



PHASE 1 PRELIMINARY RISK ASSESSMENT FOR 79 MOSLEY STREET, MANCHESTER

FINAL

TE1062/PRA

14 DECEMBER 2017

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DOCUMENT CONTROL

Project No. : TE1062/PRA
Report Status: Final
Issue No.: v1.1
Project Engineer: Callum Jones
Date of Issue: 14/12/2017
Signature:

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Issue No.	Description of Issue / Revision	Date of Issue	Reviewed By	Author Initial
1.0	Final	01/12/2017	SL	CJ
1.1	Final	14/12/2017	SL	CJ



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EXECUTIVE SUMMARY

Introduction	Tier Environmental was commissioned by Boulton Brooks Real Estate to undertake a Phase 1 Preliminary Risk Assessment of 79 Mosley Street Manchester. The purpose of the investigation was to establish land use history and review available information to determine the environmental setting of the Site and potential risks associated with soil and groundwater contamination and hazardous ground gases.
Site location	79 Mosley Road, Manchester, M2 3LQ. National Grid Reference (NGR): 384026, 397989
Site history	The Site has a history of development dating back to before the earliest Ordnance Survey (OS) maps of 1844; since this time, the site and its surrounding area have undergone multiple phases of development. The site was shown to be occupied by a number of unspecified buildings since before the earliest OS map of 1844. Pertinent surrounding land uses include a unspecified tank, a garage, potentially infilled land, numerous tramways and electricity substation.
Probable Ground conditions	Made Ground is anticipated based on the Site's history of development. Glacial Till (Secondary Undifferentiated Aquifer) is anticipated beneath the Made Ground. Bedrock is shown to comprise the Chester Pebble Beds Formation (Principal Aquifer).
Further works	Site investigation is recommended to: • Determine the nature and thickness of Made Ground and natural soils across the site; • The nature and extent of any contamination due to historic land uses, • Inform foundation design; and, • Inform preliminary waste characterisation and disposal options for basement and foundation arisings.



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1. INTRODUCTION

Tier Environmental was commissioned by Boulton Brooks Real Estate to undertake a desk study and Phase I Preliminary Risk Assessment for 79 Mosley Street, Manchester, M2 3LQ (the "Site"). The Site location is shown on Drawing No. TE1062/PRA/1, presented in Appendix A.

It is understood that there are no definitive development plans at present. This assessment has been made assuming a commercial and office space scheme, including the retention of the facade, and alterations to the internal area of the building with the erection of a single storey extension to the top floor.

Taking into account the planned future use of the Site, the objectives of this appraisal were:

- To determine the land use history from review of available historical documentation and maps;
- To establish the environmental setting of the Site;
- To determine the likely soil and groundwater conditions, including whether significant contamination could have resulted from past or current land use(s);
- To determine the potential risks posed by any ground contamination and provide recommendations on potential remedial measures to manage such risks;
- To determine the potential for risks posed to the Site from hazardous ground gases;
- To evaluate whether past mining or other extractive industries could have an influence on the Site; and,
- To provide advice relating to potential geotechnical issues associated with the Site.

The desk-study part of this investigation included the assessment of information provided by Groundsure. The information provided by these organisations is provided in Appendix E.

This report, which was designed to meet the requirements of all relevant current guidance including the remaining CLR reports, presents the factual information available during this appraisal, interpretation of the data obtained and recommendations relevant to the defined objectives.

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

The comments and opinions presented in this report are based on the findings of the desk study. There may be other conditions prevailing on the Site which have not been revealed by this investigation and which have not been taken into account by this report. Responsibility cannot be accepted for any conditions not revealed by this investigation. Any diagram or opinion on the possible configuration of the findings is conjectural and given for guidance only. Confirmation of intermediate ground conditions should be undertaken if deemed necessary.



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2. SITE DETAILS AND DESCRIPTION

Table 2.1. Current Site Overview.

Site name	79 Mosley Street, Manchester
Site address	79 Mosley Street, Manchester, M2 3LQ. A site location plan is included as Drawing No. TE1062/PRA/1 within Appendix A.
National Grid Reference	384026, 397989
Location description	The Site presently comprises a disused commercial / office space The surrounding land is mixed residential, commercial and public open space.
Approximate Site area	0.08ha
Site shape	The site is rectangular shaped.
General topography and ground levels	The Site is mostly flat lying at around 45m AOD.
Current land use	The Site is presently covered in an existing listed structure.
Existing structures	The main building occupies the central entirety of the Site.
Site ground surfaces	The Site is covered by the existing structures.
Sub-surface structures	Foundations associated with the current buildings and structures should be anticipated. It is understood that there is a full depth basement beneath the western section of the building (fronting onto St Peter's Square) and a half depth basement beneath the eastern section of the existing building along Back George Street. The potential of additional structures associated with historical land use cannot be discounted. The presence of underground services should be anticipated.

The main Site features are shown on Drawing No. TE1062/PRA/2 within Appendix A.



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3. ENVIRONMENTAL SETTING

3.1. Site History

Extracts of Ordnance Survey (OS) plans dated from 1848 to 2014 were reviewed. These were obtained as part of the GroundSure report for the Site, which is presented in Appendix E.

Table 3.1 presents a summary of the main aspects of the Site from 1844 relevant to the current and proposed future end uses. It is not the intention of this report to describe in detail all of the changes that have occurred on or adjacent to the Site, where these are not relevant to the land use.

Table 3.1. Site History.

Source (Map edition, scale)	On-Site features	Off-Site features
1848, 1:10,560	- An unspecified building is annotated covering approximately two thirds of the south-eastern section of the Site. - Mosley Street annotated in a general north-east to south-west orientation occupying the remainder of the Site.	- The surrounding land use is of high density with numerous unspecified buildings and roads surrounding the Site. 'Coal Wharf' and a gas works are annotated 450m south. - A cotton mill is annotated 470m south-west. - A railway line is annotated in a general east-west orientation 480m west. - A circular feature, possible a tank is annotated 135m west south west.
1851, 1:1,056	- Mosley Street is no longer annotated on Site. - The Site is occupied by 4 No. unspecified structures. - A 'pump' and possible well is annotated on Site.	- Manchester Royal Institution and Reading Room are annotated 20m north. - A number of 'pumps' are annotated within 250m of the Site. - Mosley Street is now annotated off-Site. - Scotch Church and St Peters Church are annotated 100m south-west.
1893, 1:2,500 to 1896, 1:10,560	The Site is now annotated with 3 No. unspecified structures.	- A number of changes have been made to buildings surrounding the Site, including Manchester Art Gallery 20m north, numerous banks, hotels, halls and theatres are annotated surrounding the Site in all directions. - A tramway is now annotated on Mosley Street. - A timber yard is annotated 230m south. - Canals located 230m southwest and 195m southeast.
1908, 1:2,500 to 1923, 1:10,560	No significant changes.	- A tramway is now annotated immediately north of the Site. - An electricity station is annotated 300m south-east. - A printing works is annotated 250m west. - Canal located 230m southwest no longer shown; potentially infilled.



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Source (Map edition, scale)	On-Site features	Off-Site features
1933, 1:2,500 to 1938, 1:10,560	No significant changes.	Alterations to structures surrounding the Site are annotated including Central Public Library is now annotated 120m west.
1948, 1:1,250	No significant changes.	- The tramway is no longer annotated immediately north. - A 'ruin' is annotated 50m north. - An airways terminus is annotated 160m south-west.
1953, 1:1,250	No significant changes.	2 No electricity stations are now annotated 300m south. - Electricity substation and station approach are annotated 300m south-west.
1955, 1:1,250	The Site does not appear on the map.	No significant changes.
1958, 1:2,500	4 No. unspecified structures are annotated on Site.	No significant changes.
1965, 1:2,500	No significant changes.	Electricity stations are now annotated 'works'.
1968, 1:1,250	No significant changes.	No significant changes.
1970, 1:2,500	No significant changes.	No significant changes.
1972, 1:10,000	No significant changes.	No significant changes.
1973, 1:1,250	The Site is not shown.	Only the western part of the map is shown. No significant changes.
1981, 1:10,000	No significant changes.	No significant changes.
1985, 1:1,250 to 1991, 1:10,000	No significant changes.	Unspecified structures previously annotated from 15m west are now no longer annotated.
1992, 1:1,250 to 1995, 1:1,250	No significant changes.	- A 'Peace Garden', cycle track, and tramway are now annotated 15m west of the Site. - St Peters Square station is annotated 100m south-west.
2002, 1:10,000	No significant changes.	No significant changes.
2010, 1:10,000	No significant changes.	No significant changes.
2014, 1:10,000	No significant changes.	5 No. petrol stations are annotated within 500m of the Site.



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3.2. Geology

Table 3.2. Geological Summary.

Maps and publications referenced	BGS 1:50,000 scale bedrock and superficial deposit maps. GroundSure Report
Made ground	No Made Ground soils are reported within the Groundsure report, however; due to the redeveloped nature of the Site, Made Ground is anticipated.
Drift geology	BGS records show superficial deposits to comprise Glacial Till, primarily consisting of sandy gravelly clay. BGS borehole records in the vicinity of the Site indicate approximately 10m Glacial Till overlying Chester Pebble Beds Formation to unknown depth.
Solid geology	Bedrock is shown to comprise the Chester Pebble Beds Formation - sandstone.
Dip of solid strata	Not established.
Faults	A fault is annotated 40m north-east. Normal fault, inferred.
Coal seams	It is considered that the Site is not at risk from historic coal mining activities. Use of the Coal Authority online active search states that the Site is not within a high risk development area. The Site does not lie within an area where past or probable future coal mining activities are likely to have occurred.

3.3. Mining and Quarrying

Table 3.3. Coal Mining Activities.

	Yes/No	Comments
Is the Site in an area of potential shallow coal workings?	No	
Are there any known shafts, adits, tips, lagoons, or opencast workings likely to affect the Site?	No	
Is exploratory work required to investigate the potential risk from shallow mining or quarrying?	No	



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Table 3.4. Other Extractive Industries.

	Yes/No	Comments
Superficial drift deposits		
Evidence of extraction on or within 250 m of the Site?	No	
Action required?	No	
Solid Strata		
Any evidence of mineral extraction on or within 250 m of the Site?	No	
Action required?	No	

Other, undocumented mineral workings on or close to the Site cannot be completely dismissed.

3.4. Hydrogeology

Table 3.5. Groundwater Occurrence and Abstraction.

	Presence/location	Comments
Depth(s)	Glacial Till – On Site Chester Pebble Beds Formation	Secondary (undifferentiated) Aquifer Principal Aquifer
Direction of flow	Unknown	
Licensed abstractions	NR within 500m	No active abstraction wells within 500m of the Site.
Private wells	NR	Historical and no longer present.
Source Protection Zones	400m south-west	Total Catchment
Springs	NR	

NR - none recorded.

For definition of Source Protection Zones, see Appendix C.



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3.5. Hydrology

Table 3.6. Surface Water Features.

	Presence/location	Comments
Environment Agency GQA classified watercourses	NR within 1.5km	
Unclassified watercourse(s)	Canal Primary River Underground river	300m south 450m south 450m south-east.
Licensed abstractions	NR within 1.5km	
Canals, ponds, lakes, etc.	NR within 250m	
Flood risk status	On Site	Very Low from rivers; however, there is potential of flooding at the surface. This means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions.
Surface run-off and Site drainage	Assumed to be drainage into local sewage network.	

NR - none recorded

Environment Agency GQA assessments: A = very good to E = poor

3.6. Ecological Features

Table 3.7. Ecological Features.

	Presence/location	Comments
Designated locations	480m north-east	Nitrate Vulnerable Zone
Other sensitive locations	NR	
Land use controls	NR	
Invasive plants	NR	A survey by a qualified invasive plant consultant is required to confirm the absence or extent of invasive species.
Trees and shrubs	NR	
Other features	NR	

NR - none recorded



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3.7. Landfill and Waste Management Activity

Table 3.8. Waste Management Activities.

	Presence/location	Comments
Environment Agency historic landfill sites	NR within 250m of Site	
Local authority recorded landfills	NR within 250m of Site	
BGS recorded landfills	NR within 250m of Site	
Other licensed waste management facilities within 250m	NR within 250m of Site	
Is there evidence of other landfilling on or within 250m of Site?	Yes	Potentially infilled canal approximately 200m south of the Site.
Is a landfill/ground gas risk assessment required?	Yes	A ground gas risk assessment should be undertaken, which includes monitoring in line with BS 8576:2013 before redevelopment of the Site.

NR - none recorded



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3.8. Local Potentially Contaminative Activities

Other potentially contaminative activities are shown in Table 3.9. The entries relate to activities within *circa* 250 m of the Site, with the exception of COMAH facilities where the assessment is extended to a distance of *circa* 1 km from the Site.

Table 3.9. Other Potentially Contaminative Processes in the Locality.

	Location	Comments
Discharge Consents	NR within 250m	
Part A(2) and Part B Activities	175m south-west 255m north-west	- Laundry Shop- Historical permit, No enforcement notified. - Johnsons Cleaners UK – Historical permit, No enforcement notified.
Prosecutions relating to controlled waters	NR within 250m of the Site	
Substantiated pollution incidents	NR within 250m of the Site	
IPPC permits/air pollution controls	NR within 500m of the Site	
Registered radioactive substances	NR	
Prosecutions relating to authorised processes	NR within 250m of the Site	
Enforcement and prohibition notices	NR within 250m of the Site	
Planning - hazardous substances consents and enforcements	NR within 250m of the Site	
COMAH sites	NR within 500m of the Site	
NIHHS sites	NR within 500m of the Site	
Fuel station entries	NR within 500m of the Site	
Pertinent contemporary trade directory entries	64m west	Unspecified tank.
	175m north-east	Garage
	195m south-east	Potentially infilled canal.
	225m south-east	Electricity substation - Due to the distance from the Site and the low mobility of PCBs in the environment this feature is not considered to present a risk to the proposed development.

NR - none recorded

COMAH – Control of Major Accident Hazards (regulations); NIHHS – Notification of Installations Handling Hazardous Substances (regulations)



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3.9. Radon Risk

Table 3.10. Radon Risk Status.

	Radon protection measures required? (Yes/No)	Comments
BRE (1999), Report 211	No	The site is located within a lower probability radon area as less than 1% of homes are above the action level. As such, no radon protection measures are required.
BGS Site-specific report	Not requested	

3.10. Summary

- The Site presently comprises an unspecified building.
- Historically, the Site has been developed since the earliest historic OS map (1844). The Site has been developed with a number of unspecified buildings since this time.
- Pertinent surrounding land uses include:
 - Unspecified tank located approximately 64m west;
 - A garage located 175m north-east;
 - Potentially infilled land 195m south-east;
- Made Ground is anticipated based on the Sites history of development
- An unknown thickness of Glacial Till is anticipated beneath the Made Ground.
- Bedrock is shown to comprise the Chester Pebble Beds Formation.
- The nearest surface water feature is a canal 300m of the Site.
- The Site is not located in a Source Protection Zone.
- Based on 'ruins' annotated on historic OS Maps and the moderate risk posed by unexploded ordnance as reported by Zetica it is advised that a UXO survey is carried out prior to any intrusive works being undertaken on Site.



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4 PROPOSED DEVELOPMENT

It is understood that the Site is to be refurbished with the retention of the current facade with the removal of the existing internal structure and the construction of a new internal structure, including the erection of a single storey extension to the top floor. It is understood that the Site will be redeveloped for a commercial end land use with office space.

It is understood that there is a full depth basement beneath the western section of the building (fronting onto St Peter's Square) and a half depth basement beneath the eastern section of the existing building along Back George Street. It is understood that excavation works will be undertaken to extend the full depth basement to beneath the entire building.



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5 PRELIMINARY CONCEPTUAL MODEL

Based on the desk study, a combined preliminary conceptual site model and conceptual exposure model has been developed for the proposed future land use. This summarises the understanding of surface and sub-surface features, the potential contaminant sources, transport pathways and receptors. In assessing the likely contaminants present at the Site, reference has also been made to Defra and Environment Agency supporting documentation. A preliminary qualitative risk assessment has also been made of the likelihood of the linkage operating and its potential significance.

The potential pollutant linkages identified and the qualitative risk assessment for these are presented in Table 4.1. The terms used in the preliminary qualitative risk assessment are defined in Appendix D.

5.1 Justification

The following factors are considered pertinent in defining the conceptual model.

Land Use

- The Site currently comprises an unspecified structure, it is understood that due to the Listed Grade status of this building that the facade is to be retained with the replacement of the internal space and an extension of the full depth basement area.
- The surrounding land is mixed residential, commercial and public open space.
- The Site is located within the city centre of Manchester, therefore numerous redevelopment has been undertaken within the vicinity of the Site, possibly amongst other reasons due to bomb damage during World War II.
- Historically, the Site has been developed since the earliest available historic OS map of 1844 with a number of unspecified buildings.
- Pertinent surrounding land uses include:
 - o Unspecified tank located approximately 64m west;
 - o A garage located 175m north-east;
 - o Potentially infilled land (canals) 230m southwest and 195m southeast;
- Made Ground is anticipated based on the Site's history of development.
- Glacial Till (Secondary Undifferentiated Aquifer) is anticipated beneath the Made Ground.
- Bedrock is shown to comprise the Chester Pebble Beds Formation (Principal Aquifer).
- The nearest surface water feature is a pond located 300m south of the Site.



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- No Environment Agency historic landfill sites are recorded within 500m of the Site.
- Basic radon protection measures are not required for the Site.
- The Site is not located in a Source Protection Zone.

Potential Sources

- Ground gas generation from potential on and of site Made Ground.
- Possible metal, PAH, phenol, sulphate, asbestos contamination of on-site Made Ground from the historic development of the Site.

Potential Pathways

- Dermal contact, ingestion and inhalation of contaminants On-Site.
- Migration of ground gas / explosion.
- Lateral migration of mobile contaminants via groundwater.
- Migration of mobile contaminants from Made Ground soils to adjacent Sites along services and conduits.
- Contaminated dust migration during construction.
- Migration via water pipes.

Potential Receptors

- Future and adjacent users of the Site.
- Buildings, hardstanding and services.
- Secondary A Aquifer beneath the Site.
- Principal Aquifer beneath the Site.
- Site investigation, demolition and construction staff and future underground service maintenance workers from hazardous short term exposure.

5.2 Uncertainties

The following uncertainties exist in the preliminary conceptual model:

- The presence of any features unrecorded by the historical maps, including unrecorded mine entries.



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- Any unrecorded geological features.
- Any unreported pollution events during the Site's history.



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Table 5.1. Preliminary Assessment of Potential Pollutant Linkages.

Pollutant linkage				Risk
	Source	Pathway(s)	Receptor(s)	
1	Possible metal, PAH, phenol, sulphate, asbestos contamination of on-site Made Ground from previous removal of permanent structures onsite.	Dermal contact, ingestion and inhalation of contaminants including contaminated dust migration during construction.	Future site users (commercial).	Medium x Likely = Moderate Risk
			Adjacent site users (commercial/residential).	Medium x Likely = Moderate Risk
			Construction, site investigation, demolition and future maintenance workers.	Medium x Likely = Moderate Risk
		Migration via water pipes.		
		Migration of mobile contaminants from Made Ground soils to adjacent sites along services and conduits.	Adjacent site users (commercial/residential).	Medium x Likely = Moderate Risk
2	Ground Gas generation from on and off site Made Ground.	Lateral and/or vertical migration of mobile contaminants.	Secondary "A" Aquifer. Principal Aquifer	Medium x Low Likelihood = Moderate/Low Risk
		Inhalation (indoor and outdoor).	Future site users (commercial).	Medium x low likelihood = Moderate/Low Risk
			Adjacent site users (commercial/residential).	Medium x low likelihood = Moderate/Low Risk
		Migration of ground gas / explosion.	Adjacent Site users, future Site users, buildings hardstanding and services.	Severe x unlikely = Moderate Risk

For definition of the terms used in the qualitative risk assessment, please see Appendix D.



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6 PROPOSED FURTHER WORKS

6.1 General

This Phase 1 Preliminary Risk Assessment appraisal has been performed for the proposed development at 79 Mosley Avenue, M2 3LQ (the "Site").

It is understood that the Site is to be refurbished with the retention of the current facade with the removal of the existing internal structure and the construction of a new internal structure, including the erection of a single storey extension to the top floor. It is understood that the Site will be redeveloped for a commercial end land use with office space.

It is understood that excavation works will be undertaken to extend the full depth basement beneath the entire Site. If this is not the case, then amendments to the interpretation and conclusions in this report may be required.

6.2 Further works

The Phase 1 Preliminary Risk Assessment has determined a moderate risk to human health and a moderate/low risk to controlled waters at the Site with respect to potential contamination and hazardous ground gases associated with historical on and off-site activities and potential infilling of ground.

It is recommended that a ground investigation is undertaken in order to further assess the potential risks associated with the pollutant linkages identified in the Preliminary Conceptual Site Model (presented in Section 6.1).

The objectives of the Phase II Ground Investigation will be:

- To determine shallow soil and groundwater (if encountered) conditions, including whether significant contamination has resulted from past or current land uses;
- To determine the risks posed by any ground contamination and provide recommendations on remedial measures to manage such risks;
- To determine the risks posed to the Site from hazardous ground gases;
- To determine the existence, and if applicable, the extent of contamination within local groundwater beneath the Site.
- To provide advice relating to geotechnical issues associated with the Site.



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6.3 Proposed Scope of Works

The following scope of works are proposed

- 1 No. days trial pitting for foundation inspection pits (approximately 4 trial pits) to determine the nature and extent of current foundations beneath the facade to be retained.
- Horizontal coring throughout the existing basement walls, assuming these are to be retained.
- 1 No. day window sample drilling (approximately 5 No. locations) and installation of 5 No. monitoring wells for gas and groundwater (if encountered) monitoring purposes and to facilitate soil sampling for environmental and geotechnical testing.
- 1 No cable percussive borehole to determine deep ground conditions to aid with foundation design (if access permits, or post demolition of internal structure);
- *In situ* geotechnical testing to assist with foundation design and recommendations;
- Environmental chemical testing on selected soil samples for metals, pH, speciated PAH, speciated TPH, phenol, SVOC/SVOC, sulphate, TOC and asbestos screens in order to assess potential risks to human health based on historical land uses on and within close proximity to the Site and to assist with basic waste characterisation.

The Control of Asbestos Regulations 2012 should be adhered to. A summary of complying with CAR: risk assessments, licensing and training is provided in Appendix F.



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7 POTENTIAL DEVELOPMENT CONSTRAINTS

7.1 General

This preliminary risk assessment has been performed for the land at 79 Mosley Street, Manchester, M2 3LQ.

The proposed development comprises the following elements:

- The site is occupied by a single structure covering the entire Site.
- The Site is situated off Mosley Road, Manchester

It is understood that excavation works will be undertaken to extend the full depth basement beneath the entire Site. If this is not the case, then amendments to the interpretation and conclusions in this report may be required.

7.2 Potential Contamination Issues

There is potential for ground gas generation and contamination related to on-site Made Ground or potential infill the former canals. Site investigation, including the installation of ground gas monitoring wells and limited chemical testing should be undertaken to determine the presence of ground gas and contamination.

7.3 Clean Cover System / Off-Site Disposal

It is assumed that there will not be any landscaped areas within the proposed development.

There is potential, given the previous Site use, for Made Ground to be present on Site which may be contaminated due to previous land use which presents a potentially significant risk to human health. This would be established via site investigation works that would include soil sampling for laboratory chemical analysis and human health/controlled waters risk assessment undertaken in accordance with current guidance. In the event that potentially significant risks to future site users are identified from the risks assessment, then there is a potential for an abnormal cost to be realised associated with the excavation and disposal of impacted soils to break potential direct contact and ingestion pathways.

7.4 Waste Soils

Characterisation of soils for waste will be required prior to off Site disposal of excavation arisings from the basement and foundations. This provides a preliminary assessment of whether a material is potentially either inert / non-hazardous or hazardous waste, with the final outcome being determined by WAC testing. Final categorisation is the responsibility of the producer or holder of the waste.

There will be requirement for the waste producer to provide appropriate Waste Acceptance Criteria (WAC) testing of the soils for disposal to ensure that the soils are appropriately classified and that the landfill is licensed to receive such soils. In the event that asbestos is identified within Made Ground soils, then the nature and extent of the asbestos should be determined along with the content by weight in order to assist with final waste classification. Any asbestos content recorded in excess of 0.1% w/w should be classified as hazardous waste.



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7.5 Upgraded Water Pipes

The measured concentrations of determinands in the soil should be assessed to determine the potential for upgraded water pipes to protect human health from migration of contaminants in the future water supply. Laboratory chemical analysis results, applicable for the materials in which the water pipes will be laid, should be compared against the UK Water Industry Research (UKWIR) 'Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites' (10/WM/03/21).

As a further measure, it is recommended that the results of laboratory chemical testing are provided to the appropriate utility companies to determine the necessity for service protection, due to the fact that utility companies commonly refer to their own proprietary Assessment Criteria. The results of this could be that upgraded water pipes including barrier pipes or polyethylene pipes are required at the Site which may present an abnormal cost to the development works.

7.6 Gas Protection Measures

Upon completion of ground gas monitoring and assessment at the Site, it is possible that measured concentrations of potentially hazardous ground gases may be reported at concentrations and flow rates that present a potentially significant risk to the future site users. In this case, it may be that gas protection measures may be required as specified in CIRIA C665 in order to reduce or mitigate the migration of ground gases at the surface and into the basement. These protection measures may include passive or active systems such as venting or membrane systems dependant on the outcome of the ground gas assessment which may present an abnormal cost to development works.

7.7 Foundations

Based on the published geological information, there is the potential for Made ground on Site. These deposits are unlikely to provide a suitable foundation platform and, as such, the geotechnical investigation should determine the depth of this unit. Due to no anticipated loads being made available prior to this report being published the final foundation solution is yet unknown. The Glacial Till may be a suitable founding stratum for pad foundations, dependant on the column and line loads. In the event that a piled solution is preferred solution and contamination is identified at the Site, care must be taken to avoid creating preferential pathways down pile runs to the underlying Secondary (A) Aquifer and Principal Aquifer.

7.8 Obstructions

Based on the site history there is a potential risk that foundations associated with the former and current buildings on Site, including the current basements. Given that the potential presence of Made Ground across the Site, it is considered possible that the existing buildings at the site may have been founded on pad foundations, which may require excavation prior to any development, in order to remove potential hard spots and reduce the risk of differential settlement.

7.9 Retaining Structures

It is anticipated that the existing basement walls are acting as retaining structures around the Site periphery. If this is the case, these may need to be retained (potentially with parts of the ground floor slabs) to prevent instability of the adjacent soils and structures.



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Consideration will need to be given to the location of proposed foundations and excavations to ensure that the integrity of these retaining walls is not affected, notable beneath the facade to be retained.



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8 REGULATORY APPROVALS

The conclusions and recommendations presented above are considered reasonable based on the findings of the site investigation. However, these cannot be guaranteed to gain regulatory approval and, therefore, the report should be passed to the appropriate regulatory authorities and/or other organisations for their comment and approval prior to undertaking any works on site.

It is recommended that conditions placed on any planning permission are discharged prior to commencement of site works.



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Project No : TE1062/PRA
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ASSESSMENT FOR 79
MOSLEY STREET,
MANCHESTER**

Project No : TE1062/PRA
Page No : 24 of 24
Engineer: Callum Jones
Date: 14/12/2017

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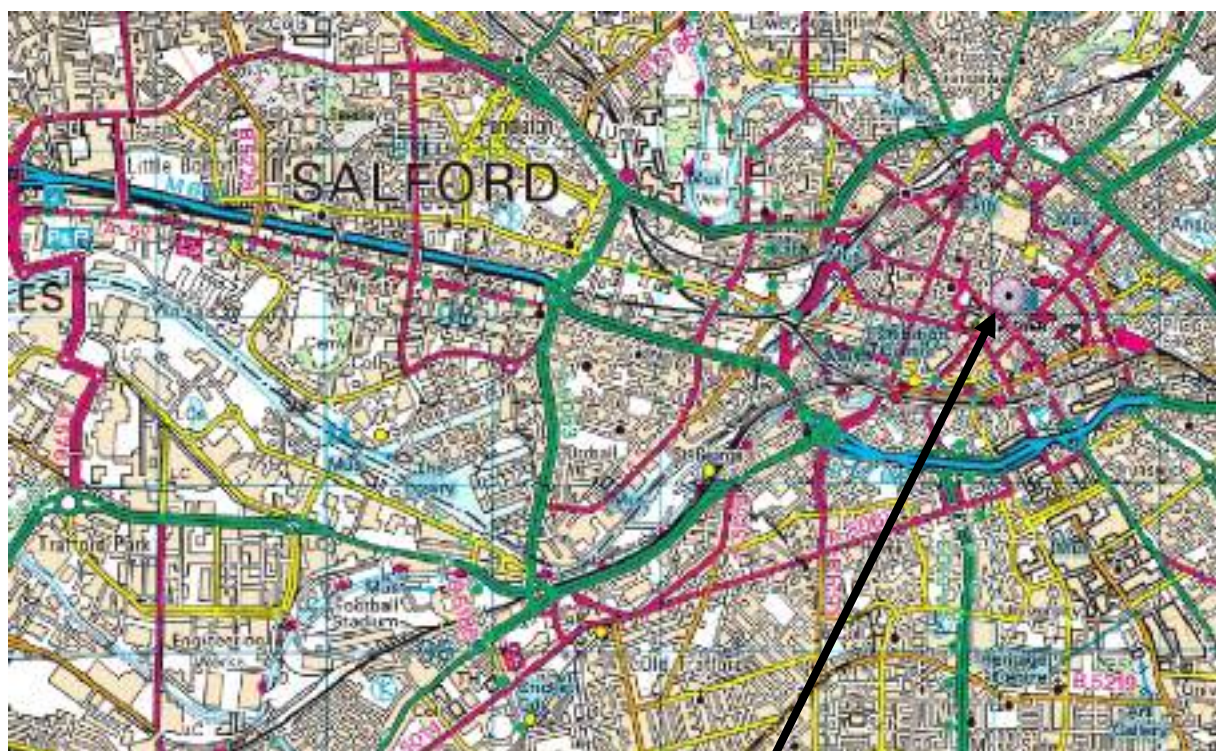
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APPENDIX A - FIGURES AND DRAWINGS



Site Location Plan

Contract Number	TE1062
Contract	Mosley Street, Manchester
Client	Boulton Brooks Real Estate



THE SITE

Scale	NTS		
Drawn by	CJ	Approved	SL
Drawing Number	TE1062/PRA/01		



Site Location Plan

Contract Number	TE1062
Contract	Mosley Street, Manchester
Client	Boulton Brooks Real Estate



THE SITE

Scale	NTS	
Drawn by	CJ	Approved SL
Drawing Number	TE1062/PRA/02	

APPENDIX B - GLOSSARY OF TERMS

ACEC	Aggressive Chemical Environment for Concrete (classification)
aOD	Above Ordnance Datum
bgl	Below ground level
BGS	British Geological Survey
BRE	Building Research Establishment
CBR	California Bearing Ratio (test)
COMAH	Control of Major Accident Hazards (regulations)
Designated location	Site (and the ecosystem on that site) protected under national or international legislation. A potential ecological receptor to be considered as part of the assessment of land contamination. Example designated locations include SSSIs (q.v.), SACs (q.v.), national nature reserves, Ramsar sites and bird special protection areas.
DQA	Data Quality Assessment
DQO	Data Quality Objective
DQRA	Detailed Quantitative Risk Assessment
DWS	Drinking Water Standard
EQS	Environmental Quality Standard
GAC	Generic Assessment Criterion
GQA	General Quality Assessment (Environment Agency)
GSV	Gas Screening Value
HCV	Health Criteria Value
IPPC	Integrated Pollution Prevention and Control (regulations)
K _{ow}	Octanol-water partition coefficient
LEL	Lower Explosive Limit
LL	Liquid Limit
LoD	Limit of Detection (analytical)
LoQ	Limit of Quantification (analytical)
Mean Value Test	Statistical test (described in CLR7) to estimate the mean value of a normally distributed population of data at a given level of confidence. Normally for contaminated land assessment, the 95th percentile (referred to as the 95%UCL or US95) is applied as a reasonable but conservative estimate of the mean concentration for comparison with the relevant assessment criteria.
Maximum Value Test	Statistical test (described in CLR7) to identify whether an elevated concentration within a normally distributed data set forms part of the underlying population from which it has been sampled or whether it is an outlier (such as a localised area of contamination) that merits further consideration.
MC	Moisture Content
NGR	National Grid Reference
NIHHS	Notification of Installations Handling Hazardous Substances (regulations)
OS	Ordnance Survey
PI	Plasticity Index
PID	Photoionisation Detector
PL	Plastic Limit
ppm	Parts per million
ppmv	Parts per million by volume
QA	Quality Assurance
QC	Quality Control
SAC	Special Area of Conservation
SOM	Soil Organic Matter
SPT	Standard Penetration Test
SPZ	Source Protection Zone (see Appendix E)
SSAC	Site-Specific Assessment Criterion
SSSI	Site of Special Scientific Interest
SVOC	Semi-Volatile Organic Compound

TEF	Toxicity Equivalent Factor
TPH	Total Petroleum Hydrocarbons
TWA	Time Weighted Average
US95	95 th percentile estimate of the true mean value of a data population (also known as 95%UCL).
VOC	Volatile Organic Compound

APPENDIX C - DEFINITION OF SOURCE PROTECTION ZONES AND GROUNDWATER VULNERABILITY ASSESSMENTS

Source Protection Zones

Source Protection Zones (SPZs) are defined by the Environment Agency (for England and Wales), SEPA (Scotland) and the Environment and Heritage Service (Northern Ireland) for groundwater sources such as wells, boreholes and springs that are used for public drinking water supply. The zones show the risk of contamination from activities that might cause groundwater pollution in the area. The size and shape of a zone depends upon subsurface conditions, how the groundwater is removed, and other environmental factors.

SPZs are classified into four categories:

- **Zone 1 (Inner protection zone).** Any pollution that can travel to the abstraction point within 50 days from any point within the zone is classified as being inside Zone 1. This applies at and below the groundwater table. This zone also has a minimum 50 m protection radius around the abstraction point. These criteria are designed to protect against the transmission of toxic chemicals and water-borne disease.
- **Zone 2 (Outer protection zone).** The outer zone covers pollution that takes up to 400 days to travel to the abstraction point, or 25% of the total catchment area, whichever area is the largest. This travel time is the minimum period over which the Environment Agency considers that pollutants need to be diluted, reduced in strength or delayed by the time they reach the abstraction point.
- **Zone 3 (Total catchment).** This is the total area needed to support removal of water from the abstraction point, and to support any discharge from this.
- **Zone of special interest.** This may occasionally be defined as a special case. This is usually where local conditions mean that industrial sites and other potential sources of contamination could affect the groundwater source, even though they are outside the normal catchment area.

Groundwater Vulnerability Assessments

From 1 April 2010 The Environment Agency Groundwater Protection Policy began to use aquifer designations which are consistent with the Water Framework Directive. These designations reflect the importance of aquifers in terms of groundwater as a resource (drinking water supply) but also their role in supporting surface water flows and wetland ecosystems.

The aquifer designation data is based on geological mapping provided by the British Geological Survey. It is updated regularly to reflect their ongoing programme of improvements to these maps. The maps are split into two different type of aquifer designation:

- Superficial (Drift) - permeable unconsolidated (loose) deposits. For example, sands and gravels.
- Bedrock -solid permeable formations e.g. sandstone, chalk and limestone.

The maps display the following aquifer designations:

Table 1. Aquifer Classification ("Geological Classification").

Classification	Definition
Principal Aquifers (Highly Permeable)	These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.
Secondary A Aquifers	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.
Secondary B Aquifers	Predominantly lower permeability layers which may store and 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.
Secondary Undifferentiated Aquifers	This has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.
Unproductive Strata	These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

APPENDIX D - DEFINITIONS OF TERMS USED IN QUALITATIVE AND QUANTITATIVE RISK ASSESSMENTS

For the qualitative and quantitative assessment of risks posed by potential pollutant linkages have been undertaken using the risk matrix adapted from CIRIA C552 and outlined in the table below.

	Category	Definition
Potential severity	Severe	Acute (short term) risk to human health, Major pollution of sensitive controlled waters, ecosystems or habitat. Catastrophic damage to buildings or property or crops.
	Medium	Chronic (Medium / long term) risk to human health Pollution of sensitive controlled waters, ecosystems or species, Significant damage to crops, buildings or structures
	Mild	Easily preventable permanent health effects on humans. Pollution of non-sensitive controlled waters. Minor damage to buildings or structures.
	Minor	Easily preventable non-permanent health effects on humans, or no effects. Minor, low level and localised contamination of on-site soil. Easily repairable damage to buildings or structures.
Probability of risk	High Likelihood	Pollutant linkage may be present and the risk is almost certain to occur , or there is evidence of harm already occurring.
	Likely	Pollutant linkage may be present and it is probable that the risk will occur over the long term.
	Low Likelihood	Pollutant linkages may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
	Unlikely	Pollutant linkage may be present but the circumstances under which harm would occur are improbable.

		Potential Severity			
		Severe	Medium	Mild	Minor
Probability of risk	High Likelihood	Very high	High	Moderate	Moderate/Low
	Likely	High	Moderate	Moderate/Low	Low
	Low Likelihood	Moderate	Moderate/Low	Low	Negligible
	Unlikely	Moderate/Low	Low	Negligible	Negligible

APPENDIX E - GROUNDSURE REPORT

Site Details:

79, MOSLEY STREET,
MANCHESTER, M2 3LQ

Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: County Series

Map date: 1848

Scale: 1:10,560

Printed at: 1:10,560



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

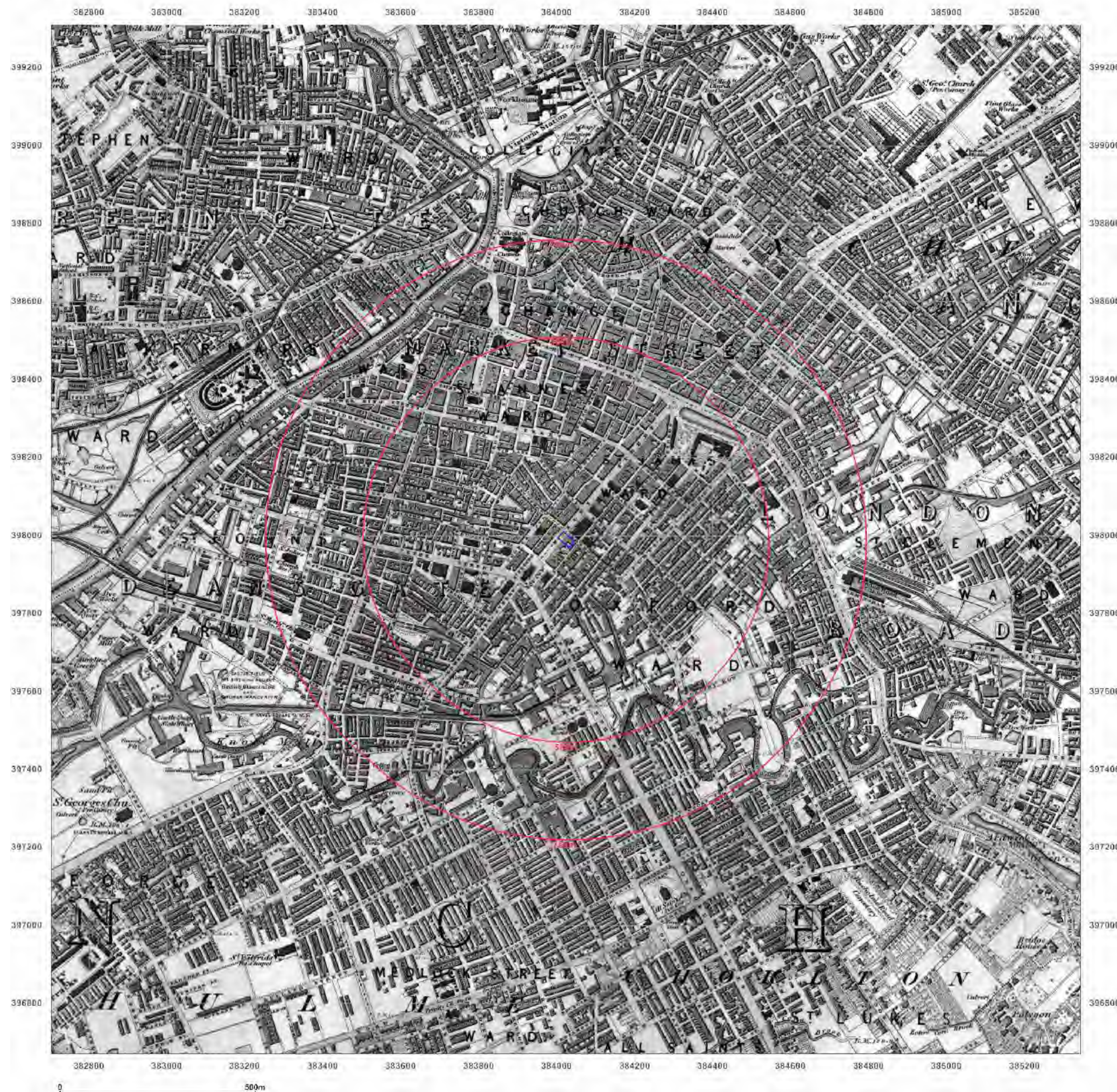


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Report Ref: GS-4529293
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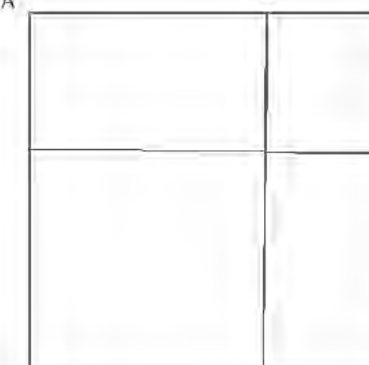
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Surveyed 1889
Revised 1889
Edition 1894
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1891
Edition 1891
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Levelled N/A



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Revised 1890
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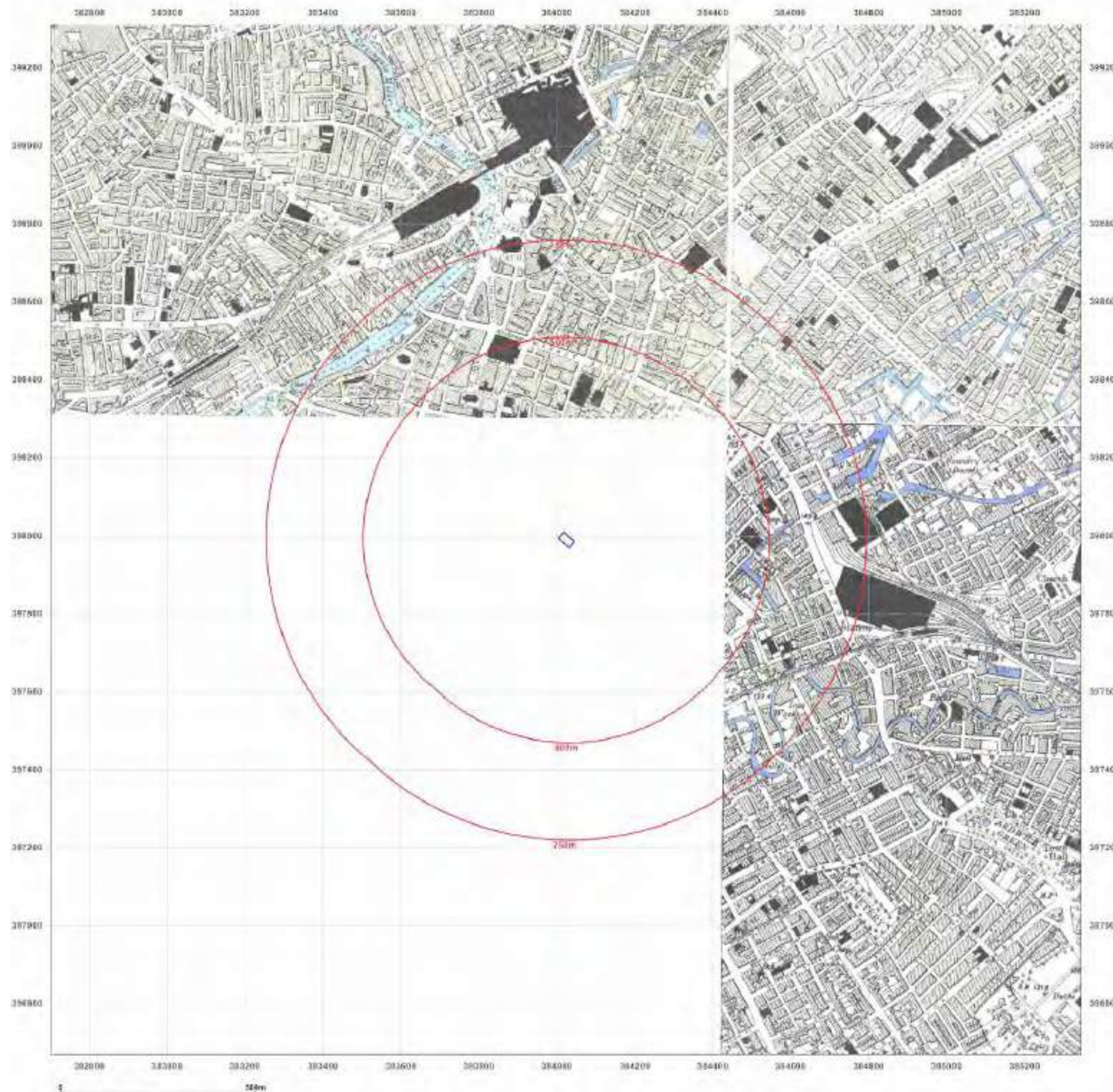


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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
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Map date: 1896

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1894
Revised 1896
Edition 1896
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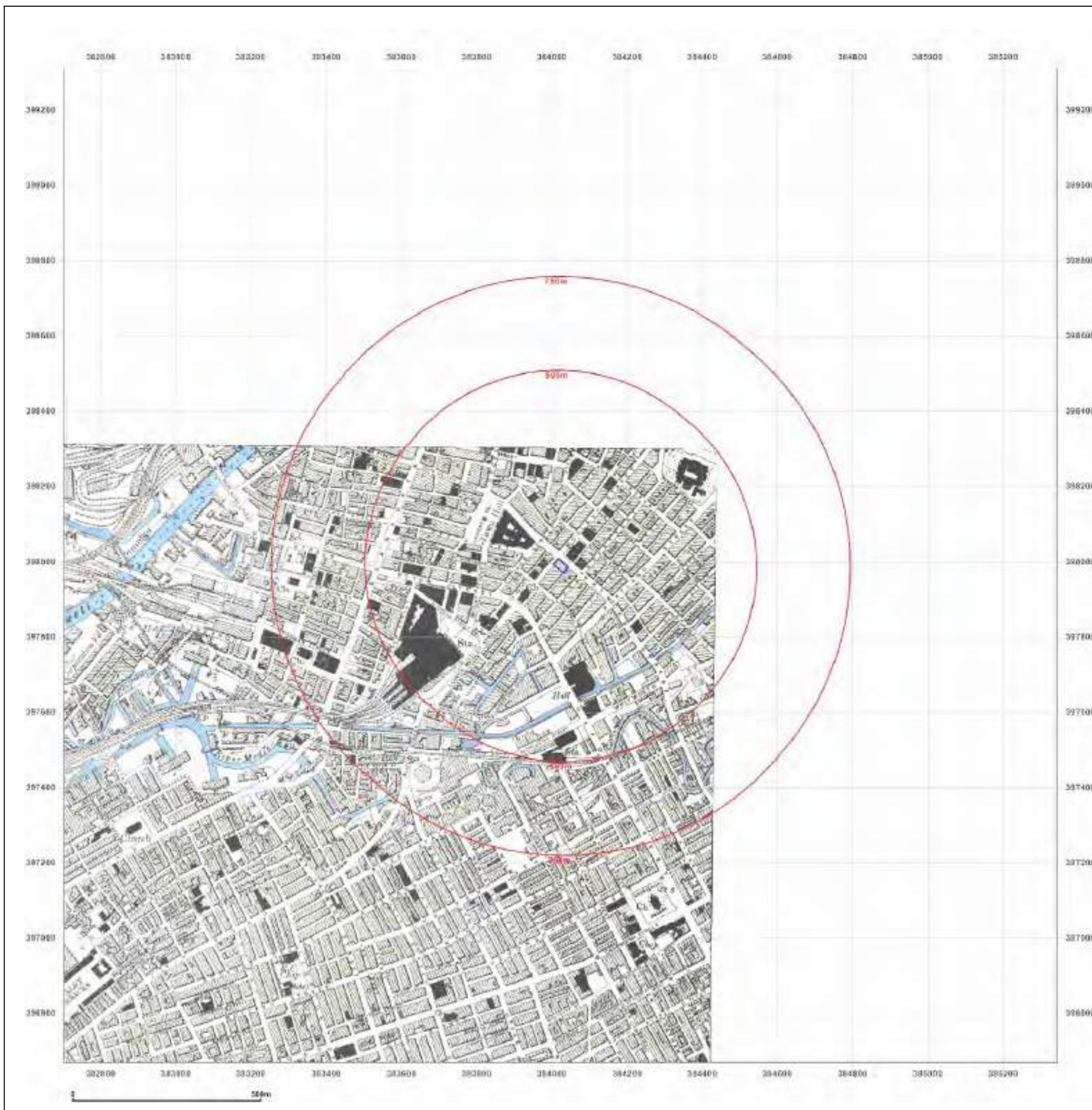


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Grid Ref: 384023, 397990

Map Name: County Series

Map date: 1905-1906

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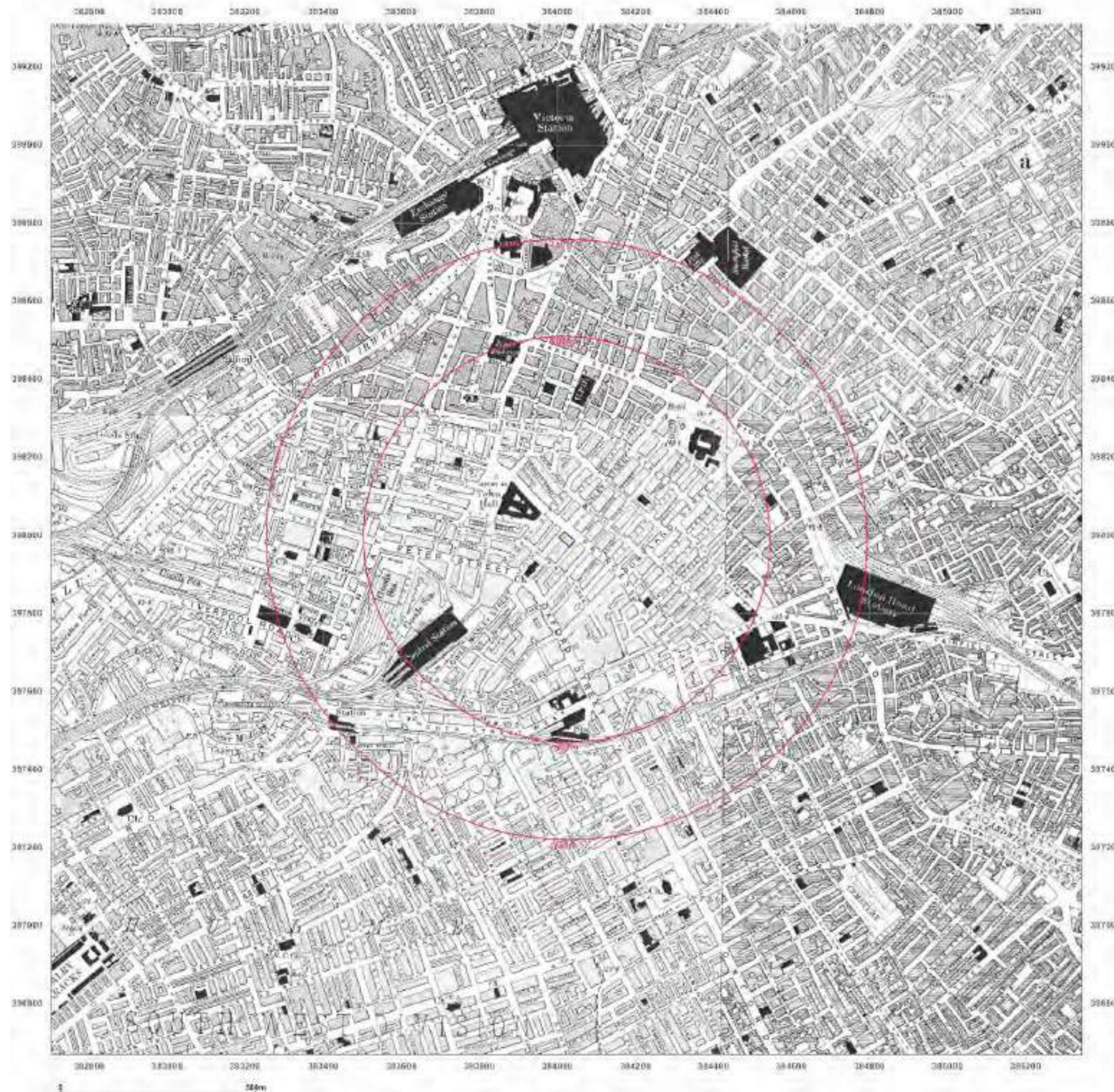


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Map Name: County Series

Map date: 1923

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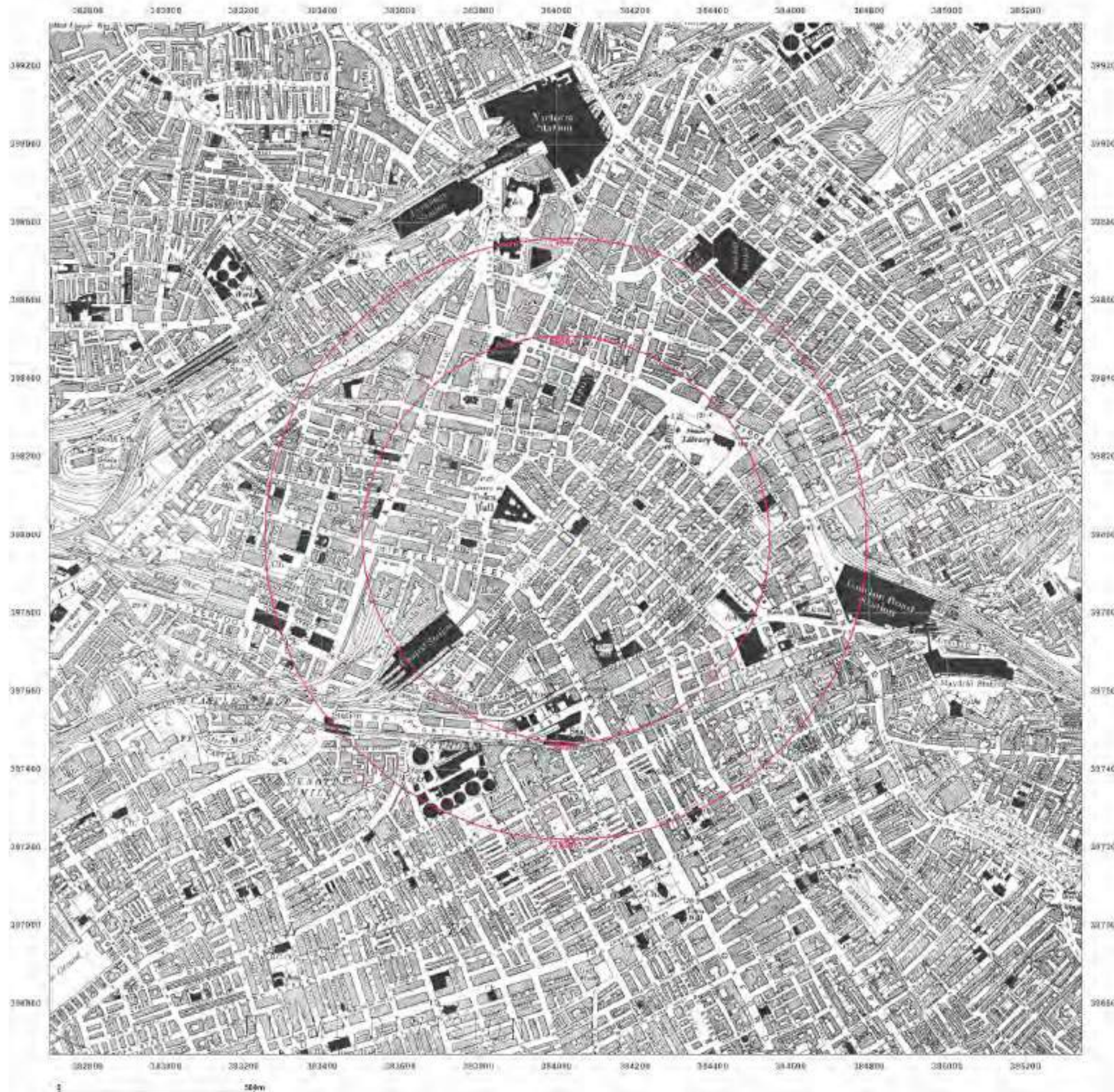


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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
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Map Name: County Series

Map date: 1931-1934

Scale: 1:10,560

Printed at: 1:10,560



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Surveyed 1844
Revised 1932
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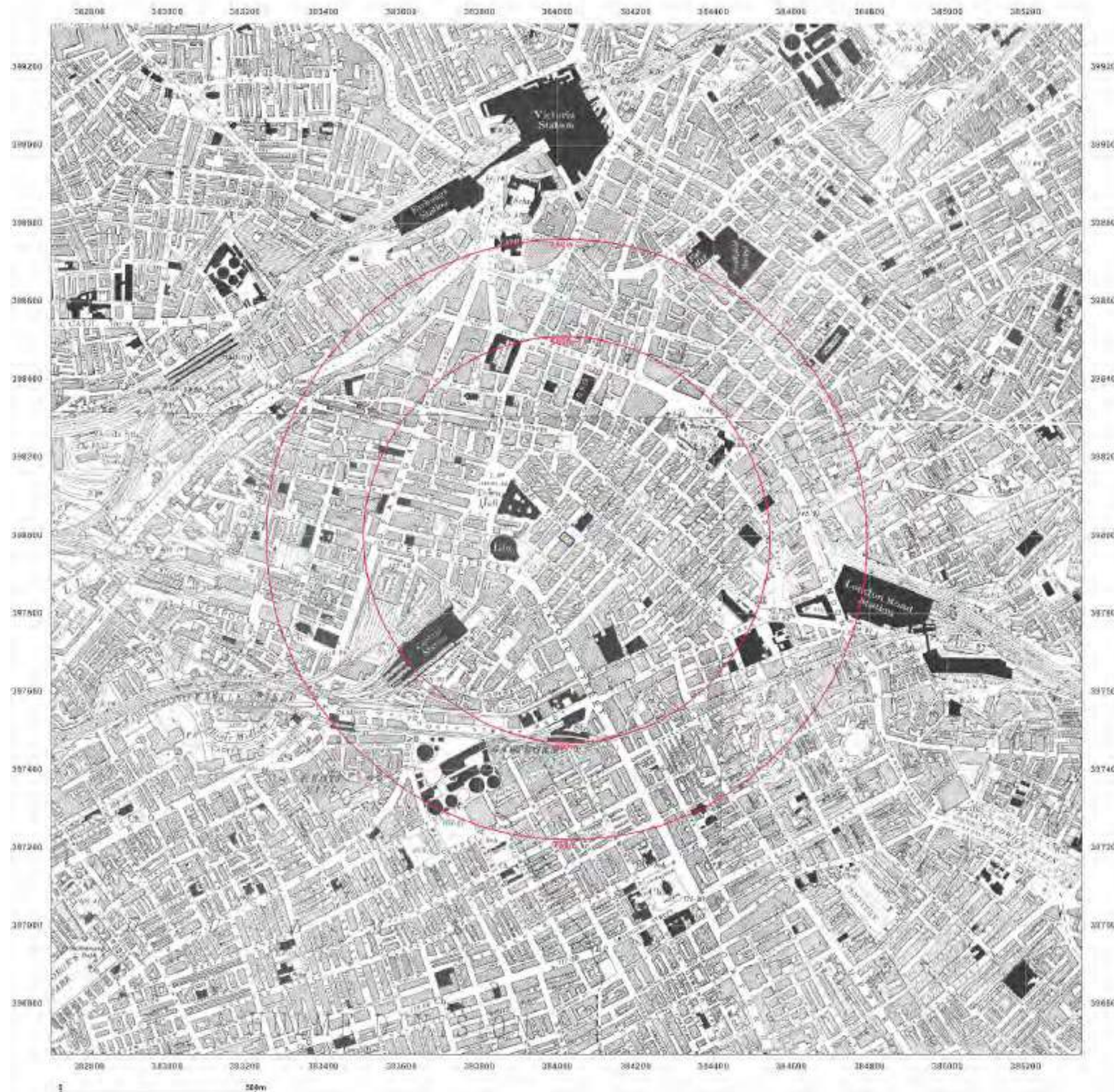


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Map Name: County Series

Map date: 1938

Scale: 1:10,560

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Edition 1938
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Levelled 1927

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

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

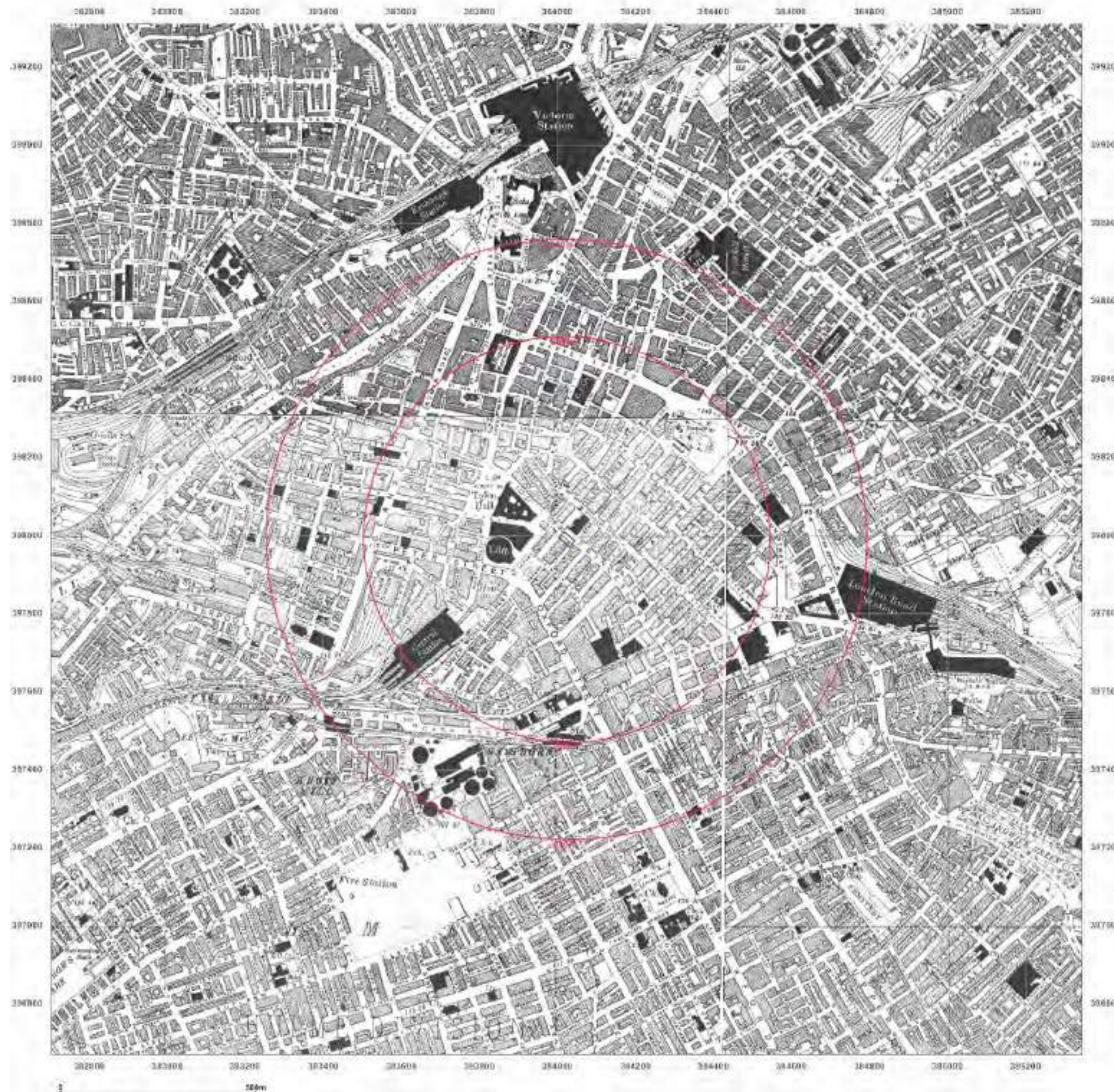


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Site Details:

79, MOSLEY STREET,
MANCHESTER, M2 3LQ

Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1972

Scale: 1:10,000

Printed at: 1:10,000



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

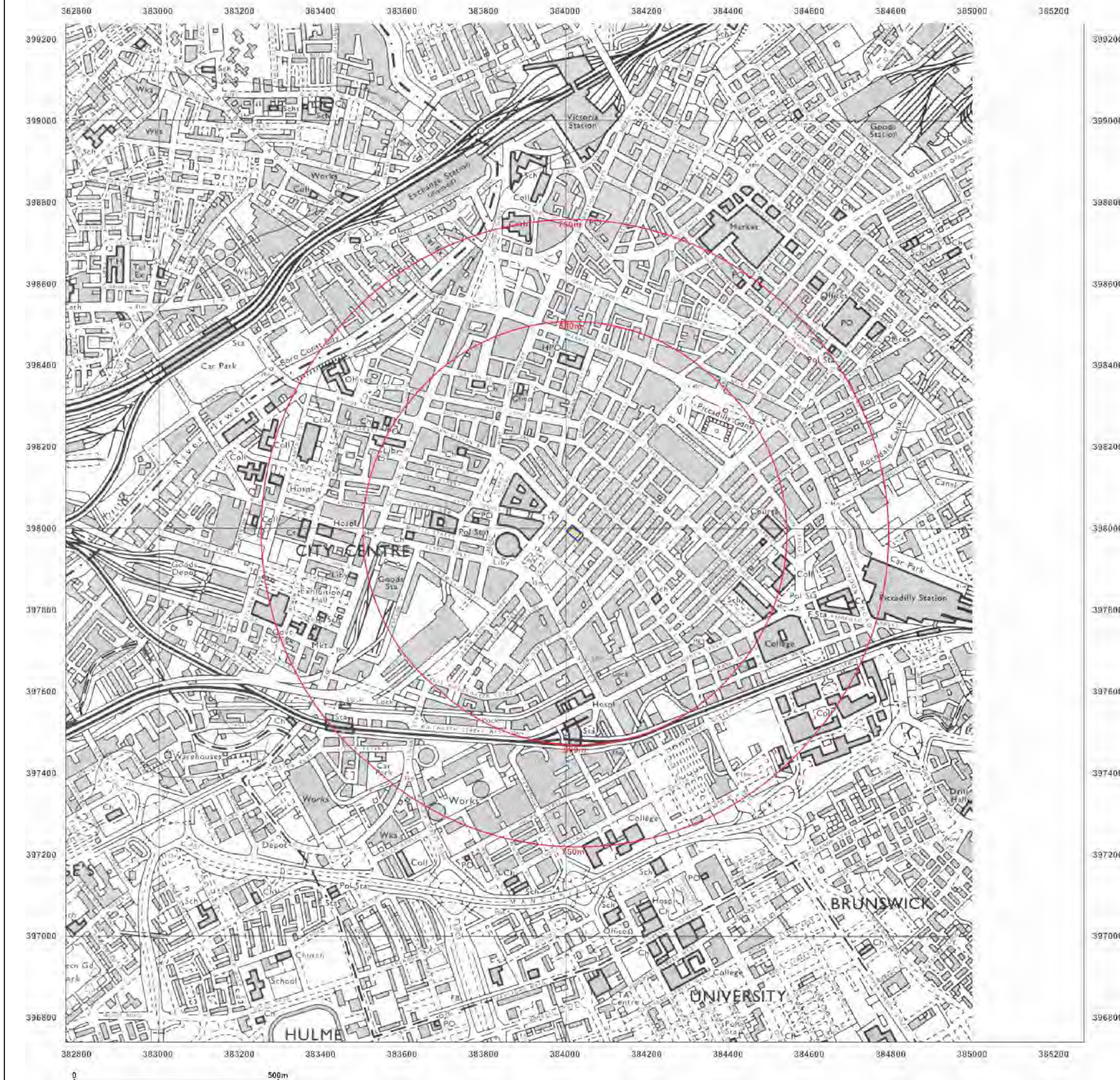


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Site Details:

79, MOSLEY STREET,
MANCHESTER, M2 3LQ

Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1980-1981

Scale: 1:10,000

Printed at: 1:10,000



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

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

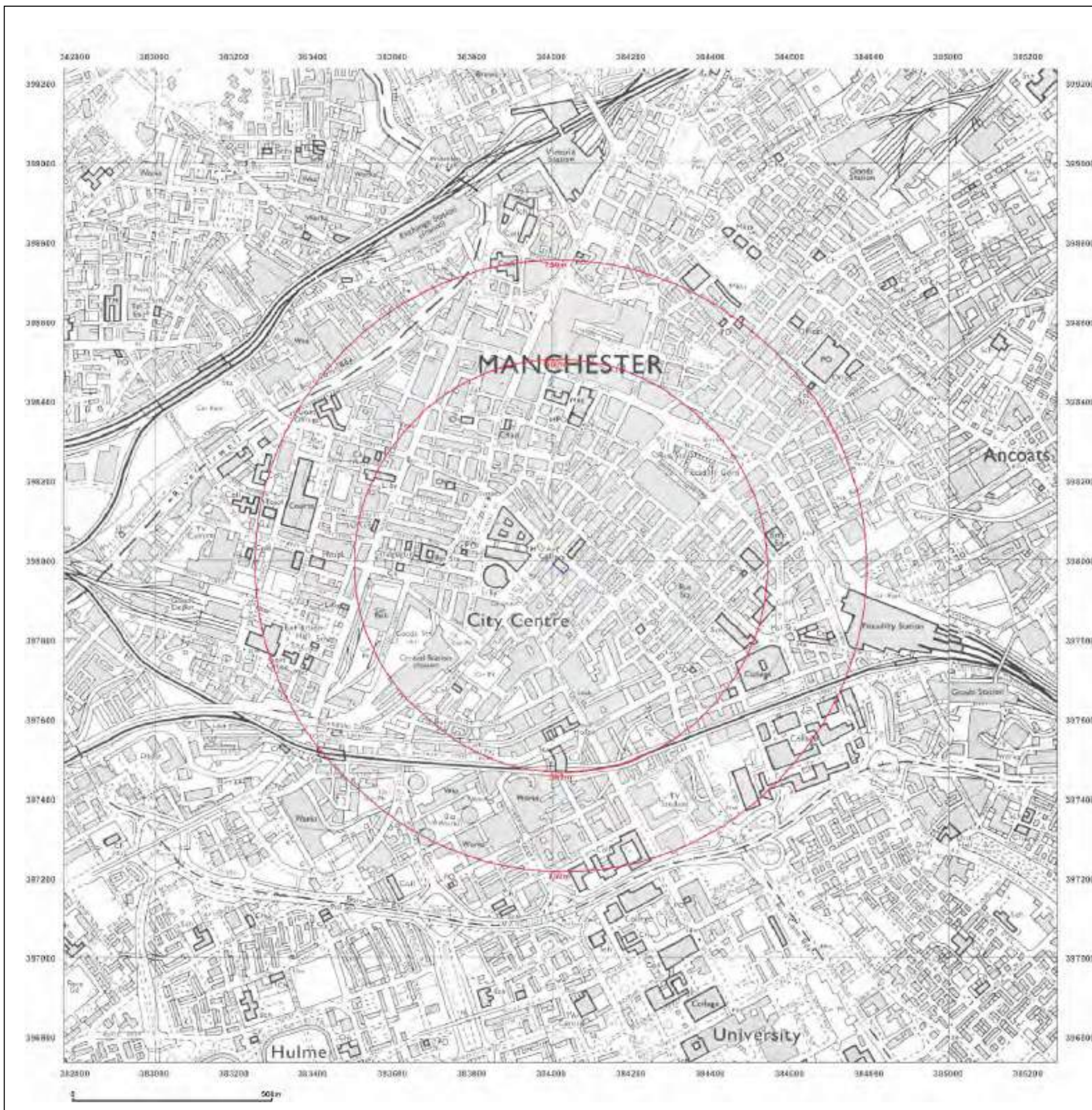


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Site Details:

79, MOSLEY STREET,
MANCHESTER, M2 3LQ

Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1985

Scale: 1:10,000

Printed at: 1:10,000



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

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

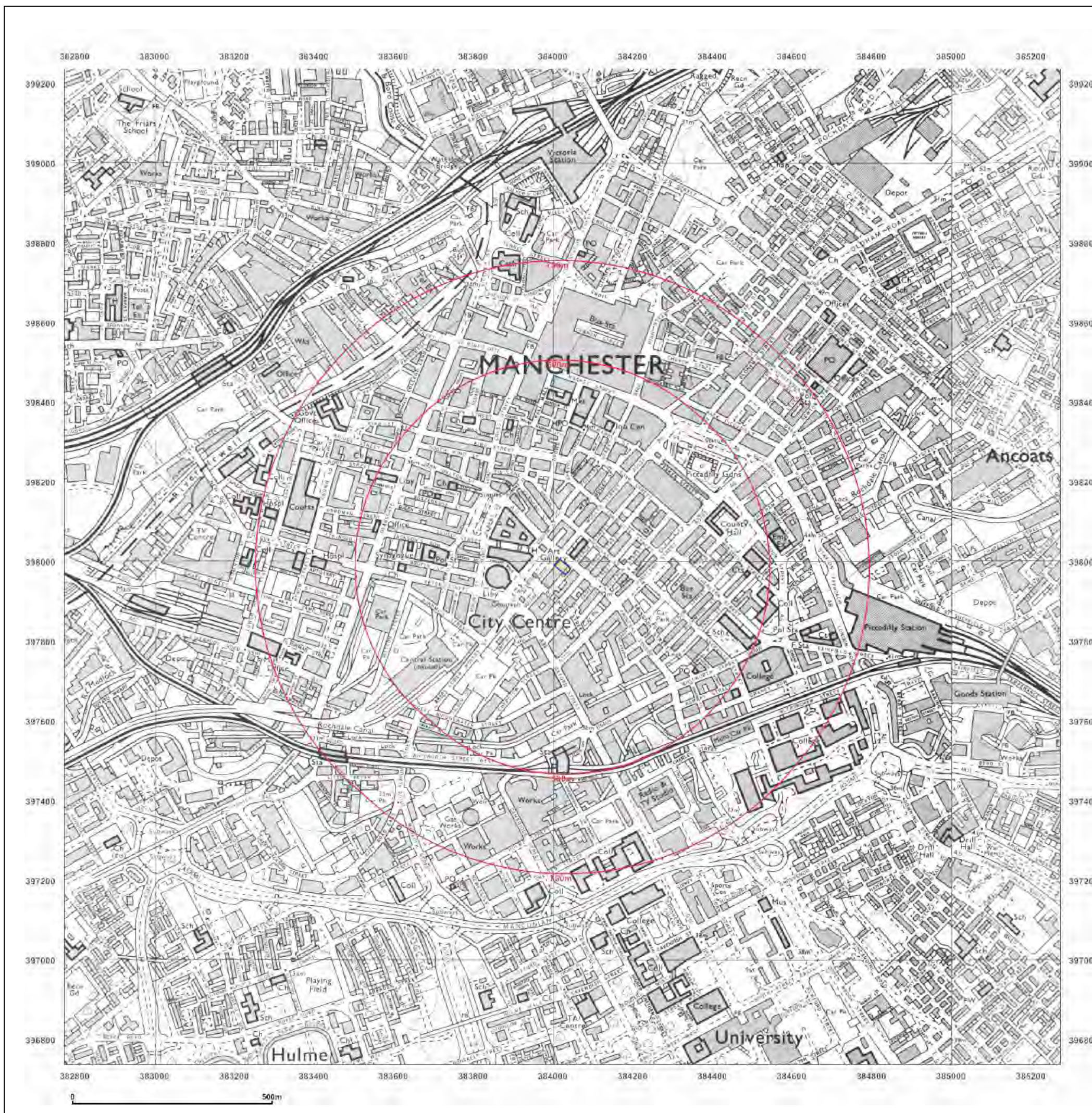


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Site Details:

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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

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 1988
Levelled 1981

Surveyed 1986
Revised 1991
Edition N/A
Copyright 1991
Levelled 1981

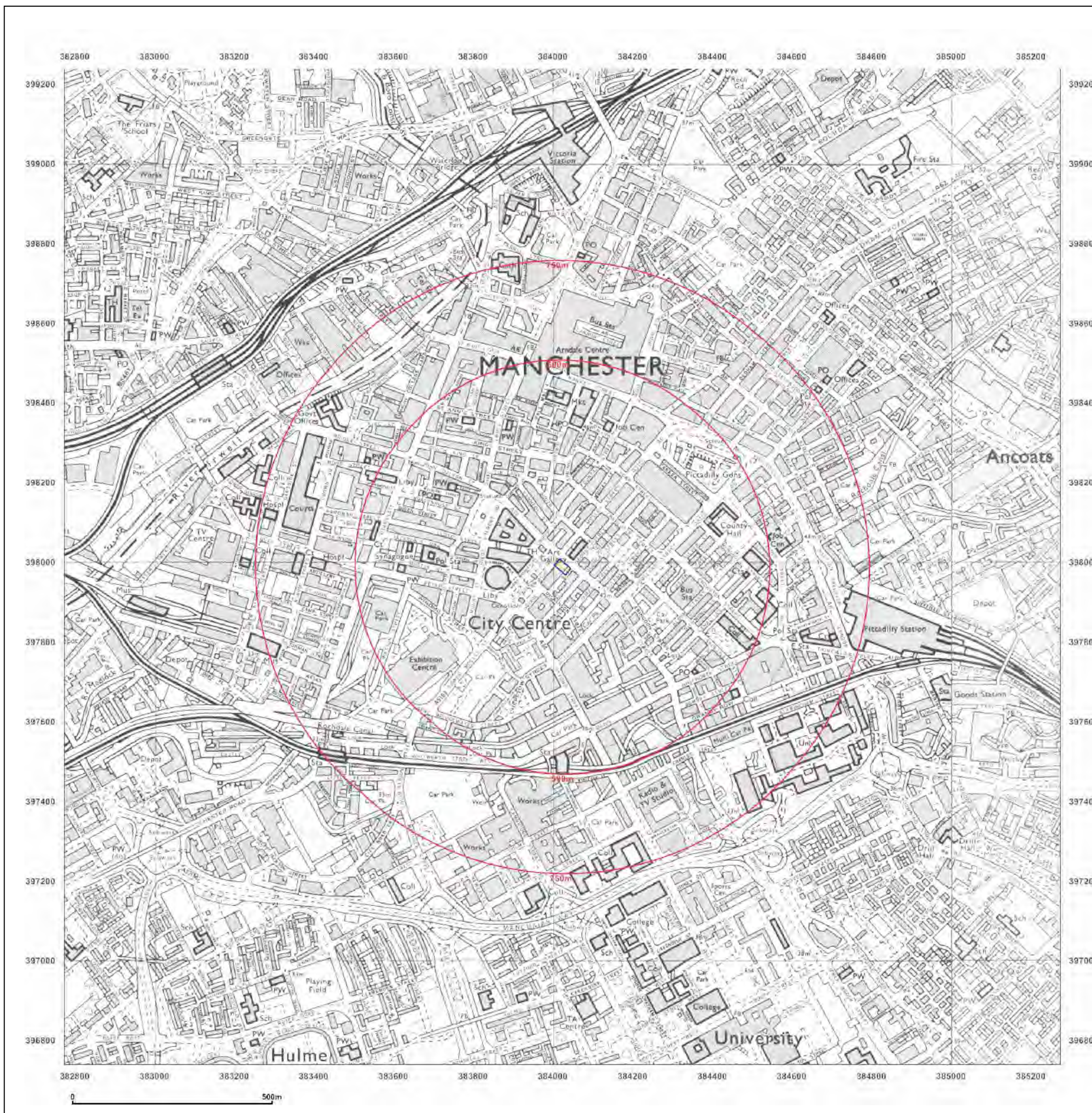


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Site Details:

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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1994

Scale: 1:10,000

Printed at: 1:10,000



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

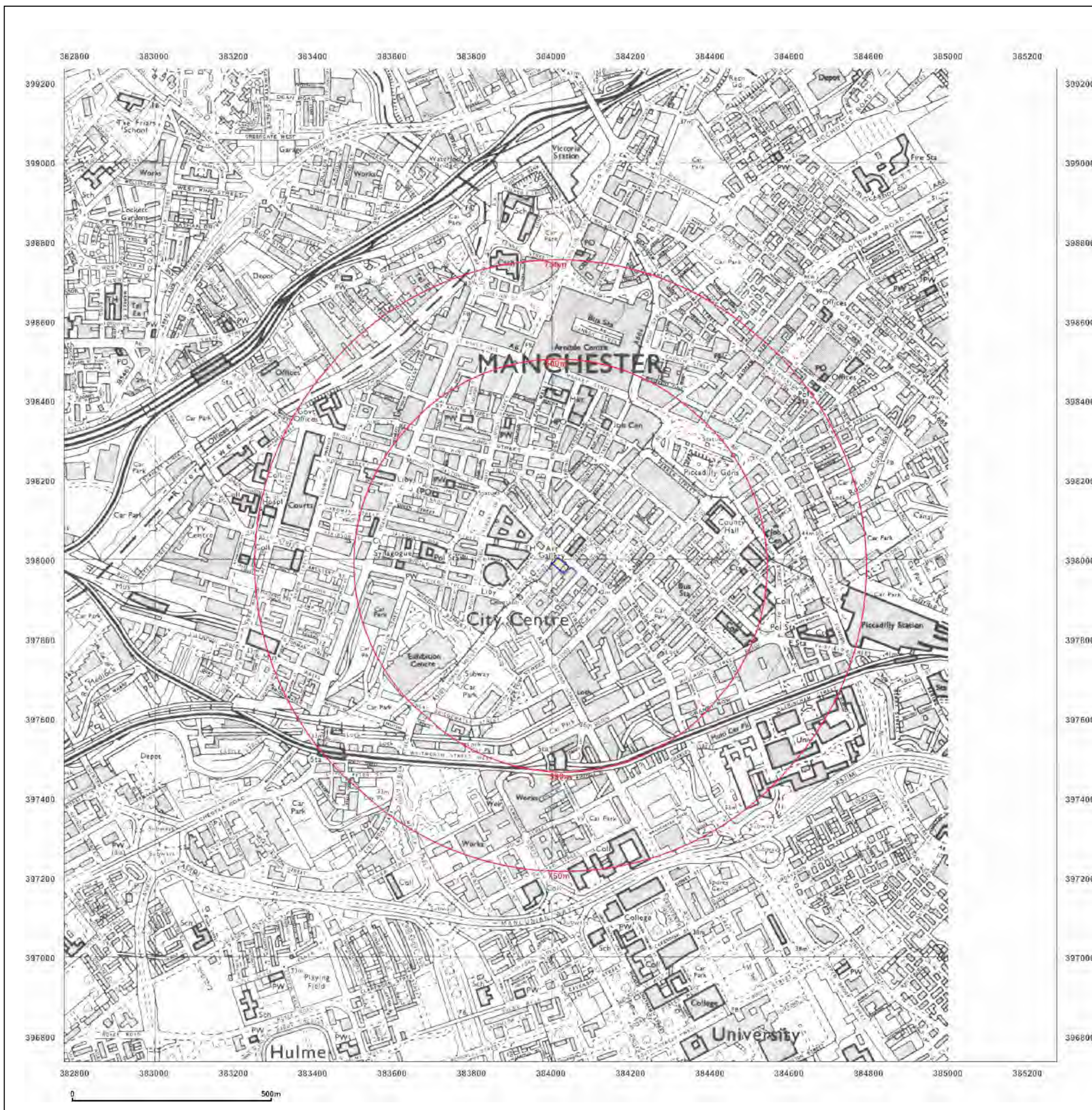


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Site Details:

79, MOSLEY STREET,
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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: 1:10,000 Raster

Map date: 2002

Scale: 1:10,000

Printed at: 1:10,000

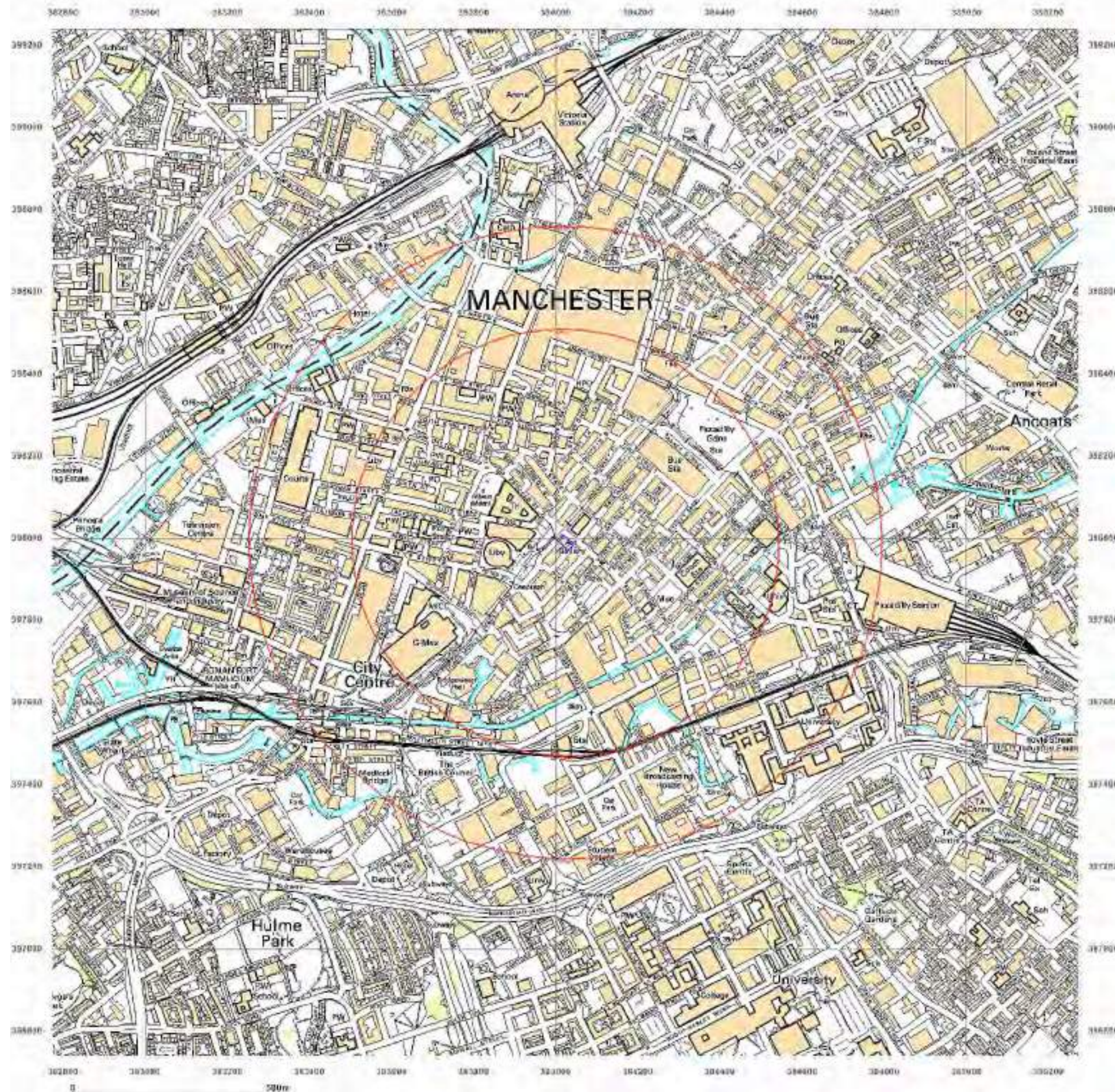


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Site Details:

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MANCHESTER, M2 3LQ

Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 2014

Scale: 1:10,000

Printed at: 1:10,000

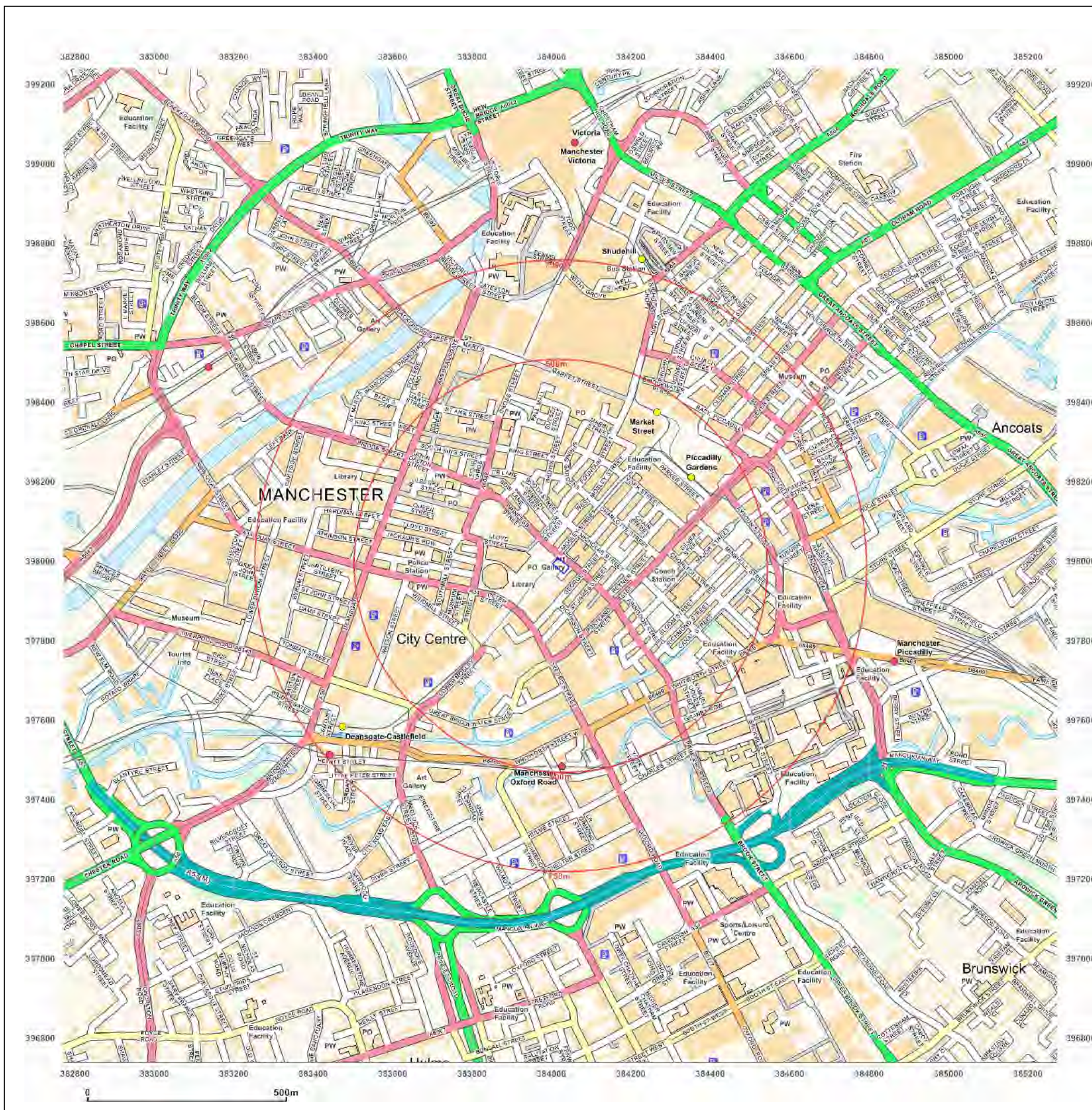


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Site Details:

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MANCHESTER, M2 3LQ

Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: 1056 Scale Town Plan

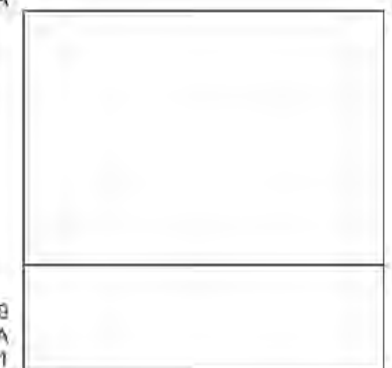
Map date: 1851

Scale: 1:1,056

Printed at: 1:1,056



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



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

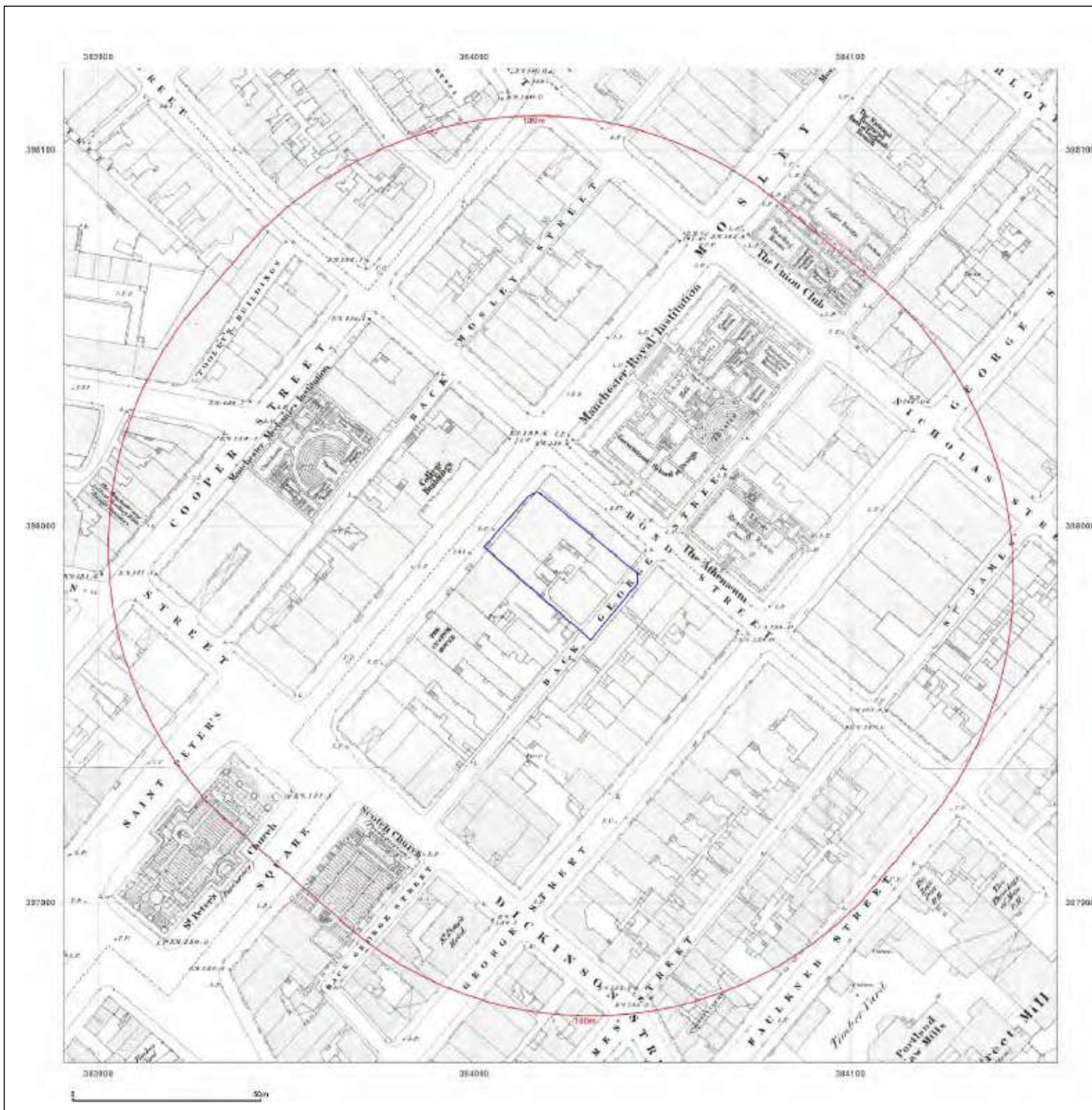


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79, MOSLEY STREET,
MANCHESTER, M2 3LQ

Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: County Series Town Plan

Map date: 1891

Scale: 1:500

Printed at: 1:1,000

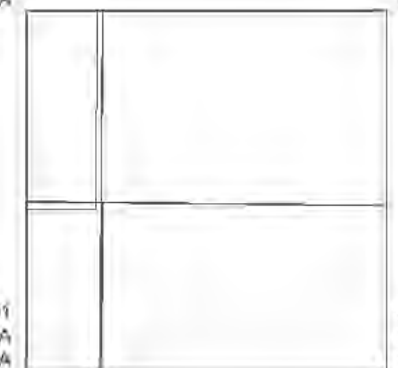


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Edition 1891
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Revised N/A
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Copyright N/A
Levelled N/A

Surveyed 1891
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79, MOSLEY STREET,
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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: County Series

Map date: 1892-1893

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1892
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Edition 1892
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Surveyed 1893
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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: County Series

Map date: 1908

Scale: 1:2,500

Printed at: 1:2,500



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

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

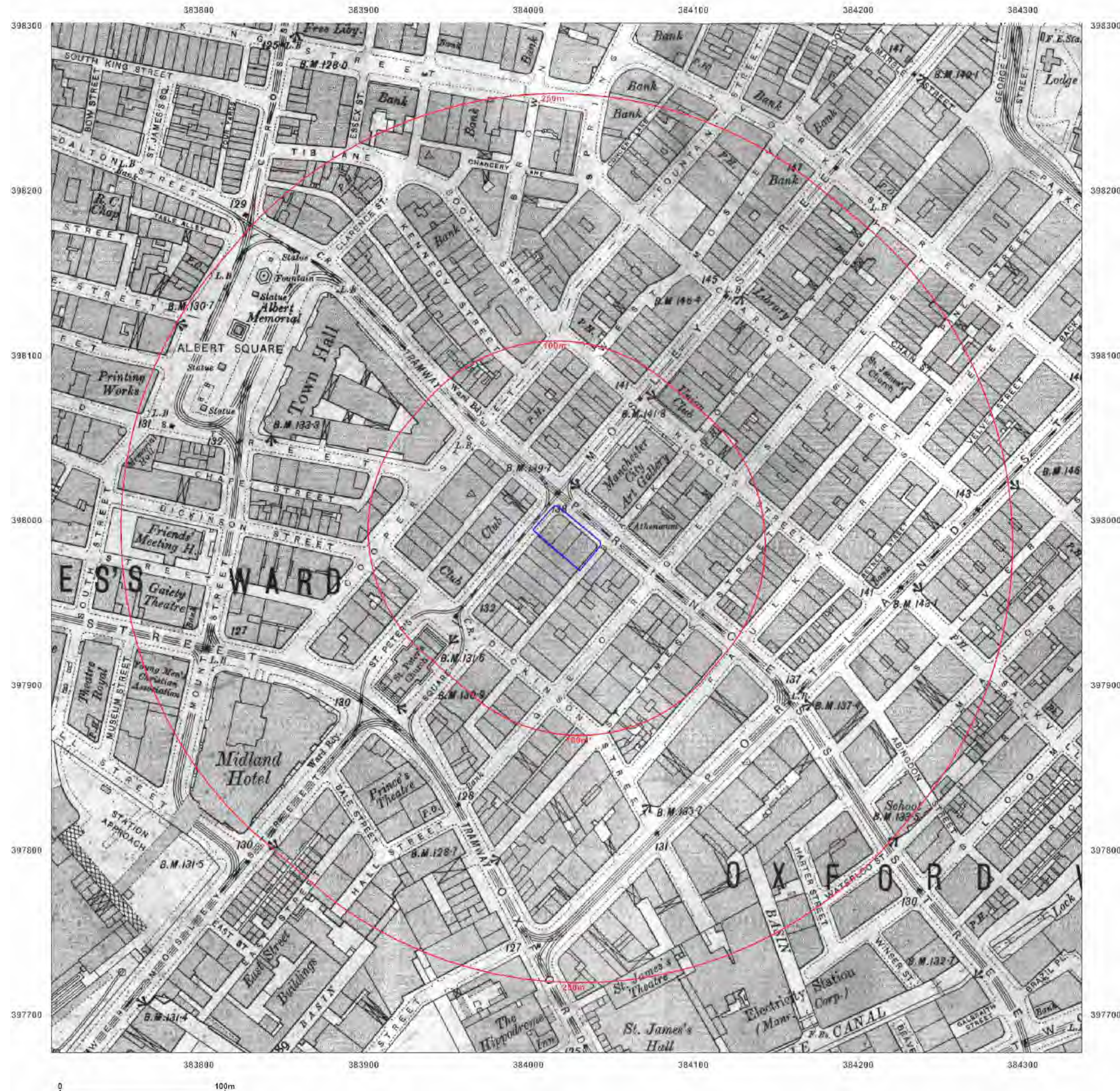


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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: County Series

Map date: 1922

Scale: 1:2,500

Printed at: 1:2,500



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Revised 1916
Edition 1922
Copyright N/A
Levelled 1915

Surveyed 1922
Revised 1916
Edition 1922
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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: County Series

Map date: 1932-1933

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1873
Revised 1933
Edition N/A
Copyright N/A
Levelled 1927

Surveyed 1873
Revised 1932
Edition N/A
Copyright N/A
Levelled 1827

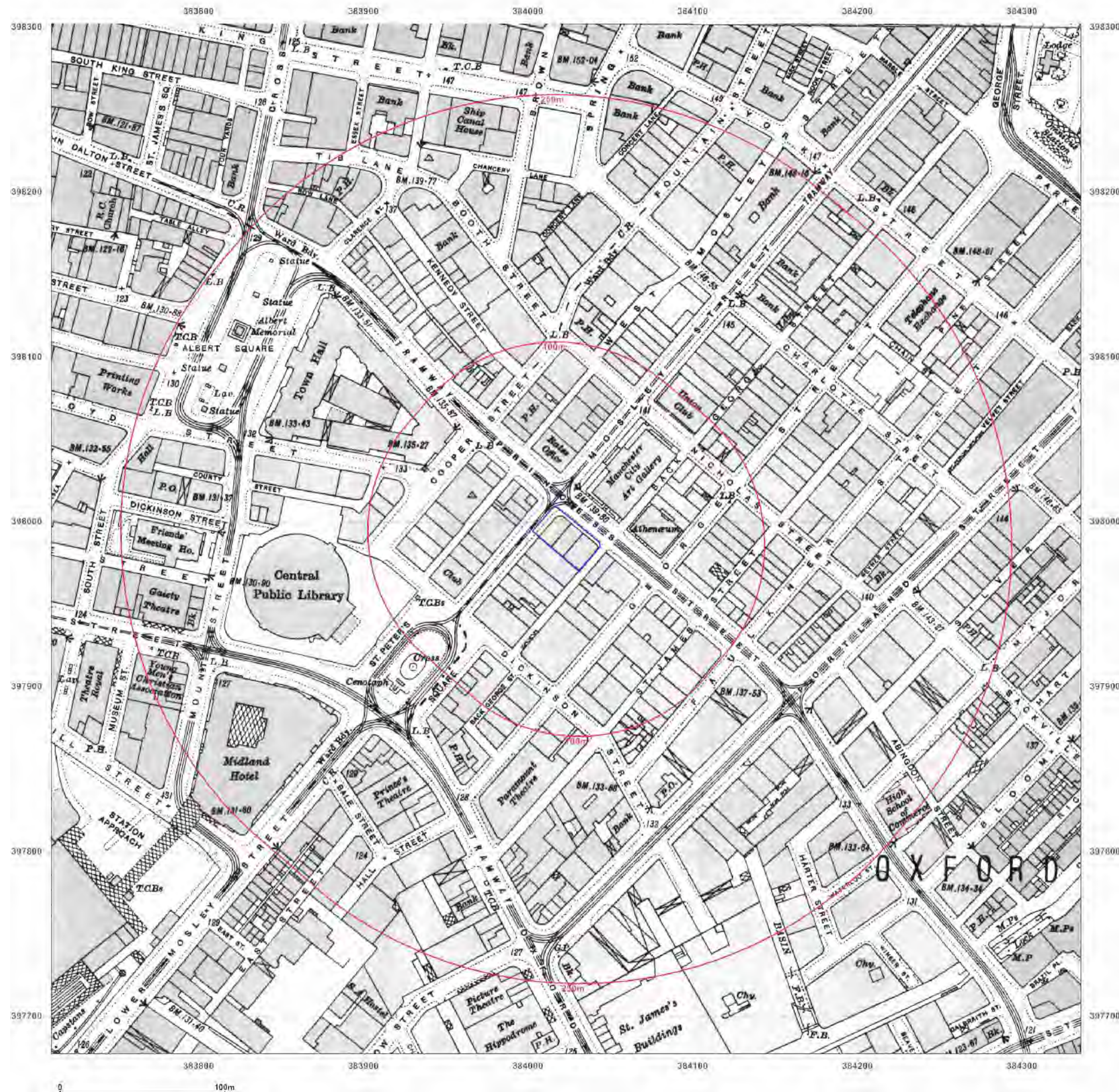


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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1948

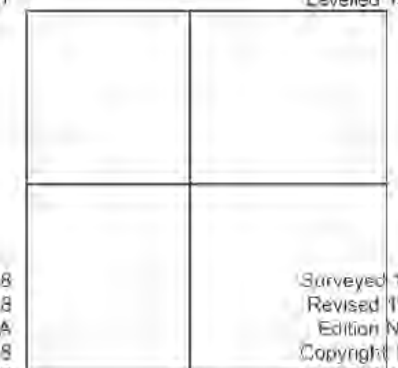
Scale: 1:1,250

Printed at: 1:2,000



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

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



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

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

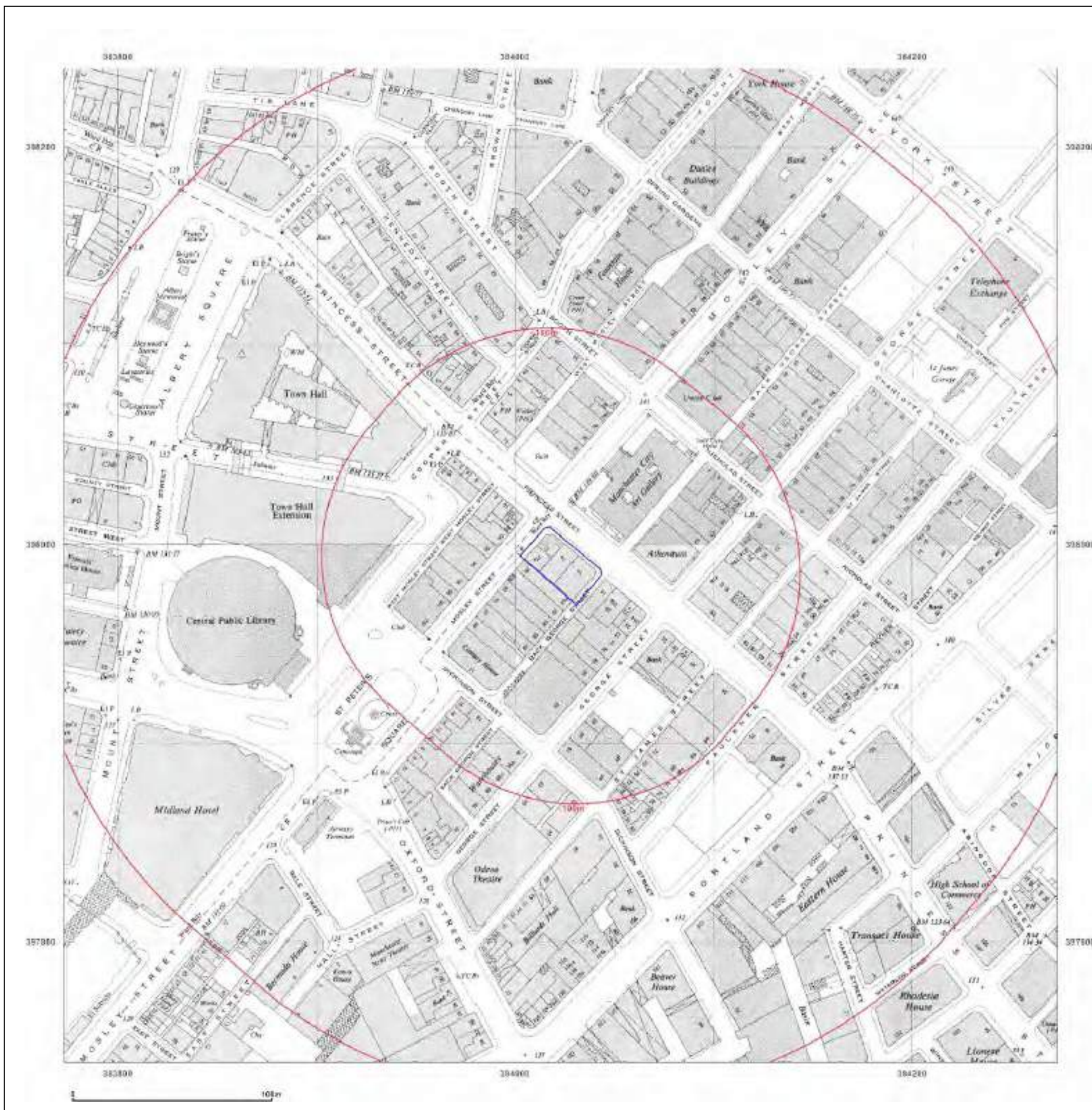


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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

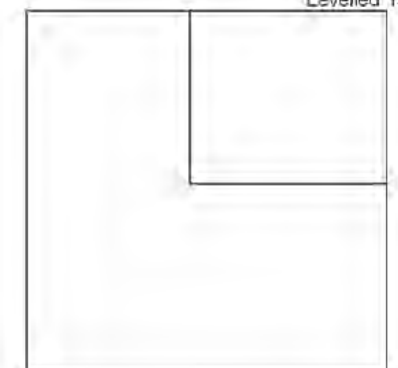
Map date: 1953

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1951
Revised 1951
Edition N/A
Copyright 1953
Levelling 1929

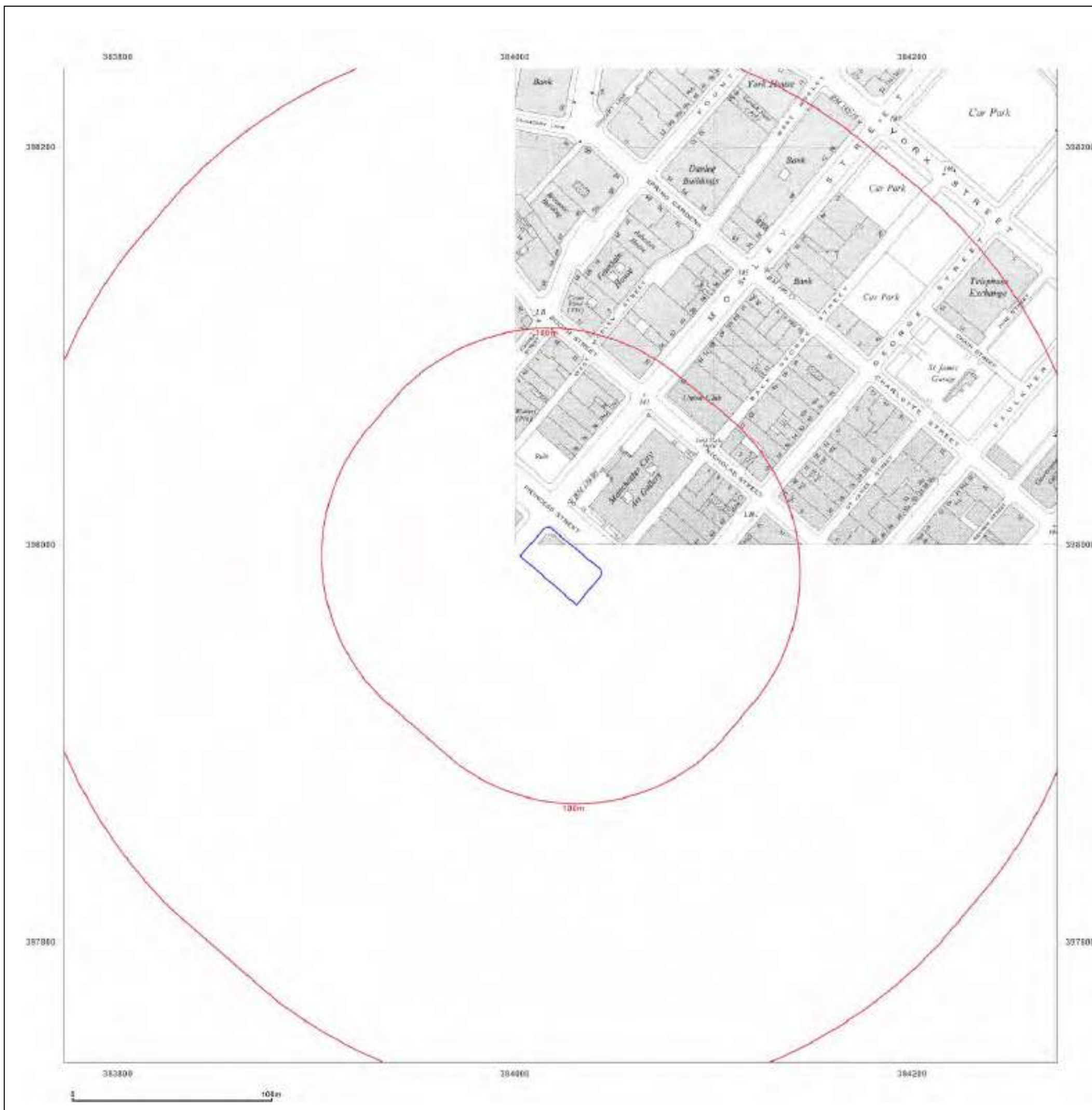


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Site Details:

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MANCHESTER, M2 3LQ

Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

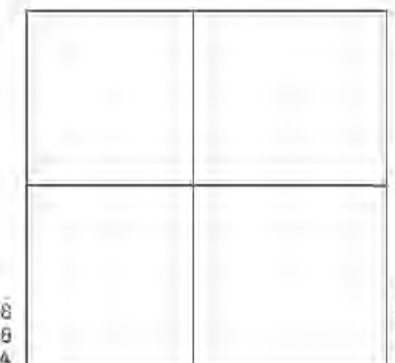
Map date: 1948-1953

Scale: 1:2,500

Printed at: 1:2,500



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



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

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

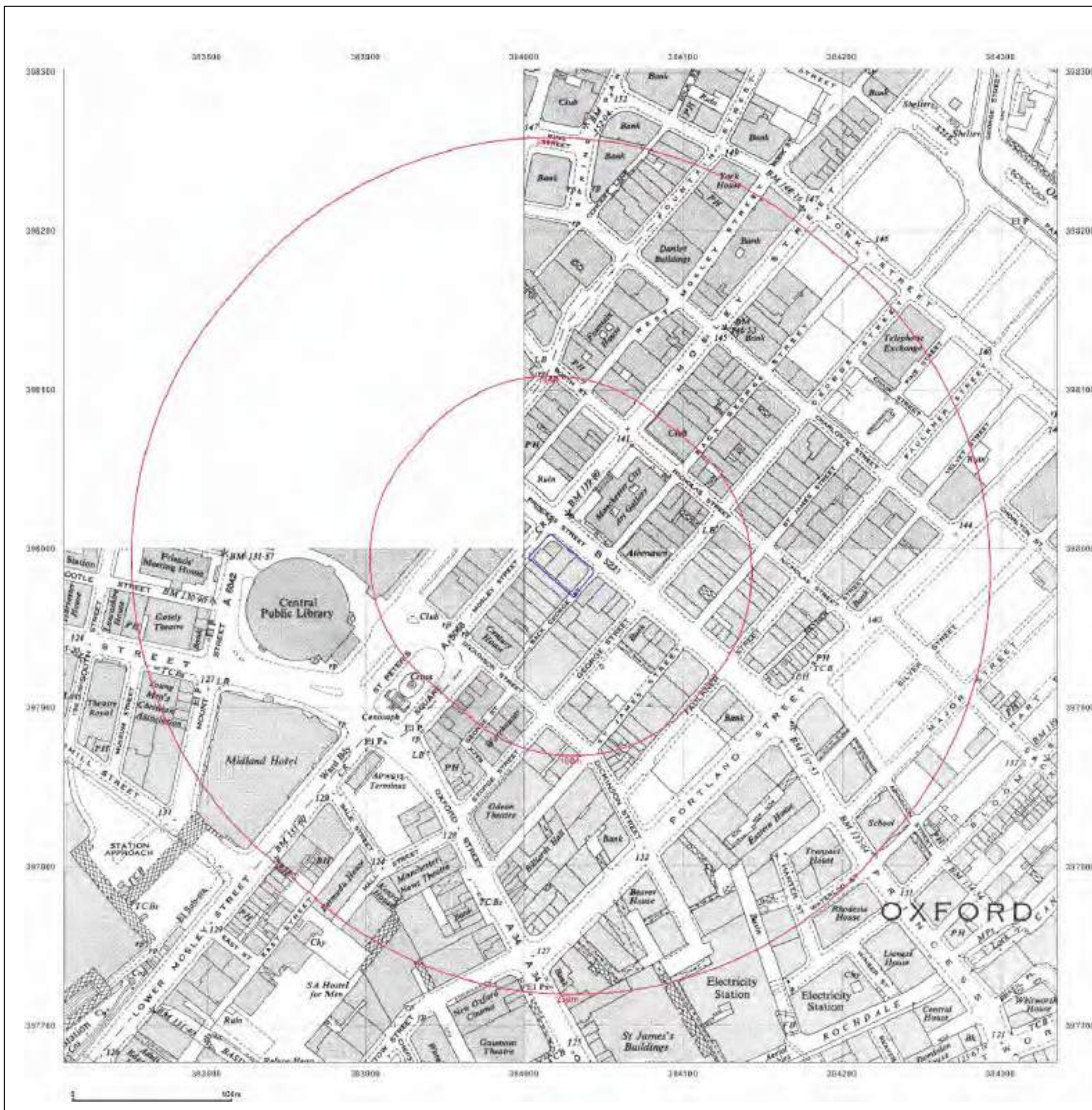


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Site Details:

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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1951-1955

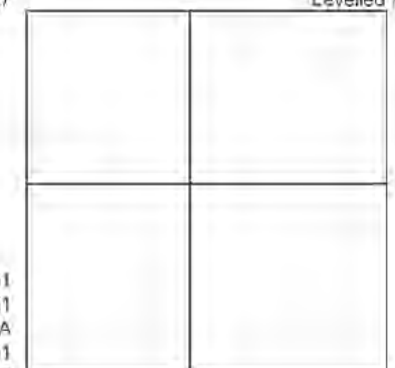
Scale: 1:1,250

Printed at: 1:2,000



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

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



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

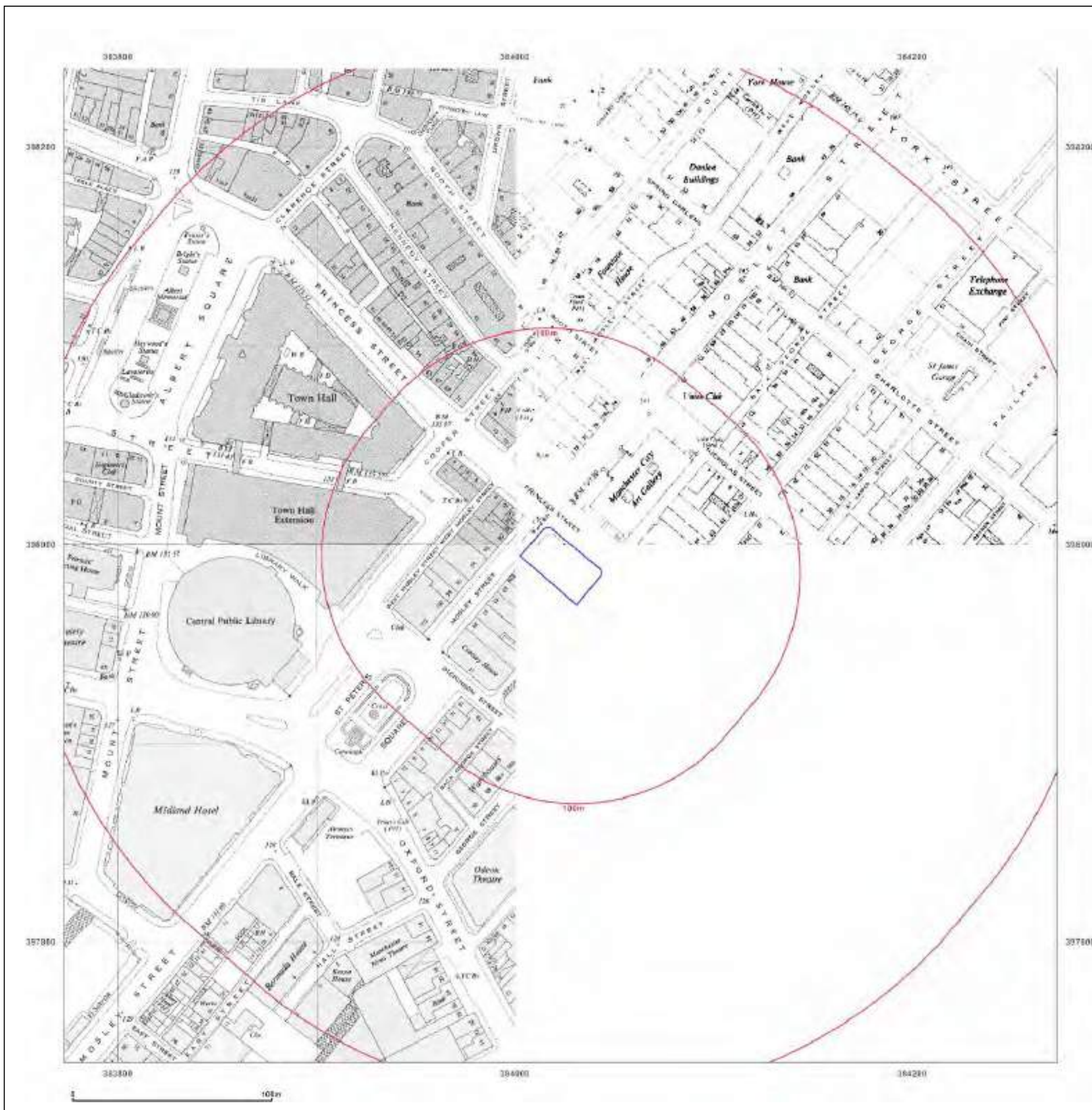


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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

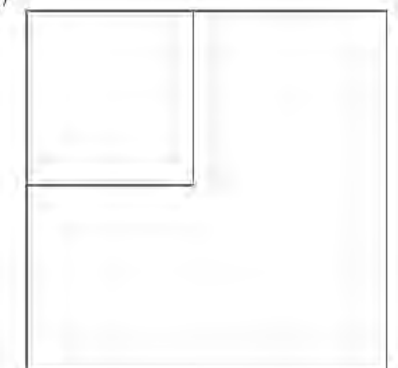
Map date: 1957

Scale: 1:2,500

Printed at: 1:2,500



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

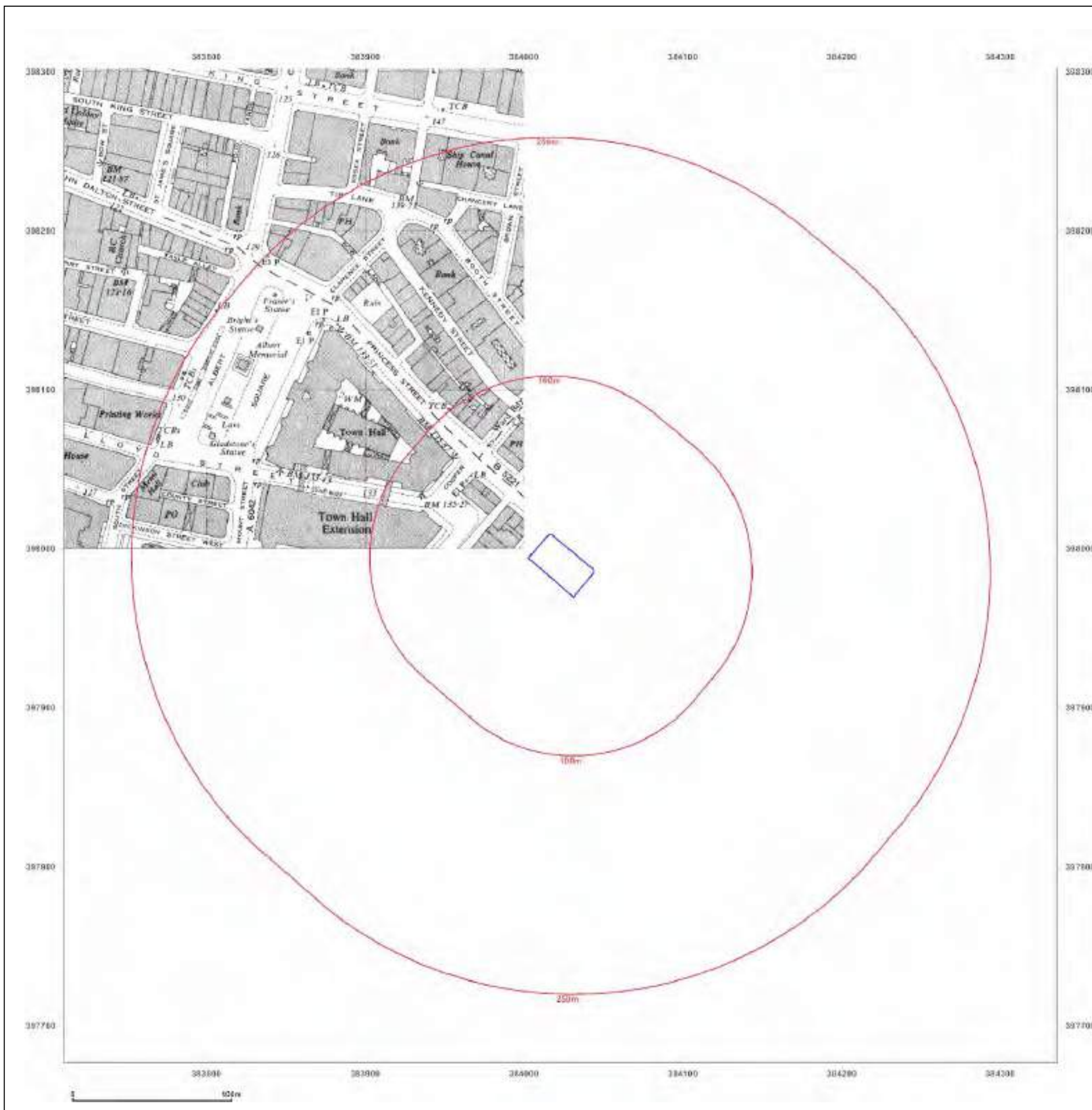


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Site Details:

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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1953-1958

Scale: 1:2,500

Printed at: 1:2,500



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

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

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

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

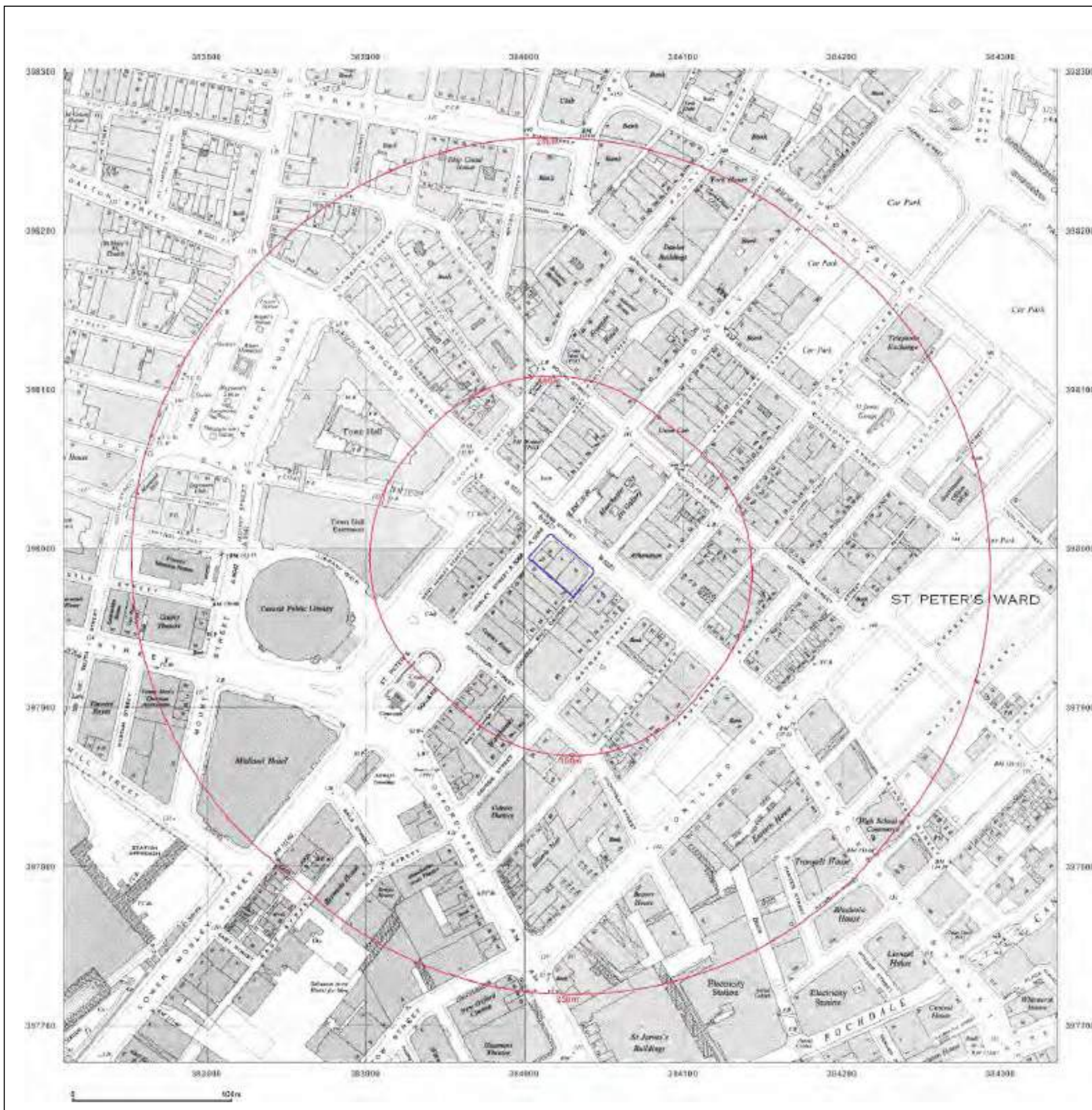


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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1963-1965

Scale: 1:2,500

Printed at: 1:2,500



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

Surveyed N/A
Revised 1984
Edition N/A
Copyright 1965
Levelled 1959

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

Surveyed 1963
Revised 1963
Edition N/A
Copyright 1965
Levelled 1959

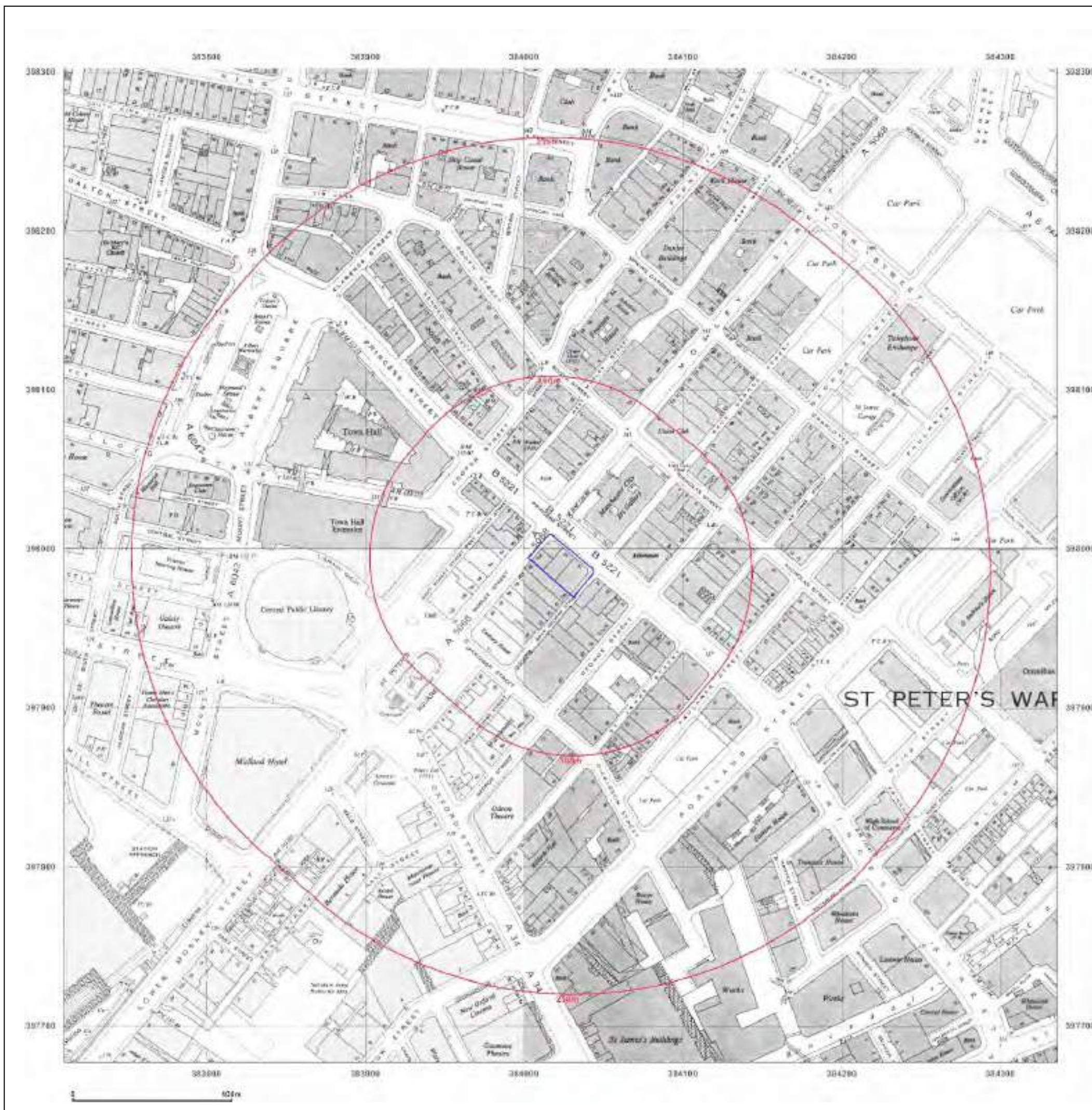


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Site Details:

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MANCHESTER, M2 3LQ

Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

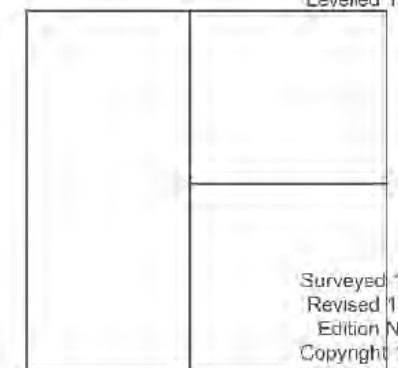
Map date: 1964-1968

Scale: 1:1,250

Printed at: 1:2,000



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Revised 1967
Edition N/A
Copyright 1968
Levelled 1964



Surveyed 1948
Revised 1963
Edition N/A
Copyright 1964
Levelled 1958



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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

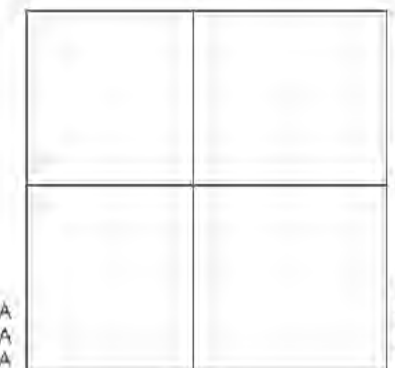
Map date: 1964-1968

Scale: 1:2,500

Printed at: 1:2,500



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



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

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

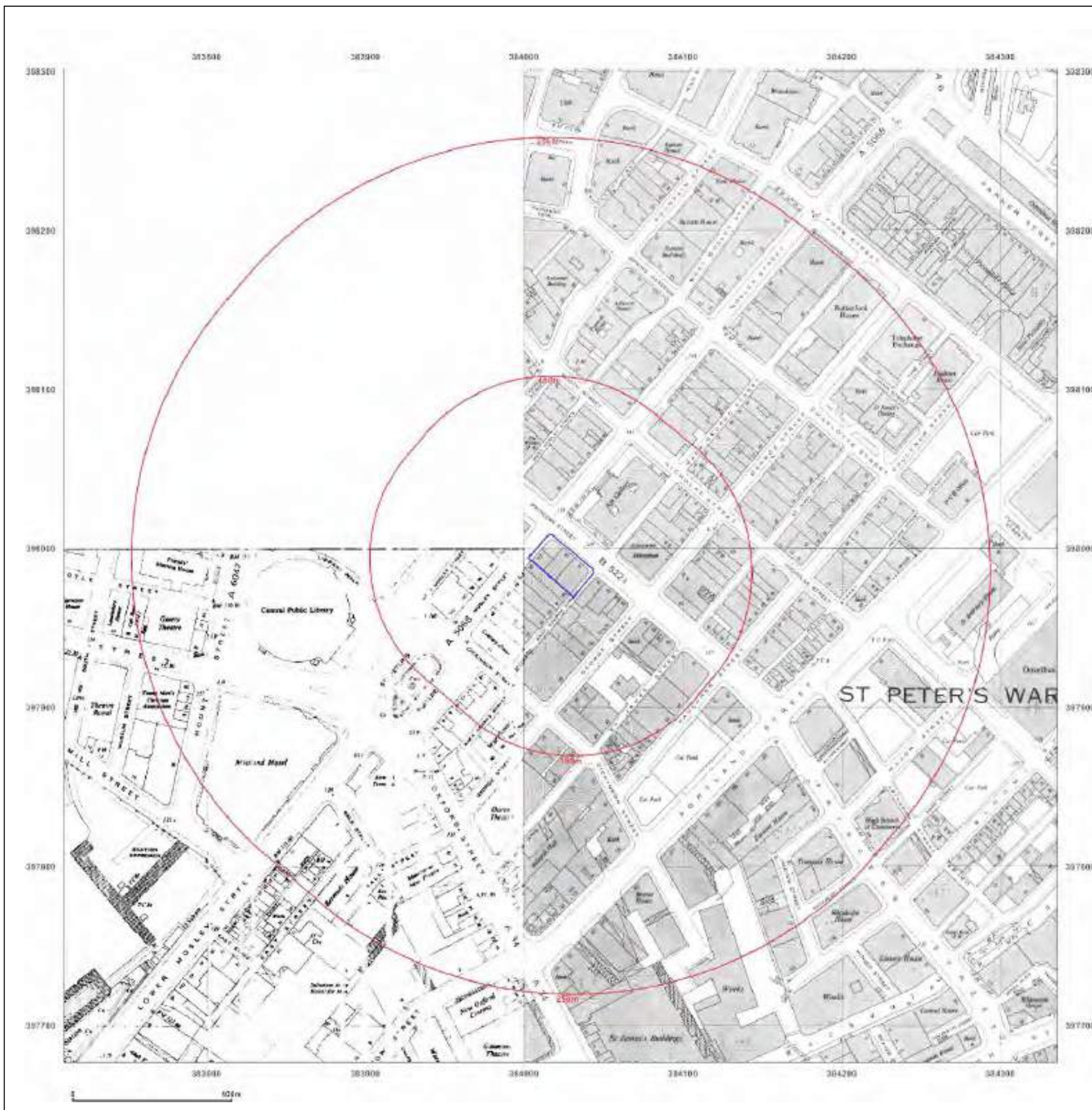


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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1969-1970

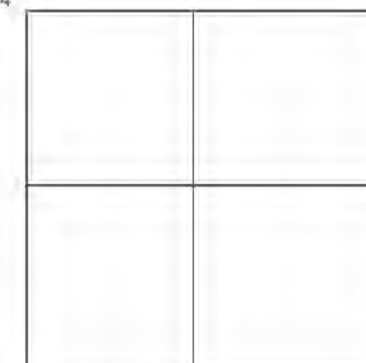
Scale: 1:2,500

Printed at: 1:2,500



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

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



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

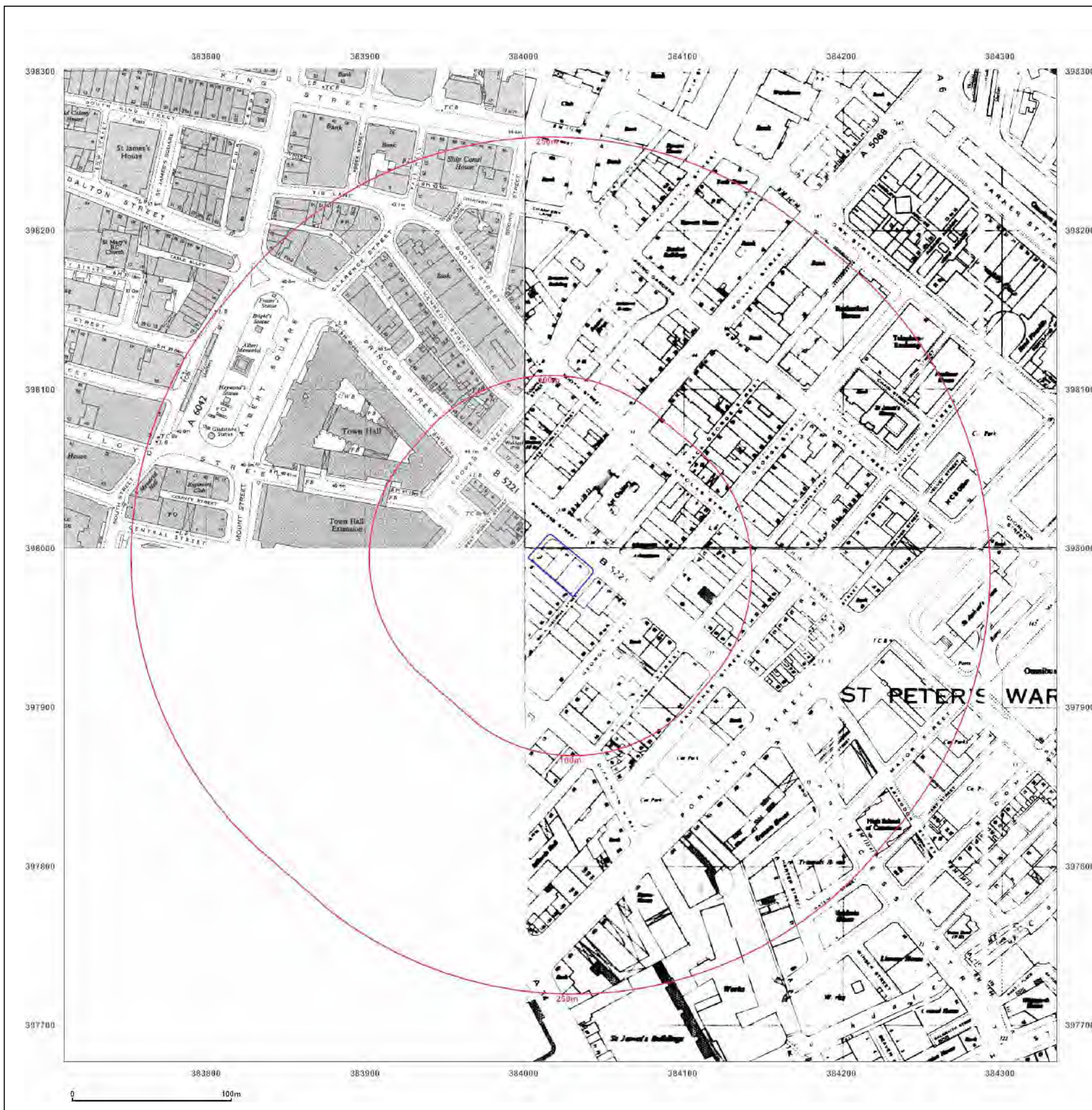


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Site Details:

79, MOSLEY STREET,
MANCHESTER, M2 3LQ

Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

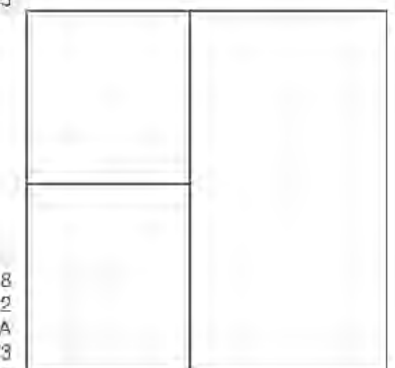
Map date: 1970-1973

Scale: 1:1,250

Printed at: 1:2,000



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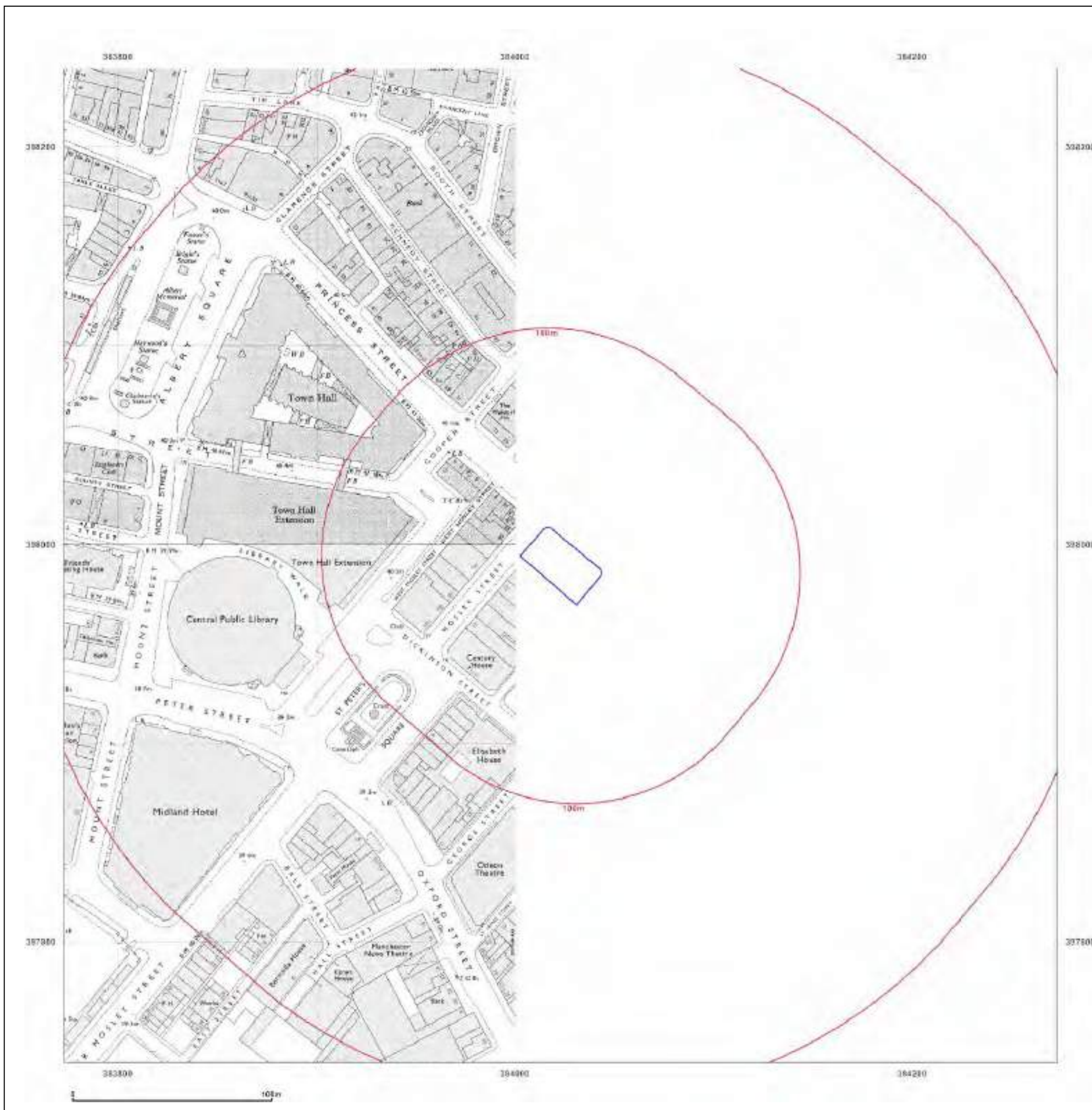


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Site Details:

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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1980-1985

Scale: 1:1,250

Printed at: 1:2,000



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Edition N/A
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Levelled 1983

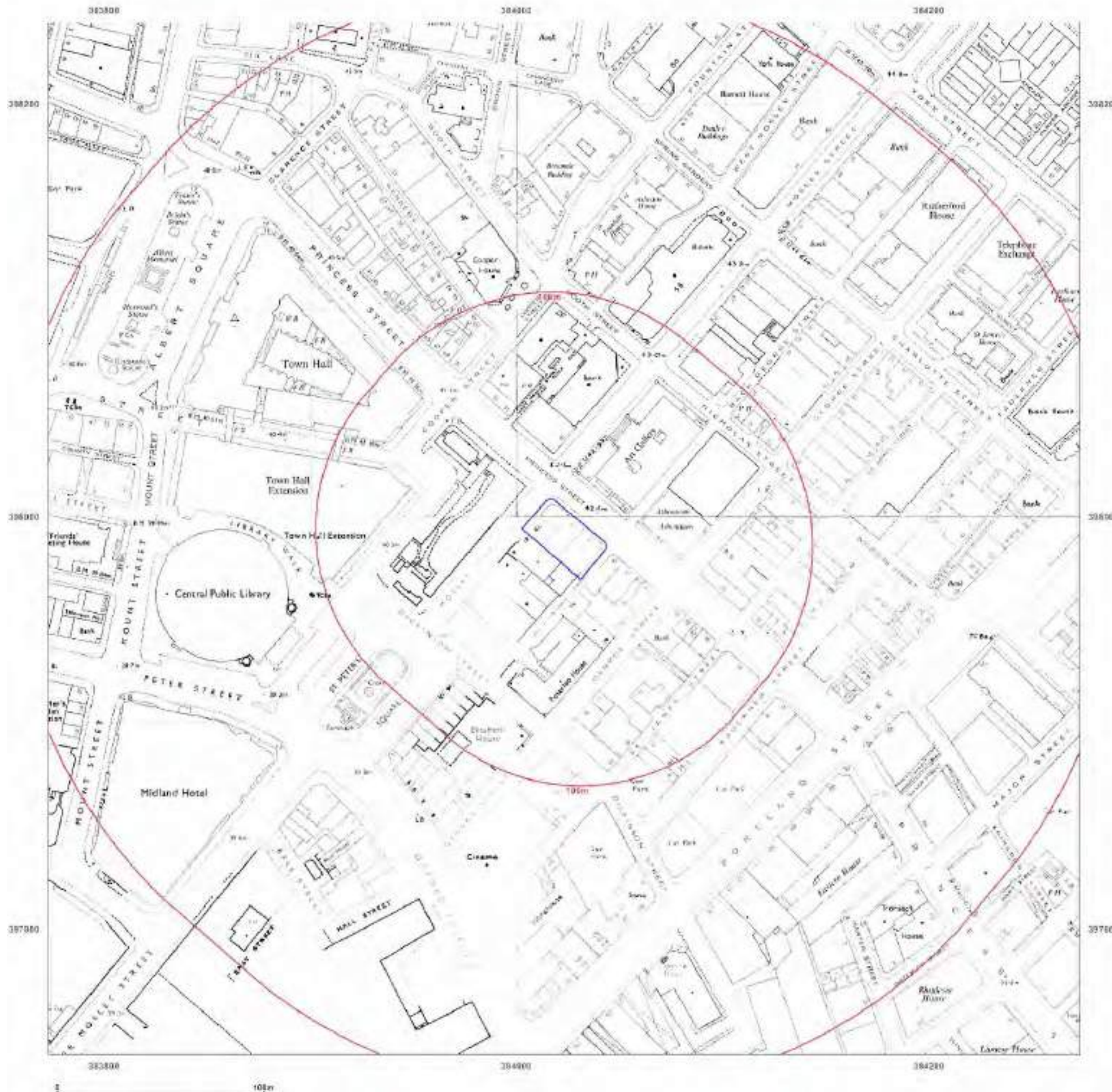


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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1986-1990

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
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Surveyed 1983
Revised 1990
Edition N/A
Copyright 1990
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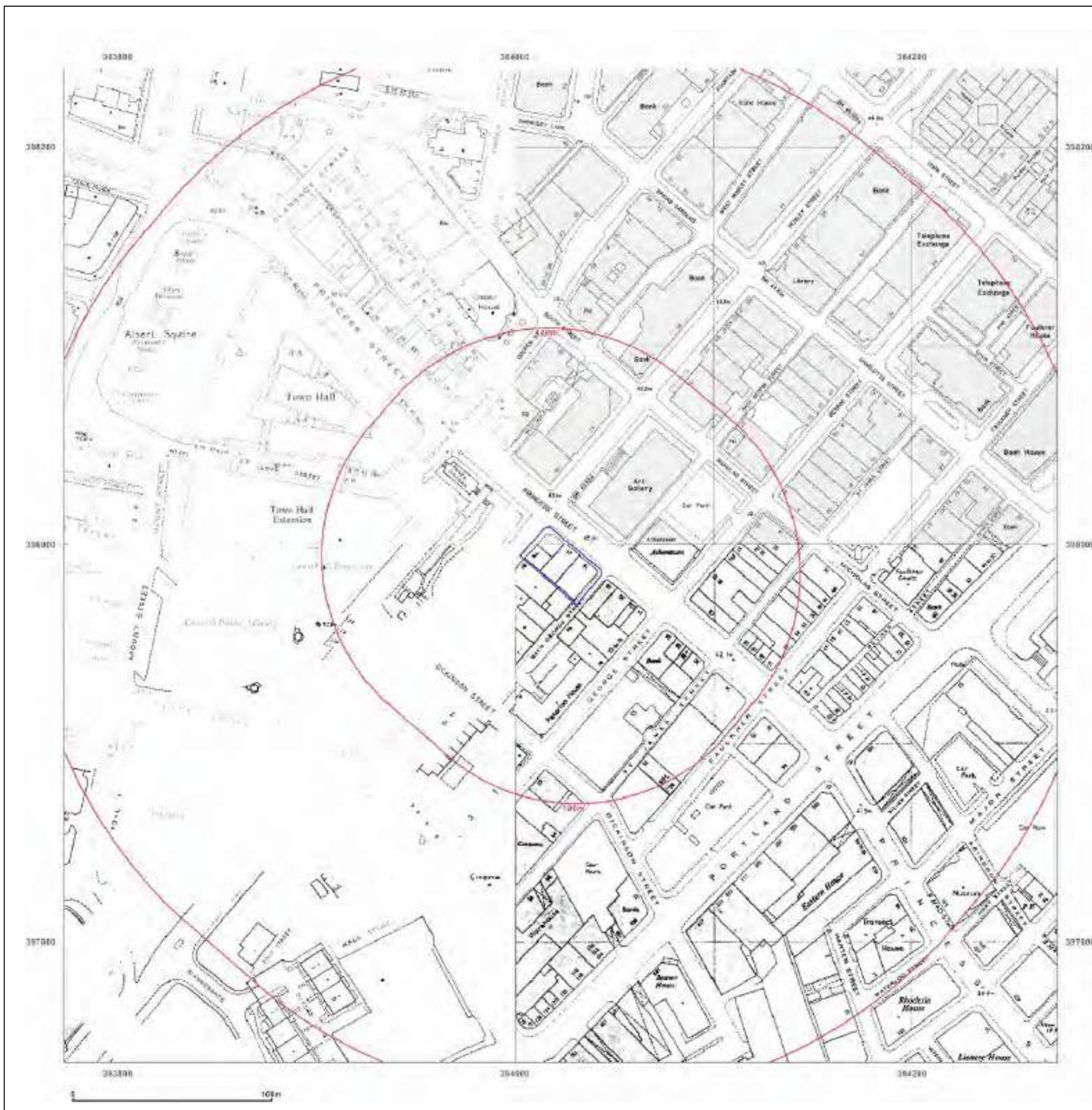


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Client Ref: PE01812_Mosley_Street_Manchester
Report Ref: GS-4529293
Grid Ref: 384023, 397990

Map Name: National Grid

Map date: 1988-1992

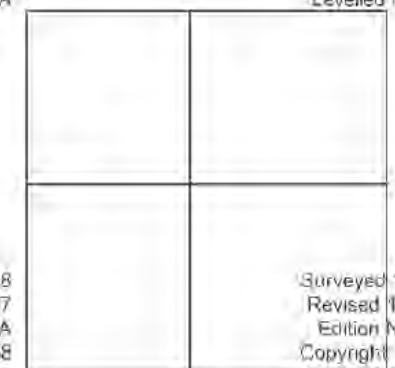
Scale: 1:1,250

Printed at: 1:2,000



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



Surveyed 1948
Revised 1987
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Surveyed 1983
Revised 1990
Edition N/A
Copyright 1990
Levelled 1983

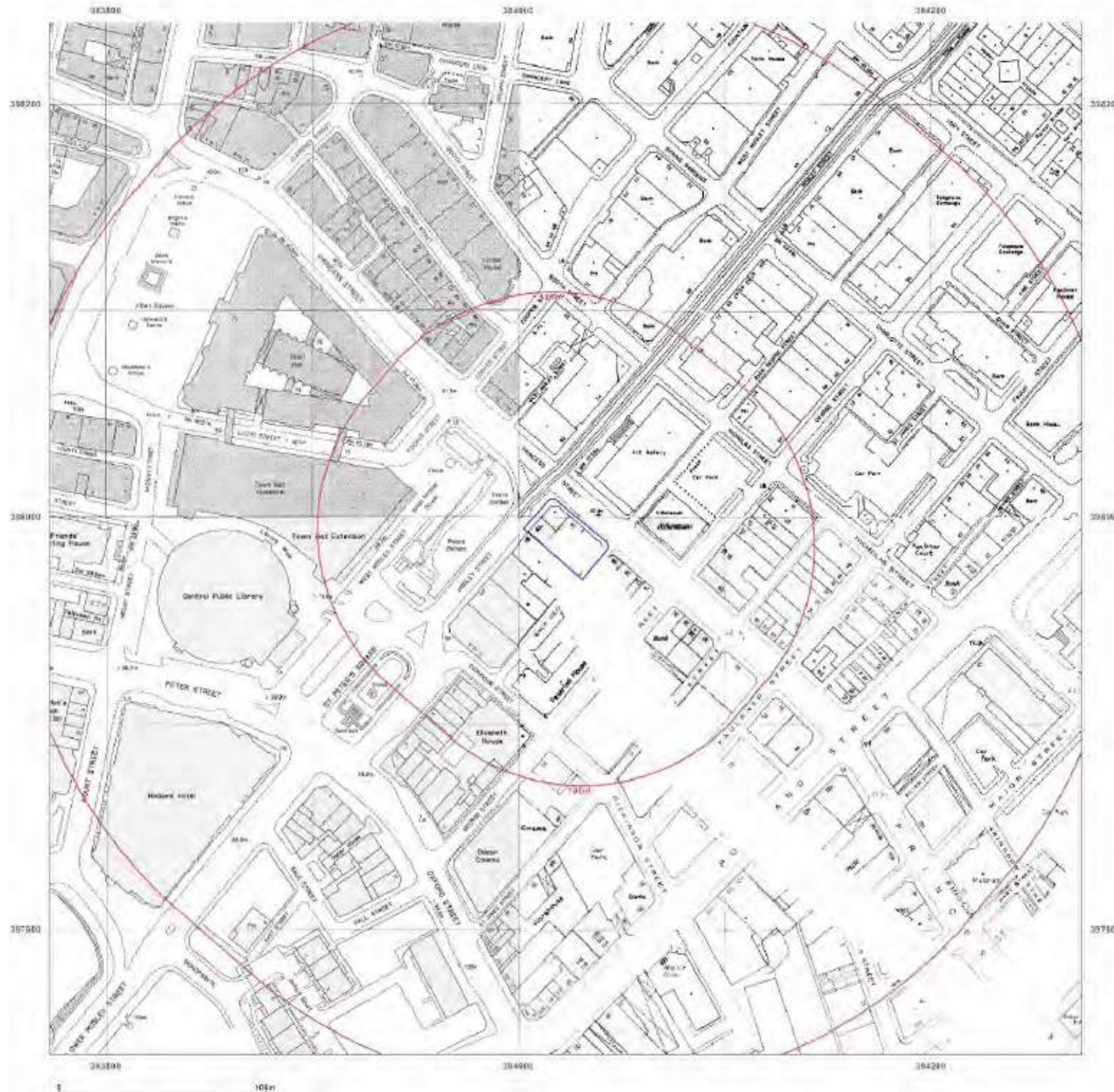


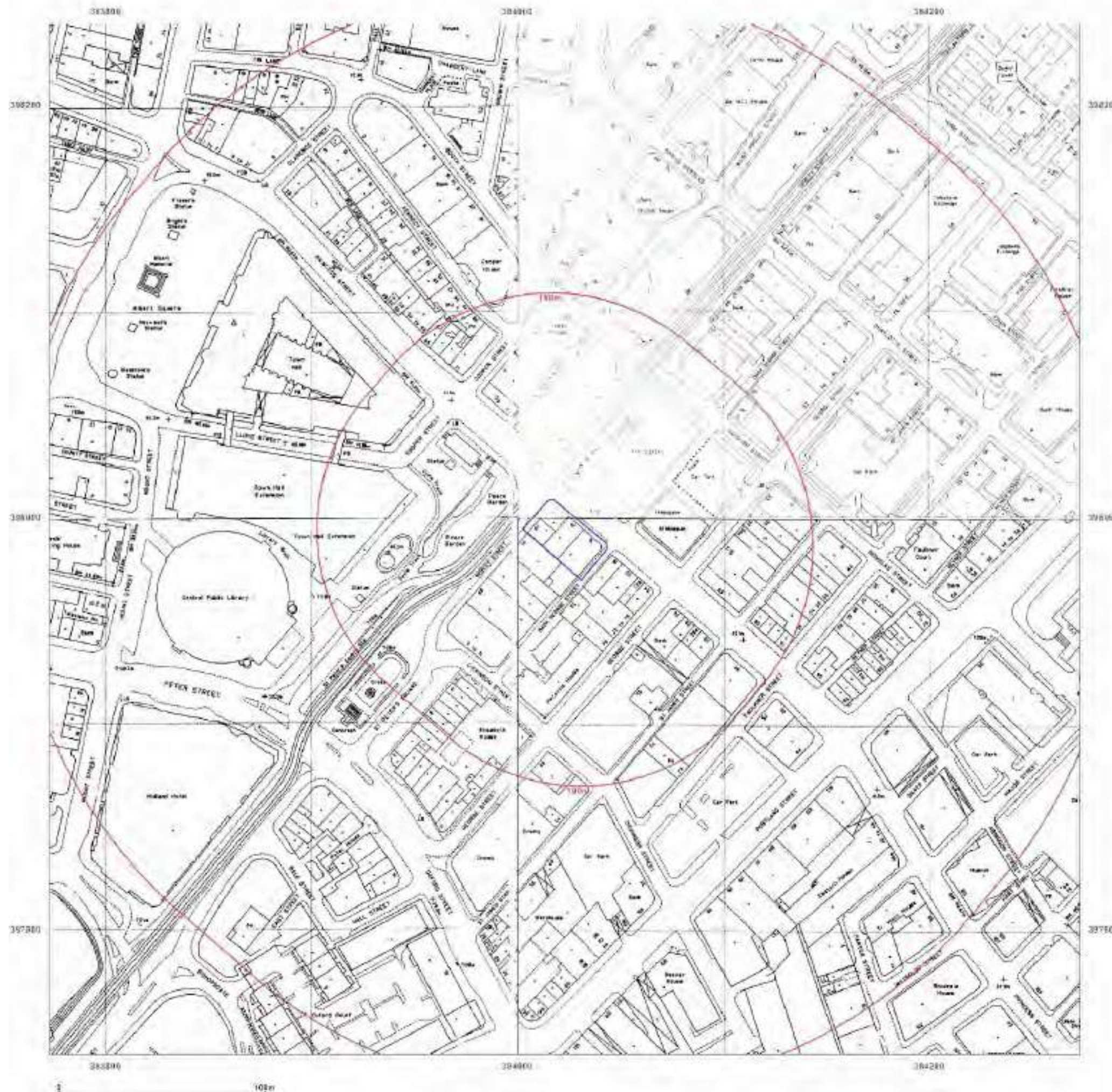
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Tier Environmental

Richmond House, Sandpiper Court,
Chester Business Park, CH4 9QZ

Groundsure
Reference:

GS-4529292

Your Reference: PE01812_Mosley_Street_Manchester

Report Date

30 Nov 2017

Report Delivery
Method:

Email - pdf

Geo Insight

Address: 79, MOSLEY STREET, MANCHESTER, M2 3LQ

Dear Sir/ Madam,

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

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,



Managing Director
Groundsure Limited

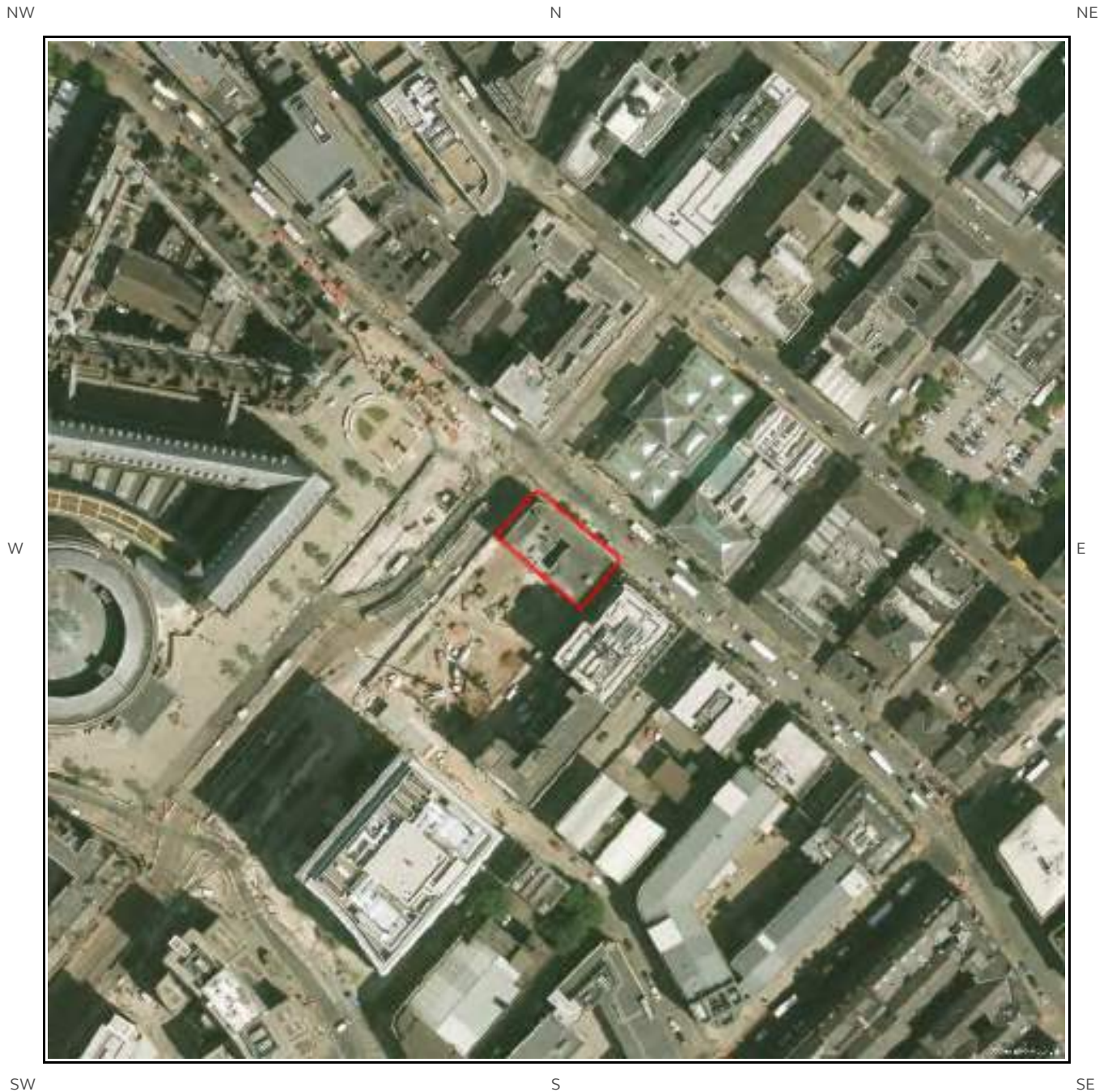
Enc.
Groundsure Geo Insight

Address: 79, MOSLEY STREET, MANCHESTER, M2 3LQ

Date: 30 Nov 2017

Reference: GS-4529292

Client: Tier Environmental



Aerial Photograph Capture date: 11-Jun-2015

Grid Reference: 384026,397989

Site Size: 0.08ha

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Overview of Findings

The Groundsure Geo Insight provides high quality geo-environmental information that allows geo-environmental professionals and their clients to make informed decisions and be forewarned of potential ground instability problems that may affect the ground investigation, foundation design and possibly remediation options that could lead to possible additional costs.

The report is based on the BGS 1:50,000 and 1:10,000 Digital Geological Map of Great Britain, BGS Geosure data; BRITPITS database; Non-coal mining data and Borehole Records, Coal Authority data including brine extraction areas, PBA non-coal mining and natural cavities database, Johnson Poole and Bloomer mining data and Groundsure's unique database including historical surface ground and underground workings.

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

Section 1: Geology 1:10,000 Scale

1.1 Artificial Ground	1.1 Is there any Artificial Ground/ Made Ground present beneath the study site at 1:10,000 scale?	No
1.2 Superficial Geology and Landslips	1.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site at 1:10,000 scale?*	Yes
	1.2.2 Are there any records of landslide within 500m of the study site boundary at 1:10,000 scale?	No
1.3 Bedrock, Solid Geology and linear features	1.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.	
	1.3.2 Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale?	Yes

Section 2: Geology 1:50,000 Scale

2.1 Artificial Ground	2.1.1 Is there any Artificial Ground/ Made Ground present beneath the study site?	No
	2.1.2 Are there any records relating to permeability of artificial ground within the study site*boundary?	No
2.2 Superficial Geology and Landslips	2.2.1 Is there any Superficial Ground/Drift Geology present beneath the study site?*	Yes
	2.2.2 Are there any records of permeability of superficial ground within 500m of the study site?	Yes
	2.2.3 Are there any records of landslide within 500m of the study site boundary?	No
	2.2.4 Are there any records relating to permeability of landslips within the study site* boundary?	No

Section 2: Geology 1:50,000 Scale

2.3 Bedrock, Solid Geology and linear features

2.3.1 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section.

2.3.2 Are there any records relating to permeability of bedrock ground within the study site boundary?

Yes

2.3.3 Are there any records of linear features within 500m of the study site boundary?

Yes

Section 3: Radon

3. Radon

3.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?

The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

3.2 Radon Protection

No radon protective measures are necessary.

Section 4: Ground Workings

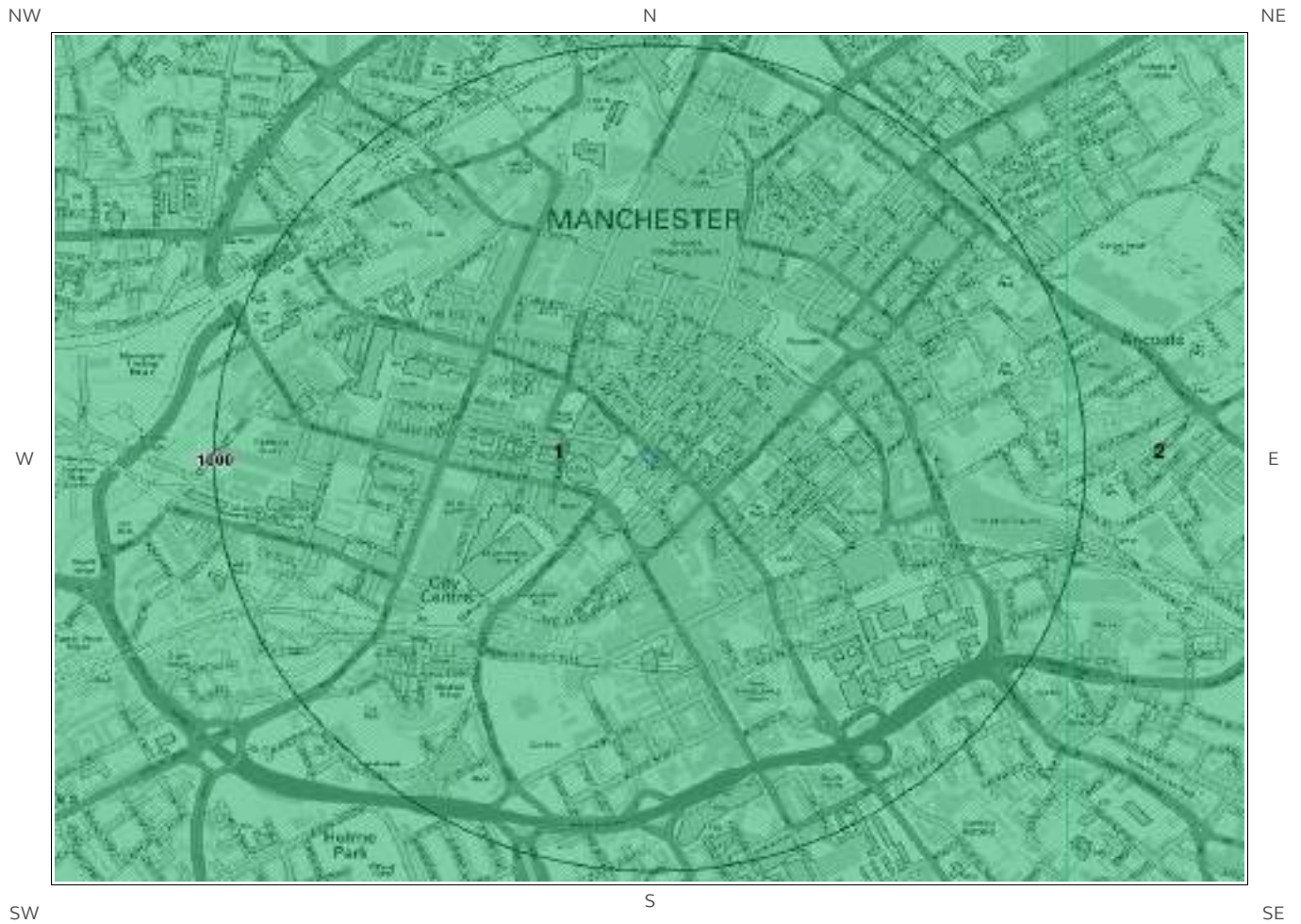
	On-site	0-50m	51-250	251-500	501-1000
4.1 Historical Surface Ground Working Features from Small Scale Mapping	0	0	2	Not Searched	Not Searched
4.2 Historical Underground Workings from Small Scale Mapping	0	0	0	0	0
4.3 Current Ground Workings	0	0	0	0	0

Section 5: Mining, Extraction & Natural Cavities

	On-site	0-50m	51-250	251-500	501-1000
5.1 Historical Mining	0	0	0	0	0
5.2 Coal Mining	1	0	0	0	0
5.3 Johnson Poole and Bloomer Mining Area	2	2	0	0	6
5.4 Non-Coal Mining*	0	0	0	0	0
5.5 Non-Coal Mining Cavities	0	0	0	0	0
5.5 Natural Cavities	0	0	0	0	0

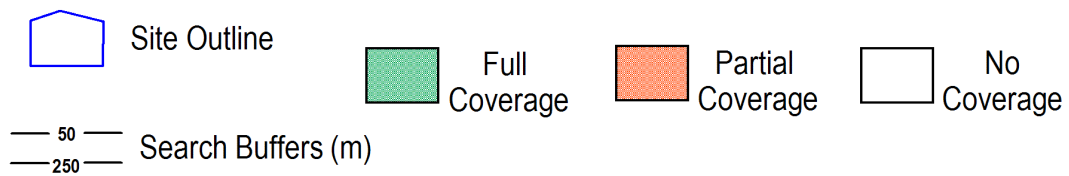
Section 5: Mining, Extraction & Natural Cavities	On-site	0-50m	51-250	251-500	501-1000
5.6 Brine Extraction	0	0	0	0	0
5.7 Gypsum Extraction	0	0	0	0	0
5.8 Tin Mining	0	0	0	0	0
5.9 Clay Mining	0	0	0	0	0
Section 6: Natural Ground Subsidence	On-site				
6.1 Shrink-Swell Clay	Very Low				
6.2 Landslides	Very Low				
6.3 Ground Dissolution of Soluble Rocks	Negligible				
6.4 Compressible Deposits	Negligible				
6.5 Collapsible Deposits	Very Low				
6.5 Running Sand	Very Low				
Section 7: Borehole Records	On-site	0-50m	51-250		
7 BGS Recorded Boreholes	0	6	61		
Section 8: Estimated Background Soil Chemistry	On-site	0-50m	51-250		
8 Records of Background Soil Chemistry	2	6	0		
Section 9: Railways and Tunnels	On-site	0-50m	51-250	250-500	
9.1 Tunnels	0	0	0	Not Searched	
9.2 Historical Railway and Tunnel Features	0	0	2	Not Searched	
9.3 Historical Railways	0	0	0	Not Searched	
9.4 Active Railways	0	10	0	Not Searched	
9.5 Railway Projects	0	0	0	0	

1:10,000 Scale Availability



1_10,000 Availability Legend

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Availability of 1:10,000 Scale Geology Mapping

The following information represents the availability of the key components of the 1:10,000 scale geological data.

ID	Distance	Artificial Coverage	Superficial Coverage	Bedrock Coverage	Mass Movement Coverage
1	0.0	Some deposits are mapped	Full	Full	No coverage
2	957.0	Some deposits are mapped	Full	Full	Some deposits are mapped
N3	1991.0	Some deposits are mapped	Full	Full	Some deposits are mapped

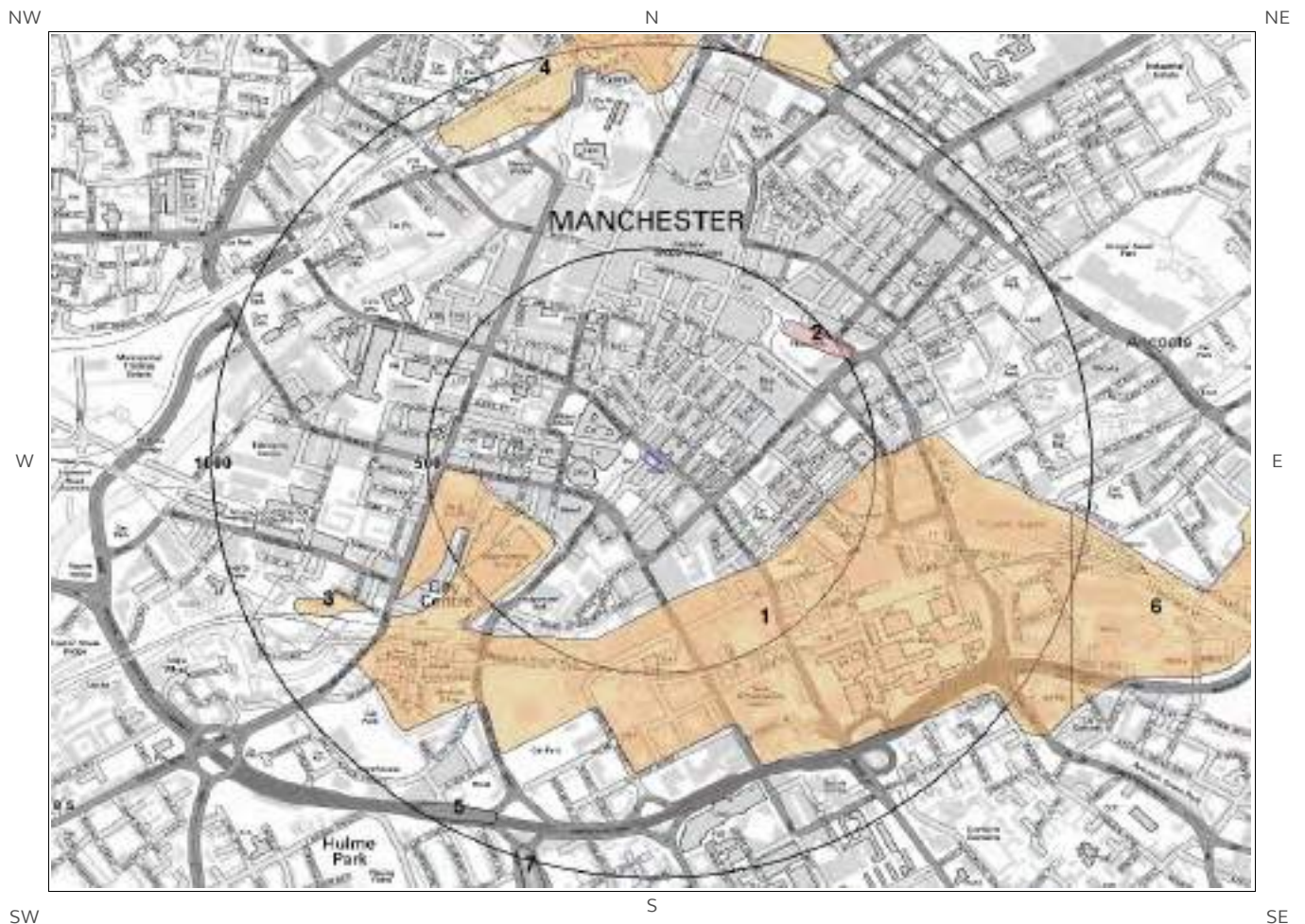
Guidance: The 1:10,000 scale geological interpretation is the most detailed generally available from BGS and is the scale at which most geological surveying is carried out in the field. The database is presented as four types of geology (artificial, mass movement, superficial and bedrock), although not all themes are mapped or available on every map sheet. Therefore a coverage layer showing the availability of the four themes is presented above.

The definitions of coverage are as follows:

Geology	Full Coverage	Partial Coverage	No Coverage
Bedrock	The whole tile has been mapped	Some but not all the tile has been mapped	No coverage
Superficial	The whole tile has been mapped	Some but not all of the tile has been mapped	No coverage
Artificial	Some deposits are mapped on this tile	-	No deposits are mapped
Mass Movement	Some deposits are mapped on this tile	-	No coverage

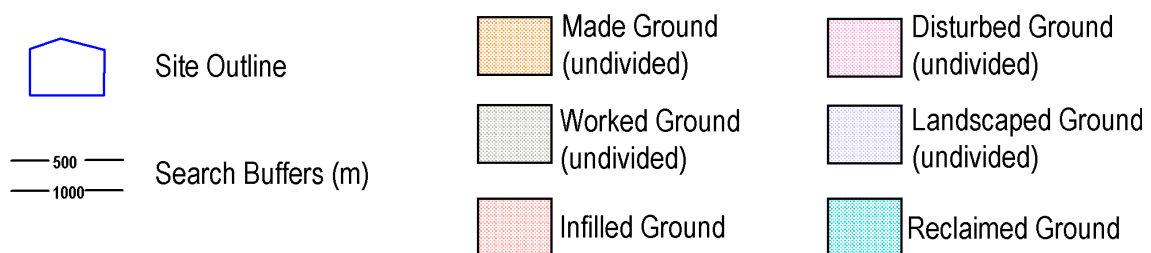
1 Geology (1:10,000 scale).

1.1 Artificial Ground map (1:10,000 scale)



Artificial Ground Legend

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1. Geology 1:10,000 scale

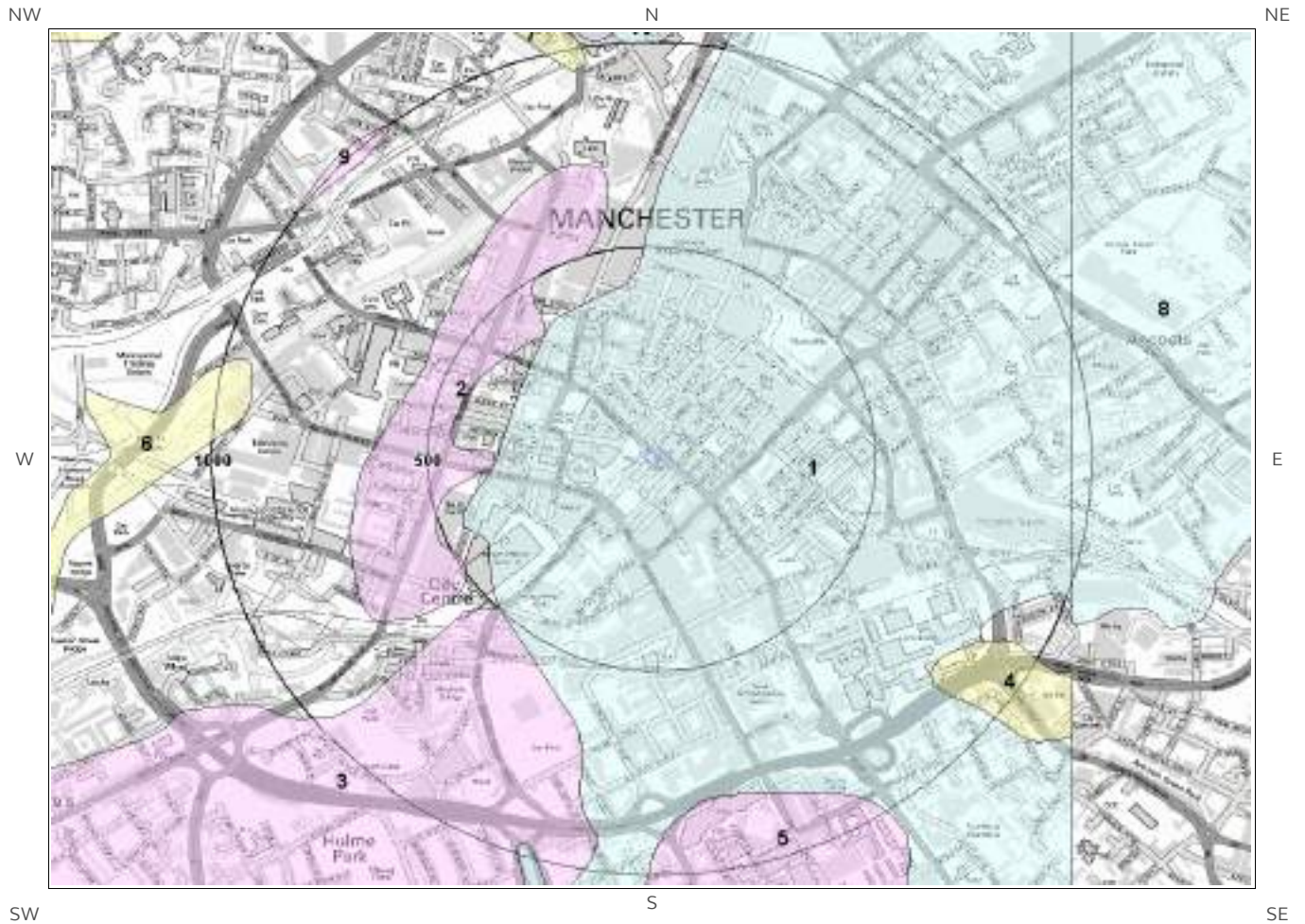
1.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

Are there any records of Artificial/ Made Ground within 500m of the study site boundary at 1:10,000 scale? Yes

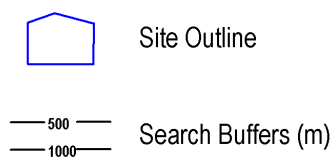
ID	Distance	Direction	LEX Code	Description	Rock Description
1	283.0	SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	426.0	NE	WMGR-ARTDP	Infilled Ground	Artificial Deposit

1.2 Superficial Deposits and Landslips map (1:10,000 scale)



Artificial Ground Legend

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1.2 Superficial Deposits and Landslips

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping

1.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary at 1:10,000 scale? Yes

ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	344.0	W	GFSDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
3	498.0	SW	GFSDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel

1.2.2 Landslip

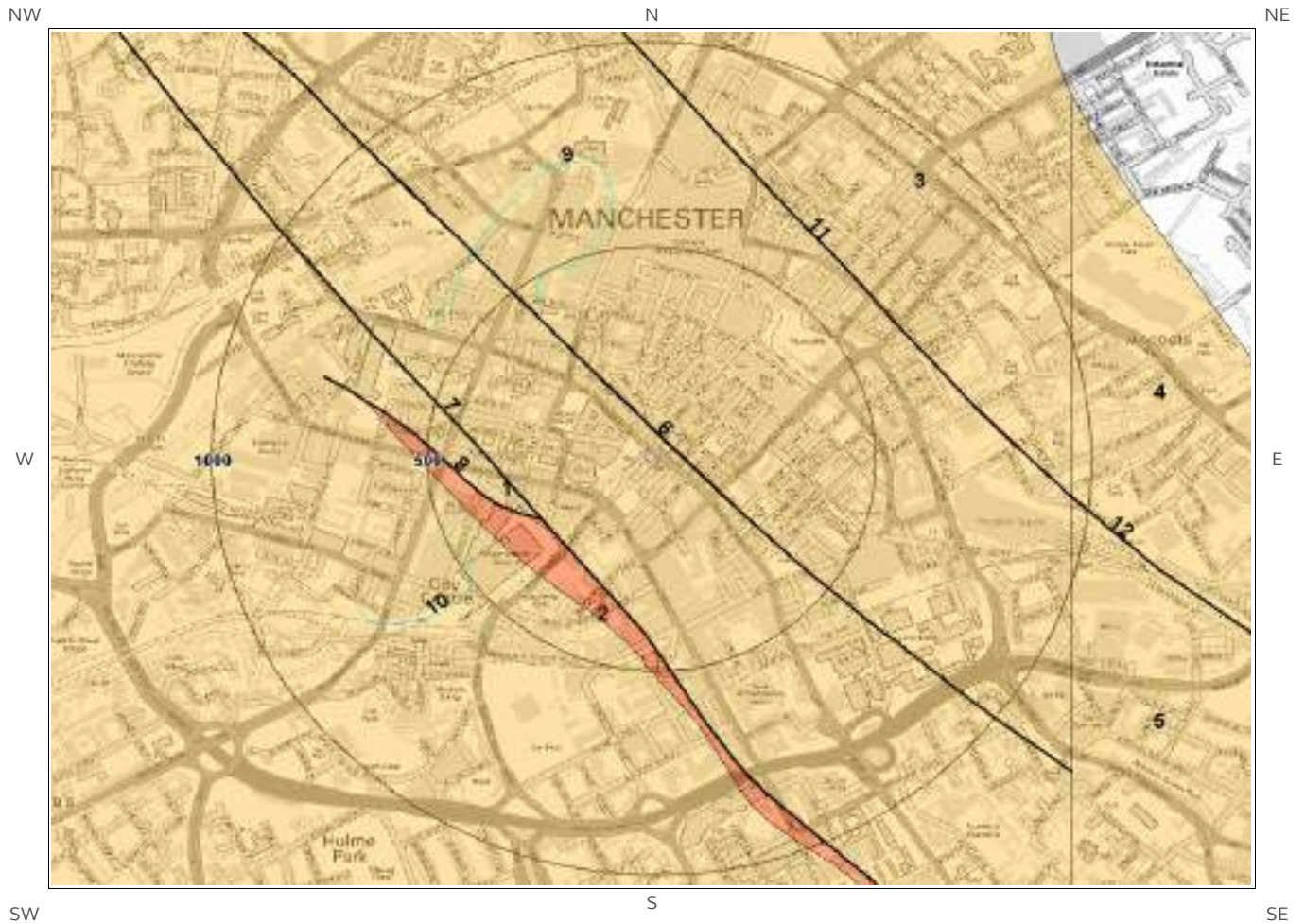
Are there any records of Landslip within 500m of the study site boundary at 1:10,000 scale? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:10,000 scale

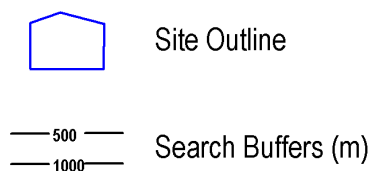
This Geology shows the main components as discrete layers, these are: Artificial / Made Ground, Superficial / Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

1.3 Bedrock and linear features map (1:10,000 scale)



Bedrock and linear features Legend

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1.3 Bedrock and linear features

The following geological information represented on the mapping is derived from 1:10,000 scale BGS Geological mapping.

1.3.1 Bedrock/ Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary at 1:10,000 scale.

ID	Distance (m)	Direction	LEX Code	Description	Rock Age
1	0.0	On Site	CPB-SDST	Chester Pebble Beds Formation - Sandstone	Early Triassic Epoch
2	278.0	SW	MM-MDST	Manchester Marls Formation - Mudstone	Late Permian Epoch [Obsolete name]

1.3.2 Linear features

Are there any records of linear features within 500m of the study site boundary at 1:10,000 scale? Yes

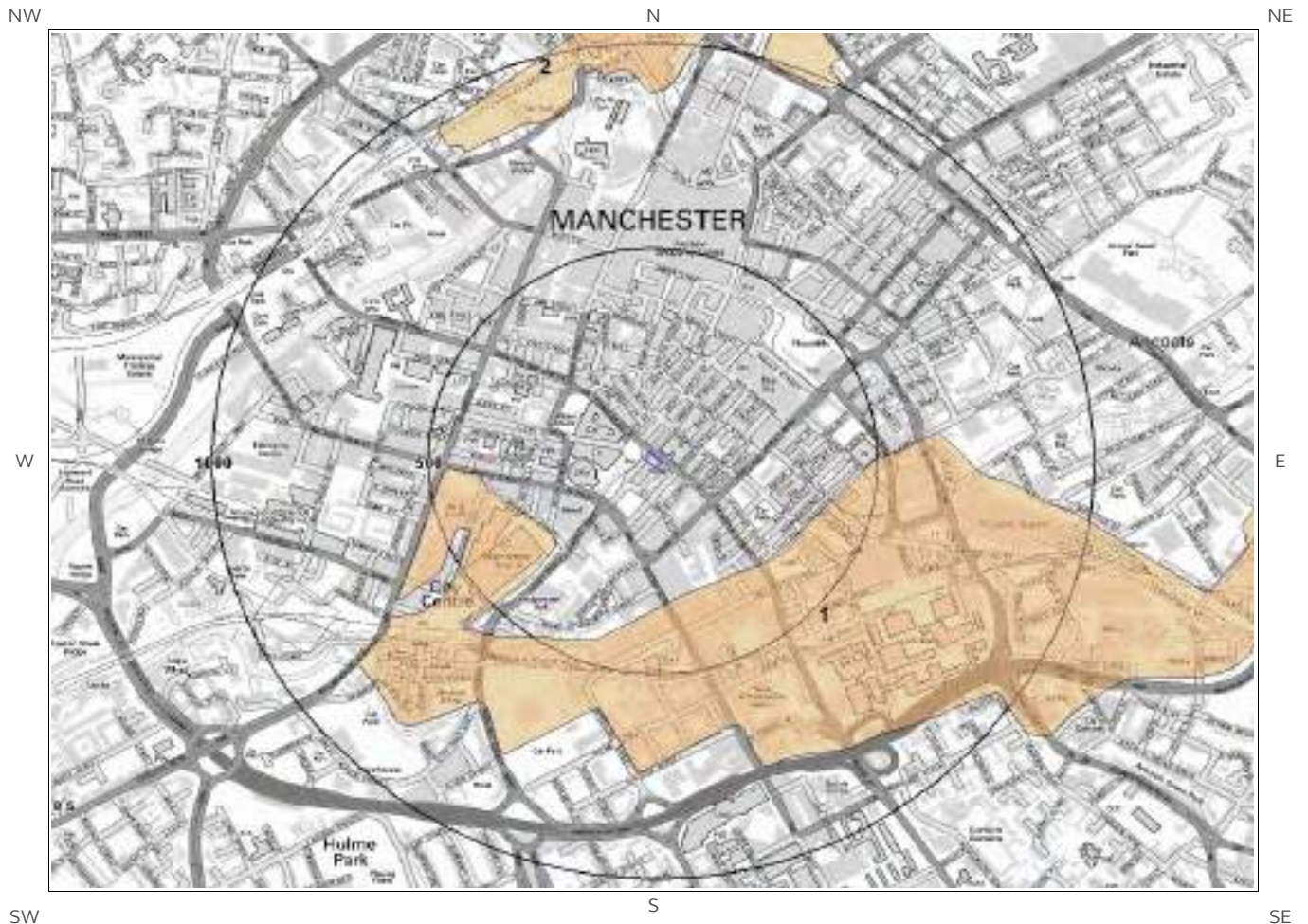
ID	Distance (m)	Direction	Category Description	Feature Description
6	41.0	NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
7	278.0	SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
8	280.0	SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
9	448.0	NW	LANDFORM	Buried channel or valley margin
10	478.0	SW	LANDFORM	Buried channel or valley margin

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of great Britain at 1:10,000 scale.

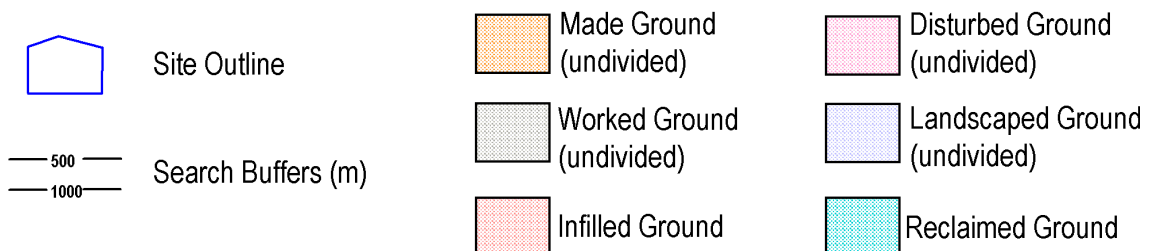
This Geology shows the main components as discrete layers, these are: Bedrock/ Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2 Geology 1:50,000 Scale

2.1 Artificial Ground map



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2. Geology 1:50,000 scale

2.1 Artificial Ground

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 085

2.1.1 Artificial/ Made Ground

Are there any records of Artificial/ Made Ground within 500m of the study site boundary? Yes

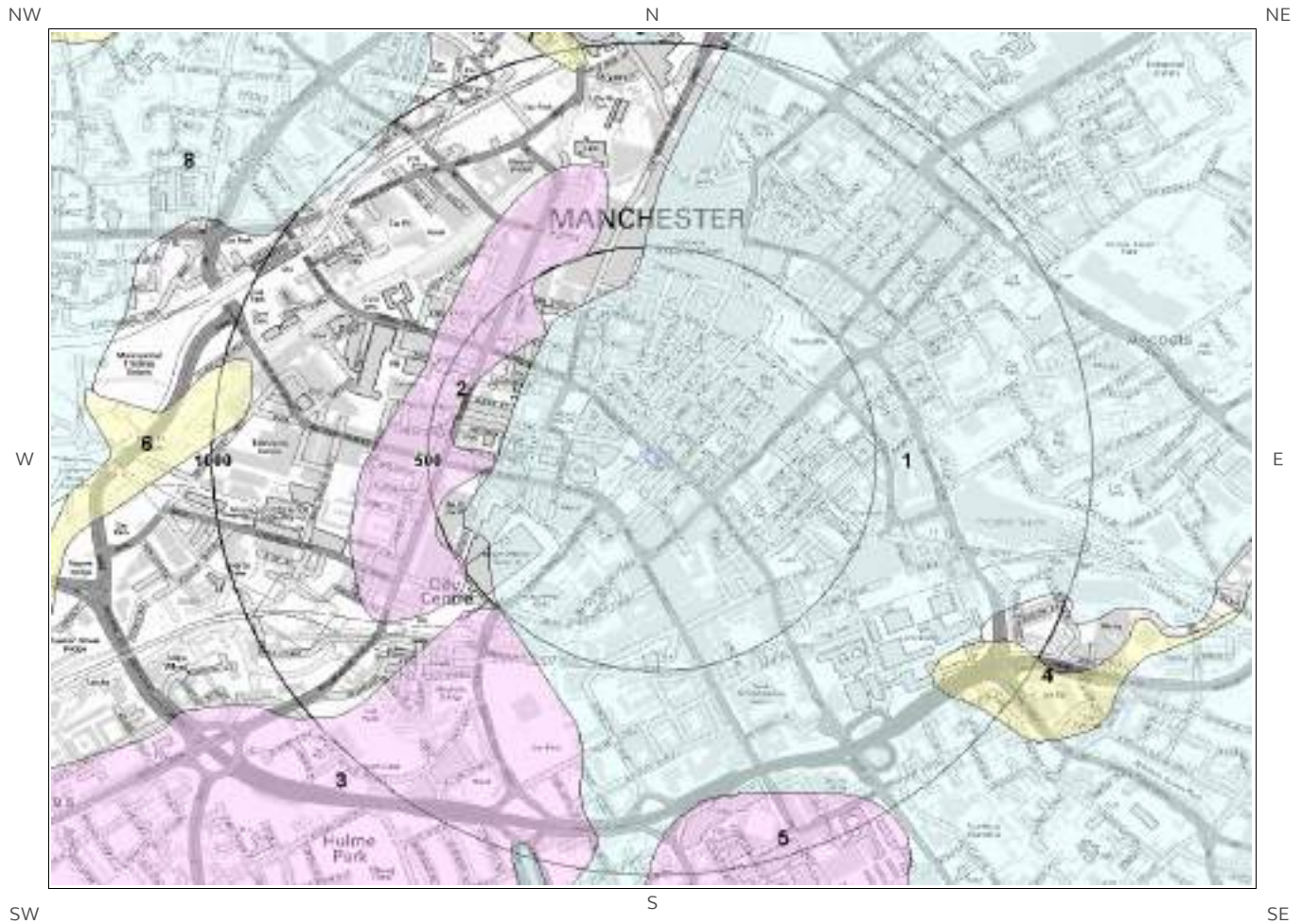
ID	Distance (m)	Direction	LEX Code	Description	Rock Description
1	283.0	SW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

2.1.2 Permeability of Artificial Ground

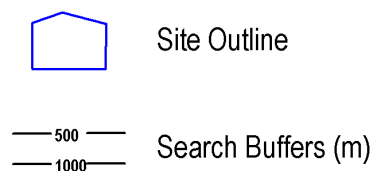
Are there any records relating to permeability of artificial ground within the study site boundary? No

Database searched and no data found.

2.2 Superficial Deposits and Landslips map (1:50,000 scale)



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2.2 Superficial Deposits and Landslips

2.2.1 Superficial Deposits/ Drift Geology

Are there any records of Superficial Deposits/ Drift Geology within 500m of the study site boundary? Yes

ID	Distance	Direction	LEX Code	Description	Rock Description
1	0.0	On Site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	345.0	W	GFSDDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
3	499.0	SW	GFSDDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL

2.2.2 Permeability of Superficial Ground

Are there any records relating to permeability of superficial ground within the study site boundary? Yes

Distance (m)	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	High	Low

2.2.3 Landslip

Are there any records of Landslip within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

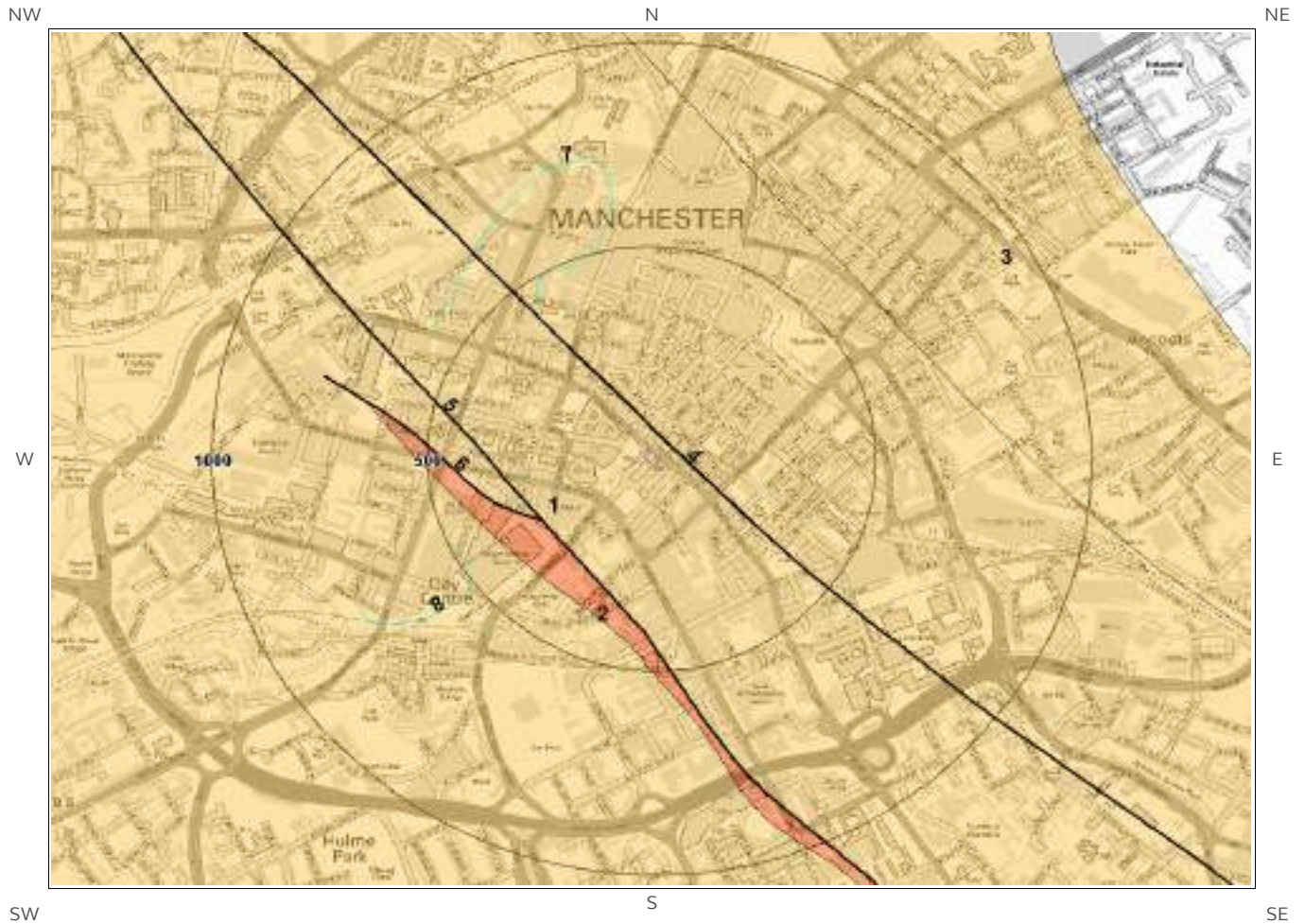
This Geology shows the main components as discrete layers, there are: Artificial/ Made Ground, Superficial/ Drift Geology and Landslips. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nationwide coverage.

2.2.4 Landslip Permeability

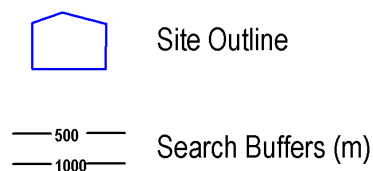
Are there any records relating to permeability of landslips within the study site boundary? No

Database searched and no data found.

2.3 Bedrock and linear features map (1:50,000 scale)



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2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 085

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	CHES-SDST	CHESTER FORMATION - SANDSTONE	OLENEKIAN
2	278.0	SW	MM-MDST	MANCHESTER MARLS FORMATION - MUDSTONE	-

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Mixed	High	Moderate

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? Yes

ID	Distance	Direction	Category Description	Feature Description
4	41.0	NE	FAULT	Fault, inferred
5	278.0	SW	FAULT	Fault, inferred
6	280.0	SW	FAULT	Fault, inferred
7	448.0	NW	LANDFORM	Approximate margin of buried (superficial deposit-filled) channel or valley
8	478.0	SW	LANDFORM	Approximate margin of buried (superficial deposit-filled) channel or valley

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

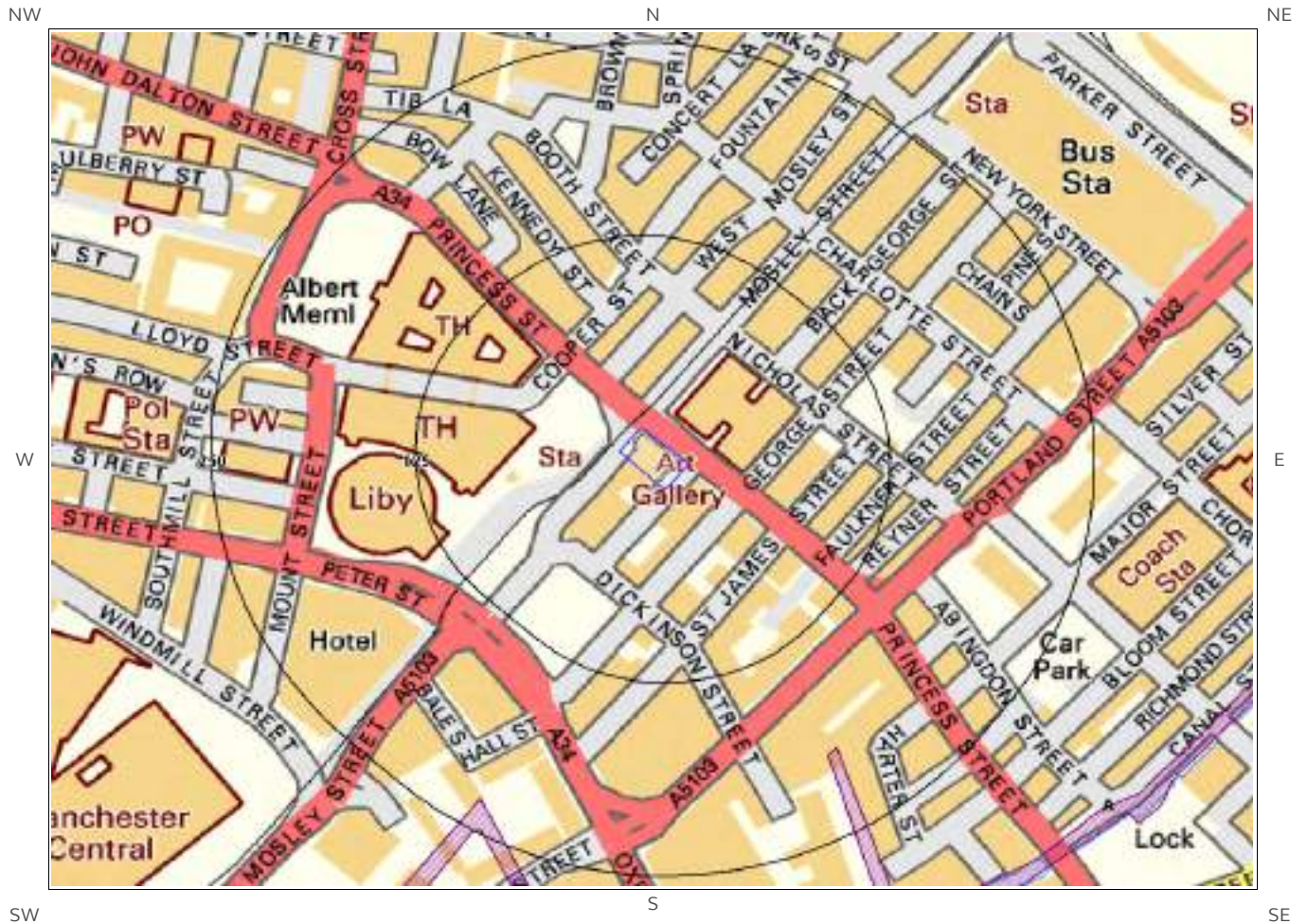
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

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

3.2 Radon Protection

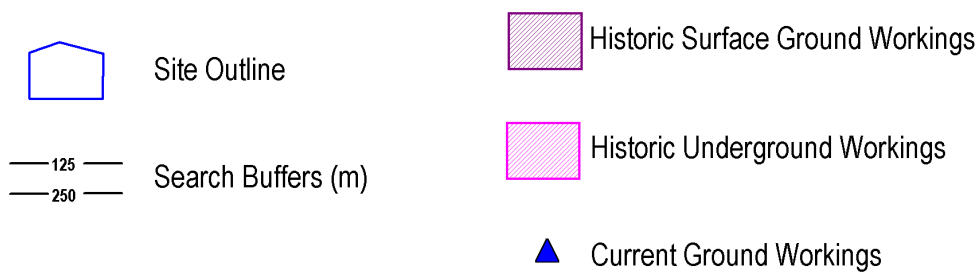
Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings map



Ground Workings Legend

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4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1A	197.0	SE	381639 396505	Canal	1894
2A	197.0	SE	381639 396505	Canal	1894

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? No

Database searched and no data found.

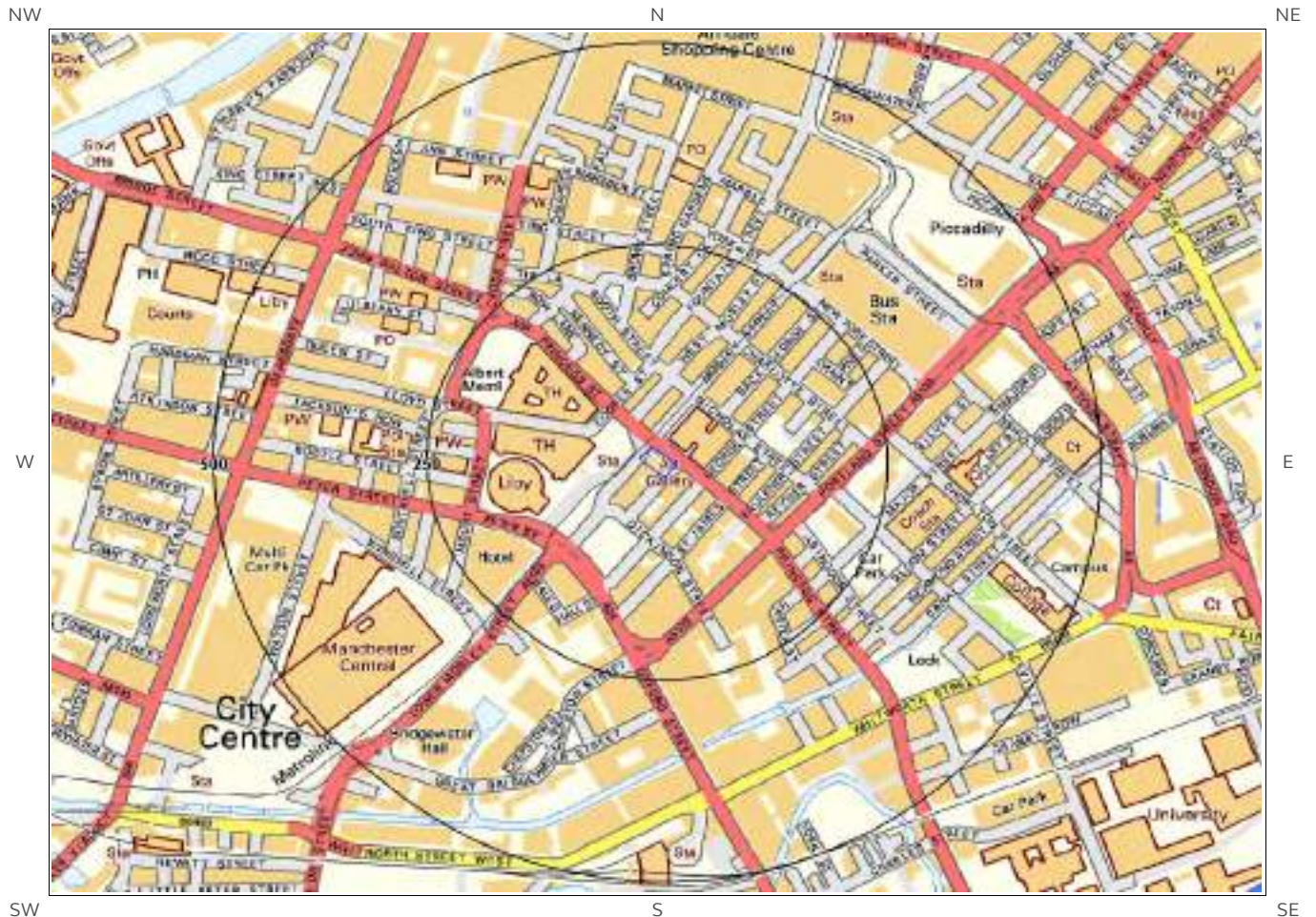
4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

Are there any BGS Current Ground Workings within 1000m of the study site boundary? No

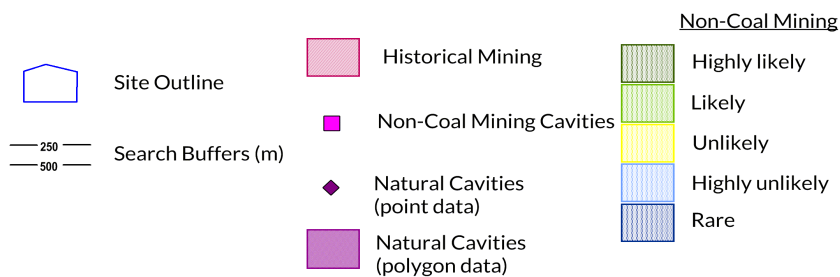
Database searched and no data found.

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and
Natural Cavities Legend

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5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? Yes

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

Distance (m)	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? Yes

The following information provided by JPB is not represented on mapping: 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. Further details and a quote for services can be obtained by emailing this report to enquiries.gs@jpb.co.uk.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled “Review of mining instability in Great Britain, 1990” PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? No

Database searched and no data found.

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

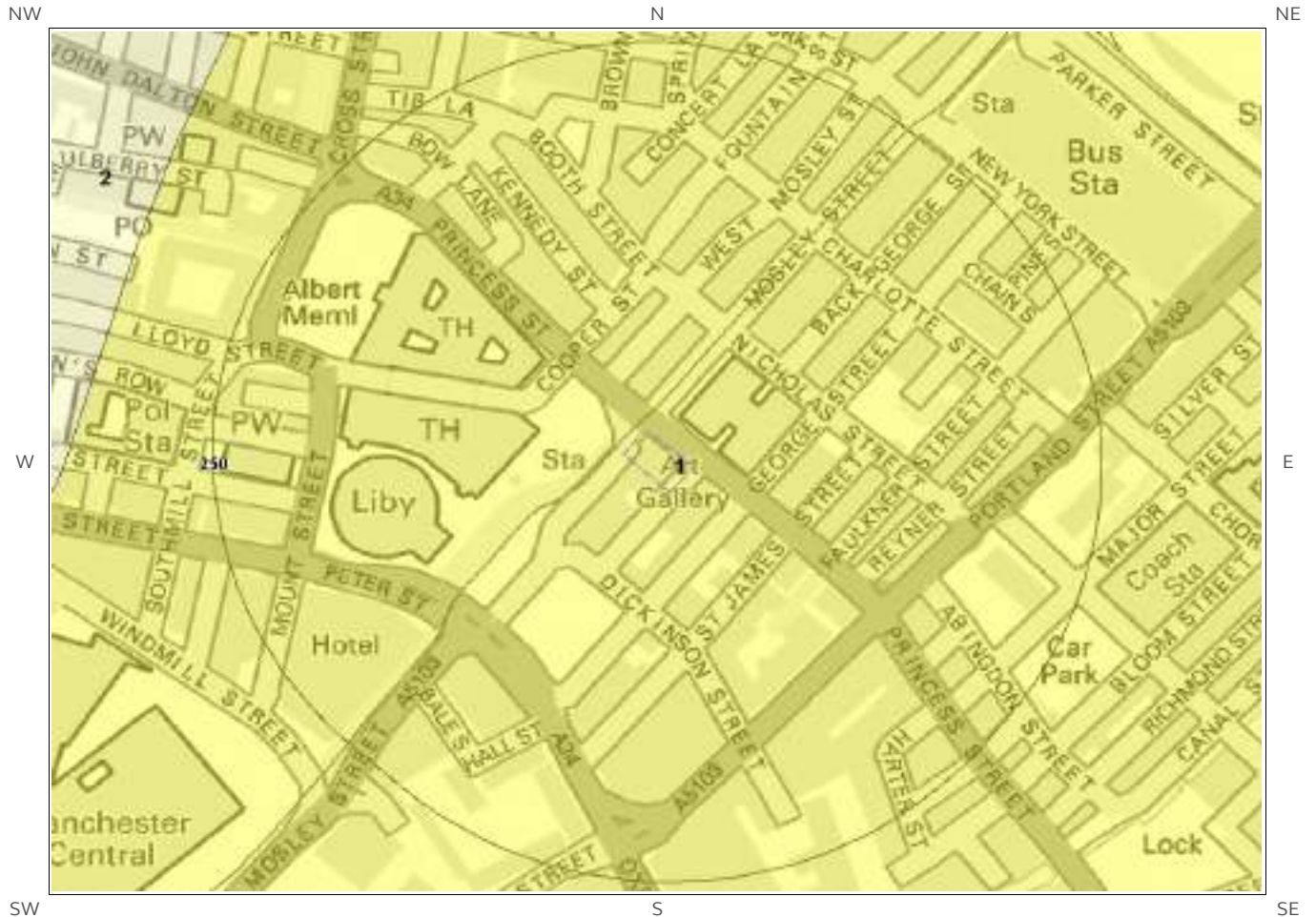
Are there any Clay Mining areas within 1000m of the study site boundary?

No

Database searched and no data found.

6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map

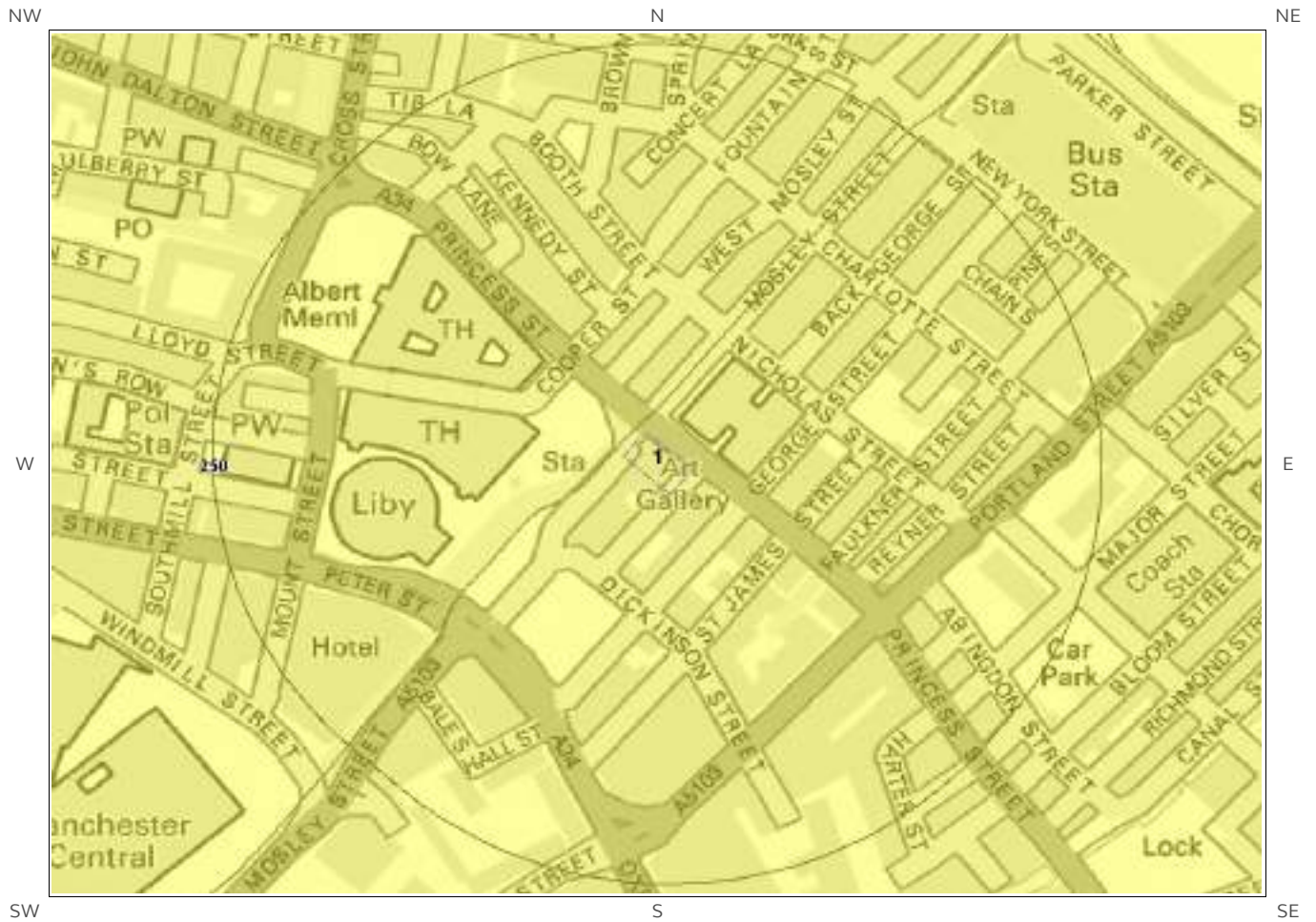


Shrink Swell Clay Legend

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6.2 Landslides map



Landslides Legend

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6.3 Ground Dissolution of Soluble Rocks map



6.4 Compressible Deposits map

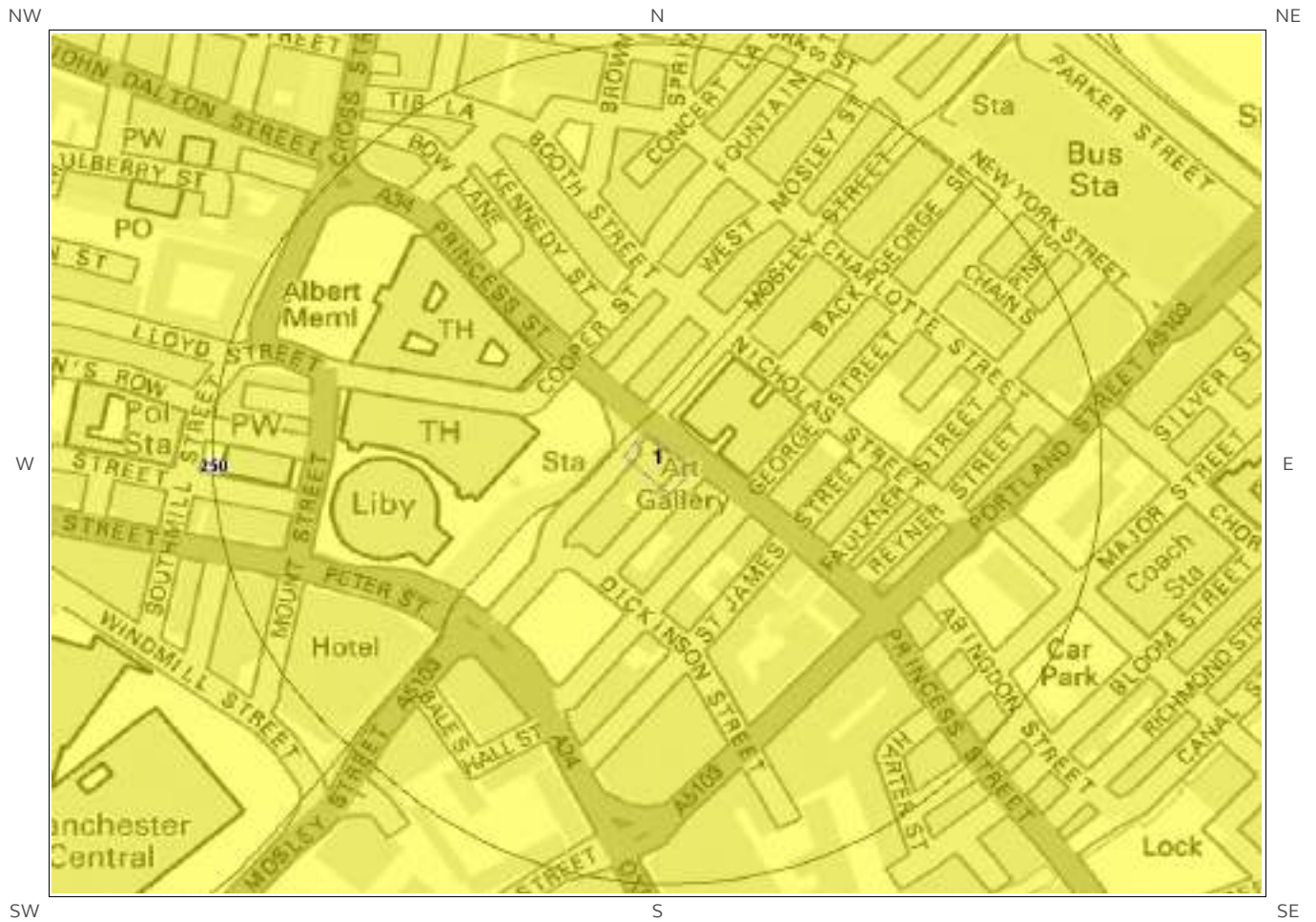


Compressible Deposits Legend

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6.5 Collapsible Deposits map

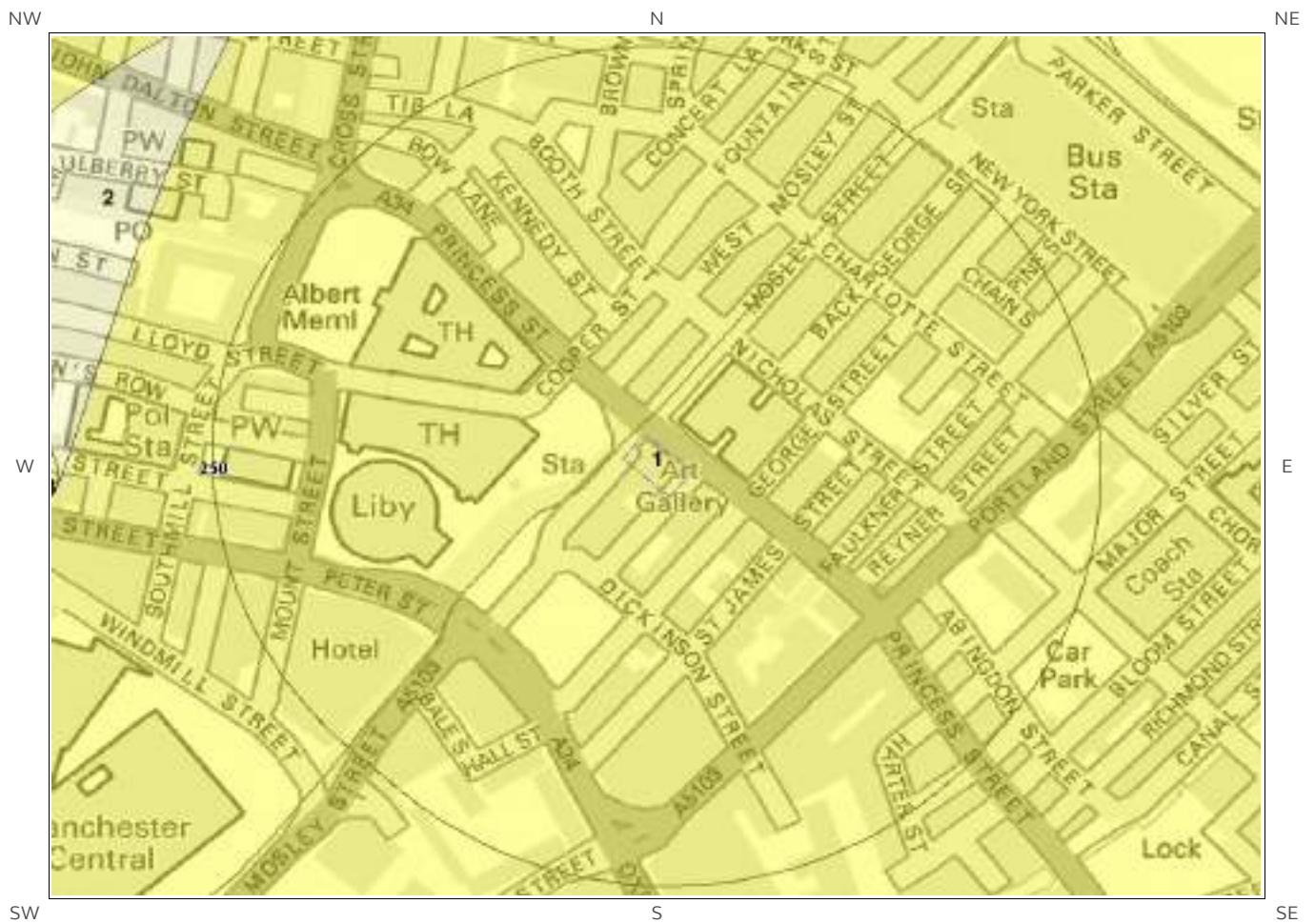


Collapsible Deposits Legend

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6.6 Running Sand map



Running Sand Legend

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6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site* boundary? Very Low

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

* This includes an automatically generated 50m buffer zone around the site

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

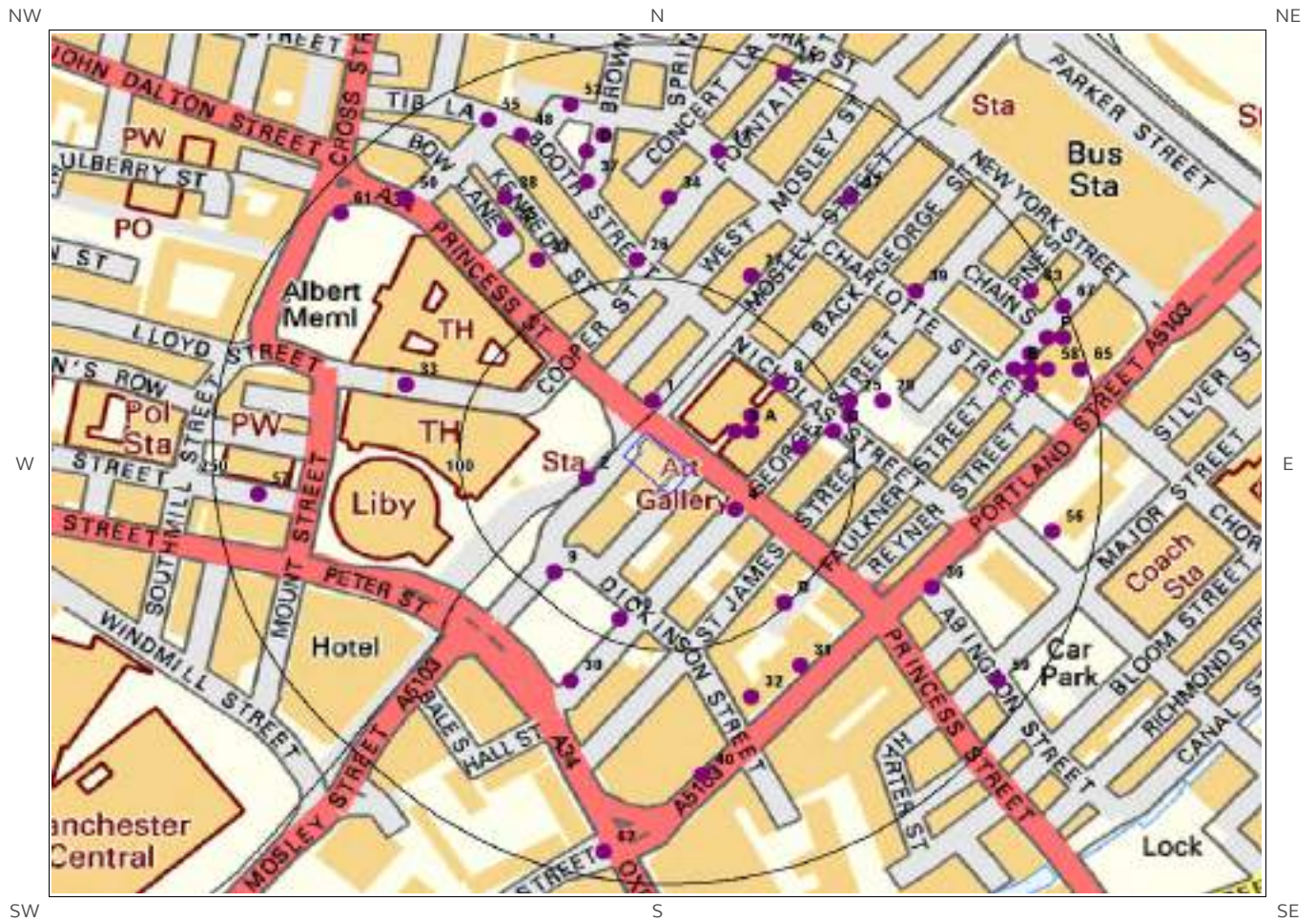
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

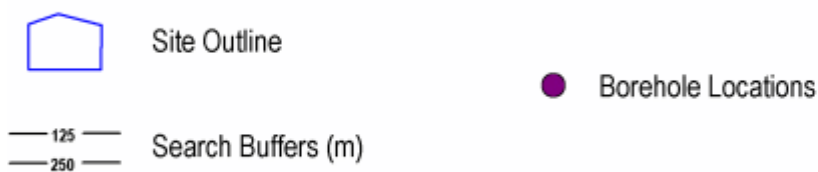
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records map



Borehole Records Legend

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7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary:

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ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	21.0	N	384020 398030	SJ89NW3574	-1.0	MOSLEY STREET SEWER RECONSTRUCTION 3
2	27.0	SW	383980 397980	SJ89NW3575	-1.0	MOSLEY STREET SEWER RECONSTRUCTION 4
3	35.0	NE	384070 398010	SJ89NW3538	-1.0	ATHENAEUM LINK BH1
4	36.0	SE	384070 397960	SJ89NW3599	-1.0	GEORGE STREET SEWER REPLACEMENT SCHEME 4
5A	43.0	NE	384080 398010	SJ89NW3539	-1.0	ATHENAEUM LINK BH2
6A	49.0	NE	384080 398020	SJ89NW3540	-1.0	ATHENAEUM LINK BH3
7	68.0	E	384110 398000	SJ89NW3281	196.6	POST OFFICE GEORGE ST. MANCHESTER
8	77.0	NE	384098 398042	SJ89NW208	-1.0	G.P.O. MANCHESTER
9	84.0	SW	383960 397920	SJ89NW3576	-1.0	MOSLEY STREET SEWER RECONSTRUCTION 5
10	86.0	S	384000 397890	SJ89NW3600	-1.0	GEORGE STREET SEWER REPLACEMENT SCHEME 5
11C	90.0	E	384130 398010	SJ89NW3598	-1.0	GEORGE STREET SEWER REPLACEMENT SCHEME 3
12B	98.0	SE	384100 397900	SJ89NW3664	9.8	PORTLANDS STREET NW TELECOMS BOARD HQ 9
13B	98.0	SE	384100 397900	SJ89NW3657	10.5	PORTLANDS STREET NW TELECOMS BOARD HQ 2
14B	98.0	SE	384100 397900	SJ89NW3661	10.2	PORTLANDS STREET NW TELECOMS BOARD HQ 6
15B	98.0	SE	384100 397900	SJ89NW3666	11.0	PORTLANDS STREET NW TELECOMS BOARD HQ 11
16B	98.0	SE	384100 397900	SJ89NW3659	10.2	PORTLANDS STREET NW TELECOMS BOARD HQ 4
17B	98.0	SE	384100 397900	SJ89NW3663	10.5	PORTLANDS STREET NW TELECOMS BOARD HQ 8
18B	98.0	SE	384100 397900	SJ89NW3658	11.5	PORTLANDS STREET NW TELECOMS BOARD HQ 3
19B	98.0	SE	384100 397900	SJ89NW3667	10.8	PORTLANDS STREET NW TELECOMS BOARD HQ 12
20B	98.0	SE	384100 397900	SJ89NW3662	10.3	PORTLANDS STREET NW TELECOMS BOARD HQ 7
21B	98.0	SE	384100 397900	SJ89NW3665	11.0	PORTLANDS STREET NW TELECOMS BOARD HQ 10

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
22B	98.0	SE	384100 397900	SJ89NW3656	11.0	PORTLANDS STREET NW TELECOMS BOARD HQ 1
23B	98.0	SE	384100 397900	SJ89NW3660	11.5	PORTLANDS STREET NW TELECOMS BOARD HQ 5
24C	102.0	E	384140 398020	SJ89NW3705	-1.0	CHINESE CAR PARK MANCHESTER 1A
25	106.0	NE	384140 398030	SJ89NW3706	-1.0	CHINESE CAR PARK MANCHESTER 2
26	111.0	N	384010 398120	SJ89NW3547	-1.0	CLARENCE STREET / BOOTH STREET / BOW LANE 4
27	119.0	NE	384080 398110	SJ89NW3573	-1.0	MOSLEY STREET SEWER RECONSTRUCTION 2
28	124.0	E	384160 398030	SJ89NW3707	-1.0	CHINESE CAR PARK MANCHESTER 3
29	129.0	NW	383950 398120	SJ89NW4121	-1.0	KENNEDY STREET MANCHESTER 2
30	134.0	SW	383970 397850	SJ89NW3601	-1.0	GEORGE STREET SEWER REPLACEMENT SCHEME 6
31	135.0	SE	384110 397860	SJ89NW1319	-1.0	PORTLAND STREET 3
32	139.0	S	384080 397840	SJ89NW296	-1.0	NO DETAILS
33	140.0	W	383870 398040	SJ89NW3259	-1.0	TOWN HALL MANCHESTER OB
34	151.0	N	384030 398160	SJ89NW3623	-1.0	FOUNTAIN STREET MAIN DRAINAGE 1
35	157.0	NW	383930 398140	SJ89NW4120	-1.0	KENNEDY STREET MANCHESTER 1
36	165.0	SE	384190 397910	SJ89NW1320	-1.0	PORTLAND STREET 4/4A
37	165.0	N	383980 398170	SJ89NW3548	-1.0	CLARENCE STREET / BOOTH STREET / BOW LANE 5
38	174.0	NW	383930 398160	SJ89NW3549	-1.0	CLARENCE STREET / BOOTH STREET / BOW LANE 6
39	177.0	NE	384180 398100	SJ89NW3597	-1.0	GEORGE STREET SEWER REPLACEMENT SCHEME 2
40	181.0	S	384050 397790	SJ89NW1318	-1.0	PORTLAND STREET 2
41D	185.0	N	383980 398190	SJ89NW954	-1.0	52-58 BROWN STREET MANCHESTER 1
42	186.0	N	384060 398190	SJ89NW3624	-1.0	FOUNTAIN STREET MAIN DRAINAGE 2
43D	193.0	N	383990 398200	SJ89NW1410	-1.0	BOOTH STREET MANCHESTER 4
44D	193.0	N	383990 398200	SJ89NW1408	-1.0	BOOTH STREET MANCHESTER 2
45D	193.0	N	383990 398200	SJ89NW1409	-1.0	BOOTH STREET MANCHESTER 3
46D	193.0	N	383990 398200	SJ89NW1407	-1.0	BOOTH STREET MANCHESTER 1
47	195.0	NE	384140 398160	SJ89NW3572	-1.0	MOSLEY STREET SEWER RECONSTRUCTION 1

ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
48	206.0	N	383940 398200	SJ89NW3546	-1.0	CLARENCE STREET / BOOTH STREET / BOW LANE 3
49E	207.0	E	384240 398050	SJ89NW1577	18.25	PORTLAND STREET MANCHESTER 1
50	210.0	NW	383870 398160	SJ89NW3544	-1.0	CLARENCE STREET / BOOTH STREET / BOW LANE 1
51E	213.0	E	384250 398040	SJ89NW1586	18.89	PORTLAND STREET MANCHESTER 10
52	216.0	N	383970 398220	SJ89NW955	-1.0	52-58 BROWN STREET MANCHESTER 2
53E	216.0	E	384250 398050	SJ89NW1582	12.19	PORTLAND STREET MANCHESTER 6
54E	219.0	E	384250 398060	SJ89NW1578	12.37	PORTLAND STREET MANCHESTER 2
55	223.0	NW	383920 398210	SJ89NW3545	-1.0	CLARENCE STREET / BOOTH STREET / BOW LANE 2
56	223.0	E	384263 397946	SJ89NW317	12.19	PORTLAND STREET & CAR PARK. BH'S 6
57	224.0	W	383780 397970	SJ89NW3531	-1.0	BOOTH STREET SEWER RENEWAL SCHEME 4
58	226.0	E	384260 398050	SJ89NW1587	12.64	PORTLAND STREET MANCHESTER 11
59	230.0	SE	384230 397850	SJ89NW3513	-1.0	BLOOM STREET/ABINGDON STREET 5
60F	232.0	E	384260 398070	SJ89NW1579	13.71	PORTLAND STREET MANCHESTER 3
61	232.0	NW	383830 398150	SJ89NW1277	-1.0	ALBERT SQUARE A
62	233.0	S	383990 397740	SJ89NW1317	-1.0	PORTLAND STREET 1
63	236.0	NE	384250 398100	SJ89NW295	-1.0	NO DETAILS
64F	241.0	E	384270 398070	SJ89NW1583	19.38	PORTLAND STREET MANCHESTER 7
65	245.0	E	384280 398050	SJ89NW1588	13.71	PORTLAND STREET MANCHESTER 12
66	245.0	N	384100 398240	SJ89NW3625	-1.0	FOUNTAIN STREET MAIN DRAINAGE 3
67	249.0	NE	384270 398090	SJ89NW1580	13.62	PORTLAND STREET MANCHESTER 4

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#7: scans.bgs.ac.uk/sobi_scans/boreholes/1045475
#12B: scans.bgs.ac.uk/sobi_scans/boreholes/1045858
#13B: scans.bgs.ac.uk/sobi_scans/boreholes/1045851
#14B: scans.bgs.ac.uk/sobi_scans/boreholes/1045855
#15B: scans.bgs.ac.uk/sobi_scans/boreholes/1045860
#16B: scans.bgs.ac.uk/sobi_scans/boreholes/1045853
#17B: scans.bgs.ac.uk/sobi_scans/boreholes/1045857
#18B: scans.bgs.ac.uk/sobi_scans/boreholes/1045852
#19B: scans.bgs.ac.uk/sobi_scans/boreholes/1045861
#20B: scans.bgs.ac.uk/sobi_scans/boreholes/1045856
#21B: scans.bgs.ac.uk/sobi_scans/boreholes/1045859
#22B: scans.bgs.ac.uk/sobi_scans/boreholes/1045850
#23B: scans.bgs.ac.uk/sobi_scans/boreholes/1045854
#32: scans.bgs.ac.uk/sobi_scans/boreholes/1042455
#33: scans.bgs.ac.uk/sobi_scans/boreholes/1045453
#49E: scans.bgs.ac.uk/sobi_scans/boreholes/1043771
#51E: scans.bgs.ac.uk/sobi_scans/boreholes/1043780
#53E: scans.bgs.ac.uk/sobi_scans/boreholes/1043776
#54E: scans.bgs.ac.uk/sobi_scans/boreholes/1043772
#56: scans.bgs.ac.uk/sobi_scans/boreholes/1042483
#58: scans.bgs.ac.uk/sobi_scans/boreholes/1043781
#60F: scans.bgs.ac.uk/sobi_scans/boreholes/1043773
#63: scans.bgs.ac.uk/sobi_scans/boreholes/1042454
#64F: scans.bgs.ac.uk/sobi_scans/boreholes/1043777
#65: scans.bgs.ac.uk/sobi_scans/boreholes/1043782
#67: scans.bgs.ac.uk/sobi_scans/boreholes/1043774

8 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

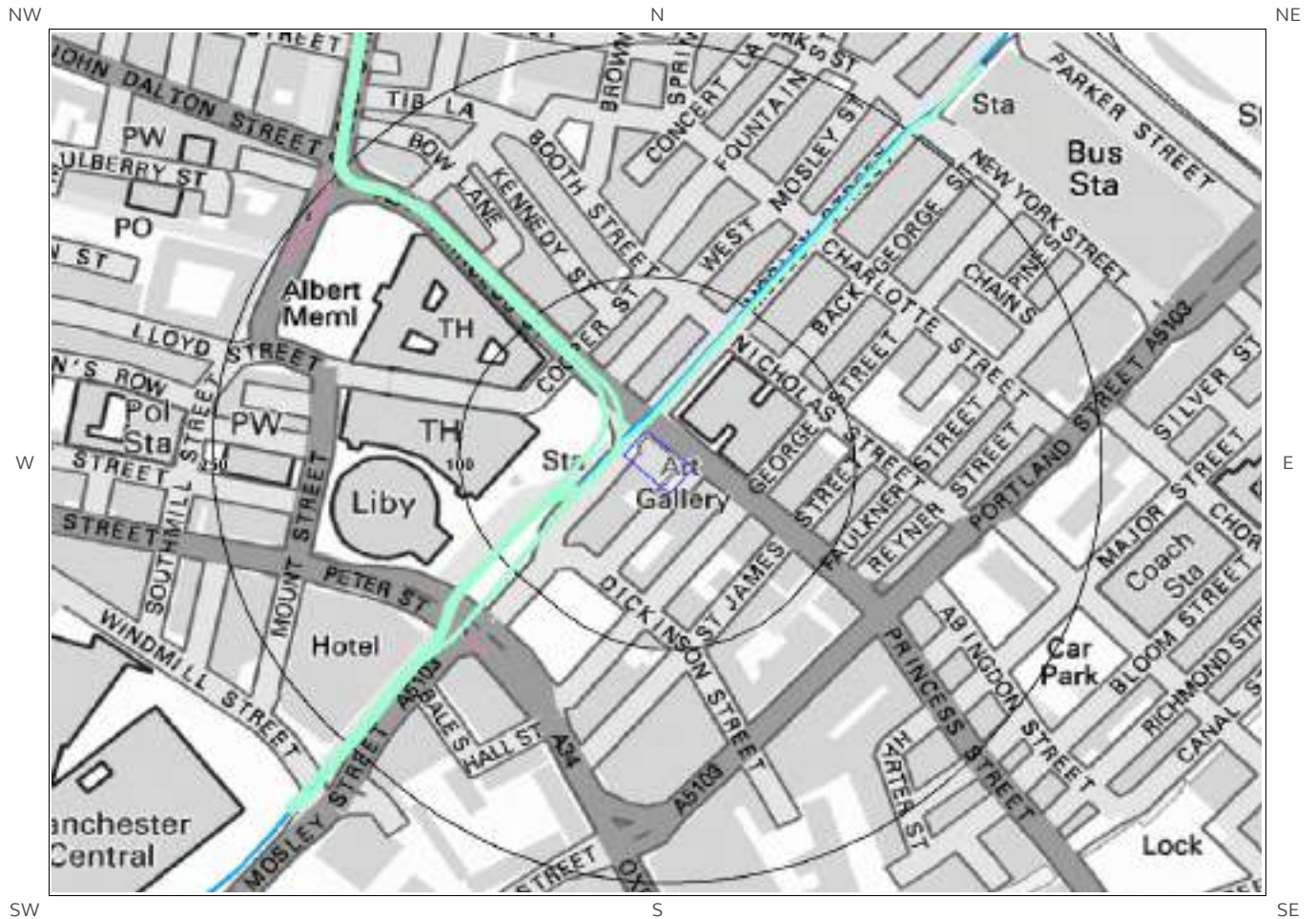
8

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
0.0	On Site	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
3.0	W	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
3.0	W	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
5.0	NW	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
5.0	NW	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
28.0	NE	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg
30.0	NE	RuralSoil	15 - 25 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg	100 - 200 mg/kg

*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? No

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1	149	SW	383907 397878	Tramway Sidings	1891
2	240	NW	383812 398146	Tramway Sidings	1891

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? Yes

Distance (m)	Direction	Name	Type
4	NW	Metrolink	Tram
4	NW	Metrolink	Tram
6	NW	Second City Crossing (2016)	Construction
6	NW	Second City Crossing (2016)	Construction
7	NW	Not given	Multi Track
7	NW	Not given	Multi Track
18	NW	Second City Crossing (2016)	Construction
18	NW	Second City Crossing (2016)	Construction
35	SW	Not given	Tram
35	SW	Not given	Tram

Multiple sections of the same track may be listed in the detail above
Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? Yes

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

Contact Details

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Standard Terms and Conditions

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<https://www.groundsure.com/terms-and-conditions-sept-2016/>



Tier Environmental

Richmond House, Sandpiper Court,
Chester Business Park, CH4 9QZ

Groundsure
Reference:

GS-4529291

Your Reference: PE01812_Mosley_Street_Manchester

Report Date

30 Nov 2017

Report Delivery
Method:

Email - pdf

Enviro Insight

Address: 79, MOSLEY STREET, MANCHESTER, M2 3LQ

Dear Sir/ Madam,

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

If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

A handwritten signature in black ink, appearing to be "Andy O.", written in a cursive style.

Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Address: 79, MOSLEY STREET, MANCHESTER, M2 3LQ

Date: 30 Nov 2017

Reference: GS-4529291

Client: Tier Environmental

NW

N

NE

W

E



SW

S

SE

Aerial Photograph Capture date: 11-Jun-2015

Grid Reference: 384026,397989

Site Size: 0.08ha

Report Reference: GS-4529291

Client Reference: PE01812_Mosley_Street_Manchester

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Overview of Findings

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Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	0	0	3	123
1.2 Additional Information – Historical Tank Database	0	0	4	47
1.3 Additional Information – Historical Energy Features Database	0	0	5	50
1.4 Additional Information – Historical Petrol and Fuel Site Database	0	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	0	0	5	16
1.6 Potentially Infilled Land	0	0	1	21

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

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	0	0	0	2
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	1	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	1	10

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	0	2	34	Not searched
4.2 Records of Petrol and Fuel Sites	0	0	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology						
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site?	No					
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site?	Yes					
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.						

Section 6: Hydrogeology and Hydrology	0-500m					
6.1 Are there any records of Strata Classification in the Superficial Geology within 500m of the study site?	Yes					
6.2 Are there any records of Strata Classification in the Bedrock Geology within 500m of the study site?	Yes					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	2	2	6	34
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	2
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	12
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	1	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	0	Not searched	Not searched

Section 6: Hydrogeology and Hydrology	0-500m					
	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site?	No	No	No	No	Yes	Yes
6.10 Detailed River Network entries within 500m of the site	0	0	0	3	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	No	Not searched	Not searched	Not searched

Section 7: Flooding						
7.1 Are there any Environment Agency Zone 2 floodplains within 250m of the study site?	No					
7.2 Are there any Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	No					
7.3 What is the Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site?	Very Low					
7.4 Are there any Flood Defences within 250m of the study site?	No					
7.5 Are there any areas benefiting from Flood Defences within 250m of the study site?	No					
7.6 Are there any areas used for Flood Storage within 250m of the study site?	No					
7.7 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	Limited potential					
7.8 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Low					

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	0
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	0
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	1	1	1
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards

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

Section 10: Mining

10.1 Are there any coal mining areas within 75m of the study site?	Yes
10.2 Are there any Non-Coal Mining areas within 50m of the study site boundary?	No
10.3 Are there any brine affected areas within 75m of the study site?	No

Using this report

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

1. Historical Industrial Sites

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

2. Environmental Permits, Incidents and Registers

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

3. Landfills and Other Waste Sites

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

4. Current Land Uses

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

5. Geology

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

6. Hydrogeology and Hydrology

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

7. Flooding

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

8. Designated Environmentally Sensitive Sites

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

9. Natural Hazards

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

10. Mining

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

11. Contacts

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

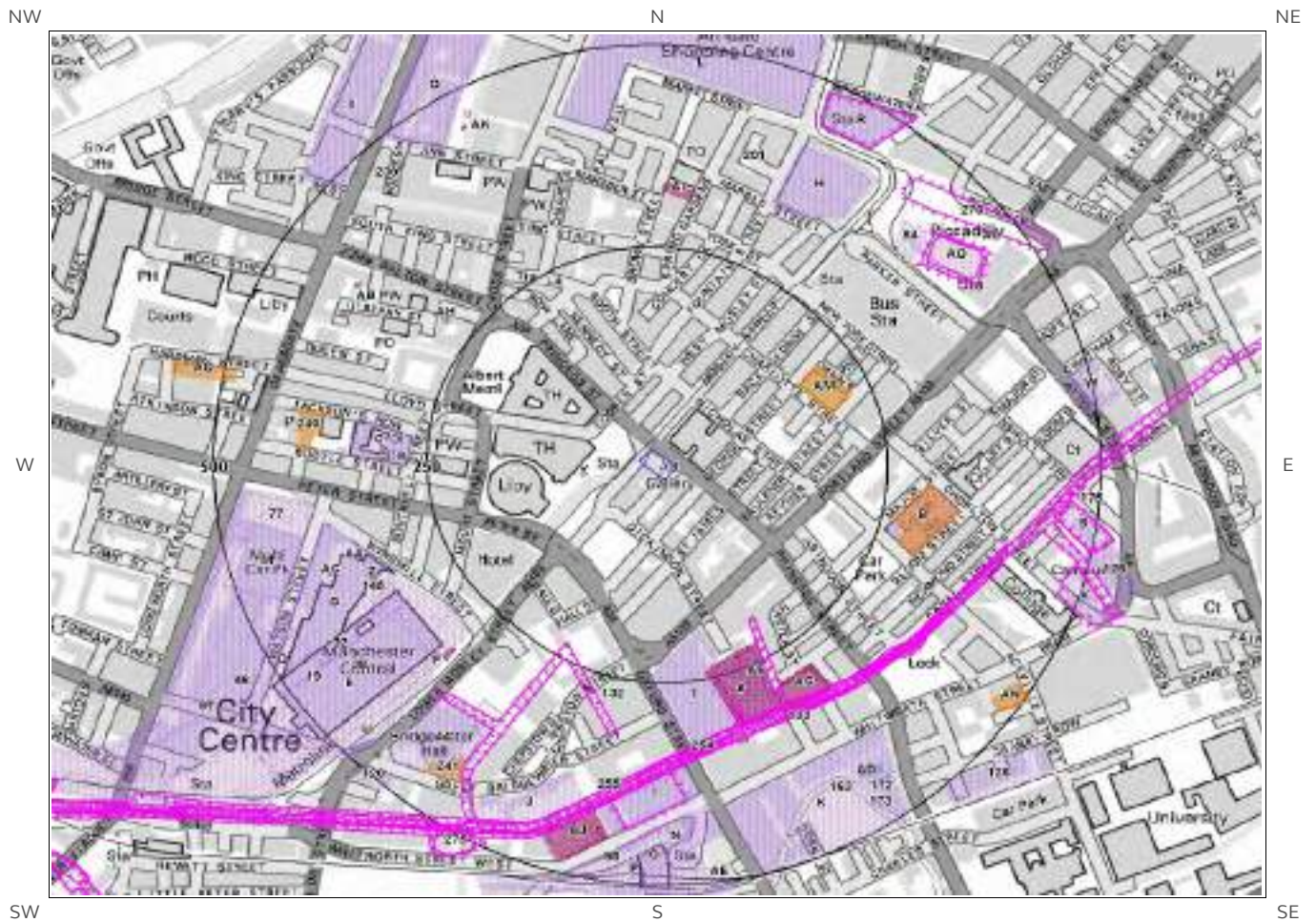
Note: Maps

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

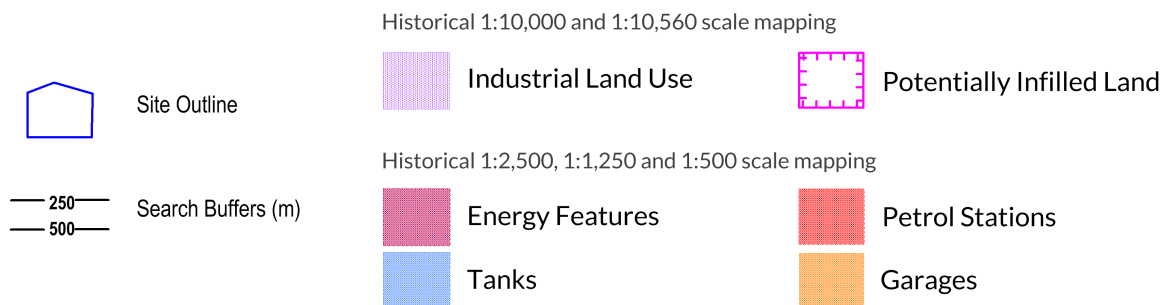
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

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

1. Historical Land Use



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1. Historical Industrial Sites

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

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

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 126

ID	Distance [m]	Direction	Use	Date
1	190	S	Unspecified Commercial/Industrial	1923
2A	233	SE	Electricity Station	1923
3A	234	SE	Electricity Station	1916
4B	258	E	Bus Station	1978
5B	258	E	Bus Station	1988
6B	258	E	Bus Station	1985
7B	258	E	Bus Station	1994
8C	267	W	Police Station	1994
9C	267	W	Police Station	1988
10C	267	W	Police Station	1971
11C	267	W	Police Station	1956
12C	267	W	Police Station	1978
13C	267	W	Police Station	1985
14E	281	SW	Railway Station	1956
15D	287	SW	Railway Sidings	1938
16D	287	SW	Railway Sidings	1932
17D	287	SW	Railway Sidings	1905
18D	287	SW	Railway Sidings	1916
19	323	SW	Railway Sidings	1896
20E	324	SW	Disused Station	1978
21F	325	SW	Railway Building	1938
22F	325	SW	Railway Building	1932
23G	327	SW	Goods Station	1923
24H	332	NE	Unspecified Commercial/Industrial	1938
25G	332	W	Goods Station	1956
26H	332	NE	Unspecified Commercial/Industrial	1931
27H	332	NE	Unspecified Commercial/Industrial	1916
28G	334	SW	Goods Station	1916
29G	334	SW	Goods Station	1905
30G	334	SW	Goods Station	1932
31G	334	SW	Goods Station	1938
32	335	W	Railway Station	1896

33E	336	SW	Railway Station	1932
34E	336	SW	Railway Station	1905
35E	336	SW	Railway Station	1923
36E	336	SW	Railway Station	1916
37E	336	SW	Railway Station	1938
38	340	SW	Disused Station	1985
39I	351	S	Hospital	1971
40I	351	S	Hospital	1978
41I	351	S	Hospital	1956
42I	357	S	Hospital	1916
43I	358	S	Coal Wharf	1851
44	361	SW	Cotton Mills	1851
45I	362	S	Hospital	1923
46	362	SW	Railway Sidings	1923
47I	366	S	Hospital	1938
48I	366	S	Hospital	1932
49J	376	S	Corporation Yard	1923
50J	376	S	Corporation Yard	1916
51J	376	S	Corporation Yard	1932
52J	376	S	Corporation Yard	1905
53J	376	S	Corporation Yard	1938
54	376	NE	Bus Station	1978
55	384	W	Railway Buildings	1923
56AQ	390	NE	Unspecified Pit	1956
57K	390	SE	Unspecified Mills	1932
58K	390	SE	Unspecified Mills	1938
59K	390	SE	Unspecified Mills	1916
60K	390	SE	Unspecified Commercial/Industrial	1905
61K	390	SE	Unspecified Commercial/Industrial	1923
62L	397	N	Bus Station	1988
63L	397	N	Bus Station	1994
64L	397	N	Bus Station	1985
65N	403	S	Gas Works	1851
66M	406	W	Goods Station	1971
67M	406	W	Disused Goods Station	1978
68M	406	W	Goods Station	1956
69M	411	W	Goods Station	1916
70M	411	W	Goods Station	1932
71M	411	W	Goods Station	1923
72M	411	W	Goods Station	1905
73M	411	W	Goods Station	1938
74N	411	S	Railway Station	1988
75N	411	S	Railway Station	1994
76N	412	S	Railway Building	1956

77	413	W	Railway Buildings	1923
78O	417	S	Railway Station	1896
79O	420	S	Railway Sidings	1988
80O	420	S	Railway Sidings	1985
81O	420	S	Railway Sidings	1994
82O	420	S	Railway Station	1916
83O	420	S	Railway Station	1938
84O	420	S	Railway Station	1932
85O	420	S	Railway Station	1905
86P	420	S	Railway Sidings	1905
87P	420	S	Railway Sidings	1916
88P	420	S	Railway Sidings	1932
89P	420	S	Railway Sidings	1938
90O	420	S	Railway Station	1923
91P	420	S	Railway Sidings	1923
92O	422	S	Railway Station	1956
93N	422	S	Tanks	1851
94O	432	S	Railway Station	1971
95O	432	S	Railway Station	1978
96O	432	S	Railway Station	1985
97	438	SW	Railway Sidings	1956
98	443	S	Railway Sidings	1896
99R	443	NE	Unspecified Commercial/Industrial	1938
100Q	443	NW	Unspecified Commercial/Industrial	1894
101Q	445	NW	Unspecified Commercial/Industrial	1938
102Q	446	NW	Unspecified Commercial/Industrial	1906
103R	447	NE	Unspecified Ground Workings	1931
104S	449	E	Unspecified Wharf	1923
105S	449	E	Unspecified Wharf	1915
106Q	450	NW	Unspecified Commercial/Industrial	1916
107Q	450	NW	Unspecified Commercial/Industrial	1931
108T	454	SW	Railway Sidings	1971
109T	454	SW	Railway Sidings	1978
110T	454	SW	Railway Sidings	1985
111U	460	SW	Railway Building	1905
112U	460	SW	Railway Building	1938
113U	460	SW	Railway Building	1923
114U	460	SW	Railway Building	1932
115U	460	SW	Railway Building	1916
116W	469	E	Infirmary	1923
117V	474	E	Unspecified Wharf	1890

118V	474	E	Ice Works	1915
119W	478	E	Infirmery	1915
120	481	SW	Bus Station	1978
121X	484	NW	Unspecified Commercial/Industrial	1938
122X	486	NW	Unspecified Commercial/Industrial	1906
123X	488	NW	Unspecified Commercial/Industrial	1931
124X	488	NW	Unspecified Commercial/Industrial	1916
125	495	E	Unspecified Works	1923
126	497	SE	Unspecified Commercial/Industrial	1923

1.2 Additional Information – Historical Tank Database

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

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

51

ID	Distance (m)	Direction	Use	Date
127Y	64	W	Unspecified Tank	1994
128Y	64	W	Unspecified Tank	1999
129Y	64	W	Unspecified Tank	1995
130Y	64	W	Unspecified Tank	1996
131AF	260	SE	Unspecified Tank	1891
132	274	S	Unspecified Tank	1891
133	335	SE	Unspecified Tank	1891
134Z	342	SW	Unspecified Tank	1995
135Z	342	SW	Unspecified Tank	1994
136Z	342	SW	Unspecified Tank	1999
137Z	342	SW	Unspecified Tank	1996
138Z	343	SW	Unspecified Tank	1988
139Z	344	SW	Unspecified Tank	1986
140Z	346	SW	Unspecified Tank	1995
141Z	346	SW	Unspecified Tank	1994
142Z	346	SW	Unspecified Tank	1999
143Z	346	SW	Unspecified Tank	1996
144Z	347	SW	Unspecified Tank	1988
145	349	SW	Unspecified Tank	1986
146AA	354	W	Unspecified Tank	1995
147AA	354	W	Unspecified Tank	1999
148AA	354	W	Unspecified Tank	1994

149AA	354	W	Unspecified Tank	1996
150AA	354	W	Unspecified Tank	1988
151AB	375	NW	Tanks	1995
152AB	376	NW	Unspecified Tank	1989
153AC	386	W	Unspecified Tank	1994
154AC	386	W	Unspecified Tank	1995
155AC	386	W	Unspecified Tank	1999
156AC	386	W	Unspecified Tank	1996
157AC	387	W	Unspecified Tank	1988
158AC	388	W	Unspecified Tank	1986
159AD	430	SE	Unspecified Tank	1891
160AD	430	SE	Tanks	1891
161AD	431	SE	Unspecified Tank	1893
162AD	431	SE	Unspecified Tank	1891
163	434	SE	Tanks	1891
164AD	438	SE	Unspecified Tank	1891
165AD	445	SE	Unspecified Tank	1891
166AD	447	SE	Unspecified Tank	1891
167AD	449	SE	Unspecified Tank	1893
168AD	449	SE	Unspecified Tank	1891
169AD	450	SE	Unspecified Tank	1891
170AD	450	SE	Unspecified Tank	1891
171AD	451	SE	Unspecified Tank	1891
172	457	SE	Tanks	1891
173	473	SE	Tanks	1891
174U	481	SW	Unspecified Tank	1891
175	488	E	Unspecified Tank	1891
176AE	491	S	Unspecified Tank	1955
177AE	491	S	Unspecified Tank	1953

1.3 Additional Information – Historical Energy Features Database

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

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

55

ID	Distance (m)	Direction	Use	Date
178A	226	SE	Electricity Station	1950
179AF	227	SE	Electricity Station	1948
180AF	227	SE	Electricity Station	1955
181A	230	SE	Electricity Station	1908
182A	231	SE	Electricity Station	1922
183AH	282	NW	Electricity Substation	1899

184AG	283	SE	Electricity Station	1950
185AG	285	SE	Electricity Station	1955
186AH	286	NW	Electricity Substation	1995
187AI	311	N	Electricity Substation	1953
188AI	311	N	Electricity Substation	1953
189F	318	SW	Electricity Substation	1985
190F	319	SW	Electricity Substation	1948
191F	319	SW	Electricity Substation	1973
192F	319	SW	Electricity Substation	1951
193F	320	SW	Electricity Substation	1948
194F	320	SW	Electricity Substation	1963
195F	320	SW	Electricity Substation	1979
196AI	322	N	Electricity Substation	1953
197AI	322	N	Electricity Substation	1967
198AI	322	N	Electricity Substation	1968
199AI	322	N	Electricity Substation	1953
200AI	322	N	Electricity Substation	1948
201	377	N	Electricity Substation	1995
202AB	393	NW	Electricity Substation	1986
203AB	393	NW	Electricity Substation	1980
204AB	393	NW	Electricity Substation	1995
205AB	394	NW	Electricity Substation	1989
206AJ	414	S	Hydraulic Power Station	1979
207AJ	414	S	Hydraulic Power Station	1948
208AJ	416	S	Hydraulic Power Station	1948
209AJ	416	S	Hydraulic Power Station	1973
210AJ	416	S	Hydraulic Power Station	1951
211AJ	427	S	Hydraulic Power Station	1932
212AJ	433	S	Electricity Substation	1979
213AJ	433	S	Electricity Substation	1985
214AJ	434	S	Electricity Substation	1988
215AJ	434	S	Electricity Substation	1948
216AJ	434	S	Electricity Substation	1973
217AJ	434	S	Electricity Substation	1951
218AJ	435	S	Electricity Substation	1995
219AJ	435	S	Electricity Substation	1994
220AJ	435	S	Electricity Substation	1999
221AJ	435	S	Electricity Substation	1996
222AK	443	NW	Electricity Substation	1980
223AK	452	NW	Electricity Substation	1995
224AK	452	NW	Electricity Substation	1970
225AK	452	NW	Electricity Substation	1989
226AK	452	NW	Electricity Substation	1955
227AK	452	NW	Electricity Substation	1948
228AK	453	NW	Electricity Substation	1957
229AK	453	NW	Electricity Substation	1986

230	455	NW	Electricity Substation	1986
231AL	464	NE	Electricity Substation	1995
232AL	465	NE	Electricity Substation	1986

1.4 Additional Information – Historical Petrol and Fuel Site Database

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

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

Database searched and no data found.

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

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

Records of historical garage and motor vehicle repair sites within 500m of the search boundary: 21

ID	Distance (m)	Direction	Use	Date
233AM	175	NE	Garage	1953
234AM	175	NE	Garage	1948
235AM	175	NE	Garage	1965
236AM	175	NE	Garage	1953
237AM	175	NE	Garage	1953
238B	263	E	Coach Station and Car Park	1994
239B	263	E	Coach Station and Car Park	1998
240	376	W	Garage	1948
241	415	SW	Garage	1973
242AN	467	SE	Garage	1985
243AN	467	SE	Garage	1990
244AN	467	SE	Garage	1990
245AN	468	SE	Garage	1948
246AN	468	SE	Garage	1964
247AN	469	SE	Garage	1965
248AN	469	SE	Garage	1965
249AN	469	SE	Garage	1955
250AN	469	SE	Garage	1968
251AN	469	SE	Garage	1950
252AO	485	W	Garage	1970
253AO	485	W	Garage	1963

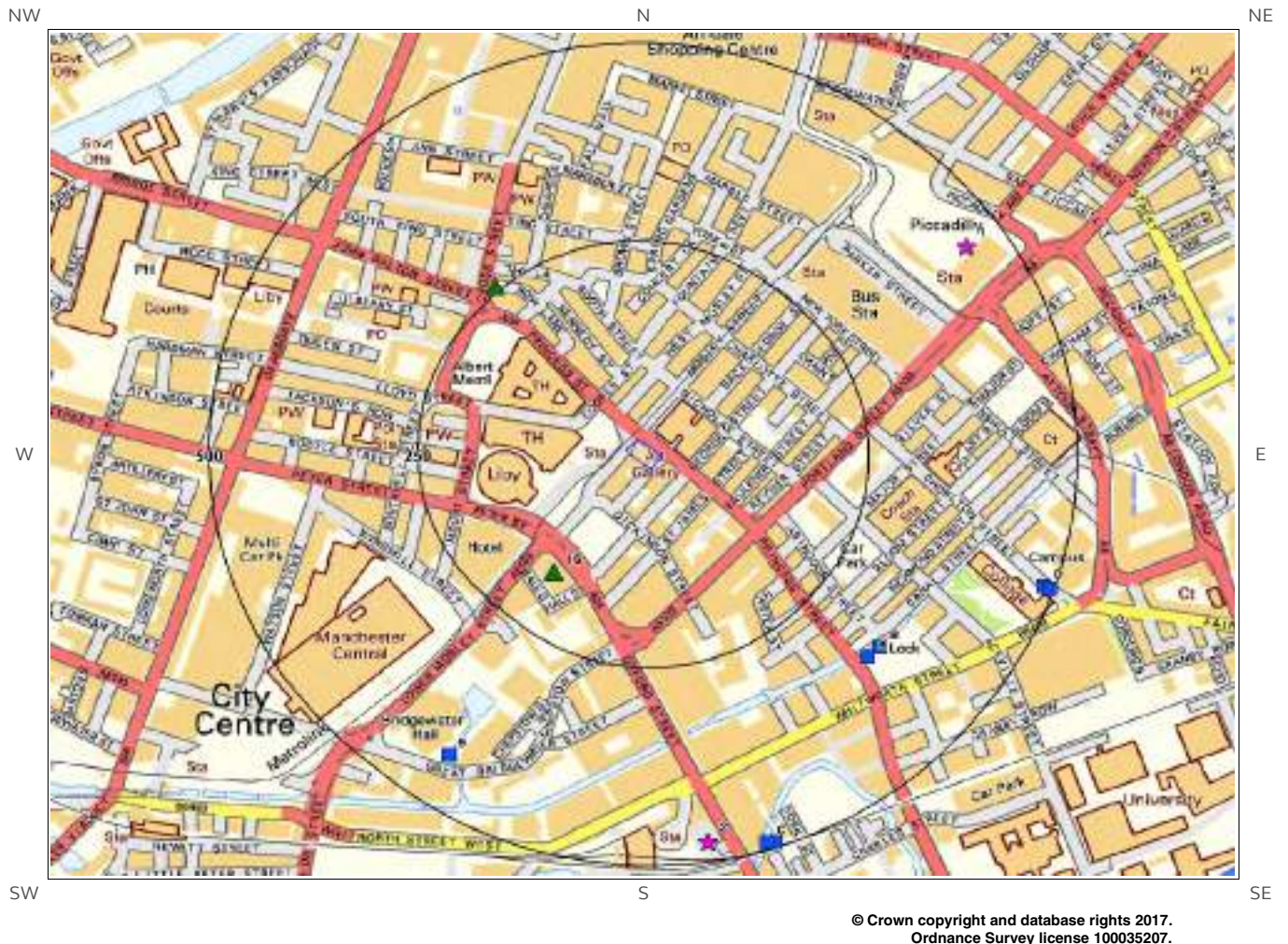
1.6 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 22

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

ID	Distance(m)	Direction	Use	Date
254	197	SE	Canal	1896
255	309	SE	Canal	1988
256	310	SE	Canal	1956
257AP	314	SE	Canal	1938
258AP	314	SE	Canal	1905
259AP	314	SE	Canal	1932
260AP	314	SE	Canal	1923
261AP	314	SE	Canal	1916
262I	358	S	Coal Wharf	1851
263AQ	383	NE	Pond	1971
264AQ	383	NE	Pond	1988
265AQ	383	NE	Pond	1978
266AQ	383	NE	Pond	1985
267AQ	383	NE	Pond	1994
268AQ	390	NE	Unspecified Pit	1956
269S	412	E	Ponds	1890
270	429	NE	Pond	1851
271R	447	NE	Unspecified Ground Workings	1931
272S	449	E	Unspecified Wharf	1923
273S	449	E	Unspecified Wharf	1915
274V	474	E	Unspecified Wharf	1890
275	491	SW	Pond	1851

2. Environmental Permits, Incidents and Registers Map



- | | | | | | |
|---|-------------------------------|---|--|---|---|
|  | Site Outline |  | Recorded Pollution Incident |  | RAS 3 & 4 Authorisations |
|  | Dangerous Substances (List 1) |  | Part A(1) Authorised Processes and Historic IPC Authorisations |  | Part A(2) and Part B Authorised Processes |
|  | Dangerous Substances (List 2) |  | COMAH / NIHHS Sites |  | Sites Determined as Contaminated Land |
|  | Water Industry Referrals |  | Licenced Discharge Consents |  | Hazardous Substance Consents and Enforcements |
|  | Red List Discharge Consents | | | | |

2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

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

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

2

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

ID	Distance (m)	Direction	NGR	Details
16	175	SW	383914 397838	Address: The Laundry Shop, Unit 5, Peter House, Oxford Street, Manchester Process: Dry Cleaning Status: Historical Permit Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified
17	255	NW	383846 398199	Address: Johnsons Cleaners UK Ltd, 59 Cross Street, Albert Square, Manchester, M2 4JW Process: Dry Cleaning Status: Current Permit Permit Type: Part B Enforcement: No Enforcement Notified Date of Enforcement: No Enforcement Notified Comment: No Enforcement Notified

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

13

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

ID	Distance (m)	Direction	NGR	Details
3A	351	SE	384291 397734	Address: GSHP SERVING ORIGIN DEVELOPMENT, 56 PRINCESS STREET, MANCHESTER, M1 6JA Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: NPSWQD004449 Permit Version: 1 Receiving Water: GROUNDWATER Status: NEW CONSENT (WRA 91, S88 & SCHD 10 AS AMENDED BY ENV ACT 1995) Issue date: 05/03/2009 Effective Date: 01-Apr-2009 Revocation Date: 15/04/2009
4A	351	SE	384291 397734	Address: GSHP SERVING ORIGIN DEVELOPMENT, 56 PRINCESS STREET, MANCHESTER, M1 6JA Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: NPSWQD004449 Permit Version: 2 Receiving Water: GROUNDWATER Status: NEW CONSENT (WRA 91, S88 & SCHD 10 AS AMENDED BY ENV ACT 1995) Issue date: 16/04/2009 Effective Date: 16-Apr-2009 Revocation Date: 31/03/2013
5A	351	SE	384291 397734	Address: GSHP SERVING ORIGIN DEVELOPMENT, 56 PRINCESS STREET, MANCHESTER, M1 6JA Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: NPSWQD004449 Permit Version: 3 Receiving Water: GROUNDWATER Status: SURRENDERED UNDER EPR 2010 Issue date: 28/10/2011 Effective Date: 01-Apr-2013 Revocation Date: 03/10/2014

ID	Distance (m)	Direction	NGR	Details	
6B	355	SE	384306 397746	Address: GSHP SERVING ORIGIN DEVELOPMENT, 56 PRINCESS STREET, MANCHESTER, M1 6JA Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: NPSWQD004449 Permit Version: 1	Receiving Water: GROUNDWATER Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 05/03/2009 Effective Date: 01-Apr-2009 Revocation Date: 15/04/2009
7B	355	SE	384306 397746	Address: GSHP SERVING ORIGIN DEVELOPMENT, 56 PRINCESS STREET, MANCHESTER, M1 6JA Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: NPSWQD004449 Permit Version: 2	Receiving Water: GROUNDWATER Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 16/04/2009 Effective Date: 16-Apr-2009 Revocation Date: 31/03/2013
8B	355	SE	384306 397746	Address: GSHP SERVING ORIGIN DEVELOPMENT, 56 PRINCESS STREET, MANCHESTER, M1 6JA Effluent Type: TRADE DISCHARGES - COOLING WATER Permit Number: NPSWQD004449 Permit Version: 3	Receiving Water: GROUNDWATER Status: SURRENDERED UNDER EPR 2010 Issue date: 28/10/2011 Effective Date: 01-Apr-2013 Revocation Date: 03/10/2014
9	433	SW	383790 397610	Address: GREAT BRIDGEWATER ST, OPPOSITE CHEPSTOW STREET, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - WATER COMPANY Permit Number: 01MAN0163 Permit Version: 1	Receiving Water: RIVER TIB CULVERT Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 15-Sep-1993 Revocation Date: 15/09/1993
10D	486	E	384502 397823	Address: CHORLTON STREET, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0162 Permit Version: 3	Receiving Water: DUKES TUNNEL Status: VARIED UNDER EPR 2010 Issue date: 05/02/2016 Effective Date: 05-Feb-2016 Revocation Date: -
11C	490	S	384170 397500	Address: 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-Jan-1995 Revocation Date: 01/01/1995
12C	490	S	384170 397500	Address: MALLARD ST OFF CHARLES ST, MANCHESTER, GREATER MANCHESTER 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-Sep-1994 Revocation Date: -
13C	493	S	384180 397500	Address: 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-Jan-1995 Revocation Date: -
14D	495	E	384510 397820	Address: CHORLTON STREET, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0162 Permit Version: 2	Receiving Water: DUKES TUNNEL Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03-Sep-2010 Revocation Date: 04/02/2016

ID	Distance (m)	Direction	NGR	Details	
15D	495	E	384510 397820	Address: CHORLTON STREET, MANCHESTER, GREATER MANCHESTER Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0162 Permit Version: 1	Receiving Water: DUKES TUNNEL Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01-Jan-1995 Revocation Date: 02/09/2010

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

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

0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

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

2

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

ID	Distance (m)	Direction	NGR	Details	
1	451	NE	384409 398252	Incident Date: 12-Feb-2002 Incident Identification: 57989 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
2	475	S	384100 397500	Incident Date: 12-Jul-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)

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

0

Database searched and no data found.

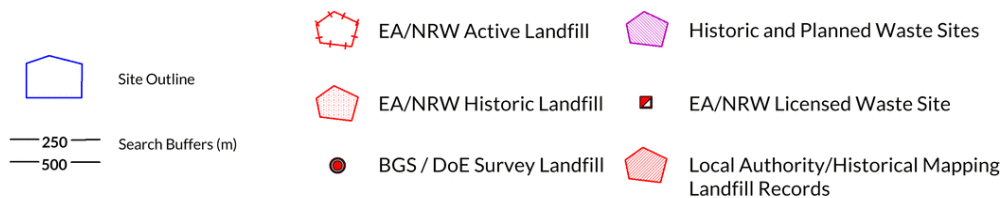
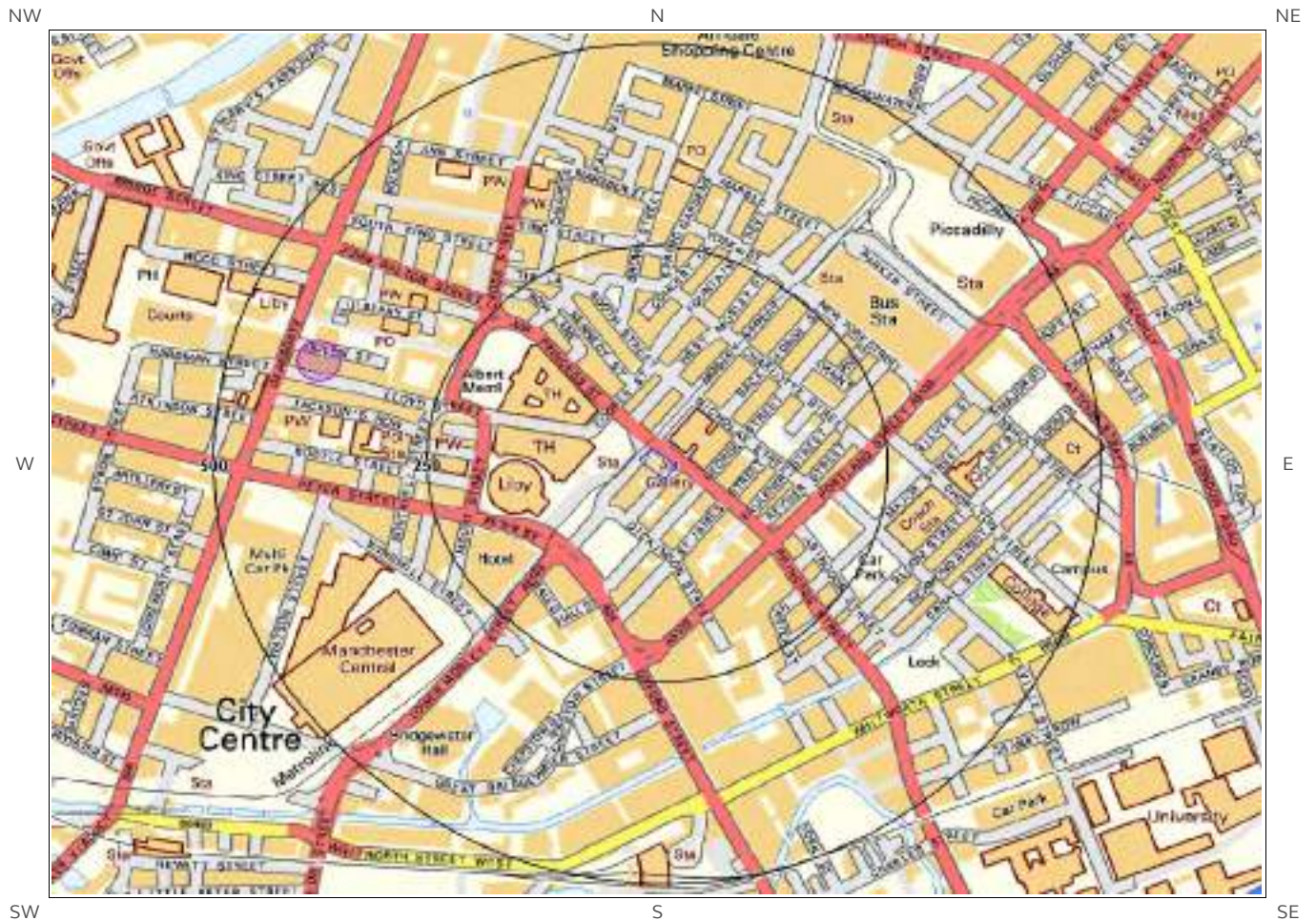
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site?

0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



3. Landfill and Other Waste Sites

3.1 Landfill Sites

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

0

Database searched and no data found.

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

2

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

ID	Distance (m)	Direction	NGR	Details
Not shown	1198	W	382700 397900	Site Address: Wilburn Street, Salford, Greater Manchester Waste Licence: - Site Reference: E052 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1405	N	383300 399400	Site Address: Overbridge Road, Salford, Greater Manchester Waste Licence: - Site Reference: E090 Waste Type: - Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -

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

0

Database searched and no data found.

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

0

Database searched and no data found.

3.2 Other Waste Sites

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

1

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

ID	Distance (m)	Direction	NGR	Details	
1	371	W	383626 398117	Type of Site: Recycling Storage Facility Site Address: St. Johns House, 2-10 Queen Street, MANCHESTER, Greater Manchester, M2 5JB Planning Application Reference: 088327/FO/2008/C1 Date: -	Further Details: Scheme comprises construction of recycling storage facility and bicycle storage facility including mesh fencing to lloyd street elevation. Construction - fencing site works. An application (ref: 088327/FO/2008/C1) for detailed planning permission was whdrawn from Manchester C.C. Planning decision obtained Data Source: Historic Planning Application Data Type: Point

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

11

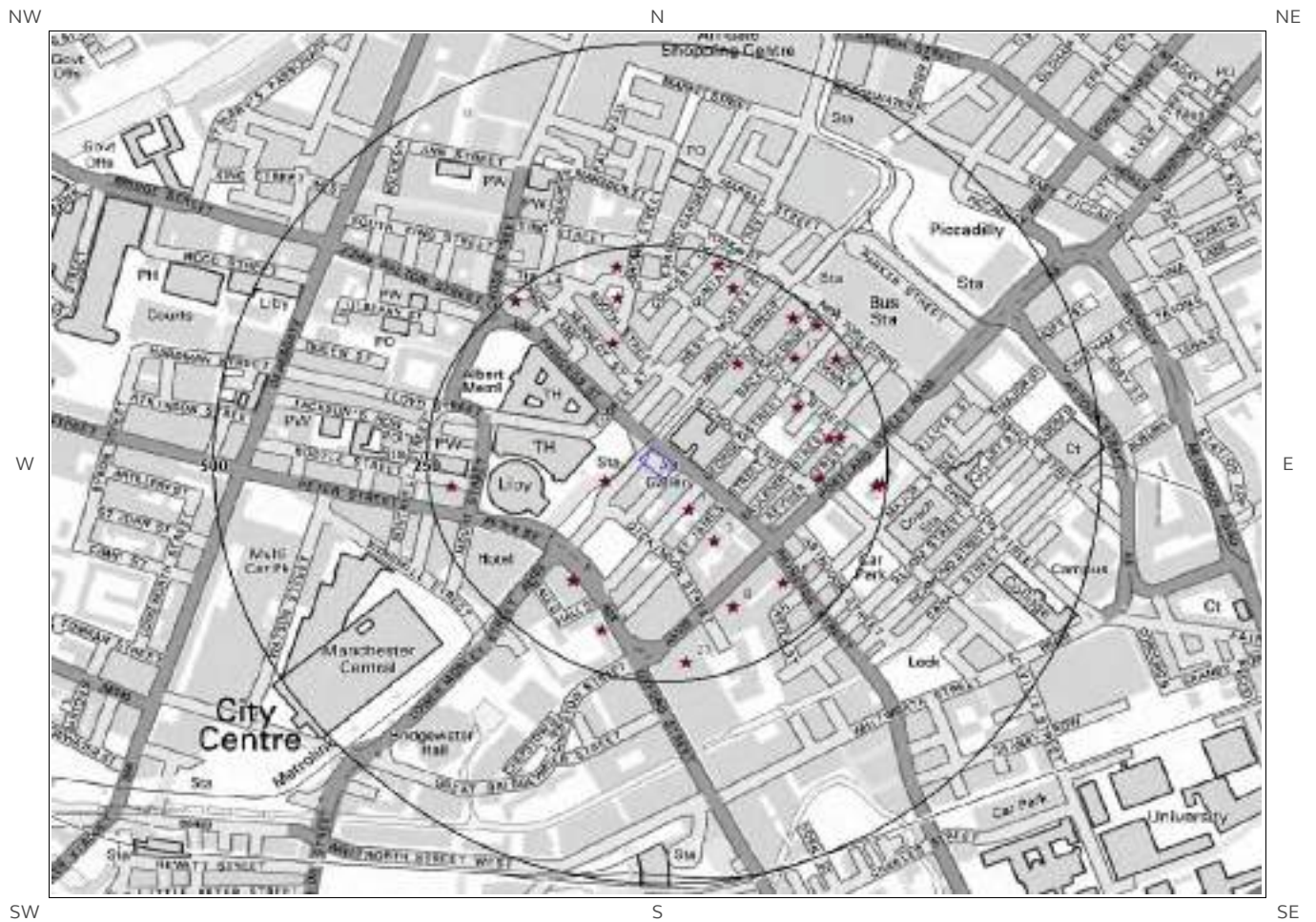
The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance (m)	Direction	NGR	Details	
Not shown	597	S	383998 397374	Site Address: Little Ireland Phase B, Great Marlborough Street, Manchester, M1 5NN Type: Mobile Plant Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: TER003 EPR reference: - Operator: Terra Vac (uk) Ltd Waste Management licence No: 50191 Annual Tonnage: 0.0	Issue Date: 17/06/2002 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Terra Vac (uk) Ltd Correspondence Address: Unit 7a, Whitwood Enterprise Park, Castleford, WF10 5PX

ID	Distance (m)	Direction	NGR	Details
Not shown	1122	NE	384771 398842	Site Address: - Type: ELV Facility Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: KER003 EPR reference: EA/EPR/TP3494CL/S002 Operator: Brendan J Kershaw & Winston Brown Waste Management licence No: 50328 Annual Tonnage: 0.0 Issue Date: 10/08/2004 Effective Date: - Modified: - Surrendered Date: 06/07/2010 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: French Parts Uk Correspondence Address: -
Not shown	1189	W	382841 397739	Site Address: Mobile Plant Permit Type: Mobile Plant Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: SOI005 EPR reference: EA/EPR/GP3895SV/T001 Operator: Soil & Water Remediation Ltd Waste Management licence No: 50480 Annual Tonnage: 0.0 Issue Date: 12/12/2006 Effective Date: 20/05/2010 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred Site Name: Mobile Plant Correspondence Address: -
Not shown	1189	W	382841 397739	Site Address: Medlock House, New Elm Road, Manchester, M3 4JW Type: Mobile Plant Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RES001 EPR reference: - Operator: Resource And Environmental Consultants Ltd Waste Management licence No: 50480 Annual Tonnage: 75000.0 Issue Date: 12/12/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: R E M Mobile Plant Correspondence Address: 25, Barnes Wallis Road, Segensworth East, Fareham, PO15 5TT
Not shown	1189	W	382841 397739	Site Address: Medlock House, New Elm Road, Manchester, M3 4JW Type: Mobile Plant Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: RES001 EPR reference: - Operator: Rec Remediation Ltd Waste Management licence No: 50480 Annual Tonnage: 75000.0 Issue Date: 12/12/2006 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Rec Remediation Ltd - Mobile Plant Correspondence Address: 25, Barnes Wallis Road, Segensworth East, Fareham, Hampshire, PO15 5TT
Not shown	1254	SE	385200 397500	Site Address: 2, Hoyle Street, Ardwick, Manchester, M12 6HG Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ADO001 EPR reference: EA/EPR/AP3092CD/A001 Operator: Donnelly Mr. A. Waste Management licence No: 53582 Annual Tonnage: 310.0 Issue Date: 11/10/1996 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Suspended Site Name: Ardwick Auto Spares Correspondence Address: -
Not shown	1284	E	385235 397506	Site Address: Hoyle Trading Estate, Hoyle Street, Manchester, M12 6HL Type: Treatment of waste to produce soil Size: < 75,000 tpy Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: DEL043 EPR reference: EA/EPR/CB3601KL/A001 Operator: E Delaney Demolition Ltd Waste Management licence No: 402157 Annual Tonnage: 74999.0 Issue Date: 26/02/2015 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: Aggregate Recycling Yard Correspondence Address: -

ID	Distance (m)	Direction	NGR	Details	
Not shown	1316	E	385296 397583	Site Address: Hoyle Street, Hoyle Trading Estate, Manchester, M12 6JL Type: Inert & excavation Waste TS + treatment Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: CIT060 EPR reference: EA/EPR/CB3905MR/A001 Operator: City Excavations Ltd Waste Management licence No: 402399 Annual Tonnage: 75000.0	Issue Date: 01/06/2015 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued Site Name: City Excavations Aggregate Yard Correspondence Address: -
Not shown	1343	E	385300 397510	Site Address: Temperance Street, Ardwick, Manchester, M12 6HS Type: Metal Recycling Site (mixed MRS's) Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: PML001 EPR reference: EA/EPR/AP3992CN/A001 Operator: Pye Metals Ltd Waste Management licence No: 53583 Annual Tonnage: 1733.33	Issue Date: 11/10/1996 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Pye Metals Ltd Correspondence Address: -
Not shown	1419	N	384300 399400	Site Address: Red Bank, Cheetham Hill, Manchester, M8 Type: Mobile Plant Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: MEL002 EPR reference: EA/EPR/LP3292ZH/S002 Operator: Mel Ltd Waste Management licence No: 65243 Annual Tonnage: 75000.0	Issue Date: 17/04/2002 Effective Date: - Modified: - Surrendered Date: 06/02/2007 Expiry Date: - Cancelled Date: - Status: Surrendered Site Name: Mobile Plant Correspondence Address: -
Not shown	1443	N	384400 399400	Site Address: - Type: Household, Commercial & Industrial Waste T Stn Size: < 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: PLT001 EPR reference: EA/EPR/CP3998CM/A001 Operator: Placemix Ltd Waste Management licence No: 50017 Annual Tonnage: 24900.0	Issue Date: 31/03/2000 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Expired Site Name: Placemix Ltd Transfer Station Correspondence Address: -

4. Current Land Use Map



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4. Current Land Uses

4.1 Current Industrial Data

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

36

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	46	SE	Electricity Sub Station	384059 397934	M1	Electrical Features	Infrastructure and Facilities
2	48	SW	St Peters Square (Manchester Metrolink)	383962 397969	M2	Tram, Metro and Light Railway Stations and Stops	Public Transport, Stations and Infrastructure
3	95	SE	Electricity Sub Station	384090 397895	M1	Electrical Features	Infrastructure and Facilities
4	139	N	Nisbet's	383971 398140	12, Booth Street, Manchester, M2 4AW	Food and Beverage Industry Machinery	Industrial Products
5	145	NE	C F E S	384117 398114	Woolwich House 61, Mosley Street, Manchester, M2 3HZ	Cooling and Refrigeration	Industrial Products
6	161	NE	M 1 1st Call Autolocksmith	384186 398060	Cobac House 14-16, Charlotte Street, Manchester, M1 4FL	Vehicle Repair, Testing and Servicing	Repair and Servicing
7A	163	SW	Pest Solutions Ltd	383924 397846	Peter House, Oxford Street, Manchester, M1 5AN	Pest and Vermin Control	Contract Services
8A	163	SW	The Kirby Group	383924 397846	Peter House, Oxford Street, Manchester, M1 5AN	Electronic Equipment	Industrial Products
9A	164	SW	Talita Koum Ltd	383924 397846	Peter House Room 308, Oxford Street, Manchester, M1 5AN	Disability and Mobility Equipment	Consumer Products
10A	164	SW	Feet & Spine	383924 397846	Peter House, Oxford Street, Manchester, M1 5AN	Disability and Mobility Equipment	Consumer Products
11	170	E	Starburst Magazine	384213 397971	60, Portland Street, Manchester, M1 4QT	Published Goods	Industrial Products
12B	176	SE	Burohappold Engineering	384112 397813	113-115, Portland Street, Manchester, M1 6DW	Civil Engineers	Engineering Services
13B	176	SE	Airport Strategy & Marketing	384112 397813	113-115, Portland Street, Manchester, M1 6DW	Airlines and Airline Services	Transport, Storage and Delivery
14C	184	E	Hong Kong Printing Co Ltd	384224 398020	41, Faulkner Street, Manchester, M1 4EE	Published Goods	Industrial Products
15	188	SE	London Global	384170 397843	Imex House 40, Princess Street, Manchester, M1 6DE	Recycling, Reclamation and Disposal	Recycling Services

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
16	190	N	H S B Engineering Insurance Services Ltd	383976 398195	50, Brown Street, Manchester, M2 2JT	Civil Engineers	Engineering Services
17	194	NE	C N UK Print	384184 398121	Alliance Business Centre, 36 George Street, Manchester, M1 4HA	Published Goods	Industrial Products
18C	197	E	Vina Karaoke	384236 398023	34, Charlotte Street, Manchester, M1 4FD	Electronic Equipment	Industrial Products
19	200	S	Sir Robert McAlpine Ltd	383957 397784	15, Oxford Court, Manchester, M2 3WQ	Civil Engineers	Engineering Services
20D	220	NE	Urban Icon	384112 398207	Barnett House 53, Fountain Street, Manchester, M2 2AN	Carpets, Flooring, Rugs and Soft Furnishings	Consumer Products
21D	220	NE	National Safety Centre	384112 398207	Barnett House 53, Fountain Street, Manchester, M2 2AN	Special Purpose Machinery and Equipment	Industrial Products
22	224	W	Electricity Sub Station	383781 397962	M2	Electrical Features	Infrastructure and Facilities
23	227	S	Biman Bangladesh Airlines	384056 397744	Portland Buildings 127-129, Portland Street, Manchester, M1 4PZ	Airlines and Airline Services	Transport, Storage and Delivery
24	229	N	Nationwide Fuels LLP	383975 398234	Ship Canal House 98, King Street, Manchester, M2 4WU	Lubricants and Lubricating Equipment	Industrial Products
25E	229	NE	A D T	384181 398170	1, New York Street, Manchester, M1 4HD	Special Purpose Machinery and Equipment	Industrial Products
26E	229	NE	AECOM	384181 398170	1, New York Street, Manchester, M1 4HD	Civil Engineers	Engineering Services
27	231	NE	Arrow Electronics UK	384232 398119	5, New York Street, Manchester, M1 4JB	Electrical Components	Industrial Products
28F	237	E	Edif Era	384279 397963	53, Portland Street, Manchester, M1 3LD	Civil Engineers	Engineering Services
29F	237	E	Scrap a Car Manchester	384279 397963	53, Portland Street, Manchester, M1 3LD	Scrap Metal Merchants	Recycling Services
30F	238	E	Cundall	384279 397963	Portland Tower, Portland Street, Manchester, M1 3AH	Civil Engineers	Engineering Services
31F	238	E	Excel Publishing	384279 397963	53, Portland Street, Manchester, M1 3LD	Published Goods	Industrial Products
32F	238	E	Leaflet Distribution Manchester	384280 397963	Portland Tower, Portland Street, Manchester, M1 3HU	Distribution and Haulage	Transport, Storage and Delivery
33	240	N	Hestor Ltd	384093 398236	46, Fountain Street, Manchester, M2 2BE	Electronic Equipment	Industrial Products
34	242	NE	Atkins Group	384210 398162	The Exchange 3, New York Street, Manchester, M1 4HN	Civil Engineers	Engineering Services
35	242	NW	Qatar Airways	383856 398191	Victoria Buildings 1-7, Princess Street, Manchester, M2 4DF	Airlines and Airline Services	Transport, Storage and Delivery
36F	243	E	Haskoning UK Ltd	384286 397966	9th Floor Manchester One, Portland Street, Manchester, M1 3BE	Civil Engineers	Engineering Services

4.2 Petrol and Fuel Sites

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

0

Database searched and no data found.

4.3 National Grid High Voltage Underground Electricity Transmission Cables

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

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

0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

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

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

0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

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

Lex Code	Description	Rock Type
TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

5.3 Bedrock and Solid Geology

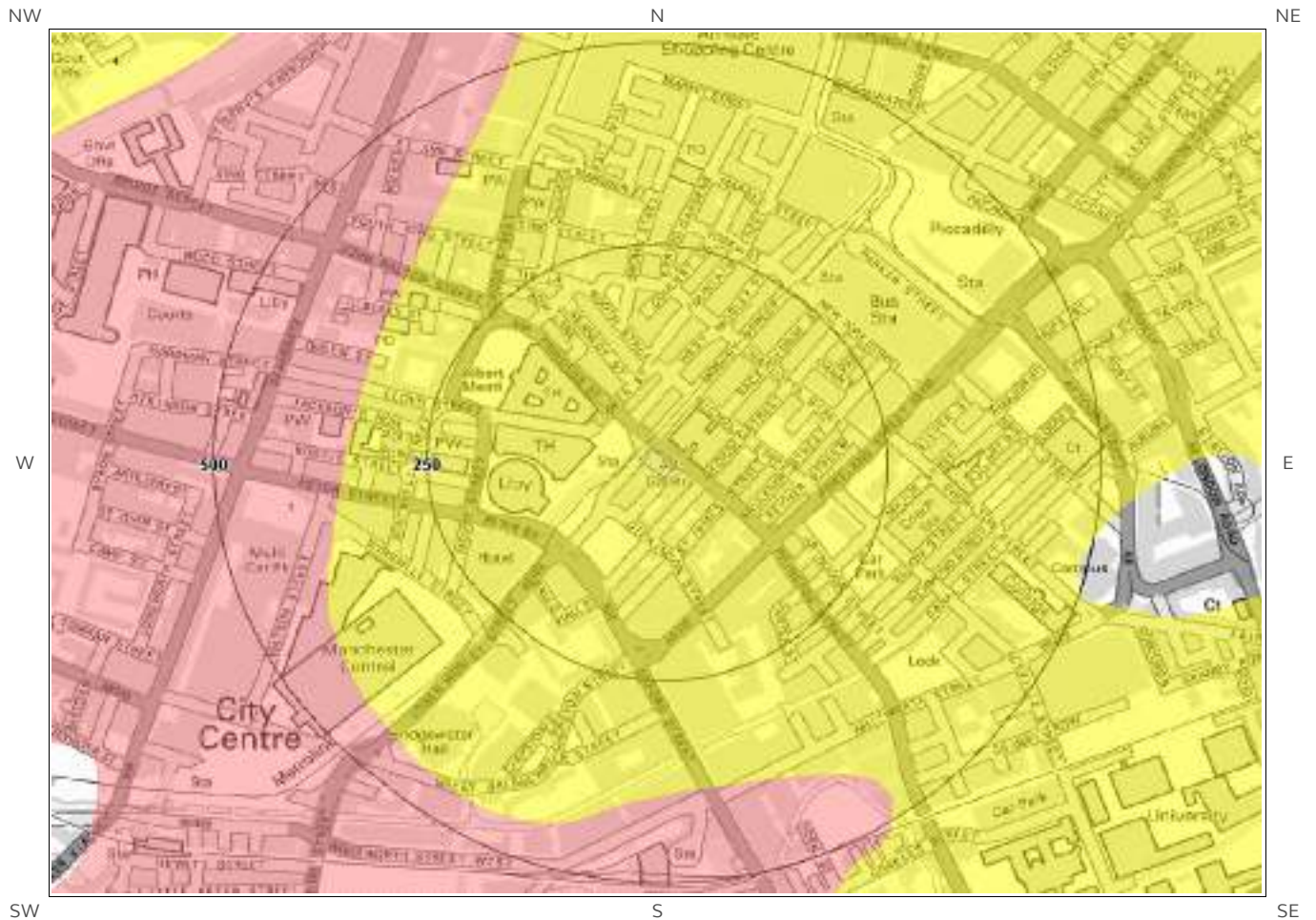
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
CHES-SDST	CHESTER FORMATION	SANDSTONE

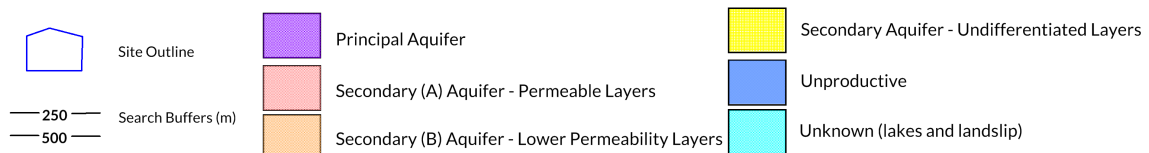
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

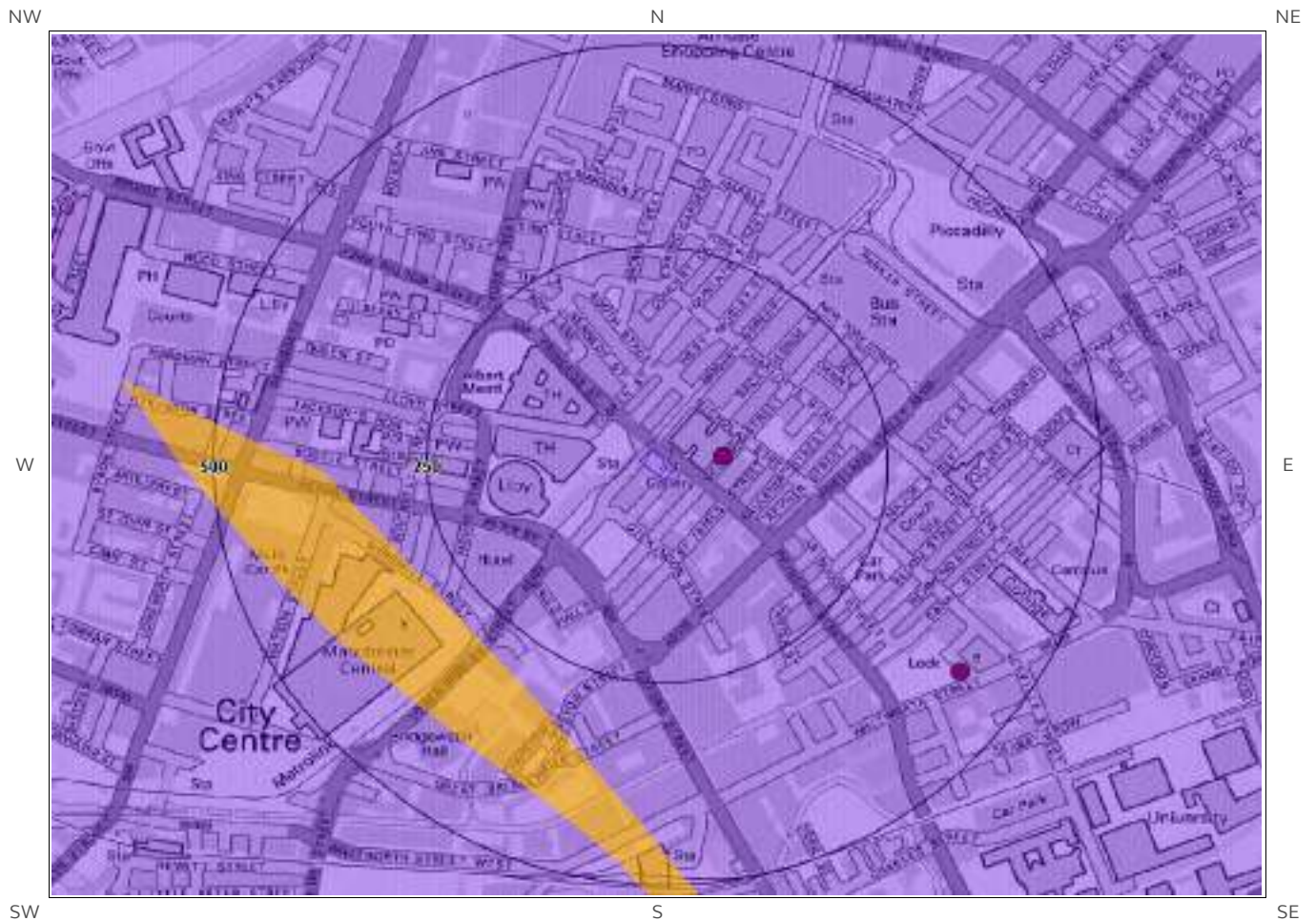
6a. Aquifer Within Superficial Geology



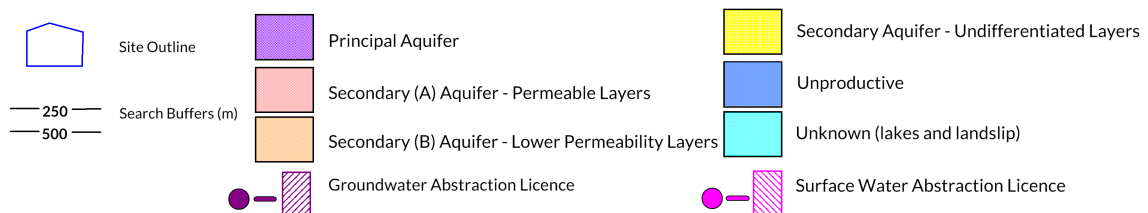
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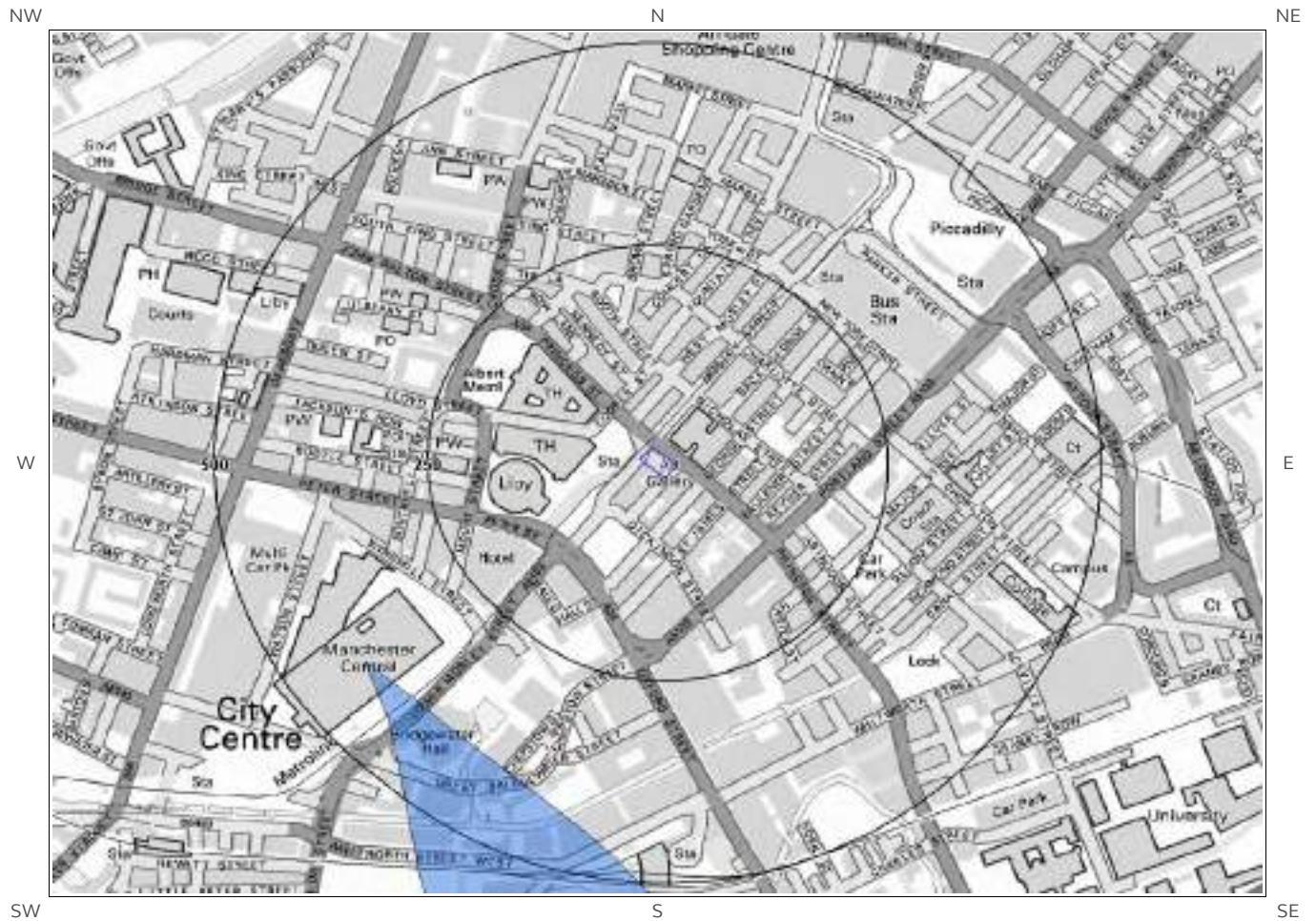
6b. Aquifer Within Bedrock Geology and Abstraction Licenses



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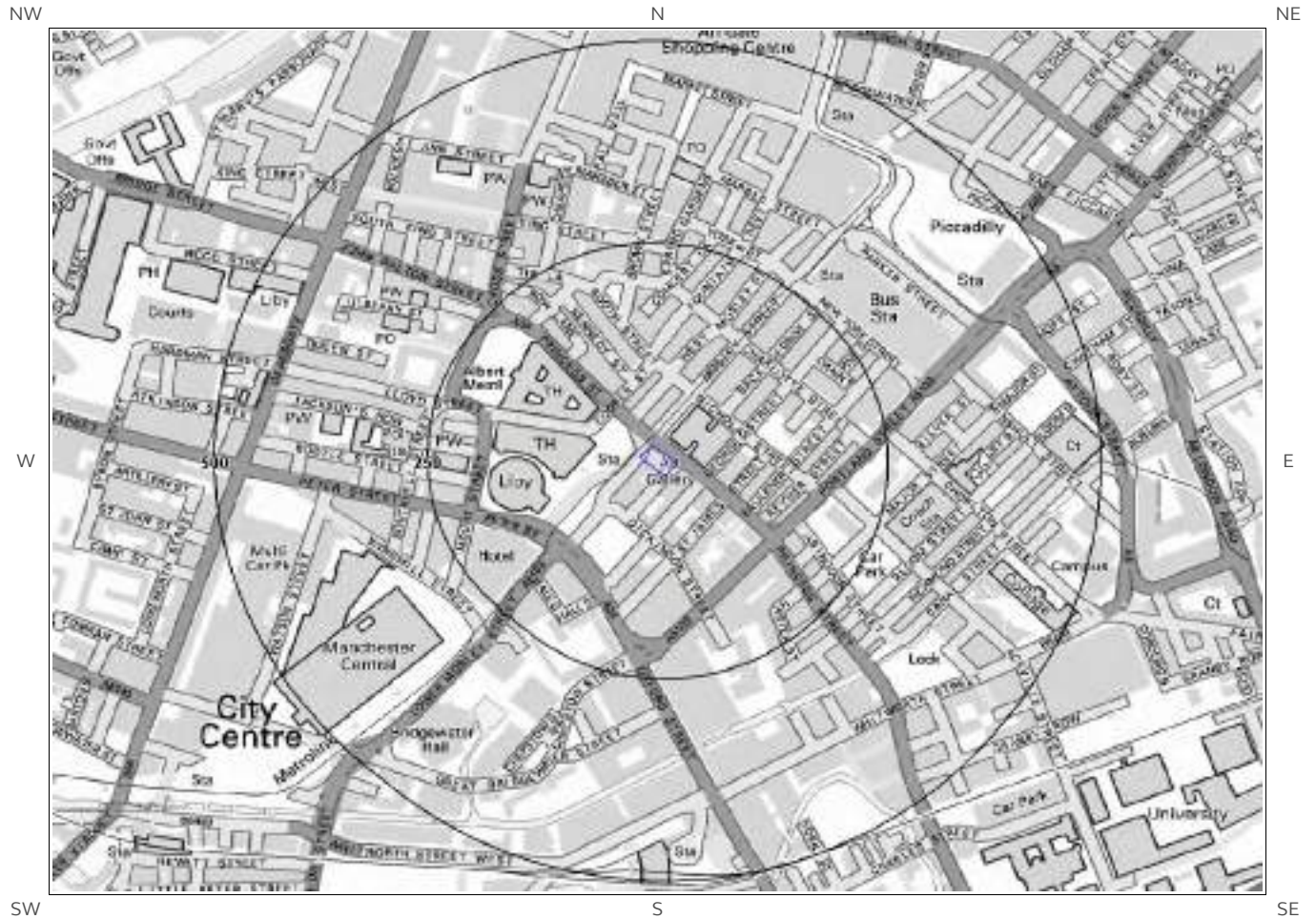
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



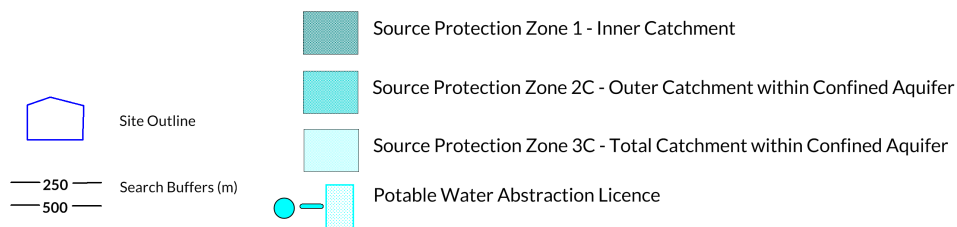
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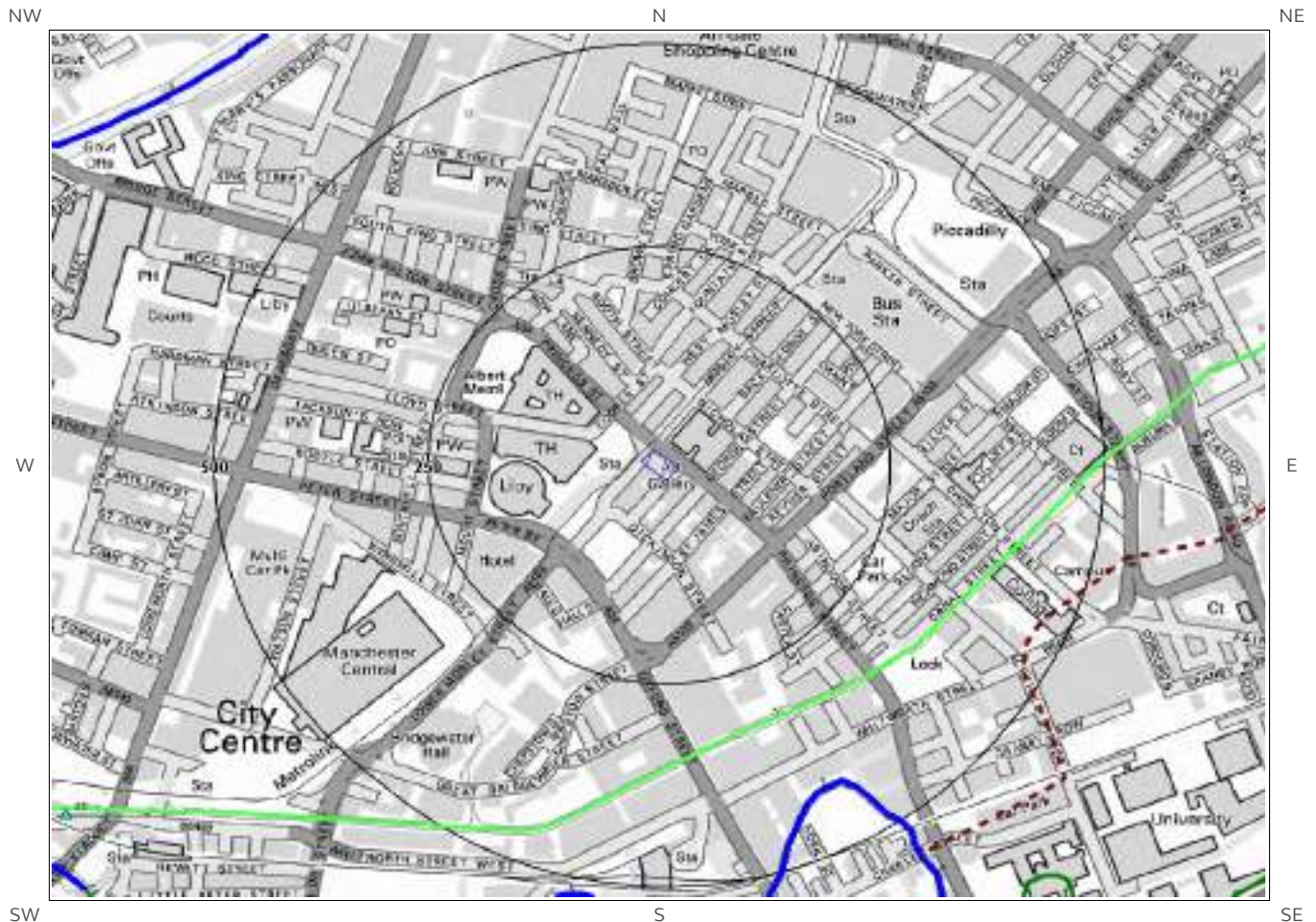
6d. Hydrogeology – Source Protection Zones within confined aquifer



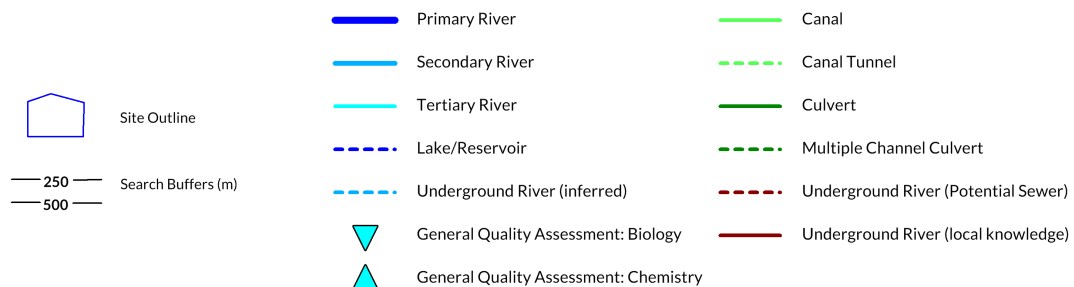
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6e. Hydrology – Detailed River Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Are there records of strata classification within the superficial geology at or in proximity to the property? Yes

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

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

ID	Distance (m)	Direction	Designation	Description
3	0	On Site	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
1	335	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

6.2 Aquifer within Bedrock Deposits

Are there records of strata classification within the bedrock geology at or in proximity to the property? Yes

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

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

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
3	287	SW	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

6.3 Groundwater Abstraction Licences

Are there any Groundwater Abstraction Licences within 2000m of the study site?

Yes

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

ID	Distance (m)	Direction	NGR	Details
4A	58	E	384100 398000	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "borehole At George St, Manchester" Data Type: Point Name: BRITISH TELECOM Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 2332 Original Start Date: 27/1/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/1/1971 Version End Date:
5A	58	E	384100 398000	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: Borehole At George St, Manchester Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC Annual Volume (m³): 1100 Max Daily Volume (m³): 860 Original Application No: 2332 Original Start Date: 1/4/1984 Expiry Date: - Issue No: 100 Version Start Date: 1/4/2007 Version End Date:
6B	419	SE	384378 397733	Status: Historical Licence No: NW0690006001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: Boreholes At Origin Developments, Manchester Data Type: Point Name: West Contracting Annual Volume (m³): 139128 Max Daily Volume (m³): 1010 Original Application No: 7623 Original Start Date: 19/1/2009 Expiry Date: 31/3/2015 Issue No: 1 Version Start Date: 19/1/2009 Version End Date:
7B	419	SE	384378 397733	Status: Historical Licence No: NW/069/0006/001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: Boreholes At Origin Developments, Manchester Data Type: Point Name: West Contracting Annual Volume (m³): 139128 Max Daily Volume (m³): 1010 Original Application No: 7623 Original Start Date: 19/1/2009 Expiry Date: 31/3/2015 Issue No: 1 Version Start Date: 19/1/2009 Version End Date:
8	734	W	383335 398310	Status: Historical Licence No: 2569007089 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: 2 Boreholes At Gartside Street Manchester Data Type: Line Name: HER MAJESTY'S COURT SERVICE Annual Volume (m³): 200000 Max Daily Volume (m³): 1179 Original Application No: 7546 Original Start Date: 26/1/2005 Expiry Date: 31/3/2011 Issue No: 2 Version Start Date: 10/7/2008 Version End Date:
Not shown	760	NW	383700 398700	Status: Historical Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: "borehole At Dial House, Chapel St, Salford" Data Type: Point Name: BRITISH TELECOM Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 2333 Original Start Date: 27/1/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/1/1971 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	760	NW	383700 398700	Status: Historical Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: Borehole At Dial House, Chapel St, Salford Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 2333 Original Start Date: 27/1/1971 Expiry Date: - Issue No: 101 Version Start Date: 1/4/1984 Version End Date:
Not shown	760	NW	383700 398700	Status: Active Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: Borehole At Dial House Chapel Street Salford Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC	Annual Volume (m³): 45 Max Daily Volume (m³): 30 Original Application No: 2333 Original Start Date: 27/1/1971 Expiry Date: - Issue No: 101 Version Start Date: 1/4/2007 Version End Date:
Not shown	891	S	384180 397091	Status: Active Licence No: NW/069/0006/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Borehole 1 At Lower Chatham Street Data Type: Point Name: Manchester Metropolitan University	Annual Volume (m³): 283240 Max Daily Volume (m³): 1532 Original Application No: NPS/WR/015264 Original Start Date: 4/4/2014 Expiry Date: 31/3/2027 Issue No: 2 Version Start Date: 4/4/2014 Version End Date:
Not shown	891	S	384180 397091	Status: Active Licence No: NW/069/0006/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: Borehole 1 At Lower Chatham Street Data Type: Point Name: Manchester Metropolitan University	Annual Volume (m³): 283240 Max Daily Volume (m³): 1532 Original Application No: NPS/WR/015264 Original Start Date: 4/4/2014 Expiry Date: 31/3/2027 Issue No: 2 Version Start Date: 4/4/2014 Version End Date:
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "borehole (no 2) At Premises, Strangeways, Manchester" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: Borehole (no 2) At Premises, Strangeways, Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 2) At Premises, Strangeways, Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 2) At Premises, Strangeways, Manchester" Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "borehole (no 3) At Premises, Strangeways, Manchester" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: Borehole (no 3) At Premises, Strangeways, Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 3) At Premises, Strangeways, Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 3) At Premises, Strangeways, Manchester" Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1252	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "borehole (no 1) At Premises, Strangeways, Manchester" Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:
Not shown	1252	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: Borehole (no 1) At Premises, Strangeways, Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1252	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 1) At Premises, Strangeways, Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1252	N	383850 399250	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 1) At Premises, Strangeways, Manchester" Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 9/8/2000 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1252	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 1 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1252	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole Number 1 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: 1/1/2004 Version End Date:
Not shown	1264	S	383715 396746	Status: Active Licence No: NW/069/0004/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: Borehole At Manchester Metropolitan University Data Type: Point Name: Manchester Metropolitan University	Annual Volume (m³): 274115 Max Daily Volume (m³): 751 Original Application No: NPS/WR/008077 Original Start Date: 20/9/2013 Expiry Date: 31/3/2027 Issue No: 1 Version Start Date: 1/1/2015 Version End Date:
Not shown	1264	S	383715 396746	Status: Active Licence No: NW/069/0004/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: Borehole At Manchester Metropolitan University Data Type: Point Name: Manchester Metropolitan University	Annual Volume (m³): 274115 Max Daily Volume (m³): 751 Original Application No: NPS/WR/008077 Original Start Date: 20/9/2013 Expiry Date: 31/3/2027 Issue No: 1 Version Start Date: 1/1/2015 Version End Date:
Not shown	1277	E	385240 397540	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: Borehole At Premises, Broadie St, Ardwick, Manchester Data Type: Point Name: MOSELEY RUBBER CO LTD	Annual Volume (m³): 331858 Max Daily Volume (m³): 909.2 Original Application No: 0006 Original Start Date: 8/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 8/2/1966 Version End Date:
Not shown	1277	E	385240 397540	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "borehole At Premises, Broadie St, Ardwick, Manchester" Data Type: Point Name: MOSELEY RUBBER CO LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 6 Original Start Date: 8/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 8/2/1966 Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1693	N	384100 399700	Status: Active Licence No: 2569004011 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: Borehole At Derby Brewery, Cheetham, Manchester 3 Data Type: Point Name: JOSEPH HOLT LTD	Annual Volume (m³): 45460 Max Daily Volume (m³): 181.84 Original Application No: 0423 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/2/1966 Version End Date:
Not shown	1693	N	384100 399700	Status: Active Licence No: 2569004011 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole At Derby Brewery, Cheetham, Manchester 3 Data Type: Point Name: JOSEPH HOLT LTD	Annual Volume (m³): 45460 Max Daily Volume (m³): 181.84 Original Application No: 0423 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/2/1966 Version End Date:
Not shown	1693	N	384100 399700	Status: Historical Licence No: 2569004011 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "borehole At Derby Brewery, Cheetham, Manchester 3" Data Type: Point Name: JOSEPH HOLT LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 423 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/2/1966 Version End Date:
Not shown	1693	N	384100 399700	Status: Historical Licence No: 2569004011 Details: Process water Direct Source: Ground Water - North West Region Point: "borehole At Derby Brewery, Cheetham, Manchester 3" Data Type: Point Name: JOSEPH HOLT LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 423 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/2/1966 Version End Date:
Not shown	1795	N	383900 399800	Status: Historical Licence No: 2569004021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole At Premises, Derby Street, Cheetham, Manchester Data Type: Point Name: LANCASHIRE DAIRIES LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1749 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/4/1993 Version End Date:
Not shown	1795	N	383900 399800	Status: Historical Licence No: 2569004021 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: Borehole At Premises, Derby Street, Cheetham, Manchester Data Type: Point Name: LANCASHIRE DAIRIES LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: 1749 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/4/1993 Version End Date:

ID	Distance (m)	Direction	NGR	Details
Not shown	1843	W	382190 398330	Status: Historical Licence No: 2569007085 Details: Process water Direct Source: Ground Water - North West Region Point: "borehole At Hope Street, Salford, Manchester" Data Type: Point Name: READY MIXED CONCRETE (NORTH WEST) LIMITED Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: S7470 Original Start Date: 1/11/2000 Expiry Date: - Issue No: 1 Version Start Date: 1/11/2000 Version End Date:
Not shown	1843	W	382190 398330	Status: Active Licence No: 2569007085 Details: Process Water Direct Source: Ground Water - North West Region Point: Borehole At Hope Street, Salford, Manchester Data Type: Point Name: CEMEX UK MATERIALS LTD Annual Volume (m³): 23000 Max Daily Volume (m³): 115 Original Application No: 7470 Original Start Date: 1/11/2000 Expiry Date: - Issue No: 3 Version Start Date: 17/10/2007 Version End Date:

6.4 Surface Water Abstraction Licences

Are there any Surface Water Abstraction Licences within 2000m of the study site? Yes

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

ID	Distance (m)	Direction	NGR	Details
Not shown	1616	W	382500 397400	Status: Historical Licence No: 2569007053 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-tidal - North West Region Point: R Irwell At Irwell Works, Ordsall Lane, Salford Data Type: Point Name: CDS COMPUTER DESIGN SYSTEMS LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 1404 Original Start Date: 22/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/11/1987 Version End Date:
Not shown	1616	W	382500 397400	Status: Historical Licence No: 2569007053 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "surface, Non-tidal - North West Region" Point: "r Irwell At Irwell Works, Ordsall Lane, Salford" Data Type: Point Name: CDS COMPUTER DESIGN SYSTEMS LTD Annual Volume (m³): - Max Daily Volume (m³): - Application No: 1404 Original Start Date: 22/1/1966 Expiry Date: - Issue No: 100 Version Start Date: 1/11/1987 Version End Date:

6.5 Potable Water Abstraction Licences

Are there any Potable Water Abstraction Licences within 2000m of the study site?

Yes

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

ID	Distance (m)	Direction	NGR	Details
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 2 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 2) At Premises, Strangeways, Manchester" Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1197	N	383820 399190	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 2) At Premises, Strangeways, Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 3 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 3) At Premises, Strangeways, Manchester" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1225	N	383830 399220	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 3) At Premises, Strangeways, Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1252	N	383850 399250	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "borehole (no 1) At Premises, Strangeways, Manchester" Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023 Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1252	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole (no 1) At Premises, Strangeways, Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:
Not shown	1252	N	383850 399250	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole Number 1 At Premises Strangeways Manchester Data Type: Point Name: INTERBREW UK LTD	Annual Volume (m³): 500000 Max Daily Volume (m³): 2500 Original Application No: CW0023R Original Start Date: 18/2/1966 Expiry Date: - Issue No: 102 Version Start Date: Version End Date:

ID	Distance (m)	Direction	NGR	Details	
Not shown	1795	N	383900 399800	Status: Historical Licence No: 2569004021 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: Borehole At Premises, Derby Street, Cheetham, Manchester Data Type: Point Name: LANCASHIRE DAIRIES LTD	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: 1749 Original Start Date: 17/2/1966 Expiry Date: - Issue No: 100 Version Start Date: Version End Date:

6.6 Source Protection Zones

Are there any Source Protection Zones within 500m of the study site?

Yes

The following Source Protection Zones records are represented on the SPZ and Potable Water Abstraction Map (6c):

ID	Distance (m)	Direction	Zone	Description
1	398	SW	3	Total catchment

6.7 Source Protection Zones within Confined Aquifer

Are there any Source Protection Zones within the Confined Aquifer within 500m of the study site?

No

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

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Is there any Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site? Yes

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

6.9 River Quality

Is there any Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site? Yes

6.9.1 Biological Quality:

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

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

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	917	N	383800 398900	River Name: Irk Reach: Moston Bk. To Irwell End/Start of Stretch: End of Stretch NGR	E	E	E	E	E

6.9.2 Chemical Quality:

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

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

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	801	E	384830 398140	River Name: Rochdale Canal Reach: Ashton Canal To Knott Mill End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
25	802	SW	383330 397558	River Name: Rochdale Canal Reach: Ashton Canal To Knott Mill End/Start of Stretch: Sample Point NGR	A	A	A	A	A
Not shown	834	E	384850 398200	River Name: Rochdale Canal Reach: Empress Processing To Ashton Canal End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
Not shown	917	N	383800 398900	River Name: Irk Reach: Moston Bk. To Irwell End/Start of Stretch: End of Stretch NGR	C	C	C	C	D
Not shown	985	SW	383100 397600	River Name: Rochdale Canal Reach: Ashton Canal To Knott Mill End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
Not shown	1018	NE	384950 398450	River Name: Rochdale Canal Reach: Empress Processing To Ashton Canal End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A
Not shown	1018	NE	384950 398450	River Name: Rochdale Canal Reach: Qsl At Summit To Empress Processing End/Start of Stretch: End of Stretch NGR	A	A	A	A	A
Not shown	1393	N	384445 399335	River Name: Irk Reach: Moston Bk. To Irwell End/Start of Stretch: Sample Point NGR	C	C	C	C	D
Not shown	1487	W	382600 397500	River Name: Medlock Reach: Lords Bk. To Irwell End/Start of Stretch: End of Stretch NGR	B	B	B	C	C

6.10 Detailed River Network

Are there any Detailed River Network entries within 500m of the study site?

Yes

The following Detailed River Network records are represented on the Hydrology Map (6e):

ID	Distance (m)	Direction	Details	
1	318	SE	River Name: Rochdale Canal Welsh River Name: - Alternative Name: -	River Type: Canal Main River Status: Currently Undefined
2	422	SE	River Name: River Medlock Welsh River Name: - Alternative Name: -	River Type: Primary River Main River Status: Currently Undefined
3	462	SE	River Name: Shooters Brook Downstream Welsh River Name: - Alternative Name: -	River Type: Underground River (Potential Sewer) Main River Status: Currently Undefined

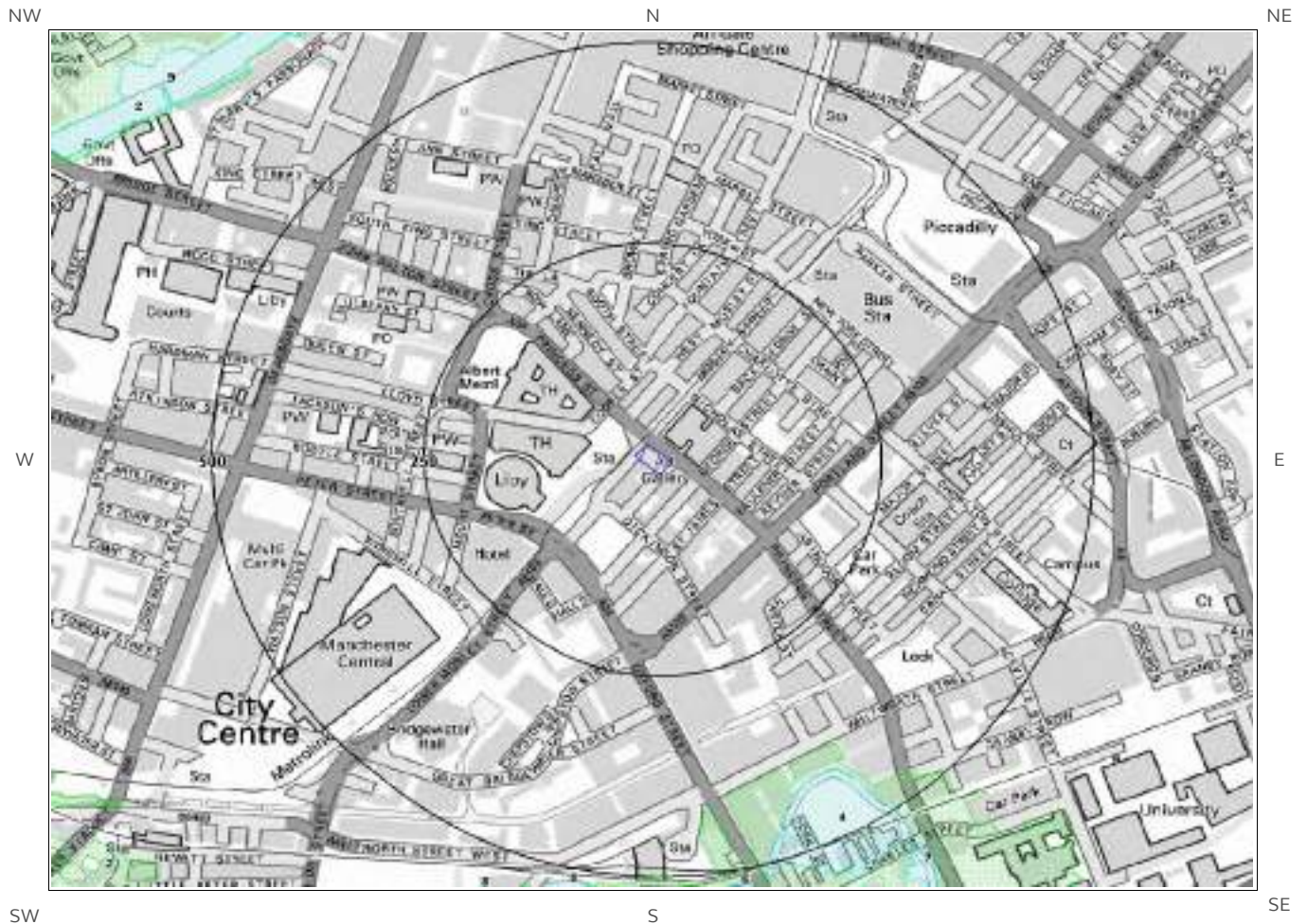
6.11 Surface Water Features

Are there any surface water features within 250m of the study site?

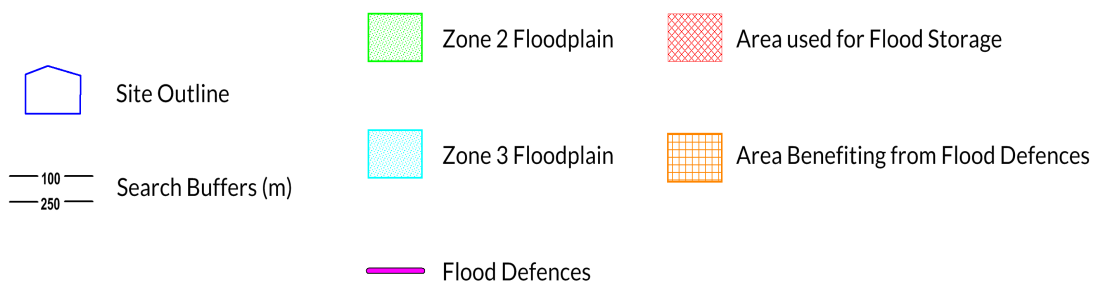
No

Database searched and no data found.

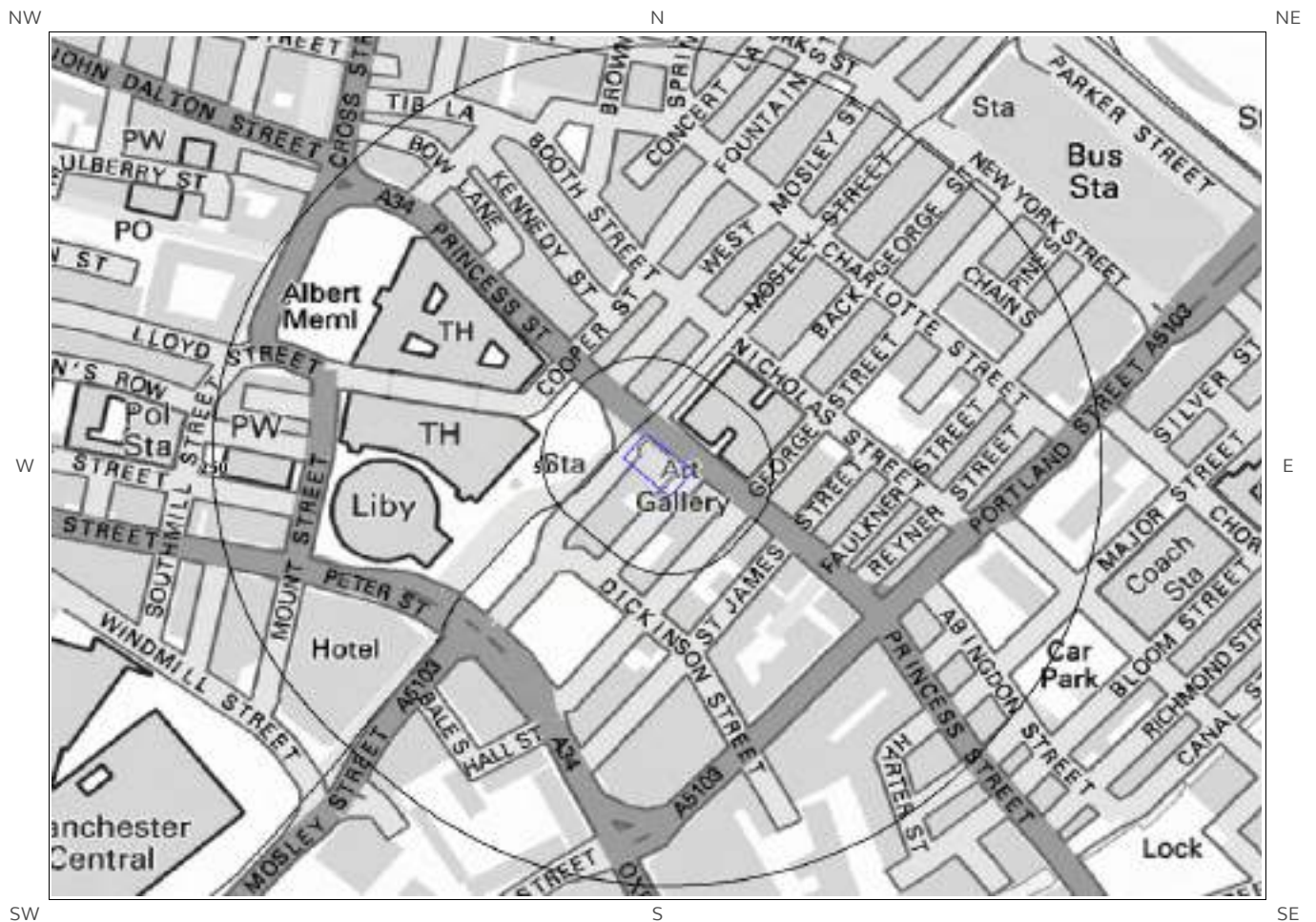
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



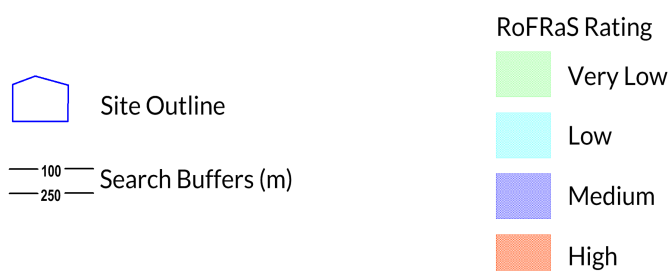
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 2 floodplain? No

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

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Is the site within 250m of an Environment Agency/Natural Resources Wales Zone 3 floodplain? No

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

Database searched and no data found.

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

What is the highest risk of flooding onsite? Very Low

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

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

7.4 Flood Defences

Are there any Flood Defences within 250m of the study site? No
Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Are there any areas benefiting from Flood Defences within 250m of the study site? No

7.6 Areas benefiting from Flood Storage

Are there any areas used for Flood Storage within 250m of the study site?

No

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 Are there any British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site? Yes

Does this relate to Clearwater Flooding or Superficial Deposits Flooding?

Clearwater Flooding

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

7.7.2 What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?

Limited potential

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

7.8 Groundwater Flooding Confidence Areas

What is the British Geological Survey confidence rating in this result?

Low

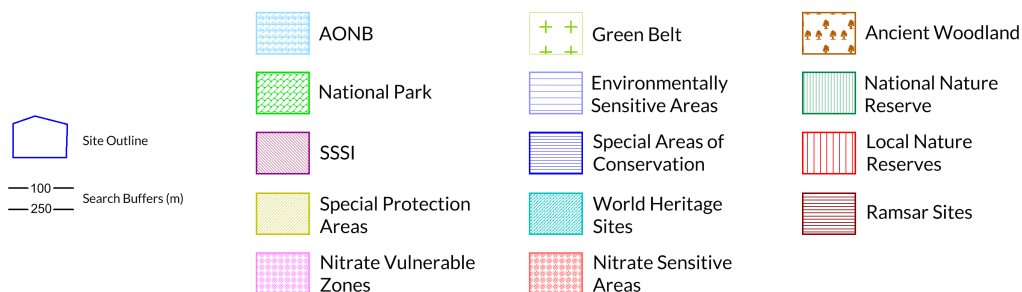
Notes: Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

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

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Presence of Designated Environmentally Sensitive Sites within 2000m of the study site? Yes

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

3

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

ID	Distance (m)	Direction	NVZ Name	Data Source
1	483	NE	Existing	DEFRA
2	917	N	Existing	DEFRA
Not shown	1991	N	Existing	DEFRA

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

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

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

9.1.1 Shrink Swell

What is the maximum Shrink-Swell* hazard rating identified on the study site? Very Low

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

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

9.1.2 Landslides

What is the maximum Landslide* hazard rating identified on the study site? Very Low

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

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

9.1.3 Soluble Rocks

What is the maximum Soluble Rocks* hazard rating identified on the study site? Negligible

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

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

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

9.1.4 Compressible Ground

What is the maximum Compressible Ground* hazard rating identified on the study site? Negligible

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

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

9.1.5 Collapsible Rocks

What is the maximum Collapsible Rocks* hazard rating identified on the study site? Very Low

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

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

9.1.6 Running Sand

What is the maximum Running Sand** hazard rating identified on the study site? Very Low

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

Hazard
Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

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

9.2 Radon

9.2.1 Radon Affected Areas

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

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

9.2.2 Radon Protection

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

10. Mining

10.1 Coal Mining

Are there any coal mining areas within 75m of the study site?

Yes

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

Distance (m)	Direction	Details
0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

10.2 Non-Coal Mining

Are there any Non-Coal Mining areas within 50m of the study site boundary?

No

Database searched and no data found.

10.3 Brine Affected Areas

Are there any brine affected areas within 75m of the study site?

No

Guidance: No Guidance Required.

Contact Details

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Acknowledgements: Site of Special Scientific Interest, National Nature Reserve, Ramsar Site, Special Protection Area, Special Area of Conservation data is provided by, and used with the permission of, Natural England who retain the Copyright and Intellectual Property Rights for the data.

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