNIAN WAY 8	16.15	N	1042495 ↗
C	146m E	384345 396980	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY 1	-	Y	N/A
C	150m E	384355 396965	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY TP 13	-	Y	N/A
C	155m E	384365 396950	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY TP 6	-	Y	N/A
C	156m E	384356 396980	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY TP 10	-	Y	N/A
C	158m E	384370 396933	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY 4	-	Y	N/A



ID	Location	Grid reference	Name	Length	Confidential	Web link
C	163m E	384374 396942	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - TP 3	-	Y	N/A
C	164m E	384361 396989	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - TP 9	-	Y	N/A
C	165m E	384369 396973	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - TP 12	-	Y	N/A
C	168m E	384376 396958	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - TP 5	-	Y	N/A
C	168m E	384374 396967	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - 3	-	Y	N/A
C	172m E	384383 396942	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - TP 2	-	Y	N/A
C	173m E	384378 396969	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - TP 7	-	Y	N/A
C	174m E	384371 396990	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - TP 8	-	Y	N/A
C	180m E	384390 396950	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - TP 1	-	Y	N/A
C	182m E	384375 397000	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - 2	-	Y	N/A
C	182m E	384383 396983	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - TP 11	-	Y	N/A
7	183m W	383922 396966	MANCHESTER CORP. HULME	10.97	N	1042240 ↗
8	184m W	383935 396934	MANCHESTER CORP. K.SEWER	10.97	N	1042241 ↗
C	184m E	384390 396969	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - TP 4	-	Y	N/A
9	186m N	384246 397204	MANCUNIAN WAY 9	11.58	N	1042496 ↗
C	190m E	384400 396950	SITE 3 MANCHESTER METROPOLITAN UNIVERSITY - 5	-	Y	N/A
D	199m E	384412 396927	ROYAL NORTHERN COLLEGE OF MUSIC MANCHESTER 1	-	Y	N/A
C	204m E	384410 396970	OXFORD ROAD MANCHESTER TP1	-	Y	N/A
10	204m W	383892 397014	MANCHESTER CORP. K.SEWER	10.67	N	1042242 ↗

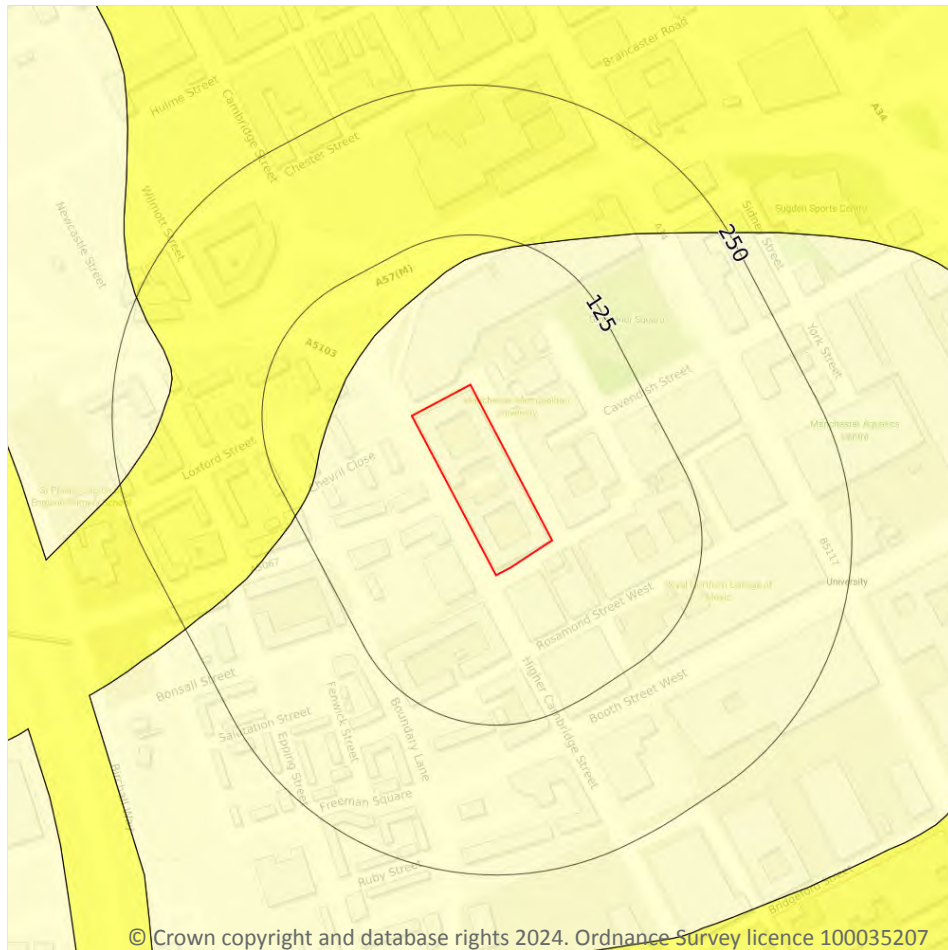


ID	Location	Grid reference	Name	Length	Confidential	Web link
E	210m NW	383970 397190	LOWER MEDLOCK UCISO'S CONTRACT 1 MAN 0285 504	15.0	N	1043424 ↗
D	211m E	384424 396909	ROYAL NORTHERN COLLEGE OF MUSIC MANCHESTER 2	-	Y	N/A
11	221m NW	383884 397085	MANCUNIAN WAY 7	15.24	N	1042494 ↗
F	222m NE	384330 397170	SIDNEY STREET, TRIAL PIT SURVEY TP 4	4.0	N	15018267 ↗
D	223m E	384434 396888	ROYAL NORTHERN COLLEGE OF MUSIC MANCHESTER 3	-	Y	N/A
G	225m N	384045 397250	MANCHESTER CORP. K.SEWER	10.06	N	1042246 ↗
12	227m SW	384002 396733	MANCHESTER CORP. SEWER WORKS NO.4, HULME	14.02	N	1042162 ↗
F	227m NE	384330 397180	SIDNEY STREET, TRIAL PIT SURVEY TP 3	4.0	N	15018265 ↗
G	228m N	384040 397250	HULME STREET MANCHESTER 4	13.2	N	1043318 ↗
F	230m NE	384340 397170	SIDNEY STREET, TRIAL PIT SURVEY TP 2	3.8	N	15018261 ↗
E	232m NW	383962 397211	MANCHESTER CORP. K.SEWER	9.75	N	1042245 ↗
F	236m NE	384340 397180	SIDNEY STREET, TRIAL PIT SURVEY TP 1	4.0	N	15018254 ↗
H	237m E	384450 396920	MANCHESTER SCHOOL OF MANAGEMENT TP3	-	Y	N/A
H	237m E	384450 396930	MANCHESTER SCHOOL OF MANAGEMENT A2	-	Y	N/A
H	238m E	384450 396940	MANCHESTER SCHOOL OF MANAGEMENT TP2	-	Y	N/A
H	247m E	384460 396910	MANCHESTER SCHOOL OF MANAGEMENT TP1	-	Y	N/A
13	249m N	384145 397297	MANCHESTER CORP. K.SEWER	10.06	N	1042247 ↗
H	249m E	384460 396950	MANCHESTER SCHOOL OF MANAGEMENT A3	-	Y	N/A

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☒ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.1 Shrink swell clays

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 123](#) >

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



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- 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 124 >](#)

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

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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.

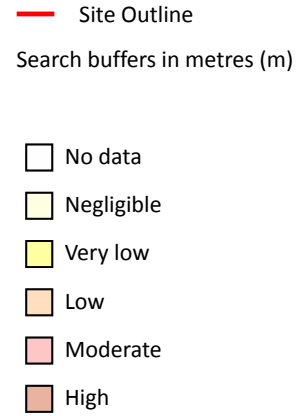
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 125 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Collapsible deposits



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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 126 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Landslides



- Site Outline
- Search buffers in metres (m)
- ☐ No data
 - ☐ Negligible
 - ☐ Very low
 - ☐ Low
 - ☐ Moderate
 - ☐ High

17.5 Landslides

Records within 50m

1

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

Features are displayed on the Natural ground subsidence - Landslides map on [page 127 >](#)

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



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- 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 128](#) >

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



This data is sourced from the British Geological Survey.



18 Mining and ground workings

18.1 BritPits

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m

0

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

This 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 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



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- Mining cavities
- Reported recent incidents
- Historical incidents
- BGS karst database (Point)
- BGS karst database (Line)
- BGS karst database (Area)

19.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.



19.2 Mining cavities

Records within 1000m

1

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

Features are displayed on the Ground cavities and sinkholes map on [page 134](#) >

ID	Location	Mine Address	Mineral	Data source	Publisher
-	711m E	Manchester, Greater Manchester	Firestone, Freestone, Hearthstone , Honestone, Ragstone, Sandstone, Scythestone , Silver Sand, Whetstone	'Underground Manchester - Secrets of the city revealed'	Willow Publishing

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.

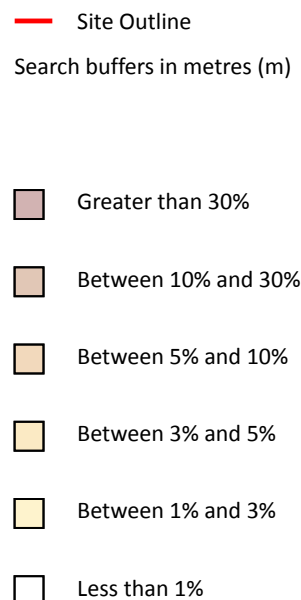
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over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



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 137](#) >

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

3

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 km². 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 km²; 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

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

8

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 km²).

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	19	3.3	98	67	0.5	68	38	22	9
On site	20	3.5	71	49	0.4	71	25	22	7
On site	21	3.7	105	72	0.5	64	40	22	10
On site	21	3.7	286	196	0.8	64	72	22	19



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	23	4	81	56	0.5	62	38	23	10
7m NW	20	3.5	71	49	0.4	65	25	21	7
8m SE	30	5.3	323	222	0.9	73	76	28	21
27m NE	18	3.2	202	139	0.7	72	62	23	16

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 km².

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects

22.1 Underground railways (London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m

0

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

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m

0

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



This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

0

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

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m

0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 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 B

Preliminary UXO Risk Assessment Report



Contact Us

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Preliminary UXO Risk Assessment

Client Groundsure Ltd
Report Ref. No. GSIP-2024-16216 PRA
Date 17/07/2024

Project Name CAMBRIDGE NORTH HALL, CAVENDISH STREET



Site Address Manchester Metropolitan University – All Saints Campus, Boundary Lane, First Street, Hulme, Manchester, Greater Manchester, M15 6JD
Centre Point NGR SJ 84156 96974

Introduction

The purpose of the *Stage 1 Preliminary Risk Assessment* is a qualitative screening exercise to assess the potential of finding unexploded ordnance (UXO) at a site. The process requires the consideration of the basic factors that affect the potential for UXO to be present at a site and the likelihood for any hazard to occur.

The aim of the preliminary assessment is to identify or discount the need for further detailed research (in the form of a *Stage 2 Detailed Risk Assessment*) to be conducted, to further clarify the risk from UXO.

The Preliminary Risk Assessment uses the sources of information available to Igne in-house, to place a development in context with domestic military and conflict history.

This assessment has been produced in accordance with the CIRIA C681 Guidelines: *Unexploded Ordnance, a Guide for the Construction Industry, 2009*.

The report will assess the following:

- o Extent of Proposed Intrusive Works
- o Conflict History / Enemy Actions
- o Domestic Aerial, Naval and Land-Based Military Activity
- o Consideration of any Risk Mitigating Factors

The assessment is intended as a common sense 'first step' in the UXO risk management process.

Site Information	
Site Description	The site encompasses a large building associated with Manchester Metropolitan University. The footprint is as such that 3no. quads comprising paving and garden areas are located throughout the centre.
Scope of Proposed Works	No details provided.

Historical site conditions	
Ground conditions during WWII	The site was developed, comprising a large building in the southern extent, and multiple terraces of houses and their associated gardens in the northern section. Multiple roadways intersected the site.
Degree of access during WWII	Being well developed, the site is likely to have remained occupied and been accessed frequently throughout WWII.

Aerial bombing & air delivered UXO	
Enemy action during WWII	- Moderate regional bombing density, with a higher localised bombing density. - 2no. bomb strikes recorded on site causing serious damage to the large building in the southern section. - At least 10no. bomb strikes recorded within 300m of the site. - Rubble from bomb strikes on site may have presented ground conditions in which a bomb strike could have landed with no discernable entry hole and remained unnoticed.

Military activity & Allied UXO	
Historic military installations (distances approximate)	- 2no. military explosives works factories were located within 5km of the site (nearest 1.5km north-west). - At least 10no. heavy anti-aircraft batteries were located within effective firing range of the site and additional unrecorded anti-aircraft guns are likely to have been located throughout the area during WWII.

Post-WWII local UXO encounters	
Items found nearby	- 03/04/2007 – Unexploded mortar shell discovered on Cambridge Street approximately 200m north of the site. - 01/10/2007 – Suspected unexploded bomb discovered on Middlewood Street 2km north-west of the site. - 24/06/2024 – A WWII-era shell was discovered on Hadfield Street, Stretford approximately 1.8km west.

Post-WWII risk mitigating factors	
Post-WWII redevelopment and clearance works	The site has been redeveloped into a large building associated with Manchester Metropolitan University. Quad areas comprising pavement and gardens are located throughout the centre of the site. Intrusive works will have been necessary for this development although not across the entirety of the site. Within any areas of the site that have not been subject to deep intrusive works to maximum bomb penetration depth, the risk from UXO is not considered to have been fully mitigated.

Conclusions	
The site was located within Manchester which was subject to a moderate bombing density. However, multiple bomb strikes were recorded on site and within the vicinity, indicating a higher localised density of bombing. Further research is required to determine the possibility of present-day German air-dropped UXO contamination. The site was not located in close proximity to any recorded Allied military installations. However, examples of Allied UXO have been found near the site, which indicates the possibility of military activity nearby which could have led to contamination on site. In addition, numerous anti-aircraft batteries were located within effective firing range of the site likely supported by additional temporary guns. These are likely to have been fired fairly frequently throughout WWII. Unexploded shells fired by these guns could conceivably have come to land in any open ground or rubble on site unnoticed and unrecorded.	

Preliminary Risk Level

HIGH

Recommendation

Igne recommends that a Stage 2 Detailed UXO Risk Assessment of the site is undertaken to clarify the UXO risk to the proposed works.

