Specialists in Ground Engineering & Energy

Phase 1 & Phase 2 Geoenvironmental Assessment for Proposed Extension at Manchester One, 49-53, Portland Street, Manchester, M1 3LD

Project No: NX587



Client

bruntwood SciTech

Specialists in Ground Engineering & Energy

DOCUMENT VERIFICATION

Report Reference: NX587 **Issue:** Rev 1 **Date:** **2nd February 2026**

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Revision History

Revision	Date	Description	Reviewed by	Approved by
Issue	March 2025	Final		
Rev 1	February 2026	Planning consultant amendments		

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EXECUTIVE SUMMARY

Site Location	Manchester One, 49-53, Portland Street, Manchester, M1 3LD
Grid Reference	384288E 397961N
Site Area	0.35ha
Current Site Use	The site comprises an existing multi-storey building with a new reception and workspaces set across 21 floors and an adjacent 2-storey commercial building in the north of site. A single storey basement containing a plant room with gas fired boilers is present beneath the west of the building and adjacent to the proposed extension. There is also a carpark and an associated ramp to the rear of the building. The Site is bound by an entertainment venue (Yates) and Chorlton Street to the northeast, Manchester Coach Station to the southeast, Sackville Street to the southwest, and Portland Street to the northwest. An site walkover has been carried out by NX Consulting to establish that no significant potential sources of contamination are present associated with the current development. The basement was observed to be well maintained and with good practices in place to contain spillages of cleaning fluids and fuels. No chemical storage areas or fuel tanks was observed during the walkover. No unstable slopes, invasive knotweed or significant induced surface settlements were observed within during the site walkover.
Development Proposals	The development consists of a commercial end use and includes the construction of a 4 storey (plus rooftop terrace and plant enclosure) extension on the western gable which wraps around the front of the building off Portland street. Hard and soft landscaping, a cycle store, access and servicing and other associated works will also form part of the development. A new substation will be formed at the rear of the building.
Geology Mapping & BGS Boreholes	Geological mapping shows the site to be underlain by sandstone of the Chester Pebble Beds Formation and Glacial Till (Diamiction). Glaciofluvial Sheet Deposits (sand and gravel) are also found to underlie the surrounding area (266m N). Nearby BGS boreholes indicates that bedrock may be present at depths circa 10.00m bgl. No faults are shown within the immediate vicinity of the site.
Hydrology	There were 2no. surface water features within 250m of the site: • 151m south, Rochdale Canal • 224m south east, inland river not influenced by normal tidal action.
Hydrogeology	The Glacial Till drift deposits are classified as a Secondary Undifferentiated Aquifer. Chester Pebble Beds Formation Bedrock strata underlying the site are a Principal Aquifer. 2no. historic abstractions are recorded within 500m of the site, 154m west and 213m south-west for cooling purposes. The site is not within a source protection zone. The overlying Devensian Till has been noted to be predominantly cohesive in nature and the anticipated thickness of around 10m is expected to provide a degree of protection to the underlying Principal Aquifer.

Site History	**On-Site** Historical mapping indicates the site lies within a heavily built-up area of commercial, residential and industrial land use. On-site features include residential buildings and associated yards, a timber yard, pub and a street running through the center of the site. **Off-Site** Numerous potentially contaminative land usage was identified in close proximity to the site including: mills, manufactories, coal yards, timber yards, copper and zinc manufacturing, reservoirs, bus stations, canals, hospitals and steel works. Historical mapping from 1948 to 1964 show previous buildings were likely destroyed by bombing in WWII. General redevelopment of the site and surrounding area which may have been a source of imported, potentially contaminated Made Ground.
Utility Locations	Underground services impact the site and the engineer should familiarise themselves with their presence and implications on the development. Drainage chambers were observed during the site walkover.
Landfill Sites & Ground Gases	No current or historic landfill sites are recorded within 1000m of the site. Given the developmental history of the site and surrounding area, the risk from hazardous ground gas is considered to be Low to Moderate due to the possible presence of made ground beneath the site. The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.
Flood Risk	The site is not located within any Flood Risk Zones 2 or 3. The site is stated to be at very low risk from surface water flooding from rivers or the sea. The drainage engineer should establish if further works are required.
Geological Mapping	Drift deposits are shown to comprise Glacial Till which mainly consist of clay with less frequent sands, silts and gravels. The solid geology comprises the Chester Pebble Beds Formation (sandstone). There are several faults recorded in the search area, the closest being a normal fault located 76m southwest of the site, the downthrown side is the northeast.
Mining Risk & Ground Stability	The site lies in the coal mining reporting area as defined by the coal authority. However, based on NX Consulting's knowledge of the area and cover of overlying sandstone, the site is considered to be at a low risk of mining related impacts. The Groundsure report lists an unspecified shaft located 889m north-east of the site. There are no other records of historical mining on or near the site. Johnson, Poole and Bloomer records are listed as being obtainable within a 1000m boundary of this site.
Unexploded Ordnance	The regional unexploded bomb risk map from Zetica indicates that the site is in an area at moderate risk from possible Unexploded Ordnance (UXO) resulting from the Second World War. A detailed UXO risk assessment report has been compiled by 1st Line Defence (Ref: DA21095-00 Detailed UXO Risk Assessment, Manchester One) and dated December 2024, for the Manchester One Site. The report found that there is an overall Medium Risk from German and anti-aircraft unexploded ordnance at the site of proposed works. There is an assessed Low Risk from Allied unexploded ordnance.

	<u>All Works</u> 1. UXO Risk Management Plan 2. Site Specific UXO Awareness Briefings to all personnel conducting intrusive works. 3 UXO Specialist On-site Support Boreholes and Piled Foundations Intrusive Magnetometer Survey of all borehole and pile locations/clusters down to maximum bomb penetration depth. Note - proactive on-site UXO support/survey should not be necessary for any works taking place at the location of and down to the depths of significantly worked post-war made ground/post-war fill. During the NX consulting preliminary intrusive works, an Unexploded Ordnance Awareness Briefing was carried out to personnel conducting intrusive works was undertaken on the first morning on site with all relevant personnel in attendance. Additionally, a UXO Specialist was present on site where borehole positions were drilled. These works involved an Intrusive Magnetometer Survey of all Borehole locations down to a maximum bomb penetration depth.
Site Investigation Works	NX Consulting have carried out an intrusive investigation in January 2025 comprising window sample boreholes, rotary cored boreholes, machine excavated trial pits.
Ground Conditions	<u>Made Ground</u> The proven depth of Made Ground across all boreholes ranged from 2.8mbgl (RBH01) to 7.0mbgl (RBH02). The average depth of Made Ground across all boreholes was 3.7mbgl. However, deeper areas of made ground should be anticipated elsewhere upon site given the historical nature of development. Made Ground typically comprised an initial layer of tarmacadam, concrete paving slabs and localized reworked topsoil materials underlain by various reddish brown, greyish brown and black uncompacted occasionally clayey sandy gravels with brick, cement , concrete, ash, tile, cloth, wire, slate, timber and other inclusions. A localized compact reddish brown gravel of brick, cement and sandstone was noted within RBH02 between 3.0-4.8mbgl. <u>Drift Deposits</u> Superficial deposits were encountered within the majority of exploratory holes between depths of 2.8-13.4m bgl, with the exception of WS02, WS03, WS05, WS06, TP01 & TP02 where the Made Ground was not able to be fully penetrated. Superficial deposits were noted to typically comprise firm to stiff to stiff dark brown sandy gravelly CLAY with rare fine to coarse sub angular to rounded gravel of mixed lithology was recorded. Clay was proven to a maximum depth of 13.4mbgl in RBH01. Uncorrected SPT 'N' values within the drift deposits ranged from 1-31, with an average 'N' value of 20 and generally increased with depth. <u>Bedrock</u> Solid geology was proven within advanced rotary cored boreholes at depths between n 9.8-25.0mbgl. and noted to comprise highly weathered becoming poorly cemented weak to medium strong reddish brown fine to coarse grained SANDSTONE with rare mineral inclusions. Horizontal to sub-horizontal bedding fractures, thinly spaced, planar, smooth to slightly rough were also noted upon recovered core runs. Recovery from shallower depths was often poor due to the rock being poorly cemented. Groundwater was not encountered within the advanced boreholes.

	Cobble features were noted within the majority of advanced probeholes. Buried obstructions impeding advancement were noted within WS05 at a depth of 1.20mbgl. and WS06 at a depth of 1.50mbgl. with a relict concrete ground beam/foundation noted within RBH03 at 0.4mbgl. Localised instability within TP01 and TP02 prevented advancement and soakaway testing. No visual or olfactory evidence of contamination was recorded during the site investigation works.
Geotechnical Assessment	Based on information provided to date, a CFA and/or bored piled solution is likely to be the most suitable solution for the proposed buildings; socketed into the sandstone bedrock. A limited number of trees and hedgerows are present which are within possible influencing distance of the site. Foundations and drainage should be designed in line with NHBC Standards guidance document Chapter 4.2 Building Near Trees. Surface hardstanding, existing underground services, basements, foundations and made ground should be anticipated across parts of the site. Buried obstructions impeding advancement were noted within WS05 at a depth of 1.20mbgl. and WS06 at a depth of 1.50mbgl. with a relict concrete ground beam/foundation noted within RBH03 at 0.4mbgl. Heavy plant and machinery will be required to break out existing slabs/retaining walls/ground beams and cellars/basement slabs as required. These materials will require 'grubbing out' and treatment (screening/crushing/segregation and reused (where appropriate) onsite to prevent formation of the piled foundations and services formation. Although unlikely, existing piles may be present upon site and during site preparation will need to be recorded /surveyed to enable foundations and infrastructure to the new development to be designed. Whilst unencountered to date, potential groundwater should be anticipated within shallow drift deposits. Groundwater shall be control in accordance with CIRIA report 113 "Control of Ground Water to Temporary Works where required. The creation and maintenance of a project risk register is seen as good practice and is a requirement under CDM. All risks identified by those involved in the design of earthworks should be filed into the project risk register. Where a project includes geotechnical design, a geotechnical risk register should be developed to support and enhance the project risk register. Soil materials used in the reprofiling of the site should be classified in accordance with Table 6/1 of Department of Transports Specification for Highways Works. The Glacial sand deposits are likely to be classified as Class 1A/1B and compaction should be carried out in dry periods to enable compaction. Excavations are unlikely to remain fully dry but should be able to be controlled by a screened sump pump techniques within the upper 1.00m to 1.50m bgl of strata. Specialist dewatering techniques (such as well point systems) may be required below the above depths and a specialist hydrologist should be employed to provide advice prior to forming/designing excavations below this depth. Any excavations below the water table is likely to result in groundwater ingress will occur resulting in running sand conditions and a resulting volume loss to surrounding soils. It would be prudent to survey in the positions of any existing basement walls and (where close to existing site boundaries and/or

	infrastructure/underground services) either left in-situ and/or utilize temporary support, should such conditions be encountered. The option for classifying soil/fill should be selected and should maximize the potential to win suitable fill from the site. Unsuitable materials (including existing foundations/slabs) will require 'grubbing out' and treatment (screening/crushing/segregation and reused (where appropriate) on site as part of the site preparation and any upfill and to prevent deflection of the piled foundations. Unsuitable materials will require removal from site to suitably licensed waste management facility. Any replaced 'site won' or imported materials will need to be compacted in a controlled manner in line with the Department of Transport, Specification for Highway Works. During site reprofiling, the earthworks designer should assess the requirement for pre-earthworks drainage that allows for temporary fill surfaces to be sealed and shaped to shed water and operational restrictions during periods of rainfall. Safety precautions should not be neglected especially where personnel are to enter excavations when close support would be required. The stability of the upper 1.00m of Made Ground/sand deposits are likely to remain stable in the short term, however, spalling and collapse is likely where deeper areas of sand due to the presence of groundwater. All excavations and basement construction should be conducted in line with CIRIA Report 97 - Trenching Practice and BRE 440 Foundations, Basements and External Works 2002. If excavations are cut at a safe angle of repose or benched a suitably qualified geotechnical engineer should be present to check for potential signs of instability. For design purposes, a conservative CBR value of 2% should be used for pavement construction within the Made Ground. Where possible all soils should be retained on site to reduce disposal costs. Soakaways are unlikely to be suitable due to the nature of made ground, and relatively impervious Glacial Clay at depths of c.3.0m. Surface treatment should be anticipated within all areas comprising excavation, crushing, screening with reuse and/or removal from site.
Conceptual Model	The Site is not included on the list of sites designated as contaminated land. With respect to existing commercial development, the likelihood of action being taken under the Environmental Protection Act 1990 is considered to be low. Polynuclear Aromatic Hydrocarbons (PAHs) and Heavy Metal have been recorded in excess of tier 1 screening values in the soils beneath the majority of the site when compared to commercial end use values within proposed landscaping areas. Within landscaping areas and P.O.S. a minimum requirement of 600mm of clean cover (150mm topsoil) / removal & replacement of made grounds should be assumed at this stage. A hard to dig layer or geotextile (designed to reduce infiltration) will be required within the cover system platform. If a geotextile is adopted then drainage should be introduced within the cover system layer to prevent waterlogged conditions within landscaped and P.O.S areas. Specialist potable water pipework will be required. This will need to be confirmed following completion of a UKWIR assessment with the Regulators and testing along the line of the proposed pipework once positions are known. Site workers involved in excavations for foundations, roads, sewers etc during the construction works may come into direct contact with the soils containing elevated concentrations of PAH's, or potentially other forms of contamination

	including asbestos. We would therefore recommend that simple precautionary measures be adopted during the construction phase i.e. good personal hygiene, provision of suitable welfare facilities and basic personnel protective equipment. Any areas of proposed landscaping and public open space will require imported subsoil/topsoil materials which will require chemical validation to demonstrate that they are suitable for a commercial end use and taken to depths sufficient to provide a sufficient cover system for all proposed materials used which are capable to support root growth. Risk to Controlled water are considered to be low upon completion of the developments. Although notwithstanding the above, to ensure a low risk to controlled waters, it is recommended that any free phase hydrocarbon/solvent contamination found during construction works are removed during a process of remediation. If contamination is found during construction works the associated risks should be reassessed. 6no. planned rounds of ground gas monitoring have been undertaken, with results indicating a probable low risk to identified receptors. No specialist protection measures are likely. Prior to the adoption of any gas protection measures, agreement should be sought from the local authority environmental health department and building control. A CL:AIRE COP Materials Management Plan (MMP), remediation strategy and final validation reports are recommended and will be required prior to discharge of any outlying planning conditions. Standard contaminated land planning conditions (requiring investigation, risk assessment, remediation strategy, implementation and validation) are likely to be applied to any planning consent and will require staged regulatory approval.

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1.0 INTRODUCTION

1.1 Instruction

NX Consulting Limited have been commissioned by Bruntwood (The Client) to complete a Phase 1 Geoenvironmental Desk Study & Preliminary Phase 2 Ground Investigation report at the proposed Manchester One Extension, 49-53, Portland Street, Manchester, M1 3L.

It is understood that the development consists of a commercial end use and includes the construction of a 4 storey (plus rooftop terrace and plant enclosure) extension on the western gable which wraps around the front of the building off Portland street. Hard and soft landscaping, a cycle store, access and servicing and other associated works will also form part of the development. A new substation will be formed at the rear of the building.

1.2 Previous Works

NX carried out a Phase 1 desk study in August 2022 (Ref: NX469 Phase 1 Desk Study & Ground Stability Risk Assessment for Manchester One, Portland Street, Manchester).

1st Line Defence also carried out a detailed Phase 1 UXO assessment report (Ref: DA21095-00 Detailed UXO Risk Assessment, Manchester One) of the Manchester One Extension Building in December 2025.

All reports should be read in conjunction with this study.

1.3 Objectives & Scope of Work

Guidance set out in LCRM[1], GPLC1-3[2] and the National Planning Policy Framework (NPPF)[3] states that a Preliminary Risk Assessment with a site reconnaissance is required as a minimum to ascertain if there is a potential contamination risk. If contamination is a potential, then site investigation works are carried out to establish a viable pollutant linkage to assess the potential risks to human health and controlled water receptors.

1 EA (2020). "Land contamination risk management (LCRM).
2 EA (2010). "Guiding Principles for Land Contamination." GPLC1-3.
3 NPPF (2024). "National Planning Policy Framework." Department of Communities and Local Government.

The objectives of the NX Consulting preliminary geoenvironmental site assessment was as follows:

- To undertake a Phase I Desk Study for the site;
- To provide further information on ground conditions to facilitate design of site infra-structure for the proposed new buildings, landscaping and hardstanding;
- To conduct chemical analysis on collected soil and groundwater samples of Made Ground and natural soils and provide a semi-quantitative assessment of potential risks from contaminants to human health and/or controlled waters, comprising a further Refined Conceptual Model; and,
- Provide preliminary recommendations regarding any outline remedial measures necessary to mitigate any risks to human health or controlled waters resulting from contamination on the site; or recommendations for any further work.

The preliminary scope included the following:

- 8no. window sample boreholes with associated in-situ testing to maximum depths of up to 5.45m bgl;
- 4no. rotary core boreholes with associated in-situ testing to maximum depths of 25.00mbgl.
- 2no. machine excavated trial pits.
- To conduct chemical analysis on collected soil samples of Made Ground and natural soils and provide a semi-quantitative assessment of potential risks from contaminants to human health and/or controlled waters, comprising a further Refined Conceptual Model.

1.3 Report Layout

- Section 2 of this report provides a summary of Phase 1 information from the previous NX Phase 1, Groundsure Report, including site description, history, published geology, Coal Mining Risk Assessment and environmental setting.
- Section 3 details the preliminary risk assessment and site investigation design.
- Section 4, 5, 6 & 7 details the intrusive investigation carried out to validate the foundation recommendations, geotechnical conditions identified by the investigation and makes recommendations in respect of foundations, pavement construction and soakaway drainage.
- Section 8 presents the records of the chemical analyses undertaken and gives the results of the qualitative risk assessment carried out using the results of the chemical analyses and taking account of the proposed end use of the site.
- Section 9 provides outlying remedial measures arising from this investigation.

1.4 Limitations

The accuracy of the data supplied by third parties should be considered in the context of any known site conditions for which NX Consulting Limited cannot be held liable.

The comments made in this report are based on the data available at the time of its completion. Any unusual or conflicting evidence discovered during any future site works must be presented to NX Consulting as soon as possible so that any implications may be considered.

This report is provided for the benefit only of the party to whom it is addressed. NX Consulting does not extend responsibility to any third party for the whole or any part of the contents. NX Consulting owes no duty of care in relation to this report to any third party. The investigation and reportage has been undertaken with all reasonable skill, care and due diligence. NX Consulting disclaims any responsibility to the client or others in respect of any matter(s) outside this agreed scope of the above works.
In addition to the above it should be noted that when investigating or developing land, sub-surface conditions might vary both spatially and over time. Whilst this investigation and subsequent interpretation has been undertaken to reasonably characterise current sub-surface conditions at the site within the scope of works and agreed budget, the

absence of certain ground, contamination or groundwater conditions at the individual locations is not a guarantee that these conditions do not exist elsewhere on the site. Additional information, changes in legislation or revised practices may necessitate re-interpretation of part or all of this report.

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2.0 PHASE 1 ASSESSMENT SUMMARY

This section summarises pertinent information gained from reviewing the Groundsure Geoinsight, Enviroinsight Reports and Historical Mapping. Full copies are presented in Appendix B and C respectively.

2.1 Site Location & Setting

Site Location	Manchester One, 49-53, Portland Street, Manchester, M1 3LD	
Site Description	The site comprises an existing multi-storey building with a new reception and workspaces set across 21 floors and an adjacent 2-storey commercial building in the north of site. A single storey basement containing a plant room with gas fired boilers is present beneath the west of the building and adjacent to the proposed extension. There is also a carpark and an associated ramp to the rear of the building. The Site is bound by an entertainment venue (Yates) and Chorlton Street to the northeast, Manchester Coach Station to the southeast, Sackville Street to the southwest, and Portland Street to the northwest. An site walkover has been carried out by NX Consulting to establish that no significant potential sources of contamination are present associated with the current development. The basement was observed to be well maintained and with good practices in place to contain spillages of cleaning fluids and fuels. No chemical storage areas or fuel tanks was observed during the walkover. No unstable slopes, invasive knotweed or significant induced surface settlements were observed within during the site walkover.	
Grid Reference	384288E 397961N	
Site Area	Approximately 0.35 hectares	
Site Setting	Surrounding area:	North: Commercial and retail East: Commercial and retail South: Commercial and retail West: Commercial and retail

2.2 Geology, Hydrology and Hydrogeology

Table 2.2 – Summary of Geology Hydrology and Hydrogeology	
Drift Geology	On site: Glacial Till (normally clays with occasional sands and gravels)
	Immediate surrounding area: Glaciofluvial deposits of sand and gravel
Solid Geology	On Site: Chester Pebble Beds Formation, Sandstone.
	Immediate surrounding area: Chester Pebble Beds Formation, Sandstone.

Table 2.2 – Summary of Geology Hydrology and Hydrogeology	
Faults	There are several faults recorded in the search area, the closest being a normal fault located 76m southwest of the site, the downthrown side is the northeast.
Hydrology	There were 2no. surface water features within 250m of the site: • 151m south, Rochdale Canal • 224m south east, inland river not influenced by normal tidal action.
Hydrogeology	Superficial deposits - Secondary Aquifer 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). Bedrock deposits - Principle Aquifer (Geology of high inter-granular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale).
Water Abstractions	There is two historical groundwater abstractions within 500m of the site. 1. Is located 154m to the west of the site and was for cooling purposes; 2. Is located 213m to the south east of site and was also for cooling purposes.
Source Protection Zone	The site is not within a currently defined groundwater source protection zone. The site is classed as having low soil leaching potential.
Flood Risk	The site is not located within any Flood Risk Zones 2 or 3. The site is stated to be at very low risk from surface water flooding from rivers or the sea. The site does not benefit from Environment Agency defined flood defences. The site is at moderate risk of groundwater flooding.
Shrink Swell Clays	Very low risk.
Landslides	Very low risk.
Ground Dissolution of soluble Rocks	Negligible risk.
Compressible deposits	Negligible risk.

Table 2.2 – Summary of Geology Hydrology and Hydrogeology	
Collapsible Deposits	Very low risk
Running Sands	Very Low risk

2.3 Mining Extraction and Natural Cavities

Table 2.3 – Mining and Mineral Extraction	
Coal Mining	The site is located within a coal mining area as defined by the Coal Authority. A Consultants Coal Mining Report is recommended to further assess coal mining issues at the site.
Johnson Poole and Bloomer	Johnson, Poole and Bloomer records are listed as being obtainable within a 1000m boundary of this site.
Other mining	None identified.
Historic Ground Workings	There are five entries for historical surface ground workings within 250m of the site: • 132m south east, canal. • 147m south east, ponds. • 173m east, unspecified wharf. • 213m south east, unspecified wharf. • 223m north east, pond. There are no entries for historical underground workings within 1000m of the site.

2.4 Ground Stability Risk Assessment

Published Geology

According to the British Geological Survey map, sheet No85 (Manchester) Solid and Drift editions, the site is shown to be underlain by Drift deposits comprising Glacio-Fluvial Sheet Deposits, overlying Chester Pebble Beds.

Coal Authority

The Coal Authority website shows the site as lying within a coal mining reporting area, but not within a development high risk area, or within an area of probable shallow coal mine workings.

Based on the published geology and Coal Authority data, the risk of the site being affected by shallow mineworkings is considered to be very low.

Heave/Shrinkage

Trees may be present in the area, which have the potential to cause heave/shrinkage and any new developments may require heave/shrinkage protection measures in line with NHBC Chapter 4.2 Guidance.

Guardian Underground Telephone Exchange (GUTE) Tunnel

It is understood by NX Consulting that the GUTE tunnels underlie certain areas of Manchester City Centre. The nearest proximity the tunnel network has to the site is located approximately 40m southwest between Sackville Street and Abingdon Street when the tunnel is reported to lie trending NW-SE (https://hidden-manchester.org.uk/tunnels.html).

It is unlikely that any underground tunnels should impact the site. Any new construction works may need to consider the tunnel presence.

2.5 Site History

Historical maps of the site area have been obtained from Groundsure. Pertinent information determined from review of these maps is set out in the following table; a full copy of the maps is presented in Appendix C.

Table 2.4 – Site History

Map Date	On Site Potentially Contaminative Past Uses	Off Site Potentially Contaminative Past Uses
1851 – 1948	The site lies within a heavily built-up area of commercial, residential and industrial land use. On-site features include residential buildings and associated yards, a timber yard, pub and a street running through the center of the site.	• (1851) The site lies within a highly industrialised area. Land uses include mills, manufactories, coal yards, timber yards, copper and zinc manufacturing, reservoirs and steel works.
1948 – 1964	Buildings are no longer marked on site. Previous buildings were likely destroyed by bombing in WWII.	• (1893) Manchester Royal Infirmary, 230m north east. • (1893) Picadilly Cotton Mill, 250m east. • (1893) Timber Yard, 240m south. • (1893) Unspecified Wharf, 170m south. • (1893) Tramway, 10m north west. • (1893) Canal, 125m south east. • (1908) Unspecified Wharf, 250m east. • (1908) Unspecified Wharf, 250m south east. • (1908) Electricity Station, 225m south west. • (1948) Garage, 100m north west.

Table 2.4 – Site History		
Map Date	**On Site Potentially Contaminative Past Uses**	**Off Site Potentially Contaminative Past Uses**
1964 – Present	The site has been redeveloped to include 1no. building, St Andrew's House (later renamed Portland Tower), and a ramp leading to a bus station and car park. The site remains largely unchanged up to the present day.	• (1964) Bus Station and Car Park, 20m south east.

2.6 Environmental Information

Table 2.5 – Environmental Information	
Environmental permits, incidents and registers	No pollution incidents have been recorded within 250m of the site. 2no. Part A(2) or Part B Activities have been identified within 500m and are as follows: • 349m W, dry cleaning activities. • 470m NW, dry cleaning activities.
Landfill Sites and Other Waste Disposal Facilities	No current landfill sites or waste treatment sites recorded within 1000m of the site. There were no instances of historical landfill sites within 500m of site, the nearest three are as follows:
Potentially contaminative land uses	45no. current, potentially contaminative land uses have been identified by the GroundSure report, the most potentially significant are summarised as follows: • On-site, scrap metal merchants. • On-site, colours, chemicals and water softeners suppliers. • 51m south east, coach and bus station. • 61m north west, print related equipment. • 65m east, medical supplies and equipment. • 119m west, scrap metal merchants. • 161m east, moorings and unloading facilities. • 164m north waste collection processing and disposal equipment • 167m west, 189m east, electrical sub station 99no. historical, potentially contaminative land uses have been identified by the GroundSure report, the most potentially significant are summarised as follows: • 14m south east, bus station. • 173m east, unspecified wharf. • 208m north east, infirmary. • 210m south west, electricity station. • Multiple entries of unspecified commercial/industrial/mills and works.

Ecological Setting	No significant sites within 1000m.
Radon	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level.

2.6 BGS Boreholes

On-Site Boreholes - BGS Ref: - SJ89NW317

6no. boreholes were sunk across the site to depths of to 14.0m depth in 1962. The findings are reproduced below:

BH01
- G.l. to ≈2.9m - MADE GROUND (Filled in ground).
- ≈2.9 to ≈10.4m - Brown CLAY
- ≈10.4 to ≈11.0m+ - Red SANDSTONE

BH02
- G.l. to ≈4.2m - MADE GROUND (Filled in ground).
- ≈4.2 to ≈4.5m - Concrete Floor
- ≈4.5 to ≈10.7m - Brown CLAY
- ≈10.7 to ≈11.6m+ - Red SANDSTONE

BH03
- G.l. to ≈1.9m - MADE GROUND (Filled in ground).
- ≈1.9 to ≈2.5m - Sandstone Cobble
- ≈12.5 to ≈13.2m - Brown CLAY
- ≈13.2 to ≈14.0m+ - Red SANDSTONE

BH04
- G.l. to ≈2.3m - MADE GROUND (Rubble/Tarmac).
- ≈2.3 to ≈9.9m - Brown CLAY
- ≈9.9 to ≈10.4m - Sandy SILT
- ≈10.4 to ≈12.0m+ - Brown CLAY

BH05
- G.l. to ≈2.7m - MADE GROUND (Filled in ground).
- ≈2.7 to ≈11.0m - Brown CLAY
- ≈11.0 to ≈12.00m+ - Red SANDSTONE

BH06
- G.l. to ≈0.8m - MADE GROUND (Filled in ground).
- ≈0.8 to ≈2.1m - Soft grey CLAY
- ≈2.1 to ≈9.6m - Brown CLAY
- ≈9.6 to ≈12.2m+ - Red SANDSTONE

No groundwater was noted.

2.7 Unexploded Ordnance (UXO)

The regional unexploded bomb risk map from Zetica indicates that the site is in an area at moderate risk from possible Unexploded Ordnance (UXO) resulting from the Second World War.

A detailed UXO risk assessment report has been compiled by 1st Line Defence (Ref: DA21095-00) and dated December 2024, for the Manchester One site. The site was indicated to have been demolished c. December 1940 due to bombing activities with a recorded fire bomb adjacent to the east and several additional demolished and partially damaged structures noted adjacent to the site. The site is recorded to have an overall Moderate Risk from German and AAC UXO with a Low risk from Allied UXO noted. As such, the following recommendations were made:

All Works

1. UXO Risk Management Plan
2. Site Specific UXO Awareness Briefings to all personnel conducting intrusive works.

Open Excavations (trial pits, service pits, bulk excavations, strip foundations etc.)

1 UXO Specialist On-site Support

Boreholes & Piled Foundations)

Intrusive Magnetometer Survey of all borehole and pile locations/clusters down to maximum bomb penetration depth.

Note - proactive on-site UXO support/survey should not be necessary for any works taking place at the location of and down to the depths of significantly worked post-war made ground/post-war fill.

During the NX consulting preliminary intrusive works, an Unexploded Ordnance Awareness Briefing was carried out to personnel conducting intrusive works was undertaken on the first morning on site with all relevant personnel in attendance.

Additionally, a UXO Specialist was present on site where borehole positions were drilled within the area allocated Medium Risk. These works involved an Intrusive Magnetometer Survey of all Borehole locations down to a maximum bomb penetration depth.

3.0 PRELIMINARY CONCEPTUAL MODEL

The site characterisation attempts to identify potential previous and existing site sources of contamination. The conceptual model links the identified sources likely to cause significant possibility of significant harm via pathways to identified critical receptors. The conceptual model is therefore based on a number of identified source-pathway-receptor scenarios. For land to be classified as contaminated a significant pollutant linkage will need to be identified which will include each component of the conceptual model. The absence or removal of a source or interception of a pathway will 'break' the pollutant linkage.

The conceptual model is characterised by identification of the following:

- On-site sources, which may impact on-site receptors via plausible pathways.
- On-site source, which may impact off-site receptors via plausible pathways.
- Off-site sources, which may impact on-site receptors via plausible pathways.

The change of land use will require assessment of the new site development layout within the context of introducing new exposure pathways. The planning regime will require assessment of the site to ensure the new development will not be classed as contaminated land as defined in the Contaminated Land (Scotland) Regulations 2000.

3.1 Risk Assessment

Section 6.3 of the CIRIA Report "Contaminated Land Risk Assessment: A Guide to Good Practice" (CIRIA Report C552) describes in detail the concepts underlying the risk-based approach to assessing potentially contaminated land, introduce the roles of key legislation and describe the qualitative methodology adopted for evaluating and characterising risk.

Current best practice in the UK promotes a risk-based approach to dealing with both soil and groundwater contamination. The principal aim of the approach is to ensure protection of human health and the environment in a thorough, transparent and cost-effective manner.

Fundamental to the risk-based approach is the concept that for 'Contaminated Land' to be designated, as a consequence of historic activities, a pathway for contamination must be shown to exist between a source of contamination and a receptor. The combined presence of a source, pathway and a receptor is described as a 'pollutant linkage'.

The concepts associated with a contaminant source, pathway and receptor are defined in DETR Circular 02/2000 'Contaminated Land Environmental Protection Act 1990: Part II A'. A **source** of contamination may be considered as a 'substance which is in, on or under land that has the potential to cause harm or to cause pollution of controlled waters'. A **receptor** can be considered as either 'a living organism, a group of living organisms, an ecological system or a piece of property which is being, or could be harmed, by a contaminant or controlled waters which are being, or could be, polluted by a contaminant'. A **pathway** may be considered as one or more routes by, or through, which a receptor is being, or could be, exposed to or affected by a contaminant. Typical pathways may include migration in groundwater, surface water run-off or infiltration, inhalation, dermal contact and ingestion.

The risks posed by an identified pollutant linkage can often be mitigated by removing the source of contamination, treating the source of contamination, blocking the relevant pathway(s) or by protecting the receptor.

PRINCIPLES OF RISK EVALUATION

The risk evaluation methodology presented below is qualitative in nature, and is therefore a subjective method. It is based upon guidance presented in CIRIA publication referenced C552, 'Contaminated land risk assessment ~ A guide to good practice', 2001 and involves the classification of the following:

The magnitude of the potential **consequence** (severity) of risk occurring (Table C 1).

The magnitude of the **probability** (likelihood) of the risk occurring (Table C 2).

These are then considered in conjunction to give a risk matrix (Table C 3)

Classification	Definition	Examples
Severe	Short-term (acute) risk to human health likely to result in 'significant harm' as defined by the Environmental Protection Act 1990, Part II A. Short-term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem (note the definitions of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000).	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Explosion, causing building collapse (can also equate to a short-term human health risk if buildings are occupied).
Medium	Chronic damage to Human Health ('significant harm' as defined in DETR, 2000). Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution). A significant change in a particular ecosystem, or organism forming part of such ecosystem. (Note: the definitions of ecological systems within Draft Circular on Contaminated Land, DETR, 2000).	Concentrations of a contaminant from site exceed the generic, or site-specific assessment criteria. Leaching of contaminants from a site to a major or minor aquifer. Death of a species within a designated nature reserve.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in the *Draft Circular on Contaminated Land,* DETR, 2000). Damage to sensitive buildings/structures/ services or the environment.	Pollution of non-classified groundwater. Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	Harm although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.	The presence of contaminants at such concentrations that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discolouration of concrete.

Table C 1: Classification of Consequence

Classification	Definition
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Table C 2: Classification of Probability

		Consequence			
		Severe	*Medium*	*Mild*	*Minor*
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table C3: Comparison of Consequence Against Probability

Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.
Moderate Risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Table C 4: Description of the classified risks and likely action required

Table 1.0. Phase 1 Conceptual Site Model (CSM) and Preliminary Risk Assessment (Existing End Use)

SOURCE -PATHWAY -RECEPTOR LINKAGE				QUALITATIVE RISK ASSESSMENT		
Potential Contaminant Source	**Location**	**Receptors**	**Pathways to Receptors**	**Associated Hazard (Potential Severity)**	**Likelihood of Occurrence**	**Risk***
Potential contaminants may be present within Made Ground beneath the site - Ash and clinker used for levelling / drainage: heavy metals, sulphates and PAHs. - Hydrocarbons - Asbestos Containing Material (ACM), - PCBs from nearby electrical substation Asbestos Containing Materials may also present within existing structures.	Possibly within sub surface strata & Groundwater.	Ground water (Principal Aquifer)	Vertical percolation to groundwater	Groundwater (Severe – pollution of sensitive water resource)	Unlikely Majority of building hardstanding cover will restrict percolation/infiltration.	**Low/Moderate**
		Surface Water	Lateral percolation & Surface Run-off to surface water	Groundwater (Medium – pollution of sensitive water resource)	Low likelihood, no surface water features identified in close proximity to site.	**Low/Moderate**
	Possibly within existing structures	End user of site.	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Human Health (Severe).	Unlikely. No significant sources of contamination recorded. Asbestos could be present in Made Ground associated with existing and demolished buildings. Building cover will restrict potential impact.	**Low/Moderate**
		Site workers, demolition staff, construction staff,	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Human Health (Minor – providing suitable PPE equipment is worn)	If conditions assessed and correct PPE, dust suppression, and other health and safety measures are applied then the likelihood can be reduced to low likelihood.	**Low/Moderate**

** Risk refers to the potential risk that the Source, Pathway, Receptor linkage is complete and is used to determine if any further investigation/measures are required. It does not indicate immediate emergency risk to any individual or feature present on the site unless specifically noted.*

Table and Summary of Potential Risks, Sheet 2

SOURCE -PATHWAY -RECEPTOR LINKAGE				QUALITATIVE RISK ASSESSMENT		
Contaminant	**Location**	**Receptors**	**Pathways to Receptors**	**Associated Hazard (Potential Severity)**	**Likelihood of Occurrence**	**Risk***
Mobile/volatile contaminants from onsite / off site Sources.	Possibly within sub surface strata & Groundwater.	End user of site	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Human Health (Medium)	Low Likelihood, dependent upon presence of historic contaminants. Building cover will restrict potential impact.	**Low/Moderate**
		Construction workers if applicable	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Human Health (Minor – Providing suitable PPE equipment is worn)	Low Likelihood, dependent upon presence of historic contaminants.	**Low Low/Moderate risk (if PPE equipment not worn)**
Hazardous Ground Gas associated with potential Made Ground.	Possibly within strata beneath the site/surrounding area	End user of site	Migration through strata and accumulation under buildings of explosive and asphyxiating gases.	Human Health (Severe)	Unlikely, no recorded landfills within 250m of the site boundary. Gas monitoring recommended prior to future development.	**Low/Moderate**
		Buildings & Infrastructure	Migration through strata and accumulation under buildings of explosive and asphyxiating gases.	Buildings & Infrastructure (Severe)	Unlikely, dependent upon presence of historic contaminants.	**Low Low/Moderate risk (if PPE equipment not worn)**
Historic coal mining	On site	Buildings & Infrastructure	Coal mining and shafts beneath the site causing surface ground instability causing building subsidence and collapse	Buildings & Infrastructure (Severe)	Unlikely, based on geology and local knowledge.	**Low/Moderate**

** Risk refers to the potential risk that the Source, Pathway, Receptor linkage is complete and is used to determine if any further investigation/measures are required. It does not indicate immediate emergency risk to any individual or feature present on the site unless specifically noted.*

4.0 FIELDWORKS

4.1 General

The preliminary phase of fieldworks were undertaken between 7th January 2025 and 17th January 2025.

All arisings from the preliminary investigation were screened on-site for the presence of volatile organic compounds (VOC) using a MiniRae Photoionisation Detector (PID).

A plan showing all the exploratory hole locations is presented in Appendix A. All locations were checked for services against available service plans, scanned with a cable avoidance tool (CAT), and hand dug trial pits formed to a depth of 1.20metres below ground level (mbgl) prior to the intrusive investigation.

4.2 Rotary Core Boreholes (RBH)

4no. rotary core boreholes were undertaken across the site to maximum depths of 25.00mbgl. Boreholes were initially advanced by means of cable percussion boreholes to rockhead.

The exploratory holes retrieved continuous soil samples; these were then logged by an on-site engineer and representative samples were taken for geotechnical and chemical analysis.

Detailed log sheets are included in Appendix C.

4.3 Window/windowless Sampler Boreholes (WS)

8no. window sample boreholes were advanced across the site to depths of between 1.50mbgl. and 5.45mbgl. Representative samples were taken for geotechnical and chemical analysis.

Standard Penetration Tests (SPTs) were undertaken at 1m intervals within the WS boreholes. Groundwater as gas monitoring wells were placed within 4no. WS boreholes on completion.

Table 4.3.1 below provides boreholes installations placed, depths and response zones of strata types.

Table 4.3.1 – Window Sample Installation Details

Borehole & Installation Depth (mbgl)	Response Zone (mbgl)	Strata Type
WS01 – 5.00	0.50 to 5.00	Made Ground, Sandy gravelly Clay
WS03 – 5.00	0.50 to 5.00	Made Ground
WS04 – 1.50	0.50 to 1.50	Made Ground
WS07 – 5.00	0.50 to 5.00	Made Ground, Sandy gravelly Clay

Detailed window sample log sheets are included in Appendix C.

4.4 Mechanically Excavated Trial Pits

2no. mechanically excavated boreholes were advanced across the site to depths of 1.20mbgl.

Representative samples were taken for geotechnical and chemical analysis.

4.5 Sample Collection and Analysis

Environmental sample collection was carried out in accordance with BS EN ISO 22475-1:2006. All soil and groundwater samples were collected using either clean stainless steel utensils or clean disposable gloves and placed directly into clean containers provided by the laboratory. Samples obtained during the investigation were subjected to a range of geochemical testing at appropriate UKAS accredited laboratories. Testing was carried out in accordance with the procedures outlined in BS EN ISO14688-1:2002, 14688-2:2004, and 14689-1:2003.

5.0 GROUND CONDITIONS

5.1 General

The ground conditions recorded confirmed the published geology discussed within the NX Phase 1 section of this report. In general, the ground conditions were found to comprise varying thicknesses of Made Ground overlying Glacial Till. Chester Pebble Beds Formation Sandstone was encountered in all of the rotary core boreholes underlying these deposits.

5.2 Ground & Groundwater Conditions

A summary of ground conditions and respective water strikes, from the rotary core and window sampler boreholes are provided within the Table 5.2.1 below.

Table 5.2.1. Ground Conditions Summary
M – Denotes metres below ground level

	Made Ground	Glacial Clay	SANDSTONE BEDROCK	Groundwater Strike
RBH01	0.0-2.8m	2.8-13.4m	13.4-22.5m	NR
RBH02	0.0-7.0m	7.0-13.0m	13.0-25.0m	NR
RBH03	0.0-3.8m	3.8-9.8m	9.8-24.0m	NR
RBH04	0.0-3.7m	3.7-9.8m	9.8-19.0m	NR
WS01	0.0-3.0m	3.0-5.5m+		NR
WS02	0.0-5.5m+			NR
WS03	0.0-5.5m+			NR
WS04	0.0-3.2m	3.2-5.5m+		NR
WS05	0.0-1.2m+			NR
WS06	0.0-1.5m+			NR
WS07	0.0-3.0m	3.0-5.5m+		NR
WS08	0.0-3.0m	3.0-5.5m+		NR
TP01	0.0-1.2m+			NR
TP02	0.0-1.2m+			NR

Made Ground

For purposes of identification, we have attempted to classify the Made Ground, with a few exceptions, into the following distinct soil types;

- Reworked topsoil
- Concrete paving
- Uncompact greyish brown and black gravelly sand/sandy gravel with various anthropogenic materials

Made Ground depths were found to be significantly variable across the site. A surface cover of topsoil or concrete paving slabs were present within external areas.

The proven depth of Made Ground across all boreholes ranged from 2.8mbgl (RBH01) to 7.0mbgl (RBH02). With the full thickness of Made Ground unproven within WS02, WS03,

WS05, WS06, TP01 & TP02. The average depth of Made Ground proven across all boreholes was 3.7mbgl.

Made Ground was generally found to be deepest to the north-west of the existing onsite structure where proven to a depth of 7.0mbgl. within 1no. location (RBH02) and to an unproven depth within surrounding shallow probeholes.

Made Ground typically comprised an initial layer of concrete paving slabs and localized reworked topsoil materials underlain by various reddish brown, greyish brown and black uncompacted occasionally clayey sandy gravels with brick, cement, concrete, ash, tile, cloth, wire, slate, timber and other inclusions. A localized compact reddish brown gravel of brick, cement and sandstone was noted within RBH02 between 3.0-4.8mbgl.

Cobble features were noted within the majority of advanced probeholes. Buried obstructions impeding advancement were noted within WS05 at a depth of 1.20mbgl. and WS06 at a depth of 1.50mbgl with a relict concrete ground beam/foundation noted within RBH03 at 0.4mbgl. Localised instability within TP01 and TP02 prevented advancement.

Superficial Deposits

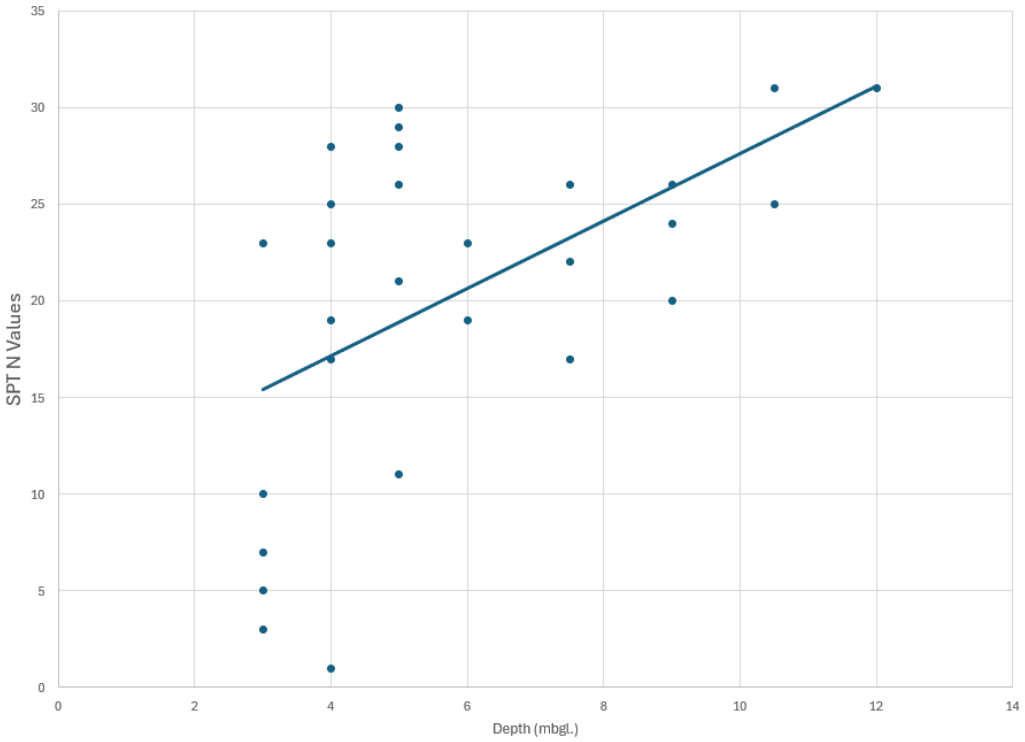
Superficial deposits were encountered within the majority of exploratory holes between depths of 2.8-13.4m bgl, with the exception of WS02, WS03, WS05, WS06, TP01 & TP02 where the Made Ground was not able to be fully penetrated.

Superficial deposits were noted to typically comprise firm to stiff to stiff dark brown sandy gravelly CLAY with rare fine to coarse sub angular to rounded gravel of mixed lithology was recorded. Clay was proven to a maximum depth of 13.4mbgl in RBH01.

The boreholes were progressed as cored drillholes once competent bedrock was encountered (9.8-13.4mbgl).

Uncorrected SPT 'N' values within the drift deposits ranged from 1-31, with an average 'N' value of 20 and generally increased with depth, as the strong positive correlation shows on the line of best fit within Graph 5.1.1 below. The standard deviation for the data is 9.66.

Graph 5.1.1 – SPT N Value Data within Drift Deposits.



Handheld Shear Vane Tests

Shear vane values taken within the Glacial Clay deposits ranged from 120 to 134KPa, indicating that the clays generally range from stiff/very stiff.

Solid Geology

Solid geology was proven within advanced rotary cored boreholes at depths between n 9.8-25.0mbgl. and noted to comprise highly weathered becoming poorly cemented weak to medium strong reddish brown fine to coarse grained SANDSTONE with rare mineral inclusions. Horizontal to sub-horizontal bedding fractures, thinly spaced, planar, smooth to slightly rough were also noted upon recovered core runs. Sub rounded to rounded gravel was recorded within the sandstone bedrock. Recovery from shallower depths was often poor due to the rock being poorly cemented. This generally improved as drilling progressed.

5.3 Groundwater

Table 5.3.1 above highlights an absence of encountered groundwater within advanced probeholes. It should be noted that water added to aid rotary drilling may have masked the presence of groundwater within these deposits.

Previously advanced BGS boreholes at the site did not record groundwater.

An absence of groundwater strikes and limited available nearby borehole logs has restricted regional groundwater flow calculations.

5.4 Underground Service Plans

The following utilities are present across the site:

- Electricity and fibre optic cables routed through the site.
- Drains are present within the site boundary.

The design team and Client should familiarise themselves with the presence of these underground services and potential structures.

5.5 Below ground obstructions

The majority of exploratory probeholes noted the presence of concrete and brick cobble and boulder obstructions within Made Ground. Buried obstructions impeding advancement were noted within WS05 at a depth of 1.20mbgl. and WS06 at a depth of 1.50mbgl. with a relict concrete ground beam/foundation noted within RBH03 at 0.4mbgl. Localised instability within TP01 and TP02 prevented advancement.

5.6 Contamination Observations

No visual or olfactory evidence of hydrocarbon contamination was noted within the advanced probeholes. No significant photo ionisation detector (PID) readings were obtained during the advancement of boreholes.

6.0 GEOTECHNICAL TESTING

6.1 Laboratory Analysis

A programme of laboratory testing was undertaken in accordance with BS 1377 (1990) "Methods of Test for Soils for Civil Engineering Purposes". The results are presented in Appendix D and are summarised below.

BS Test Number	Description
Part 2:3	Moisture Content
Part 2:5	Plasticity index
Part 2:9	Particle Size Distribution
Part 3:5,9	pH and Sulphate
Part 4:1	Dry Density/Moisture Content Relationship
Part 7.9	Unconsolidated Undrained Triaxial Test

Moisture Content

11 samples of clay were tested for natural moisture content from drift deposits and Made Ground. The results are summarised below:

Strata	Range	Mean
All	13-21	16.94
Drift Deposits	13-21	17.17
Made Ground	14-17	15.95

Plasticity Index

11No. samples of natural cohesive strata from natural cohesive strata from drift deposits and Made Ground, were analysed for plasticity index and hence shrinkage/swelling potential. The results are summarised below:

Strata	Plasticity	Plasticity Range	Amended Plasticity Range	Volume Change Potential
Made Ground	-	-	-	-
Clay	Low-Medium	7.0 - 23.0%	6.65 – 22.77%	Low-Moderate

Particle size distribution

8No. samples were selected for the determination of particle size distribution. The resultant grading curves have been included in Appendix D.

Sulphate and pH

Samples were analysed for pH and soluble sulphate:

Property	Range
Sulphate as SO4 (g/l)	0.025 - 0.18
pH	8.4 - 8.9

Point Load Testing and Uniaxial Compressive Strength Testing

36no. samples of sandstone were selected for the determination of Point Load compressive testing. 3 samples of sandstone were selected for UCS analysis.

Property	IS(50) Range (MPA)	Mean	Approximate UCS (MPa)*
Point Load	0.07 to 0.44	0.23	1.68 to 10.56
UCS		5.41	4.84-6.15

***Refer: Carter and Sneddon 1977 (from "Using the Point Load Test to determine the UCS of Coal Measure Rock" by Rousiak and Mark.**

7.0 GEOTECHNICAL ASSESSMENT

7.1 General

It is understood that the development consists of a commercial end use and includes the construction of a 4 storey (plus rooftop terrace and plant enclosure) extension on the western gable which wraps around the front of the building off Portland street. Hard and soft landscaping, a cycle store, access and servicing and other associated works will also form part of the development. A new substation will be formed at the rear of the building.

No building loads have been provided to NX Consulting at the time of drafting this document.

Ground conditions encountered across the site (during the NX investigation) comprise Made Ground to maximum proven depths of 7.0mbgl with associated below ground obstructions firm to stiff to stiff cohesive clay. Suspected bedrock was encountered at depths between 9.8-13.4mbgl. and noted to comprise a weak to medium strong reddish brown poorly cemented fine to coarse grained SANDSTONE with rare mineral inclusions.

SPT N values within the drift deposits recorded values of 1-31 between depths of 3.0-13.0mbgl.

SPT N values within the sandstone recorded values of in the order of 50 for minimal penetration prior to termination of the borehole.

7.2 Geotechnical Parameters

The following parameters are recommended for engineering design based on laboratory test results obtained to date and literature values:

Table 7.2.1: Glacial Clay		
Parameter	**Typical data range**	**Suggested Design**
Moisture Content (%)	13.0 - 21.0	13.0 to 21.0
Amended Plasticity Index (%)	6.67-22.77	20.00 - Medium
Bulk Density (Mg/m3)		2.20
SPT N-value	1-31	8 – 3.0m bgl 25 – 3.0m to 13.0mbgl
Undrained Shear Strength (kN/m2)	120 - 130	65 – 9.0m bgl 120 – 9.00 to 13.4m bgl
Effective Cohesion (kN/m^2	-	0
Coefficient of compressibility (m2/MN)	-	10/Cu
Angle of Friction (phi')	-	26
Permeability (m/sec)	-	-
ACEC	DS1, AC-1	DS1, AC1s

Table 7.2.2 - Sandstone Bedrock	
Parameter	**Recommended Design**
SPT N-value	50
Highly weathered SANDSTONE	Angle of shearing resistance = 36^o
SANDSTONE	Friction Angles for clean fractures in rock of 30^o (Tomlinson 2001)
UCS (MPa)	1.7 (conservative) to 10.5

7.3 General

It is likely that a post-development foundation system cannot fully be confirmed until final building levels and any 'Build Near' restrictions are established. It is considered likely that the upper 1.0 to 2.0m of strata will be grubbed up, screened, crushed and replaced to create a stable working platform, free from obstructions to detrimentally impact pile formation.

A degree of surface treatment comprising screening, crushing, excavation and re-compaction will need to be carried out beneath former buildings and infrastructure prior to the formation of foundations.

The Made Ground deposits and drift deposits are considered unsuitable as an adequate founding stratum due to the proposed loads and the possible risks of unacceptable total and differential settlements occurring.

Main Building Foundations

Piles

Given the likely heavy building loads, presence of significant thicknesses of Made Ground, potential groundwater and adjacent structure, piled foundation are likely to be the most suitable foundation solution.

Soil and rock properties are presented in Table 7.3.1 below are recommended for 'preliminary' pile based on log description and in-situ testing results, as well as published geotechnical data of soil and rock properties. Point load analysis indicates that the bedrock is poorly cemented and are generally very weak to weak. Therefore, the UCS of lower bound of very weak should be adopted as a conservative approach.

If adopted, piled foundation options would need to consider the effects of noise and vibration on nearby structures and the presence of below ground obstructions recorded during this assessment. Access for piling rigs with sufficient capacity to penetrate moderately strong to strong sandstone should also be considered.

The advice of specialist piling contractors should be sought on the suitability and load carrying capacity of their proprietary system for the use at the site and their attention brought to the nature and composition of the Made Ground, obstructions, below ground services and Glacial Till deposits.

If treatment of the upper made ground strata is not carried out, probing/pre-auguring and/or excavation will be required at pile locations to establish the potential presence and any required removal of obstructions present within the upper 2.0m+ of made ground.

Following treatment, in-situ load tests should be carried out on the compacted ground to verify performance and foundation and slab design.

A limited number of trees and hedgerows are present which are within possible influencing distance of the site. Foundations and drainage should be designed in line with NHBC Standards guidance document Chapter 4.2 Building Near Trees.

Floor Slabs

Suspended floor slabs or ground bearing slabs onto pre-treated ground are recommended due to the depth of Made Ground and variability of strata encountered. Adequate support and reinforcement should be adopted to reduce slab deflections in line with structural standards.

Table 7.3.1 –Soil Properties adopted in the Preliminary Pile Design

Stratum	Soil Properties	Remark
Made Ground/ Fill	Bulk Density = 18 kN/m^3	Contribution of shaft resistance being ignored.
Glacial Till	Bulk Density = 18 kN/m^3 Angle of shearing resistance = 26^o	
Highly weathered SANDSTONE	Bulk Density = 18 kN/m^3 Angle of shearing resistance = 36^o	Based on the lower bound of dense granular materials as recorded as sandstone sand and gravel
Very weak SANDSTONE	Bulk Density = 21 kN/m^3 UCS = 1.6MPa – 9m to 12m UCS = 4.8Mpa – 12m to 25m RQD < 30% Angle of shearing resistance = 30^o	Based on worst case point load and description of predominantly described very weak to moderately strong

7.4 Earthworks, Excavations and Groundwater

All projects involving earthworks come under the requirements of the Construction (Design and Management) Regulations 2007 (CDM). The creation and maintenance of a project risk register is seen as good practice and is a requirement under CDM. All risks identified by those involved in the design of earthworks should be filed into the project risk register. Where a project includes geotechnical design, a geotechnical risk register should be developed to support and enhance the project risk register.

Site preparation prior to upfilling should include removal of all vegetation, topsoil and any uncontrolled filling/Made Ground. Earthworks materials should be classified in accordance with Table 6/1 of Department of Transports Specification for Highways Works (Series 600 SHW); summarised below.

Table 7.3.1 – Classes of Earthworks Materials Permitted for Incorporation into the Works

Use	Permitted Class(es)
General fill – granular (and granular improvement layer, where required)	1A, 1B, 1C
General fill – cohesive	2A, 2B
Fill to landscape areas	4
Topsoil	5A, 5B
Embankment Starter Layer	6A, 6B,6C
Capping	6F1,6F2,6F3
Fill to reinforced earthworks	6I/J
Backfill to structures	6N, 6P [6NI, 6PI]

Any embankments and site slopes should be constructed utilizing Class1A, 1B, 1C granular fill as specified within (Series 600 SHW). The starter layer for embankment construction should comprise Class 6A, 6B, 6C granular fill. Unacceptable material, Class U2 shall be as defined in Clause 601.3 Series 600 SHW.

The Made Ground is likely to be suitable as 'bulk' fill following a degree of treatment.

The option for classifying soil/fill should be selected and should maximize the potential to win suitable fill from the site. Unsuitable materials will require treatment (screening/crushing/segregation and reused (where appropriate) on site as part of the site preparation and upfill. Unsuitable materials will require removal from site to suitably licensed waste management facility.

During site upfilling, consideration should be given for pre-earthworks drainage that allows for temporary fill surfaces to be sealed and shaped to shed water and operational restrictions during periods of rainfall.

The requirements for geotextiles to be used to separate earthworks materials should be assessed by a suitably qualified specialist contractor/manufacturer. The required design life should be no less than 120 years.

Details of laying and lapping shall be in accordance with the specialist contractors recommendations.

Excavations into the Made Ground and Glacial Till should be viable using conventional hydraulic excavating plant. Where relict concrete, cobbles and boulders are present within the upper 1.0 to 2.0m+, breaking equipment may be needed to achieve the design depth required.

The stability of excavations is likely to be variable and collapse and spalling of the granular Made Ground strata (particularly where groundwater is present) should be anticipated. All excavations should be conducted in line with CIRIA Report 97 - Trenching Practice and BRE 440 Foundations, Basements and External Works 2002. Trenchboxes or similar may be required to support drainage excavations locally.

Any replaced 'site won' or imported materials will again need to be compacted in a controlled manner in line with the Department of Transport, Specification for Highway Works Specification 600 & 800 series, subject to additional confirmatory earthworks testing.

Where possible all soils should be retained on site to reduce disposal costs.

Pavement Construction

If the CBR is less than 2.5%, foundation improvement work shall be undertaken in accordance with IAN 73/06. An initial design CBR value of 2% is recommended for the granular Made Ground deposits. Should the proposed formation be formed off the recorded compacted gravel at depths ranging from 0.20m bgl to 0.65m bgl a CBR value of 15% may be achievable.

Once the cut and fill volume has been carried out, and where access roads are to be adopted, design CBR values should be confirmed by carrying out in-situ plate load tests. It may be prudent to excavate areas of soft strata, if encountered, and replaced with suitably compacted gravel due to the risk of deformation and short to long term settlements.

If the works are carried out during periods of inclement wet weather, very soft ground should be anticipated and imported stone or ground improvement may be required for temporary enabling works.

Groundwater, excavations & Surface Water Management

Whilst unencountered to date, potential groundwater should be anticipated within shallow drift deposits. Groundwater shall be control in accordance with CIRIA report 113 "Control of Ground Water to Temporary Works where required.

It should be noted that water added to aid rotary drilling, may have masked the presence of groundwater within bedrock deposits.

It is likely that seepages of groundwater would be encountered within the Made Ground and in excavations. Specialist dewatering measures are unlikely to be required for shallow excavations, (typically <1m bgl) and sump pumps should be adequate. Excavations below

5.00m may require specialist dewatering measures (such as well point systems) and temporary support from groundwater should be implemented as required.

If groundwater or surface water flows into foundation excavations, 'blinding' concrete should be used at the base of the foundation and excavations. Foundation concrete should be poured as soon as possible afterwards.

Arrangements should be made to prevent ponding and water softening in any excavation and within formation level soils. The Contractor should ensure that ground levels are of sufficient gradient to enable the collection of surface water run-off in sumps or grips.

Any potentially contaminated water shall not be allowed to migrate into other areas until the results of the analysis are available and, if required, a suitable means of water treatment has been agreed.

Pumping from over excavated sumps may be required to maintain satisfactory working conditions.

Groundwater should be monitored prior to and throughout the construction period to establish and groundwater changes and associated impact on construction and design.

Concrete Classification

The results from the chemical laboratory sulphate and pH analysis for the site indicate that a worst-case Design Sulphate Class of DS-1 and an Aggressive Chemical Environment for Concrete (ACEC) class of AC-1.

7.5 Soakaway Drainage

It was not possible to carry out soakaway testing due to the unstable and deleterious nature of the upper 3m of made ground deposits. Additionally, relatively impervious glacial clay deposits are likely to yield infiltration rates in the order of 3 x 10-9m/sec.

NX Consider that soakaways are unlikely to be suitable at this site within the interbedded clay and sand deposits. Furthermore, the presence of elevated lead contamination across the site likely precludes the acceptability of use.

7.6 Shallow Mineworkings

Based on the published geology and Coal Authority Mining Report, the risk to the proposed development from shallow coal mineworkings is considered to be very low.

8.0 GEOCHEMICAL GROUND AND GROUNDWATER ASSESSMENT

8.1 Introduction & Sampling Strategy

The preliminary conceptual site model identified that, the potential for the existence of contamination beneath the site was moderate. A review of the Phase 1 Desk Study Report revealed a number of potential contamination sources, including onsite Made Ground materials arising from previous phases of development and possible offsite adjacent sources. Therefore, sampling and exploratory holes were targeted for a general screening of site wide soils targeting the areas identified in historical mapping.

NX Chemical Analytical Strategy

During the preliminary works, all arisings from the Ground Investigation were screened on-site for the presence of volatile organic compounds (VOC) using a MiniRae Photoionisation Detector (PID). No elevated concentrations were recorded.

During the preliminary works, 22no. samples of Made Ground soils, superficial strata were tested for a number of general screening tests including pH and metals, cyanide, phenols, sulphide, sulphur, asbestos, speciated PAH and TPH and BTEX to confirm the site's anticipated risk status to human health receptors from soil contamination as determined within the NX Consulting Desk Study for the site.

Asbestos was not recorded in any of the 14no. samples of Made Ground analysed.

6no. samples were analysed for petroleum hydrocarbons Criteria Working Group (TPHCWG) for both aliphatic and aromatic compounds.

5no. samples of Made Ground and natural deposits were sampled for Waste Assessment Classification (WAC).

No visual or olfactory contamination was recorded within the Glacial Till and sandstone core and as such analysis of the deeper strata was not carried out.

The following contamination assessment sub-sections will discuss the identified risks associated with individual contaminant groups based on contamination testing results, undertaken on samples from the intrusive investigation.

8.2 Rationale

In May of 2008, Contaminated Land: Application in Real Environments (CLAIRE) in conjunction with the Chartered Institute of Environmental Health (CIEH), with support from the Soil and Groundwater Technology Association (SAGTA), released a document entitled 'Guidance on Comparing Soil Contamination Data with a Critical Concentration' [7].

The document provides advice on the use of statistical techniques in the assessment of soil contamination data. It forms part of a package of improved UK guidance highlighted in the Defra discussion paper 'Assessing risks from land contamination - a proportionate approach. Soil Guideline Values: the Way Forward (CLAN 06/2006). The overall aim is to increase understanding of the role statistics can play in quantifying the uncertainty attached to estimates of the mean concentration of contaminants thereby creating a more informed basis for regulatory decision-making.

The guidance presents a structured approach that can be followed when employing statistical techniques for data assessment.

In April 2012 revised Statutory Guidance stated that:

"New technical tools and advice may be developed and used to help regulators and others conform to this Guidance."

"Tools might be developed to help assessors apply the Category 1-4 Screening Levels (C4SLs) approach in relation to specific substances or situations. For example, this might include the development of generic screening levels to help assessors decide when land might be assumed to be in Category 4."

C4SLs are intended as generic screening values to help show when land is within Category 4. They describe a level of risk that whilst above 'minimal' is still 'low', providing a 'higher simple test' for deciding that land is suitable for use and definitely not contaminated.

Current Soil Guideline Values / Generic Assessment Criteria can now be replaced with more pragmatic (but still strongly precautionary) Category 4 Screening Levels and provide a higher simpler test for deciding that land is suitable for use and definitely not contaminated

C4SL's retained and used the CLEA framework, modified according to considerations of the underlying assumptions and science, within the context of Defra's policy background.

8.3 Soil Guideline Values

The Environment Agency's position on CLEA guidance is as follows:

"The CLEA guidance is non-statutory. It does not purport to interpret the policies or procedures of the Environment Agency and shall not operate as a statutory license, waiver, consent or approval from the Environment Agency"[9].

"The CLEA guidance describes the soil concentrations above which, in the opinion of the Environment Agency, there may be concern that warrants further investigation and risk evaluation for both threshold and non-threshold substances. These levels are a guide to help assessors estimate risk. It does not provide a definitive test for telling when risks are significant"[9].

The soil guideline value (SGV) is derived by estimating the concentration of a substance in soil, which will result in an amount of the contaminant entering the human body that is equal to the relevant Health Criteria Value(s).Revised guidance and software has been published for calculation of generic assessment criteria, which will lead to the publication of SGVs based on the new approach. New TOX and SGV reports for priority substances are due to be published after March 2009. The 'old' ten SGV reports will be replaced.

The Environment Agency and DEFRA have produced two new reports - "Human health toxicological assessment of contaminants in soil" and "Updated technical background to the CLEA model". This has led to the withdrawal of CLR7-10, which no longer reflects the current approach and formed the basis of the existing SGVs, as a result all the existing SGV reports have been withdrawn.

The publication of new substance specific TOX reports will lead to the withdrawal of the existing reports. Practitioners are expected to produce their own generic assessment criteria using the CLEA software and handbook.

8.4 LQM/CIEH Suitable 4 Use Levels (S4UL)

The LQM/CIEH S4ULs are intended for use in assessing the potential risks posed to human health by contaminants in soil and has transparently-derived and cautious 'trigger' values above which further assessment of the risks or remedial action may be needed. They replace the second edition of the LQM/CIEH General Assessment Criteria (GAC) published in 2009.

In this instance initial potential risk to human health will be determined by comparison of appropriate chemical analysis to the values specified in the current LQM/CIEH Suitable 4 Use Levels'. With respect to lead the current Category 4 Screening Level will be used.

8.5 Site Soils

8.5.1 NX Consulting Investigation

The chemistry analysis results, presented in Appendix D, have been compared against the Tier 1 criteria for a *commercial industrial with limited managed landscaping* end use to reflect the development proposals. Exposure pathways are restricted to the following from deep and shallow site soils:

- Ingestion of soil,
- Ingestion of site derived household dust,
- Dermal contact with soil,
- Dermal contact with site derived household dust,
- Inhalation of fugitive soil dust,
- Inhalation of fugitive site derived household dust,
- Inhalation of vapours outside
- Inhalation of vapours inside

For risk assessment purposes a soil organic matter value of 1.0% has been used.

Made Ground & Natural Soils

Table 8.5.1 displays the contaminants for which Tier 1 thresholds whether or not they have been exceeded:

Table 8.5.1 – Summary of Tier 1 Exceedances

Summary of Tier 1 Exceedances					
Solid Contamination Results					
DETERMINAND	**No. of Samples**	**Range**	**Average**	**GAC**	**No of Exceedences**
Inorganics, Carbon and Asbestos					
Asbestos Quantification (%)	14	Not Detected <0.001%		-	-
pH	20	8.2-12.2	9.67	-	-
Total Sulphate	19	249-6020	1602	-	-
Total Cyanide	19	<0.1-0.7	<1.00	527	0
Sulphide	19	40-150	74	-	-
Total Organic Carbon (%)	19	1.0-7.4	3.4	-	-
Metals and Semi-Metals					

Arsenic	19	1.1-29	15.15	37	0
Cadmium	19	0.2-3.3	0.73	11	0
Chromium III	19	3.7-56	19.14	910	0
Copper	19	9.5-1300	292.18	2400	0
Lead	19	43-43000	6510.63	450	13
Mercury (Inorganic)	19	<0.05-0.89	0.35	40	0
Nickel	19	3-34	17.35	180	0
Selenium	19	<0.5-2	0.75	250	0
Zinc	19	26-630	234.74	3700	0
Boron	19	0.5-2.4	1.46	240,290	0
Speciated Petroleum Hydrocarbons (TPH-CWG)					
TPH-CWG - Aliphatic >EC5 - EC6	9	<0.01	<0.01	42	0
TPH-CWG - Aliphatic >EC6 - EC8	9	<0.01-2.6	2.6	100	0
TPH-CWG - Aliphatic >EC8 - EC10	9	<0.01-0.93	0.93	27	0
TPH-CWG - Aliphatic >EC10 - EC12	9	<0.01	<0.01	130	0
TPH-CWG - Aliphatic >EC12 - EC16	9	<0.01	<0.01	1100	0
TPH-CWG - Aliphatic >EC16 - EC21	9	<0.01-1.94	1.94	65000	0
TPH-CWG - Aliphatic >EC21 - EC35	9	<0.01-36.43	36.43	65000	0
TPH-CWG - Aliphatic (EC5 - EC35)	9	<0.01-36.43	36.43	-	-
TPH-CWG - Aromatic >EC5 - EC7	9	<0.01-0.02	0.02	70	0
TPH-CWG - Aromatic >EC7 - EC8	9	<0.01	<0.01	130	0
TPH-CWG - Aromatic >EC8 - EC10	9	<0.01	<0.01	34	0
TPH-CWG - Aromatic >EC10 - EC12	9	<0.90	<0.90	74	0
TPH-CWG - Aromatic >EC12 - EC16	9	<0.50 – 4.91	3.12	140	0
TPH-CWG - Aromatic >EC16 - EC21	9	1.01-32.56	13.00	260	0
TPH-CWG - Aromatic >EC21 - EC35	9	<10.0 – 104.2	51.7	1100	0

Polynuclear Aromatic Hydrocarbons (PAHs)					
Naphthalene	19	<0.03 – 0.39	0.19	2.3	0
Acenaphthylene	19	<0.03	<0.03	170	0
Acenaphthene	19	<0.03 – 0.38	0.21	210	0
Fluorene	19	<0.03 – 0.5	0.13	170	0
Phenanthrene	19	<0.03 – 4.1	0.91	95	0
Anthracene	19	<0.03 – 1.1	0.29	2400	0
Fluoranthene	19	<0.03 – 6.1	1.41	280	0
Pyrene	19	<0.03 – 9.4	1.58	620	0
Benzo(a)anthracene	19	<0.03 – 3.1	0.64	7.2	0
Chrysene	19	<0.03 – 2.7	0.55	15	0
Benzo(b)fluoranthene	19	<0.03 – 3.2	0.73	2.6	0
Benzo(k)fluoranthene	19	<0.03 – 1.1	0.31	77	0
Benzo(a)pyrene	19	<0.03 – 4.3	0.82	2.2	0
Indeno(1,2,3-cd)pyrene	19	<0.03 – 1.7	0.40	27	0
Dibenz(a,h)anthracene	19	<0.03 – 0.58	0.48	0.24	2
Benzo(ghi)perylene	19	<0.03 – 0.39	0.52	320	0
Total PAH (Sum of USEPA 16)	19	<0.1 – 39	8.25	-	0

Table 8.5.1 above shows that there were Tier 1 exceedances for the soils analysed to date, beneath the existing building and the proposed development, for both natural soils and Made Ground soils. This is largely consistent with the historic site uses.

Table 8.5.1 – Summary of Tier 1 Exceedances

Parameter Group	Screening value (mg/kg)	Maximum Concentration of Exceedances (mg/kg)	Locations
Lead	450	48000	WS01 (3.0mbgl.) WS02 (4.5mbgl.) WS03 (0.80mbgl.) WS03 (4.8mbgl.) WS04 (0.5mbgl.) WS04 (1.4mbgl.) WS05 (5.0mbgl.) WS06 (0.9mbgl.) WS07 (1.5mbgl.) WS08 (0.15mbgl.) WS08 (1.0mbgl.) WS08 (3.5mbgl.) BH03 (3.5mbgl.)
Dibenzo(a,h)anthracene	0.24	0.48	WS03 (4.8mbgl.) WS06 (0.90mbgl.)

Lead and Dibenzo(a,h)anthracenezo have been detected in 13no. samplesof Made Ground.

8.5.2 Water Supply

Approval should be obtained from the relevant water supply company before supply pipes are installed in order to confirm pipe selection. Pipe selection is currently made based on the UK Water Industry Research Ltd [UKWIR] report entitled "Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites".

The results indicate that specialist protection measures are required in relation to the water supply pipework. A UKWIR risk assessment is recommended to be completed at the depth of the proposed pipes are likely to be required. It is anticipated that specialist water supply pipework will be required for the new buildings. Testing along the line of proposed pipework is recommended once the positions are known.

8.5.3 Phytotoxicity

Phytotoxicity Guidance on the effects of metal contamination on plant growth is provided within the Ministry of Agriculture, Fisheries and Food (MAFF) Code of Good Agricultural Practice for the Protection of Soil.

Thresholds have not been exceeded within all samples analysed within the made-ground or natural soils with respect to the end use of the site.

8.5.4 Controlled Waters

A low to moderate risk to Controlled Waters receptors was identified at the site within the previous NX Consulting Desk Study report requiring a site investigation with groundwater sampling to determine the presence of otherwise of source-receptor pathways.

NX carried out a series of leachate tests from samples of Made ground and the findings are summarised In Table 8.5.2 below.

Leachate Analysis

NX carried out 6no. leachate samples for analysis from within the different exploratory holes located onsite. The findings are summarised in Table 8.5.2.

Table 8.5.2 – Leachate Analysis Summary

DETERMINAND	UNITS	EQS	DWS	No	Max C	No of Exceedences	LOC. OF EX.
INORGANICS							
Arsenic	µg/l	50	10	6	5.1	**0**	N/A
Cadmium	µg/l	5	5	6	<0.03	**0**	N/A
Chromium	µg/l	2	50	6	4.7	**1**	BH03 (3.5mbgl).
Copper	µg/l	5	2000	6	5.4	**1**	WS03 (4.8mbgl)
Total Cyanide	µg/l	-	50	6	<40	**0**	N/A
Lead	µg/l	4	10	6	46	**6**	WS01 (1.0mbgl) WS02 (3.5mbgl) WS03 (4.8mbgl) WS05 (5.0mbgl) WS07 (1.5mbgl) BH03 (3.5mbgl)

Mercury	µg/l	1	1	6	0.03	**0**	N/A
Nickel	µg/l	8	20	6	<0.5	**0**	N/A
Selenium	µg/l	-	10	6	0.60	**0**	N/A
Zinc	µg/l	30	5000	6	19	**0**	N/A
pH	-	6-9	-	6	7.7-8.6	**0**	N/A
ORGANICS							
Naphthalene	µg/l	10	-	6	0.06	**0**	N/A
Benzo(a)pyrene	µg/l	0.05	0.01	6	0.27	**5**	WS01 (1.0mbgl) WS02 (3.5mbgl) WS03 (4.8mbgl) WS05 (5.0mbgl) BH03 (3.5mbgl)
benzo[b/k]fluoranthene	µg/l	0.03	-	6	0.40	**5**	WS01 (1.0mbgl) WS02 (3.5mbgl) WS03 (4.8mbgl) WS05 (5.0mbgl) BH03 (3.5mbgl)
benzo[g,h,i]perylene & indeno(1,2,3-cd]pyrene	µg/l	0.02	-	6	0.39	**5**	WS01 (1.0mbgl) WS02 (3.5mbgl) WS03 (4.8mbgl) WS05 (5.0mbgl) BH03 (3.5mbgl)

*Notes: The WHO Guideline Values for petroleum products in drinking water have been applied in the absence of a current UK specific TPH water quality standard. However, for the aromatic TPH bandings of C6-C7, C7-C8 and C8-C10 the more conservative UK specific EQS for benzene, toluene and ethylbenzene have been selected as the Tier 1 screening criteria.

8.5.5 Discussion and Recommendations

Soils

The environmental chemistry results together with the findings of the intrusive investigation are consistent with the site's historical uses.

Localised elevated concentrations of Lead & Dibenzo(a,h)anthracene have been recorded in excess of tier 1 screening values in the soils.

None of the tested samples of Made Ground have recorded asbestos, with preliminary quantification determining concentrations of 'Not Detected <0.001%' total mass.

Although unlikely, it should be noted that there may of course be areas of undetected contamination between our sampling points.

Given the recorded exceedances a potentially unacceptable risk may be posed to future end users of the site from shallow soils present within areas of P.O.S and landscaped areas.

All Asbestos Containing Material (ACM) identified during the site enabling works must be dealt with in strict accordance with the Control of Asbestos Regulations (CAR) 2012, UK Waste Management Legislation and the Environmental Protection Act 1994.

As a contingency measure and to protect construction workers and future end users from any asbestos contamination, we recommend that the following protective measures are adopted during the proposed ground preparatory works:

- All site personnel should be provided with PPE when excavations and demolition works are taking place.
- A water bowser or other dust suppression equipment shall be provided in order to dampen exposed surfaces; during the movement of plant and removal of arisings.
- Provision of personal monitors for site staff to measure individual exposure to asbestos fibres.

Should off-site disposal be required, then additional asbestos quantification and waste classification testing should be undertaken to ensure that it is classified correctly and disposed at a suitably licenced facility.

All ACM impacted soils must be managed so as to ensure no airborne fibre release during construction or placement of impacted material in such a manner to ensure no future exposure risk.

Site soils will need to be placed below a suitable clean cover layer to ensure they pose no unacceptable risk to the future site users. Given the nature of the contamination the most cost effective remedial solution is likely to comprise a simple capping layer.

Within areas of proposed landscaping it is recommended that a minimum of 600mm of Made Ground (below proposed formation level), should be removed from site and replaced with clean inert materials to form a capping layer over any potential contamination.

In areas of the site where buildings and hardstanding are proposed the made ground can be left in-situ as the buildings and hardstanding areas will break the 'pollutant linkage' and remove the pathway for contamination and come in to contact with the end users.

Materials imported to site are required to be suitable for the intended commercial end use.

All operations will be subject to regulation using a 'Materials Management Plan' (MMP) to be created in accordance with Version 2 of the CL:AIRE Definition of Waste - Industry Code of Practice. The MMP should be created with due consideration to all proposed remediation and enabling works operations prescribed within this document and should be undertaken by a Qualified Person and a signed declaration submitted to the EA prior to re-use of materials on the site.

Topsoil should be in line with BS 3882: 2015 'Specification for topsoil' within the clean cover system.

Risks to Controlled Water Receptors

The NX site investigation works has encountered ground conditions comprising Made Ground overlying predominantly cohesive clay deposits. These drift deposits are classified as a Secondary Undifferentiated aquifer deposits with the underlying sandstone is recorded to be a Principal aquifer.

The Groundsure report indicates that there are 2no. surface water features within 250m of the site, 151m south – Rochdale Canal & 224m south east – unnamed inland river.

An absence of groundwater strikes and limited available nearby borehole logs has restricted regional groundwater flow calculations.

The drift deposits have been recorded to depths ranging from 9.8-13.4mbgl. over the Principal Aquifer. Glacial Clay deposits between c.6.0-10.5m thickness are expected to provide infiltrations rates in the order of 10-9m/sec.

The proposed development is to comprise a 4-storey building extension on the western gable with hard and soft landscaping, access and servicing and other associated works.

Leachate testing analysis identified heavy metal and PAH contaminants beneath the site. The testing highlighted above has recorded a number of inorganic contaminants within the leachate samples in Made Ground deposits; at concentrations exceeding the respective EQS and UKDWS screening values recorded in WS01, WS02, WS03, WS05 & BH03. The exceedances highlighted above are considered to be marginal due to the limited concentrations of heavy metals recorded within the soils across the site.

The NX site investigation works has encountered ground conditions comprising Made Ground predominantly cohesive clay deposits which will restrict vertical and lateral percolation of recorded low levels of copper, chromium, lead and PAHs. Given the low mobility of these contaminants, the potential for the contaminants to represent suspended solids and development proposals comprising predominantly hardstanding impermeable surfaces reducing infiltration the risks to controlled water receptors post construction is deemed to be low.

As such, risks to the Principal Aquifer post construction is deemed to be low.

Soil analysis within these areas indicate that these areas are localised and low levels of PAH contamination with widespread elevated Lead concentrations. This is confirmed in site wide soil analysis, where concentrations of Lead & PAH contaminants above the laboratory limit of detection have been identified.

It is considered that risks to controlled waters will be low from potentially unrecorded hydrocarbon contamination, upon completion of the development works. The supplementary intrusive works will be targeting further soils analysis within these areas.

Any recorded, free phase hydrocarbon contamination in soils and groundwater should be removed during a process of remediation. The above verification works should form part of a remediation strategy agreed with Manchester City Council and Environment Agency.

If contamination is found during construction works the associated risks should be reassessed.

8.5.6 Waste Classification

Soil samples have been characterised against hazardous waste criteria using Hazwasteonline. Any soils to be exported from site should be allocated an appropriate waste code, following the steps within WM3.

The results appended to this document indicate that the samples tested are likely to predominantly be classified as NON-HAZARDOUS WASTE. However, localised shallow Made Ground deposits are likely to be determined to be classified as HAZARDOUS WASTE. This should be confirmed by the appointed waste management contractor following submission of all available test results carried out at the site to date. The waste classification assessment only applies to those soils that have been tested. If other soils are to be disposed of off-site then further analysis may be required.

It is the responsibility of those generating the waste (i.e. the site), to ensure that the waste is handled and disposed of appropriately. Waste carriers transporting, and sites accepting, this material should have a corresponding code within their permits.

Waste acceptance criteria (WAC) testing results indicate that sampled Made Ground soils will be suitable for an non-hazardous and inert non-hazardous landfills.

In order to prevent excessive costs and reduce the environmental impact of the development it is recommended that removal of wastes from the site, including waste soils, is kept to a minimum. It is however, envisaged that arisings will be created during the works; in particular within service excavations and site reprofiling.

To evaluate the various on-site soils for potential offsite disposal, soils are classified in accordance with the Hazardous Waste Directive (HWD) that enables the provision of a European Waste Catalogue (EWC) Code for use during offsite disposal and a Hazardous or Non-Hazardous Classification. Non-Hazardous material is suitable for disposal in a Non-Hazardous landfill; however, disposal to an Inert Landfill requires further Waste Acceptance Criteria (WAC) testing in accordance with BS EN 12457–3. Material classed as Hazardous also requires WAC testing to assign a suitable hazardous classification.

The Landfill Regulations require that all Hazardous and Non-Hazardous solid waste must be treated prior to offsite disposal to landfill. You can define 'treatment' by using the following 'three-point test'. All three criteria must be satisfied for all of the waste to qualify as being treated:

1. It must be a physical, thermal, chemical or biological process including sorting.
2. It must change the characteristics of the waste.
3. It must do so in order to:

a. Reduce its volume; or
b. Reduce its hazardous nature; or
c. Facilitate its handling; or
d. Enhance recovery.

It should be noted that a site investigation is unable to identify all below ground conditions at a site and therefore, it should be noted that if during construction works soils that require offsite disposal are identified as being different to what has been preliminarily tested in this report, additional testing will be required prior to disposal or recovery at a licensed offsite facility.

It is also recommended that prior to offsite disposal or recovery of any waste soils; the receiving landfill facility should be sent copies of all relevant chemical analysis and written confirmation of acceptance of soils provided.

All producers of waste have a duty of care to ensure that any waste they produce is handled safely and within the law. They must check that anyone they pass waste on to is authorised to take it. This includes the authorised site earmarked to handle the waste and any haulier (licensed waste carrier) used to transport the waste between the sites.

All waste holders must act to keep waste safe against:

1. Corrosion or wear of waste containers;
2. Accidental spilling or leaking or inadvertent leaching from waste unprotected from rainfall;
3. Accident or weather breaking open contained waste and allowing it to escape;
4. Waste blowing away or falling while stored or transported;
5. Scavenging of waste by vandals, thieves, children, trespassers or animals.

Holders should protect waste against the above risks while it is in their possession and they should also protect it for its future handling requirements. Waste should reach not only its next holder but a licensed facility or other appropriate destination without escape. It is recommended that the container used to transport the waste is suitable not only to prevent

solid and liquid residues escaping, but also any potentially dangerous vapours or odours associated with the waste.

Segregation of different categories of waste where they are produced may be necessary to prevent the mixing of incompatible wastes. Segregation may assist the disposal of waste to specialist outlets. Where segregation is practiced on sites, the waste holder should ensure that his employees and anyone else handling waste there are aware of the locations and uses of each segregated waste container.

Waste handed over to another person should be in some sort of container, which might include a skip. The only reasonable exception would be loose material loaded into a vehicle and then covered sufficiently to prevent escape before being moved. Waste containers should suit the material put in them.

A waste transfer note (WTN) is a document which must accompany any transfer of waste between different holders. The purpose of a WTN is to allow other people who handle your waste to know what they are dealing with so that they can manage it safely and properly.

A WTN must be created for each load of waste that leaves the site.

The WTN must contain enough information about the waste to enable anyone coming into contact with it to handle it safely, and either dispose of it or allow it to be recovered within the law. If insufficient information is given on the WTN the responsible party may liable to be prosecuted.

Records of all waste transferred or received must keep for at least two years.

8.6 Ground Gases

8.6.1 Asphyxiant, Noxious or Explosive Gases

Risk Assessment & Methodology

CIRIA Report 665 "Assessing Risks Posed by Hazardous Ground Gases to Buildings" presents current best practice on the assessment of ground gases for commercial and residential buildings (with the exception of low rise traditional housing). The report presents a risk based approach based on gas screening levels which depend on both the concentration and emission rate of gas from the ground. Gas screening levels are calculated as follows:

Gas *screening value* (*l/hr*) = *gas concentration* (%) *X measured borehole flow rate* (*l/h*) /100

Gas screening values should be calculated on a borehole basis in the first instance. Consideration of worst case i.e. highest flow and highest concentrations should only be considered if the CSM warrants it.

Selected monitoring boreholes were installed with ground gas monitoring wells, with response zones set within the made ground and drift deposits. Exploratory hole records showing monitoring well constructions and locations of monitoring wells are presented in Appendix C.

The assessment of potential ground gas generation is based on the observations of trends and patterns of change in ground gas concentration, by the direct measurement of ground gas from the monitoring wells. During each visit the measurement of methane, carbon dioxide, oxygen, hydrogen sulphide, carbon monoxide, gas flow, groundwater level and barometric pressure were recorded.

Potential Sources

The preliminary risk assessment identified the risk from hazardous ground gas as moderate risk and low to moderate source generating potential in line with CIRIA 665, due to the potential for Made Ground and former developments on and within the surrounding area of the site. The Made Ground was recorded to depths of 7.0mbgl. and where present, material does not contain significant deleterious items/organic matter.

Potential pathways

The potential pathways into the building are:

1. Horizontal and vertical migration through the ground into the building via cracks in the floor slab or around services.

Lateral migration could occur from the adjacent infilled sites through the shallow Made Ground deposits and drainage annulus within service trenches.

Receptors

The receptors considered in this assessment are the users of the building and the building. The building comprises a 4-storey extension to the existing structure with open ventilated spaces and will have smaller spaces (storerooms/toilets, offices etc) within it. The buildings are a low to moderate sensitivity receptor due to its anticipated infrequent occupancy and potential for well-ventilated areas within the lab spaces.

Ground Gas Monitoring

Suitability of Data

The response zones in boreholes were not flooded on all occasions and water was found to be present within all boreholes.

Given the developmental history of the site and recorded historical works within the surrounding area, the source generating potential for the site was deemed to be low to moderate and a total of 6no visits are planned in line with Ciria 665 guidelines.

Results

To date, 6No.rounds of monitoring have been undertaken with a barometric pressure of between 983-1023mb.

A summary of the soil gas monitoring results is presented in Table 8.6.1 below and copies of the log sheets presented in Appendix G.

Table 8.6.1 – Summary of Gas Monitoring Results (NXC)

NX Consulting Borehole Reference	Max CO2 (%v/v)	Max Flow (l/hr)	Max GSV (l/hr)	Max CH4 (%v/v)	Max GSV (l/hr)
WS01	0.2	0.2	<0.01	0.3	<0.01
WS03	0.6	0.3	<0.01	0.3	<0.01
WS05	0.2	0.1	<0.01	0.9	<0.01
WS07	0.3	0.1	<0.01	0.4	<0.01

Recommendations & Gas Protection Design

From a detailed review of the gas monitoring data available, it would appear that the risk to the site is low and no specific protection measures are required.

8.5.2 Radon & Hydrocarbons

The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level. Therefore, no radon protective measures are necessary.

9.0 PRE-REMEDIATION CONSTRAINTS AND OUTLINE REMEDIATION STRATEGY

9.1 Supplementary Investigation

During the preliminary works, all arisings from the ground investigation were screened on-site for the presence of volatile organic compounds (VOC) using a MiniRae Photoionisation Detector (PID). No elevated concentrations were recorded.

9.2 Invasive Plants

The presence of Japanese Knotweed and/or other invasive plants was not apparent during the fieldwork, however, advice should be sought from a suitably qualified ecologist should any suspicious plant growth be encountered.

9.2 Services

The following utilities are present across the site:

- Electricity cables routed through the site.
- Drains are present within the site boundary.

9.3 Hardstanding & Surface Cover

The external portion of the sites surface cover comprises areas of concrete paving and grassed topsoil landscaping. Internal areas comprise areas of concrete slab & screed.

Photographs presented in Appendix A of shows the nature of surface cover.

9.4 Land Condition and Outline Remediation

9.4.1 Foundations and Ground Stability

The proposed ground level is assumed to be similar to the existing site level and without significant change will be made.

Anticipated Ground Condition & Additional Intrusive Works

Ground conditions encountered across the site (during the NX investigation) comprise Made Ground to maximum proven depths of 7.0mbgl, with occasional below ground obstructions overlying firm to stiff to stiff cohesive clay. Bedrock has been encountered at depths between 9.8-13.4mbgl+ and noted to comprise weak to medium strong reddish brown poorly cemented fine to coarse grained SANDSTONE.

The majority of exploratory probeholes noted the presence of concrete and brick cobble and boulder obstructions within Made Ground. Buried obstructions impeding advancement were noted within WS05 at a depth of 1.20mbgl. and WS06 at a depth of 1.50mbgl. with a relict concrete ground beam/foundation noted within RBH03 at 0.4mbgl. Localised instability within TP01 and TP02 prevented advancement.

Groundwater was absent within the advanced probeholes though may be encountered locally. It should be noted that water added to aid rotary drilling may have masked the presence of groundwater within these deposits.

Foundations

The Made Ground deposits are considered unsuitable as an adequate founding stratum due to the proposed loads and the possible risks of unacceptable total and differential settlements occurring. Contiguous Flight Augur or a bored piled foundations are the most

suitable solution for both foundation and floor slab to reduce the risk of excessive total and differential settlement associated with Made Ground and drift deposits.

Geotechnical testing indicates that site clays are of low to medium shrinkage potential

A limited number of trees and hedgerows are present which are within possible influencing distance of the site. Foundations and drainage should be designed in line with NHBC Standards guidance document Chapter 4.2 Building Near Trees.

Site Won Soils

The Made Ground is unlikely to be suitable as a structural fill for foundations and pavements in its current state and treatment (sorting, segregation, screening/crushing/replacement) would be required to enable some of the materials to be re-used on parts of the site as structural fill for pavements and floorslabs. Cohesive soils would need to consider inclement weather as the soils would turn very soft during heavy rainfall if left exposed.

Excavation, Earthworks and Groundwater Measures

Excavations into the Made Ground and Glacial Till should be viable using conventional hydraulic excavating plant. Where relict concrete, cobbles and boulders are present within the upper 1.0 to 2.0m+, breaking equipment may be needed to achieve the design depth required.

The stability of excavations is likely to be variable and collapse and spalling of the granular Made Ground strata (particularly where groundwater is present) should be anticipated. All excavations should be conducted in line with CIRIA Report 97 - Trenching Practice and BRE 440 Foundations, Basements and External Works 2002. Trenchboxes or similar may be required to support drainage excavations locally.

If necessary, a specialist hydrogeologist should be appointed to provide advice on dewatering measures within the Glacial Till deposits where well point systems may be required, to prevent spalling, collapse and running sand conditions.

Any replaced 'site won' or imported materials will again need to be compacted in a controlled manner in line with the Department of Transport, Specification for Highway Works.

Where possible all soils should be retained on site to reduce disposal costs.

During periods of inclement weather, surface water management controls will be required.

Access Road and Hardstanding

If the CBR is less than 2.5%, foundation improvement work shall be undertaken in accordance with IAN 73/06. Consideration should be given to cement/lime stabilisation to provide a stable working platform for site plant, personnel and proposed pavements. A suitably qualified treatment specialist should be contacted to confirm the suitability of these soils and achievable CBR values following treatment.

Prior to the construction, it is recommended in-situ CBR tests using a bearing plate to be carried out at the formation once the formation elevation is determined.

Soakaways

NX Consider that soakaways are unlikely to be suitable at this site within the made ground and clay deposits.

Concrete Design

Concrete should be of minimum Design Sulphate Class of DS-1 and an Aggressive Chemical Environment for Concrete (ACEC) class of AC-1s.

9.4.2 Contamination

A preliminary and refined risk assessment, based upon the findings of the intrusive investigation, is presented in Appendix F the general findings of which are discussed below.

Polynuclear Aromatic Hydrocarbons (PAHs) and Heavy Metal have been recorded in excess of tier 1 screening values in the soils beneath the majority of the site when compared to commercial end use values within proposed landscaping areas.

Within landscaping areas and P.O.S. a minimum requirement of 600mm of clean cover (150mm topsoil) / removal & replacement of made grounds should be assumed at this stage. A hard to dig layer or geotextile (designed to reduce infiltration) will be required within the cover system platform. If a geotextile is adopted then drainage should be introduced within the cover system layer to prevent waterlogged conditions within landscaped and P.O.S areas.

Specialist potable water pipework will be required. This will need to be confirmed following completion of a UKWIR assessment with the Regulators and testing along the line of the proposed pipework once positions are known.

Site workers involved in excavations for foundations, roads, sewers etc during the construction works may come into direct contact with the soils containing elevated concentrations of PAH's, or potentially other forms of contamination including asbestos. We would therefore recommend that simple precautionary measures be adopted during the construction phase i.e. good personal hygiene, provision of suitable welfare facilities and basic personnel protective equipment.

Any areas of proposed landscaping and public open space will require imported subsoil/topsoil materials which will require chemical validation to demonstrate that they are suitable for a commercial end use and taken to depths sufficient to provide a sufficient cover system for all proposed materials used which are capable to support root growth.

Risk to Controlled water are considered to be low upon completion of the developments. Although notwithstanding the above, to ensure a low risk to controlled waters it is recommended that any free phase hydrocarbon/solvent contamination found during construction works are removed during a process of remediation.

If contamination is found during construction works the associated risks should be reassessed.

6no. planned rounds of ground gas monitoring have been undertaken, with results indicating a probable low risk to identified receptors. No specialist protection measures are likely. Prior to the adoption of any gas protection measures, agreement should be sought from the local authority environmental health department and building control.

A CL:AIRE COP Materials Management Plan (MMP), remediation strategy and final validation reports are recommended and will be required prior to discharge of any outlying planning conditions.

APPENDICES

Appendix A – Drawings & Site Photographs

Appendix B – Groundsure Report & Historical Mapping

Appendix C – Exploratory Hole Logs

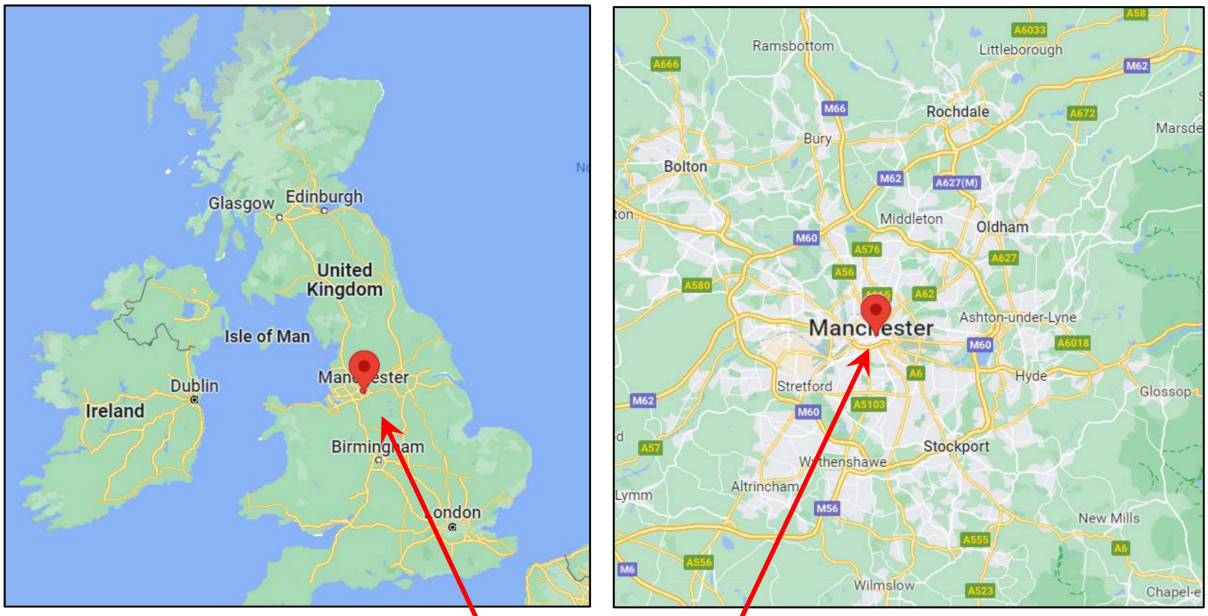
Appendix D - Geotechnical Laboratory Test Results

Appendix E – Chemical Test Results

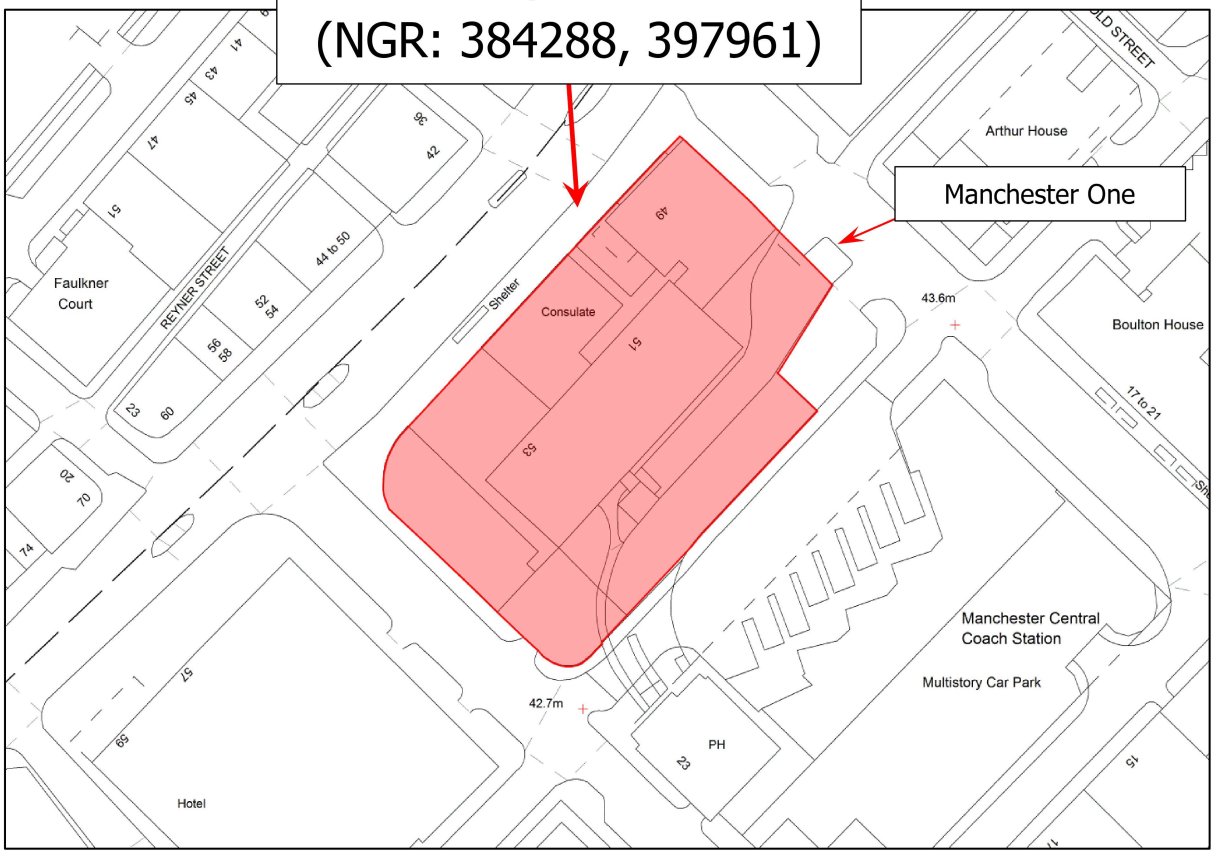
Appendix F – Conceptual Models & Risk Assessments

Appendix G – Gas Monitoring Results

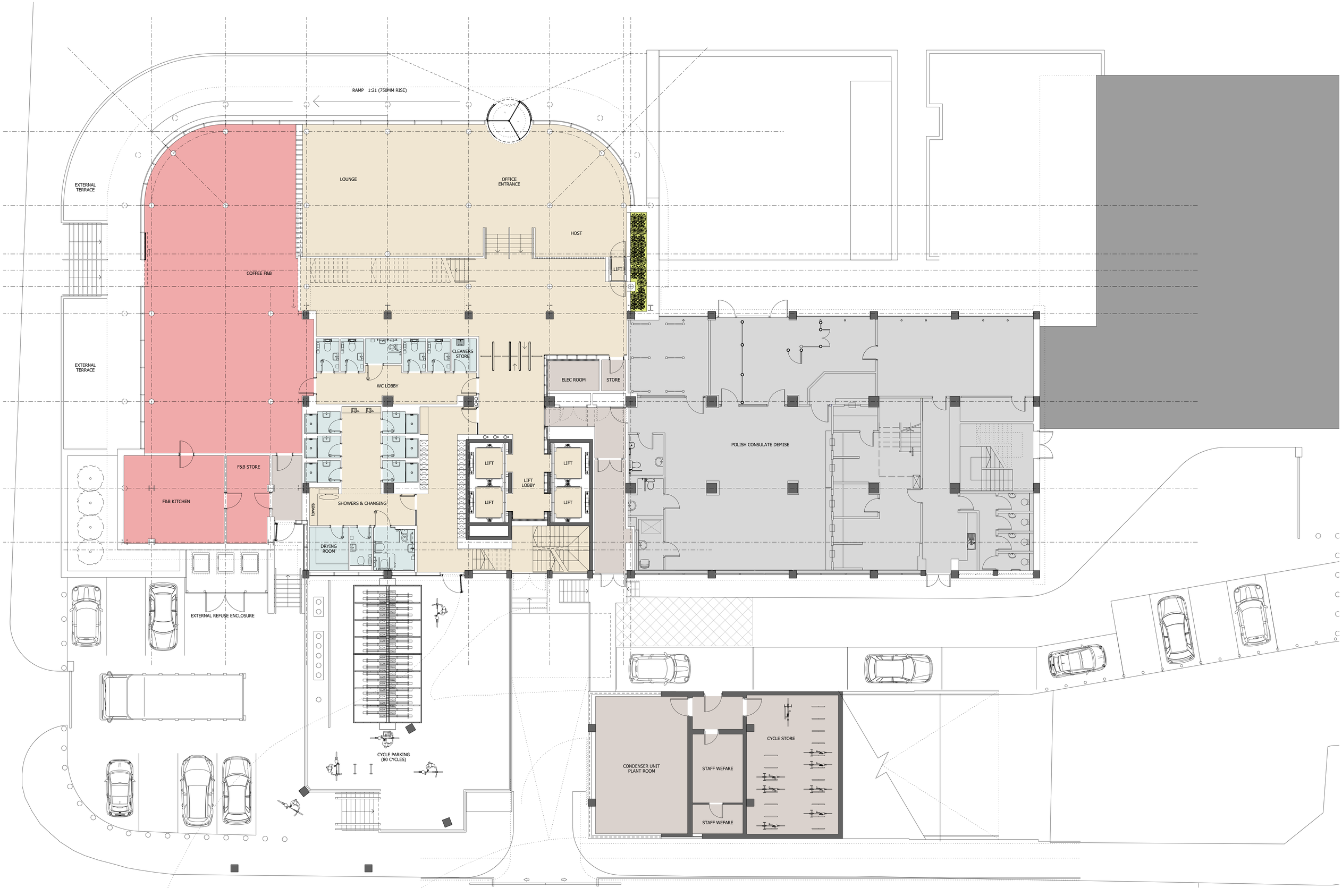
Appendix A – Drawings & Site Photographs



SITE
(NGR: 384288, 397961)



nxconsulting Next Generation Engineering Consultancy Services Tel: 0161 904 0187 E-mail: admin@nxconsulting.org.uk Web: www.nxconsulting.org.uk	Ref: NX469 Figure	Project: Manchester One, 49-53, Portland Street, Manchester M1 3LD Title: Site Location Plan



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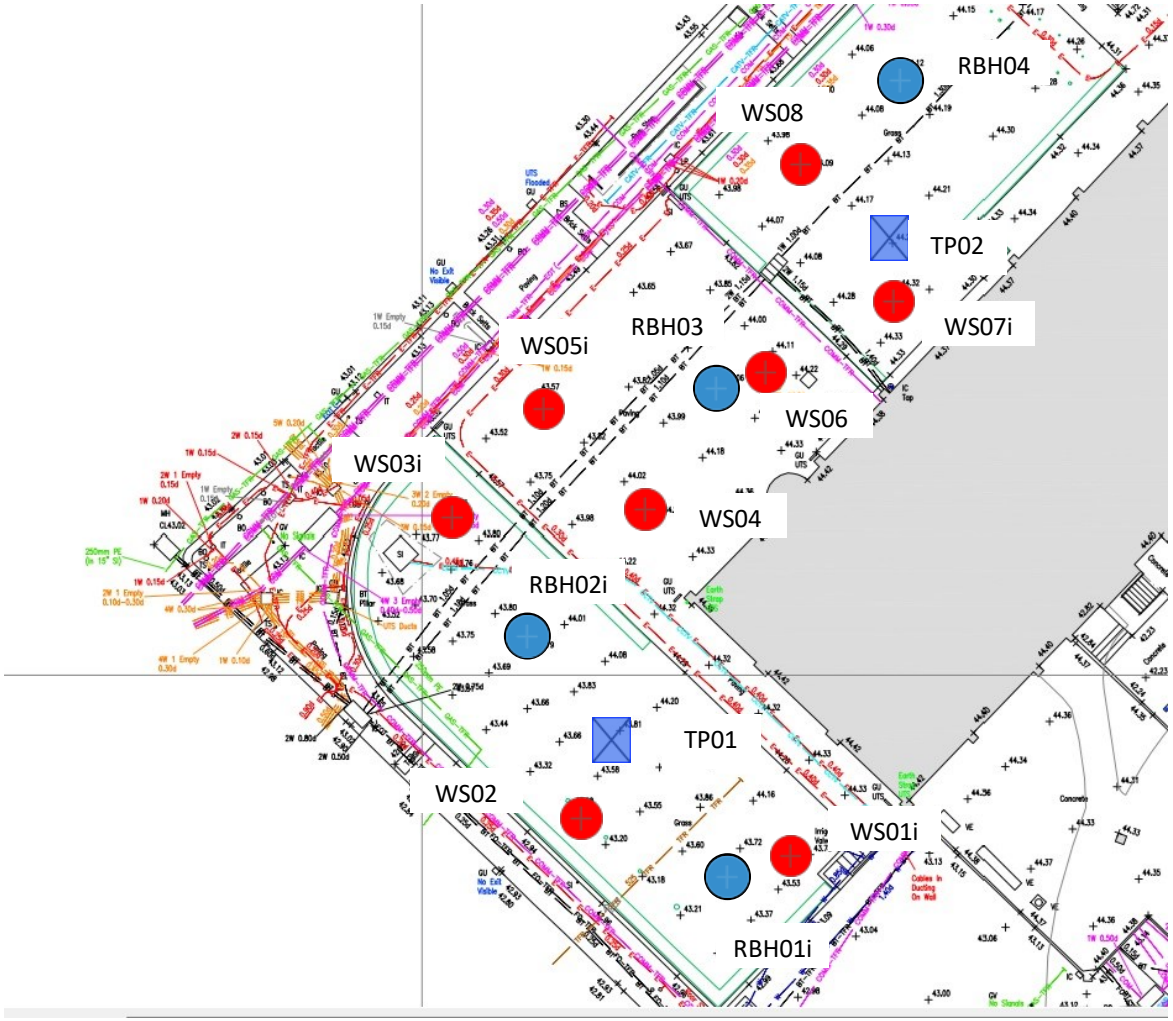
revision notes
rev A - 2024-11-12 structural grid changes

project	Manchester One - 53 Portland St.	**drawing title**	General Arrangement - Ground Floor Plan
client	Bruntwood SciTech	**drawing scale**	1:100 @ A1
job no.	0264	**drawing created**	October 2024
drawing no.	al(04)101	**drawing rev**	A

bridge architects

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Note: Positions shown are approximate and are subject to access/site restrictions.



Key	
●	NX Consulting Window Sampler Boreholes (WS)
⊠	NX Machine Excavated Trial pit (TP)
●	NX Consulting Cable Tool/ Rotary Core Boreholes (RBH)
i	Denotes NX groundwater/ gas installation

nxconsulting

Ref: NX587 Figure 1

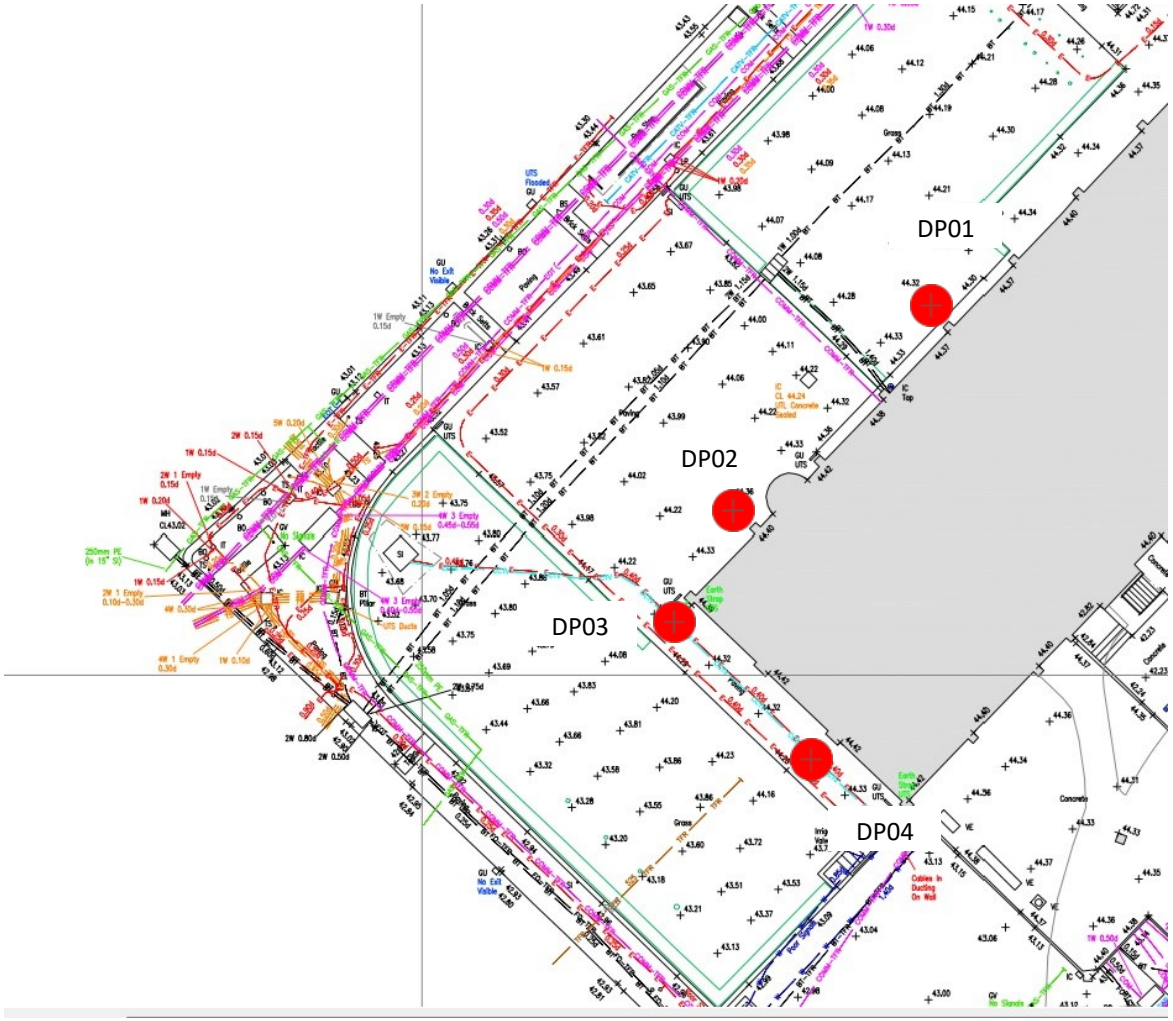
Project:

Manchester One, 49-53, Portland Street, Manchester, M1 3LD

Title:

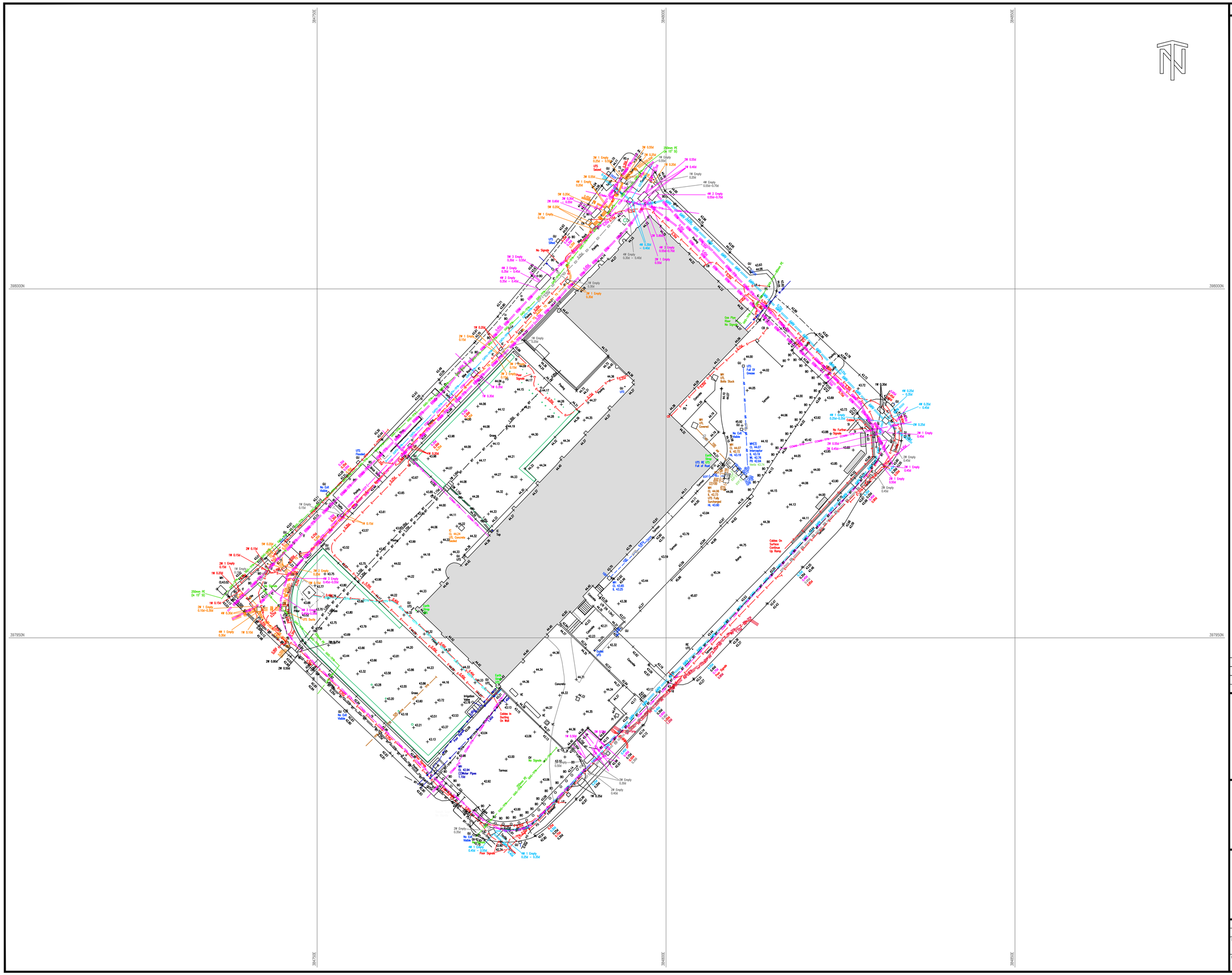
Exploratory Hole Location Plan

Note: Positions shown are approximate and are subject to access/site restrictions.



Key	
	NX Consulting Dynamic Probe Boreholes to 6m depth (DP)
DP1 — 800mm DP2 — 800mm DP3 — 600mm DP4 — 600mm	Distance from face of column. DP3/DP4 reduced due to presence of cables at shallow depth

nxconsulting	**Ref: NX587 Figure 2**	**Project:** Manchester One, 49-53, Portland Street, Manchester, M1 3LD **Title:** **Dynamic Probe Hole Location Plan**



NOTES

KEY

Grid & Datum - Local Plane Grid related to OS National Grid & Datum By GNSS RTK Observations

STANDARD ABBREVIATIONS

STREET FURNITURE

A/C - AIR CONDITIONING
AE - AERIAL
AL - ALARM
AV - AIR VALVE
BA - BUOYANCY AID
BB - BELISHA BEACON
BD - BUILDING DIVIDE
BH - BOREHOLE
BI - BOLLARD ILLUMINATED
BL - BASEMENT LIGHT
BO - BOLLARD
BP - BOUNDARY POST
BR - BOULDER
BS - BUS STOP
BU - BUSH
CA - CAIRN
CB - CONTROL BOX
CC - CLOSE CIRCUIT TV
CIB - CIGARETTE BIN
Col - COLUMN
CT - CLOSE CIRCUIT TV POLE
DP - DOWN PIPE
DR - DRAIN
Dr Ch - DRAINAGE CHANNEL
DU - DUCT
EL - ELECTRIC
EP - ELECTRICITY POLE
ER - EARTH ROD
FA - FENDOR ANCHOR
FB - FLOWER BED
FH - FIRE HYDRANT
FL - FLOODLIGHT
FS - FLAG STAFF
GA - GAS
GM - GAS METER
G - GIRTH
GP - GATE POST
GU - GULLY
GV - GAS VALVE
Hyd - HYDRANT
IC - INSPECTION COVER
JB - JUNCTION BOX
KO - KERB OFFSET
LA - LADDER
LB - LITTER BIN
LC - LIGHTING COLUMN
LI - LIGHT
LP - LAMP POST
MBO - MOORING BOLLARD
MH - MANHOLE
MI - MANHOLE
MO - MONUMENT
MP - MILE POST
MR - MOORING RING
MW - MONITORING WELL
NP - NAME PLATE
OH - OVERHEAD
OSBM - ORDNANCE SURVEY BENCH MARK
PA - PLAY APPARATUS
PB - PILLAR BOX
PH - PUBLIC HOUSE
PI - PIPE
PL - PLANT
PM - PARKING METER
PN - PLANTER
PO - POST
PP - PETROL PUMP
RH - RIDGE HEIGHT
RS - ROAD SIGN
RI - ROAD SIGN ILLUMINATED
RTW - RETAINING WALL
RWP - RAINWATER PIPE
SA - STANCHION
SC - SPEED CAMERA
SD - SAFETY DISH
SF - SAFETY FENCE
SG - SIGNAL
SI - SIGN
SI - SIGN ILLUMINATED
SMP - SERVICE MARKER POST
SS - SECURITY SENSOR
ST - STOP TAP
SU - STUMP
SV - STOP VALVE
SW - SWITCHGEAR
SY - STAY
TA - TANK
TBM - TEMPORARY BENCH MARK
TCB - TELEPHONE CALL BOX
TE - TELEPHONE
TM - TICKET MACHINE
TS - TRAFFIC SIGNAL
TP - TELEGRAPH POLE
UTL - UNABLE TO LIFT
VDP - VEHICLE DETECTOR PAD
VP - VENT PIPE
WA - WATER TROUGH
WM - WATER METER
WO - WASH OUT
WP - WASTE PIPE

FENCE TYPES

B/W - BARBED WIRE
C/B - CLOSE BOARDED
C/I - CORRUGATED IRON
C/P - CONCRETE PANEL
H/R - HANDRAIL
H/W - HEDGE/RING
PAL - PALISADE
P/C - POST & CHAIN
P/P - POST & PANEL
P/R - POST & RAIL
PSB - PEDESTRIAN SAFETY BARRIER
P/W - POST & WIRE
W/M - WIRE MESH

LEVELS

BL43.45 - BED LEVEL
EV43.45 - EAVE LEVEL
IL43.45 - INVERT LEVEL
43.45 - SPOT LEVEL
RF43.45 - ROOF LEVEL
RL43.45 - RIDGE LEVEL
SB43.45 - SOFIT BED LEVEL
SL43.45 - SOFFIT LEVEL
TH43.45 - THRESHOLD LEVEL
WL43.45 - WATER LEVEL

SYMBOLS

HEDGE
GATE
BUILDING
TREE CANOPY
CONTROL STATION
EMBANKMENT
TREE
BUSH

UNDERGROUND SERVICE KEY

Foul/Combined water drain
Foul/Combined drain 3000 and above
Surface water drain
Surface water drain 3000 and above
Combined Water Drain
Surface water drain 3000 and above
End of trace
Electric cables
HV cables
Gas
Water
Telephone
Catv
CCTV
Comms
Fibre Optics
Pipe
Vents
Fuel
Offsets
Vapour Recovery
Gauge Lines
Unidentified GPR
Unidentified EML
Taken From Records
Assumed Routes
Empty Ducts
Earth Rod
Rising Main
Overhead
Heating Pipes
Traffic Signals
Multi User
Trench Scar
Service Duct

Where chamber extents are significantly greater than the cover size, their approximate extents are shown thus;

ABBREVIATION KEY

AR	assumed route	HOR	head of run	TE	trapped exit
BD	bollard	HL	high level	TFR	taken from records
BO	backdrop	IC	inspection chamber	TP	telegraph pole
CP	cable pit	IBD	internal back drop	UDO	unable to determine outfall
CL	cover level	IL	invert level	UTF	unable to find
CR	cable riser	MH	manhole	UTL	unable to lift
CO	chamber	ML	multi level	UTS	unable to survey
EBD	external back drop	PR	pipe riser	UTT	unable to trace
EOT	end of trace	RE	rodding eye	VP	vent pipe
EP	electricity pole	RWP	rainwater pipe	WL	water level
FH	fire hydrant	SL	silted	WM	water meter
FL	flooded	SL	silt level	WO	wash out valve
G	gully	SV	stop valve		
GV	gas valve	SVP	soil vent pipe		

UTILITY SURVEY NOTES

ELECTROMAGNETIC AND GROUND PENETRATING RADAR TECHNIQUES WERE BEEN USED TO LOCATE AND MAP UNDERGROUND UTILITIES AND FEATURES ON THIS DRAWING. N D OLIVER & CO LTD MAKE EVERY ENDEAVOUR TO MAKE SURE THAT THE INFORMATION CONTAINED WITHIN THIS DRAWING IS ACCURATE AND OF THE HIGHEST QUALITY, HOWEVER, THE RESULTS FROM THESE TYPES OF SURVEYS ARE NOT REVEALED AND SHOULD THE LOCATION OR DEPTH OF SERVICES/FEATURES BE OF PARTICULAR IMPORTANCE TO A PROJECT, THEN IT IS STRONGLY ADVISED THAT TRIAL EXCAVATIONS SHOULD BE UNDERTAKEN TO CONFIRM SURVEY RESULTS.

N D OLIVER & CO LTD HAVE USED ALL RECORD DRAWINGS THAT WERE AVAILABLE TO US BY THE CLIENT OR BY THE STATUTORY UTILITY PROVIDERS AT THE TIME OF THE SURVEY, ANY INFORMATION TAKEN FROM THESE DRAWINGS BY PRINT, DATA, MATERIALS IS NOT GUARANTEED, SERVICES LOCATED FROM RECORD DRAWINGS WILL BE SHOWN AND ANNOTATED AS TAKEN FROM RECORDS (TFR), HISTORIC RECORD INFORMATION IS OFTEN INCOMPLETE/INACCURATE AND CANNOT BE RELIED UPON.

A SINGLE LINE INDICATING A UTILITY MAY INDICATE THE PRESENCE OF MULTIPLE SERVICES WITHIN CLOSE PROXIMITY TO EACH OTHER, WHERE A SINGLE LINE TYPE IS SHOWN WE RECOMMEND HAND DIGGING WITHIN 0.5m, TO EXPOSE HIDDEN SERVICES.

WHERE QUOTED, DEPTH INFORMATION OF UNDERGROUND SERVICES/FEATURES IS STATED, DEPTHS ARE GENERALLY WITHIN +/- 10% ACCURATE, BUT CANNOT BE GUARANTEED, ANY DEPTHS SHOWN ARE USUALLY TO THE TOP OF THE SERVICE/FEATURE, GRANNY SENSORS AND DRAINS ARE USUALLY TO INVERT (DUCT OF DRAINAGE CHANNEL) UNLESS OTHERWISE STATED.

AT N D OLIVER & CO LTD WE USE SKILLED STAFF AND MODERN CALIBRATED EQUIPMENT TO PERFORM OUR SURVEYS, HOWEVER, THE COMPLETENESS OF ANY UNDERGROUND SURVEY CANNOT BE 100% GUARANTEED AND WE CANNOT BE HELD RESPONSIBLE FOR ANY INACCURACIES BEYOND THOSE THAT COULD BE REASONABLY EXPECTED BY A COMPETENT COMPANY.

CONTRACTORS UTILISING OUR DRAWINGS FOR INTRUSIVE WORK SHOULD TAKE ALL REASONABLE MEASURES TO WORK SAFELY IN ACCORDANCE WITH HSG47 GUIDELINES "AVOIDING DANGER FROM UNDERGROUND SERVICES".

Rev	Date	Drawn	Description	Ch'k'd	App'd

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TOPOGRAPHICAL & UTILITIES SURVEY
SHEET 1 OF 1

Surveyed	TB	Drawn	BW/AU	Drawn Date:	11/12/2024
Checked	AM	Approved	NDO		
Scale	1:250 @ A1	Project	13094	Status	ORIG
		CAD File	P:\13094\DRAWING\S13094_001.DWG		
Drawing No	13094 / 001			Rev	0



Plate 1 – Manchester One, looking south from Portland Street across proposed extension area.

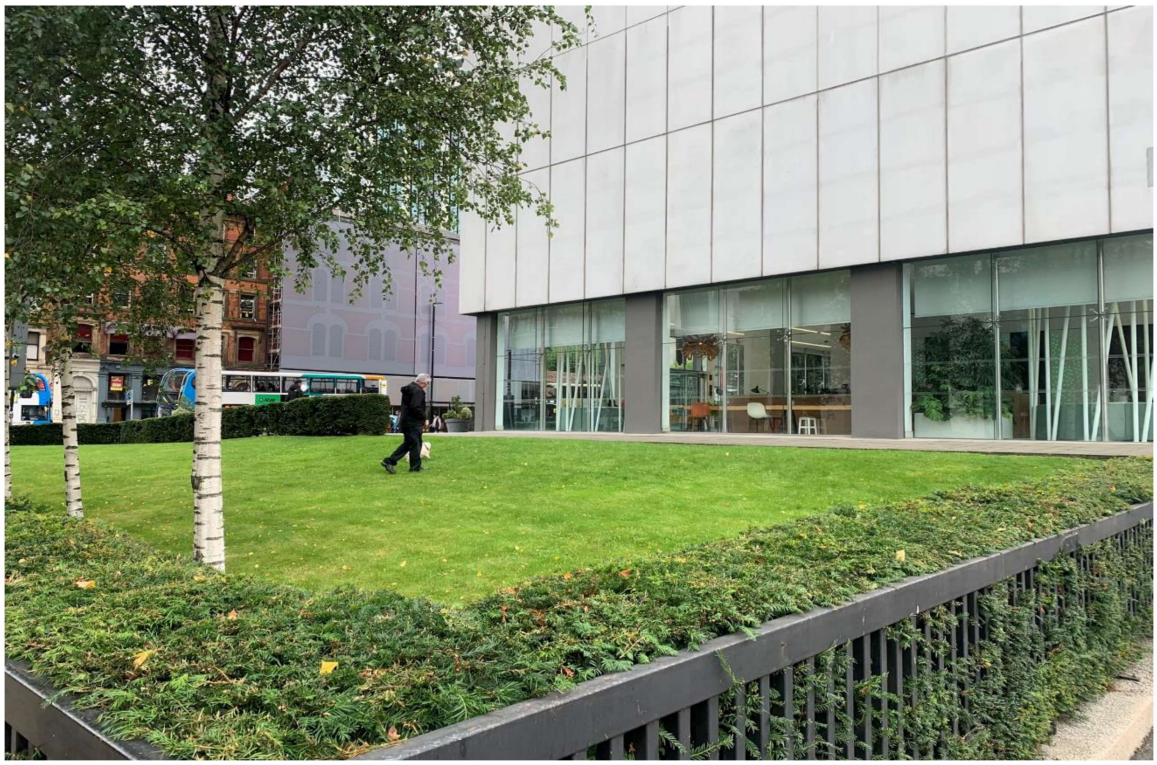


Plate 2 – Manchester One Gable Elevation, looking north from Sackville Street across proposed extension area.



Plate 3 - Manchester One, looking southeasterly from Portland Street across proposed extension area.



Plate 4 - Part Basement Plant Room Boilers adjacent to Sackville St Gable End



Plate 5 – Manchester One, looking west from Chorlton Street.



Plate 6 – Looking east along the sites northern boundary, Portland Street.



Plate 7 – Car park area to the rear, looking southwest.



Plate 1 – WS01 – 1.0m to 5.0mbgl.



Plate 2 – WS02 - 1.0m - to 5.0mbgl.



Plate 3 – WS03 – 1.0m to 5.0mbgl.



Plate 4 – WS04 – 1.0m to 5.0mbgl.





Plate 5 - WS05 – GL to 1.00m bgl Arisings





Plate 6 - WS06 GL to 0.25mbgl & Arisings



Plate 6 – WS7 – GL to 5.45m bgl.



Plate 7 – WS8 - GL to 5.45m bgl



Plate 1 – TP01 Gl to 1.20m bgl & arisings.



Plate 2 – TP02 gl to 1.20m bgl & Arisings. Note concrete boulder @ 0.80m bgl.



Plate 1 – Rotary Borehole 01 (RBH01) – 13.50mbgl to 18.00mbgl.



Plate 2 – RBH01 – 19.50mbgl to 22.50m bgl.



Plate 3 – RBH02 – 16.50m bgl to 19.5m bgl.



Plate 4 – RBH02 – 19.5m bgl to 22.5m bgl.



Plate 5 – RBH02 – 22.50mbgl to 25.50mbgl.



Plate 6 – RBH03 – 12.00m bgl to 15.00m bgl.



Plate 7 – RBH03 15.00mbgl to 18.00m bgl.



Plate 8 – RBH03 – 18.0m bgl to 21.00m bgl.



Plate 9 – RBH03 – 21.00m bgl to 24.00m bgl.



Plate 10 – RBH04 –12.00mbgl to 15.00mbgl.

Appendix B – Groundsure Report & Historical Mapping

Groundsure LOCATION INTELLIGENCE

Enviro+Geo Insight

49-53, PORTLAND STREET, MANCHESTER, M1 3LD

Order Details

Date: 14/07/2022

Your ref: NX469

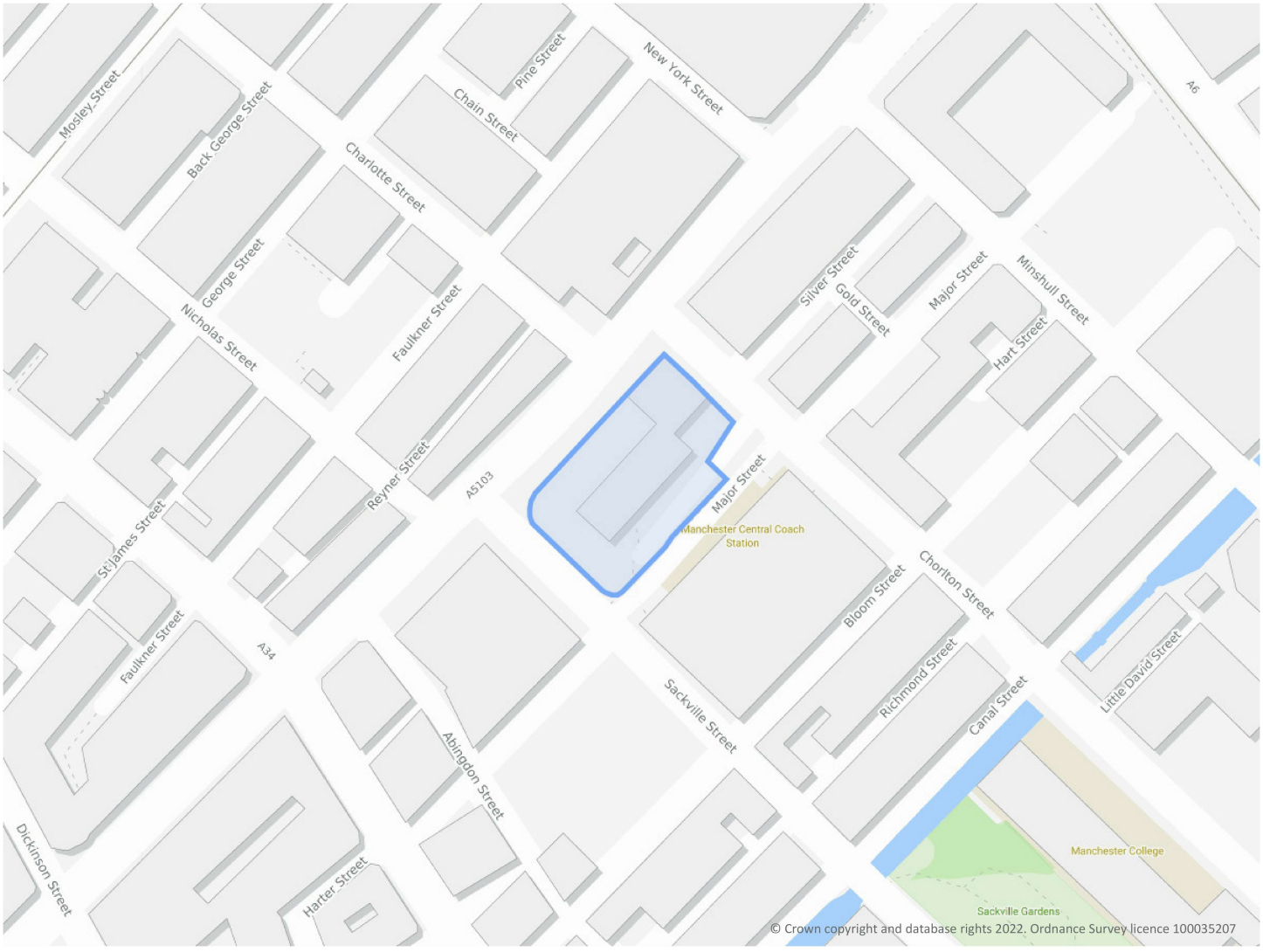
Our Ref: GS-8905458

Site Details

Location: 384288 397961

Area: 0.35 ha

Authority: Manchester City Council



Summary of findings p. 2

OS MasterMap site plan p.12

Aerial image p. 8

groundsure.com/insightuserguide

Contact us with any questions at:
info@groundsure.com
08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	0	2	10	87	-
17	1.2	Historical tanks	0	0	3	35	-
19	1.3	Historical energy features	0	0	5	10	-
20	1.4	Historical petrol stations	0	0	0	0	-
20	1.5	Historical garages	0	0	5	16	-
21	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped	On site	0-50m	50-250m	250-500m	500-2000m
22	2.1	Historical industrial land uses	0	4	14	146	-
28	2.2	Historical tanks	0	0	3	41	-
30	2.3	Historical energy features	0	0	7	33	-
32	2.4	Historical petrol stations	0	0	0	0	-
32	2.5	Historical garages	0	0	13	40	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
35	3.1	Active or recent landfill	0	0	0	0	-
35	3.2	Historical landfill (BGS records)	0	0	0	0	-
36	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
36	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
36	3.5	Historical waste sites	0	0	0	0	-
36	3.6	Licensed waste sites	0	0	0	0	-
36	3.7	Waste exemptions	0	0	0	9	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
38	4.1	Recent industrial land uses	5	0	40	-	-
42	4.2	Current or recent petrol stations	0	0	0	0	-
42	4.3	Electricity cables	0	0	0	0	-
42	4.4	Gas pipelines	0	0	0	0	-
42	4.5	Sites determined as Contaminated Land	0	0	0	0	-

42	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
43	4.7	Regulated explosive sites	0	0	0	0	-
43	4.8	Hazardous substance storage/usage	0	0	0	0	-
43	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
43	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
43	**4.11**	**Licensed pollutant release (Part A(2)/B)**	0	0	0	3	-
44	**4.12**	**Radioactive Substance Authorisations**	0	0	0	6	-
45	**4.13**	**Licensed Discharges to controlled waters**	0	0	10	29	-
50	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
51	4.15	Pollutant release to public sewer	0	0	0	0	-
51	4.16	List 1 Dangerous Substances	0	0	0	0	-
51	4.17	List 2 Dangerous Substances	0	0	0	0	-
51	**4.18**	**Pollution Incidents (EA/NRW)**	0	0	0	2	-
52	4.19	Pollution inventory substances	0	0	0	0	-
52	4.20	Pollution inventory waste transfers	0	0	0	0	-
52	4.21	Pollution inventory radioactive waste	0	0	0	0	-

Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
53	**5.1**	**Superficial aquifer**	Identified (within 500m)				
55	**5.2**	**Bedrock aquifer**	Identified (within 500m)				
57	**5.3**	**Groundwater vulnerability**	Identified (within 50m)				
58	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
58	5.5	Groundwater vulnerability- local information	None (within 0m)				
59	**5.6**	**Groundwater abstractions**	0	0	4	0	47
72	**5.7**	**Surface water abstractions**	0	0	0	0	2
73	**5.8**	**Potable abstractions**	0	0	0	0	10
76	5.9	Source Protection Zones	0	0	0	0	-
76	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-

Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
77	**6.1**	**Water Network (OS MasterMap)**	0	0	6	-	-

78	6.2	Surface water features	0	0	6	-	-
78	6.3	WFD Surface water body catchments	1	-	-	-	-
79	6.4	WFD Surface water bodies	0	0	1	-	-
79	6.5	WFD Groundwater bodies	1	-	-	-	-

Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
81	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
81	7.2	Historical Flood Events	0	0	0	-	-
81	7.3	Flood Defences	0	0	0	-	-
82	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
82	7.5	Flood Storage Areas	0	0	0	-	-
83	7.6	Flood Zone 2	None (within 50m)				
83	7.7	Flood Zone 3	None (within 50m)				

Page	Section	Surface water flooding	
84	8.1	Surface water flooding	1 in 100 year, Greater than 1.0m (within 50m)

Page	Section	Groundwater flooding	
86	9.1	Groundwater flooding	Moderate (within 50m)

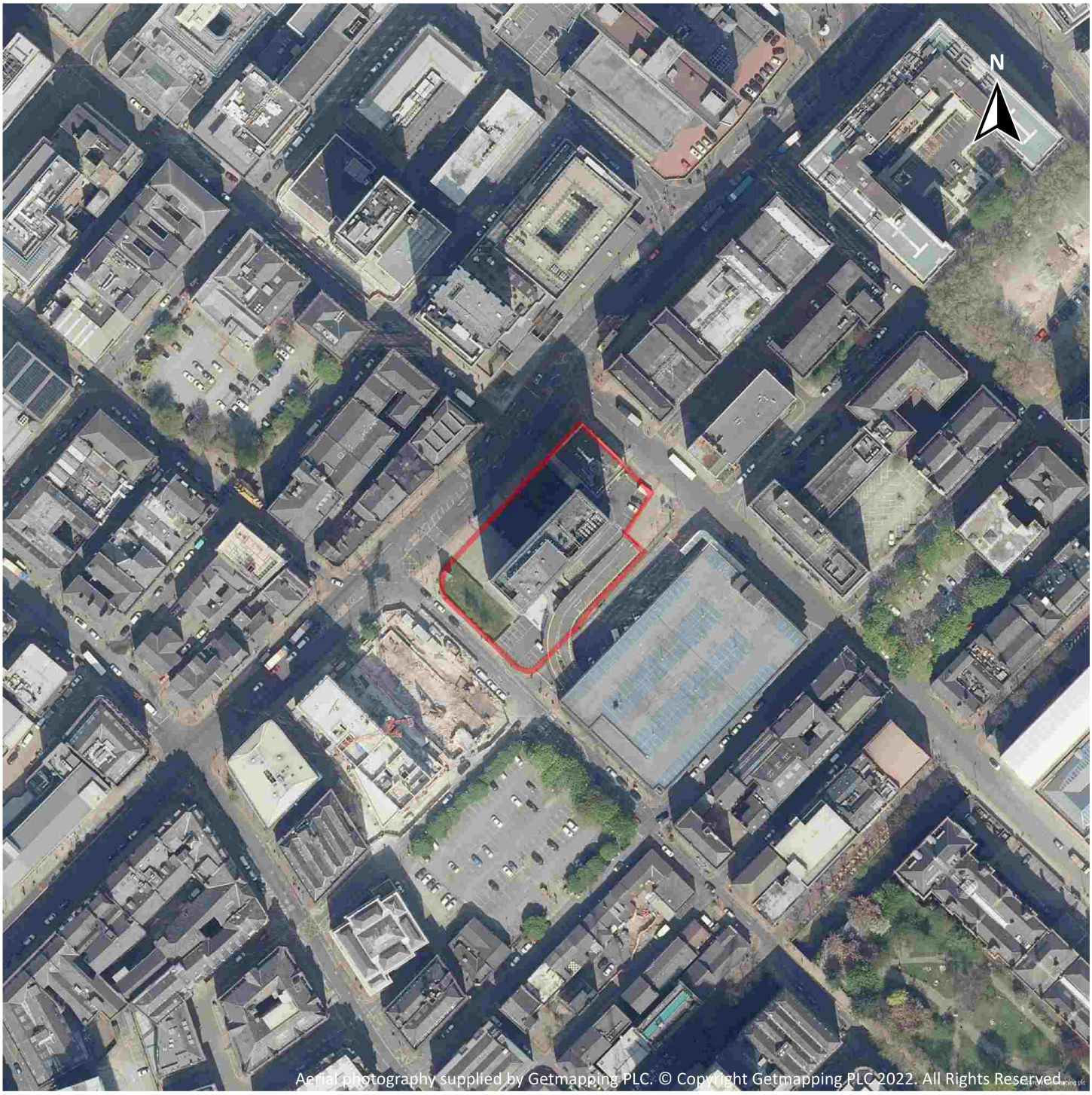
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
87	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
87	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
87	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
87	10.4	Special Protection Areas (SPA)	0	0	0	0	0
88	10.5	National Nature Reserves (NNR)	0	0	0	0	0
88	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
88	10.7	Designated Ancient Woodland	0	0	0	0	0
88	10.8	Biosphere Reserves	0	0	0	0	0
89	10.9	Forest Parks	0	0	0	0	0
89	10.10	Marine Conservation Zones	0	0	0	0	0
89	10.11	Green Belt	0	0	0	0	0
89	10.12	Proposed Ramsar sites	0	0	0	0	0

89	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
90	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
90	10.15	Nitrate Sensitive Areas	0	0	0	0	0
90	**10.16**	**Nitrate Vulnerable Zones**	0	0	0	1	3
91	**10.17**	**SSSI Impact Risk Zones**	1	-	-	-	-
92	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
93	11.1	World Heritage Sites	0	0	0	-	-
94	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
94	11.3	National Parks	0	0	0	-	-
94	**11.4**	**Listed Buildings**	0	4	74	-	-
98	**11.5**	**Conservation Areas**	0	1	4	-	-
98	11.6	Scheduled Ancient Monuments	0	0	0	-	-
99	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
100	**12.1**	**Agricultural Land Classification**	Urban (within 250m)				
101	12.2	Open Access Land	0	0	0	-	-
101	12.3	Tree Felling Licences	0	0	0	-	-
101	12.4	Environmental Stewardship Schemes	0	0	0	-	-
101	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
102	13.1	Priority Habitat Inventory	0	0	0	-	-
102	13.2	Habitat Networks	0	0	0	-	-
102	13.3	Open Mosaic Habitat	0	0	0	-	-
102	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
103	**14.1**	**10k Availability**	Identified (within 500m)				
104	**14.2**	**Artificial and made ground (10k)**	0	0	1	1	-
105	**14.3**	**Superficial geology (10k)**	1	0	0	0	-

106	14.4	Landslip (10k)	0	0	0	0	-
107	14.5	Bedrock geology (10k)	1	0	0	2	-
108	14.6	Bedrock faults and other linear features (10k)	0	0	1	3	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
109	15.1	50k Availability	Identified (within 500m)				
110	15.2	Artificial and made ground (50k)	0	0	1	0	-
111	15.3	Artificial ground permeability (50k)	0	0	-	-	-
112	15.4	Superficial geology (50k)	1	0	0	0	-
113	15.5	Superficial permeability (50k)	Identified (within 50m)				
113	15.6	Landslip (50k)	0	0	0	0	-
113	15.7	Landslip permeability (50k)	None (within 50m)				
114	15.8	Bedrock geology (50k)	1	0	0	2	-
115	15.9	Bedrock permeability (50k)	Identified (within 50m)				
115	15.10	Bedrock faults and other linear features (50k)	0	0	1	3	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
116	16.1	BGS Boreholes	1	2	111	-	-
Page	Section	Natural ground subsidence					
122	17.1	Shrink swell clays	Very low (within 50m)				
123	17.2	Running sands	Very low (within 50m)				
124	17.3	Compressible deposits	Negligible (within 50m)				
125	17.4	Collapsible deposits	Very low (within 50m)				
126	17.5	Landslides	Very low (within 50m)				
127	17.6	Ground dissolution of soluble rocks	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
129	18.1	Natural cavities	0	0	0	0	-
130	18.2	BritPits	0	0	0	0	-
130	18.3	Surface ground workings	0	0	18	-	-
131	18.4	Underground workings	0	0	0	0	0
131	18.5	Historical Mineral Planning Areas	0	0	0	0	-

131	18.6	Non-coal mining	0	0	0	0	0
131	18.7	Mining cavities	0	0	0	0	0
132	**18.8**	**JPB mining areas**	Identified (within 0m)				
132	**18.9**	**Coal mining**	Identified (within 0m)				
132	18.10	Brine areas	None (within 0m)				
133	18.11	Gypsum areas	None (within 0m)				
133	18.12	Tin mining	None (within 0m)				
133	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
134	**19.1**	**Radon**	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
135	**20.1**	**BGS Estimated Background Soil Chemistry**	2	0	-	-	-
135	**20.2**	**BGS Estimated Urban Soil Chemistry**	4	3	-	-	-
136	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
137	21.1	Underground railways (London)	0	0	0	-	-
137	21.2	Underground railways (Non-London)	0	0	0	-	-
138	21.3	Railway tunnels	0	0	0	-	-
138	21.4	Historical railway and tunnel features	0	0	0	-	-
138	21.5	Royal Mail tunnels	0	0	0	-	-
138	21.6	Historical railways	0	0	0	-	-
138	**21.7**	**Railways**	0	0	19	-	-
139	21.8	Crossrail 1	0	0	0	0	-
140	21.9	Crossrail 2	0	0	0	0	-
140	**21.10**	**HS2**	0	0	0	2	-

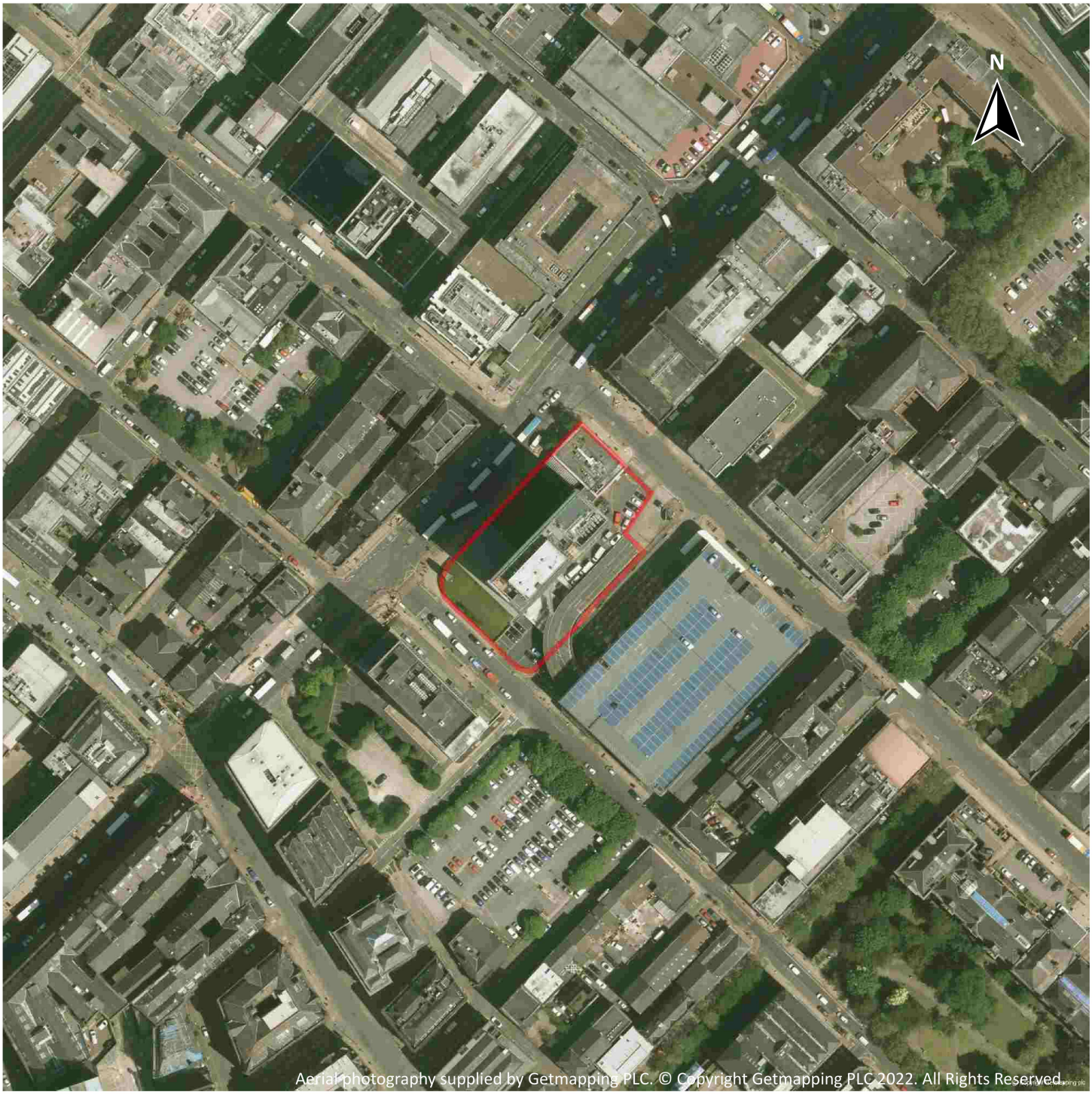
Recent aerial photograph



Capture Date: 22/04/2019

Site Area: 0.35ha

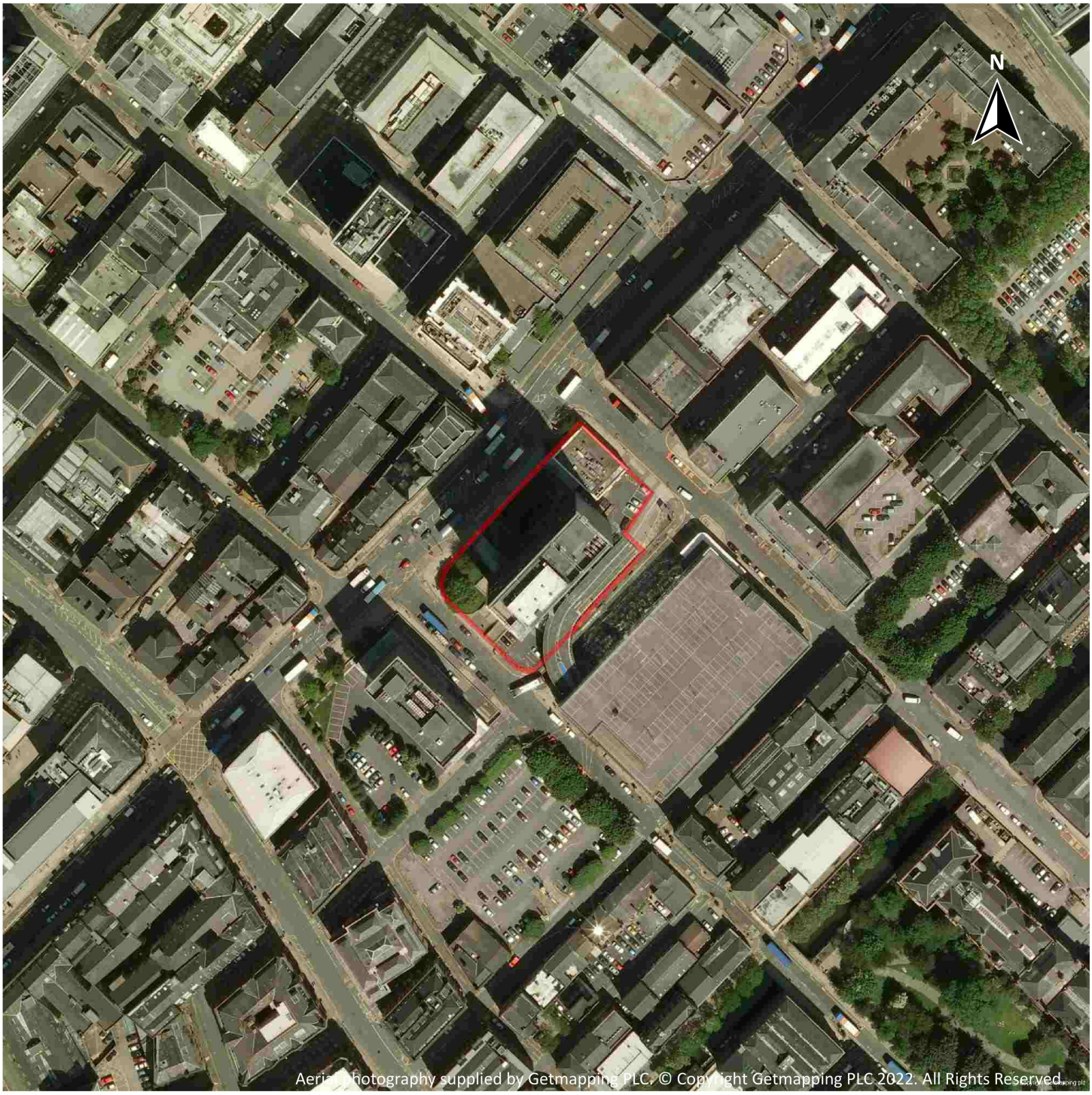
Recent site history - 2015 aerial photograph



Capture Date: 11/06/2015

Site Area: 0.35ha

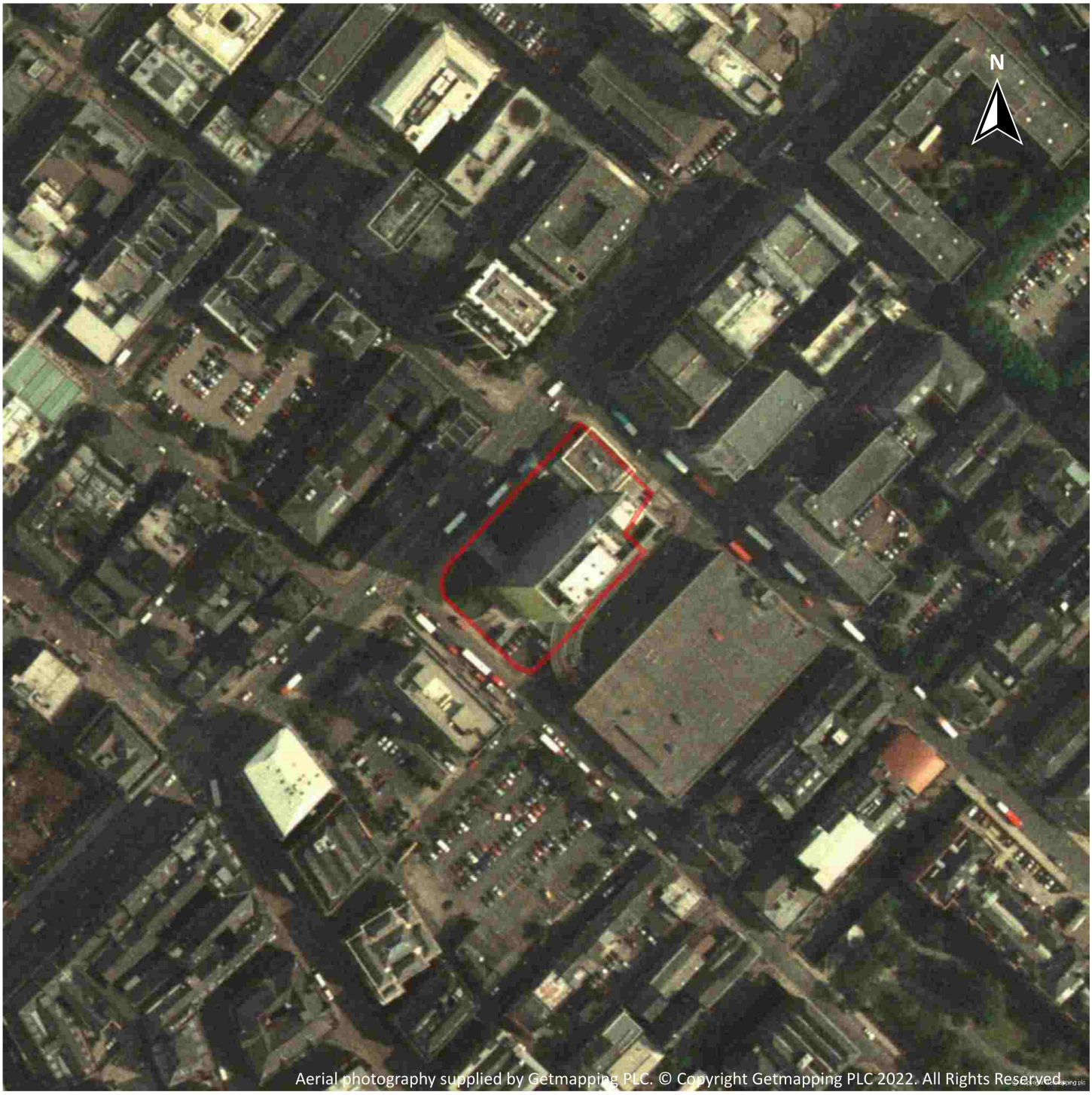
Recent site history - 2009 aerial photograph



Capture Date: 02/06/2009

Site Area: 0.35ha

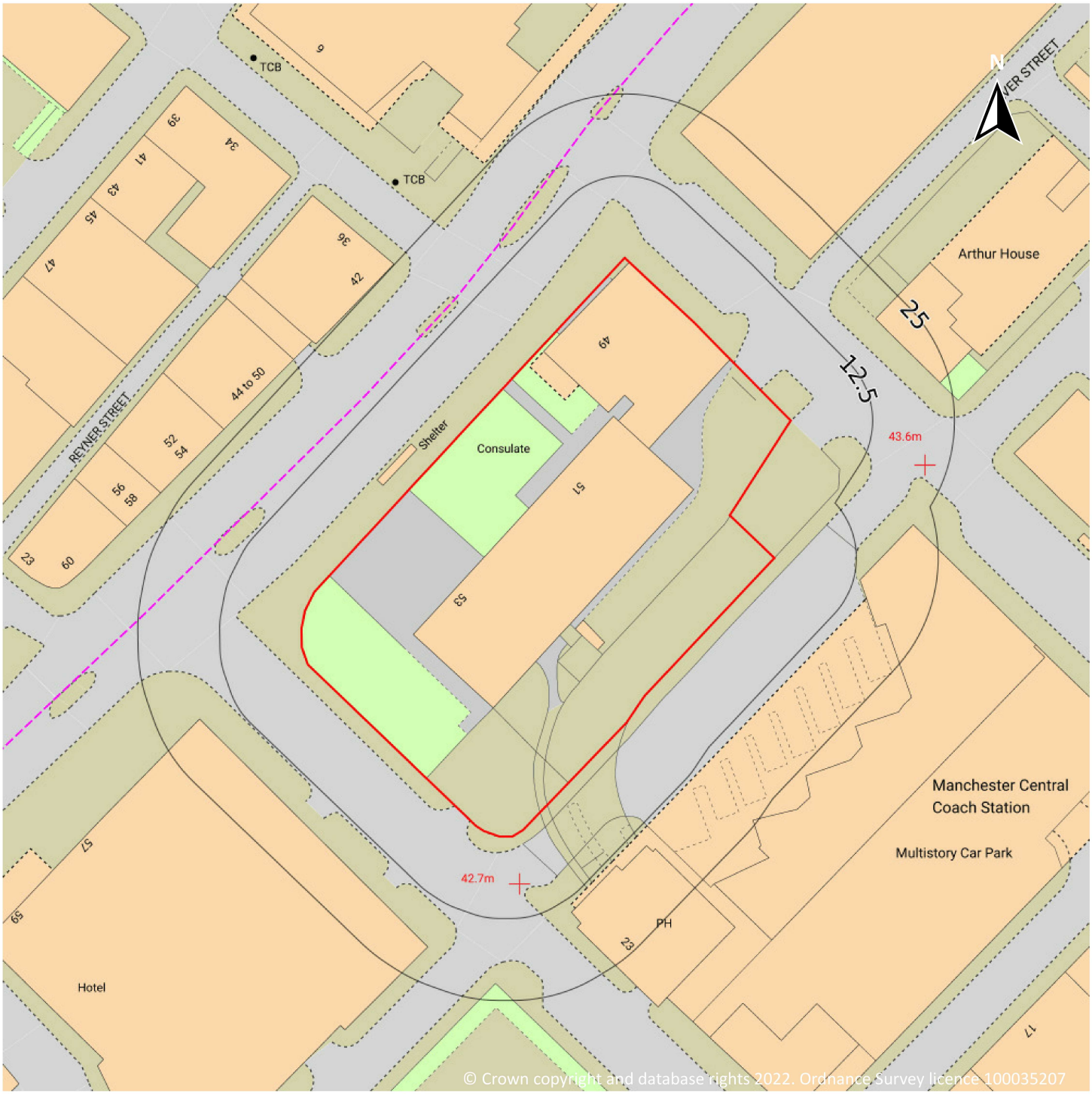
Recent site history - 2000 aerial photograph



Capture Date: 27/06/2000

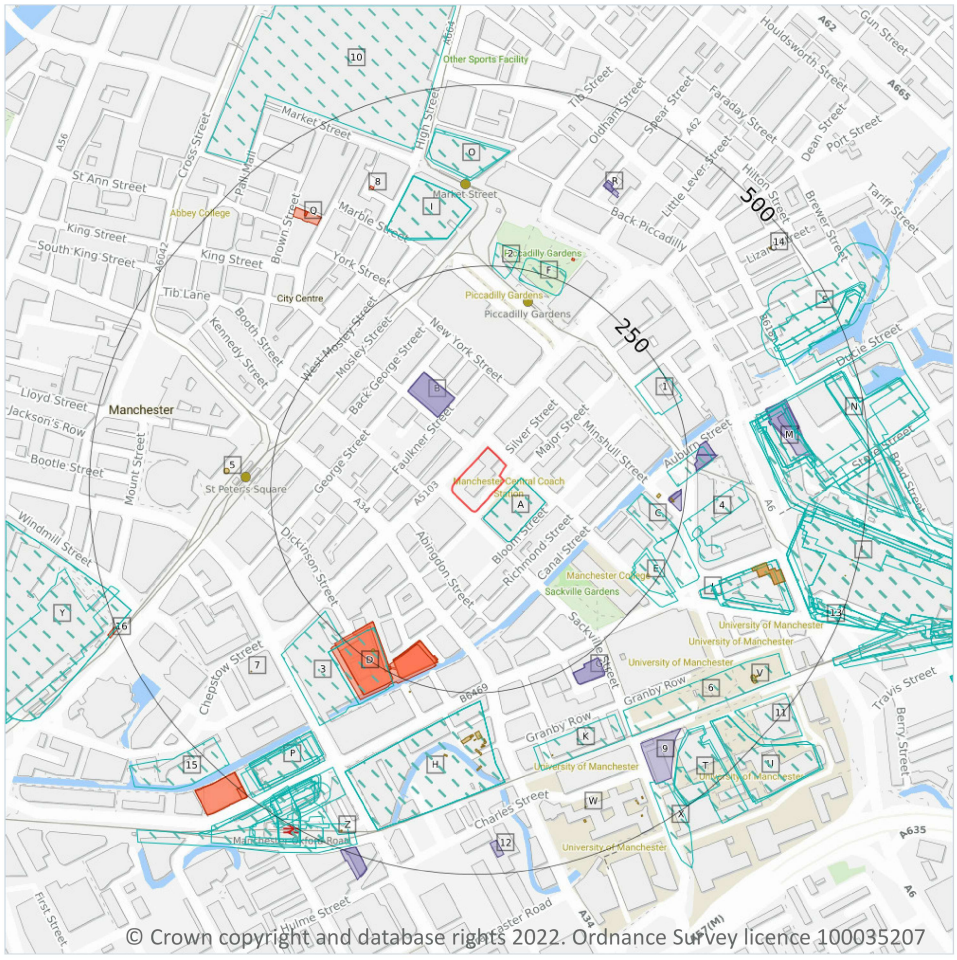
Site Area: 0.35ha

OS MasterMap site plan



Site Area: 0.35ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

Historical garages

1.1 Historical industrial land uses

Records within 500m	99

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

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
A	14m SE	Bus Station	1978	884077

ID	Location	Land use	Dates present	Group ID
A	14m SE	Bus Station	1985 - 1994	952978
C	173m E	Unspecified Wharf	1915 - 1923	848098
1	208m NE	Infirmary	1915 - 1923	975872
D	210m SW	Electricity Station	1916 - 1923	992043
E	212m SE	Ice Works	1915	808540
E	213m SE	Unspecified Wharf	1890	826601
C	222m E	Unspecified Works	1915 - 1923	898319
E	225m SE	Unspecified Works	1923	830436
F	229m NE	Unspecified Pit	1956	840494
2	233m N	Bus Station	1978	842917
3	240m SW	Unspecified Commercial/Industrial	1923	796724
4	253m E	Unspecified Mill	1915 - 1923	946972
H	261m S	Unspecified Mills	1916	861845
H	261m S	Unspecified Commercial/Industrial	1923	874542
H	261m S	Unspecified Commercial/Industrial	1905	968335
H	261m S	Unspecified Mills	1932 - 1938	989884
E	270m E	Unspecified Ground Workings	1934 - 1938	906423
I	292m N	Unspecified Commercial/Industrial	1938	873846
I	293m N	Unspecified Commercial/Industrial	1931	885632
I	293m N	Unspecified Commercial/Industrial	1916	924604
J	309m SE	Police Station	1985 - 1994	879174
J	309m SE	Police Station	1971	907595
J	309m SE	Police Station	1978	978804
J	323m SE	Fire Station	1934 - 1938	857211
J	324m SE	Police Station	1915 - 1923	846961
J	327m SE	Fire Station	1985 - 1994	864327
J	327m SE	Fire Station	1978	872224
J	327m SE	Fire Station	1956 - 1971	924791

ID	Location	Land use	Dates present	Group ID
K	331m SE	Unspecified Commercial/Industrial	1923	796719
L	341m E	Railway Sidings	1915	849007
L	341m E	Railway Sidings	1934 - 1938	899923
6	342m SE	Unspecified Commercial/Industrial	1923	796723
L	344m E	Railway Sidings	1923	879517
J	345m SE	Fire Engine Station	1915 - 1923	869627
M	347m E	Railway Building	1890	820433
M	348m E	Goods Shed	1915	885654
M	348m E	Goods Shed	1934 - 1938	924820
L	351m E	Railway Sidings	1956	950162
M	352m E	Goods Shed	1905	923774
M	352m E	Goods Shed	1923	979300
L	354m E	Railway Sidings	1890 - 1905	979002
N	358m E	Unspecified Commercial/Industrial	1956	796797
J	364m E	Police Station	1934 - 1938	903287
O	368m N	Unspecified Commercial/Industrial	1938	796725
O	372m N	Unspecified Ground Workings	1931	800625
P	376m SW	Hospital	1956 - 1971	915521
P	376m SW	Hospital	1978	957282
P	381m SW	Hospital	1916	938342
N	389m E	Goods Station	1890 - 1938	979048
P	389m SW	Hospital	1923	848326
P	392m SW	Coal Wharf	1851	794097
S	392m NE	Unspecified Wharf	1956	971868
P	399m SW	Hospital	1932 - 1938	949847
L	402m E	Railway Stations	1915	887476
L	402m E	Railway Stations	1934 - 1938	900032
P	402m SW	Gas Works	1851	802208

ID	Location	Land use	Dates present	Group ID
S	403m NE	Unspecified Wharf	1890 - 1923	976213
L	404m E	Railway Station	1956	935665
L	405m E	Railway Station	1923	941202
L	405m E	Railway Station	1890 - 1905	959335
S	405m NE	Unspecified Wharf	1934	971276
S	407m NE	Unspecified Warehouses	1915	933374
S	407m NE	Unspecified Warehouses	1934 - 1938	964840
S	410m NE	Unspecified Warehouse	1923	807197
L	413m E	Railway Station	1985 - 1994	890876
L	413m E	Railway Station	1971	897274
L	413m E	Railway Station	1978	897926
L	414m E	Railway Station	1851	942543
T	420m SE	Unspecified Works	1915 - 1923	954702
P	420m SW	Railway Station	1988 - 1994	912150
L	423m E	Railway Sidings	1851	923729
10	423m N	Bus Station	1985 - 1994	940823
P	423m SW	Railway Building	1956	820261
T	424m SE	Iron Works	1890	822793
P	427m SW	Tanks	1851	832185
P	430m SW	Railway Station	1956	923967
P	431m SW	Railway Sidings	1985 - 1994	928139
P	431m SW	Railway Station	1896	887032
P	432m SW	Railway Sidings	1905 - 1938	864885
P	432m SW	Railway Station	1905 - 1938	962635
U	433m SE	Unspecified Mills	1934 - 1938	854159
U	433m SE	Unspecified Mills	1915	967472
U	436m SE	Unspecified Mills	1923	914258
X	445m SE	Unspecified Works	1915 - 1923	951103

ID	Location	Land use	Dates present	Group ID
T	448m SE	Railway Sidings	1915 - 1923	959198
11	449m SE	Unspecified Works	1915 - 1923	934829
L	460m E	Railway Building	1938	820435
L	460m E	Grain Store	1915 - 1923	946860
P	461m SW	Railway Station	1971	960776
P	461m SW	Railway Station	1985	962611
P	461m SW	Railway Station	1978	981767
13	467m SE	Railway Buildings	1923	833658
15	472m SW	Corporation Yard	1905 - 1938	920120
Y	472m W	Railway Sidings	1905 - 1916	871753
Y	472m W	Railway Sidings	1932 - 1938	982150
Y	479m W	Railway Station	1956	888631
P	480m SW	Railway Sidings	1896	989778
L	484m E	Railway Building	1905 - 1938	893315

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	**38**

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

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
C	211m E	Unspecified Tank	1891	115912
C	231m E	Unspecified Tank	1891	115913
D	234m SW	Unspecified Tank	1891	115965
D	263m S	Unspecified Tank	1891	115964

ID	Location	Land use	Dates present	Group ID
H	303m S	Unspecified Tank	1891	115962
H	307m S	Tanks	1891	106792
5	308m W	Unspecified Tank	1994 - 1999	133983
H	308m S	Unspecified Tank	1893	115963
H	310m S	Unspecified Tank	1891	115960
H	313m S	Unspecified Tank	1891	115949
H	314m S	Unspecified Tank	1891	115961
H	315m S	Unspecified Tank	1891	115947
H	317m S	Unspecified Tank	1891 - 1893	141146
H	321m S	Unspecified Tank	1891	115959
H	322m S	Unspecified Tank	1891	115948
H	327m S	Unspecified Tank	1891	115958
H	331m S	Tanks	1891	106786
H	337m S	Tanks	1891	106782
H	350m S	Tanks	1891	106787
K	352m S	Unspecified Tank	1891	115946
J	362m E	Gas Meter Testing Station	1948	120722
7	371m SW	Unspecified Tank	1891	115956
V	433m SE	Unspecified Tank	1952 - 1955	134489
W	434m S	Unspecified Tank	1891	115941
V	439m SE	Unspecified Tank	1891	115938
W	450m S	Unspecified Tank	1891	115940
L	451m E	Unspecified Tank	1891	115916
L	451m E	Unspecified Tank	1891	115915
X	455m SE	Unspecified Tank	1891	115944
X	455m SE	Unspecified Tank	1891	115942
X	459m SE	Unspecified Tank	1891	115945
14	470m NE	Unspecified Tank	1891	115967

ID	Location	Land use	Dates present	Group ID
Z	475m S	Unspecified Tank	1955	136262
Z	476m S	Unspecified Tank	1953	136354
X	477m SE	Unspecified Tank	1891	115943
L	487m E	Unspecified Tank	1891	115922
L	491m E	Unspecified Tank	1891	115914
L	491m E	Unspecified Tank	1891	115911

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**15**

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

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
D	193m S	Electricity Station	1948	73425
D	193m S	Electricity Station	1950	68267
D	193m S	Electricity Station	1955	77896
D	199m S	Electricity Station	1908 - 1922	81883
D	205m SW	Electricity Station	1950 - 1955	66381
F	283m NE	Electricity Substation	1986 - 1995	72406
J	362m E	Gas Meter Testing Station	1948	63684
Q	386m NW	Electricity Substation	1953	74071
8	389m NW	Electricity Substation	1995	62186
Q	406m NW	Electricity Substation	1953 - 1967	74509
Q	406m NW	Electricity Substation	1948 - 1968	80770
P	486m SW	Hydraulic Power Station	1948 - 1979	64692

ID	Location	Land use	Dates present	Group ID
P	487m SW	Hydraulic Power Station	1948 - 1973	64396
P	495m SW	Electricity Substation	1948 - 1999	65682
16	499m W	Electricity Substation	1948 - 1985	80627

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	**21**

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

Features are displayed on the Past land use map on **page 13**

ID	Location	Land use	Dates present	Group ID
B	79m NW	Garage	1953 - 1965	27406
B	79m NW	Garage	1948 - 1953	24294
C	228m E	Garage	1948 - 1971	25857
C	228m E	Garage	1968 - 1984	24849
C	228m E	Garage	1955 - 1965	25421
G	258m SE	Garage	1985 - 1990	27728
G	259m SE	Garage	1948 - 1968	26993
C	260m E	Garage	1948	24212

ID	Location	Land use	Dates present	Group ID
C	260m E	Garage	1971	22467
C	263m E	Garage	1971	23089
C	264m E	Garage	1948 - 1971	25009
M	366m E	Garage	1990	23753
M	367m E	Garage	1971	20840
M	380m E	Garage	1971	21466
R	388m NE	Garage	1953	21528
R	390m NE	Garage	1965	23515
R	391m NE	Garage	1953	25567
9	392m SE	Garage	1952 - 1955	26338
12	454m S	Garage	1948 - 1955	24945
Z	490m S	Garage	1955 - 1990	26377
Z	490m S	Garage	1948 - 1998	27861

This data is sourced from Ordnance Survey / Groundsure.

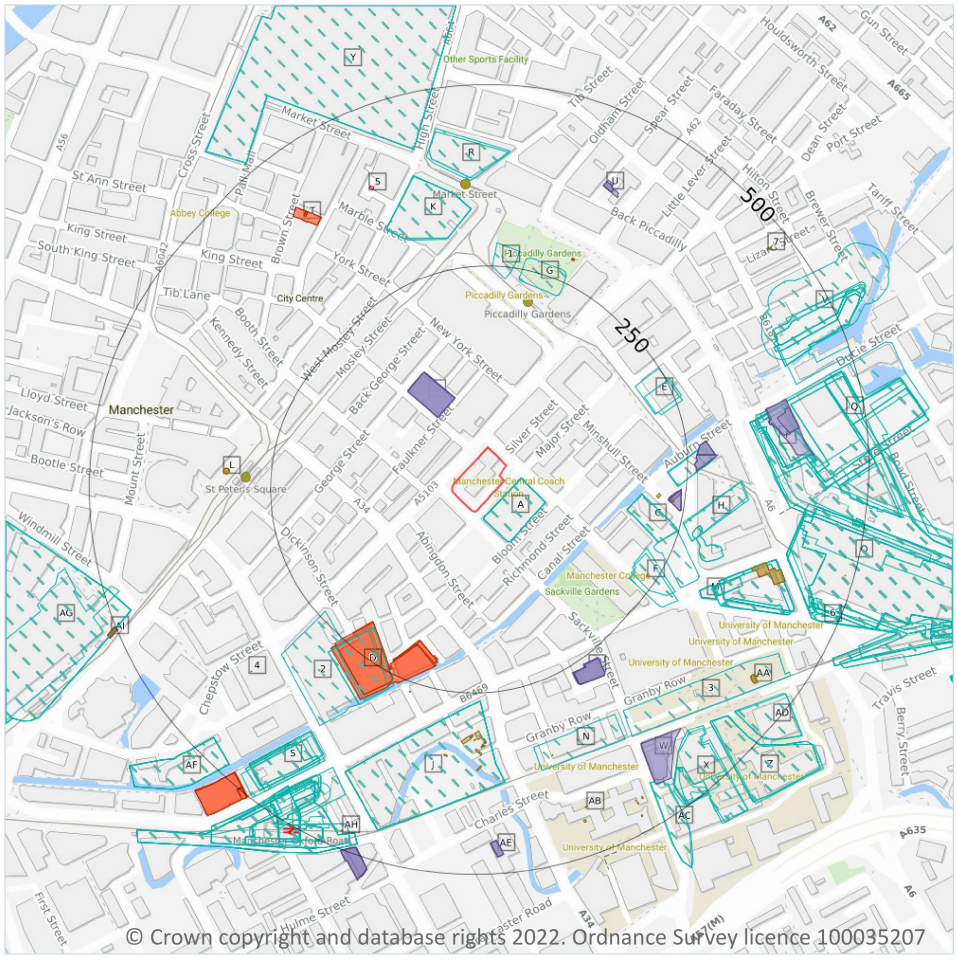
1.6 Historical military land

Records within 500m	**0**

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

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

2 Past land use - un-grouped



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2.1 Historical industrial land uses

Records within 500m	164

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

Features are displayed on the Past land use - un-grouped map on **page 22**

ID	Location	Land Use	Date	Group ID
A	14m SE	Bus Station	1988	952978
A	14m SE	Bus Station	1978	884077
A	14m SE	Bus Station	1985	952978

ID	Location	Land Use	Date	Group ID
A	14m SE	Bus Station	1994	952978
C	173m E	Unspecified Wharf	1923	848098
C	174m E	Unspecified Wharf	1915	848098
E	208m NE	Infirmary	1923	975872
D	210m SW	Electricity Station	1916	992043
F	212m SE	Ice Works	1915	808540
E	213m NE	Infirmary	1915	975872
F	213m SE	Unspecified Wharf	1890	826601
D	218m SW	Electricity Station	1923	992043
C	222m E	Unspecified Works	1923	898319
C	224m E	Unspecified Works	1915	898319
F	225m SE	Unspecified Works	1923	830436
G	229m NE	Unspecified Pit	1956	840494
1	233m N	Bus Station	1978	842917
2	240m SW	Unspecified Commercial/Industrial	1923	796724
H	253m E	Unspecified Mill	1923	946972
H	255m E	Unspecified Mill	1915	946972
J	261m S	Unspecified Mills	1938	989884
J	261m S	Unspecified Mills	1932	989884
J	261m S	Unspecified Mills	1916	861845
J	261m S	Unspecified Commercial/Industrial	1905	968335
J	261m S	Unspecified Commercial/Industrial	1923	874542
F	270m E	Unspecified Ground Workings	1938	906423
F	270m E	Unspecified Ground Workings	1934	906423
K	292m N	Unspecified Commercial/Industrial	1938	873846
K	293m N	Unspecified Commercial/Industrial	1931	885632
K	293m N	Unspecified Commercial/Industrial	1916	924604
M	309m SE	Police Station	1971	907595

ID	Location	Land Use	Date	Group ID
M	309m SE	Police Station	1988	879174
M	309m SE	Police Station	1978	978804
M	309m SE	Police Station	1985	879174
M	309m SE	Police Station	1994	879174
M	323m SE	Fire Station	1938	857211
M	323m SE	Fire Station	1934	857211
M	324m SE	Police Station	1923	846961
M	326m SE	Police Station	1915	846961
M	327m SE	Fire Station	1971	924791
M	327m SE	Fire Station	1956	924791
M	327m SE	Fire Station	1988	864327
M	327m SE	Fire Station	1978	872224
M	327m SE	Fire Station	1985	864327
M	327m SE	Fire Station	1994	864327
N	331m SE	Unspecified Commercial/Industrial	1923	796719
O	341m E	Railway Sidings	1938	899923
O	341m E	Railway Sidings	1934	899923
O	341m E	Railway Sidings	1915	849007
3	342m SE	Unspecified Commercial/Industrial	1923	796723
O	344m E	Railway Sidings	1923	879517
M	345m SE	Fire Engine Station	1923	869627
M	346m SE	Fire Engine Station	1915	869627
P	347m E	Railway Building	1890	820433
P	348m E	Goods Shed	1938	924820
P	348m E	Goods Shed	1934	924820
P	348m E	Goods Shed	1915	885654
O	351m E	Railway Sidings	1956	950162
P	352m E	Goods Shed	1905	923774

ID	Location	Land Use	Date	Group ID
P	352m E	Goods Shed	1923	979300
O	354m E	Railway Sidings	1905	979002
Q	358m E	Unspecified Commercial/Industrial	1956	796797
M	364m E	Police Station	1938	903287
M	364m E	Police Station	1934	903287
R	368m N	Unspecified Commercial/Industrial	1938	796725
O	371m E	Railway Sidings	1890	979002
R	372m N	Unspecified Ground Workings	1931	800625
S	376m SW	Hospital	1971	915521
S	376m SW	Hospital	1956	915521
S	376m SW	Hospital	1978	957282
S	381m SW	Hospital	1916	938342
Q	389m E	Goods Station	1938	979048
Q	389m E	Goods Station	1934	979048
Q	389m E	Goods Station	1915	979048
S	389m SW	Hospital	1923	848326
S	392m SW	Coal Wharf	1851	794097
V	392m NE	Unspecified Wharf	1956	971868
S	399m SW	Hospital	1938	949847
S	399m SW	Hospital	1932	949847
Q	401m E	Goods Station	1905	979048
Q	401m E	Goods Station	1890	979048
Q	401m E	Goods Station	1923	979048
O	402m E	Railway Stations	1938	900032
O	402m E	Railway Stations	1934	900032
O	402m E	Railway Stations	1915	887476
S	402m SW	Gas Works	1851	802208
V	403m NE	Unspecified Wharf	1905	976213

ID	Location	Land Use	Date	Group ID
V	403m NE	Unspecified Wharf	1890	976213
V	403m NE	Unspecified Wharf	1923	976213
O	404m E	Railway Station	1956	935665
O	405m E	Railway Station	1905	959335
O	405m E	Railway Station	1890	959335
O	405m E	Railway Station	1923	941202
V	405m NE	Unspecified Wharf	1934	971276
V	405m NE	Unspecified Wharf	1915	976213
V	407m NE	Unspecified Warehouses	1938	964840
V	407m NE	Unspecified Warehouses	1934	964840
V	407m NE	Unspecified Warehouses	1915	933374
V	410m NE	Unspecified Warehouse	1923	807197
O	413m E	Railway Station	1971	897274
O	413m E	Railway Station	1988	890876
O	413m E	Railway Station	1978	897926
O	413m E	Railway Station	1985	890876
O	413m E	Railway Station	1994	890876
O	414m E	Railway Station	1851	942543
X	420m SE	Unspecified Works	1923	954702
S	420m SW	Railway Station	1988	912150
S	420m SW	Railway Station	1994	912150
O	423m E	Railway Sidings	1851	923729
S	423m SW	Railway Building	1956	820261
Y	423m N	Bus Station	1988	940823
Y	423m N	Bus Station	1985	940823
Y	423m N	Bus Station	1994	940823
X	424m SE	Iron Works	1890	822793
S	427m SW	Tanks	1851	832185

ID	Location	Land Use	Date	Group ID
S	430m SW	Railway Station	1956	923967
S	431m SW	Railway Sidings	1988	928139
S	431m SW	Railway Sidings	1985	928139
S	431m SW	Railway Sidings	1994	928139
S	431m SW	Railway Station	1896	887032
S	432m SW	Railway Station	1938	962635
S	432m SW	Railway Sidings	1938	864885
S	432m SW	Railway Station	1932	962635
S	432m SW	Railway Sidings	1932	864885
S	432m SW	Railway Station	1916	962635
S	432m SW	Railway Sidings	1916	864885
S	432m SW	Railway Station	1905	962635
S	432m SW	Railway Sidings	1905	864885
S	432m SW	Railway Sidings	1923	864885
S	432m SW	Railway Station	1923	962635
Z	433m SE	Unspecified Mills	1938	854159
Z	433m SE	Unspecified Mills	1934	854159
Z	433m SE	Unspecified Mills	1915	967472
Z	436m SE	Unspecified Mills	1923	914258
AC	445m SE	Unspecified Works	1923	951103
AC	445m SE	Unspecified Works	1915	951103
X	448m SE	Railway Sidings	1923	959198
X	448m SE	Unspecified Works	1915	954702
AD	449m SE	Unspecified Works	1915	934829
AD	450m SE	Unspecified Works	1923	934829
X	451m SE	Railway Sidings	1915	959198
O	460m E	Railway Building	1938	820435
O	460m E	Grain Store	1915	946860

ID	Location	Land Use	Date	Group ID
S	461m SW	Railway Station	1971	960776
S	461m SW	Railway Station	1978	981767
S	461m SW	Railway Station	1985	962611
O	461m E	Grain Store	1923	946860
6	467m SE	Railway Buildings	1923	833658
AF	472m SW	Corporation Yard	1938	920120
AF	472m SW	Corporation Yard	1932	920120
AF	472m SW	Corporation Yard	1916	920120
AF	472m SW	Corporation Yard	1905	920120
AF	472m SW	Corporation Yard	1923	920120
AG	472m W	Railway Sidings	1938	982150
AG	472m W	Railway Sidings	1932	982150
AG	472m W	Railway Sidings	1916	871753
AG	472m W	Railway Sidings	1905	871753
AG	479m W	Railway Station	1956	888631
S	480m SW	Railway Sidings	1896	989778
O	484m E	Railway Building	1938	893315
O	484m E	Railway Building	1934	893315
O	486m E	Railway Building	1915	893315
O	486m E	Railway Building	1905	893315
O	486m E	Railway Building	1923	893315

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**44**

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

Features are displayed on the Past land use - un-grouped map on **page 22**

ID	Location	Land Use	Date	Group ID
C	211m E	Unspecified Tank	1891	115912
C	231m E	Unspecified Tank	1891	115913
D	234m SW	Unspecified Tank	1891	115965
D	263m S	Unspecified Tank	1891	115964
J	303m S	Unspecified Tank	1891	115962
J	307m S	Tanks	1891	106792
J	308m S	Unspecified Tank	1893	115963
L	308m W	Unspecified Tank	1996	133983
L	308m W	Unspecified Tank	1995	133983
L	308m W	Unspecified Tank	1994	133983
L	308m W	Unspecified Tank	1999	133983
J	310m S	Unspecified Tank	1891	115960
J	313m S	Unspecified Tank	1891	115949
J	314m S	Unspecified Tank	1891	115961
J	315m S	Unspecified Tank	1891	115947
J	317m S	Unspecified Tank	1891	141146
J	317m S	Unspecified Tank	1893	141146
J	321m S	Unspecified Tank	1891	115959
J	322m S	Unspecified Tank	1891	115948
J	327m S	Unspecified Tank	1891	115958
J	331m S	Tanks	1891	106786
J	337m S	Tanks	1891	106782
J	350m S	Tanks	1891	106787
N	352m S	Unspecified Tank	1891	115946
M	362m E	Gas Meter Testing Station	1948	120722
4	371m SW	Unspecified Tank	1891	115956
AA	433m SE	Unspecified Tank	1955	134489
AA	433m SE	Unspecified Tank	1955	134489

ID	Location	Land Use	Date	Group ID
AA	434m SE	Unspecified Tank	1952	134489
AB	434m S	Unspecified Tank	1891	115941
AA	439m SE	Unspecified Tank	1891	115938
AB	450m S	Unspecified Tank	1891	115940
O	451m E	Unspecified Tank	1891	115916
O	451m E	Unspecified Tank	1891	115915
AC	455m SE	Unspecified Tank	1891	115944
AC	455m SE	Unspecified Tank	1891	115942
AC	459m SE	Unspecified Tank	1891	115945
7	470m NE	Unspecified Tank	1891	115967
AH	475m S	Unspecified Tank	1955	136262
AH	476m S	Unspecified Tank	1953	136354
AC	477m SE	Unspecified Tank	1891	115943
O	487m E	Unspecified Tank	1891	115922
O	491m E	Unspecified Tank	1891	115914
O	491m E	Unspecified Tank	1891	115911

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**40**

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

Features are displayed on the Past land use - un-grouped map on **page 22**

ID	Location	Land Use	Date	Group ID
D	193m S	Electricity Station	1948	73425
D	193m S	Electricity Station	1950	68267
D	193m S	Electricity Station	1955	77896
D	199m S	Electricity Station	1908	81883

ID	Location	Land Use	Date	Group ID
D	200m S	Electricity Station	1922	81883
D	205m SW	Electricity Station	1950	66381
D	205m SW	Electricity Station	1955	66381
G	283m NE	Electricity Substation	1995	72406
G	284m NE	Electricity Substation	1986	72406
M	362m E	Gas Meter Testing Station	1948	63684
T	386m NW	Electricity Substation	1953	74071
T	386m NW	Electricity Substation	1953	74071
5	389m NW	Electricity Substation	1995	62186
T	406m NW	Electricity Substation	1967	74509
T	406m NW	Electricity Substation	1953	74509
T	406m NW	Electricity Substation	1968	80770
T	406m NW	Electricity Substation	1948	80770
T	406m NW	Electricity Substation	1953	80770
S	486m SW	Hydraulic Power Station	1979	64692
S	486m SW	Hydraulic Power Station	1948	64692
S	487m SW	Hydraulic Power Station	1951	64396
S	487m SW	Hydraulic Power Station	1973	64396
S	487m SW	Hydraulic Power Station	1948	64396
S	495m SW	Electricity Substation	1979	65682
S	496m SW	Electricity Substation	1985	65682
S	496m SW	Electricity Substation	1951	65682
S	496m SW	Electricity Substation	1988	65682
S	496m SW	Electricity Substation	1973	65682
S	496m SW	Electricity Substation	1948	65682
S	496m SW	Electricity Substation	1996	65682
S	496m SW	Electricity Substation	1995	65682
S	496m SW	Electricity Substation	1994	65682

ID	Location	Land Use	Date	Group ID
S	496m SW	Electricity Substation	1999	65682
AI	499m W	Electricity Substation	1985	80627
AI	500m W	Electricity Substation	1951	80627
AI	500m W	Electricity Substation	1973	80627
AI	500m W	Electricity Substation	1948	80627
AI	500m W	Electricity Substation	1979	80627
AI	500m W	Electricity Substation	1963	80627
AI	500m W	Electricity Substation	1948	80627

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	**0**

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

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	**53**

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

Features are displayed on the Past land use - un-grouped map on **page 22**

ID	Location	Land Use	Date	Group ID
B	79m NW	Garage	1953	27406
B	79m NW	Garage	1953	27406
B	79m NW	Garage	1965	27406
B	79m NW	Garage	1948	24294
B	79m NW	Garage	1953	24294

ID	Location	Land Use	Date	Group ID
C	228m E	Garage	1952	25857
C	228m E	Garage	1948	25857
C	228m E	Garage	1968	24849
C	228m E	Garage	1965	25421
C	228m E	Garage	1955	25421
C	229m E	Garage	1964	25857
C	229m E	Garage	1971	25857
C	229m E	Garage	1984	24849
I	258m SE	Garage	1990	27728
I	258m SE	Garage	1990	27728
I	258m SE	Garage	1985	27728
I	259m SE	Garage	1964	26993
I	259m SE	Garage	1948	26993
I	259m SE	Garage	1965	26993
I	259m SE	Garage	1965	26993
I	259m SE	Garage	1955	26993
I	259m SE	Garage	1968	26993
I	259m SE	Garage	1950	26993
C	260m E	Garage	1948	24212
C	260m E	Garage	1971	22467
C	263m E	Garage	1971	23089
C	264m E	Garage	1971	25009
C	264m E	Garage	1948	25009
P	366m E	Garage	1990	23753
P	367m E	Garage	1971	20840
P	380m E	Garage	1971	21466
U	388m NE	Garage	1953	21528
U	390m NE	Garage	1965	23515

ID	Location	Land Use	Date	Group ID
U	391m NE	Garage	1953	25567
U	391m NE	Garage	1953	25567
W	392m SE	Garage	1952	26338
W	393m SE	Garage	1955	26338
AE	454m S	Garage	1953	24945
AE	454m S	Garage	1948	24945
AE	454m S	Garage	1955	24945
AH	490m S	Garage	1955	26377
AH	490m S	Garage	1987	27861
AH	490m S	Garage	1969	27861
AH	490m S	Garage	1948	27861
AH	490m S	Garage	1953	27861
AH	490m S	Garage	1962	27861
AH	490m S	Garage	1965	26377
AH	490m S	Garage	1965	26377
AH	490m S	Garage	1968	26377
AH	491m S	Garage	1990	26377
AH	491m S	Garage	1985	26377
AH	491m S	Garage	1995	27861
AH	491m S	Garage	1998	27861

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill



3.1 Active or recent landfill

Records within 500m	0

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

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

3.2 Historical landfill (BGS records)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

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

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

3.5 Historical waste sites

Records within 500m	0

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

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

3.6 Licensed waste sites

Records within 500m	0

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

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

3.7 Waste exemptions

Records within 500m	9

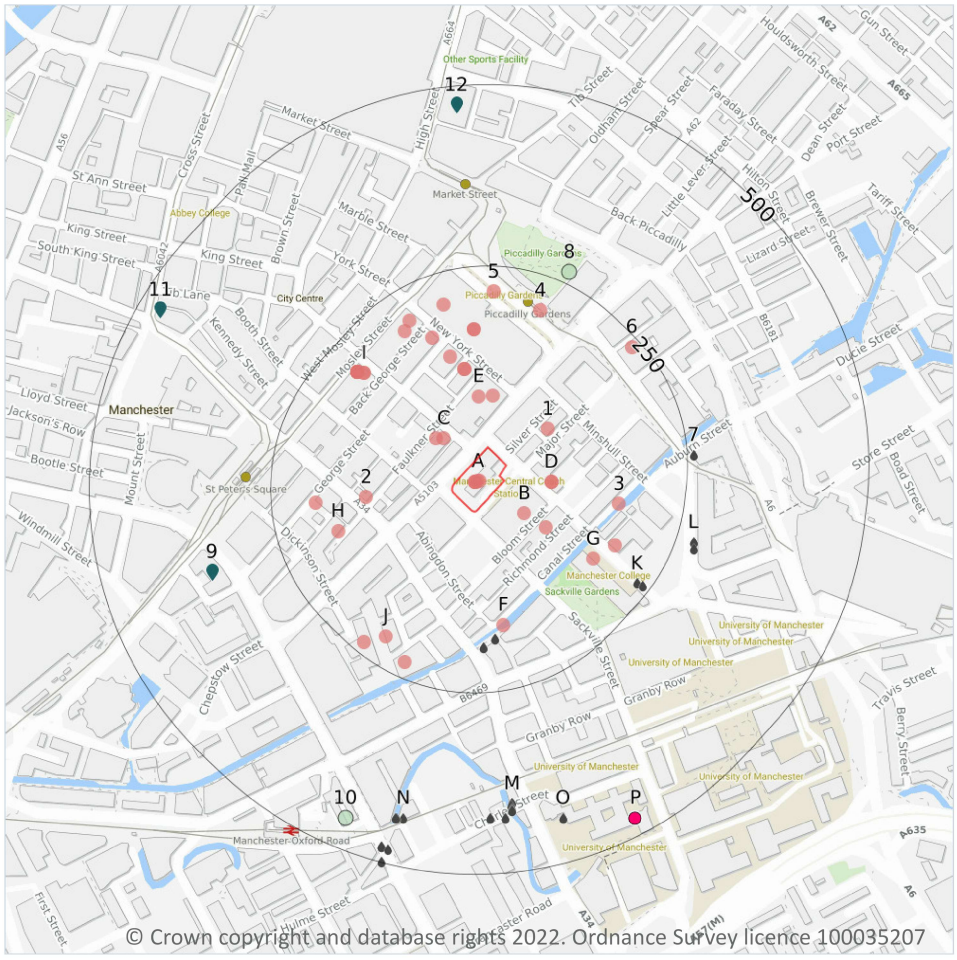
Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 35**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	274m W	New Build Construction Works by Russells, 3 St Peter Square, Manchester, M2 3DF	WEX118443	Treating waste exemption	Not on a farm	Screening and blending of waste
A	274m W	New Build Construction Works by Russells, 3 St Peter Square, Manchester, M2 3DF	WEX118443	Using waste exemption	Not on a farm	Use of waste in construction
B	311m S	LINEAR NETWORK: MAINLINE RAILWAY BETWEEN MANCHESTER AIRPORT AIRPORT AND BARROW-IN-FURNESS	EPR/BE5446FE/A001	Disposing of waste exemption	Non-Agricultural Waste Only	Deposit of waste from a railway sanitary convenience
B	312m S	Bridgewater House 60 Whitworth Street MANCHESTER M1 6LT	EPR/NF0707MF/A001	Disposing of waste exemption	Non-Agricultural Waste Only	Deposit of waste from a railway sanitary convenience
C	317m NW	11 York Street, York Street, Manchester, M2 2BE	WEX111733	Treating waste exemption	Not on a farm	Screening and blending of waste
C	317m NW	11 York Street, York Street, Manchester, M2 2BE	WEX111733	Using waste exemption	Not on a farm	Use of waste in construction
1	426m SE	Michael Smith Building, Dover Street, Manchester, M13 9PL	WEX086269	Treating waste exemption	Not on a farm	Treatment of kitchen waste in a wormery
2	473m W	Brazennose House M2 5PB	EPR/ZE5544KA/A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in a secure place
3	487m W	Windmill Green, 24 Mount Street, Manchester, M2 3NN	WEX105155	Using waste exemption	Not on a farm	Use of waste in construction

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

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

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

Radioactive Substance Authorisations

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	45

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 38**

ID	Location	Company	Address	Activity	Category
A	**On site**	**Cundall**	**Manchester, Greater Manchester, M1**	**Civil Engineers**	**Engineering Services**
A	**On site**	**Scrap a Car Manchester**	**53, Portland Street, Manchester, Greater Manchester, M1 3LD**	**Scrap Metal Merchants**	**Recycling Services**

ID	Location	Company	Address	Activity	Category
A	**On site**	**Leaflet Distribution Manchester**	**Portland Tower, Portland Street, Manchester, Greater Manchester, M1 3HU**	**Distribution and Haulage**	**Transport, Storage and Delivery**
A	**On site**	**Rina**	**53, Portland Street, Manchester, Greater Manchester, M1 3LD**	**Civil Engineers**	**Engineering Services**
A	**On site**	**Medusa 19 Ltd**	**2nd Floor, Manchester, Greater Manchester, M1 1EZ**	**Colours, Chemicals and Water Softeners and Supplies**	**Industrial Products**
B	51m SE	Coach Station	Greater Manchester, M1	Bus and Coach Stations, Depots and Companies	Public Transport, Stations and Infrastructure
C	53m NW	Vina Karaoke Bar	34, Charlotte Street, Manchester, Greater Manchester, M1 4FD	Electronic Equipment	Industrial Products
C	61m NW	Hong Kong Printing Co Ltd	41, Faulkner Street, Manchester, Greater Manchester, M1 4EE	Published Goods	Industrial Products
D	65m E	Broome & Wellington	Boulton House 17-21, Chorlton Street, Manchester, Greater Manchester, M1 3HY	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
D	65m E	Newsco Insider Ltd	Eighth Floor Boulton House 17-21, Chorlton Street, Manchester, Greater Manchester, M1 3HY	Published Goods	Industrial Products
E	72m N	Proveca	9, Charlotte Street, Manchester, Greater Manchester, M1 4ET	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
E	72m N	Daisy Group Plc	Bank Chambers, Faulkner Street, Manchester, Greater Manchester, M1 4EH	Radar and Telecommunications Equipment	Industrial Products
1	76m NE	Print Chain	Barlow House 4, Minshull Street, Manchester, Greater Manchester, M1 3DZ	Published Goods	Industrial Products
B	86m SE	Sports Fashion Distribution UK Ltd	Richmond House 15, Bloom Street, Manchester, Greater Manchester, M1 3HZ	Distribution and Haulage	Transport, Storage and Delivery
E	112m N	St John Ambulance	Faulkner House, Faulkner Street, Manchester, Greater Manchester, M1 4DY	Ambulance and Medical Transportation Services	Health Support Services
E	112m N	St John Ambulance Supplies	Fifth Floor Faulkner House, Faulkner Street, Manchester, Greater Manchester, M1 4DY	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products

ID	Location	Company	Address	Activity	Category
2	119m W	Scrap That Car	91, Princess Street, Manchester, Greater Manchester, M1 4HT	Scrap Metal Merchants	Recycling Services
E	136m N	British Engineering Services	5, New York Street, Manchester, Greater Manchester, M1 4JB	Civil Engineers	Engineering Services
F	161m S	Landing Stage	Greater Manchester, M1	Moorings and Unloading Facilities	Water
3	161m E	Landing Stage	Greater Manchester, M1	Moorings and Unloading Facilities	Water
G	163m SE	Electricity Sub Station	Greater Manchester, M1	Electrical Features	Infrastructure and Facilities
E	164m N	Nxgen Europe Ltd	City Tower, Piccadilly Plaza, Manchester, Greater Manchester, M1 4BT	Office and Shop Equipment	Industrial Products
E	164m N	Weeshred Ltd	Fourteenth Floor City Tower, Piccadilly Plaza, Manchester, Greater Manchester, M1 4BT	Waste Collection, Processing and Disposal Equipment	Industrial Products
H	167m W	Electricity Sub Station	Greater Manchester, M1	Electrical Features	Infrastructure and Facilities
E	169m NW	Atkins Group	The Exchange 3, New York Street, Manchester, Greater Manchester, M1 4HN	Civil Engineers	Engineering Services
G	176m SE	United Global	Minshull House 47, Chorlton Street, Manchester, Greater Manchester, M1 3FY	Distribution and Haulage	Transport, Storage and Delivery
H	189m W	Electricity Sub Station	Greater Manchester, M1	Electrical Features	Infrastructure and Facilities
I	195m NW	Hazexperts	International House, 61 Mosley Street, Manchester, Greater Manchester, M2 3HZ	Recycling, Reclamation and Disposal	Recycling Services
I	195m NW	Imex Health UK	International House, 61 Mosley Street, Manchester, Greater Manchester, M2 3HZ	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
E	197m NW	A D T	1, New York Street, Manchester, Greater Manchester, M1 4HD	Special Purpose Machinery and Equipment	Industrial Products
4	202m N	Piccadilly Gardens (Mancheste r Metrolink)	Greater Manchester, M1	Tram, Metro and Light Railway Stations and Stops	Public Transport, Stations and Infrastructure
I	202m NW	C F E S	Woolwich House 61, Mosley Street, Manchester, Greater Manchester, M2 3HZ	Cooling and Refrigeration	Industrial Products

ID	Location	Company	Address	Activity	Category
I	202m NW	North West Lightning Protection Ltd	Woolwich House 61, Mosley Street, Manchester, Greater Manchester, M2 3HZ	Industrial Engineers	Engineering Services
I	202m NW	Prime Power Solution	Woolwich House 61, Mosley Street, Manchester, Greater Manchester, M2 3HZ	Electrical Motors and Generators	Industrial Products
I	202m NW	Total Towing	Woolwich House 61, Mosley Street, Manchester, Greater Manchester, M2 3HZ	Vehicle Repair, Testing and Servicing	Repair and Servicing
I	202m NW	Trustech	Woolwich House 61, Mosley Street, Manchester, Greater Manchester, M2 3HZ	Medical Equipment, Supplies and Pharmaceuticals	Industrial Products
I	202m NW	Ibuybeds	Woolwich House 61, Mosley Street, Manchester, Greater Manchester, M2 3HZ	Beds and Bedding	Consumer Products
I	202m NW	P P E Universe	Woolwich House 61, Mosley Street, Manchester, Greater Manchester, M2 3HZ	Workwear	Industrial Products
E	206m NW	Aecom Europe Ltd	1, New York Street, Manchester, Greater Manchester, M1 4HD	Civil Engineers	Engineering Services
E	206m N	City Tower	City Tower, Piccadilly Plaza, Manchester, Greater Manchester, M1 4BT	Business Parks and Industrial Estates	Industrial Features
J	210m SW	China House	Greater Manchester, M1	Sand, Gravel and Clay Extraction and Merchants	Extractive Industries
5	215m N	Bus Station	Greater Manchester, M1	Bus and Coach Stations, Depots and Companies	Public Transport, Stations and Infrastructure
J	228m SW	Electricity Sub Station	Greater Manchester, M1	Electrical Features	Infrastructure and Facilities
J	235m SW	Storebox	Linley House, Dickinson Street, Manchester, Greater Manchester, M1 4LF	Container and Storage	Transport, Storage and Delivery
6	238m NE	Unified Theory of Everything	Apartment 314 The Grand 1, Aytoun Street, Manchester, Greater Manchester, M1 3DA	Published Goods	Industrial Products

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	0

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

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

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m	0

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

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

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

Records within 500m	3

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

Features are displayed on the Current industrial land use map on **page 38**

ID	Location	Address	Details	
9	349m W	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
11	470m NW	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
12	473m N	Johnsons Cleaners UK Ltd, 24 High Street, City Centre, Manchester, M4 1QB	Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m **6**

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

Features are displayed on the Current industrial land use map on **page 38**

ID	Location	Address	Details	
P	476m SE	Umist, Po Box 88, Sackville Street, Manchester, M60 1QD	Operator: Umist Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AC8878 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Revoked/cancelled
P	476m SE	Umist, Po Box 88,sackville Street, Manchester, M60 1QD	Operator: Umist Type: Keeping And Use Of Radioactive Materials (was Rsa60 Section 1). Permission number: AC8886 Date of approval: 06/03/2001	Effective from: 06/03/2001 Last date of update: 01/01/2015 Status: Revoked/cancelled
P	476m SE	Umist, Po Box 88, Sackville Street, Manchester, M60 1QD	Operator: Umist Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AG4009 Date of approval: 16/01/1995	Effective from: 16/02/1995 Last date of update: 01/01/2015 Status: Superseded By Variation
P	476m SE	Umist, Po Box 88, Sackville Street, Manchester, M60 1QD	Operator: Umist Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AG4009 Date of approval: 30/01/1997	Effective from: 25/02/1997 Last date of update: 01/01/2015 Status: Superseded By Variation

ID	Location	Address	Details	
P	476m SE	Umist, Po Box 88, Sackville Street, Manchester, M60 1QD	Operator: Umist Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AG4009 Date of approval: 13/11/1997	Effective from: 11/12/1997 Last date of update: 01/01/2015 Status: Superseded By Variation
P	476m SE	Umist, Po Box 88, Sackville Street, Manchester, M60 1QD	Operator: Umist Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AG4009 Date of approval: 09/04/2002	Effective from: 06/05/2002 Last date of update: 01/01/2015 Status: Revoked/cancelled

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

4.13 Licensed Discharges to controlled waters

Records within 500m **39**

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

Features are displayed on the Current industrial land use map on **page 38**

ID	Location	Address	Details	
F	178m S	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: 01/04/2009 Revocation Date: 15/04/2009
F	178m S	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: 16/04/2009 Revocation Date: 31/03/2013
F	178m S	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: 01/04/2013 Revocation Date: 03/10/2014
F	188m S	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: 01/04/2009 Revocation Date: 15/04/2009

ID	Location	Address	Details	
F	188m S	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: 16/04/2009 Revocation Date: 31/03/2013
F	188m S	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: 01/04/2013 Revocation Date: 03/10/2014
K	231m SE	CHORLTON STREET CSO 281J2, CHORLTON STREET, MANCHESTER, GREATER MANCHESTER, M1 3HW	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: 05/02/2016 Revocation Date: 10/04/2018
K	231m SE	CHORLTON STREET CSO 281J2, CHORLTON STREET, MANCHESTER, GREATER MANCHESTER, M1 3HW	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0162 Permit Version: 4 Receiving Water: SHOOTERS BROOK TRIB RVR MEDLOC	Status: VARIED UNDER EPR 2010 Issue date: 11/04/2018 Effective Date: 11/04/2018 Revocation Date: -
K	239m SE	CHORLTON STREET CSO 281J2, CHORLTON STREET, MANCHESTER, GREATER MANCHESTER, M1 3HW	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: 01/01/1995 Revocation Date: 02/09/2010
K	239m SE	CHORLTON STREET CSO 281J2, CHORLTON STREET, MANCHESTER, GREATER MANCHESTER, M1 3HW	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: 03/09/2010 Revocation Date: 04/02/2016
7	258m E	AYTOUN ST/AUBURN ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0370 Permit Version: 1 Receiving Water: -	Status: SURRENDERED UNDER EPR 2010 Issue date: - Effective Date: 01/01/1995 Revocation Date: 27/03/2015

ID	Location	Address	Details	
L	273m E	AYTOUN ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982630 Permit Version: 1 Receiving Water: SHOOTERS BROOK	Status: SURRENDERED UNDER EPR 2010 Issue date: - Effective Date: 30/09/1994 Revocation Date: 30/10/2018
L	273m E	AYTOUN ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0318 Permit Version: 1 Receiving Water: SHOOTERS BROOK	Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 01/01/1995 Revocation Date: 01/01/1995
L	277m E	MINSHULL ST/WHITWORTH ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0355 Permit Version: 1 Receiving Water: -	Status: SURRENDERED UNDER EPR 2010 Issue date: - Effective Date: 01/01/1995 Revocation Date: 18/07/2014
M	405m S	PRINCESS ST/GRANBY ROW CS, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982956 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: CONSENT REVOKED - DISCHARGE CEASED (WRA 91, SCHED 10 & 6) Issue date: - Effective Date: 23/06/1995 Revocation Date: 31/03/1998
M	405m S	PRINCESS ST/WHITWORTH ST CSO 282MN, 67 WHITWORTH ST, MANCHESTER, GREATER MANCHESTER, M1 6LQ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982950 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 23/06/1995 Revocation Date: 19/10/2020
M	409m S	PRINCESS ST/WHITWORTH ST CSO 282MN, 67 WHITWORTH ST, MANCHESTER, GREATER MANCHESTER, M1 6LQ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982950 Permit Version: 2 Receiving Water: RIVER MEDLOCK VIA SWS	Status: VARIED UNDER EPR 2010 Issue date: 20/10/2020 Effective Date: 20/10/2020 Revocation Date: -
M	412m S	CHARLES ST PRINCESS ST CSO 28116, 106 PRINCESS STREET, MANCHESTER, M1 6NG	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0166 Permit Version: 3 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 21/03/2018 Effective Date: 01/04/2018 Revocation Date: -

ID	Location	Address	Details	
M	415m S	CHARLES ST PRINCESS ST CSO 28116, 106 PRINCESS STREET, MANCHESTER, M1 6NG	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0166 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: 02/09/2010
M	415m S	CHARLES ST PRINCESS ST CSO 28116, 106 PRINCESS STREET, MANCHESTER, M1 6NG	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0166 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 31/03/2018
M	415m S	WHITWORTH ST/SACKVILLE ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0253 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/01/1995 Revocation Date: 01/01/2017
M	422m S	112-116 PRINCESS STREET, MANCHESTER, GREATER MANCHESTER	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991403 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 24/04/1989 Revocation Date: 31/03/1992
M	422m S	112-116 PRINCESS STREET, MANCHESTER, GREATER MANCHESTER	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991403 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/04/1992 Revocation Date: 10/02/1993
M	422m S	112-116 PRINCESS STREET, MANCHESTER, GREATER MANCHESTER	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991403 Permit Version: 3 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 11/02/1993 Revocation Date: 01/11/1994
M	424m S	CHARLES STREET CSO, 7 CHARLES STREET, MANCHESTER, M1 7EN	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0183 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: 02/09/2010
M	424m S	CHARLES STREET CSO, 7 CHARLES STREET, MANCHESTER, M1 7EN	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0183 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 31/03/2018

ID	Location	Address	Details	
M	424m S	CHARLES STREET CSO, 7 CHARLES STREET, MANCHESTER, M1 7EN	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0183 Permit Version: 3 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 19/03/2018 Effective Date: 01/04/2018 Revocation Date: -
N	433m S	YORK ST/CHARLES ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0281 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: 09/08/2019
N	435m S	MALLARD STREET/CHARLES STREET CSO, MALLARD STREET, MANCHESTER, GREATER MANCHESTER, M1 6EY	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982736 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 30/09/1994 Revocation Date: 09/07/2020
N	435m S	MEDLOCK ST(OFF CHARLES ST), MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0343 Permit Version: 1 Receiving Water: -	Status: CONSENT REVOKED OR REVISED - NEW CONSENT ISSUED (37(1)) Issue date: - Effective Date: 01/01/1995 Revocation Date: 01/01/1995
N	437m S	MALLARD STREET/CHARLES STREET CSO, MALLARD STREET, MANCHESTER, GREATER MANCHESTER, M1 6EY	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 016982736 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 10/07/2020 Effective Date: 10/07/2020 Revocation Date: -
O	439m S	112-116 PRINCESS STREET, MANCHESTER, GREATER MANCHESTER	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991403 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 24/04/1989 Revocation Date: 31/03/1992
O	439m S	112-116 PRINCESS STREET, MANCHESTER, GREATER MANCHESTER	Effluent Type: MISCELLANEOUS DISCHARGES - SURFACE WATER Permit Number: 016991403 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/04/1992 Revocation Date: 10/02/1993
N	479m S	OXFORD ROAD/GROSVENOR STREET CSO, 137 OXFORD ROAD, MANCHESTER, GREATER MANCHESTER, M1 7DZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0189 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: 02/09/2010

ID	Location	Address	Details	
N	479m S	OXFORD ROAD/GROSVENOR STREET CSO, 137 OXFORD ROAD, MANCHESTER, GREATER MANCHESTER, M1 7DZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0189 Permit Version: 2 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 03/09/2010 Effective Date: 03/09/2010 Revocation Date: 04/02/2016
N	479m S	OXFORD ROAD/GROSVENOR STREET CSO, 137 OXFORD ROAD, MANCHESTER, GREATER MANCHESTER, M1 7DZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0189 Permit Version: 3 Receiving Water: RIVER MEDLOCK	Status: VARIED UNDER EPR 2010 Issue date: 05/02/2016 Effective Date: 05/02/2016 Revocation Date: 28/03/2021
N	479m S	OXFORD/NEW WAKEFILD ST, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0165 Permit Version: 1 Receiving Water: RIVER MEDLOCK	Status: REVOKED - UNSPECIFIED Issue date: - Effective Date: 01/01/1995 Revocation Date: 31/03/1998
N	480m S	OXFORD ROAD/GROSVENOR STREET CSO, 137 OXFORD ROAD, MANCHESTER, GREATER MANCHESTER, M1 7DZ	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0189 Permit Version: 4 Receiving Water: RIVER MEDLOCK VIA SWS	Status: VARIED UNDER EPR 2010 Issue date: 29/03/2021 Effective Date: 29/03/2021 Revocation Date: -
N	498m S	OXFORD RD, MANCHESTER, GREATER MANCHESTER	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 01MAN0342 Permit Version: 1 Receiving Water: -	Status: POST NRA LEGISLATION WHERE ISSUE DATE > 31-AUG-89 (HISTORIC ONLY) Issue date: - Effective Date: 01/01/1995 Revocation Date: 19/12/1999

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m	0

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

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

4.15 Pollutant release to public sewer

Records within 500m	0

Discharges of Special Category Effluents to the public sewer.

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

4.16 List 1 Dangerous Substances

Records within 500m	0

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

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

4.17 List 2 Dangerous Substances

Records within 500m	0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m	2

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

Features are displayed on the Current industrial land use map on **page 38**

ID	Location	Details	
8	266m NE	Incident Date: 12/02/2002 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)
10	458m S	Incident Date: 12/07/2001 Incident Identification: 15886 Pollutant: Oils and Fuel Pollutant Description: Diesel	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0

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

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

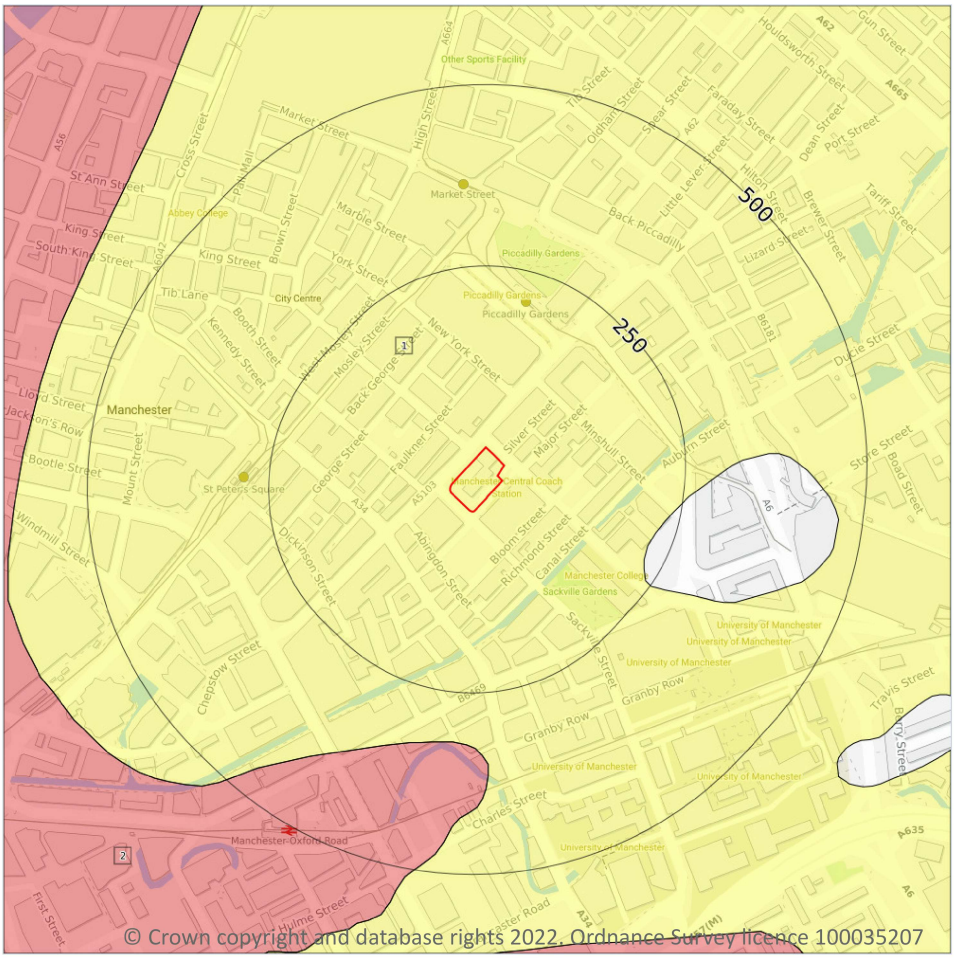
4.21 Pollution inventory radioactive waste

Records within 500m	0

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

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

5 Hydrogeology - Superficial aquifer



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Site Outline

Search buffers in metres (m)

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

5.1 Superficial aquifer

Records within 500m	2

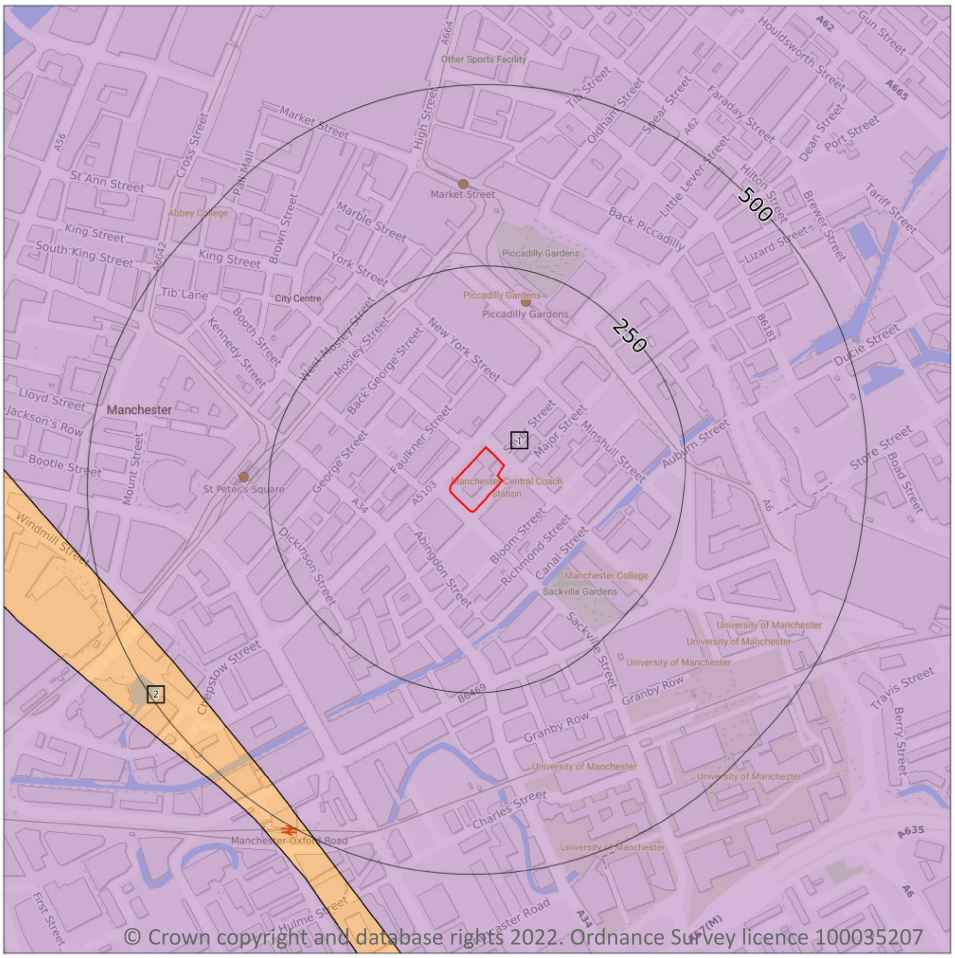
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 53**

ID	Location	Designation	Description
1	**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**
2	318m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

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

Bedrock aquifer



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5.2 Bedrock aquifer

Records within 500m	2

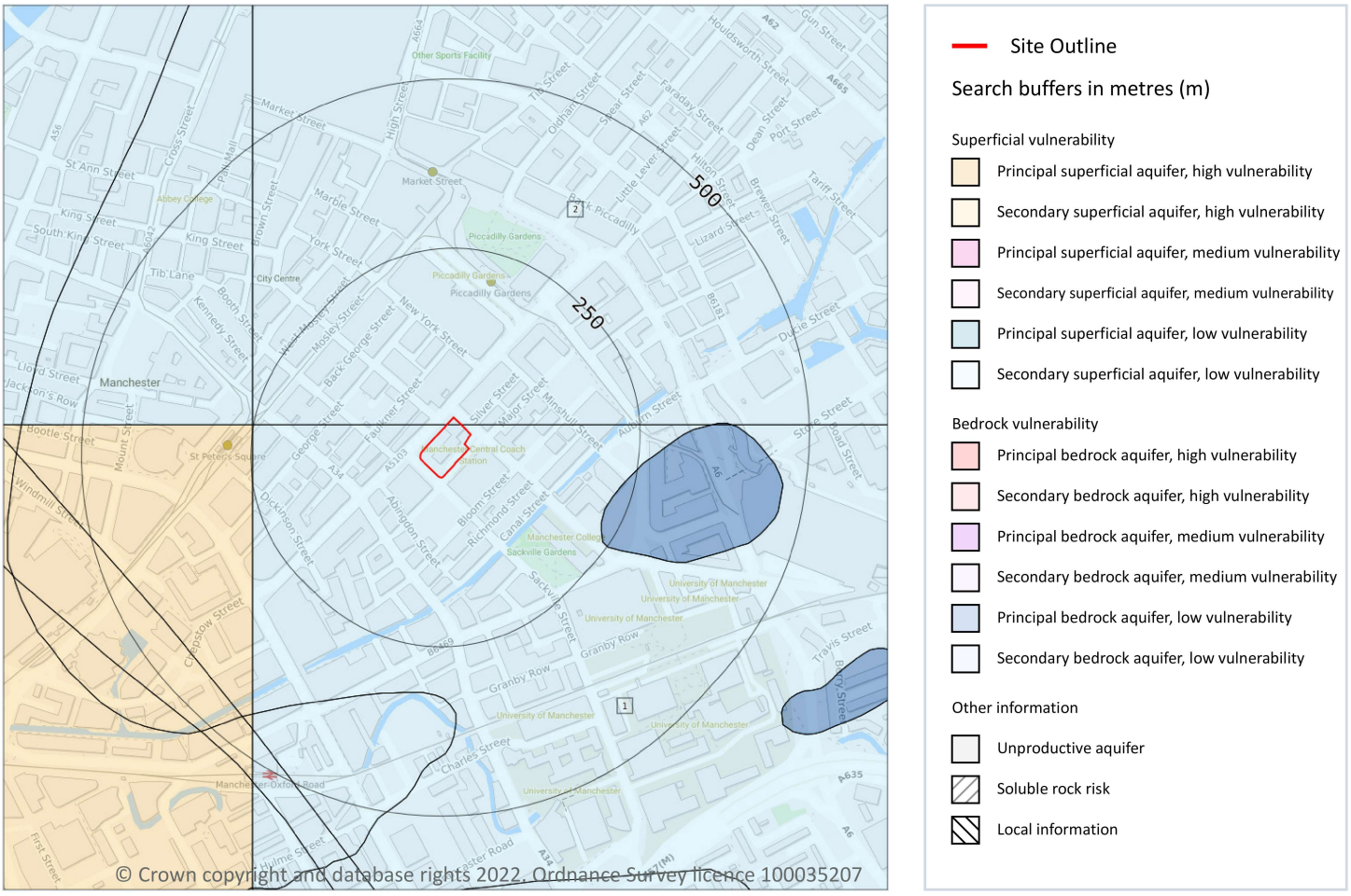
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 55**

ID	Location	Designation	Description
1	**On site**	**Principal**	**Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers**
2	444m SW	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeablehorizons and weathering. These are generally the water-bearing parts of the former non-aquifers

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

Groundwater vulnerability



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5.3 Groundwater vulnerability

Records within 50m	2

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

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

Features are displayed on the Groundwater vulnerability map on **page 57**

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

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

5.4 Groundwater vulnerability- soluble rock risk

Records on site	0

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

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

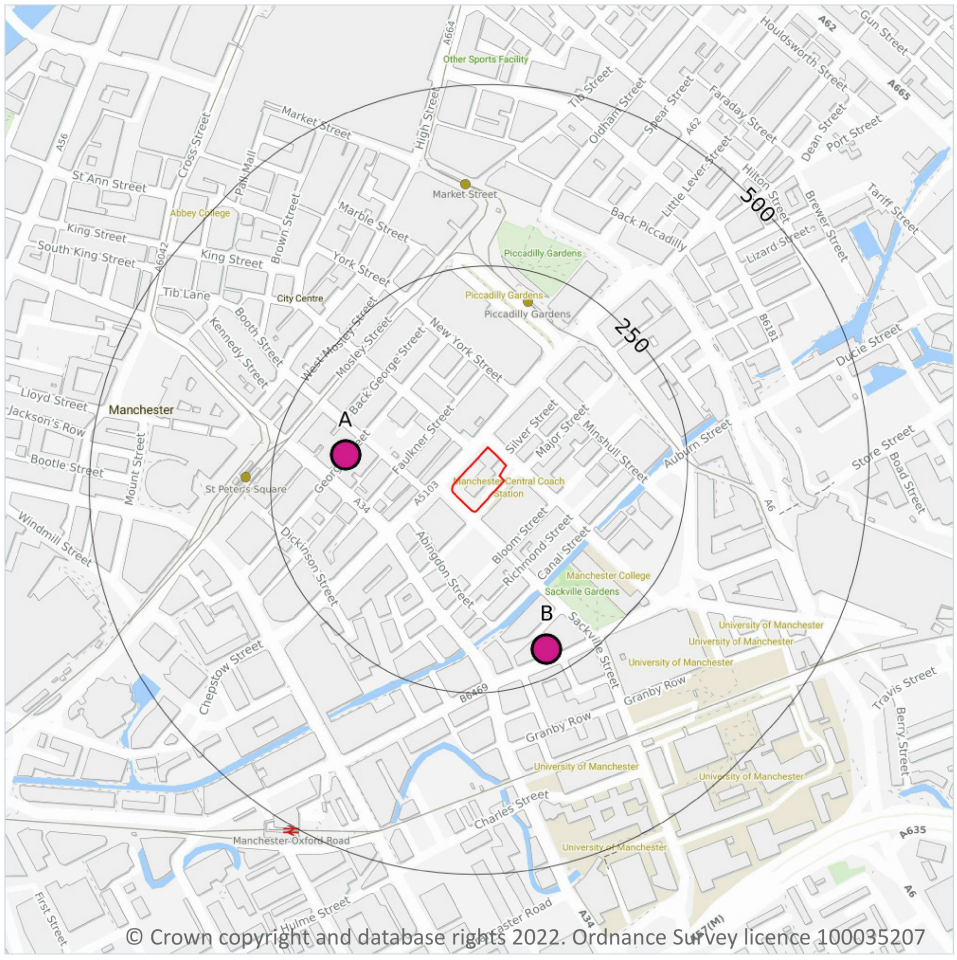
5.5 Groundwater vulnerability- local information

Records on site	0

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

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

Abstractions and Source Protection Zones



Site Outline

Search buffers in metres (m)

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

5.6 Groundwater abstractions

Records within 2000m	51

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 59**

ID	Location	Details	
A	154m W	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT GEORGE ST, MANCHESTER" Data Type: Point Name: BRITISH TELECOM Easting: 384100 Northing: 398000	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/01/1971 Version End Date: -
A	154m W	Status: Historical Licence No: 2569007069 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT GEORGE ST, MANCHESTER Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC Easting: 384100 Northing: 398000	Annual Volume (m^3): 1100 Max Daily Volume (m^3): 860 Original Application No: - Original Start Date: 01/04/1984 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date: -
B	213m SE	Status: Historical Licence No: NW0690006001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLES AT ORIGIN DEVELOPMENTS, MANCHESTER Data Type: Point Name: West Contracting Easting: 384378 Northing: 397733	Annual Volume (m^3): 139128 Max Daily Volume (m^3): 1010 Original Application No: - Original Start Date: 19/01/2009 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 19/01/2009 Version End Date: -
B	213m SE	Status: Historical Licence No: NW/069/0006/001 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: BOREHOLES AT ORIGIN DEVELOPMENTS, MANCHESTER Data Type: Point Name: West Contracting Easting: 384378 Northing: 397733	Annual Volume (m^3): 139128 Max Daily Volume (m^3): 1010 Original Application No: - Original Start Date: 19/01/2009 Expiry Date: 31/03/2015 Issue No: 1 Version Start Date: 19/01/2009 Version End Date: -

ID	Location	Details	
-	837m S	Status: Active Licence No: NW/069/0006/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University Easting: 384180 Northing: 397091	Annual Volume (m^3): 283,240 Max Daily Volume (m^3): 1,532 Original Application No: NPS/WR/015264 Original Start Date: 04/04/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date: -
-	837m S	Status: Active Licence No: NW/069/0006/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE 1 AT LOWER CHATHAM STREET Data Type: Point Name: Manchester Metropolitan University Easting: 384180 Northing: 397091	Annual Volume (m^3): 283,240 Max Daily Volume (m^3): 1,532 Original Application No: NPS/WR/015264 Original Start Date: 04/04/2014 Expiry Date: 31/03/2027 Issue No: 2 Version Start Date: 04/04/2014 Version End Date: -
-	911m NW	Status: Historical Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT DIAL HOUSE, CHAPEL ST, SALFORD" Data Type: Point Name: BRITISH TELECOM Easting: 383700 Northing: 398700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 100 Version Start Date: 27/01/1971 Version End Date: -
-	911m NW	Status: Historical Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT DIAL HOUSE, CHAPEL ST, SALFORD Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC Easting: 383700 Northing: 398700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 27/01/1971 Expiry Date: - Issue No: 101 Version Start Date: 01/04/1984 Version End Date: -

ID	Location	Details	
-	911m NW	Status: Active Licence No: 2569007070 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT DIAL HOUSE CHAPEL STREET SALFORD Data Type: Point Name: BRITISH TELECOMMUNICATIONS PLC Easting: 383700 Northing: 398700	Annual Volume (m^3): 45 Max Daily Volume (m^3): 30 Original Application No: 2333 Original Start Date: 27/01/1971 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2007 Version End Date: -
-	978m W	Status: Historical Licence No: 2569007089 Details: Non-Evaporative Cooling Direct Source: Ground Water - North West Region Point: 2 BOREHOLES AT GARTSIDE STREET MANCHESTER Data Type: Line Name: HER MAJESTY'S COURT SERVICE Easting: 383335 Northing: 398310	Annual Volume (m^3): 200000 Max Daily Volume (m^3): 1179 Original Application No: - Original Start Date: 26/01/2005 Expiry Date: 31/03/2011 Issue No: 2 Version Start Date: 10/07/2008 Version End Date: -
-	1013m SE	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, BROADIE ST, ARDWICK, MANCHESTER" Data Type: Point Name: MOSELEY RUBBER CO LTD Easting: 385240 Northing: 397540	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 08/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 08/02/1966 Version End Date: -
-	1013m SE	Status: Historical Licence No: 2569006001 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, BROADIE ST, ARDWICK, MANCHESTER Data Type: Point Name: MOSELEY RUBBER CO LTD Easting: 385240 Northing: 397540	Annual Volume (m^3): 331858 Max Daily Volume (m^3): 909.2 Original Application No: - Original Start Date: 08/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 08/02/1966 Version End Date: -

ID	Location	Details	
-	1101m W	Status: Historical Licence No: NW/069/0004/019 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: Ground Water - North West Region Point: ST JOHNS MANCHESTER Data Type: Poly4 Name: Manchester Quays Development (MGY) Ltd Easting: 383094 Northing: 398099	Annual Volume (m^3): 543,120 Max Daily Volume (m^3): 1,488 Original Application No: - Original Start Date: 13/09/2019 Expiry Date: 31/12/2020 Issue No: 1 Version Start Date: 13/09/2019 Version End Date: -
-	1230m SW	Status: Active Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW11 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383204 Northing: 397298	Annual Volume (m^3): 260,172 Max Daily Volume (m^3): 712.80 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1236m SW	Status: Active Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW10 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383211 Northing: 397276	Annual Volume (m^3): 260,172 Max Daily Volume (m^3): 712.80 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1239m SW	Status: Active Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW9 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383223 Northing: 397253	Annual Volume (m^3): 260,172 Max Daily Volume (m^3): 712.80 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -

ID	Location	Details	
-	1254m SW	Status: Active Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW8 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383224 Northing: 397225	Annual Volume (m^3): 260,172 Max Daily Volume (m^3): 712.80 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1270m SW	Status: Active Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW6 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383171 Northing: 397275	Annual Volume (m^3): 260,172 Max Daily Volume (m^3): 712.80 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1272m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1272m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -

ID	Location	Details	
-	1272m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1272m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1272m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 2 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1272m N	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 2 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -

ID	Location	Details	
-	1276m SW	Status: Active Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW5 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383193 Northing: 397230	Annual Volume (m^3): 260,172 Max Daily Volume (m^3): 712.80 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1296m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1296m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1296m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -

ID	Location	Details	
-	1296m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1296m N	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 3 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1296m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 3 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1299m SW	Status: Active Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW7 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383184 Northing: 397203	Annual Volume (m^3): 260,172 Max Daily Volume (m^3): 712.80 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -

ID	Location	Details	
-	1303m SW	Status: Active Licence No: NW/069/0004/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University Easting: 383715 Northing: 396746	Annual Volume (m^3): 274,115 Max Daily Volume (m^3): 751 Original Application No: NPS/WR/008077 Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/01/2015 Version End Date: -
-	1303m SW	Status: Active Licence No: NW/069/0004/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University Easting: 383715 Northing: 396746	Annual Volume (m^3): 274,115 Max Daily Volume (m^3): 751 Original Application No: NPS/WR/008077 Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/01/2015 Version End Date: -
-	1316m SW	Status: Active Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW4 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383159 Northing: 397210	Annual Volume (m^3): 260,172 Max Daily Volume (m^3): 712.80 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1317m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -

ID	Location	Details	
-	1317m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1317m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1317m N	Status: Historical Licence No: 2569004023 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1317m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 1 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -

ID	Location	Details	
-	1317m N	Status: Historical Licence No: 2569004023 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 1 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1328m SW	Status: Active Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW3 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383140 Northing: 397217	Annual Volume (m^3): 260,172 Max Daily Volume (m^3): 712.80 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1343m SW	Status: Active Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW2 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383113 Northing: 397230	Annual Volume (m^3): 260,172 Max Daily Volume (m^3): 712.80 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -
-	1357m SW	Status: Active Licence No: NW/069/0006/010 Details: Dewatering Direct Source: Ground Water - North West Region Point: BOREHOLE PW1 CHESTER FORMATION AT CROWN STREET Data Type: Point Name: Renaker Build Ltd Easting: 383085 Northing: 397249	Annual Volume (m^3): 260,172 Max Daily Volume (m^3): 712.80 Original Application No: NPS/WR/034474 Original Start Date: 24/09/2021 Expiry Date: 31/03/2023 Issue No: 1 Version Start Date: 24/09/2021 Version End Date: -

ID	Location	Details	
-	1700m N	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 Easting: 384100 Northing: 399700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/02/1966 Version End Date: -
-	1700m N	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 Easting: 384100 Northing: 399700	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/02/1966 Version End Date: -
-	1700m N	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 Easting: 384100 Northing: 399700	Annual Volume (m^3): 45,460 Max Daily Volume (m^3): 181.84 Original Application No: 0423 Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/02/1966 Version End Date: -
-	1700m N	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 Easting: 384100 Northing: 399700	Annual Volume (m^3): 45,460 Max Daily Volume (m^3): 181.84 Original Application No: 0423 Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 17/02/1966 Version End Date: -

ID	Location	Details	
-	1832m N	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 Easting: 383900 Northing: 399800	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
-	1832m N	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 Easting: 383900 Northing: 399800	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
-	1842m SE	Status: Historical Licence No: NW/069/0004/005 Details: Heat Pump Direct Source: Ground Water - North West Region Point: AREA OF ABSTRACTION - LOWER CARBONIFEROUS LIMESTONE Data Type: Poly4 Name: G T Energy UK Limited Easting: 385729 Northing: 396778	Annual Volume (m^3): 2,049,840 Max Daily Volume (m^3): 8640 Original Application No: - Original Start Date: 17/01/2013 Expiry Date: 16/01/2037 Issue No: 2 Version Start Date: 11/06/2013 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m	**2**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 59**

ID	Location	Details	
-	1832m W	Status: Historical Licence No: 2569007053 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "R IRWELL AT IRWELL WORKS, ORDSALL LANE, SALFORD" Data Type: Point Name: CDS COMPUTER DESIGN SYSTEMS LTD Easting: 382500 Northing: 397400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 22/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1987 Version End Date: -
-	1832m W	Status: Historical Licence No: 2569007053 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: R IRWELL AT IRWELL WORKS, ORDSALL LANE, SALFORD Data Type: Point Name: CDS COMPUTER DESIGN SYSTEMS LTD Easting: 382500 Northing: 397400	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 22/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/11/1987 Version End Date: -

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

5.8 Potable abstractions

Records within 2000m	**10**

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 59**

ID	Location	Details	
-	1272m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -

ID	Location	Details	
-	1272m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 2) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1272m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 2 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383820 Northing: 399190	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1296m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1296m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 3) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -

ID	Location	Details	
-	1296m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 3 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383830 Northing: 399220	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1317m N	Status: Historical Licence No: 2569004023 Details: "Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services" Direct Source: Ground Water - North West Region Point: "BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER" Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 09/08/2000 Version End Date: -
-	1317m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE (NO 1) AT PREMISES, STRANGEWAYS, MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -
-	1317m N	Status: Historical Licence No: 2569004023 Details: Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services Direct Source: Ground Water - North West Region Point: BOREHOLE NUMBER 1 AT PREMISES STRANGEWAYS MANCHESTER Data Type: Point Name: INTERBREW UK LTD Easting: 383850 Northing: 399250	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 2500 Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/01/2004 Version End Date: -

ID	Location	Details	
-	1832m N	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 Easting: 383900 Northing: 399800	Annual Volume (m^3): - Max Daily Volume (m^3): - Original Application No: - Original Start Date: 17/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -

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

5.9 Source Protection Zones

Records within 500m	0

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

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

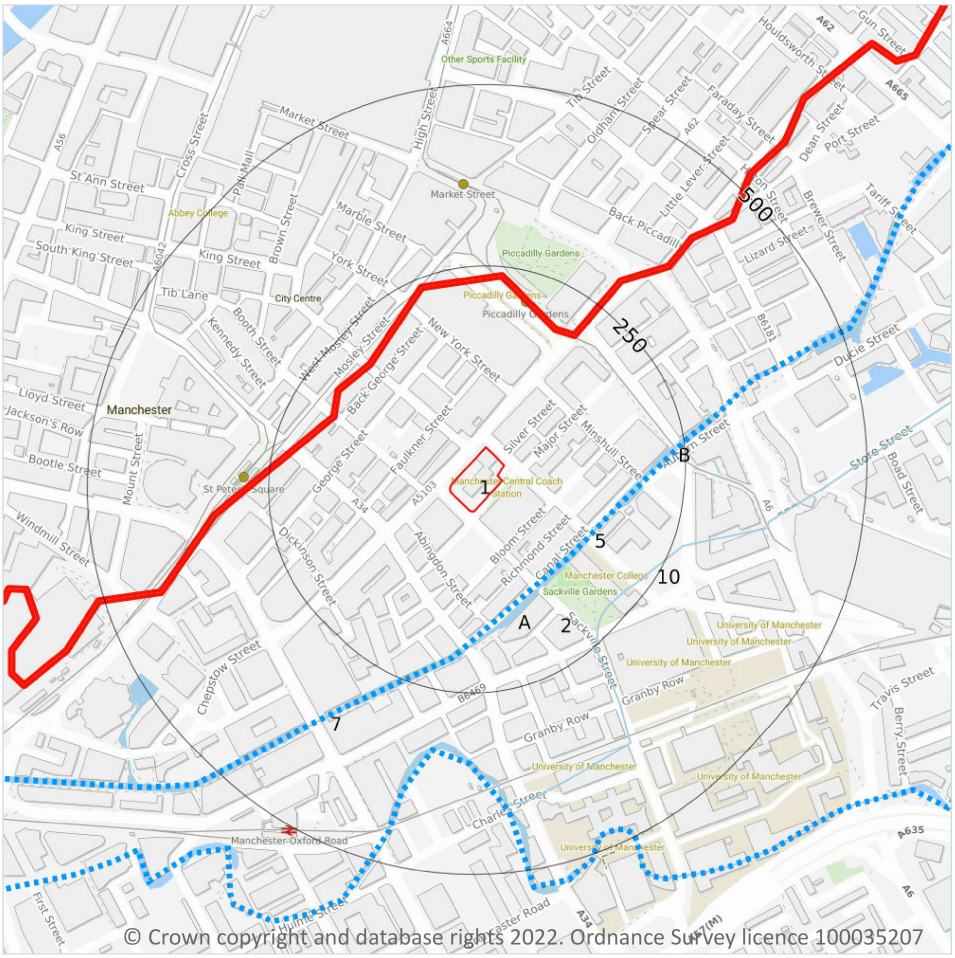
5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

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

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

6 Hydrology



6.1 Water Network (OS MasterMap)

Records within 250m	6

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

Features are displayed on the Hydrology map on **page 77**

ID	Location	Type of water feature	Ground level	Permanence	Name
5	138m SE	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal

ID	Location	Type of water feature	Ground level	Permanence	Name
7	151m S	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal
A	151m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
10	224m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
B	228m E	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal
B	248m E	Canal. A manmade watercourse for inland navigation.	On ground surface	Watercourse contains water year round (in normal circumstances)	Rochdale Canal

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	6

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

Features are displayed on the Hydrology map on **page 77**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

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

Features are displayed on the Hydrology map on **page 77**

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

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

6.4 WFD Surface water bodies

Records identified	**2**

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

Features are displayed on the Hydrology map on **page 77**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
4	133m SE	Canal	Rochdale Canal, western section	GB71210517	Moderate	Fail	Moderate	2019
13	333m S	River	Medlock (Lumb Brook to Irwell)	GB112069061152	Moderate	Fail	Moderate	2019

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

6.5 WFD Groundwater bodies

Records on site	**1**

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

Features are displayed on the Hydrology map on **page 77**

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

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

7 River and coastal flooding

7.1 Risk of flooding from rivers and the sea

Records within 50m	0

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

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

7.2 Historical Flood Events

Records within 250m	0

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

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

7.3 Flood Defences

Records within 250m	0

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

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

7.4 Areas Benefiting from Flood Defences

Records within 250m	0

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

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

7.5 Flood Storage Areas

Records within 250m	0

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

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

River and coastal flooding - Flood Zones

7.6 Flood Zone 2

Records within 50m	0

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

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

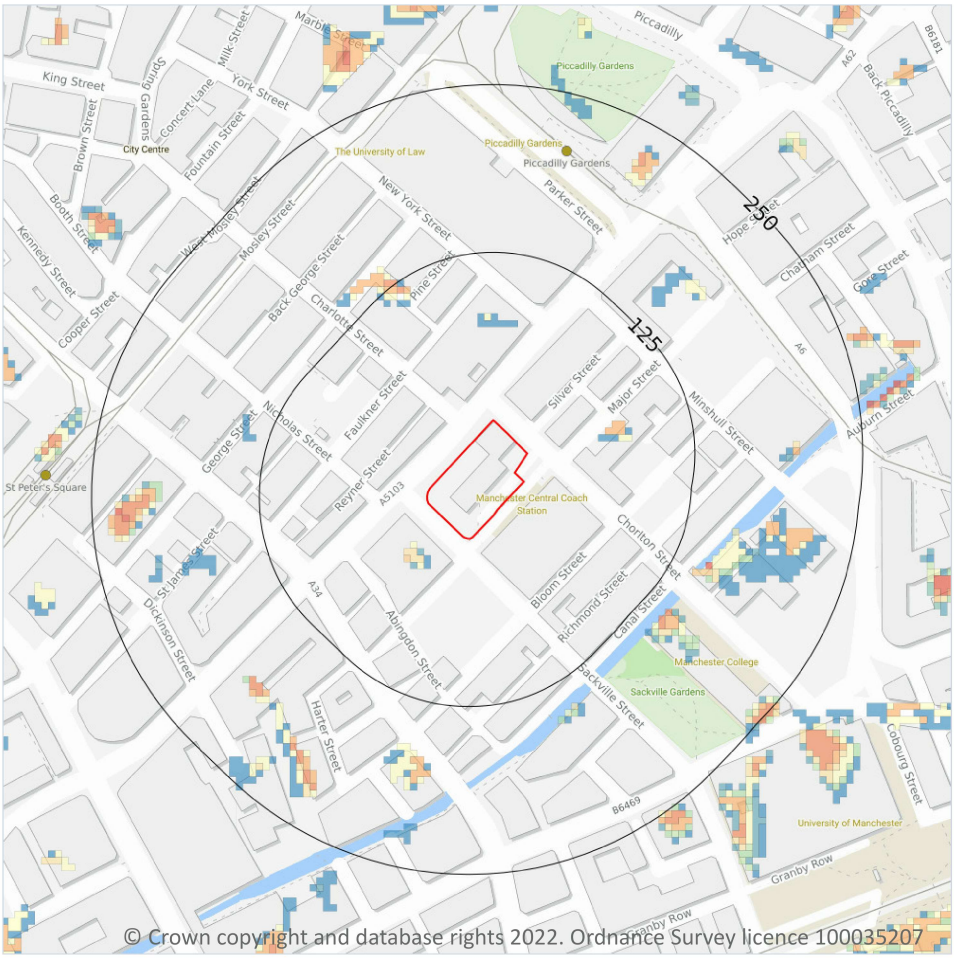
7.7 Flood Zone 3

Records within 50m	0

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

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

8 Surface water flooding



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Site Outline

Search buffers in metres (m)

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

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

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

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

8.1 Surface water flooding

Highest risk on site	**Negligible**
Highest risk within 50m	**1 in 100 year, Greater than 1.0m**

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

Features are displayed on the Surface water flooding map on **page 84**

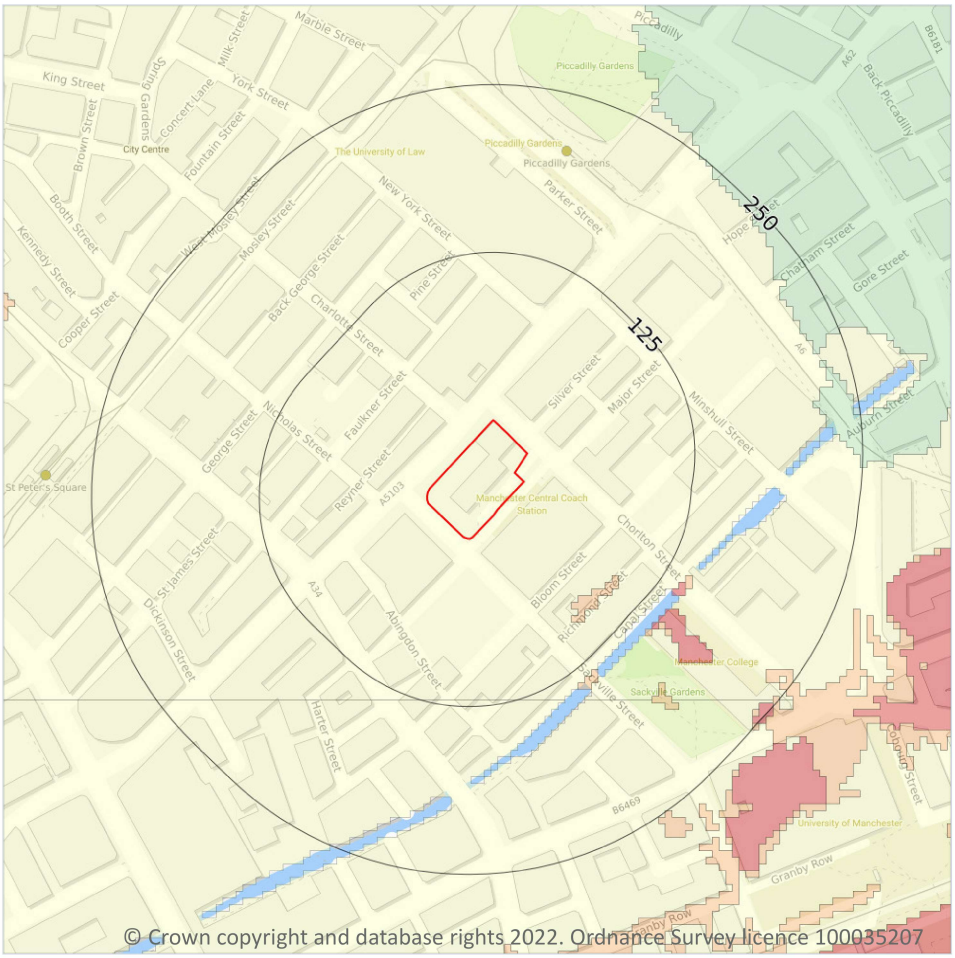
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

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

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

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



9.1 Groundwater flooding

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

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

Features are displayed on the Groundwater flooding map on **page 86**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m	0

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m	0

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m	0

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

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

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

10.7 Designated Ancient Woodland

Records within 2000m	0

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

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

10.8 Biosphere Reserves

Records within 2000m	0

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

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

10.9 Forest Parks

Records within 2000m	0

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

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

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

10.11 Green Belt

Records within 2000m	0

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

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

10.12 Proposed Ramsar sites

Records within 2000m	0

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

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

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

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

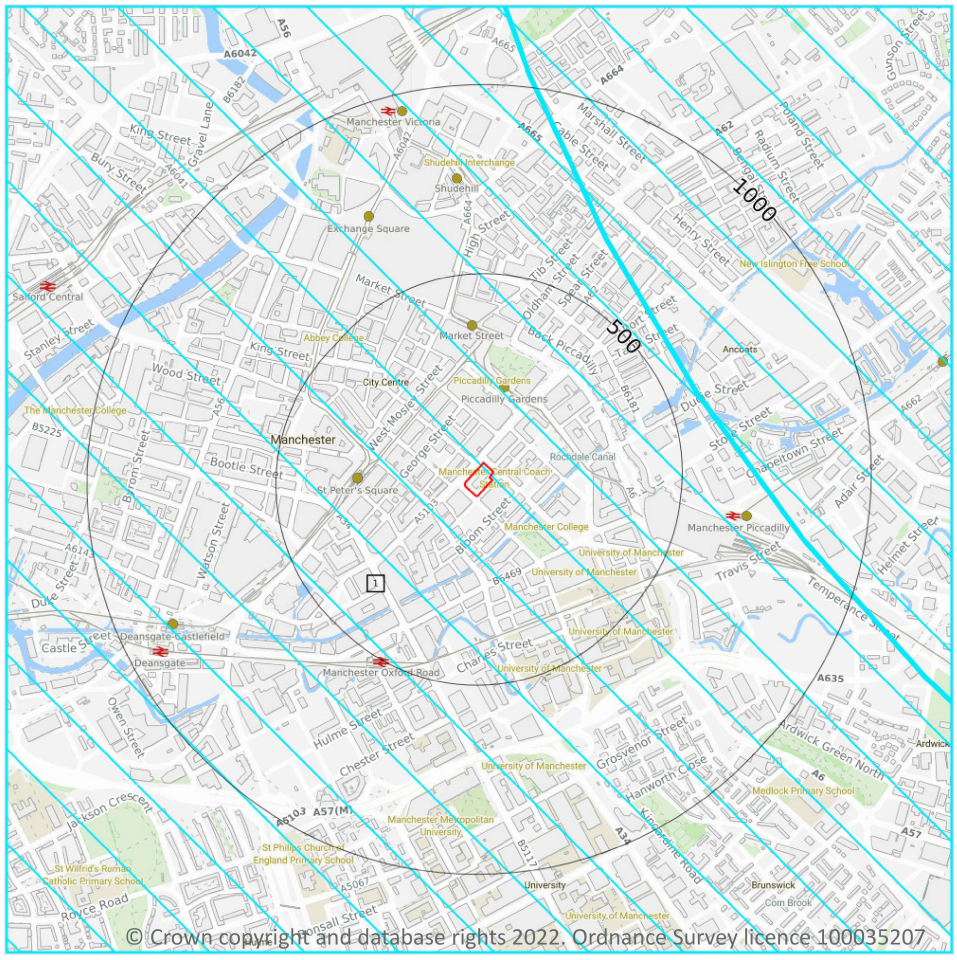
Records within 2000m	4

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

Location	Name	Type	NVZ ID	Status
389m NE	River Irk (Moston Brook to River Irwell) NVZ	Surface Water	638	Existing
624m N	River Irk (Moston Brook to River Irwell) NVZ	Surface Water	638	Existing
1019m NW	Irwell / Man. Ship Canal (Kearsley to Irlam Locks) NVZ	Surface Water	643	Existing
1602m N	Irwell / Man. Ship Canal (Kearsley to Irlam Locks) NVZ	Surface Water	643	Existing

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

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

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

10.17 SSSI Impact Risk Zones

Records on site	1

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

Features are displayed on the SSSI Impact Zones and Units map on **page 91**

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

This data is sourced from Natural England.

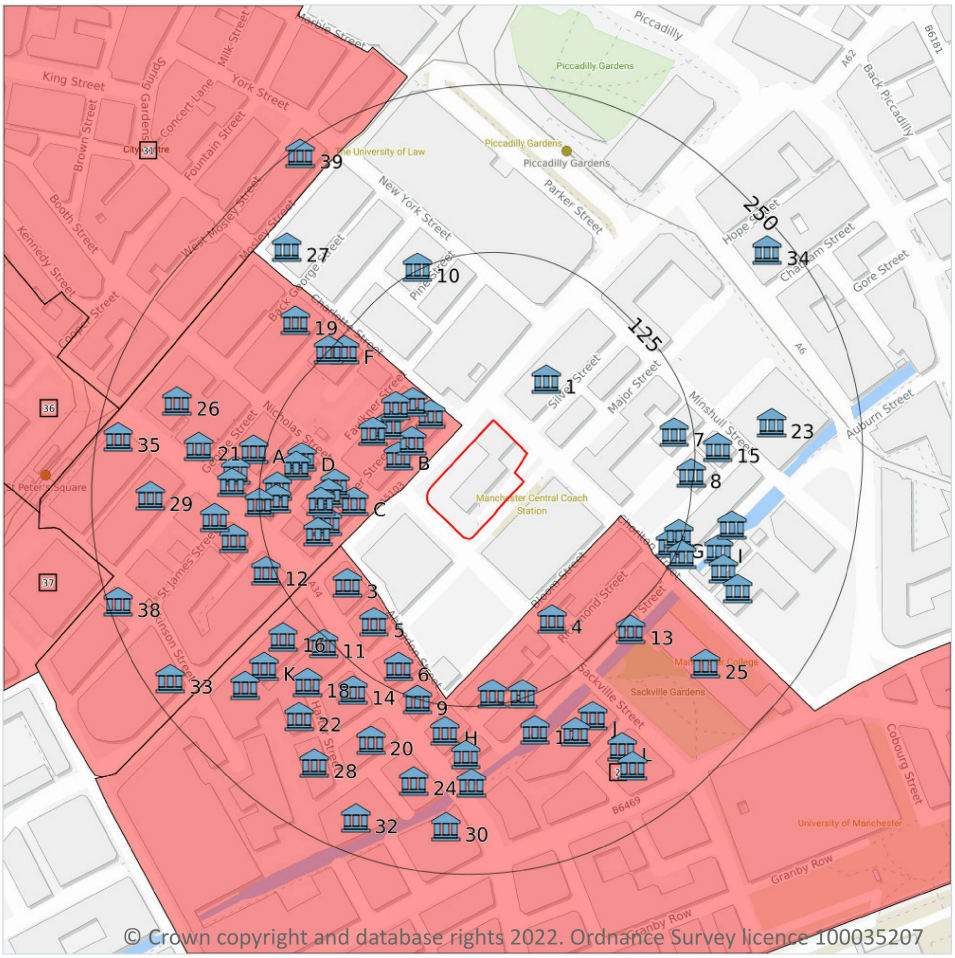
10.18 SSSI Units

Records within 2000m	0

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

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

11 Visual and cultural designations



Site Outline

Search buffers in metres (m)

Listed buildings

Conservation areas

Conservation areas - no data

National Parks

Areas of Outstanding Natural Beauty

Registered parks and gardens

Scheduled Monuments

World Heritage Sites

11.1 World Heritage Sites

Records within 250m	0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

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

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

11.3 National Parks

Records within 250m	0

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

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

11.4 Listed Buildings

Records within 250m	78

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

Features are displayed on the Visual and cultural designations map on **page 93**

ID	Location	Name	Grade	Reference Number	Listed date
B	34m NW	52 and 54, Portland Street, Deansgate, Manchester, M1	II	1246953	06/06/1994
B	34m NW	44-50, Portland Street, Deansgate, Manchester, M1	II	1247041	06/06/1994
B	37m NW	Fraser House, Deansgate, Manchester, M1	II	1283064	03/10/1974
1	49m NE	Britannia Hotel, Piccadilly, Manchester, M1	II*	1246952	25/02/1952
B	53m NW	Lindencourt House, Deansgate, Manchester, M1	II	1208396	03/10/1974

ID	Location	Name	Grade	Reference Number	Listed date
C	54m W	70 and 72, Portland Street (See Details For Further Address information), Deansgate, Manchester, M1	II	1271071	06/06/1994
B	55m NW	45 and 47, Faulkner Street, Deansgate, Manchester, M1	II	1200830	20/06/1988
B	60m NW	No. 49, Faulkner Street, Deansgate, Manchester, M1	II	1200831	06/06/1994
B	61m NW	Nos. 41 and 43, Faulkner Street, Deansgate, Manchester, M1	II	1200829	03/10/1974
C	69m W	55, Faulkner Street (See Details For Further Address information), Deansgate, Manchester, M1	II	1217991	06/06/1994
C	73m W	57, Faulkner Street, Deansgate, Manchester, M1	II	1218005	06/06/1994
C	76m W	Nos 74-78, and No 80 (The Grey Horse Public House) and Attached Railings, Portland Street, Deansgate, Manchester, M1	II	1246954	06/06/1994
C	79m W	59 and 61, Faulkner Street, Deansgate, Manchester, M1	II	1282964	06/06/1994
3	85m SW	Former Pickles Building, Piccadilly, Manchester, M1	II	1246955	03/10/1974
C	85m W	Circus Tavern and Attached Railings, Deansgate, Manchester, M1	II	1247057	06/06/1994
4	85m SE	27, Sackville Street, Piccadilly, Manchester, M1	II	1247607	06/06/1994
5	92m SW	101, Princess Street, Piccadilly, Manchester, M1	II	1270899	03/10/1974
D	98m W	16, Nicholas Street, Deansgate, Manchester, M1	II	1271453	06/06/1994
D	100m W	46, 48 and 50, Faulkner Street, Deansgate, Manchester, M1	II	1282962	06/06/1994
6	108m SW	103, Princess Street, Piccadilly, Manchester, M1	II*	1247391	11/05/1972
7	111m E	8, Minshull Street (See Details For Further Address information), Piccadilly, Manchester, M1	II	1219858	06/06/1994
D	112m W	52 and 54, Faulkner Street, Deansgate, Manchester, M1	II	1282963	06/06/1994
D	112m W	No. 56, Faulkner Street, Deansgate, Manchester, M1	II	1200832	06/06/1994
E	117m S	Former Warehouse, Piccadilly, Manchester, M1	II	1431770	19/01/2016
F	117m NW	Austin House, Deansgate, Manchester, M1	II	1197783	03/10/1974
G	119m E	The Churchill Public House, Piccadilly, Manchester, M1	II	1197758	06/06/1994
E	122m S	51 and 53, Richmond Street, Piccadilly, Manchester, M1	II	1270835	06/06/1994
G	122m E	9, Richmond Street, Piccadilly, Manchester, M1	II	1247476	06/06/1994
8	123m E	11, Bloom Street, Piccadilly, Manchester, M1	II	1208005	06/06/1994
D	125m W	87-91, Princess Street, Deansgate, Manchester, M1	II	1247390	06/06/1994

ID	Location	Name	Grade	Reference Number	Listed date
9	126m S	Brazil House, Piccadilly, Manchester, M1	II	1270871	03/10/1974
F	126m NW	No, 12, Charlotte Street and No. 17, George Street, Deansgate, Manchester, M1	II	1208392	03/10/1974
10	127m NW	Telephone Buildings, Deansgate, Manchester, M1	II	1255051	20/06/1988
11	129m SW	Eastern House Portland House, Piccadilly, Manchester, M1	II	1247058	06/06/1994
G	130m SE	39, Chorlton Street, Piccadilly, Manchester, M1	II	1283091	06/06/1994
12	131m SW	No. 36, Princess Street, No. 94, Portland Street, and No. 75, Faulkner Street, Deansgate, Manchester, M1	II	1247384	06/06/1994
13	133m SE	Rochdale Canal Boundary Wall To Canal Between Sackville Street and Chorlton Street, Piccadilly, Manchester, M1	II	1270837	06/06/1994
A	134m W	35, 37 and 39a, George Street (See Details For Further Address information), Deansgate, Manchester, M1	II	1200836	06/06/1994
14	141m SW	Transact House, Piccadilly, Manchester, M1	II	1247386	06/06/1994
15	142m E	Minshull House, Piccadilly, Manchester, M1	II	1197926	06/06/1994
A	144m W	39 and 41, George Street, Deansgate, Manchester, M1	II	1218183	06/06/1994
H	144m S	109, Princess Street, Piccadilly, Manchester, M1	II	1270914	03/10/1974
A	146m W	83, Princess Street, Deansgate, Manchester, M1	II	1270913	06/06/1994
16	147m SW	Basil House, Piccadilly, Manchester, M1	II	1246956	06/06/1994
A	147m W	34, Princess Street, Deansgate, Manchester, M1	II	1247383	06/06/1994
17	150m S	Boundary Wall To Rochdale Canal Between Princess Street and Sackville Street Rochdale Canal Boundary Wall To Canal Street Between Princess Street and Sackville Street, Piccadilly, Manchester, M1	II	1247555	06/06/1994
I	153m E	Rochdale Canal Lock Number 86, To East of Chorlton Street, Piccadilly, Manchester, M1	II	1247481	06/06/1994
I	158m E	Rochdale Canal Boundary Wall To Canal Between Chorlton Street and Minshull Street, Piccadilly, Manchester, M1	II	1247478	06/06/1994
18	159m SW	Langley Buildings, Piccadilly, Manchester, M1	II	1247385	06/06/1994
A	159m W	26-30, Princess Street, Deansgate, Manchester, M1	II	1246961	06/06/1994
19	159m NW	Charlotte House, Deansgate, Manchester, M1	II	1197782	03/10/1974
H	160m S	New Union Public House, Piccadilly, Manchester, M1	II	1247444	03/10/1974

ID	Location	Name	Grade	Reference Number	Listed date
J	161m SE	42 and 44, Sackville Street, Piccadilly, Manchester, M1	II	1270791	03/10/1974
I	162m SE	Mintierna House, Piccadilly, Manchester, M1	II	1197759	06/06/1994
J	164m SE	3, Brazil Street, Piccadilly, Manchester, M1	II	1283077	06/06/1994
20	166m SW	Rhodesia House, Piccadilly, Manchester, M1	II	1270911	06/06/1994
K	172m SW	109 and 111, Portland Street, Piccadilly, Manchester, M1	II	1271095	06/06/1994
21	174m W	The Athenaeum, Deansgate, Manchester, M1	II*	1270889	03/10/1974
I	178m SE	Minshull House, Piccadilly, Manchester, M1	II	1283092	08/05/1990
22	181m SW	2, Harter Street, Piccadilly, Manchester, M1	II	1200841	06/06/1994
H	182m S	Rochdale Canal Lock Number 87, To East of Princess Street, With Cast Iron Footbridge Beside Street, Piccadilly, Manchester, M1	II	1247580	06/06/1994
23	184m E	City Police Courts, Piccadilly, Manchester, M1	II*	1219894	03/10/1974
24	184m S	Lionesse House, Piccadilly, Manchester, M1	II	1247387	06/06/1994
25	192m SE	The Shena Simon Sixth-Form College, Piccadilly, Manchester, M1	II	1270607	06/06/1994
L	192m SE	46, Sackville Street, Piccadilly, Manchester, M1	II	1247608	06/06/1994
K	192m SW	113-119, Portland Street, Piccadilly, Manchester, M1	II	1246957	28/02/1989
26	199m W	Manchester Art Gallery, Deansgate, Manchester, M2	I	1282980	25/02/1952
27	200m NW	The Portico Library and The Bank Public House, Deansgate, Manchester, M2	II*	1197930	25/02/1952
28	202m SW	104, Bloom Street (See Details For Further Address information), Piccadilly, Manchester, M1	II	1218476	06/06/1994
29	206m W	Princess Buildings, Deansgate, Manchester, M1	II	1247380	03/10/1974
L	208m SE	Regency House With Barclays Bank, Piccadilly, Manchester, M1	II	1254835	06/06/1994
30	215m S	Central House, Piccadilly, Manchester, M1	II	1247389	03/10/1974
32	224m S	Former Electricity Power Station, Piccadilly, Manchester, M1	II	1255031	06/06/1994
33	232m SW	32, Dickinson Street (See Details For Further Address information), Deansgate, Manchester, M1	II	1247060	28/02/1989
34	235m NE	Grand Hotel, Piccadilly, Manchester, M1	II	1197797	20/10/1987
35	235m W	14 and 16, Princess Street (See Details For Further Address information), Deansgate, Manchester, M2	II	1271097	03/10/1974

ID	Location	Name	Grade	Reference Number	Listed date
38	243m W	63, George Street, Deansgate, Manchester, M1	II	1218197	03/10/1974
39	245m NW	Royal Bank of Scotland, Deansgate, Manchester, M2	II*	1220165	25/02/1952

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

11.5 Conservation Areas

Records within 250m	**5**

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

Features are displayed on the Visual and cultural designations map on **page 93**

ID	Location	Name	District	Date of designation
A	14m NW	George Street	Manchester	01/06/1985
2	68m SE	Whitworth Street and Princess Street	Manchester	01/09/1974
31	215m NW	Upper King Street	Manchester	04/11/1970
36	238m W	Albert Square	Manchester	01/04/1972
37	240m W	St Peter's Square	Manchester	01/12/1973

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

11.6 Scheduled Ancient Monuments

Records within 250m	**0**

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

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

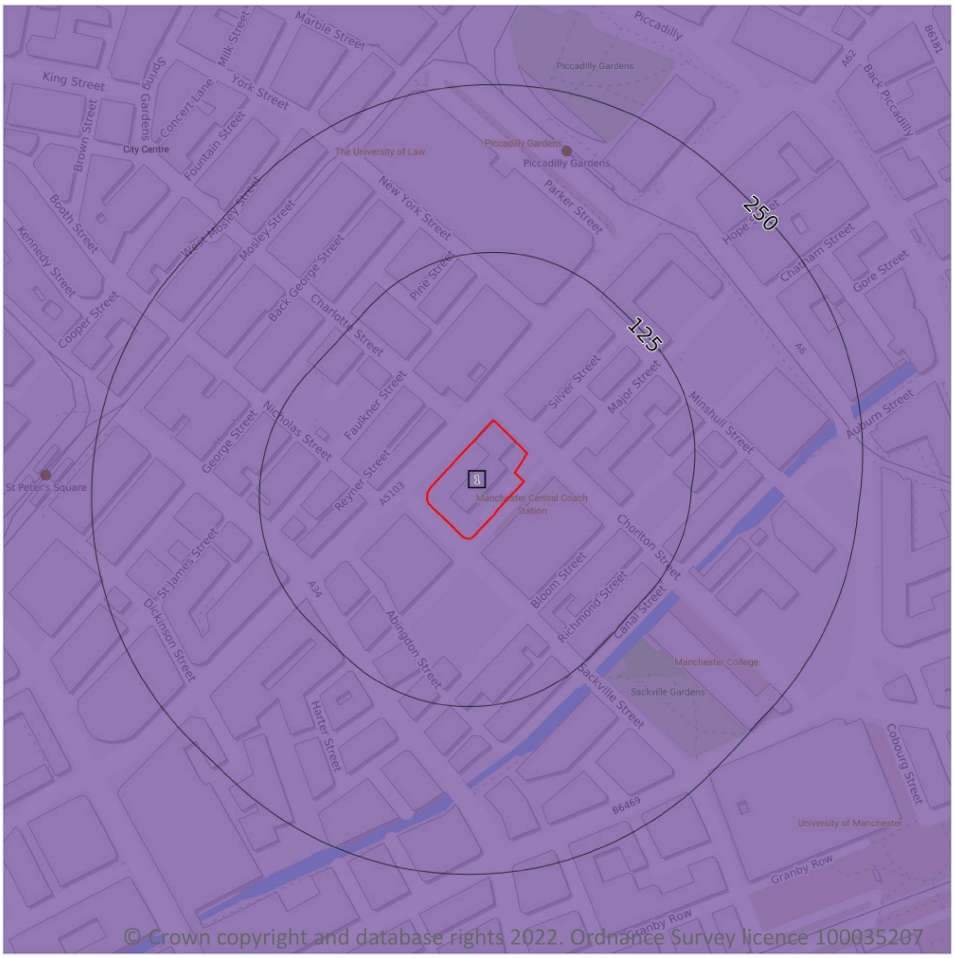
11.7 Registered Parks and Gardens

Records within 250m	0

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

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

12 Agricultural designations



Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Non-agricultural land
- Urban land
- Exclusion land
- Tree felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	1

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

Features are displayed on the Agricultural designations map on **page 100**

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

This data is sourced from Natural England.

12.2 Open Access Land

Records within 250m	0

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

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

12.3 Tree Felling Licences

Records within 250m	0

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

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

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



Site Outline

Search buffers in metres (m)

- ☐ Full coverage
- ☐ Partial coverage
- ☐ No coverage

14.1 10k Availability

Records within 500m	1

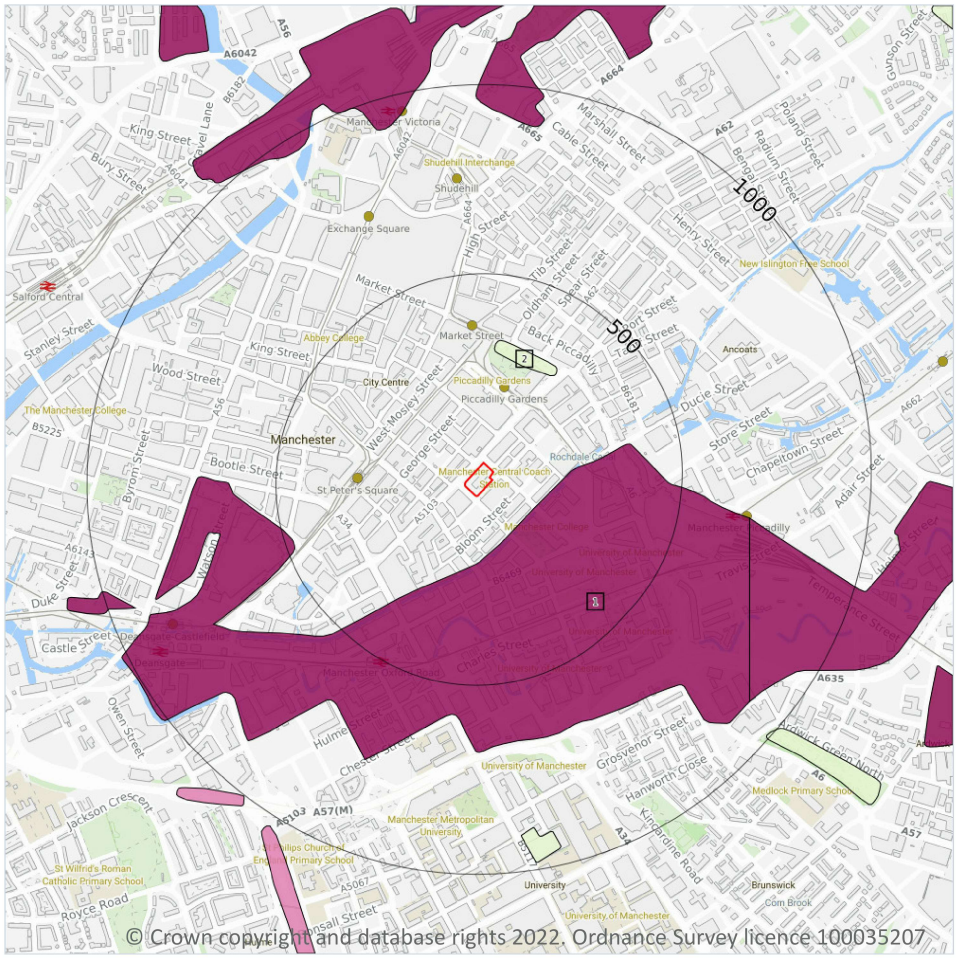
An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 103**

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

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

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

14.2 Artificial and made ground (10k)

Records within 500m	2

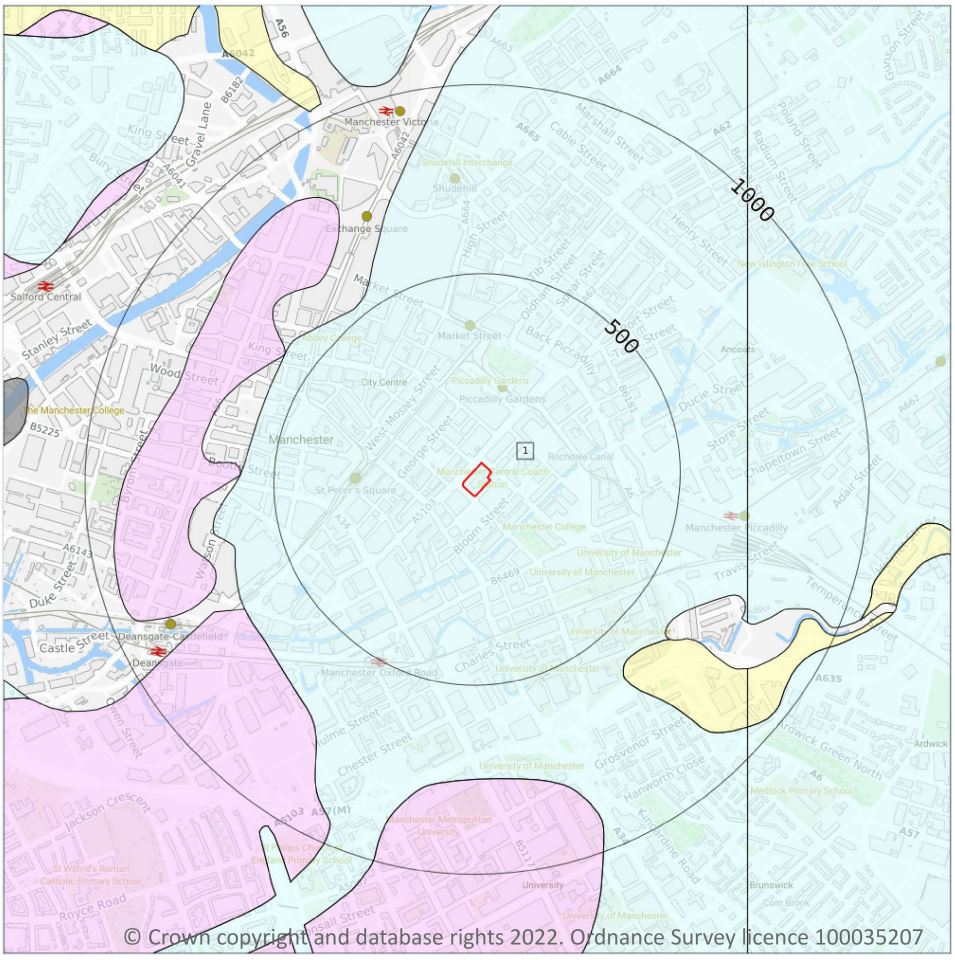
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on **page 104**

ID	Location	LEX Code	Description	Rock description
1	131m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	275m N	WMGR-ARTDP	Infilled Ground	Artificial Deposit

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m	1

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

Features are displayed on the Geology 1:10,000 scale - Superficial map on **page 105**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-DMTN**	**Till, Devensian - Diamicton**	**Diamicton**

This data is sourced from the British Geological Survey.

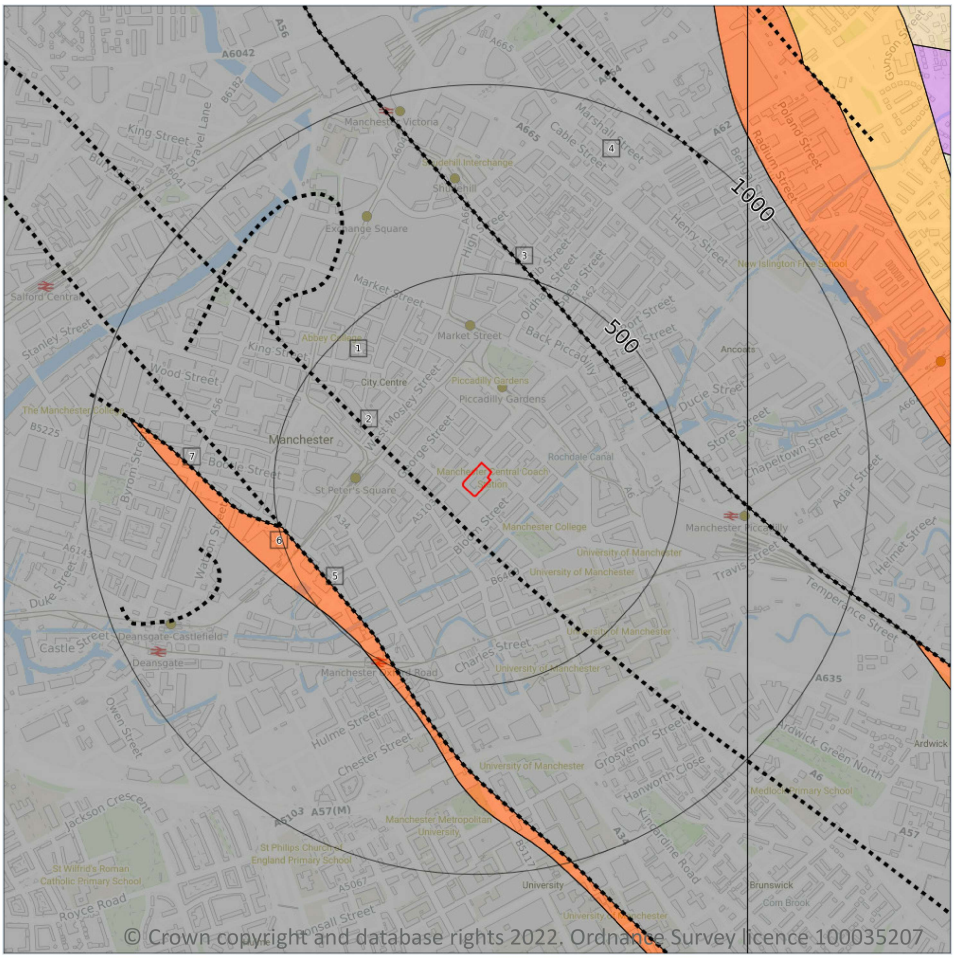
14.4 Landslip (10k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (10k)

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

14.5 Bedrock geology (10k)

Records within 500m	3

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 107**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**CPB-SDST**	**Chester Pebble Beds Formation - Sandstone**	**Early Triassic Epoch**
4	423m NE	CPB-SDST	Chester Pebble Beds Formation - Sandstone	Early Triassic Epoch
6	435m SW	MM-MDST	Manchester Marls Formation - Mudstone	Late Permian Epoch [Obsolete name]

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m	4

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

Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 107**

ID	Location	Category	Description
2	76m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
3	423m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
5	435m SW	FAULT	Normal fault, inferred; crossmarks on downthrow side
7	491m W	FAULT	Normal fault, inferred; crossmarks on downthrow side

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

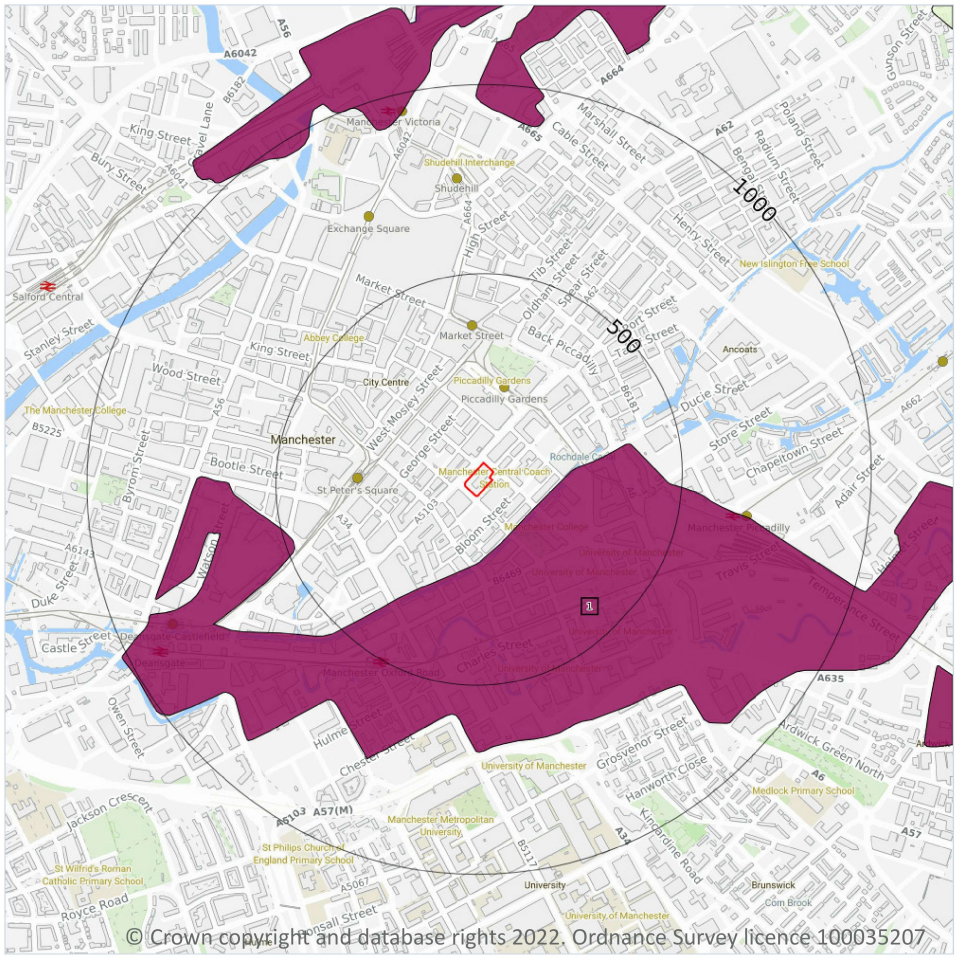
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 109**

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

This data is sourced from the British Geological Survey.

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



Site Outline

Search buffers in metres (m)

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

15.2 Artificial and made ground (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 110**

ID	Location	LEX Code	Description	Rock description
1	131m SE	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

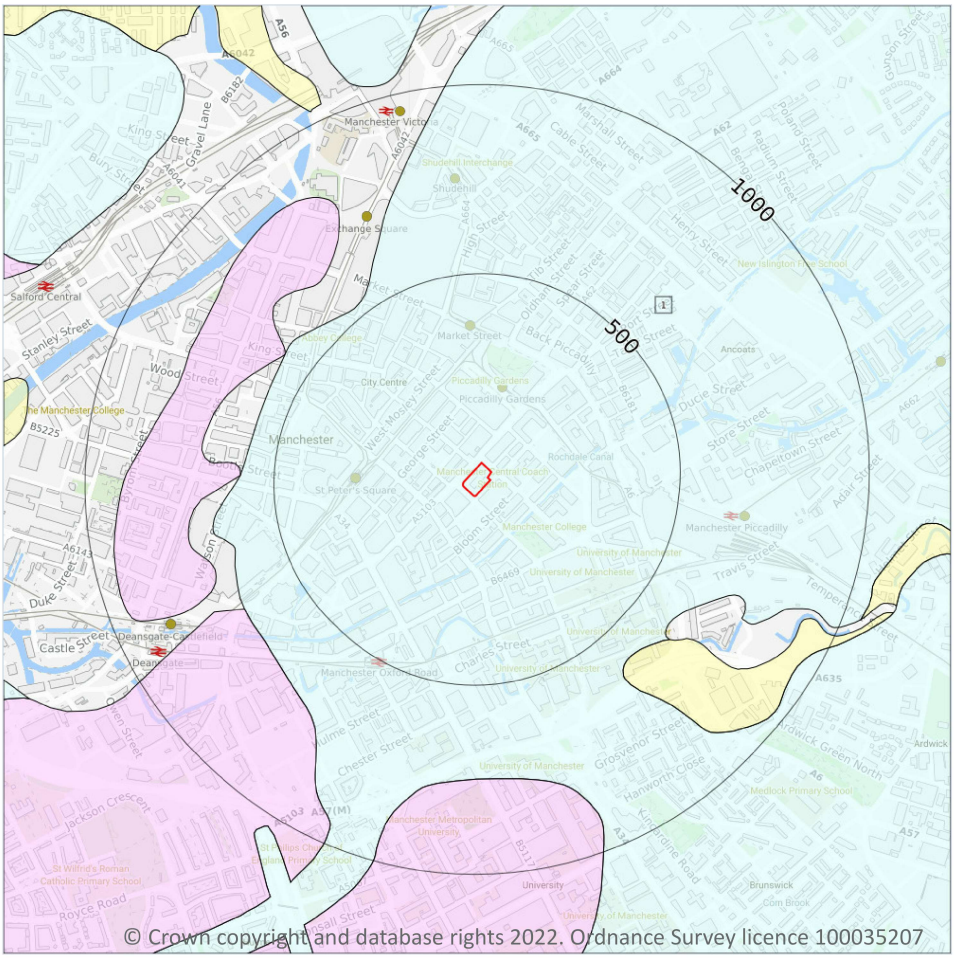
15.3 Artificial ground permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m **1**

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 112**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TILLD-DMTN**	**TILL, DEVENSIAN**	**DIAMICTON**

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

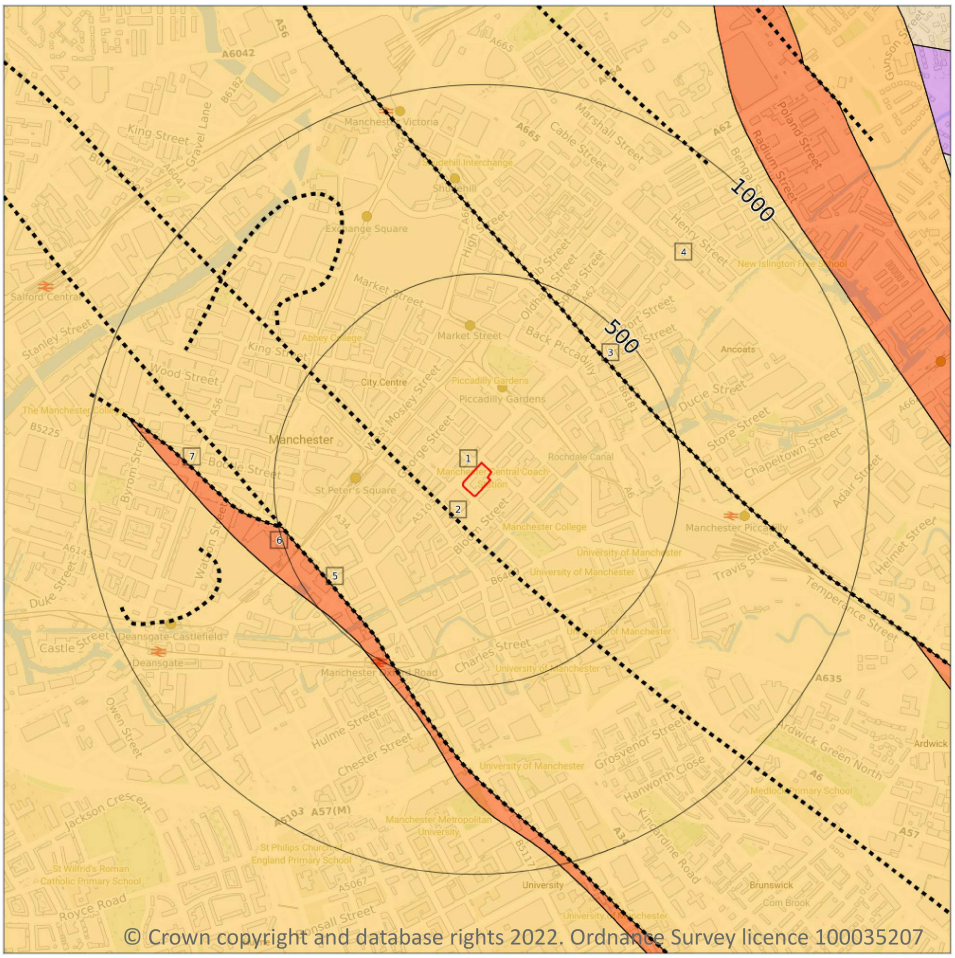
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m **3**

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 114**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**CHES-SDST**	**CHESTER FORMATION - SANDSTONE**	**OLENEKIAN**
4	423m NE	CHES-SDST	CHESTER FORMATION - SANDSTONE	OLENEKIAN
6	435m SW	MM-MDST	MANCHESTER MARLS FORMATION - MUDSTONE	-

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

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

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

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	4

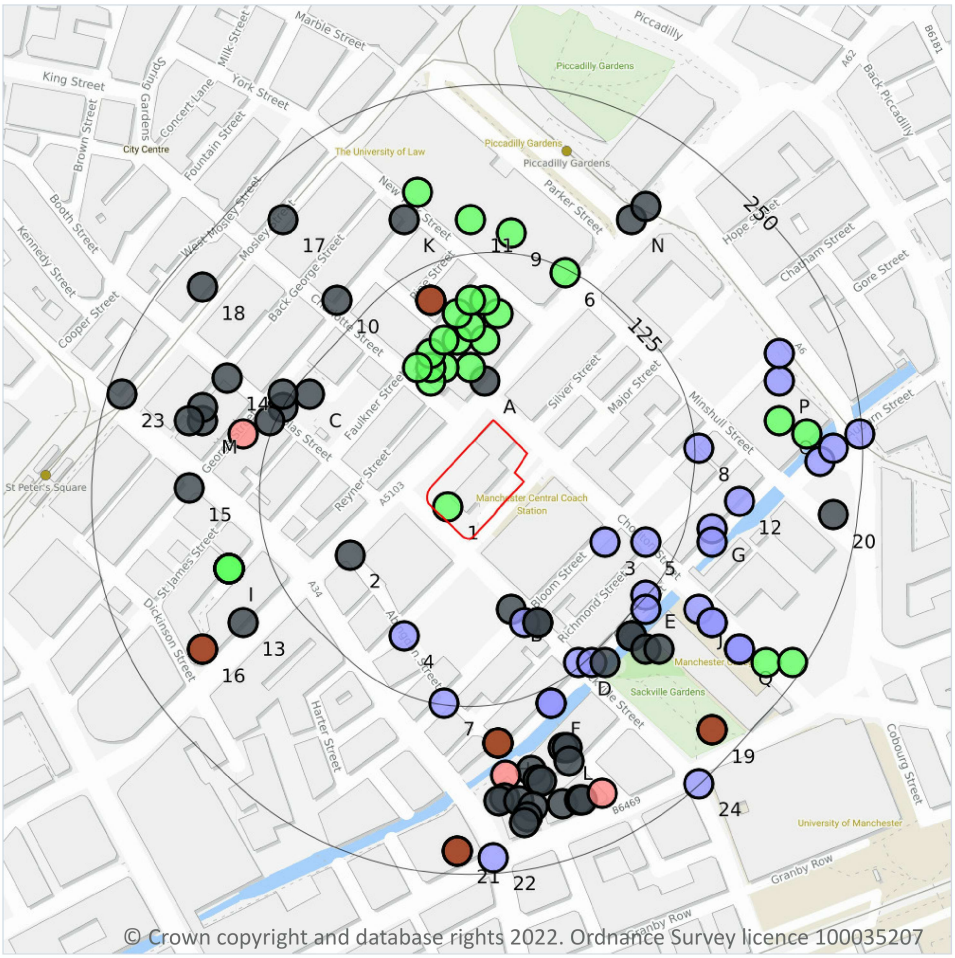
Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 114**

ID	Location	Category	Description
2	76m SW	FAULT	Fault, inferred
3	423m NE	FAULT	Fault, inferred
5	435m SW	FAULT	Fault, inferred
7	490m W	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.

16 Boreholes



16.1 BGS Boreholes

Records within 250m **114**

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

Features are displayed on the Boreholes map on **page 116**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	**On site**	**384263 397946**	**PORTLAND STREET & CAR PARK. BH'S 6**	**12.19**	**N**	**1042483**
A	30m N	384290 398040	PORTLAND STREET 5/5A	-	Y	N/A
A	43m NW	384280 398050	PORTLAND STREET MANCHESTER 12	13.71	N	1043782

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	54m NW	384260 398050	PORTLAND STREET MANCHESTER 11	12.64	N	1043781
A	54m NW	384250 398040	PORTLAND STREET MANCHESTER 10	18.89	N	1043780
A	60m N	384290 398070	PORTLAND STREET MANCHESTER 13	13.71	N	1043783
B	61m SE	384310 397870	SACKVILLE STREET / BLOOM STREET 3	-	Y	N/A
A	61m NW	384250 398050	PORTLAND STREET MANCHESTER 6	12.19	N	1043776
A	65m NW	384270 398070	PORTLAND STREET MANCHESTER 7	19.38	N	1043777
A	68m NW	384250 398060	PORTLAND STREET MANCHESTER 2	12.37	N	1043772
A	68m NW	384240 398050	PORTLAND STREET MANCHESTER 1	18.25	N	1043771
A	70m NW	384260 398070	PORTLAND STREET MANCHESTER 3	13.71	N	1043773
2	70m SW	384190 397910	PORTLAND STREET 4/4A	-	Y	N/A
A	71m N	384280 398080	PORTLAND STREET MANCHESTER 8	13.59	N	1043778
B	74m SE	384320 397860	BLOOM STREET/ABINGDON STREET 4	8.7	N	1045706
3	75m SE	384380 397920	BLOOM STREET/ABINGDON STREET 3	8.95	N	1045705
A	80m N	384300 398090	PORTLAND STREET MANCHESTER 14	21.33	N	1043784
B	80m SE	384330 397860	SACKVILLE STREET / BLOOM STREET 2	-	Y	N/A
B	80m SE	384330 397860	SACKVILLE STREET / BLOOM STREET 1	-	Y	N/A
A	84m N	384270 398090	PORTLAND STREET MANCHESTER 4	13.62	N	1043774
4	86m SW	384230 397850	BLOOM STREET/ABINGDON STREET 5	9.05	N	1045707
A	90m N	384290 398100	PORTLAND STREET MANCHESTER 9	13.71	N	1043779
A	91m N	384280 398100	PORTLAND STREET MANCHESTER 5	17.37	N	1043775
A	101m NW	384250 398100	NO DETAILS	-1.0	N	1042454
5	101m SE	384410 397920	CANAL STREET SEWER RENEWAL SCHEME 4A	5.5	N	1045630
C	114m NW	384160 398030	CHINESE CAR PARK MANCHESTER 3	-	Y	N/A
6	122m NE	384350 398120	CITY CENTRE - PHASE 2 37	19.49	N	1043535
D	122m SE	384360 397830	CANAL STREET SEWER RENEWAL SCHEME 3	7.1	N	1045629
7	124m S	384260 397800	BLOOM STREET/ABINGDON STREET 6	1.2	N	1045708
E	124m SE	384410 397880	CANAL STREET SEWER RENEWAL SCHEME 2	6.7	N	1045628
C	125m NW	384140 398020	CHINESE CAR PARK MANCHESTER 1A	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
8	128m E	384450 397990	BLOOM STREET/ABINGDON STREET 2	8.0	N	1045704
D	129m SE	384370 397830	CANAL STREET SEWER RENEWAL SCHEME 3	6.0	N	1045635
C	129m NW	384130 398010	GEORGE STREET SEWER REPLACEMENT SCHEME 3	-	Y	N/A
C	130m NW	384140 398030	CHINESE CAR PARK MANCHESTER 2	-	Y	N/A
E	131m SE	384410 397870	CANAL STREET SEWER RENEWAL SCHEME 4	4.7	N	1045636
D	136m SE	384380 397830	SACKVILLE GARDENS 3	-	Y	N/A
F	137m SE	384340 397800	CANAL STREET SEWER RENEWAL SCHEME 2	5.8	N	1045634
F	137m SE	384340 397800	CANAL STREET SEWER RENEWAL SCHEME 1	5.8	N	1045633
E	137m SE	384400 397850	SACKVILLE GARDENS T1	-	Y	N/A
E	137m SE	384400 397850	SACKVILLE GARDENS 2	-	Y	N/A
9	140m N	384310 398150	PICCADILLY HOTEL. NO.4 BH	20.42	N	1042501
C	145m W	384110 398000	POST OFFICE GEORGE ST. MANCHESTER	196.6	N	1045475
G	145m E	384460 397930	CANAL STREET SEWER RENEWAL SCHEME 6	4.0	N	1045638
10	146m NW	384180 398100	GEORGE STREET SEWER REPLACEMENT SCHEME 2	-	Y	N/A
G	148m E	384460 397920	CANAL STREET SEWER RENEWAL SCHEME 5	4.2	N	1045637
11	150m N	384280 398160	PICCADILLY HOTEL. TOWER BLOCK NO.7	23.77	N	1042502
E	151m SE	384410 397840	SACKVILLE GARDENS 1	-	Y	N/A
H	154m S	384300 397770	BLOOM STREET/ABINGDON STREET 7	10.5	N	1045709
H	154m S	384300 397770	NO DETAILS	-1.0	N	1042456
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 10	11.0	N	1045859
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 7	10.3	N	1045856
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 1	11.0	N	1045850
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 12	10.8	N	1045861
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 3	11.5	N	1045852
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 5	11.5	N	1045854
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 2	10.5	N	1045851

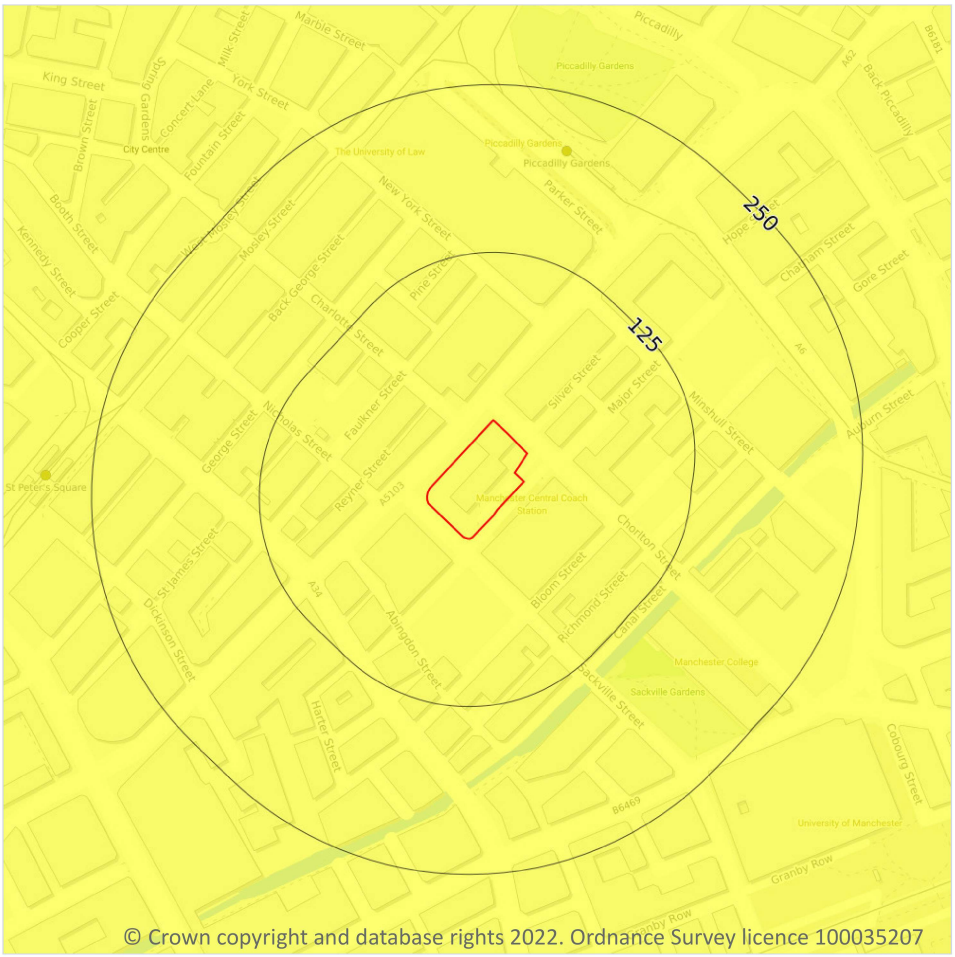
ID	Location	Grid reference	Name	Length	Confidential	Web link
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 6	10.2	N	1045855
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 9	9.8	N	1045858
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 11	11.0	N	1045860
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 4	10.2	N	1045853
I	156m W	384100 397900	PORTLANDS STREET NW TELECOMS BOARD HQ 8	10.5	N	1045857
E	158m SE	384420 397840	SACKVILLE GARDENS T2	-	Y	N/A
12	161m E	384480 397950	CANAL STREET SEWER RENEWAL SCHEME 1	5.5	N	1045627
J	161m SE	384450 397870	CANAL STREET SEWER RENEWAL SCHEME 7	4.6	N	1045639
K	164m NW	384230 398160	GEORGE STREET SEWER REPLACEMENT SCHEME 1	-	Y	N/A
13	164m SW	384110 397860	PORTLAND STREET 3	-	Y	N/A
L	170m SE	384349 397767	PRINCESS STREET, MANCHESTER BH101	-	Y	N/A
L	171m SE	384352 397767	PRINCESS STREET, MANCHESTER TP101	-	Y	N/A
14	172m NW	384098 398042	G.P.O. MANCHESTER	-	Y	N/A
J	175m SE	384460 397860	CANAL STREET SEWER RENEWAL SCHEME 8	6.6	N	1045640
J	175m SE	384460 397860	CANAL STREET SEWER RENEWAL SCHEME 5	6.3	N	1045631
M	176m W	384080 398010	ATHENAEUM LINK BH2	-	Y	N/A
15	177m W	384070 397960	GEORGE STREET SEWER REPLACEMENT SCHEME 4	-	Y	N/A
H	178m S	384325 397750	PRINCESS STREET, MANCHESTER TP107	-	Y	N/A
H	178m S	384306 397746	ORIGIN DEVELOPMENT, BH 1 (RECHARGE)	90.0	N	18108076
K	179m N	384240 398180	PICCADILLY HOTEL. TOWER BLOCK NO.10	23.93	N	1042503
M	179m W	384080 398020	ATHENAEUM LINK BH3	-	Y	N/A
L	181m SE	384353 397757	PRINCESS STREET, MANCHESTER TP106	-	Y	N/A
N	182m NE	384400 398160	PICADILLY GARDENS TP5	-	Y	N/A
M	186m W	384070 398010	ATHENAEUM LINK BH1	-	Y	N/A
H	186m S	384330 397743	PRINCESS STREET, MANCHESTER TP102	-	Y	N/A
H	188m S	384333 397742	PRINCESS STREET, MANCHESTER BH102	-	Y	N/A
O	190m E	384510 398010	MANCHESTER FGC/3235. 2	18.0	N	1042545

ID	Location	Grid reference	Name	Length	Confidential	Web link
H	195m S	384305 397729	PRINCESS STREET, MANCHESTER TP103	-	Y	N/A
N	196m NE	384410 398170	PORTLAND STREET 6	-	Y	N/A
P	196m E	384510 398040	MANCHESTER FGC/3235. 1	10.0	N	1042544
H	197m S	384301 397727	PRINCESS STREET, MANCHESTER BH103	-	Y	N/A
H	199m S	384316 397727	PRINCESS STREET, MANCHESTER TP108	-	Y	N/A
16	200m SW	384080 397840	NO DETAILS	-1.0	N	1042455
P	202m E	384510 398060	BLOOM STREET/ABINGDON STREET 1	8.0	N	1045703
Q	203m SE	384480 397840	CANAL STREET SEWER RENEWAL SCHEME 10	5.2	N	1045642
Q	203m SE	384480 397840	CANAL STREET SEWER RENEWAL SCHEME 9	7.2	N	1045641
H	205m S	384326 397723	PRINCESS STREET, MANCHESTER TP109	-	Y	N/A
O	209m E	384530 398000	MANCHESTER FGC/3235. 3	15.0	N	1042546
H	209m S	384348 397725	PRINCESS STREET, MANCHESTER TP110	-	Y	N/A
H	211m SE	384361 397728	PRINCESS STREET, MANCHESTER TP105	-	Y	N/A
H	212m SE	384363 397728	PRINCESS STREET, MANCHESTER BH105	-	Y	N/A
H	212m S	384322 397715	PRINCESS STREET, MANCHESTER TP104	-	Y	N/A
H	213m SE	384378 397733	ORIGIN DEVELOPMENT, BH 2 (ABH)	90.0	N	18108077
H	215m S	384320 397711	PRINCESS STREET, MANCHESTER BH104	-	Y	N/A
17	217m NW	384140 398160	MOSLEY STREET SEWER RECONSTRUCTION 1	-	Y	N/A
O	218m E	384540 397980	AYTOUN STREET MANCHESTER BH3	2.4	N	1045731
Q	225m SE	384500 397830	CANAL STREET SEWER RENEWAL SCHEME 6	11.0	N	1045632
18	226m NW	384080 398110	MOSLEY STREET SEWER RECONSTRUCTION 2	-	Y	N/A
O	228m E	384550 397990	AYTOUN STREET MANCHESTER BH2	5.1	N	1045730
19	228m SE	384460 397780	HIGH SCHOOL MANCHESTER OB	-1.0	N	1045473
20	232m E	384550 397940	MINSHULL STREET MAIN DRAINAGE	-	Y	N/A
21	233m S	384270 397690	GALBRAITH STREET MANCHESTER OB	-1.0	N	1045470
22	238m S	384297 397685	MANCHESTER CORP. SHOOTERS BROOK RELIEF SEWER	7.62	N	1042252
23	239m W	384020 398030	MOSLEY STREET SEWER RECONSTRUCTION 3	-	Y	N/A
Q	242m SE	384520 397830	MANCHESTER METROPOLITAN UNIVERSITY 3	14.6	N	1043371

ID	Location	Grid reference	Name	Length	Confidential	Web link
O	248m E	384570 398000	AYTOUN STREET MANCHESTER BH1	4.0	N	1045729
24	249m SE	384450 397740	SACKVILLE STREET 1	7.5	N	1043691

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	1

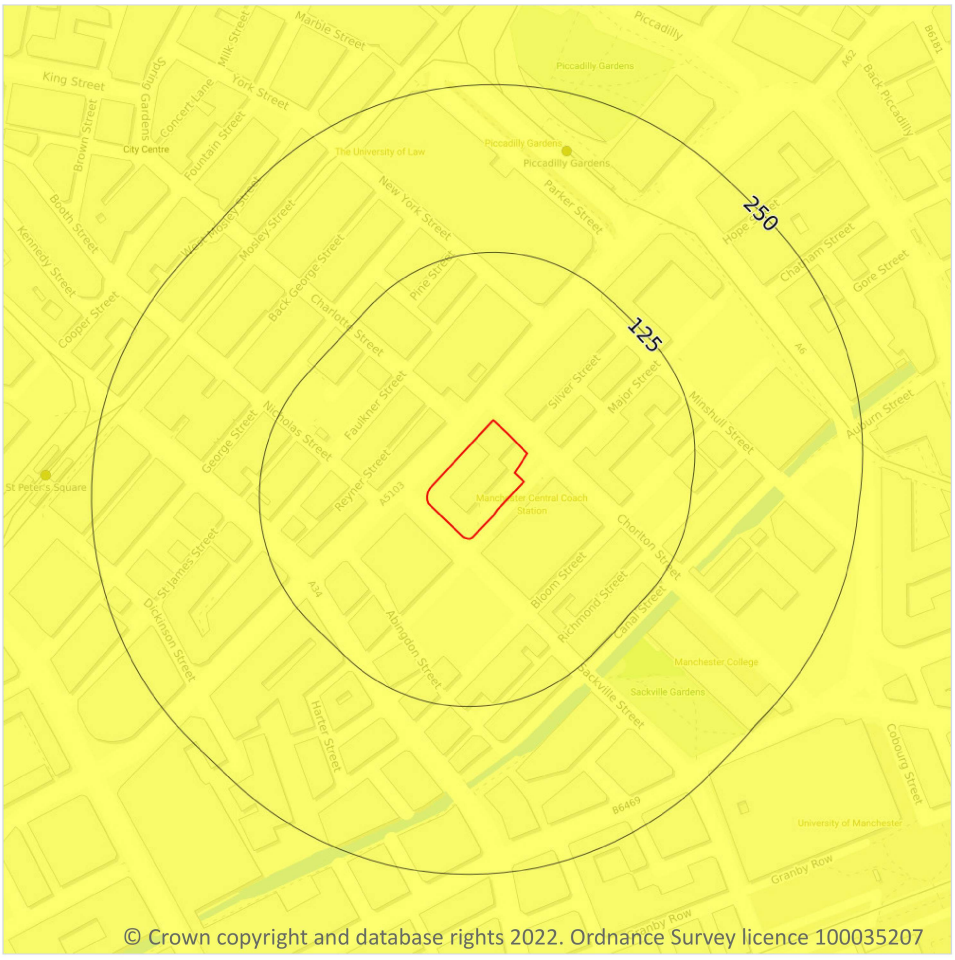
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 122**

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



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Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	1

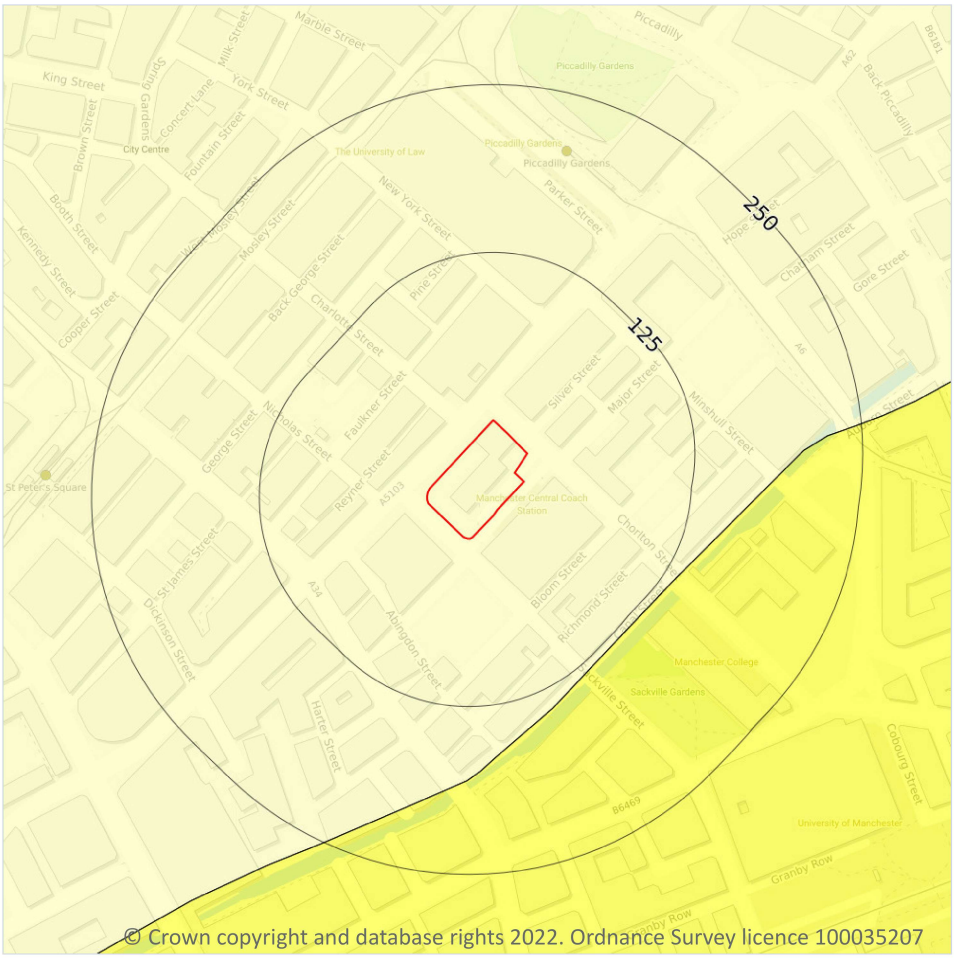
The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

Features are displayed on the Natural ground subsidence - Running sands map on **page 123**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	1

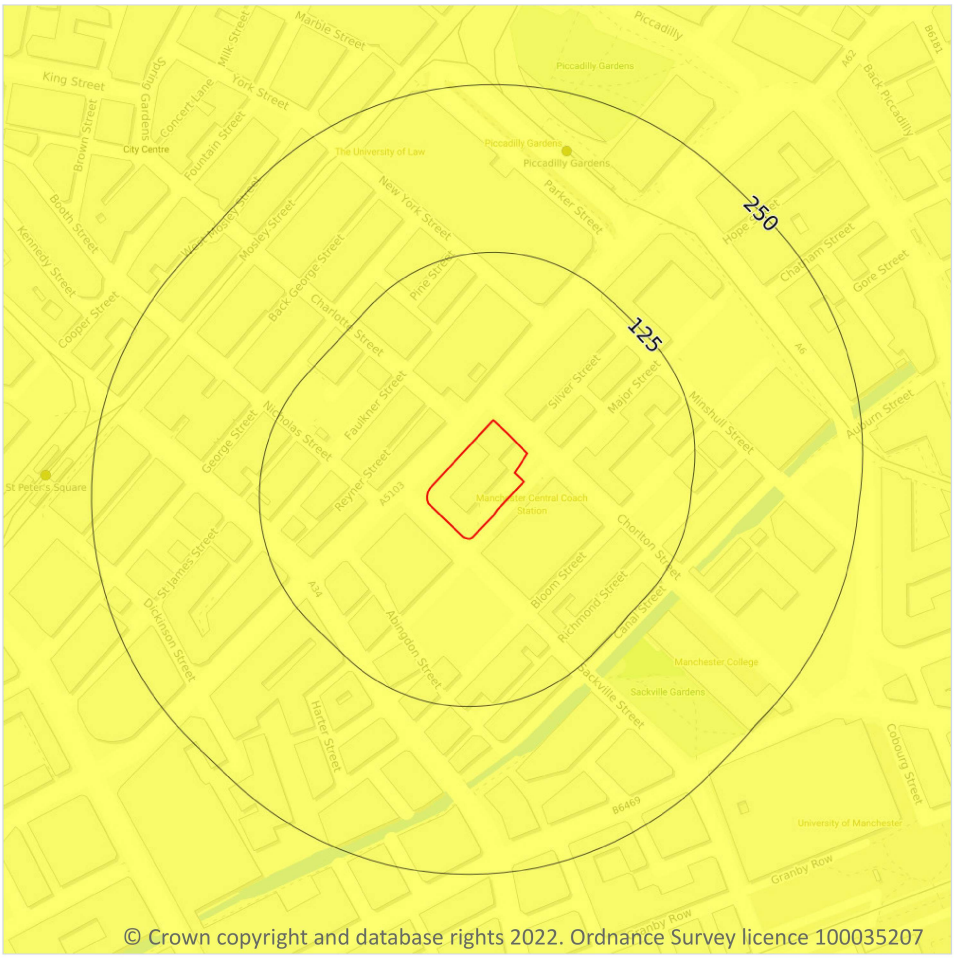
The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 124**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

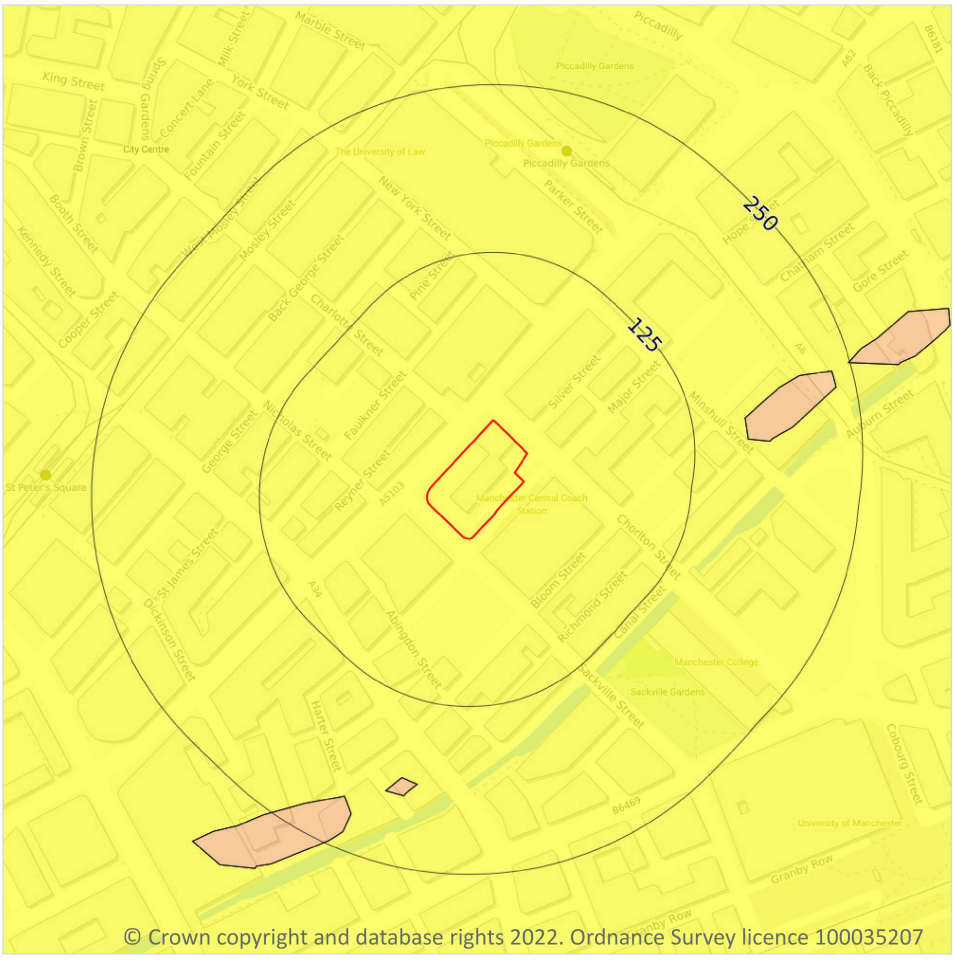
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 125**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

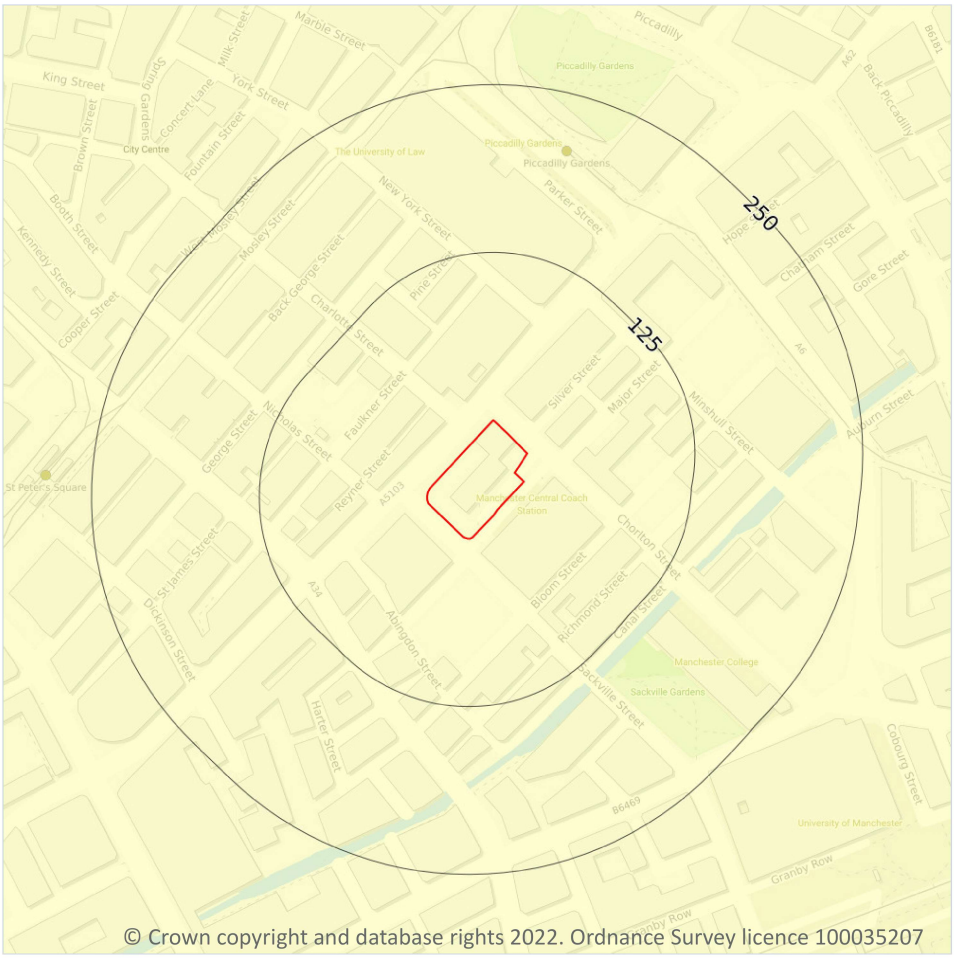
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 126**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



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Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	1

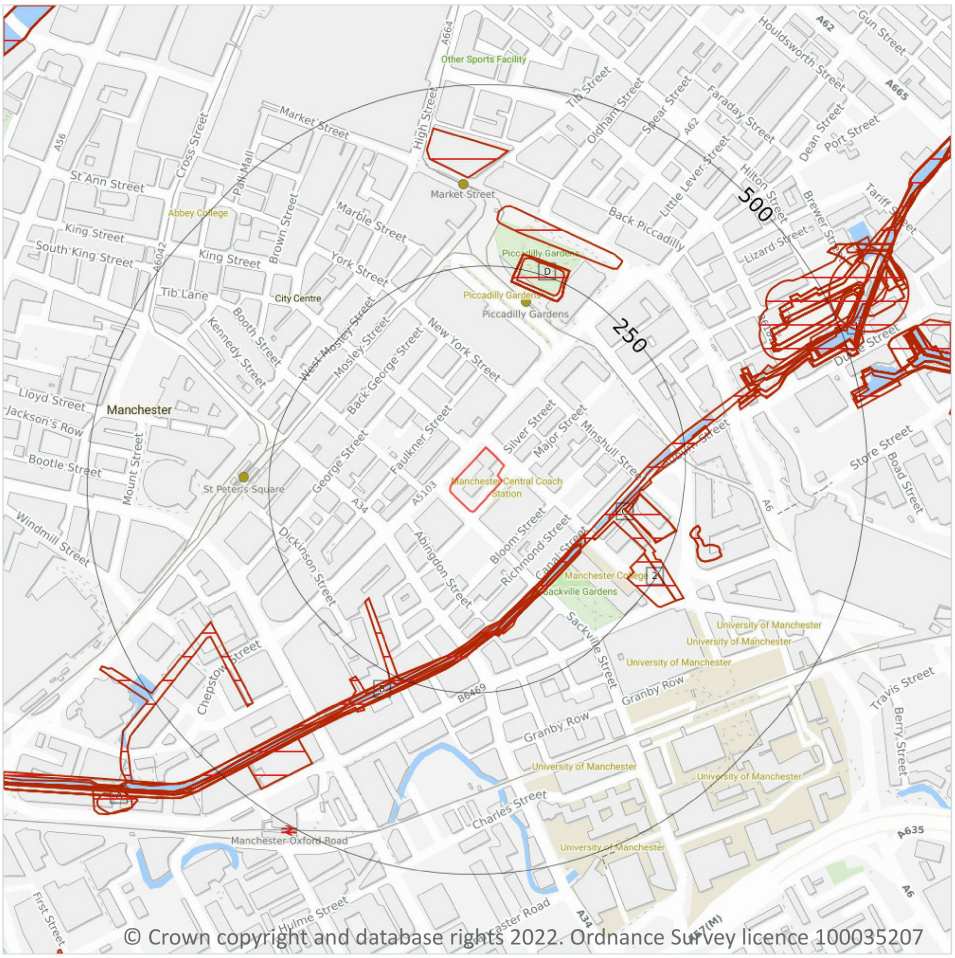
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 127**

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

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

BritPits

Surface ground workings

Underground workings

Historical Mineral Planning Areas

Mining Cavities

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	18

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 129**

ID	Location	Land Use	Year of mapping	Mapping scale
A	132m SE	Canal	1896	1:10560
1	133m SE	Canal	1956	1:10560
B	135m SE	Canal	1938	1:10560
B	135m SE	Canal	1932	1:10560
B	135m SE	Canal	1916	1:10560
B	135m SE	Canal	1905	1:10560
B	135m SE	Canal	1923	1:10560
A	136m SE	Canal	1988	1:10000
C	147m SE	Ponds	1890	1:10560
C	173m E	Unspecified Wharf	1923	1:10560
C	174m E	Unspecified Wharf	1915	1:10560
2	213m SE	Unspecified Wharf	1890	1:10560
D	223m NE	Pond	1971	1:10000
D	223m NE	Pond	1988	1:10000
D	223m NE	Pond	1978	1:10000
D	223m NE	Pond	1985	1:10000
D	223m NE	Pond	1994	1:10000

ID	Location	Land Use	Year of mapping	Mapping scale
D	229m NE	Unspecified Pit	1956	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	1

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

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	1

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

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

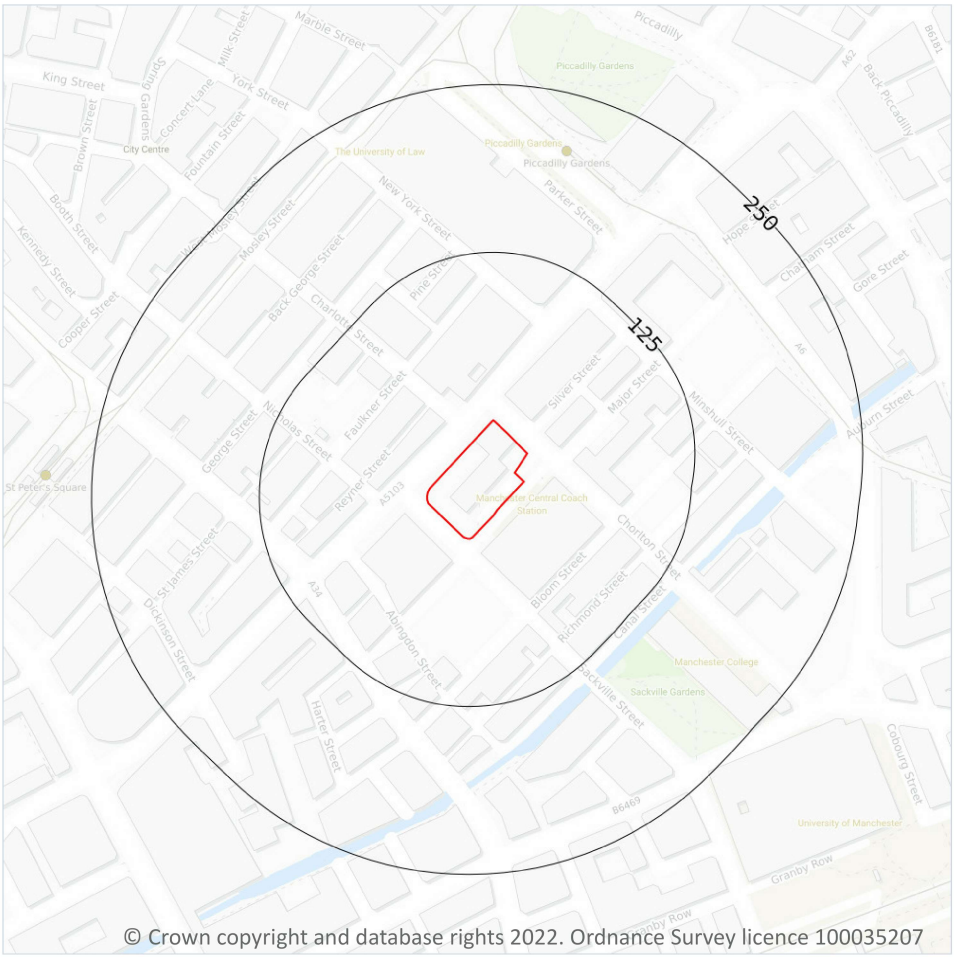
18.13 Clay mining

Records on site	0

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

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

19 Radon



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Site Outline

Search buffers in metres (m)

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

19.1 Radon

Records on site	1

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 134**

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

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m **2**

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

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

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m **7**

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

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	**14**	**2.5**	**112**	**77**	**0.6**	**58**	**38**	**18**	**7**
On site	**19**	**3.3**	**102**	**70**	**0.5**	**65**	**34**	**21**	**7**
On site	**8**	**1.4**	**99**	**68**	**0.5**	**46**	**35**	**12**	**7**
On site	**8**	**1.4**	**88**	**60**	**0.5**	**47**	**32**	**12**	**6**
22m S	21	3.7	114	78	0.6	66	39	23	7
30m SE	30	5.3	112	77	0.5	74	35	29	7

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
47m W	12	2.1	53	36	0.4	55	25	17	6

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	**0**

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects



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21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	19

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

Features are displayed on the Railway infrastructure and projects map on **page 137**

Location	Name	Type
187m NE		light_rail
190m NE	Not given	Multi Track
194m NE	Metrolink	light_rail
199m NE	Metrolink	tram
202m NE	Metrolink	light_rail
213m NW		light_rail
215m NW	Not given	Multi Track
216m N		light_rail
216m N		light_rail
216m NW	Not given	Multi Track
217m NW	Metrolink	light_rail
227m NW	Not given	Multi Track
232m N	Not given	Multi Track
235m W	Not given	Single Track
235m W	Not given	Single Track
235m NW	Not given	Multi Track
242m W		light_rail
243m N	Not given	Single Track
246m E		light_rail

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	2

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

Features are displayed on the Railway infrastructure and projects map on **page 137**

Location	Track Type	Speed (mph)	Speed (km/h)	Status
497m E	Bridge/Viaduct	50mph	80kph	Current preferred consultation route
498m E	Bridge/Viaduct	50mph	80kph	Current preferred consultation route

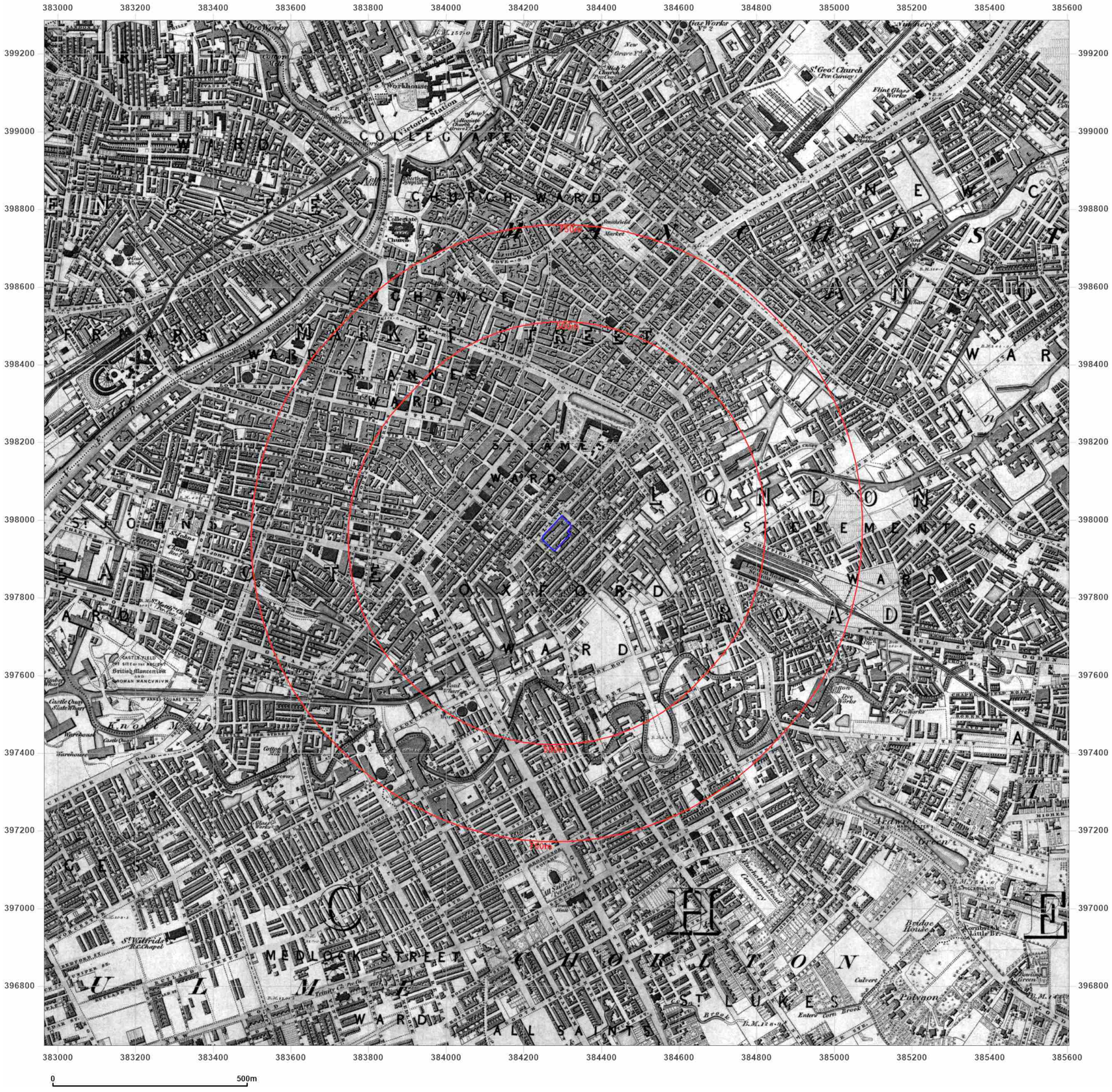
This data is sourced from HS2 ltd.

Data providers

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

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Groundsure INSIGHTS

Site Details:

49-53, PORTLAND STREET,
MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: County Series

Map date: **1848**

Scale: 1:10,560

Printed at: 1:10,560

N
W E
S

Surveyed 1845
Revised N/A
Edition 1848
Copyright N/A
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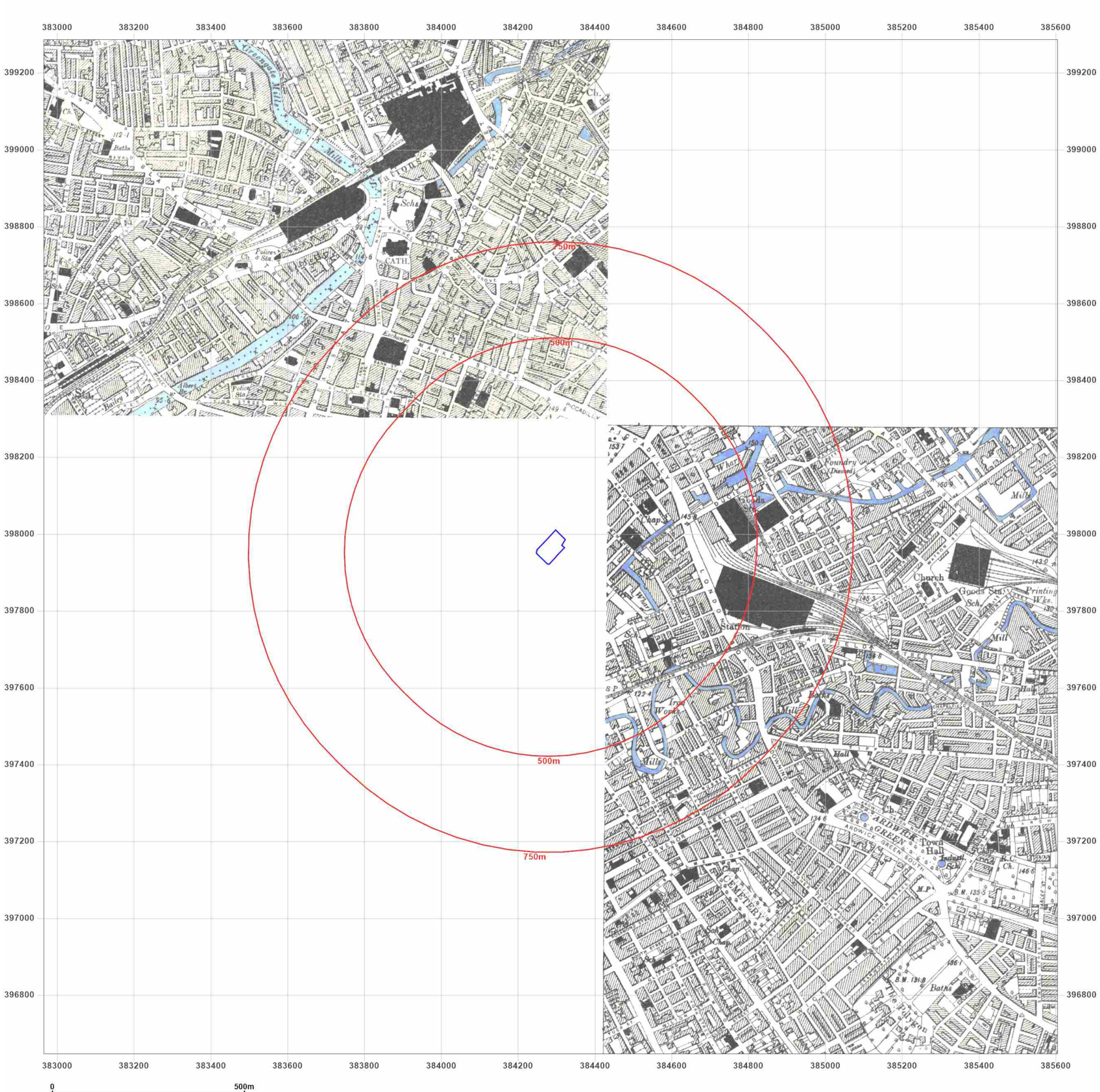
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Production date: 14 July 2022

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



Groundsure INSIGHTS

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49-53, PORTLAND STREET,
MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: County Series

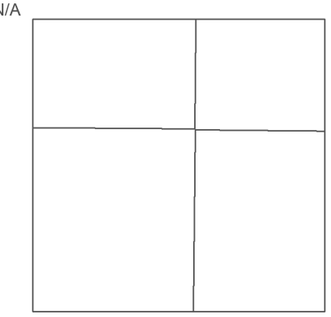
Map date: **1890-1894**

Scale: 1:10,560

Printed at: 1:10,560

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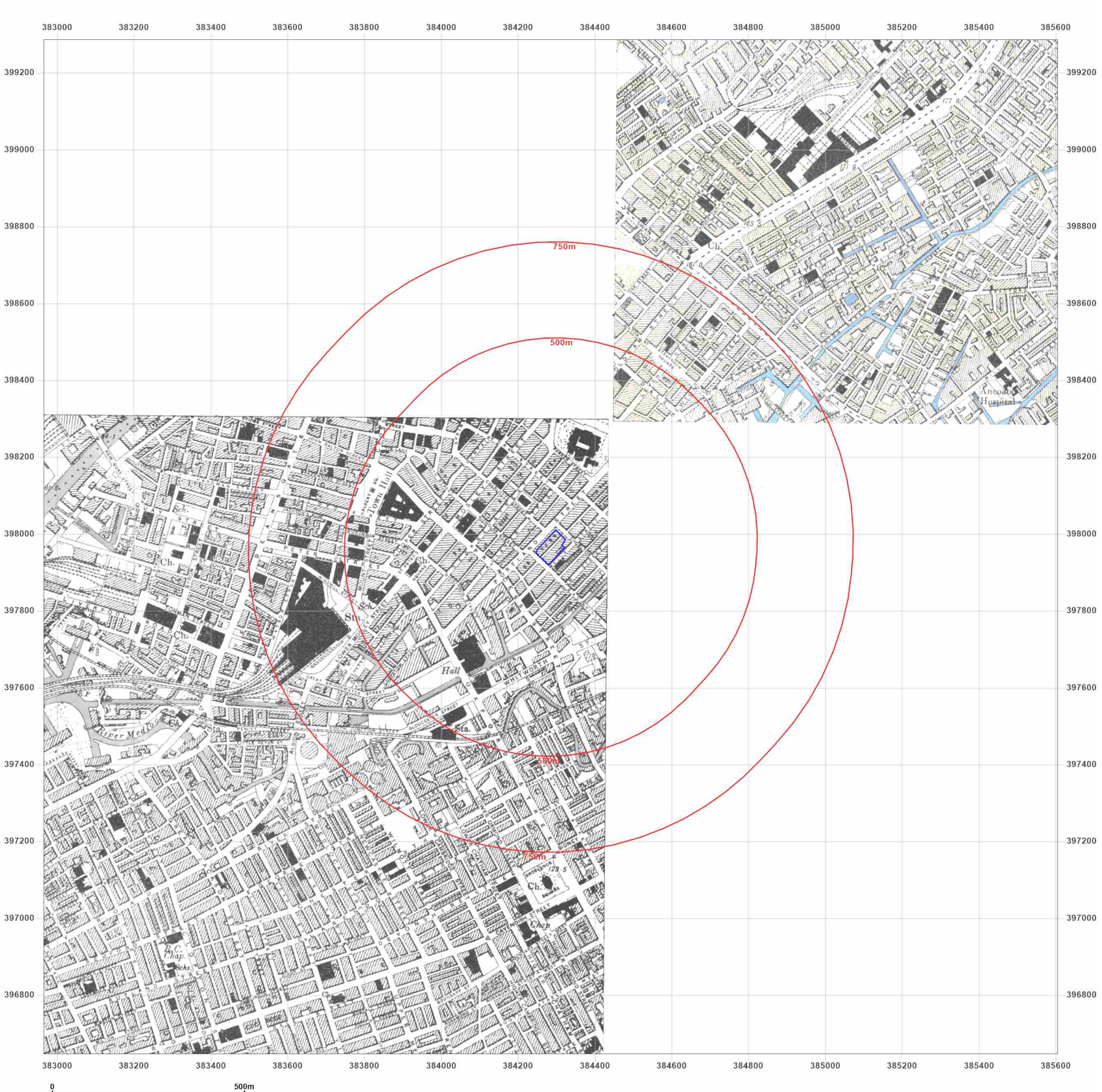
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Site Details:

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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: County Series

Map date: **1891-1896**

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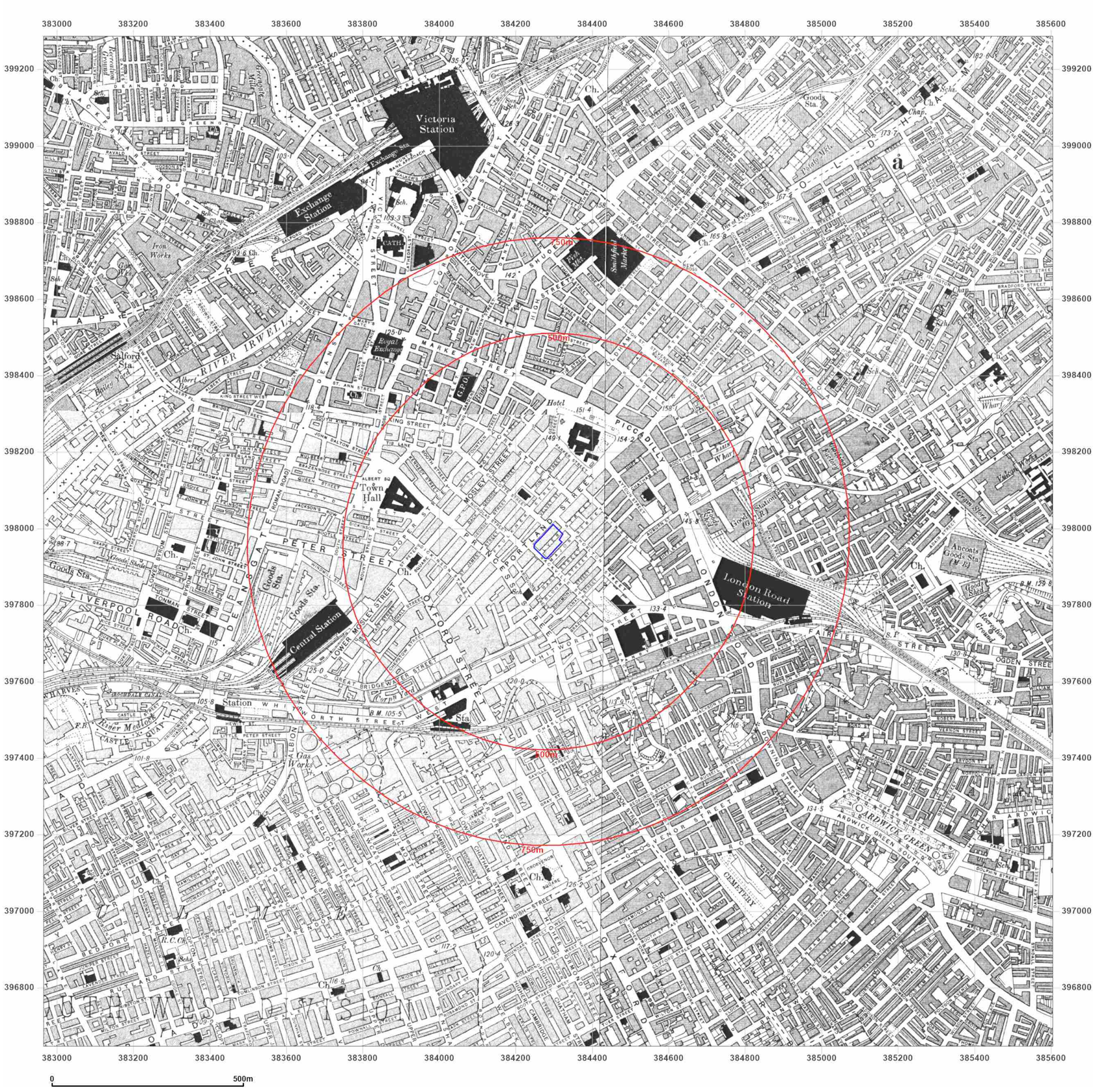
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Map Name: County Series

Map date: **1905-1906**

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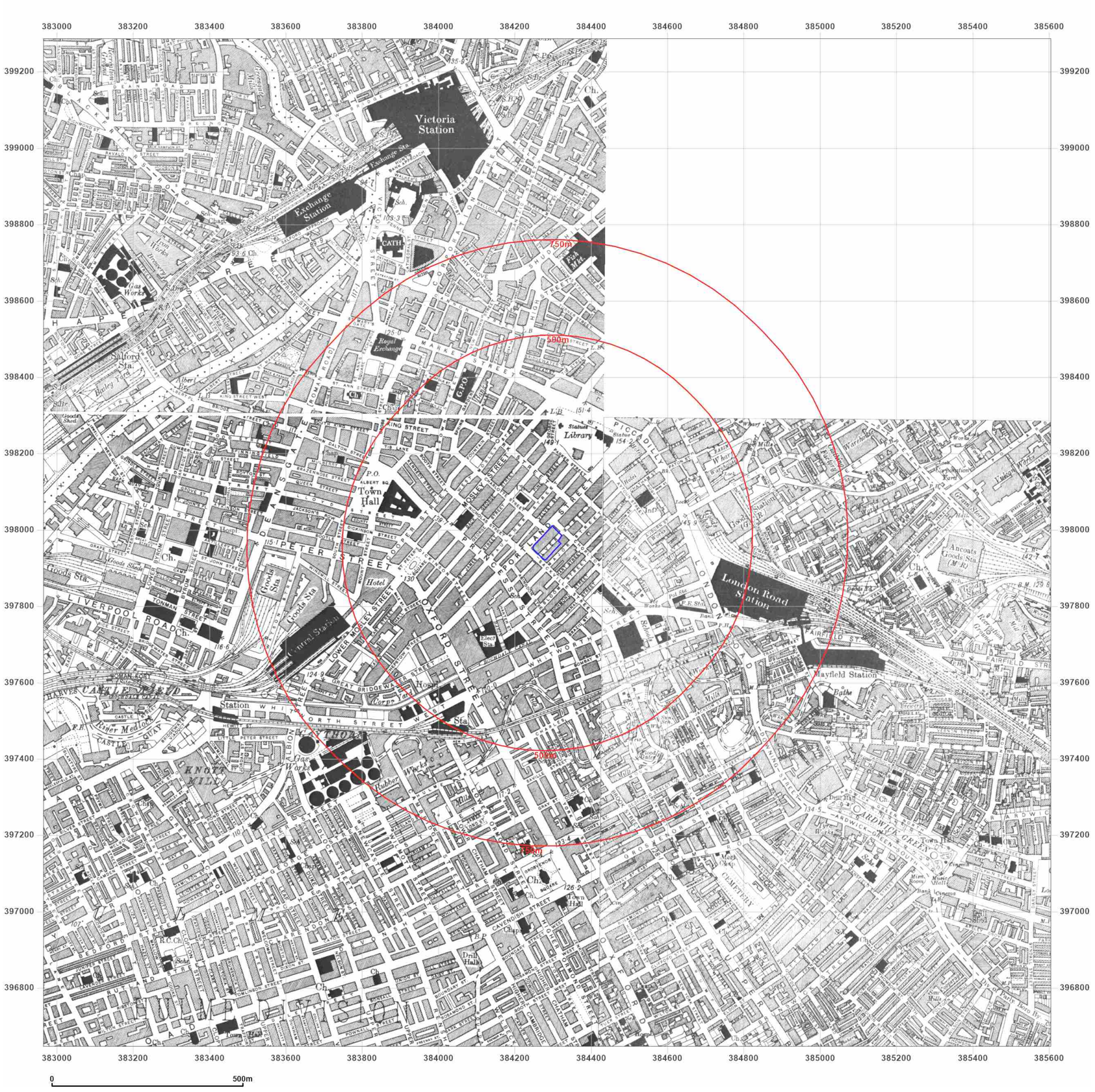
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Grid Ref: 384284, 397966

Map Name: County Series

Map date: **1923**

Scale: 1:10,560

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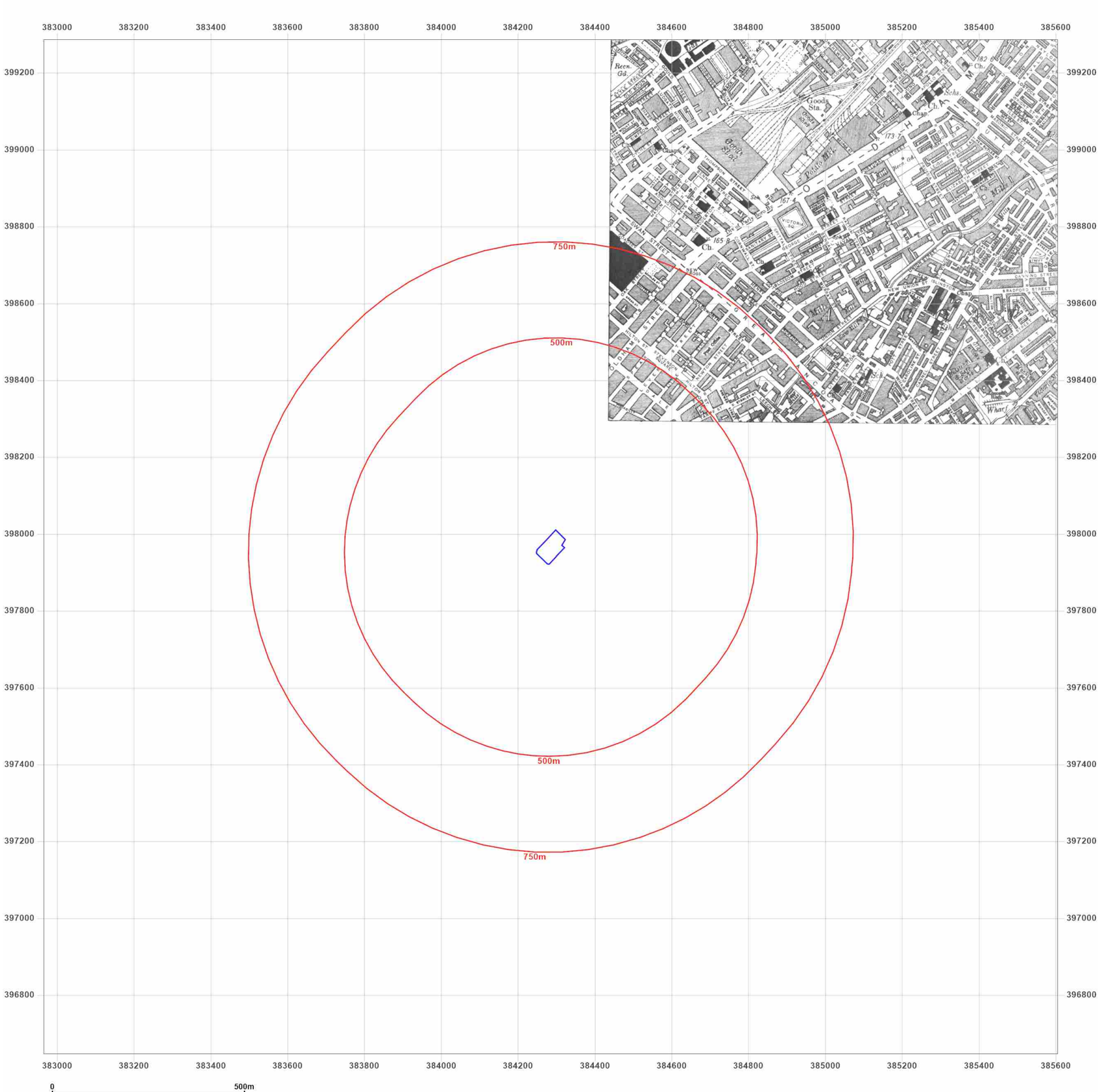
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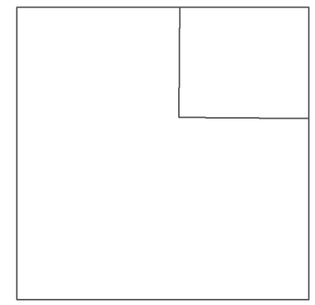
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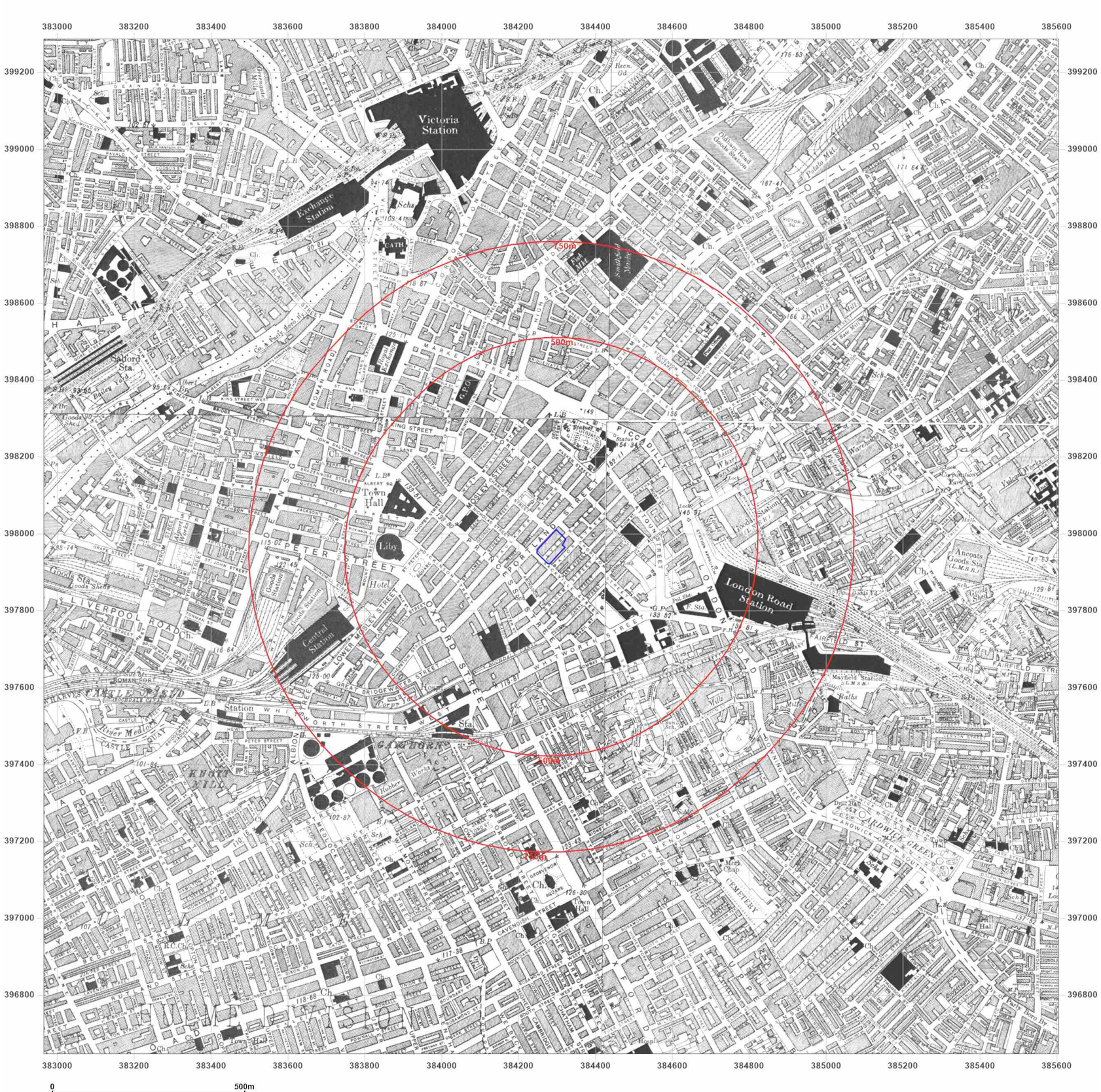
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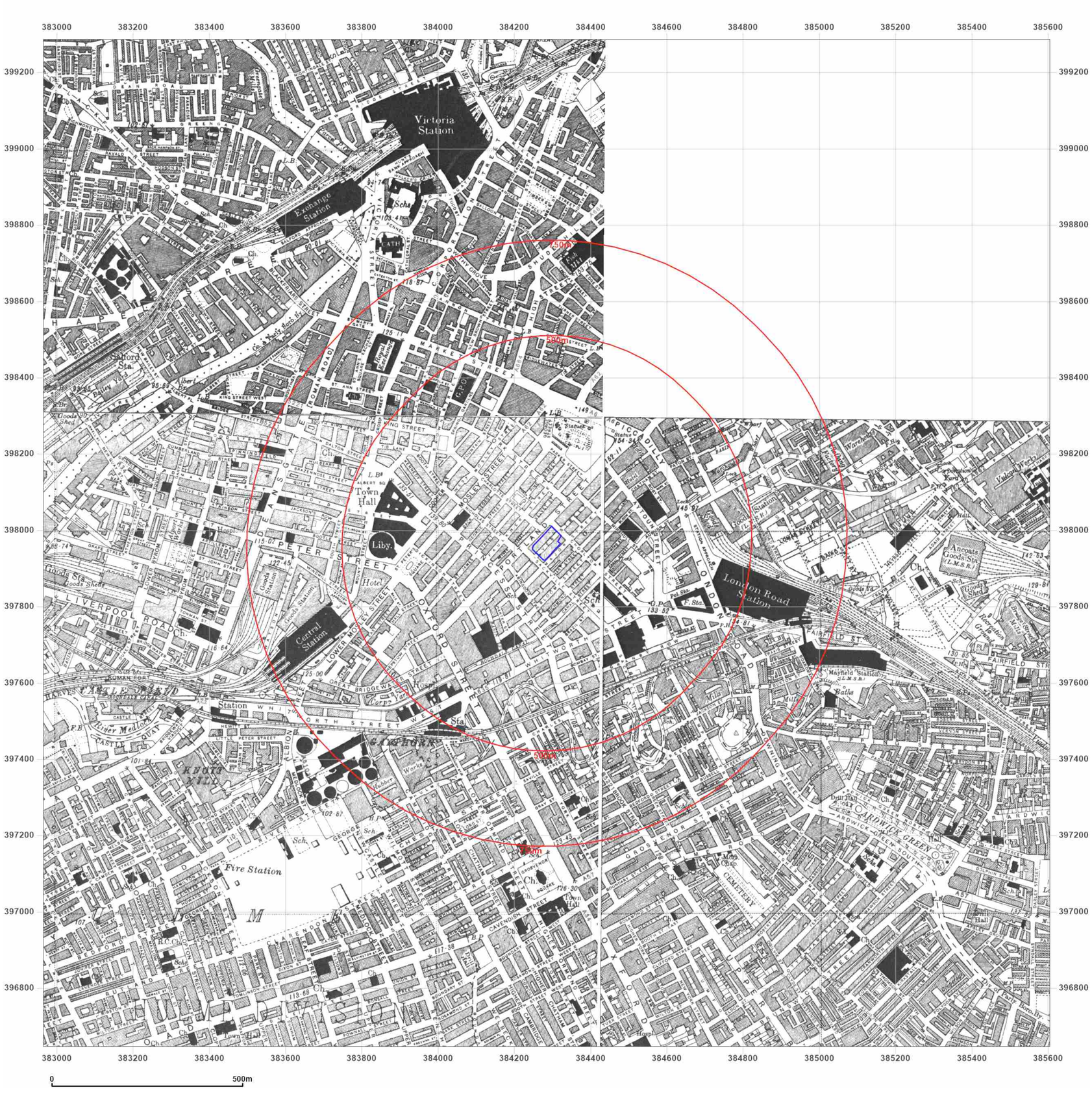
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Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge House
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Mills
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Warehouse
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Goods Station
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Sidings
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Yard
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Wharf
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Works
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Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Hotel
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Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Chapel
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Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Hall
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Baths
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Drill Hall
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Mem. Chap.
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Ancoats Goods Sta.
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Victoria Road Goods Station
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Liverpool Road Goods Station
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Oldham Road Goods Station
Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Gaythorn
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Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Castle Field
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Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Albert Bridge Deansgate
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Site Details:

49-53, PORTLAND STREET,
MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: County Series

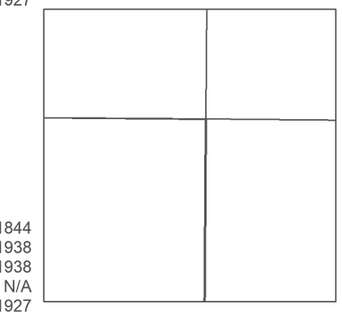
Map date: **1938**

Scale: 1:10,560

Printed at: 1:10,560

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



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

Surveyed 1844
Revised 1938
Edition 1938
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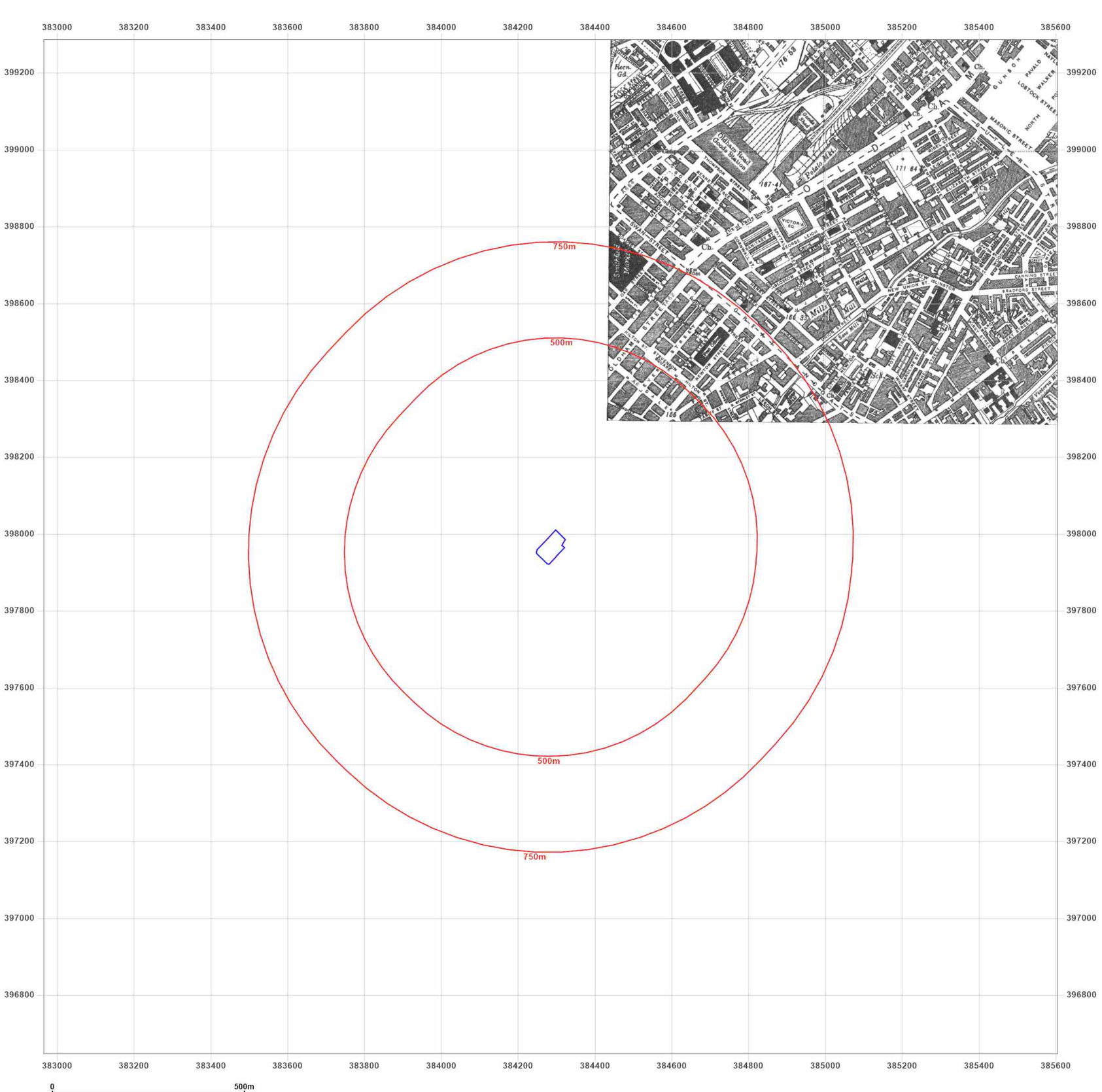
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Site Details:

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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: County Series

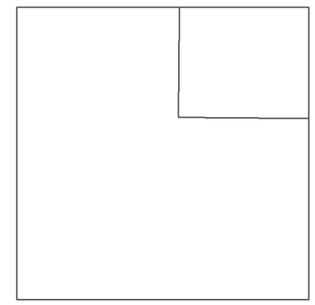
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Printed at: 1:10,560

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



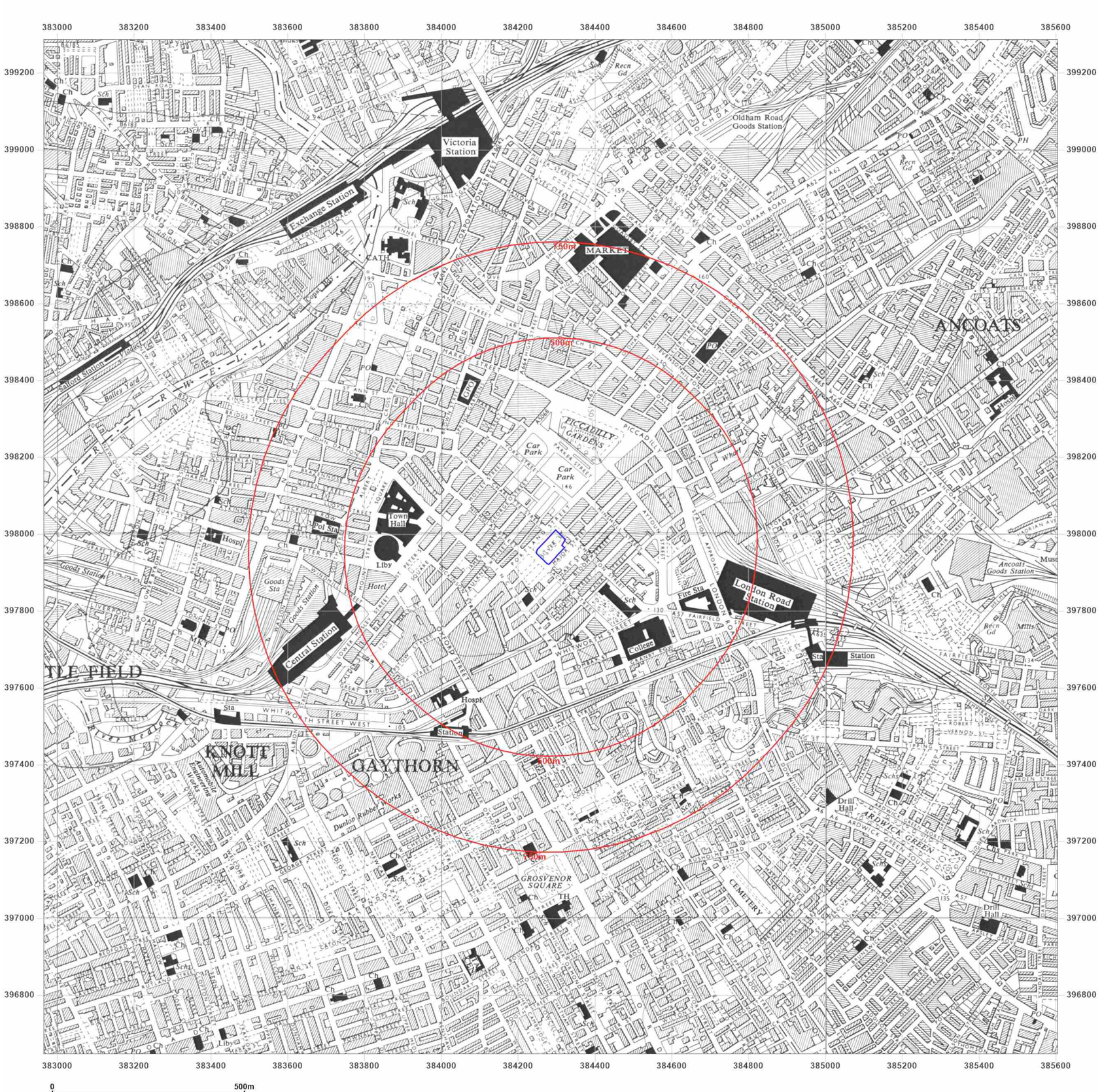
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: Provisional

Map date: **1956**

Scale: 1:10,560

Printed at: 1:10,560

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

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

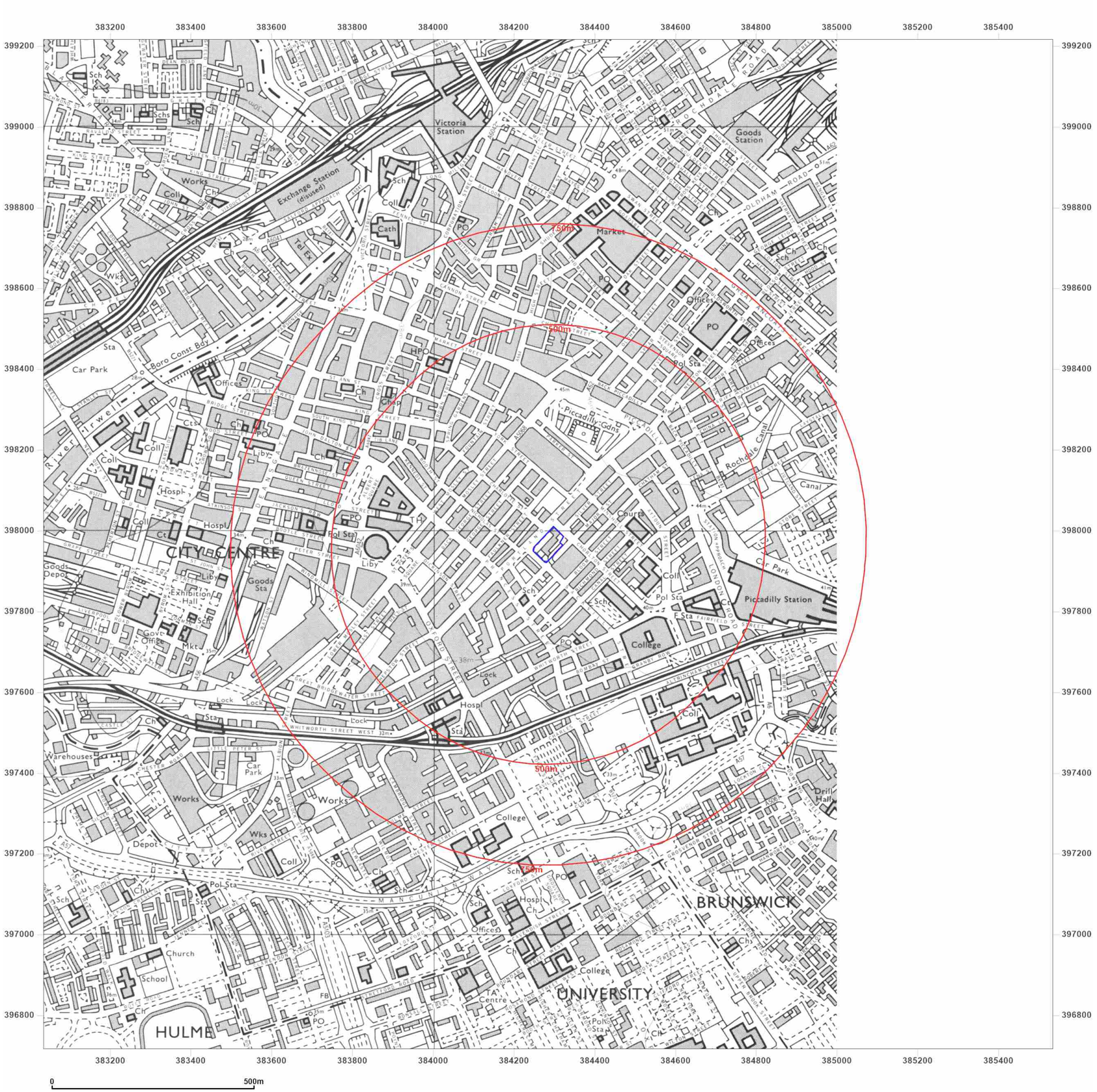
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MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1972**

Scale: 1:10,000

Printed at: 1:10,000

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

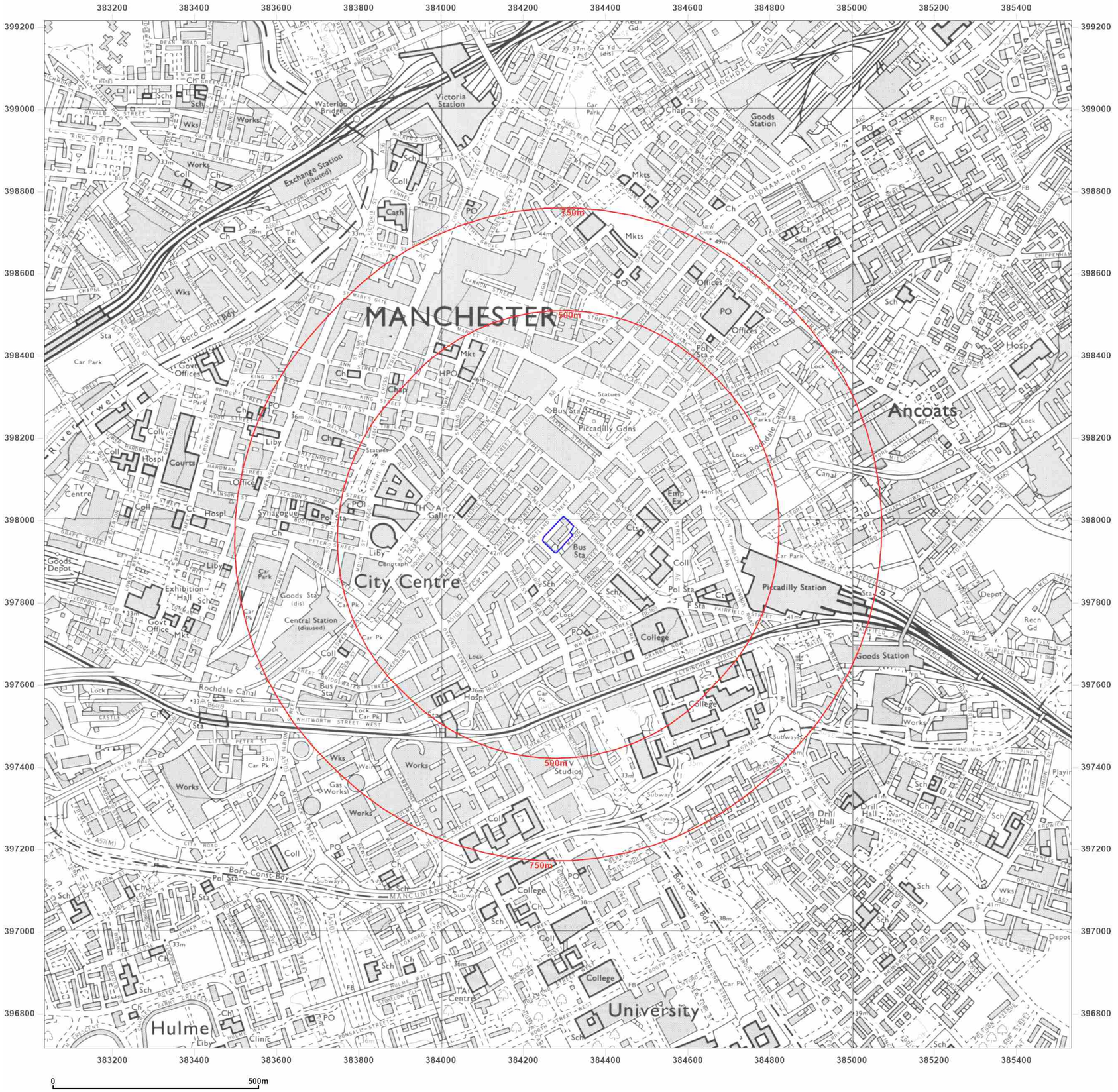
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1980-1981**

Scale: 1:10,000

Printed at: 1:10,000

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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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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1985**

Scale: 1:10,000

Printed at: 1:10,000

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

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

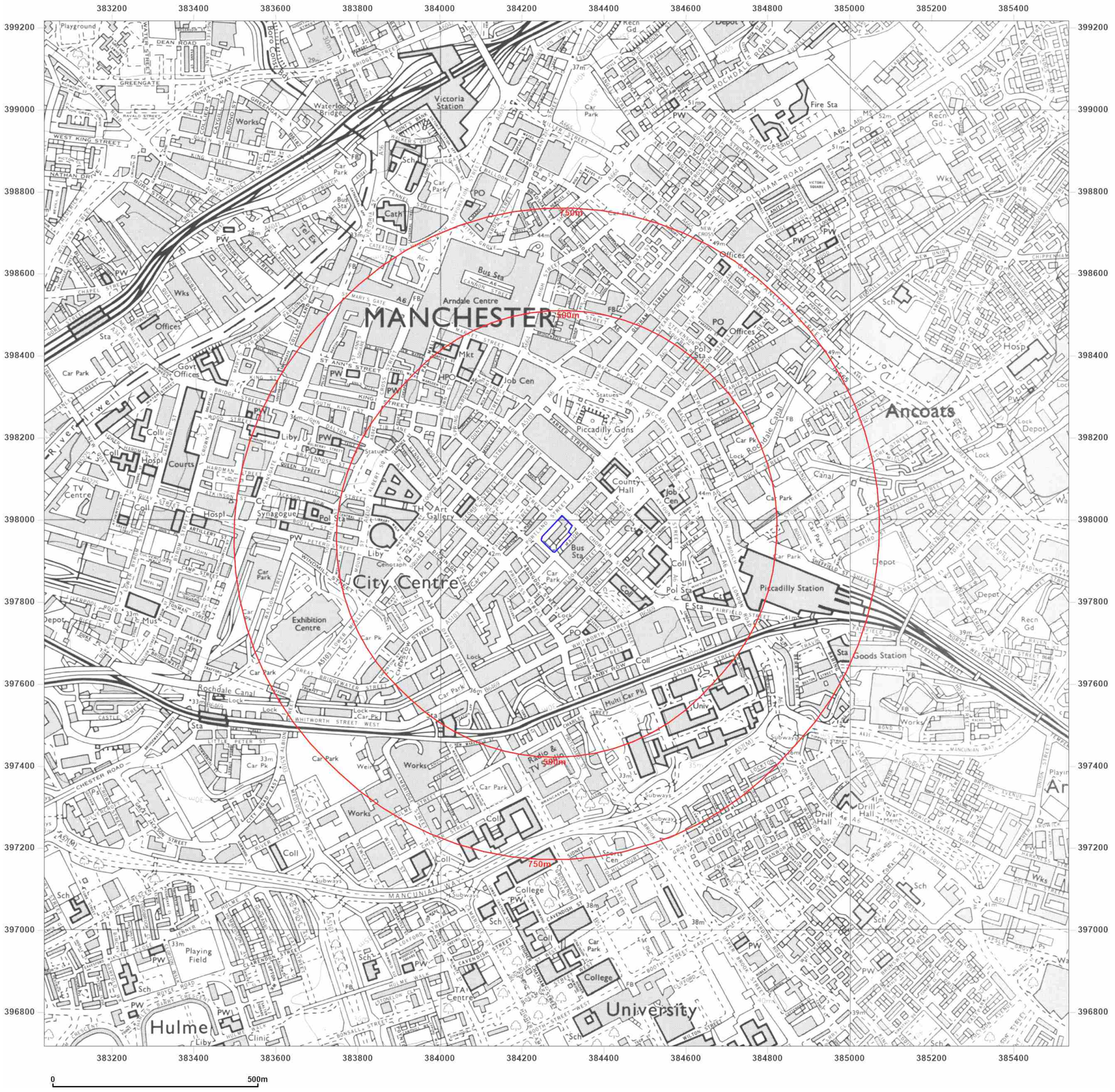
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1988-1991**

Scale: 1:10,000

Printed at: 1:10,000

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

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

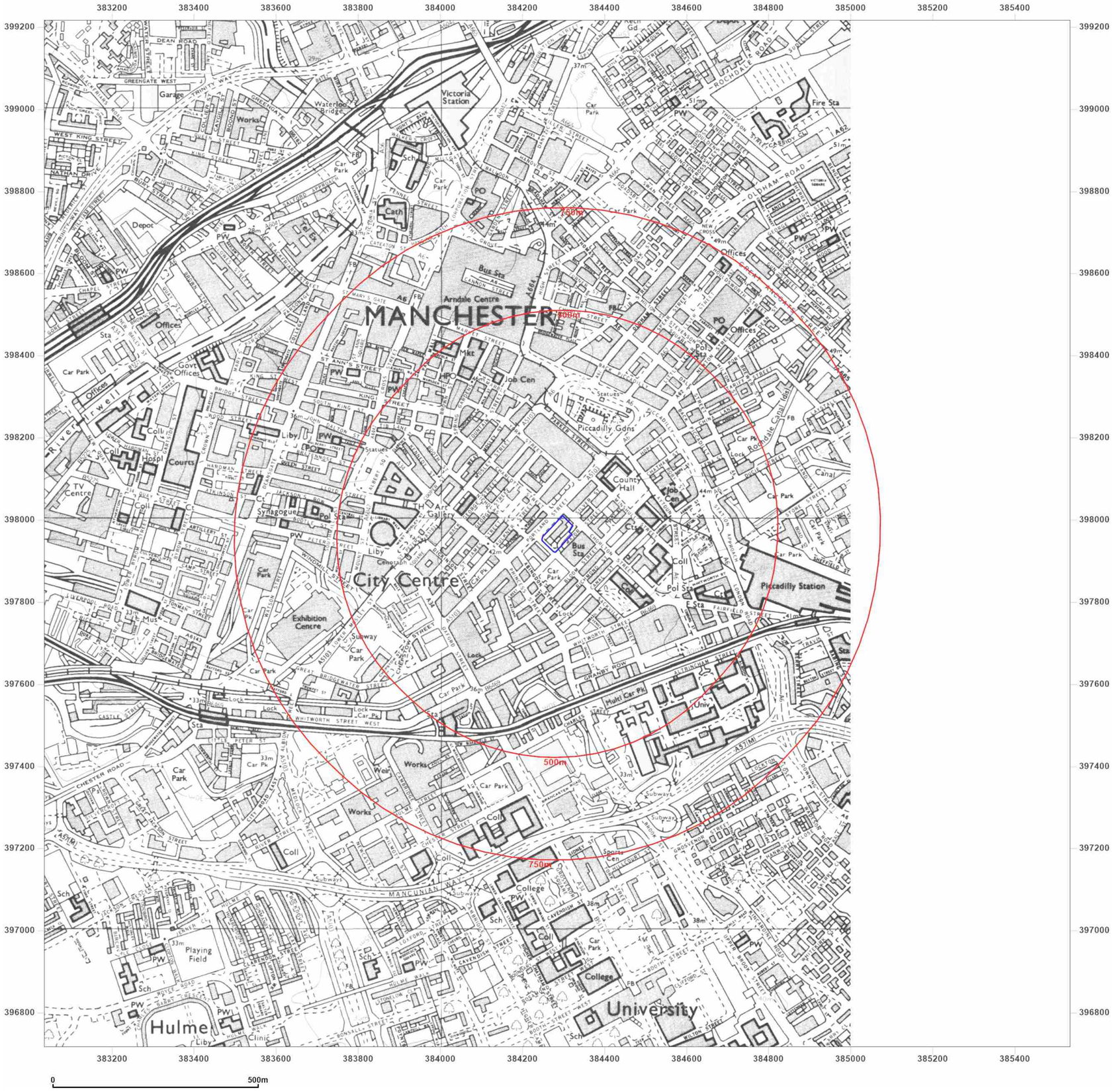
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1994**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1986
Revised 1994
Edition N/A
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **2001**

Scale: 1:10,000

Printed at: 1:10,000

N
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2001

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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **2010**

Scale: 1:10,000

Printed at: 1:10,000

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2010

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MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **2022**

Scale: 1:10,000

Printed at: 1:10,000

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2022

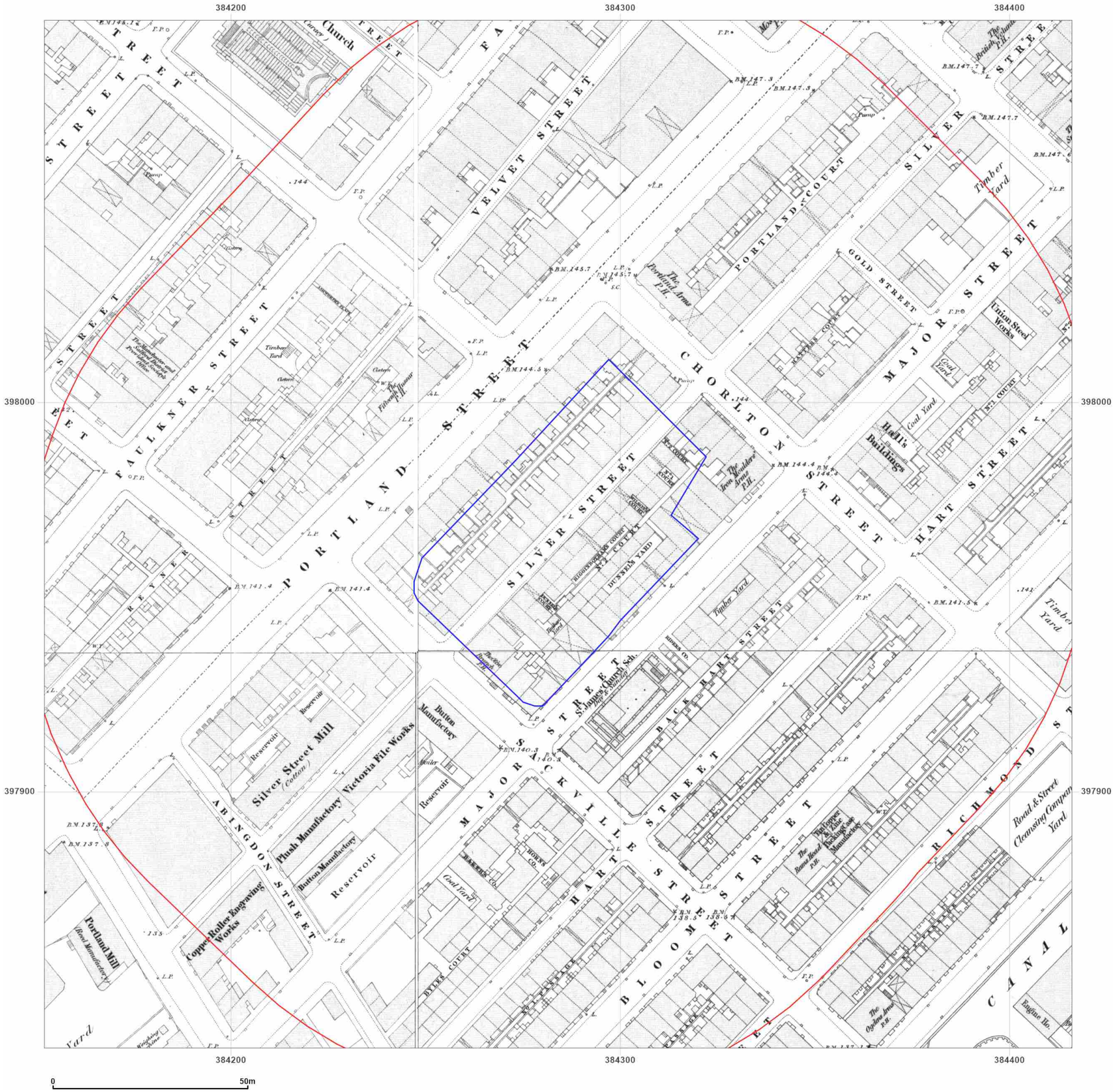
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: 1056 Scale Town Plan

Map date: **1851**

Scale: 1:1,056

Printed at: 1:1,056

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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

Surveyed 1849
Revised N/A
Edition 1851
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Surveyed 1849
Revised N/A
Edition 1851
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MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: County Series Town Plan

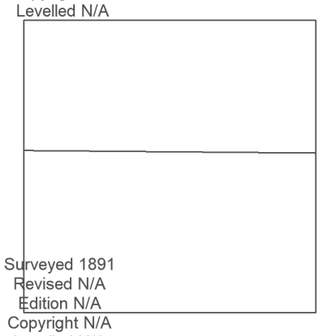
Map date: **1891**

Scale: 1:500

Printed at: 1:1,000

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



Surveyed 1891
Revised N/A
Edition N/A
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MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: County Series

Map date: **1889-1893**

Scale: 1:2,500

Printed at: 1:2,500

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

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

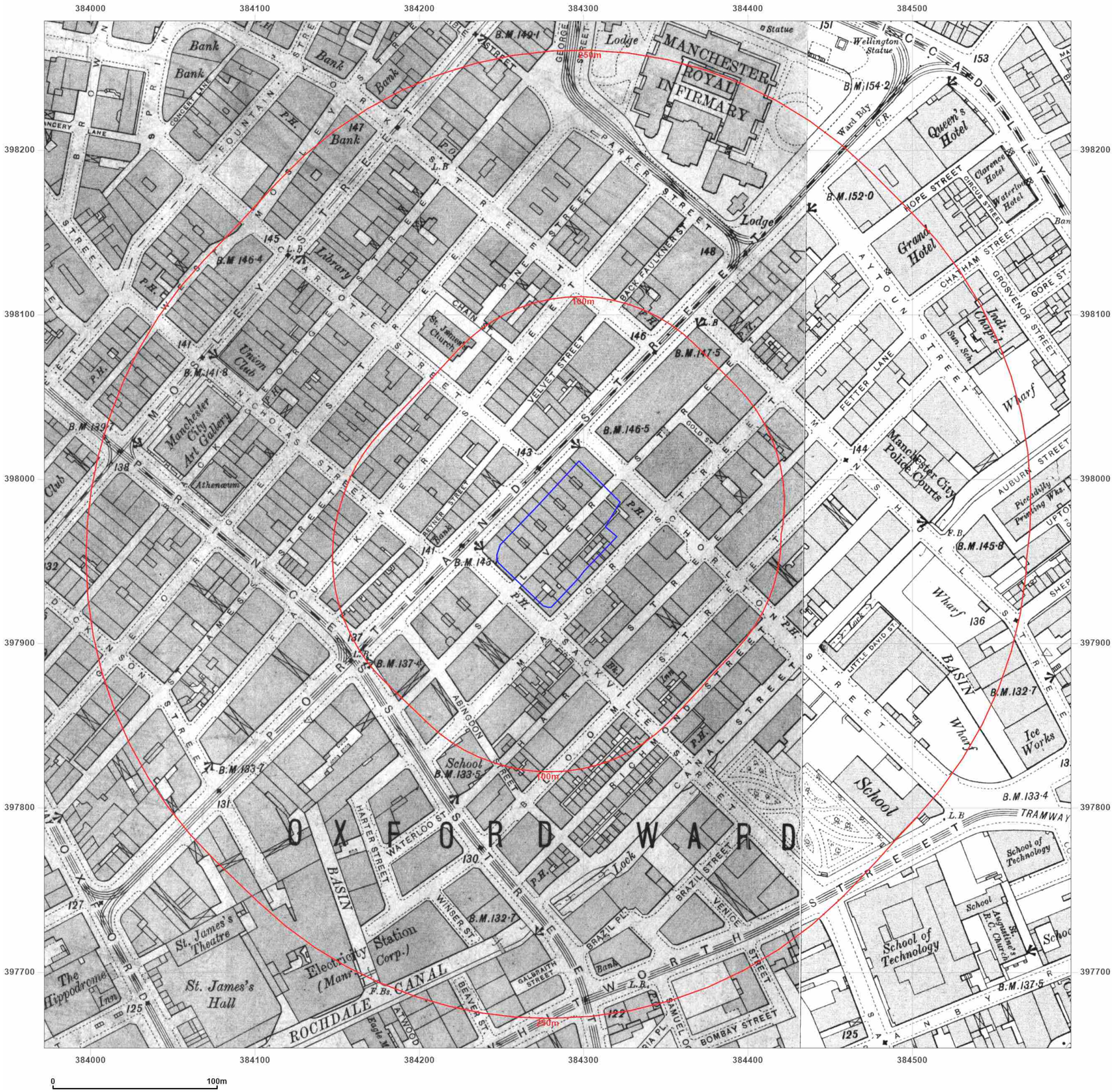
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Client Ref: NX469
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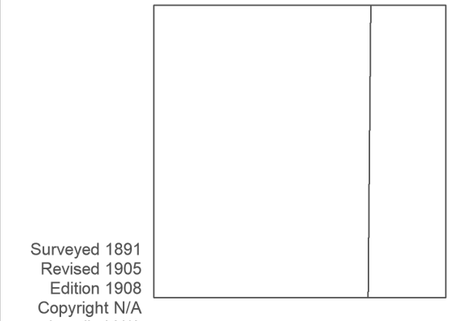
Map Name: County Series

Map date: **1908**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1905
Edition 1908
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Revised 1905
Edition 1908
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: County Series

Map date: **1922**

Scale: 1:2,500

Printed at: 1:2,500

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Edition 1922
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Surveyed 1922
Revised 1916
Edition 1922
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: County Series

Map date: **1932**

Scale: 1:2,500

Printed at: 1:2,500

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

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

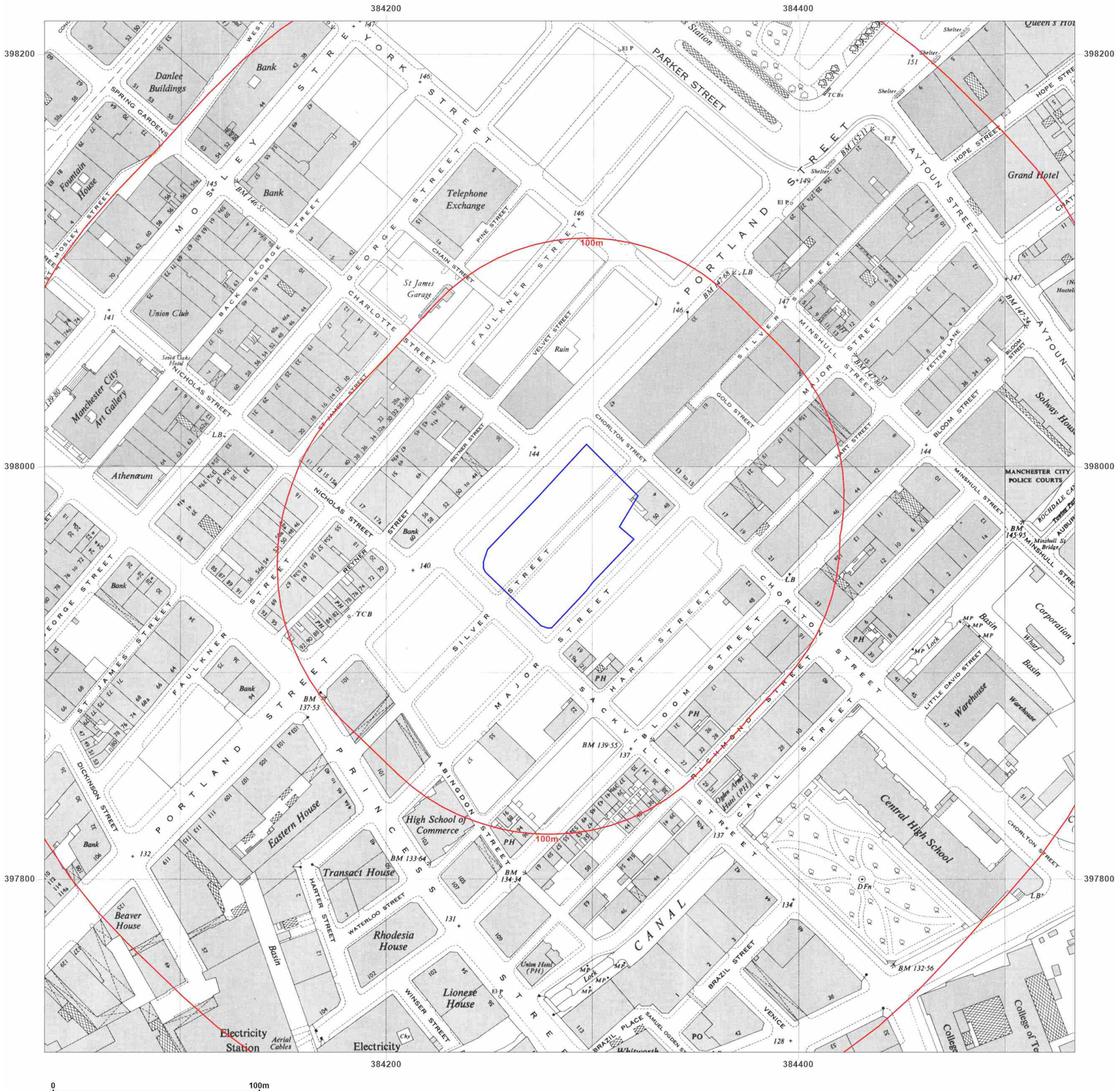
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1948**

Scale: 1:1,250

Printed at: 1:2,000

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

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

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

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Revised 1948
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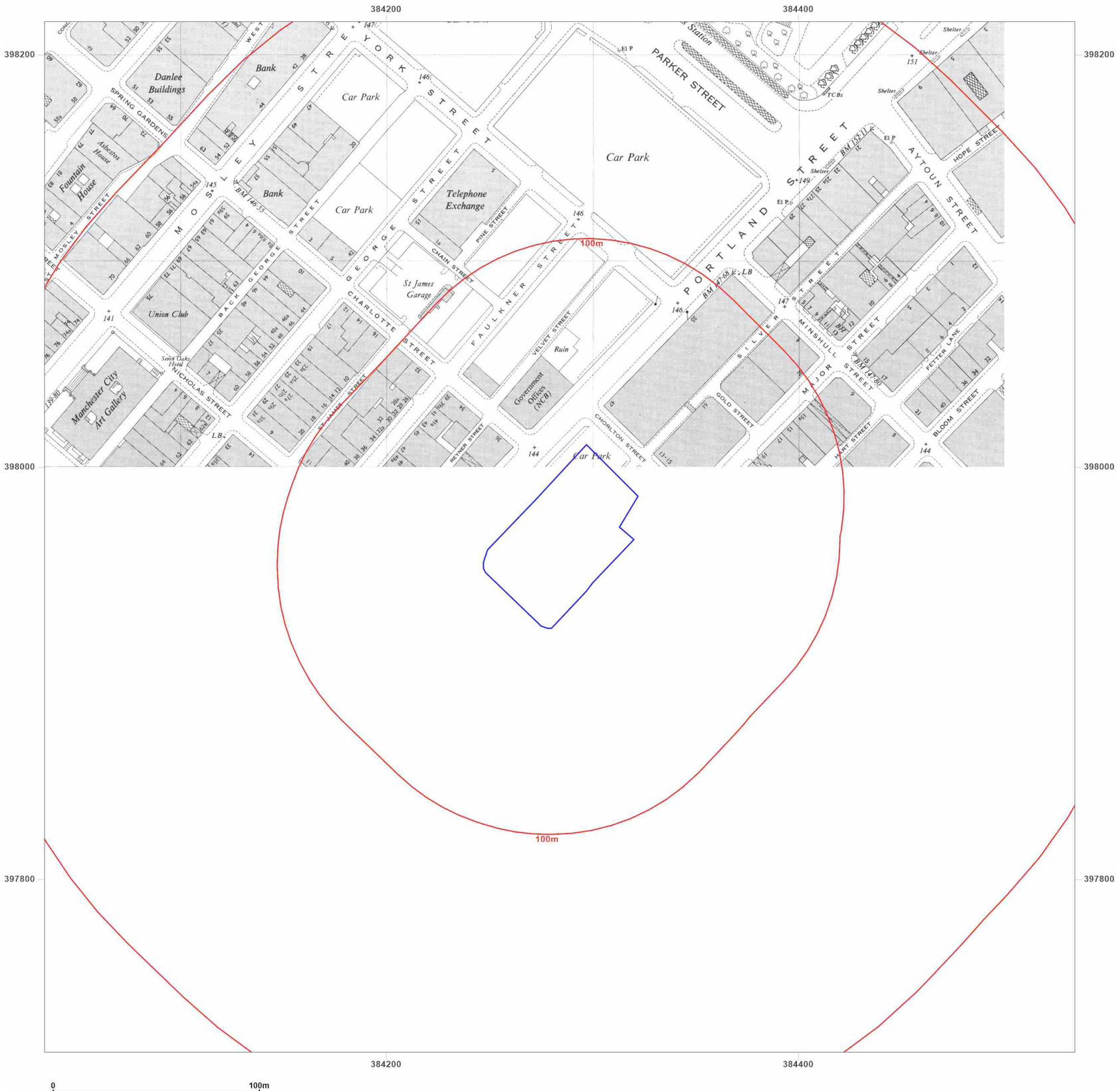
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MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

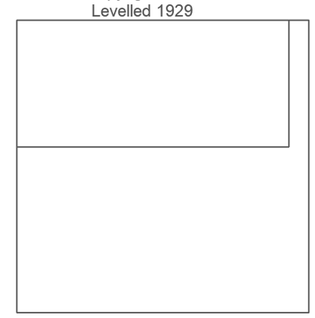
Map date: **1953**

Scale: 1:1,250

Printed at: 1:2,000

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



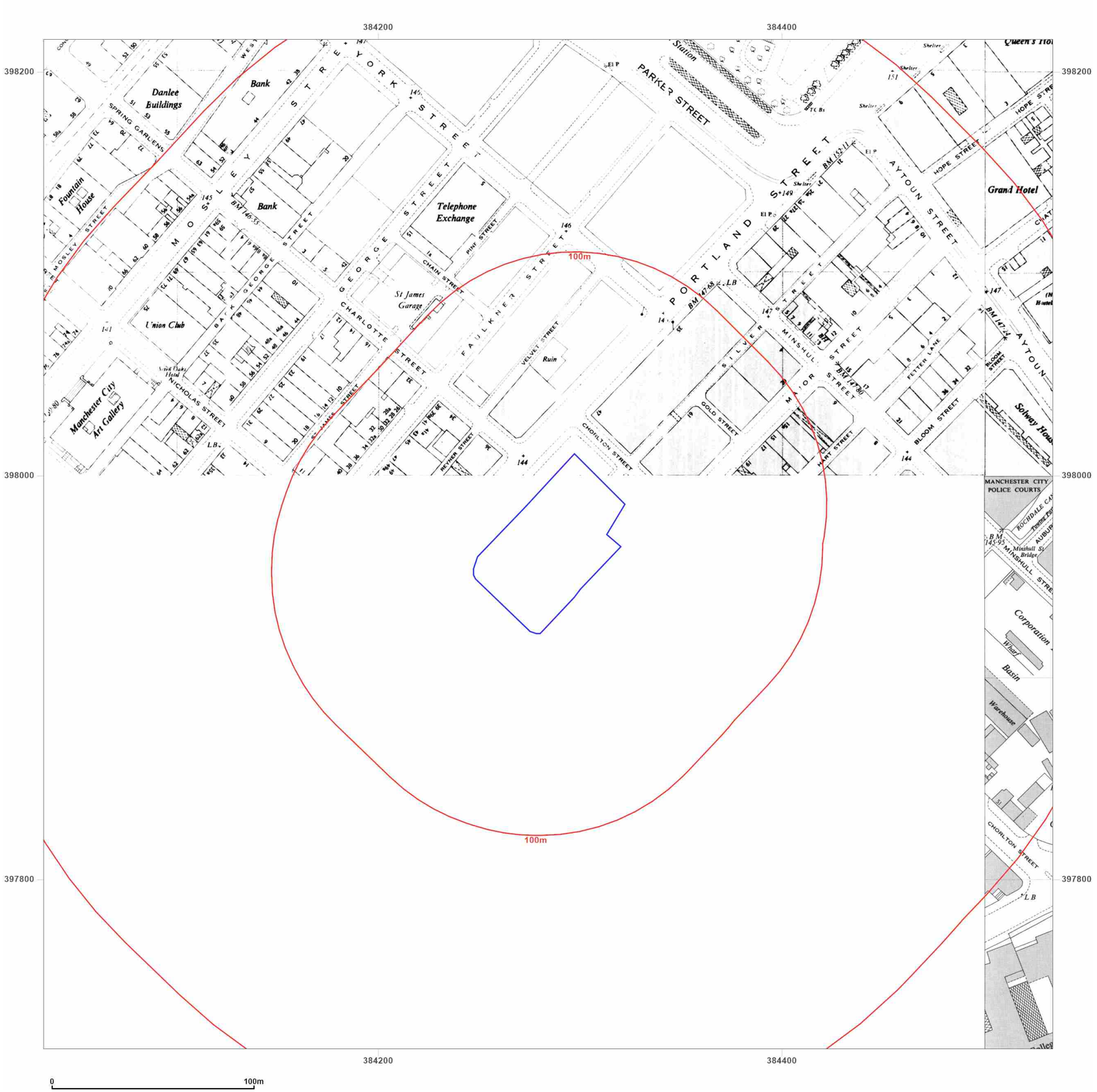
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid
Map date: **1951-1954**
Scale: 1:1,250
Printed at: 1:2,000

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

Surveyed 1948
Revised 1953
Edition 1954
Copyright N/A
Levelled N/A

Surveyed 1953
Revised 1953
Edition N/A
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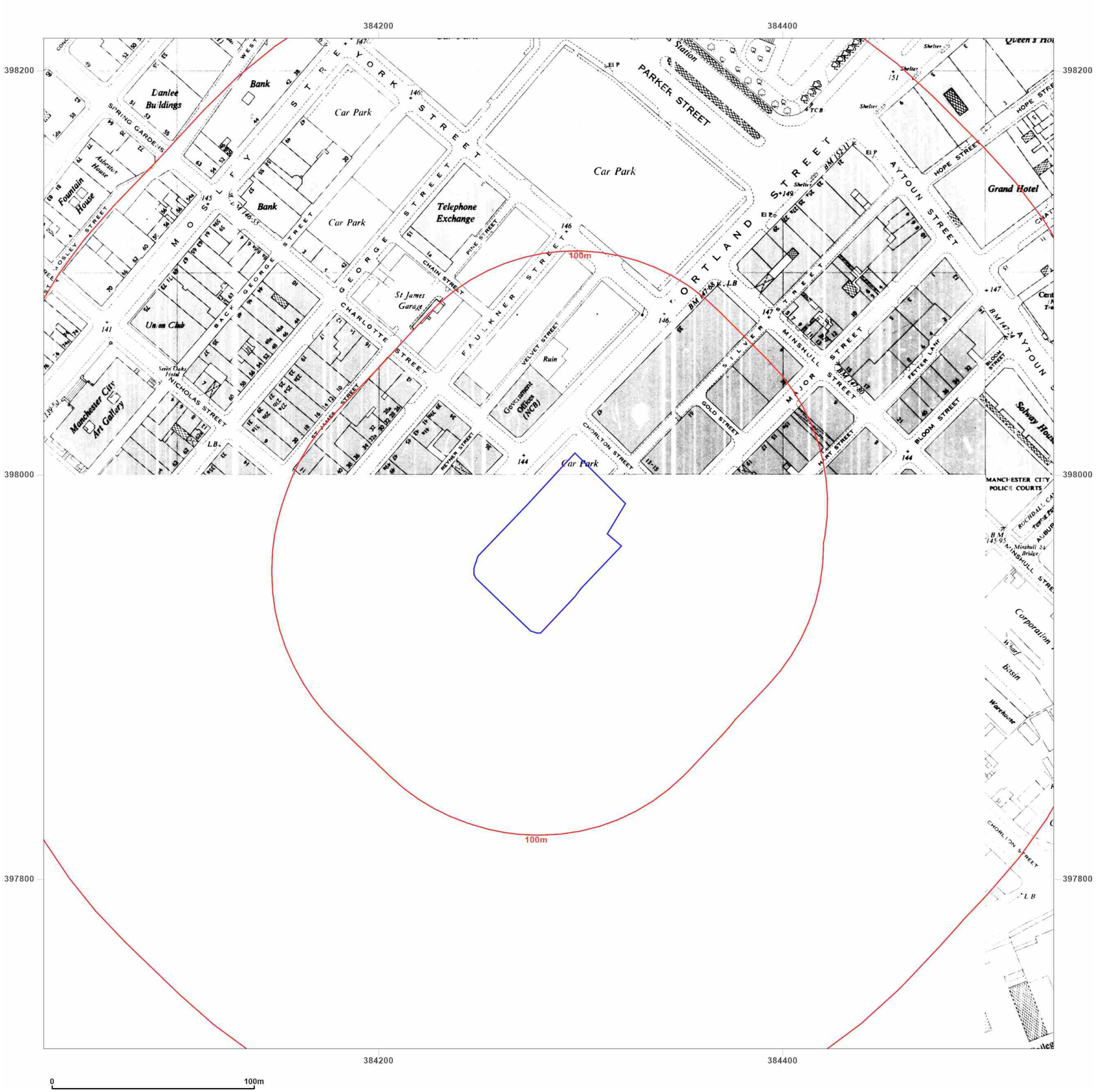
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Site Details:

49-53, PORTLAND STREET,
MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1951-1954**

Scale: 1:1,250

Printed at: 1:2,000

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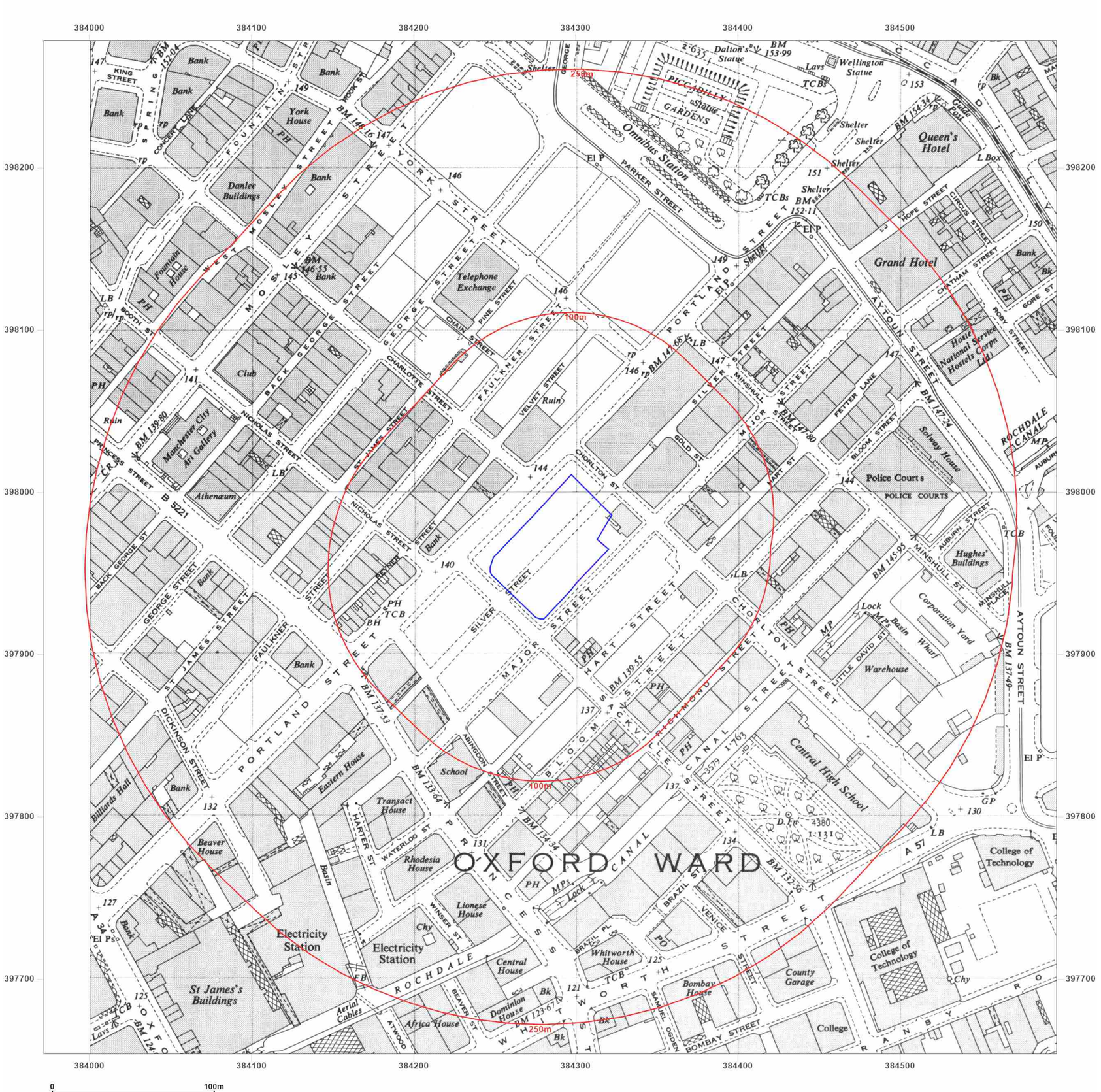
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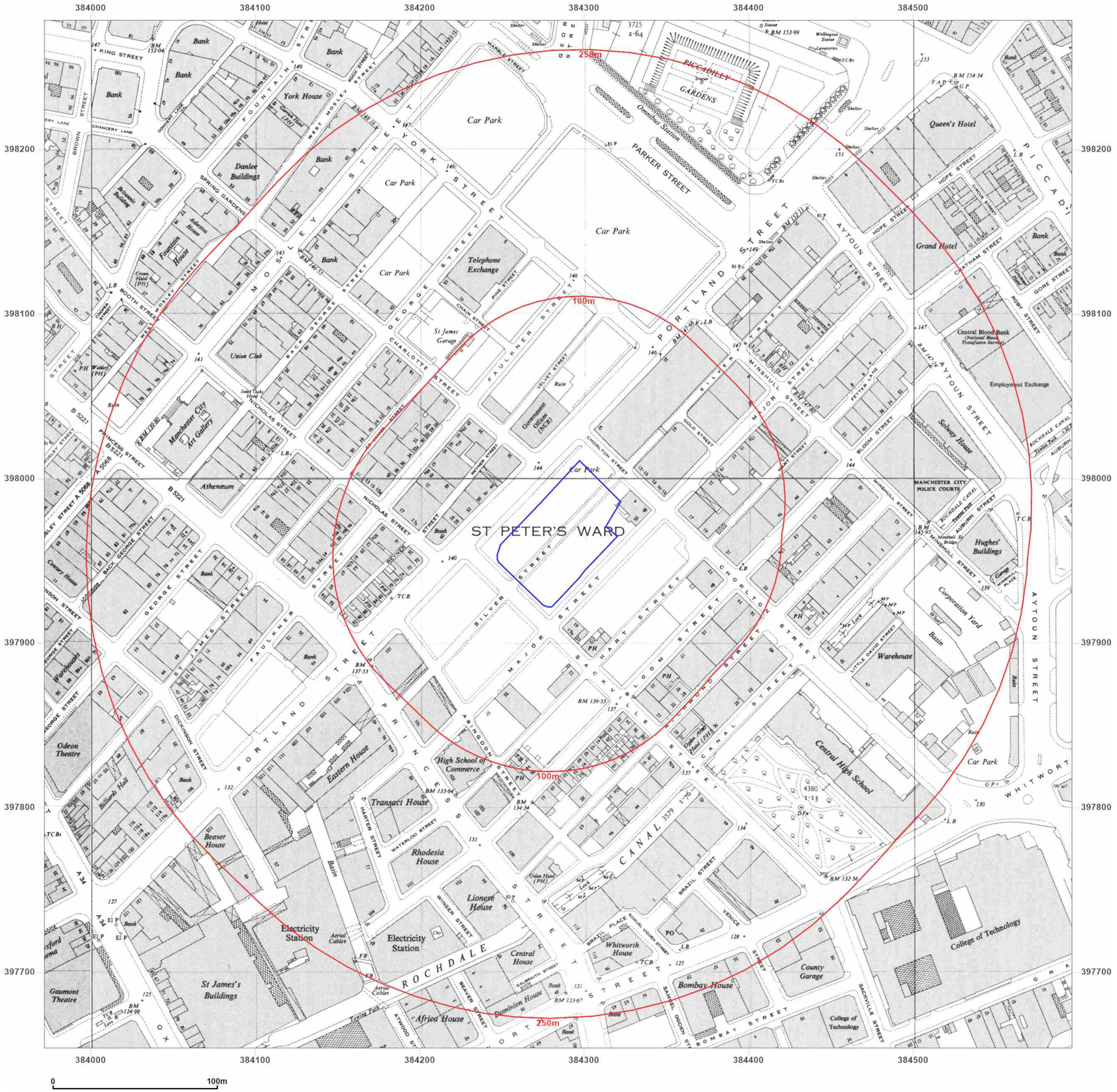
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OXFORD WARD
PICCADILLY GARDENS
Omnibus Station
Queen's Hotel
Grand Hotel
Telephone Exchange
Police Courts
Central High School
College of Technology
Electricity Station
Manchester City Art Gallery
Athenæum
Central House
Whitworth House
Bombay House
County Garage
Hughes' Buildings
Corporation Yard
Warehouse
Lock
Basin
Wharf
Danlee Buildings
York House
Fountain House
Club
Ruin
Eastern House
Transact House
Beaver House
Rhodesia House
Lionese House
St James's Buildings
Aerial Cables
Africa House
Dominion House
Bank
PH
School
Billiards Hall
Solway House
Hostel
National Service Hostels Corpn Ltd
Dalton's Statue
Wellington Statue
Statue
Shelter
Lavs
TCBs
TCB
Chy
El P
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Guide Post
L Box
MP
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Guidepost
Signpost
Direction Finger
Cattle Grid
Gate
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Footbridge
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Satellite Tracking Station with Dish and Mast and Building and Fence and Gate and Sign and Light and Camera and Antenna and Transformer and Substation and Pylon and Power



Groundsure INSIGHTS

Site Details:

49-53, PORTLAND STREET,
MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1954-1958**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1957
Edition N/A
Copyright 1958
Levelled 1927

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

Surveyed 1953
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Copyright 1957
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Surveyed 1953
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Edition N/A
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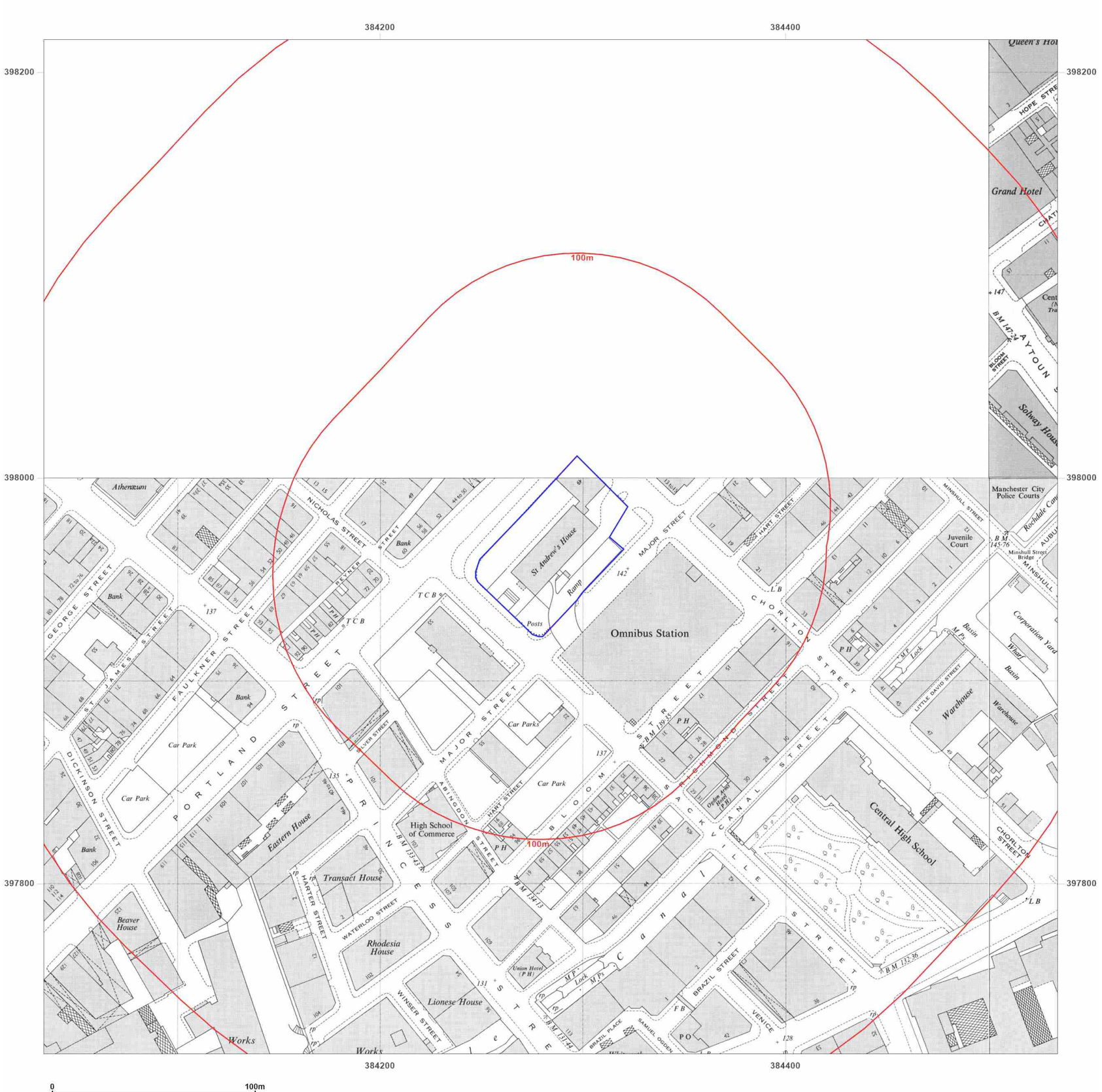
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Site Details:

49-53, PORTLAND STREET,
MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1960-1964**

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1953
Edition N/A
Copyright 1960
Levelled 1929

Surveyed 1948 Revised 1963 Edition N/A Copyright 1964 Levelled 1958	Surveyed 1963 Revised 1963 Edition N/A Copyright 1964 Levelled 1959

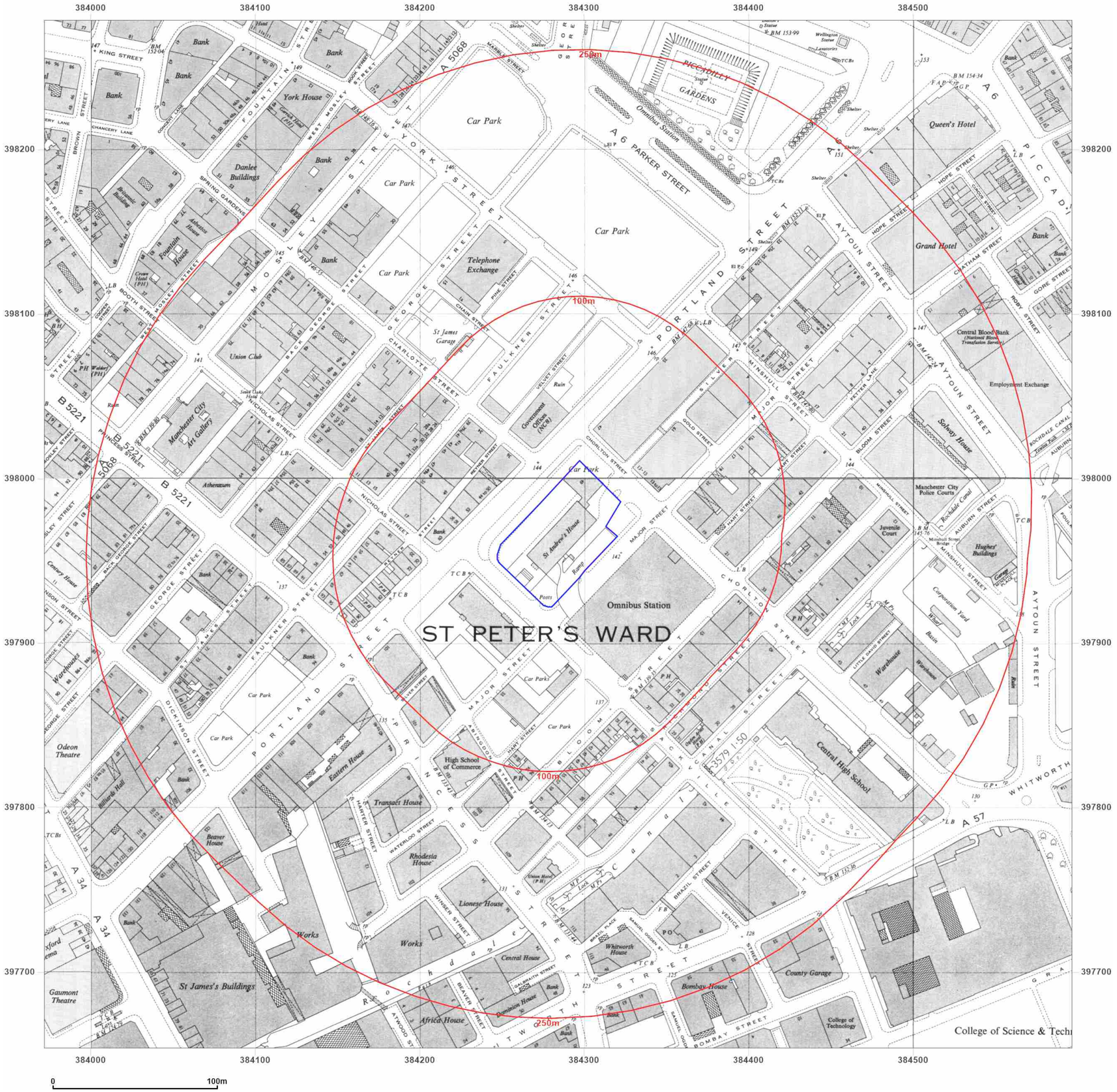
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1963-1965**

Scale: 1:2,500

Printed at: 1:2,500

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

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

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Copyright 1965
Levelled 1958

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

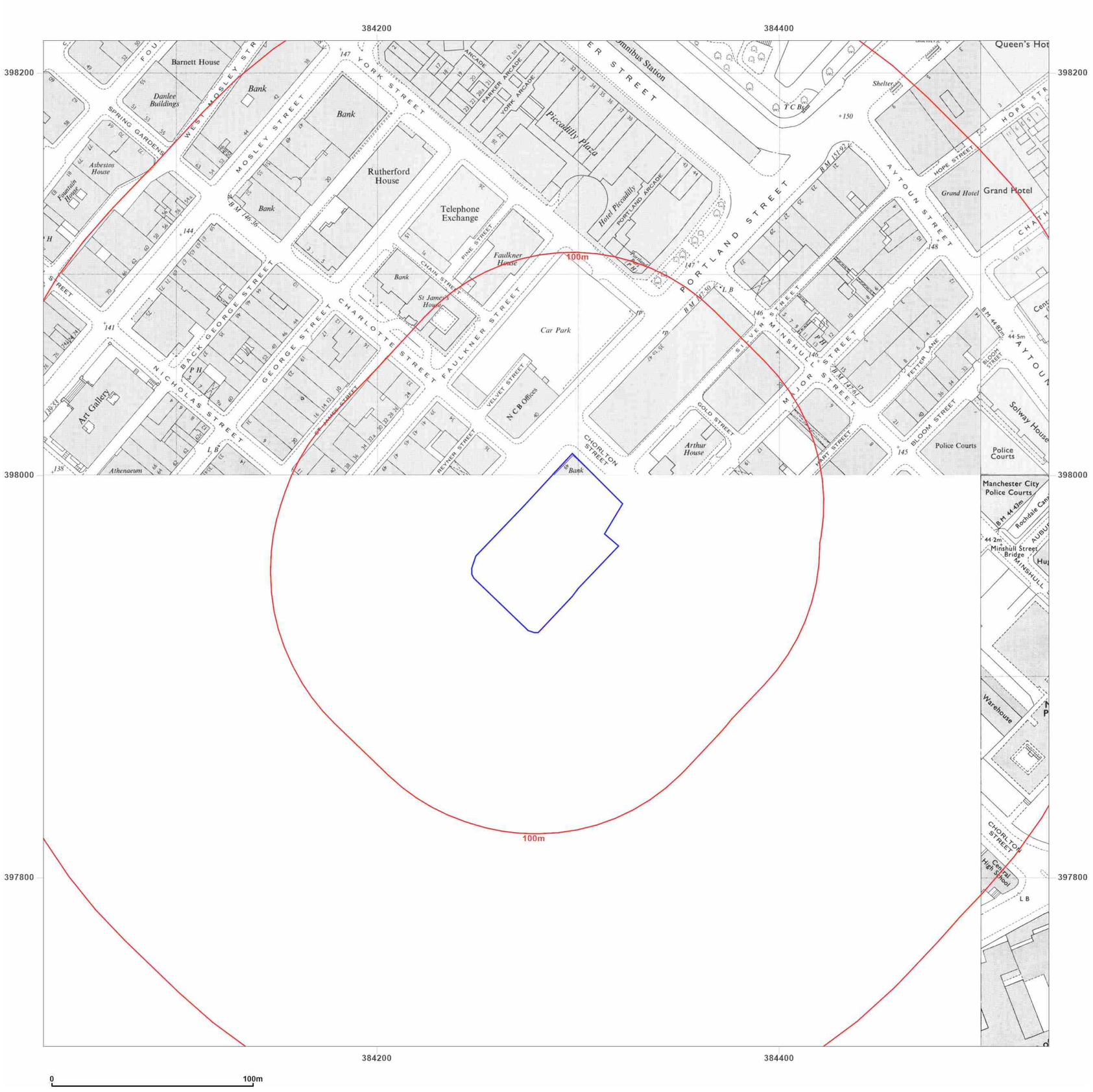
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1968-1971**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed 1948
Revised 1967
Edition N/A
Copyright 1968
Levelled 1964

Surveyed 1948
Revised 1970
Edition N/A
Copyright 1971
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Copyright 1971
Levelled 1964

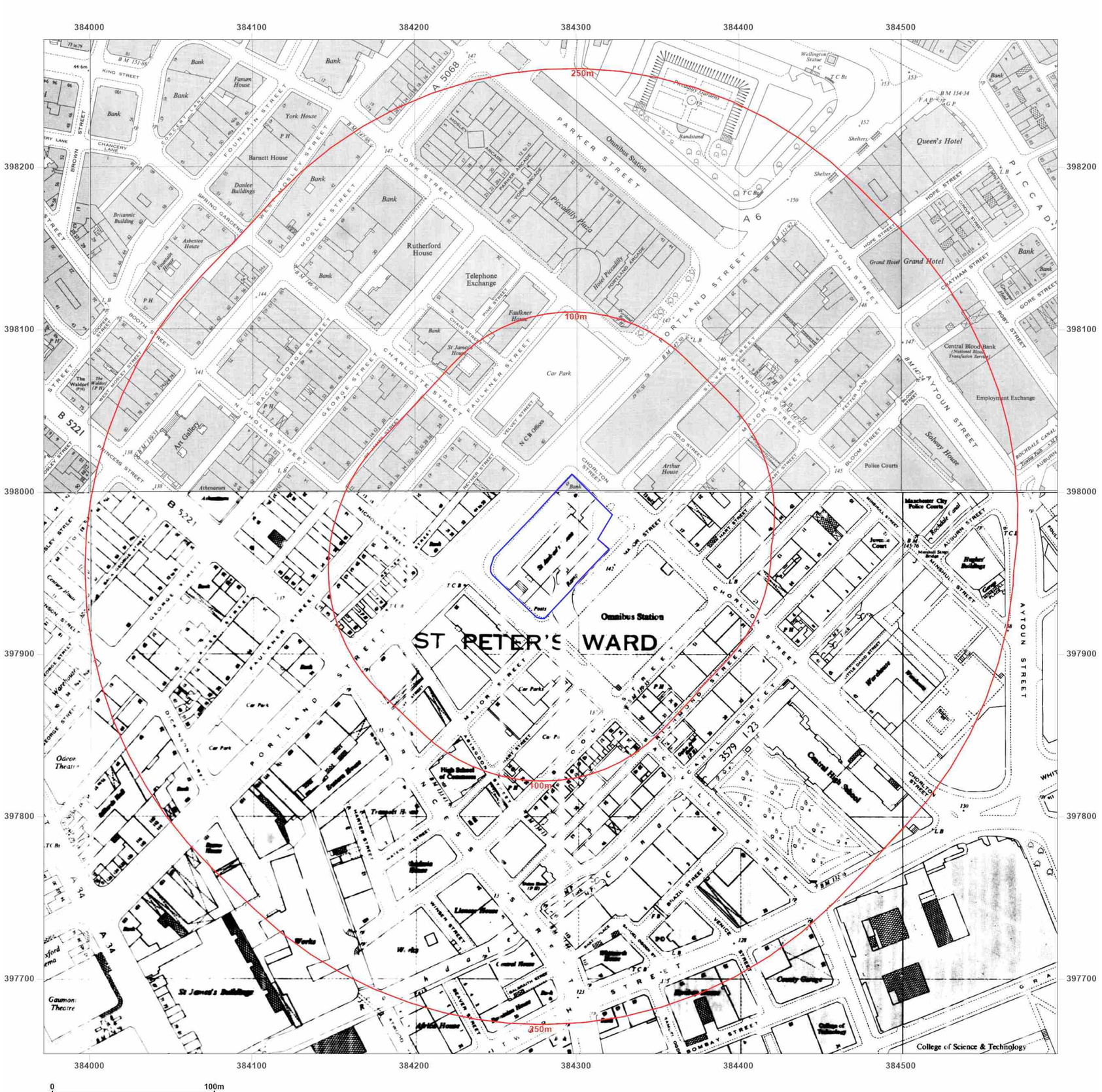
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Site Details:

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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1964-1971**

Scale: 1:2,500

Printed at: 1:2,500

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Revised 1970
Edition N/A
Copyright 1971
Levelled 1964

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Edition N/A
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Revised N/A
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Revised N/A
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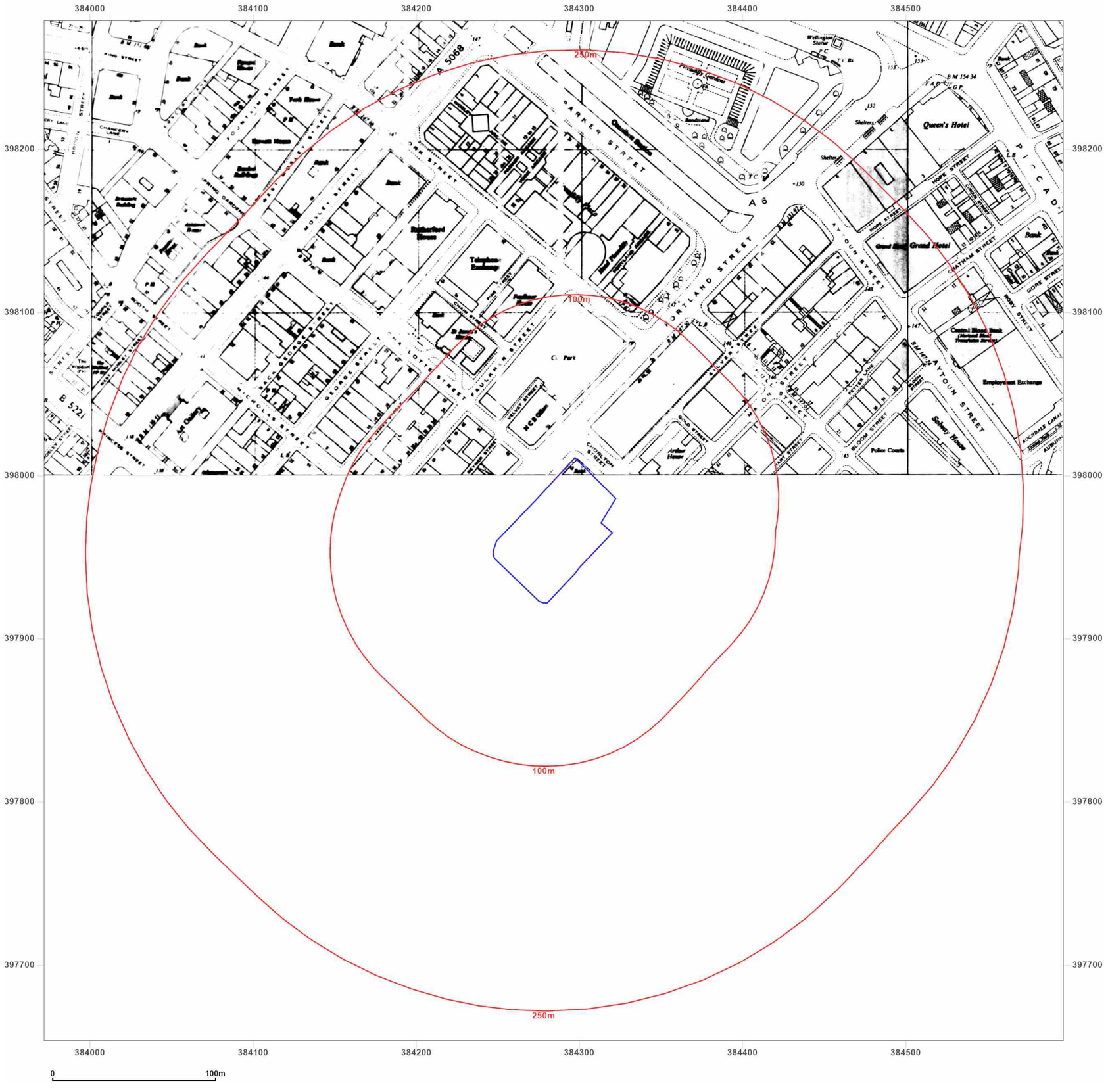
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1969-1971**

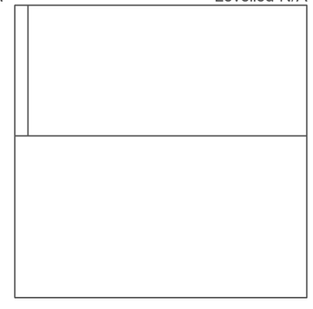
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Edition N/A
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Revised N/A
Edition N/A
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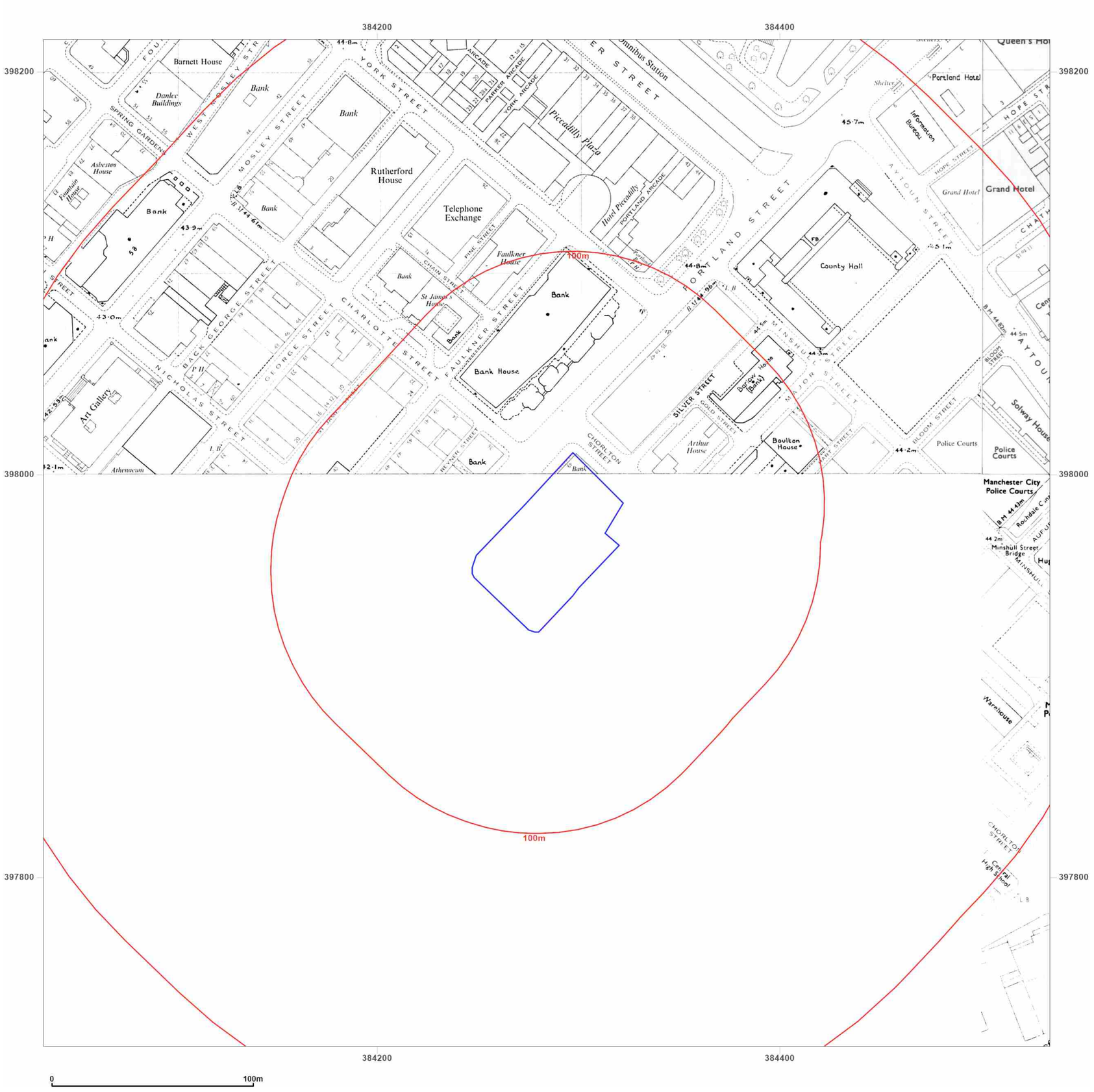
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1971-1980**

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1970
Edition N/A
Copyright 1971
Levelled 1964

Surveyed N/A
Revised N/A
Edition N/A
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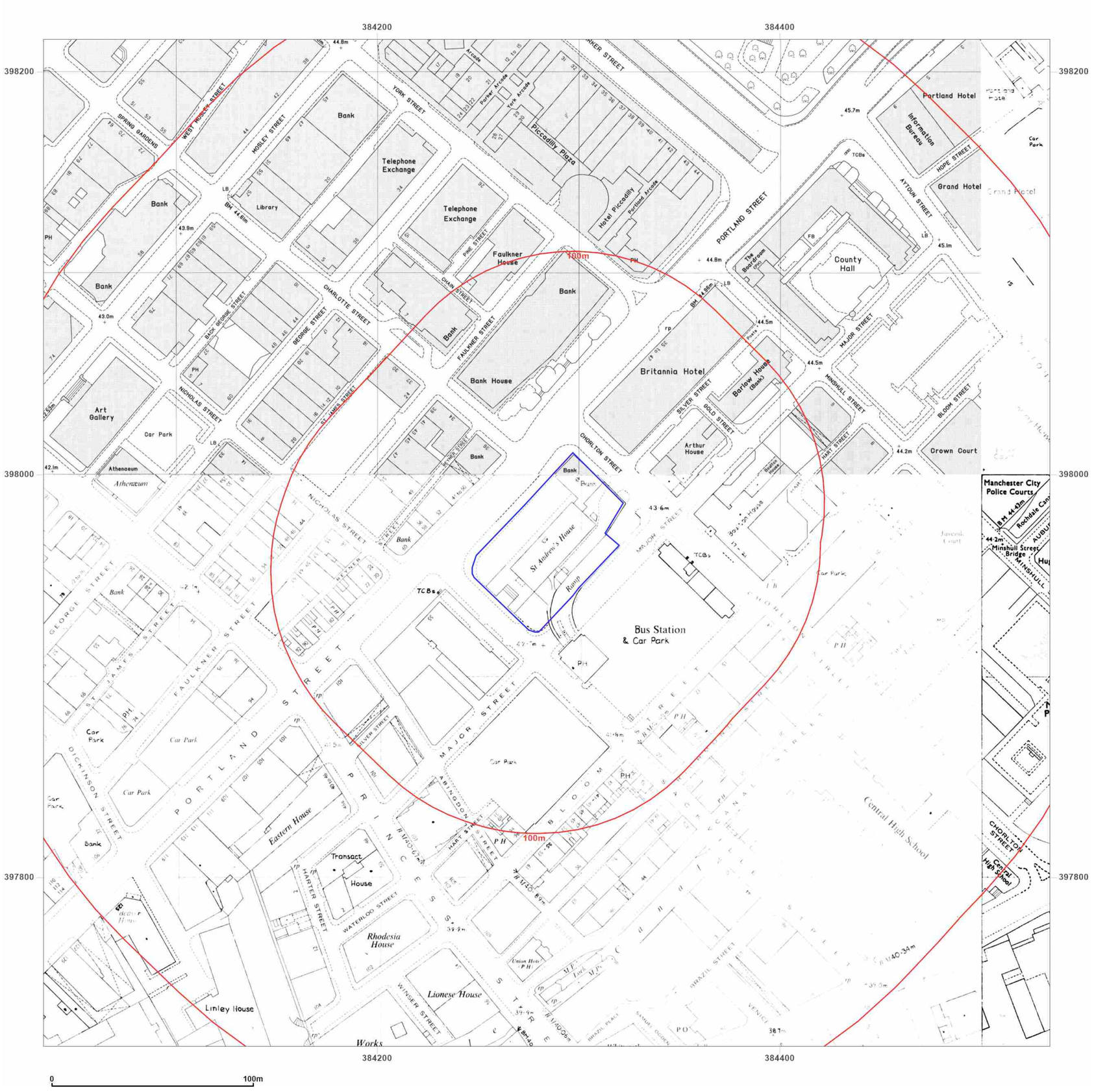
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1984-1986**

Scale: 1:1,250

Printed at: 1:2,000

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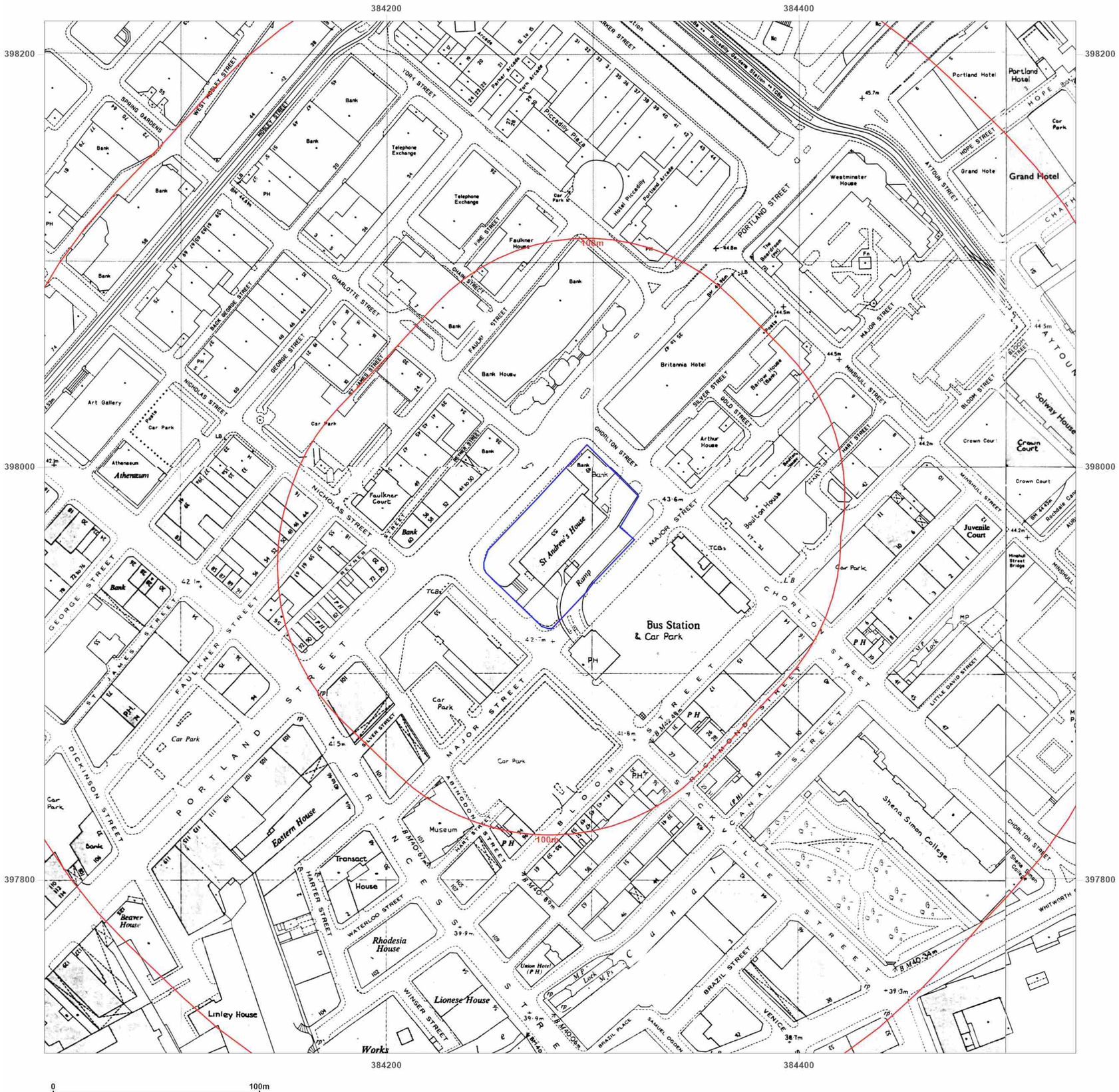
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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1990-1992**

Scale: 1:1,250

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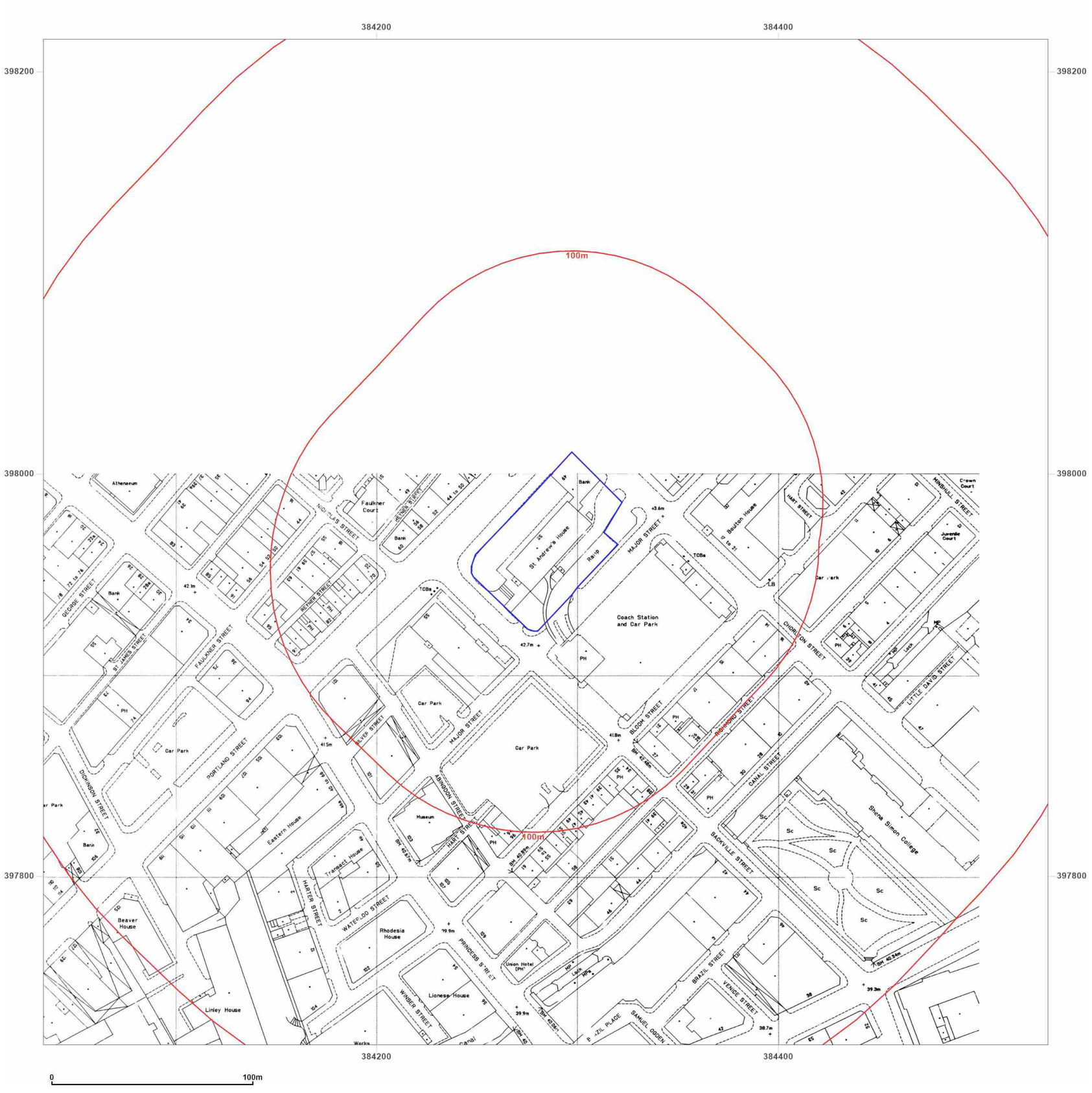
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Site Details:

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Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1994
Edition N/A
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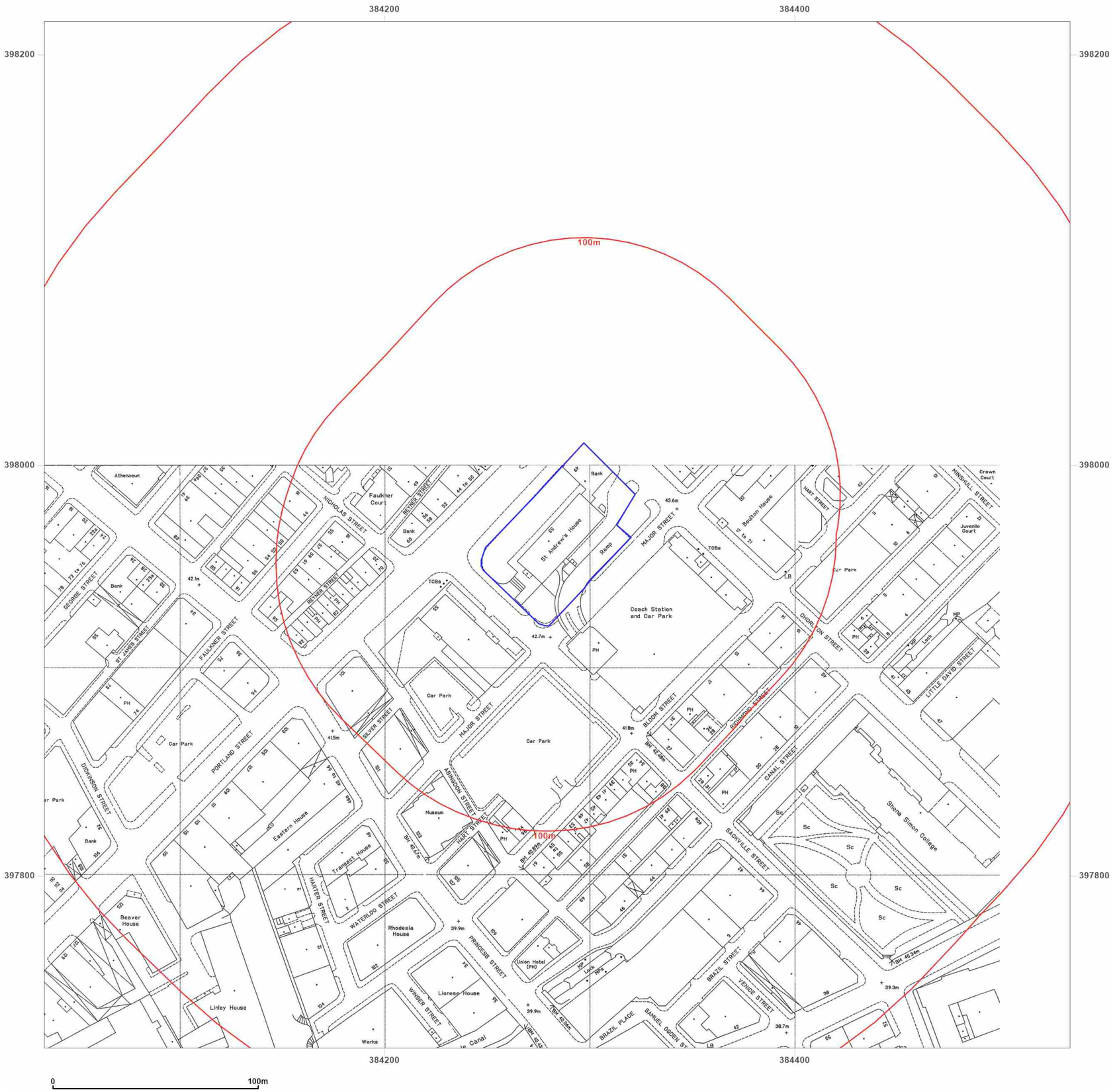
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Site Details:

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MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1994**

Scale: 1:1,250

Printed at: 1:2,000

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Surveyed N/A
Revised 1994
Edition N/A
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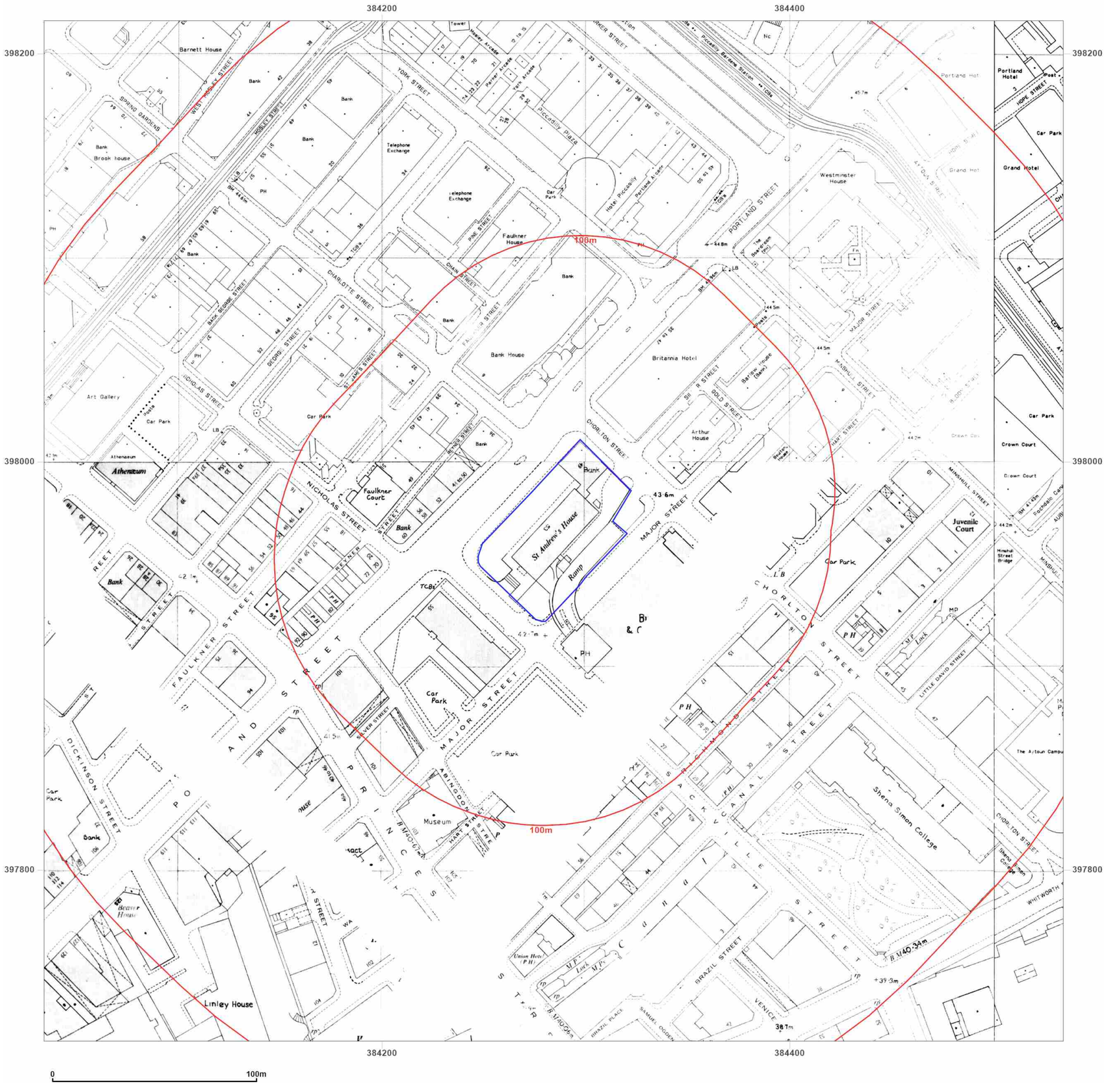
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Site Details:

49-53, PORTLAND STREET,
MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1990-1995**

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1995
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Levelled N/A

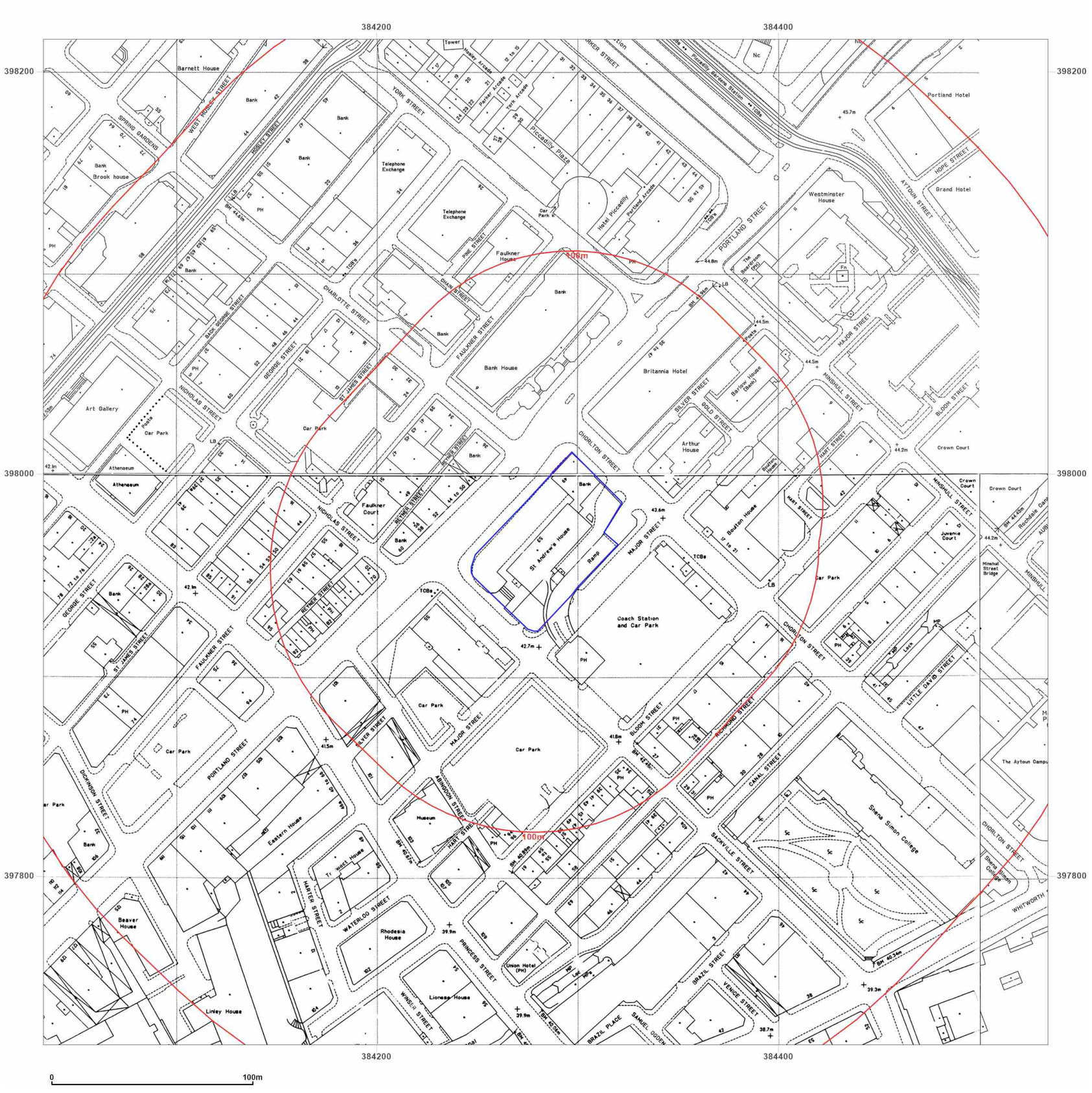
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Groundsure INSIGHTS

Site Details:

49-53, PORTLAND STREET,
MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: National Grid

Map date: **1992-1995**

Scale: 1:1,250

Printed at: 1:2,000

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Revised 1995
Edition N/A
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Levelled N/A

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

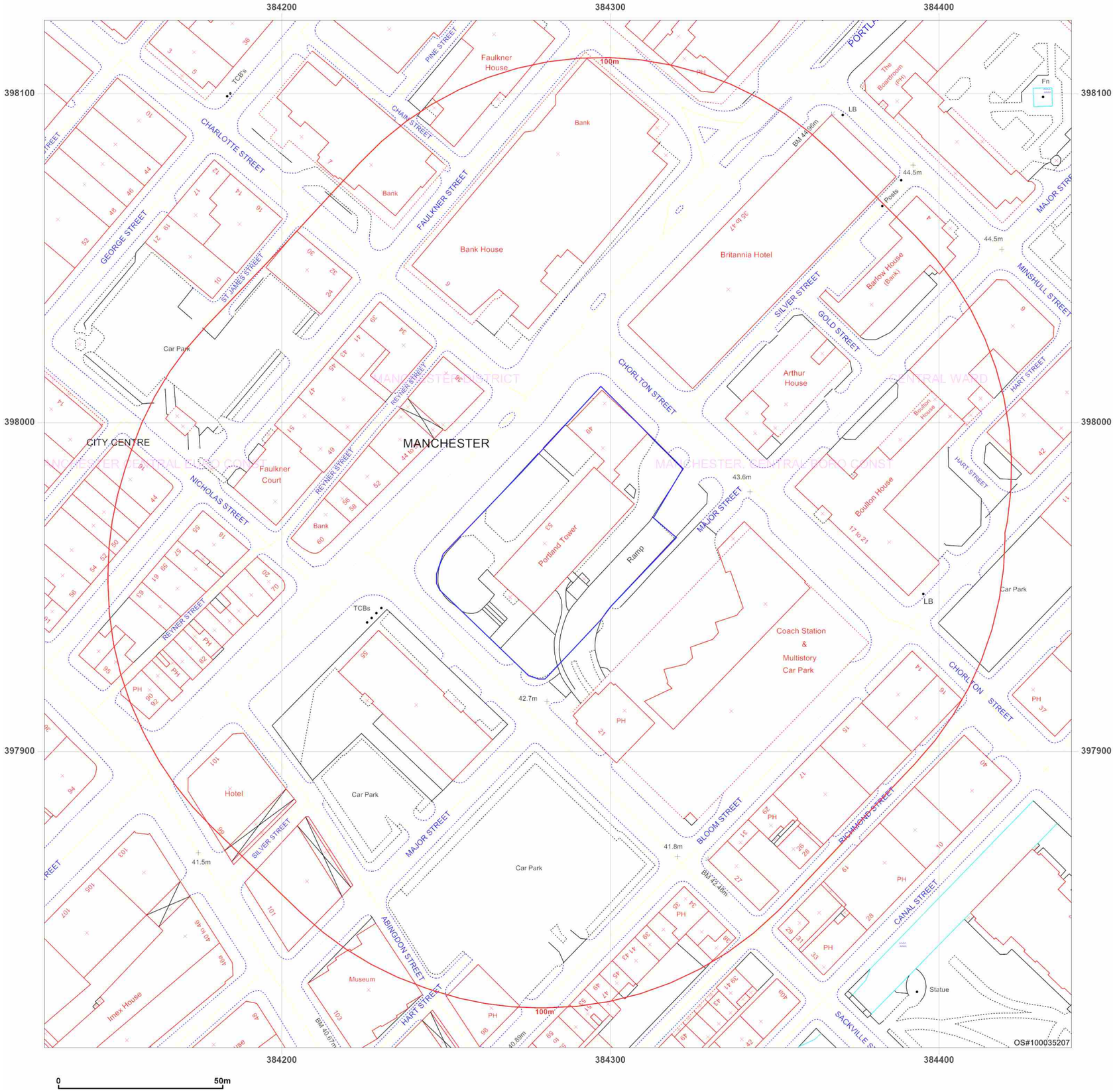
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Groundsure INSIGHTS

Site Details:

49-53, PORTLAND STREET,
MANCHESTER, M1 3LD

Client Ref: NX469
Report Ref: GS-8905457
Grid Ref: 384284, 397966

Map Name: LandLine

Map date: **2003**

Scale: 1:1,250

Printed at: 1:1,250

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2003

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Production date: 14 July 2022

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Appendix C – Exploratory Hole Logs

NX Consulting

WINDOW SAMPLER BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				WS01
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	07-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.10	ES					0.35	MADE GROUND: Grass over dark brown fine to coarse clayey slightly organic sand with some fine to coarse angular to sub angular gravel of ash, sandstone, mudstone, coal, slate, concrete, brick (Topsoil).		
						(0.85)	MADE GROUND: Uncompact brown fine to coarse sandy angular to sub angular gravel of brick, concrete, slate, glass, tiles. Some half and intact brick cobbles. Rare timber.		
1.00	ES S D					1.20			
1.00		N12					MADE GROUND: Orange brown fine to coarse ashy sandy gravel of concrete, brick, ash and clinker. Some brick cobbles.		
						(1.30)			
2.00	SPT D					2.50			
2.00		N2					MADE GROUND: Grey brown fine to medium sandy angular to sub angular gravel of brick, cement, sandstone, clinker, ceramics.		
						(0.50)			
3.00	ES S D					3.00			
3.00		N5					GLACIAL TILL: Firm to stiff to stiff brown sandy gravelly CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, coal and other mixed lithology. Some coal traces.		
4.00	SPT								
4.00		N25				(2.45)			
5.00	SPT								
5.00		N29				5.45			
							...borehole ended at 5.45mbgl.		

Boring Progress and Water Observations						Chiselling			Water Added	
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To

GENERAL REMARKS

No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:46.875	Client Burntwood Scitech	Method/ Plant Used Tracked Archway Dart	Logged By MN

AGS3 UK WS NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 18/2/25

NX Consulting

WINDOW SAMPLER BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				**WS02**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	07-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.15	MADE GROUND: Grass over dark brown fine to coarse clayey slightly organic sand with sandstone, mudstone, coal, slate, concrete, brick and gravel . Some roots and rootlets (Topsoil).		
0.20	ES						MADE GROUND: Brown black ashy sandy gravel. Gravel is fine to coarse, angular to subrounded of ash, clinker, brick, sandstone and other mixed lithology.		
1.00	SPT					(1.65)			
1.00		N3							
1.50	ES					1.80			
						(0.60)	MADE GROUND: Loose to medium dense yellow brown slightly ashy slightly clayey sandy gravel. Gravel is fine to coarse, angular to subrounded of brick, ash, ceramic and other mixed lithology.		
2.00	SPT					2.40			
2.00		N5					MADE GROUND: Brown black fine to coarse sandy clayey gravel of ash, clinker, brick, cement, glass, timber fragments, wire. Some clay pockets.		
3.00	SPT								
3.00		N11							
3.50	ES					(3.05)			
4.00	SPT								
4.00		N9							
4.50	ES								
5.00	SPT								
5.00		N21				5.45			
							...borehole ended at 5.45mbgl.		

Boring Progress and Water Observations						Chiselling			Water Added	
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To

GENERAL REMARKS

No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:46.875	Client Burntwood Scitech	Method/ Plant Used Tracked Archway Dart	Logged By MN

AGS3 UK WS NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 18/2/25

NX Consulting

WINDOW SAMPLER BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				WS03
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	07-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.15	MADE GROUND: Grass over dark brown fine to coarse clayey slightly organic sand with sandstone, mudstone, coal, slate, concrete, brick and gravel . Some roots and rootlets (Topsoil).		
0.80	ES					(1.30)	MADE GROUND: Brown black ashy sandy gravel. Gravel is fine to coarse, angular to subrounded of ash, clinker, brick, sandstone and other mixed lithology.		
1.00	SPT								
1.00		N5				1.45			
						(0.55)	No recovery. Probable cobble.		
						2.00			
2.00	SPT					(0.45)	MADE GROUND: Red brown black ashy sandy gravel. Gravel is fine to coarse, angular to subrounded of ash, clinker, brick and other mixed lithology.		
2.00		N4				2.45			
2.50	ES					(0.55)	No recovery. Probable cobble.		
						3.00			
3.00	SPT					(0.45)	MADE GROUND: Red brown black ashy sandy gravel. Gravel is fine to coarse, angular to subrounded of ash, clinker, brick and other mixed lithology.		
3.00		N7				3.45			
						(0.55)	No recovery. Probable cobble.		
						4.00			
4.00	SPT					(0.45)	MADE GROUND: Black fine to coarse silty sandy gravel of ash, brick and clinker.		
4.00		N10				4.45			
						(0.55)	No recovery. Probable cobble.		
4.80	ES					5.00			
5.00	SPT					(0.45)	MADE GROUND: Red brown adn black fine to coarse silty sandy gravel of ash, brick, slate, cement and clinker.		
5.00		N50				5.45			
							...borehole ended at 5.45mbgl.		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

GENERAL REMARKS

No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:46.875	Client Burntwood Scitech	Method/ Plant Used Tracked Archway Dart	Logged By MN

AGS3 UK WS NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 18/2/25

NX Consulting

WINDOW SAMPLER BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				**WS04**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	07-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.15	MADE GROUND: Paving slab over sand blind.		
						0.25	MADE GROUND: Lean mix concrete. Recovered as angular fine to coarse gravel and cobbles.		
						0.40	MADE GROUND: Yellow grey brown fine to coarse angular sandstone gravel over cloth geotextile membrane.		
0.50	ES						MADE GROUND: Red brown fine to coarse angular ashy gravel of brick, cement, clinker, concrete, ceramic, cloth, wire, sandstone, slate and mudstone. Some cobbles of brick and concrete.		
1.00	SPT								
1.00		N22							
1.40	ES								
						(2.80)			
2.00	SPT								
2.00		N14							
3.00	SPT					3.20			
3.00		N7					GLACIAL TILL: Firm to stiff to stiff brown sandy gravelly CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, coal and other mixed lithology.		
4.00	ES								
4.00	SPT								
4.00		N1				(2.25)			
5.00	SPT								
5.00		N28							
						5.45			
							Borehole ended at 5.45m bgl		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

GENERAL REMARKS

No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:46.875	Client Burntwood Scitech	Method/ Plant Used Tracked Archway Dart	Logged By MN

AGS3 UK WS NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 18/2/25

NX Consulting

WINDOW SAMPLER BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				**WS05**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	10-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 1

SAMPLES & TESTS			Water	STRATA					
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	Geology	Instrument/ Backfill
						0.15	MADE GROUND: Paving slab over sand blind.		
						0.25	MADE GROUND: Lean mix concrete. Recovered as angular fine to coarse gravel and cobbles.		
						0.40			
0.50	ES					(0.80)	MADE GROUND: Yellow grey brown fine to coarse angular sandstone gravel over cloth geotextile membrane.		
1.00		N50/ 80mm				1.20	MADE GROUND: Red brown fine to coarse angular ashy gravel of brick, cement, concrete, tiles, sandstone, slate and mudstone. Some cobbles of brick and concrete. Obstruction at 1.20m bgl preventing progress.		
1.50		N50/ 0mm					...borehole ended at 1.20m bgl due to obstruction.		
5.00	ES								

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:46.875	Client Burntwood Scitech	Method/ Plant Used Tracked Archway Dart	Logged By MN

AGS3 UK WS NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 18/2/25

NX Consulting

WINDOW SAMPLER BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				WS06
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	07-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.15	MADE GROUND: Compact black ashy fine to coarse slightly sandy angular gravel of tarmacadam.		
						(1.05)	MADE GROUND: Compact grey ashy sandy gravel. Gravel is fine to coarse, angular to subrounded of limestone and other mixed lithology.		
0.90	ES					1.20			
						1.50	MADE GROUND: Medium dense brown slightly ashy slightly clayey sandy gravel. Gravel is fine to coarse, angular to subrounded of brick, ash, limestone, concrete and other mixed lithology.		
1.45	SPT						...borehole ended at 1.50m bg on obstruction		
1.45		N50/ 0mm							

Boring Progress and Water Observations						Chiselling			Water Added	
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To

GENERAL REMARKS

No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:46.875	Client Burntwood Scitech	Method/ Plant Used Tracked Archway Dart	Logged By MN

AGS3 UK WS NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 18/2/25

NX Consulting

WINDOW SAMPLER BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				WS07
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	13-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.35	MADE GROUND: Grass over dark brown fine to coarse clayey slightly organic sand with some fine to coarse angular to sub angular gravel of ash, cloth, sandstone, mudstone, coal, slate, concrete, brick (Topsoil).		
0.50	ES						MADE GROUND: Uncompact brown fine to coarse sandy angular to sub angular gravel of brick, concrete, slate, glass, tiles. Some half and intact brick cobbles.		
1.00	SPT								
1.00		N11							
1.50	ES					(2.65)			
2.00	SPT								
2.00		N10							
						3.00			
3.00	SPT						GLACIAL TILL: Firm to stiff to stiff brown sandy gravelly CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, coal and other mixed lithology. Some coal traces.		
3.00		N3							
3.50	ES								
4.00	SPT								
4.00		N19				(2.45)			
4.80	ES								
5.00	SPT								
5.00		N30							
						5.45			
							...borehole ended at 5.45mbgl.		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

GENERAL REMARKS

No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:46.875	Client Burntwood Scitech	Method/ Plant Used Tracked Archway Dart	Logged By MN

AGS3 UK WS NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 18/2/25

NX Consulting

WINDOW SAMPLER BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				**WS08**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	13-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.15	ES					0.35	MADE GROUND: Grass over dark brown fine to coarse clayey slightly organic sand with some fine to coarse angular to sub angular gravel of ash, cloth, sandstone, mudstone, coal, slate, concrete, brick (Topsoil).		
1.00	ES					(2.65)	MADE GROUND: Uncompact black brown fine to coarse sandy angular to sub angular ashy gravel of brick, concrete, clinker, glass, ceramic. Rare half and intact brick cobbles.		
1.00	SPT								
1.00		N5							
2.00	ES								
2.00	SPT								
2.00		N12				3.00			
3.00	SPT					(2.45)	GLACIAL TILL: Firm to stiff to stiff brown sandy gravelly CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, coal and other mixed lithology. Some coal traces.		
3.00		N23							
3.50	ES								
4.00	SPT								
4.00		N17							
5.00	SPT								
5.00		N26				5.45			
							...borehole ended at 5.45mbgl.		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

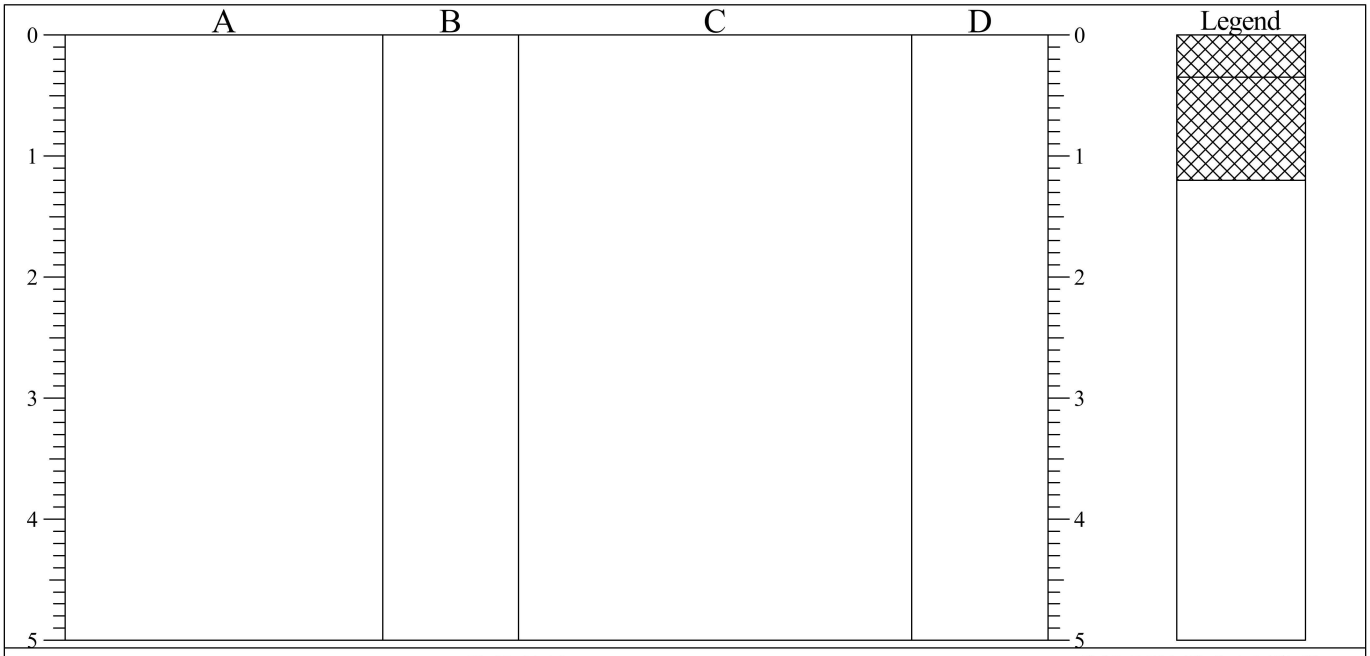
All dimensions in metres Scale 1:46.875	Client Burntwood Scitech	Method/ Plant Used Tracked Archway Dart	Logged By MN

AGS3 UK WS NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 18/2/25

NX Consulting

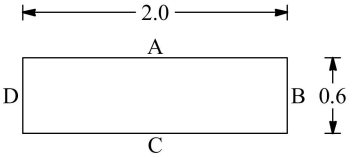
TRIAL PIT LOG

Project				TRIAL PIT No
Manchester One Extension				TP01
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	13-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.35		MADE GROUND: Grass over dark brown fine to coarse clayey sand with sandstone, mudstone, coal, slate, concrete, brick, ash and gravel of mixed lithology(Topsoil). Some roots and rootlets			
0.35-1.20		MADE GROUND: Uncompact brown and black fine to coarse ashy sandy angular to sub angular gravel and cobbles of brick, concrete, tile, ash, slate and rare glass. Some ash infill and local pockets of clay/sand. Much cobbles of brick/half brick (30%). Some timber and tree roots to 0.80m bgl.	0.30 0.50	CBR CBR	
1.20		...trial pit ended at 1.20m bgl due to spalling and collapse.			

Shoring/Support: None
Stability: Very poor





GENERAL REMARKS

Unable to progress further due to collapse and spalling within trial pit.
No groundwater recorded.
No visual or olfactory evidence

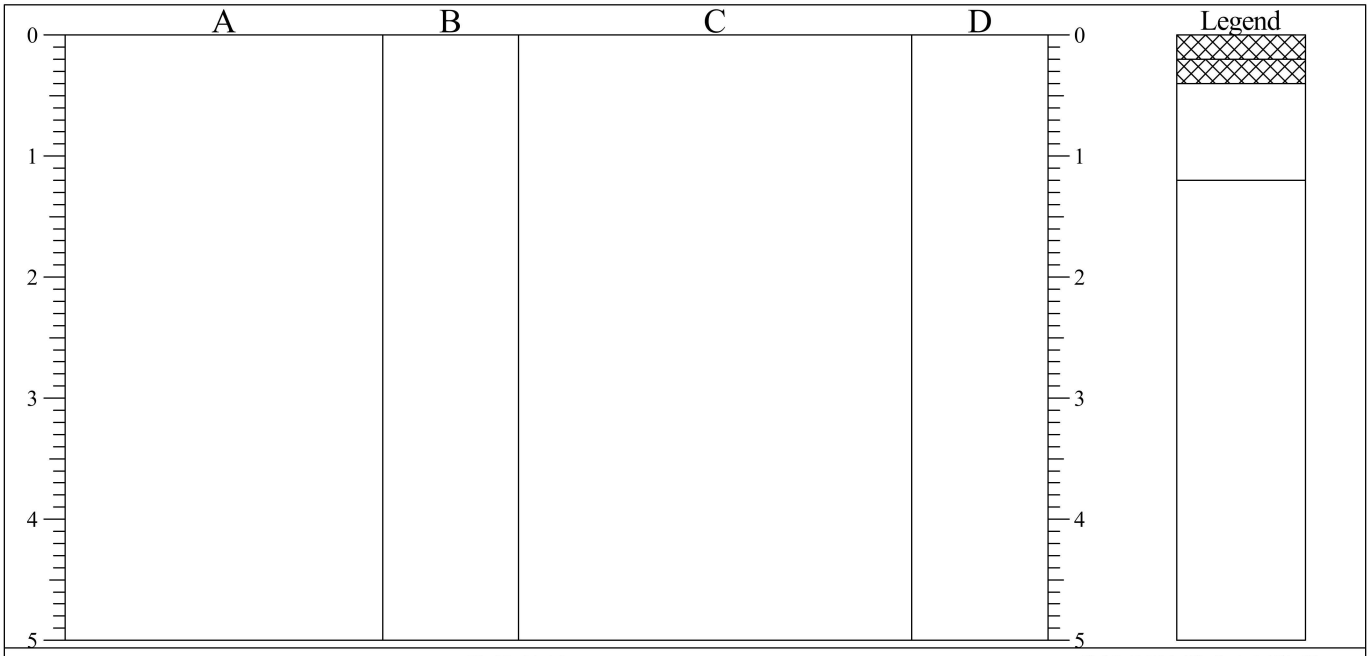
All dimensions in metres Scale 1:62.5	Client Bruntwood Scitech	Method/ Plant Used 8t tracked excavator	Logged By MN

AGS3 UK TP NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 3/3/25

NX Consulting

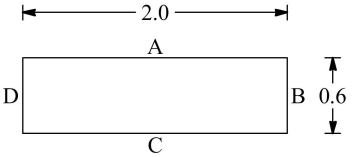
TRIAL PIT LOG

Project				TRIAL PIT No
Manchester One Extension				**TP02**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	13-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.20 0.20-0.40		MADE GROUND: Grass over dark brown fine to coarse clayey sand with sandstone, mudstone, coal, slate, concrete, brick, ash and gravel of mixed lithology(Topsoil).			
0.40-1.20		MADE GROUND: Grey brown fine to coarse sandy gravel of ash. brick, cement, clinker, cement, wire, glass. Some cobbles of brick.	0.40 0.60	CBR CBR	
		MADE GROUND: Grey orange brown fine to coarse silty clayey sand with much half and full brick cobbles. Some black burnt black fabric materials.			
1.20		...trial pit ended at 1.20m bgl due to spalling and collapse.			

Shoring/Support: None
Stability: Very poor





GENERAL REMARKS

Unable to progress further due to collapse and spalling within trial pit.
No groundwater recorded.
No visual or olfactory evidence

All dimensions in metres Scale 1:62.5	Client Bruntwood Scitech	Method/ Plant Used 8t tracked excavator	Logged By MN

AGS3 UK TP NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 3/3/25

NX Consulting

CABLE TOOL BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				RBH01
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	13-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 2

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.30	MADE GROUND: Grass over dark brown fine to coarse clayey sand with sandstone, mudstone, coal, slate, concrete, brick and gravel (Topsoil).		
0.50	BULK						MADE GROUND: Uncompact brown fine to coarse sandy angular to sub angular gravel of brick, concrete, slate, glass, tiles. Some half and intact brick cobbles. Rare timber.		
1.00		N8							
1.20	S D					(2.50)			
2.00	S D								
2.00		N9				2.80			
2.90	SV	96kpa					GLACIAL TILL: Firm to stiff to stiff brown sandy gravelly CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, coal and other mixed lithology.		
3.00	S D B								
3.00		N10							
3.90	SV	120kpa							
4.00	S D B								
4.00		N28							
5.00	S D B								
5.00		N11							
6.00	S D								
6.00		N19							
6.90	SV	>134kpa							
7.50	S D								
7.50		N17				(10.60)			
9.00	S D B								
9.00	SV	125kpa							
9.00		N26							
10.50	S D								
10.50		N31							
12.00	S D								
12.00		N31							
						13.40			
13.50	S D						HIGHLY WEATHERED SANDSTONE: Recovered as dense fine to coarse silty sand with some fine to coarse angular gravel of sandstone. Rare rounded gravel of mixed lithology.		
13.50		N50/ 50mm				14.00	Borehole continued as a Cored Drillhole		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:93.75	Client Burntwood Scitech	Method/ Plant Used Beretta T41	Logged By MN

AGS3 UK BH NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 17/2/25

NX Consulting **ROTARY CORE BOREHOLE LOG**

Project				DRILLHOLE No
Manchester One Extension				**RBH01**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	13-01-25			
Contractor				Sheet 2 of 2
Taylor Drilling Services				

RUN DETAILS						STRATA				
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION			Geology	Instrument/ Backfill
						Discontinuities	Detail	Main		
14.00	33 (25) 0				14.00			Weak to medium strong poorly cemented reddish brown fine to coarse grained SANDSTONE with occasional mineral inclusions and intraclasts. Horizontal to subhorizontal bedding fractures, thinly spaced, planar, smooth to slightly rough.		
15.00										
	33 (26) 0									
16.00										
	33 (24) 10									
17.00										
	33 (24) 0									
18.50		(50/122mm)			(8.50)	50/122mm				
19.50	0 (0) 0									
	100 (20) 10									
20.50										
	100 (80) 70									
21.50										
	100 (90) 80									
22.50					22.50			...borehole ended at 22.50m bgl.		

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:93.75	Client Burntwood Scitech	Method/ Plant Used Beretta T41	Logged By MN

AGS UK DH.1 NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 17/2/25

NX Consulting

CABLE TOOL BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				RBH02
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	15-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 2

SAMPLES & TESTS			Water	STRATA					
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION	Geology	Instrument/ Backfill
						0.30	MADE GROUND: Grass over dark brown fine to coarse clayey slightly organic sand with some fine to coarse angular gravek of brick, ash, sandstone, slate, concrete and tiles(Topsoil).		
0.50	BULK					0.40	MADE GROUND: Concrete, brick and floor tile boulder (0.25m x 0.30m x 0.18m).		
1.00	S D								
1.00		N8				(2.60)	MADE GROUND: Uncompact brown and black fine to coarse sandy angular to sub angular gravel of brick, concrete, tile, slate and rare glass. Some ash infill and local pockets of clay/sand. Much cobbles of brick/half brick.		
2.00	S D								
2.00		N9				3.00			
3.00	S B D						MADE GROUND: Very compact red brown fine to coarse angular gravel of brick, cement and sandstone.		
3.00		N13				(1.80)			
4.00	S D								
4.00		N13				4.80			
5.00	S D						MADE GROUND: Firm locally stiff brown clay with some fine to coarse angular gravel of brick, ash adn concrete. Less brick gravel from 6.00m bgl.		
5.00		N14				(2.20)			
6.00	S D								
6.00		N13				7.00			
7.50	S B D						GLACIAL TILL: Firm to stiff to stiff brown sandy gravelly CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, coal and other mixed lithology.		
7.50		N22							
9.00	S D								
9.00		N20				(6.00)			
10.50	S D								
10.50		N25							
12.00	BULK								
12.50	D					13.00			
						13.50	HIGHLY WEATHERED SANDSTONE: Recovered as dense fine to coarse silty sand with some fine to coarse angular gravel of sandstone. Rare rounded gravel of mixed lithology.		
							Borehole continued as a Cored Drillhole		

Boring Progress and Water Observations					
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt

Chiselling			Water Added	
From	To	Hours	From	To

GENERAL REMARKS

No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:93.75	Client Burntwood Scitech	Method/ Plant Used Beretta T41	Logged By MN

AGS3 UK BH NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 17/2/25

NX Consulting **ROTARY CORE BOREHOLE LOG**

Project				DRILLHOLE No
Manchester One Extension				**RBH02**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	15-01-25			
Contractor				Sheet
Taylor Drilling Services				2 of 2

RUN DETAILS						STRATA				
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION			Geology	Instrument/ Backfill
						Discontinuities	Detail	Main		
13.50	0 (0) 0				13.50			Weak to medium strong reddish brown fine to coarse grained SANDSTONE with rare mineral inclusions and intraclasts. Subhorizontal bedding fractures, thinly spaced, planar, smooth to slightly rough. Frequent subrounded to rounded gravel of mixed lithology.		
14.50										
	90 (70) 30									
15.50										
	90 (89) 26									
16.50		(50/75mm)								
	90 (20) 0									
17.50										
	100 (70) 40									
18.50										
	100 (80) 60				(11.50)					
19.50										
	100 (75) 55									
20.50										
	100 (85) 70									
21.50										
	100 (95) 18									
22.50										
	100 (49) 37									
23.50										
	100 (10) 0									
24.50										
	100 (80) 40				25.00					
25.50								...borehole ended at 25.00m bgl.		

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:93.75	Client Burntwood Scitech	Method/ Plant Used Beretta T41	Logged By MN

AGS UK DH.1 NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 17/2/25

NX Consulting

CABLE TOOL BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				RBH03
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	17-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 2

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.50	BULK					0.20	MADE GROUND: Paving slab over sand blind and compacted fine to coarse angular limestone gravel .		
1.00	S D						MADE GROUND: Red brown fine to coarse angular gravel of brick, cement, concrete, tiles, cloth, wire, sandstone, slate and mudstone. Some cobbles and boulders of brick and concrete. Relic conctete ground beam/oundation footing in hole at 0.40m. Hand pit extended to bypass obstruction.		
1.00		N7							
2.00	S D					(3.60)			
2.00		N8							
3.00	S B D								
3.00		N12				3.80			
4.00	S D						GLACIAL TILL: Firm to stiff to stiff brown sandy gravelly CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, coal and other mixed lithology.		
4.00		N23							
5.00	S D								
5.00		N21							
6.00	S D								
6.00		N23				(6.00)			
7.50	S B D								
7.50		N26							
9.00	S D								
9.00		N24				9.80			
10.50	S D						HIGHLY WEATHERED SANDSTONE: Recovered as dense fine to coarse silty sand with some fine to coarse angular gravel of sandstone. Rare rounded gravel of mixed lithology.		
10.50		N50				(2.35)			
12.00	BULK					12.15			
12.00		N50					Weak to medium strong reddish brown fine to coarse grained SANDSTONE with rare mineral inclusions and intraclasts. Subhorizontal bedding fractures, thinly spaced, planar, smooth to slightly rough. Rare subrounded to rounded gravel of mixed lithology. Borehole continued as a Cored Drillhole		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:93.75	Client Burntwood Scitech	Method/ Plant Used Beretta T41	Logged By MN

AGS3 UK BH NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 17/2/25

NX Consulting **ROTARY CORE BOREHOLE LOG**

Project				DRILLHOLE No
Manchester One Extension				**RBH03**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	17-01-25			
Contractor				Sheet
Taylor Drilling Services				2 of 2

RUN DETAILS						STRATA				
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION			Geology	Instrument/ Backfill
						Discontinuities	Detail	Main		
13.00	50 (0)							Weak to medium strong reddish brown fine to coarse grained SANDSTONE with rare mineral inclusions and intraclasts. Subhorizontal bedding fractures, thinly spaced, planar, smooth to slightly rough. Rare subrounded to rounded gravel of mixed lithology. *(continued)*		
14.00	0 50 (20) 0									
15.00	50 (25) 10									
16.00	0 (0) 0									
17.00	0 (0) 0									
18.00	0 (0) 0									
19.00	60 (20) 10				(11.85)					
20.00	60 (40) 10									
21.00	60 (30) 20									
22.00	83 (70) 10									
23.00	85 (80) 35									
24.00	83 (85) 20				24.00					
								...borehole ended at 24.00m bgl.		

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

No groundwater recorded. No visual or olfactory evidence of hydrocarbon contamination encountered.

All dimensions in metres Scale 1:93.75	Client Burntwood Scitech	Method/ Plant Used Beretta T41	Logged By MN

AGS UK DH.1 NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 17/2/25

NX Consulting

CABLE TOOL BOREHOLE LOG

Project				BOREHOLE No
Manchester One Extension				RBH04
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	15-01-25			
Contractor				Sheet
Taylor Drilling Services				1 of 2

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
						0.30	MADE GROUND: Grass over dark brown fine to coarse clayey sand with sandstone, mudstone, coal, ash, concrete, brick and gravel (Topsoil).		
0.50	BULK						MADE GROUND: Uncompact brown fine to coarse sandy angular to sub angular gravel of brick, concrete, slate, glass, tiles. Some half and intact brick cobbles. Rare timber. Much burnt black cloth material.		
1.00	S D								
2.00	S D					(3.40)			
3.00	S B D								
						3.70			
4.00	S D						GLACIAL TILL: Firm to stiff to very stiff brown sandy gravelly CLAY. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, coal and other mixed lithology.		
5.00	S D								
6.00	S D					(6.10)			
7.50	S B D								
9.00	S D								
						9.80			
						9.90	GLACIAL TILL: No recovery. Probable boulder or sandstone bedrock (drillers description).		
						10.20	HIGHLY WEATHERED SANDSTONE: Recovered as dense fine to coarse silty sand with some fine to coarse angular gravel of sandstone. Rare rounded gravel of mixed lithology.		
							Borehole continued as a Cored Drillhole		

Boring Progress and Water Observations						Chiselling			Water Added	
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To

GENERAL REMARKS

Borehole collapsed and cobble stuck between casing and core barell between 14.00m and 19.00m bgl. Prevented further drilling.

All dimensions in metres Scale 1:93.75	Client Burntwood Scitech	Method/ Plant Used Beretta T41	Logged By MN

NX Consulting **ROTARY CORE BOREHOLE LOG**

Project				DRILLHOLE No
Manchester One Extension				**RBH04**
Job No	Date	Ground Level (m)	Co-Ordinates ()	
NX587	15-01-25			
Contractor				Sheet
Taylor Drilling Services				2 of 2

RUN DETAILS						STRATA				
Depth / Date	TCR (SCR) RQD	(SPT) Fracture Spacing	Red'cd Level	Legend	Depth (Thick-ness)	DESCRIPTION			Geology	Instrument/ Backfill
						Discontinuities	Detail	Main		
11.00	0 (0) 0				10.20			Weak to medium strong poorly cemented reddish brown fine to coarse grained SANDSTONE with occasional mineral inclusions and intraclasts. Horizontal to subhorizontal bedding fractures, thinly spaced, planar, smooth to slightly rough. Frequent subrounded to rounded gravel of mixed lithology.		
12.00	0 (0) 0									
13.00	0 (0) 0									
14.00	50 (0) 0	(50/235mm)								
15.00	50 (50) 0				(8.80)					
16.00	50 (70) 30									
17.00	0 (0) 0	(50/90mm)								
18.00	0 (0) 0									
19.00	0 (0) 0				19.00					
								...borehole ended at 19.0m bgl due to core barrel being stuck down hole.		

Drilling Progress and Water Observations						
Date	Time	Depth	Casing	Core Dia mm	Water Strike	Water Standing

Rotary Flush			
From	To	Type	Returns

GENERAL REMARKS

Borehole collapsed and cobble stuck between casing and core barell between 14.00m and 19.00m bgl. Prevented further drilling.

All dimensions in metres Scale 1:93.75	Client Burntwood Scitech	Method/ Plant Used Beretta T41	Logged By MN

AGS UK DH.1 NX587 MANCHESTER ONE LOGS 17.02.2025.GPJ AGS 3_1.GDT 17/2/25

Appendix D - Geotechnical Laboratory Test Results

GFQ-008-74
Issue 02 - Nov 23

Summary of Classification Test Results

Project No.
J299715

Project Name
Manchester One Extension

Hole No.	Sample				Soil Description	Density bulk Mg/m³	Density dry Mg/m³	w %	Passing 425µm %	LL %	If 1 Point Test Pen 1	If 1 Point Test Pen 2	If 1 Point Test CF	PL %	PI %	Particle density Mg/m³	Remarks
	Ref	Top	Base	Type													
BH01		2.00	2.45	D	Dark brown gravelly SAND			14.4									Non plastic
BH01	B4	3.00	3.45	D	Brown clayey gravelly SAND			19.8	95S	32 -1pt	21	21	0.984	25	7		
BH01		5.00	5.45	D	Brown slightly sandy slightly gravelly CLAY			17.6	98-hp	41 -1pt	20	20	1	20	21		
BH01		7.50	7.95	D	Brown slightly sandy slightly gravelly CLAY			21.0	99-hp	41 -1pt	19	20	1.01	20	21		
BH01	B9	9.00	9.45	D	Brown slightly sandy slightly gravelly CLAY			13.5	91-w	32 -1pt	20	20	1	16	16		
BH02	B8	7.50	7.95	D	Brown slightly sandy slightly gravelly CLAY			18.9	97-hp	35 -1pt	20	20	1	18	17		
BH03		2.00	2.45	D	Dark brown gravelly SAND			17.5									Non plastic
BH03		4.00	4.45	D	Brown slightly sandy gravelly CLAY			17.5	99-hp	44 -1pt	21	21	0.984	21	23		
BH03	B8	7.50	7.95	D	Brown slightly sandy slightly gravelly CLAY			14.2	91-w	35 -1pt	20	20	1	18	17		
BH03		9.00	9.45	D	Brown mottled grey slightly sandy slightly gravelly CLAY			13.7	94-w	38 -1pt	20	20	1	16	22		
BH04		4.00	4.45	D	Brown slightly sandy slightly gravelly CLAY			18.3	99-n	43 -1pt-i	19	20	1.01	20	23		

Key

Density tests:
Linear measurement unless :
wd - water displacement
wi - immersion in water

w - water content

Atterberg:
4pt cone unless :
cas - Casagrande method
1pt - single point test
CF - Correlation Factor

Liquid limit test: i - increasing moisture content, d - decreasing moisture content

Atterberg sample prep: n - Natural, HP - Hand Picked, w - Washed

Particle density:
sp - fluid pycnometer
gj - gas pycnometer

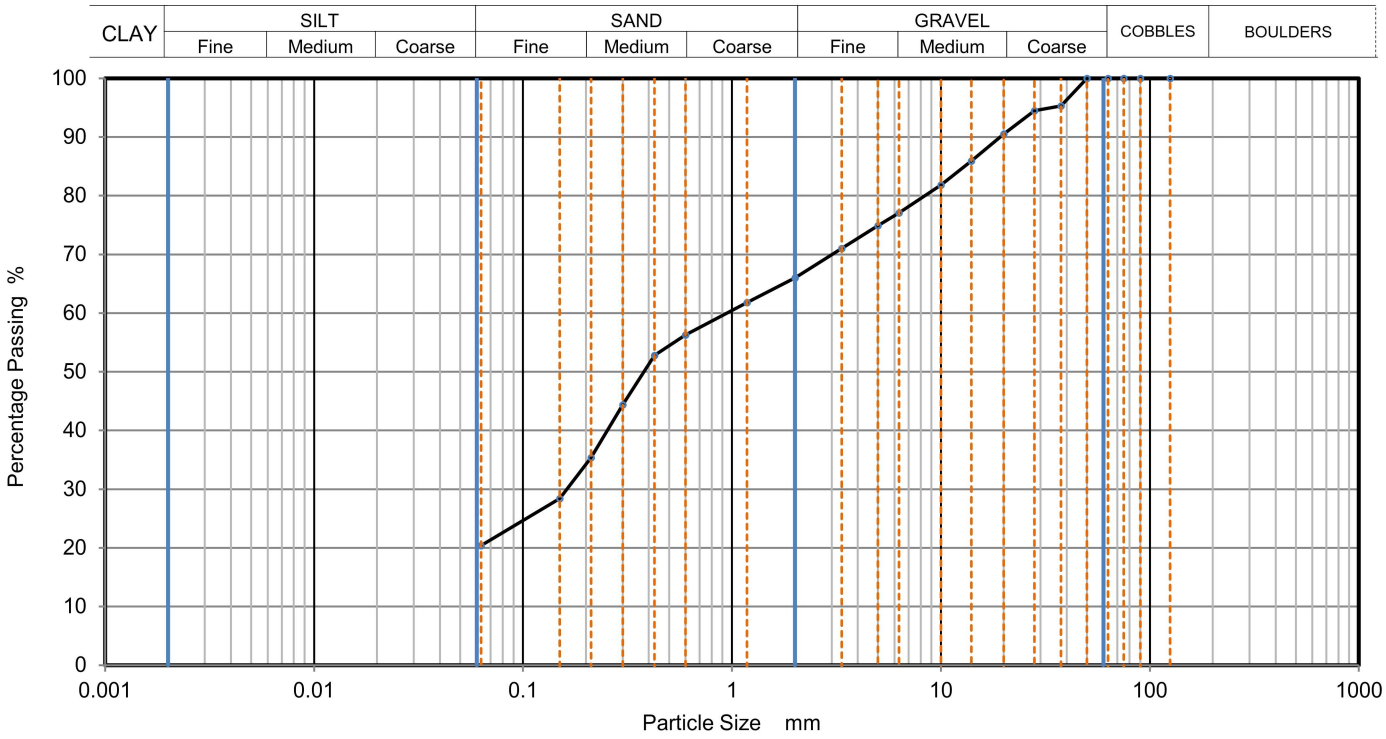
Test Standards:

Bulk Density Tests - BS EN ISO 17892-2:2014
Water Content - BS EN ISO 17892-1:2014+A1:2022
Liquid & Plastic Limits - BS EN ISO 17892-12:2018+A2:2022
Particle Density - BS EN ISO 17892-3:2015

Date Printed:
11/02/2025

ISO INDX

GFQ-008-77 Issue 02 - Nov 23	**Determination of Particle Size Distribution (ISO 17892-4:2016)**			Job Ref	**J299715**
				Borehole/Pit No.	BH01
Project Name	Manchester One Extension			Sample No.	B4
Soil Description	Brown clayey SAND and GRAVEL			Depth, m	3.00
Specimen Reference		Specimen Depth	m	Sample Type	D
Test Method	ISO 17892 -4, by sieving on pre-dried or dry sample			KeyLAB ID	TTLP2025012919



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	95		
28	95		
20	91		
14	86		
10	82		
6.3	77		
5	75		
3.35	71		
2	66		
1.18	62		
0.6	56		
0.425	53		
0.3	44		
0.212	35		
0.15	28		
0.063	20		

Dry Mass of sample, g	4403

Sample Proportions	% dry mass
Very coarse	0
Gravel	34
Sand	46
Fines <0.063mm	20

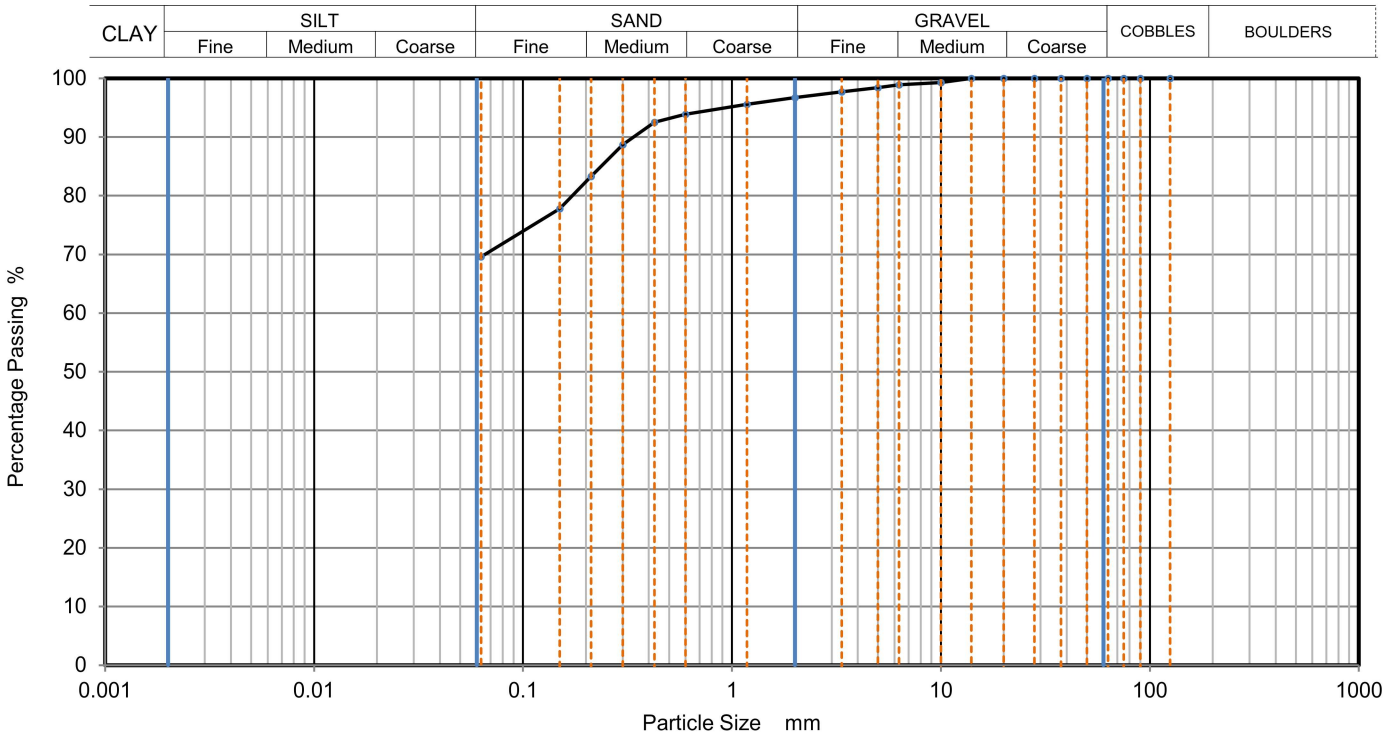
Grading Analysis		
D100	mm	50
D60	mm	0.943
D30	mm	0.163
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		
Pretreatment Method (If Applicable)		

Remarks

Preparation and testing performed to BS EN ISO 17892-4 unless noted below

Date Printed: 11/02/2025		**ISO PSD**

GFQ-008-77 Issue 02 - Nov 23	**Determination of Particle Size Distribution (ISO 17892-4:2016)**			Job Ref	**J299715**
				Borehole/Pit No.	BH01
Project Name	Manchester One Extension			Sample No.	B9
Soil Description	Brown slightly sandy slightly gravelly CLAY			Depth, m	9.00
Specimen Reference		Specimen Depth	m	Sample Type	D
Test Method	ISO 17892 -4, by sieving on pre-dried or dry sample			KeyLAB ID	TTLP2025012922



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	99		
6.3	99		
5	98		
3.35	98		
2	97		
1.18	96		
0.6	94		
0.425	93		
0.3	89		
0.212	83		
0.15	78		
0.063	70		

Dry Mass of sample, g	1572

Sample Proportions	% dry mass
Very coarse	0
Gravel	3
Sand	27
Fines <0.063mm	70

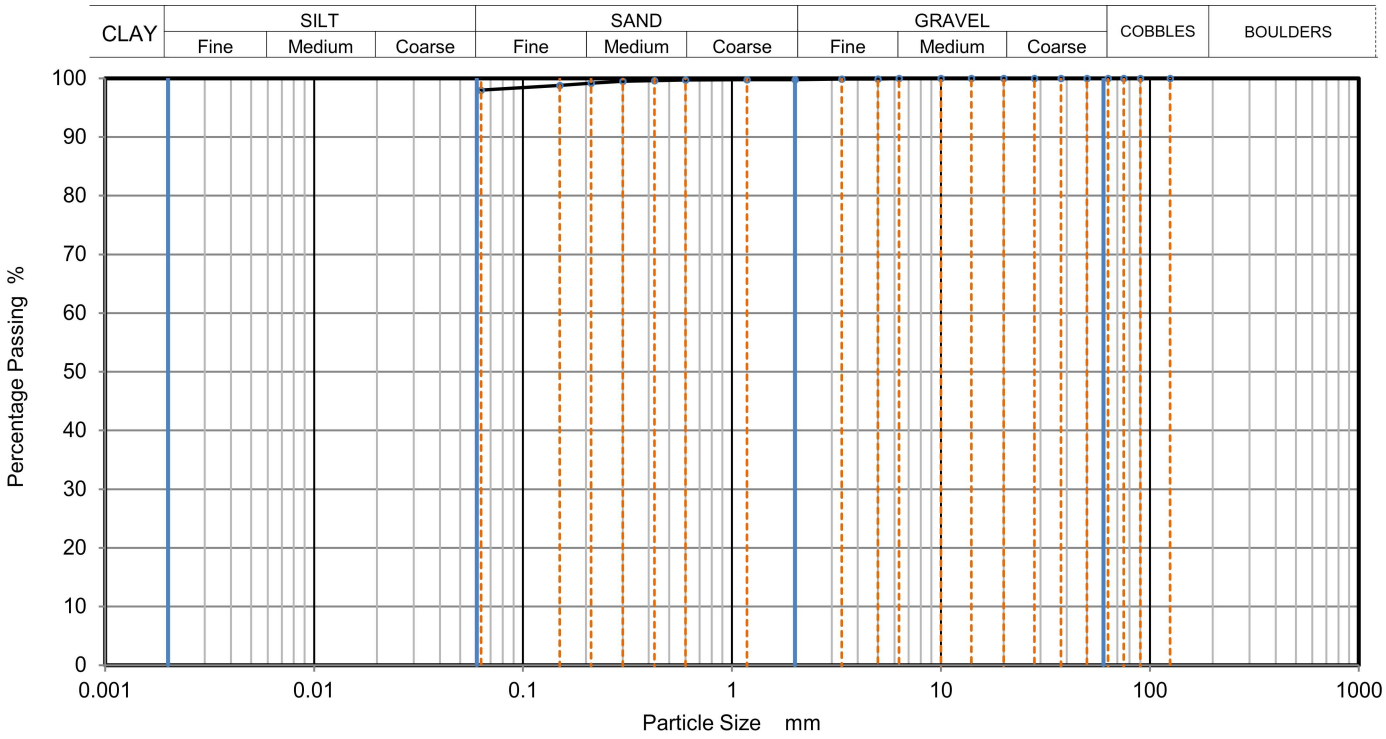
Grading Analysis		
D100	mm	14
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		
Pretreatment Method (If Applicable)		

Remarks

Preparation and testing performed to BS EN ISO 17892-4 unless noted below

Date Printed: 11/02/2025		**ISO PSD**

GFQ-008-77 Issue 02 - Nov 23	**Determination of Particle Size Distribution (ISO 17892-4:2016)**			Job Ref	**J299715**
				Borehole/Pit No.	BH01
Project Name	Manchester One Extension			Sample No.	B11
Soil Description	Brown slightly sandy CLAY			Depth, m	12.00
Specimen Reference		Specimen Depth	m	Sample Type	D
Test Method	ISO 17892 -4, by sieving on pre-dried or dry sample			KeyLAB ID	TTLP2025012923



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	99		
0.15	99		
0.063	98		

Dry Mass of sample, g	917

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	2
Fines <0.063mm	98

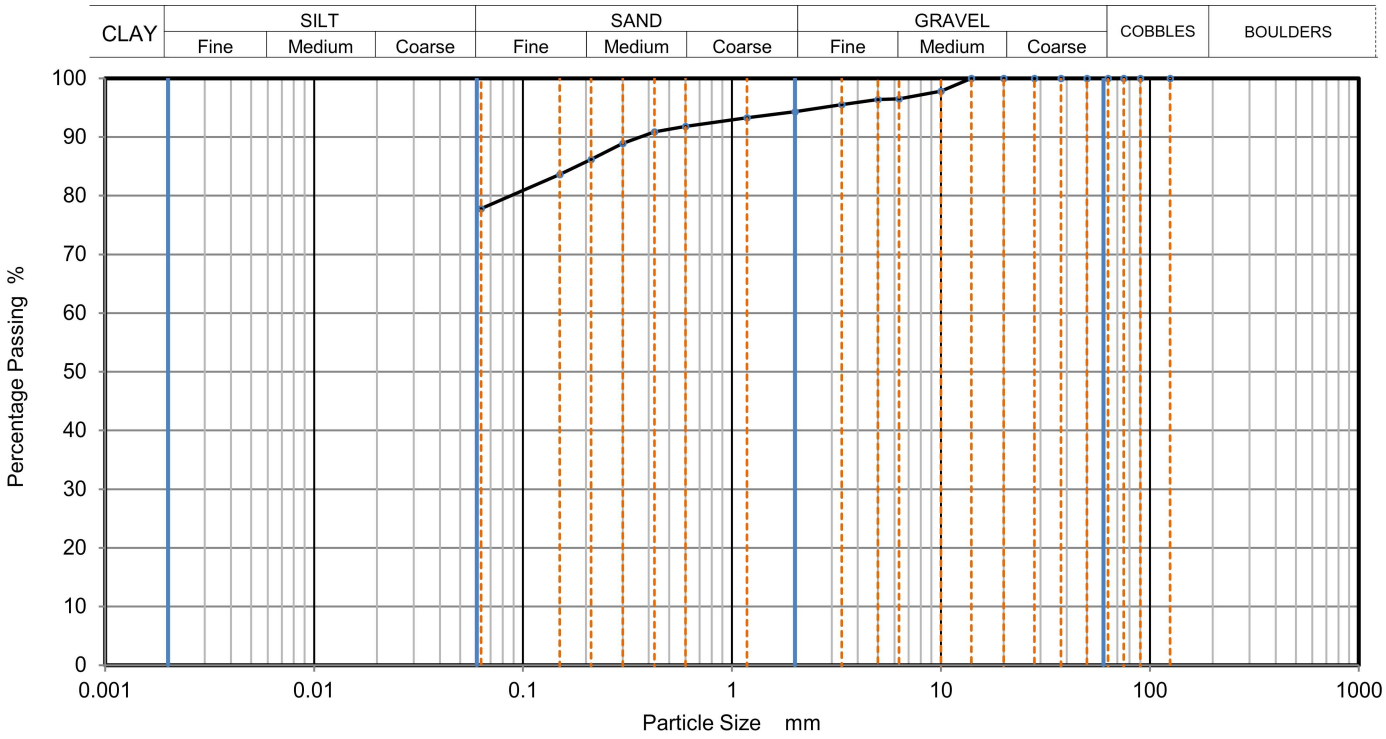
Grading Analysis		
D100	mm	6.3
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		
Pretreatment Method (If Applicable)		

Remarks

Preparation and testing performed to BS EN ISO 17892-4 unless noted below

Date Printed: 11/02/2025		**ISO PSD**

GFQ-008-77 Issue 02 - Nov 23	**Determination of Particle Size Distribution (ISO 17892-4:2016)**			Job Ref	**J299715**
				Borehole/Pit No.	BH02
Project Name	Manchester One Extension			Sample No.	B6
Soil Description	Brown slightly sandy slightly gravelly CLAY			Depth, m	5.00
Specimen Reference		Specimen Depth	m	Sample Type	D
Test Method	ISO 17892 -4, by sieving on pre-dried or dry sample			KeyLAB ID	TTLP2025012924



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	98		
6.3	97		
5	96		
3.35	96		
2	94		
1.18	93		
0.6	92		
0.425	91		
0.3	89		
0.212	86		
0.15	84		
0.063	78		

Dry Mass of sample, g	2026

Sample Proportions	% dry mass
Very coarse	0
Gravel	6
Sand	16
Fines <0.063mm	78

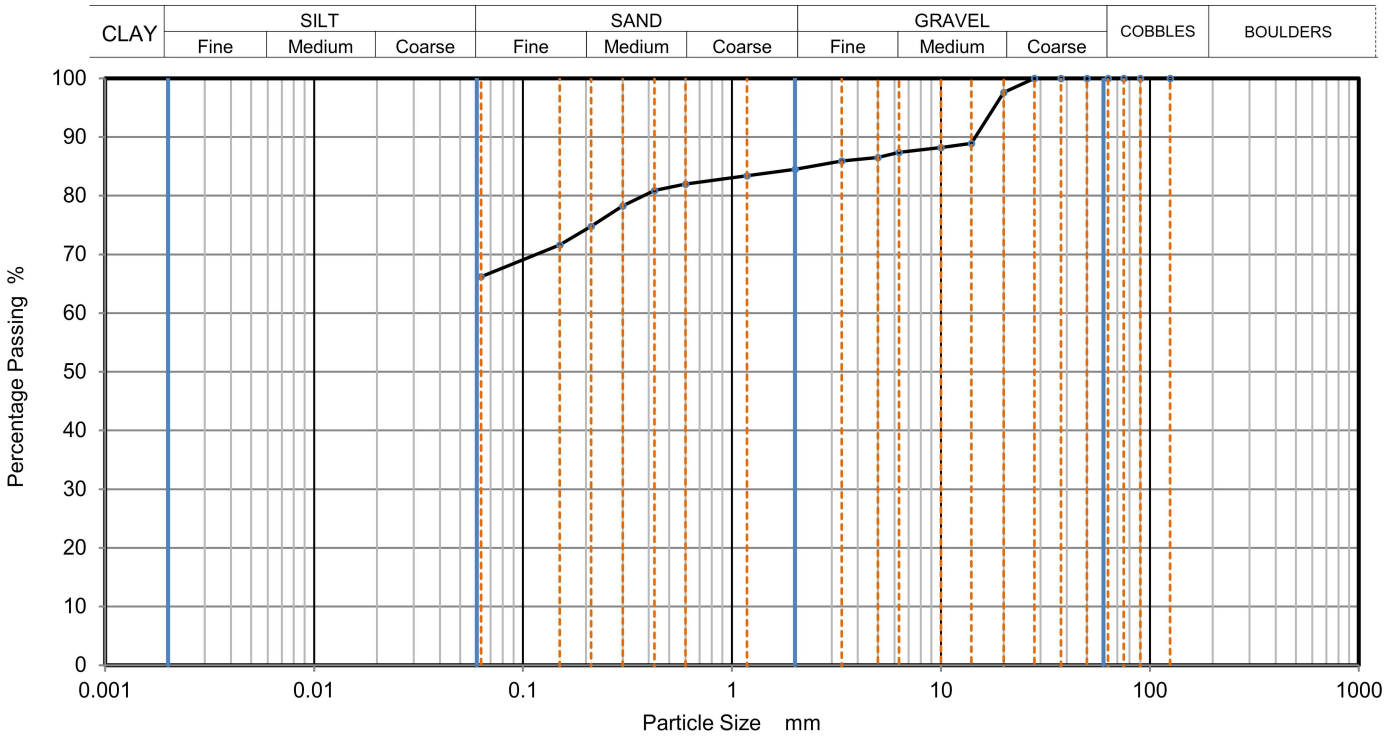
Grading Analysis		
D100	mm	14
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		
Pretreatment Method (If Applicable)		

Remarks

Preparation and testing performed to BS EN ISO 17892-4 unless noted below

Date Printed: 11/02/2025		**ISO PSD**

GFQ-008-77 Issue 02 - Nov 23	**Determination of Particle Size Distribution (ISO 17892-4:2016)**			Job Ref	**J299715**
				Borehole/Pit No.	BH02
Project Name	Manchester One Extension			Sample No.	B8
Soil Description	Brown slightly sandy slightly gravelly CLAY			Depth, m	7.50
Specimen Reference		Specimen Depth	m	Sample Type	D
Test Method	ISO 17892 -4, by sieving on pre-dried or dry sample			KeyLAB ID	TTLP2025012925



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	89		
10	88		
6.3	87		
5	87		
3.35	86		
2	85		
1.18	83		
0.6	82		
0.425	81		
0.3	78		
0.212	75		
0.15	72		
0.063	66		

Dry Mass of sample, g	1765

Sample Proportions	% dry mass
Very coarse	0
Gravel	15
Sand	19
Fines <0.063mm	66

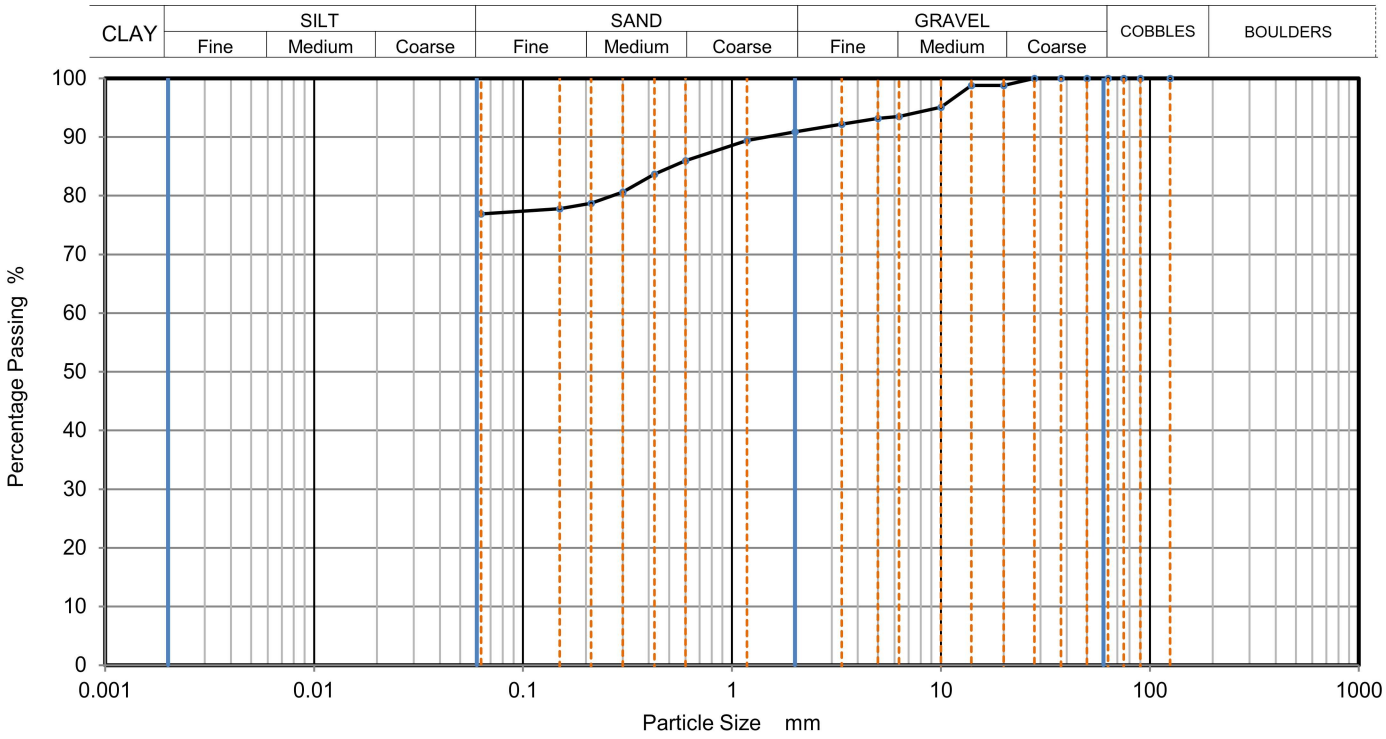
Grading Analysis		
D100	mm	28
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		
Pretreatment Method (If Applicable)		

Remarks

Preparation and testing performed to BS EN ISO 17892-4 unless noted below

Date Printed: 11/02/2025		**ISO PSD**

GFQ-008-77 Issue 02 - Nov 23	**Determination of Particle Size Distribution (ISO 17892-4:2016)**			Job Ref	**J299715**
				Borehole/Pit No.	BH02
Project Name	Manchester One Extension			Sample No.	11
Soil Description	Brown slightly sandy slightly gravelly CLAY			Depth, m	12.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	ISO 17892 -4, by sieving on pre-dried or dry sample			KeyLAB ID	TTLP2025012927



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	99		
10	95		
6.3	94		
5	93		
3.35	92		
2	91		
1.18	89		
0.6	86		
0.425	84		
0.3	81		
0.212	79		
0.15	78		
0.063	77		

Dry Mass of sample, g	1485

Sample Proportions	% dry mass
Very coarse	0
Gravel	9
Sand	14
Fines <0.063mm	77

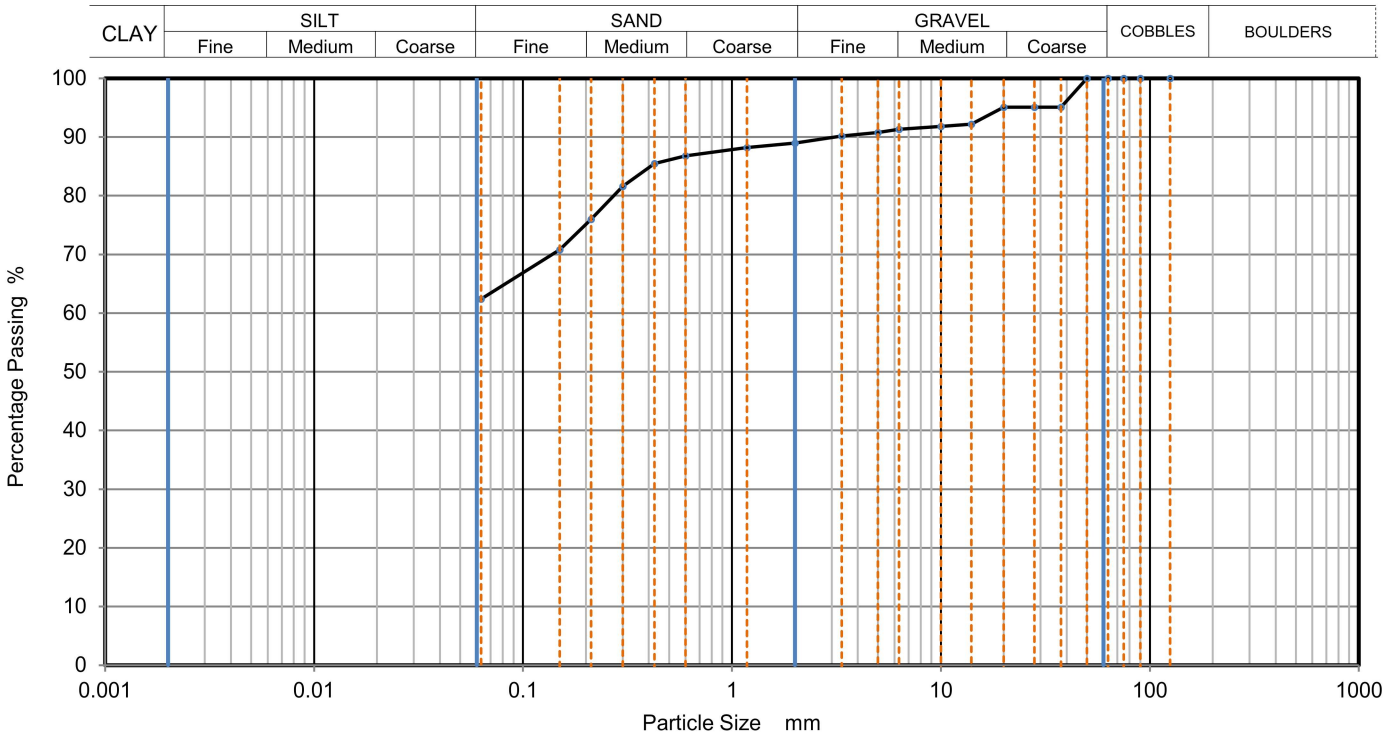
Grading Analysis		
D100	mm	28
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		
Pretreatment Method (If Applicable)		

Remarks

Preparation and testing performed to BS EN ISO 17892-4 unless noted below

Date Printed: 11/02/2025		**ISO PSD**

GFQ-008-77 Issue 02 - Nov 23	**Determination of Particle Size Distribution (ISO 17892-4:2016)**			Job Ref	**J299715**
				Borehole/Pit No.	BH03
Project Name	Manchester One Extension			Sample No.	B8
Soil Description	Brown slightly sandy slightly gravelly CLAY			Depth, m	7.50
Specimen Reference		Specimen Depth	m	Sample Type	D
Test Method	ISO 17892 -4, by sieving on pre-dried or dry sample			KeyLAB ID	TTLP2025012930



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	95		
28	95		
20	95		
14	92		
10	92		
6.3	91		
5	91		
3.35	90		
2	89		
1.18	88		
0.6	87		
0.425	86		
0.3	82		
0.212	76		
0.15	71		
0.063	62		

Dry Mass of sample, g	1986

Sample Proportions	% dry mass
Very coarse	0
Gravel	11
Sand	27
Fines <0.063mm	62

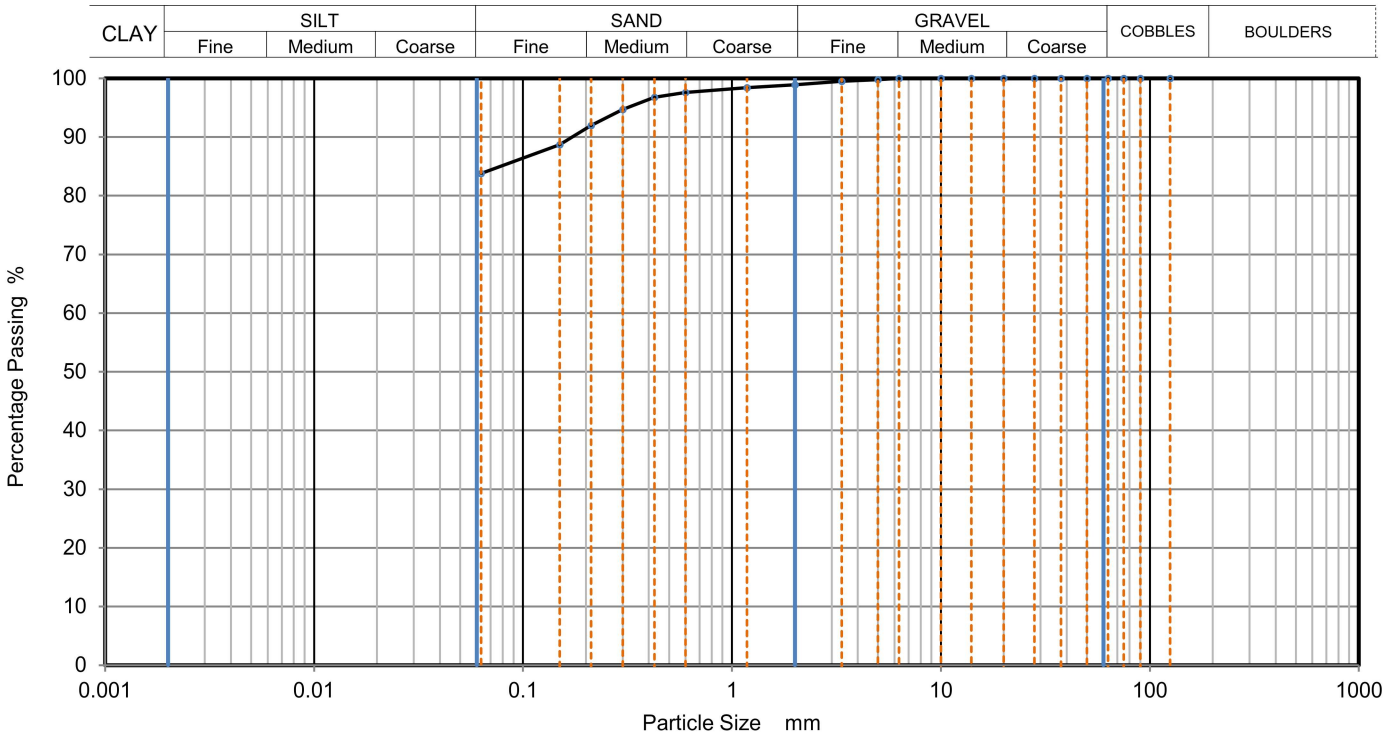
Grading Analysis		
D100	mm	50
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		
Pretreatment Method (If Applicable)		

Remarks

Preparation and testing performed to BS EN ISO 17892-4 unless noted below

Date Printed: 11/02/2025		**ISO PSD**

GFQ-008-77 Issue 02 - Nov 23	**Determination of Particle Size Distribution (ISO 17892-4:2016)**			Job Ref	**J299715**
				Borehole/Pit No.	BH04
Project Name	Manchester One Extension			Sample No.	5
Soil Description	Brown slightly sandy slightly gravelly CLAY			Depth, m	3.70
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	ISO 17892 -4, by sieving on pre-dried or dry sample			KeyLAB ID	TTLP2025012933



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	99		
1.18	98		
0.6	98		
0.425	97		
0.3	95		
0.212	92		
0.15	89		
0.063	84		

Dry Mass of sample, g	1575

Sample Proportions	% dry mass
Very coarse	0
Gravel	1
Sand	15
Fines <0.063mm	84

Grading Analysis		
D100	mm	6.3
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		
Pretreatment Method (If Applicable)		

Remarks

Preparation and testing performed to BS EN ISO 17892-4 unless noted below

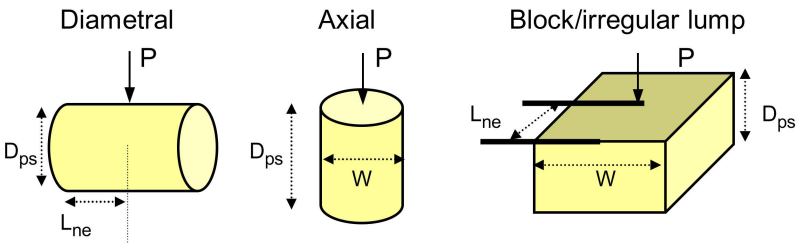
Date Printed: 11/02/2025		**ISO PSD**

Point Load Index Test
ISRM:2007

Project No	Project Name
J299715	Manchester One Extension

All specimens tested at **as received water content** unless shown otherwise

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction (U = unknown or random)
L - parallel to planes of weakness
P - perpendicular to planes of weakness
Dimensions
D_{ps} - Distance between platens (platen separation)
D_{ps}' - at failure (see ISRM note 6)
L_{ne} - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Borehole	Depth, m	Sample Ref	Sample Type	Specimen Ref	Specimen Depth	Rock type	Test Type see ISRM Fig 5 and 8		Failure Valid (Y/N)	Dimensions				LOAD P	De equivalent diameter, mm	Point Load Index MPa $F = (De/50)^{0.45}$		Remarks
							Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm	kN		I_s	$I_{s(50)}$	
RBH01	18.50			C		Sandstone	D	L	Y	55.0	8.5	85.0	80.0	0.40	26.03	0.59	0.44	
RBH01	18.50			C		Sandstone	A	P	Y		85.5	52.0	48.0	0.90	72.27	0.17	0.20	
RBH01	20.50			C		Sandstone	D	L	Y	54.0	85.2	85.0	83.0	0.40	84.07	0.06	0.07	
RBH01	20.50			C		Sandstone	A	P	Y		85.2	48.0	44.0	1.50	69.07	0.31	0.36	
RBH01	21.70			C		Sandstone	D	L	Y	61.0	85.4	85.0	83.0	1.00	84.20	0.14	0.18	
RBH01	21.70			C		Sandstone	A	P	Y		85.4	55.0	51.0	1.30	74.48	0.23	0.28	
RBH01	21.60			C		Sandstone	D	L	Y	50.0	85.3	85.0	83.0	0.70	84.16	0.10	0.12	
RBH01	21.60			C		Sandstone	A	P	Y		85.3	59.0	55.0	1.00	77.30	0.17	0.20	
RBH02	17.60			C		Sandstone	D	L	Y	50.0	85.2	85.0	83.0	0.70	84.11	0.10	0.13	
RBH02	17.60			C		Sandstone	A	P	Y		85.2	50.0	45.0	1.10	69.88	0.23	0.26	
RBH02	18.00			C		Sandstone	D	L	Y	51.0	85.7	85.0	83.0	1.00	84.33	0.14	0.18	
RBH02	18.00			C		Sandstone	A	P	Y		85.7	48.0	45.0	1.40	70.06	0.29	0.33	
RBH02	18.90			C		Sandstone	D	L	Y	53.0	85.1	85.0	83.0	1.20	84.06	0.17	0.21	
RBH02	18.90			C		Sandstone	A	P	Y		85.1	60.0	55.0	1.50	77.21	0.25	0.31	
RBH02	21.30			C		Sandstone	D	L	Y	49.0	85.1	85.0	83.0	0.90	84.05	0.13	0.16	
RBH02	21.30			C		Sandstone	A	P	Y		85.1	54.0	50.0	1.60	73.61	0.30	0.35	
RBH02	23.10			C		Sandstone	D	L	Y	51.0	84.1	84.0	81.0	0.40	82.56	0.06	0.07	
RBH02	23.10			C		Sandstone	A	P	Y		84.1	58.0	55.0	0.80	76.76	0.14	0.16	
RBH02	24.70			C		Sandstone	D	L	Y	53.0	84.7	84.0	82.0	1.50	83.33	0.22	0.27	
RBH02	24.70			C		Sandstone	A	P	Y		84.7	45.0	41.0	1.80	66.49	0.41	0.46	

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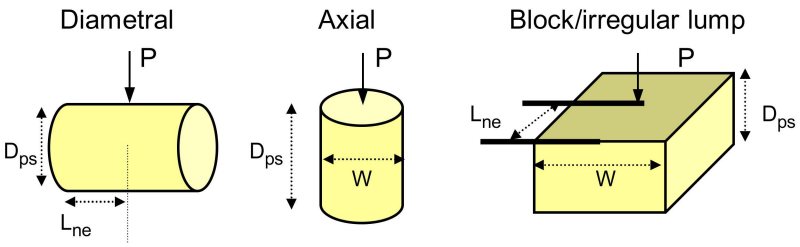
Figure
PLT

Point Load Index Test
ISRM:2007

Project No	Project Name
J299715	Manchester One Extension

All specimens tested at **as received water content** unless shown otherwise

Test Type
D - Diametral, A - Axial, I - Irregular Lump, B - Block
Direction (U = unknown or random)
L - parallel to planes of weakness
P - perpendicular to planes of weakness
Dimensions
D_{ps} - Distance between platens (platen separation)
D_{ps}' - at failure (see ISRM note 6)
L_{ne} - Length from platens to nearest free end
W - Width of shortest dimension perpendicular to load, P



Borehole	Depth, m	Sample Ref	Sample Type	Specimen Ref	Specimen Depth	Rock type	Test Type see ISRM Fig 5 and 8		Failure Valid (Y/N)	Dimensions				LOAD P	De equivalent diameter, mm	Point Load Index MPa $F = (De/50)^{0.45}$		Remarks
							Type (D, A, I, B)	Direction (L, P or U)		Lne mm	W mm	Dps mm	Dps' mm	kN		I_s	$I_{s(50)}$	
RBH02	25.00			C		Sandstone	D	L	Y	49.0	85.2	85.0	82.0	1.40	83.56	0.20	0.25	
RBH02	25.00			C		Sandstone	A	P	Y		85.2	55.0	50.0	1.80	73.63	0.33	0.40	
RBH03	12.90			C		Sandstone	D	L	Y	50.0	85.5	85.0	82.0	1.10	83.71	0.16	0.20	
RBH03	12.90			C		Sandstone	A	P	Y		85.5	51.0	48.0	1.40	72.27	0.27	0.32	
RBH03	18.10			C		Sandstone	D	L	Y	55.0	86.4	86.0	84.0	1.00	85.19	0.14	0.18	
RBH03	18.10			C		Sandstone	A	P	Y		86.4	62.0	60.0	1.20	81.24	0.18	0.23	
RBH03	21.80			C		Sandstone	D	L	Y	51.0	85.6	85.0	83.0	0.90	84.29	0.13	0.16	
RBH03	21.80			C		Sandstone	A	P	Y		85.6	42.0	38.0	1.60	64.36	0.39	0.43	
RBH03	22.10			C		Sandstone	D	L	Y	52.0	84.6	84.0	82.0	0.80	83.29	0.12	0.15	
RBH03	22.10			C		Sandstone	A	P	Y		84.6	51.0	49.0	1.00	72.65	0.19	0.22	
RBH03	23.85			C		Sandstone	D	L	Y	54.0	85.1	85.0	83.0	0.40	84.04	0.06	0.07	
RBH03	23.85			C		Sandstone	A	P	Y		85.1	53.0	49.0	1.70	72.86	0.32	0.38	
RBH03	13.10			C		Sandstone	D	L	Y	45.0	84.3	84.0	82.0	0.70	83.14	0.10	0.13	
RBH03	13.10			C		Sandstone	A	P	Y		84.3	50.0	46.0	1.20	70.27	0.24	0.28	
RBH04	14.40			C		Sandstone	D	L	Y	52.0	84.4	84.0	82.0	0.50	83.21	0.07	0.09	
RBH04	14.40			C		Sandstone	A	P	Y		84.4	55.0	53.0	0.80	75.48	0.14	0.17	

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Figure
PLT

UNIAXIAL COMPRESSIVE STRENGTH OF ROCK - SUMMARY OF RESULTS

Project No	Project Name
J299715	Manchester One Extension

Hole No.	Sample				Rock Type	Specimen Dimensions[2]			Bulk Density[2]	Water Content[1]	Uniaxial Compression[3]				Remarks
	No.	Depth (m)		type		Dia.	Height	H/D			Load Rate	Time to failure	Mode of failure	UCS	
		from	to			mm	mm		Mg/m^3	%	kN/min	secs		MPa	
RBH01		20.60		C	SANDSTONE	85.42	197.27	2.3	2.05	12.0	10.0	321	Axial Cleavage	4.83	
RBH02		22.20		C	SANDSTONE	85.48	206.38	2.4	2.12	12.3	10.0	321	Axial Cleavage	6.15	
RBH04		14.20		C	SANDSTONE	84.8	220.4	2.6	2.08	10.0	10.0	327	Axial Cleavage	5.84	

Notes :

Test Specification : International Society for Rock Mechanics, The complete ISRM suggested methods for Rock Characterization Testing and Monitoring, 2007

1 ISRM p87 test 1, water content at 105 ± 3 °C, specimen as received at the laboratory

2 ISRM p86 clause (vii), Caliper method used for determination of bulk volume and derivation of bulk density

3 ISRM p153 part 1, determination of Uniaxial Compressive Strength (UCS) of Rock Materials

above notes apply unless annotated otherwise in the remarks

Mode of failure :

S - Single shear MS - multiple shear

AC - Axial cleavage F - Fragmented

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Table

RUCS

Appendix E – Chemical Test Results

Certificate of Analysis

Certificate Number	25-00996	*Issued:*	27-Jan-25

Client NX Consulting Ltd
Station House
Stamford New Road
Altricham
WA14 1EP

Our Reference	25-00996
Client Reference ~	NX587
Order No ~	(not supplied)
Contract Title ~	Manchester One Extension
Description	24 Soil samples, 11 Leachate prepared by DETS samples.
Date Received	17-Jan-25
Date Started	17-Jan-25
Date Completed	27-Jan-25
Test Procedures	Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Reyhan Irfan
Operations Manager

2139

Summary of Chemical Analysis
Soil Samples

Our Ref 25-00996
Client Ref ~ NX587
Contract Title ~ Manchester One Extension

	Lab No	2450133	2450134	2450135	2450136	2450137	2450138
	Sample ID ~	WS1	WS1	WS1	WS2	WS2	WS2
	Depth ~	0.10	1.00	3.00	0.20	1.50	3.50
	Other ID ~						
	Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date ~	07/01/2025	07/01/2025	07/01/2025	07/01/2025	07/01/2025	07/01/2025
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	27		16	7.8	17	
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.8		0.7	1.4	0.6	
Cadmium	DETSC 2301#	0.1	mg/kg	1.8		0.8	0.2	0.7	
Chromium	DETSC 2301#	0.15	mg/kg	20		22	24	56	
Copper	DETSC 2301#	0.2	mg/kg	52		110	25	220	
Lead	DETSC 2301#	0.3	mg/kg	200		1100	32	310	
Mercury	DETSC 2325#	0.05	mg/kg	0.67		0.41	< 0.05	0.34	
Nickel	DETSC 2301#	1	mg/kg	16		20	30	18	
Selenium	DETSC 2301#	0.5	mg/kg	0.6		< 0.5	< 0.5	2.0	
Zinc	DETSC 2301#	1	mg/kg	210		230	61	200	
Inorganics									
pH	DETSC 2008#		pH	9.6		10.0	8.7	8.4	
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.3		0.2	< 0.1	0.5	
Total Organic Carbon	DETSC 2084#	0.5	%	3.7		3.0	1.0	5.2	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l					79	
Sulphide	DETSC 2024*	10	mg/kg	150		40	48	56	
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	4000		1150	416	653	
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01				< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01				< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01				< 0.01
Aliphatic >EC10-EC12	DETSC 3521#	1.5	mg/kg		< 1.50				< 1.50
Aliphatic >EC12-EC16	DETSC 3521#	1.2	mg/kg		< 1.20				< 1.20
Aliphatic >EC16-EC21	DETSC 3521#	1.5	mg/kg		< 1.50				< 1.50
Aliphatic >EC21-EC35	DETSC 3521#	3.4	mg/kg		< 3.40				< 3.40
Aliphatic C5-C35	DETSC 3521*	10	mg/kg		< 10.00				< 10.00
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01				< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01				< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01				< 0.01
Aromatic >EC10-EC12	DETSC 3521#	0.9	mg/kg		< 0.90				< 0.90
Aromatic >EC12-EC16	DETSC 3521#	0.5	mg/kg		2.10				< 0.50
Aromatic >EC16-EC21	DETSC 3521#	0.6	mg/kg		20.60				7.57
Aromatic >EC21-EC35	DETSC 3521#	1.4	mg/kg		29.78				12.69
Aromatic C5-C35	DETSC 3521*	10	mg/kg		52.48				20.26
TPH Ali/Aro Total C5-C35	DETSC 3521*	10	mg/kg		52.48				20.26
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03		< 0.03	< 0.03	< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.06		< 0.03	< 0.03	< 0.03	
Fluorene	DETSC 3303	0.03	mg/kg	0.04		< 0.03	< 0.03	< 0.03	
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.41		< 0.03	0.23	0.21	

Summary of Chemical Analysis
Soil Samples

Our Ref 25-00996
Client Ref ~ NX587
Contract Title ~ Manchester One Extension

				Lab No	2450133	2450134	2450135	2450136	2450137	2450138
				Sample ID ~	WS1	WS1	WS1	WS2	WS2	WS2
				Depth ~	0.10	1.00	3.00	0.20	1.50	3.50
				Other ID ~						
				Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
				Sampling Date ~	07/01/2025	07/01/2025	07/01/2025	07/01/2025	07/01/2025	07/01/2025
				Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**							
Anthracene	DETSC 3303	0.03	mg/kg	0.09		< 0.03	0.04	0.04	
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.86		< 0.03	0.49	0.45	
Pyrene	DETSC 3303#	0.03	mg/kg	0.82		< 0.03	0.46	0.44	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.36		< 0.03	0.18	0.17	
Chrysene	DETSC 3303	0.03	mg/kg	0.33		< 0.03	0.17	0.15	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.44		< 0.03	0.20	0.19	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.15		< 0.03	0.07	0.07	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.36		< 0.03	0.15	0.15	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.19		< 0.03	0.08	0.08	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.05		< 0.03	< 0.03	< 0.03	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.24		< 0.03	0.09	0.09	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	4.4		< 0.10	2.2	2.0	
Phenols										
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3		< 0.3	< 0.3	< 0.3	

Summary of Chemical Analysis
Soil Samples

Our Ref 25-00996
Client Ref ~ NX587
Contract Title ~ Manchester One Extension

	Lab No	2450139	2450140	2450141	2450142	2450143	2450144
	Sample ID ~	WS2	WS3	WS3	WS3	WS4	WS4
	Depth ~	4.50	0.80	2.50	4.80	0.50	1.40
	Other ID ~						
	Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date ~	07/01/2025	07/01/2025	07/01/2025	07/01/2025	10/01/2025	10/01/2025
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	26	26		15	14	13
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.1	1.6		1.2	0.6	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	1.0	0.4		0.4	0.3	3.3
Chromium	DETSC 2301#	0.15	mg/kg	17	22		14	17	13
Copper	DETSC 2301#	0.2	mg/kg	330	100		120	81	200
Lead	DETSC 2301#	0.3	mg/kg	820	5600		2100	1200	5100
Mercury	DETSC 2325#	0.05	mg/kg	0.56	0.89		0.24	0.19	0.16
Nickel	DETSC 2301#	1	mg/kg	34	20		17	16	14
Selenium	DETSC 2301#	0.5	mg/kg	0.6	< 0.5		0.7	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	330	170		170	90	630
Inorganics									
pH	DETSC 2008#		pH	8.4	8.8	9.5	9.1	10.3	9.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.5	0.7		0.1	0.1	0.4
Total Organic Carbon	DETSC 2084#	0.5	%	7.4	4.3		3.2	4.7	4.8
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	65		150	63		130
Sulphide	DETSC 2024*	10	mg/kg	52	36		44	60	84
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	955	1530		917	1130	1920
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg			< 0.01			< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg			< 0.01			< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01			< 0.01
Aliphatic >EC10-EC12	DETSC 3521#	1.5	mg/kg			< 1.50			< 1.50
Aliphatic >EC12-EC16	DETSC 3521#	1.2	mg/kg			< 1.20			< 1.20
Aliphatic >EC16-EC21	DETSC 3521#	1.5	mg/kg			< 1.50			< 1.50
Aliphatic >EC21-EC35	DETSC 3521#	3.4	mg/kg			< 3.40			< 3.40
Aliphatic C5-C35	DETSC 3521*	10	mg/kg			< 10.00			< 10.00
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg			< 0.01			< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg			< 0.01			< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01			< 0.01
Aromatic >EC10-EC12	DETSC 3521#	0.9	mg/kg			< 0.90			< 0.90
Aromatic >EC12-EC16	DETSC 3521#	0.5	mg/kg			4.36			< 0.50
Aromatic >EC16-EC21	DETSC 3521#	0.6	mg/kg			31.33			5.70
Aromatic >EC21-EC35	DETSC 3521#	1.4	mg/kg			41.31			13.60
Aromatic C5-C35	DETSC 3521*	10	mg/kg			77.00			19.30
TPH Ali/Aro Total C5-C35	DETSC 3521*	10	mg/kg			77.00			19.30
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.08	< 0.03		< 0.30	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03		< 0.30	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.06	0.15		0.38	< 0.03	0.07
Fluorene	DETSC 3303	0.03	mg/kg	0.04	0.15		< 0.30	< 0.03	0.04
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.74	1.7		4.1	0.23	0.58

Summary of Chemical Analysis
Soil Samples

Our Ref 25-00996
Client Ref ~ NX587
Contract Title ~ Manchester One Extension

			Lab No	2450139	2450140	2450141	2450142	2450143	2450144
			Sample ID ~	WS2	WS3	WS3	WS3	WS4	WS4
			Depth ~	4.50	0.80	2.50	4.80	0.50	1.40
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	07/01/2025	07/01/2025	07/01/2025	07/01/2025	10/01/2025	10/01/2025
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Anthracene	DETSC 3303	0.03	mg/kg	0.12	0.49		1.1	0.06	0.11
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.98	2.6		4.7	0.68	1.2
Pyrene	DETSC 3303#	0.03	mg/kg	1.0	2.2		9.4	0.65	1.1
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.40	1.1		3.1	0.27	0.44
Chrysene	DETSC 3303	0.03	mg/kg	0.40	0.90		2.7	0.26	0.40
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.47	1.5		2.9	0.39	0.52
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.18	0.59		0.85	0.14	0.20
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.42	1.5		4.3	0.36	0.41
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.18	0.75		1.7	0.15	0.19
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	0.04	0.16		0.58	< 0.03	0.05
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.22	0.98		2.9	0.18	0.24
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	5.3	15		39	3.4	5.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3		< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis
Soil Samples

Our Ref 25-00996
Client Ref ~ NX587
Contract Title ~ Manchester One Extension

	Lab No	2450145	2450146	2450147	2450148	2450150	2450151
	Sample ID ~	WS4	WS5	WS5	WS6	WS7	WS7
	Depth ~	4.00	0.50	5.00	0.90	1.50	4.80
	Other ID ~						
	Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampling Date ~	10/01/2025	10/01/2025	10/01/2025	10/01/2025	13/01/2025	13/01/2025
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	1.9	1.1	17	4.9	29	2.3
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	2.9	1.7	1.1	2.3	0.5	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.5	0.8	0.2	0.6	0.8	0.6
Chromium	DETSC 2301#	0.15	mg/kg	3.7	1.7	26	6.4	46	4.8
Copper	DETSC 2301#	0.2	mg/kg	11	9.5	62	190	1300	13
Lead	DETSC 2301#	0.3	mg/kg	58	89	1400	840	28000	53
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.60	0.07	0.06	< 0.05
Nickel	DETSC 2301#	1	mg/kg	3.0	2.3	27	5.1	21	4.3
Selenium	DETSC 2301#	0.5	mg/kg	0.7	0.6	0.6	0.5	< 0.5	0.6
Zinc	DETSC 2301#	1	mg/kg	26	32	77	53	650	33
Inorganics									
pH	DETSC 2008#		pH	12.2	11.4	9.2	12.1	8.2	12.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total Organic Carbon	DETSC 2084#	0.5	%	2.1	3.1	2.1	1.3	2.5	1.7
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l			54		790	49
Sulphide	DETSC 2024*	10	mg/kg	88	12	100	100	52	76
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	316	249	756	1390	3410	1540
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01	< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01	< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01	< 0.01	
Aliphatic >EC10-EC12	DETSC 3521#	1.5	mg/kg		< 1.50		< 1.50	< 1.50	
Aliphatic >EC12-EC16	DETSC 3521#	1.2	mg/kg		< 1.20		< 1.20	< 1.20	
Aliphatic >EC16-EC21	DETSC 3521#	1.5	mg/kg		< 1.50		1.94	< 1.50	
Aliphatic >EC21-EC35	DETSC 3521#	3.4	mg/kg		36.43		< 3.40	< 3.40	
Aliphatic C5-C35	DETSC 3521*	10	mg/kg		36.43		< 10.00	< 10.00	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01	< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01	< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg		< 0.01		< 0.01	< 0.01	
Aromatic >EC10-EC12	DETSC 3521#	0.9	mg/kg		< 0.90		< 0.90	< 0.90	
Aromatic >EC12-EC16	DETSC 3521#	0.5	mg/kg		< 0.50		4.91	< 0.50	
Aromatic >EC16-EC21	DETSC 3521#	0.6	mg/kg		2.86		32.56	1.01	
Aromatic >EC21-EC35	DETSC 3521#	1.4	mg/kg		5.86		66.75	< 1.40	
Aromatic C5-C35	DETSC 3521*	10	mg/kg		< 10.00		104.2	< 10.00	
TPH Ali/Aro Total C5-C35	DETSC 3521*	10	mg/kg		36.43		104.2	< 10.00	
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.37	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.06	< 0.03	0.90	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	0.03	< 0.03	0.50	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.07	0.43	0.07	3.4	0.09	< 0.03

Summary of Chemical Analysis
Soil Samples

Our Ref 25-00996
Client Ref ~ NX587
Contract Title ~ Manchester One Extension

			Lab No	2450145	2450146	2450147	2450148	2450150	2450151
			Sample ID ~	WS4	WS5	WS5	WS6	WS7	WS7
			Depth ~	4.00	0.50	5.00	0.90	1.50	4.80
			Other ID ~						
			Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	10/01/2025	10/01/2025	10/01/2025	10/01/2025	13/01/2025	13/01/2025
			Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**						
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.08	< 0.03	1.0	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.08	0.76	0.07	6.1	0.10	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.08	0.69	0.07	5.2	0.12	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.04	0.29	0.04	2.4	0.06	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.03	0.28	0.03	1.9	0.05	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.03	0.45	0.04	3.2	0.06	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.14	< 0.03	1.1	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.37	0.04	2.8	0.06	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	0.16	< 0.03	1.1	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.26	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	0.20	< 0.03	1.4	0.03	< 0.03
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	0.27	3.9	0.32	32	0.55	< 0.10
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis
Soil Samples

Our Ref 25-00996
Client Ref ~ NX587
Contract Title ~ Manchester One Extension

	Lab No	2450152	2450153	2450155	2450156
	Sample ID ~	WS8	WS8	WS8	BH03
	Depth ~	0.15	1.00	3.50	3.50
	Other ID ~				
	Sample Type ~	SOIL	SOIL	SOIL	SOIL
	Sampling Date ~	13/01/2025	13/01/2025	13/01/2025	14/01/2025
	Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Metals					
Arsenic	DETSC 2301#	0.2	mg/kg	12	11	25	22
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	2.4	1.9	1.2	2.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.2	0.6	0.4
Chromium	DETSC 2301#	0.15	mg/kg	10	23	17	20
Copper	DETSC 2301#	0.2	mg/kg	780	88	860	1000
Lead	DETSC 2301#	0.3	mg/kg	43000	4800	11000	18000
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.19	0.18
Nickel	DETSC 2301#	1	mg/kg	16	28	21	17
Selenium	DETSC 2301#	0.5	mg/kg	0.6	0.6	0.7	0.9
Zinc	DETSC 2301#	1	mg/kg	360	88	600	450
Inorganics							
pH	DETSC 2008#		pH	8.2	9.3	10.1	8.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	0.4	1.0
Total Organic Carbon	DETSC 2084#	0.5	%	1.3	1.0	5.8	6.4
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l				110
Sulphide	DETSC 2024*	10	mg/kg	130	92	110	80
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	6020	603	1530	1960
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	2.6			< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	0.93			< 0.01
Aliphatic >EC10-EC12	DETSC 3521#	1.5	mg/kg	< 1.50			< 1.50
Aliphatic >EC12-EC16	DETSC 3521#	1.2	mg/kg	< 1.20			< 1.20
Aliphatic >EC16-EC21	DETSC 3521#	1.5	mg/kg	< 1.50			< 1.50
Aliphatic >EC21-EC35	DETSC 3521#	3.4	mg/kg	< 3.40			< 3.40
Aliphatic C5-C35	DETSC 3521*	10	mg/kg	< 10.00			< 10.00
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	0.02			< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01			< 0.01
Aromatic >EC10-EC12	DETSC 3521#	0.9	mg/kg	< 0.90			< 0.90
Aromatic >EC12-EC16	DETSC 3521#	0.5	mg/kg	< 0.50			1.10
Aromatic >EC16-EC21	DETSC 3521#	0.6	mg/kg	1.32			14.03
Aromatic >EC21-EC35	DETSC 3521#	1.4	mg/kg	< 1.40			21.80
Aromatic C5-C35	DETSC 3521*	10	mg/kg	< 10.00			36.93
TPH Ali/Aro Total C5-C35	DETSC 3521*	10	mg/kg	< 10.00			36.93
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.14
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	0.04	< 0.03	0.24
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.17
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.12	0.25	< 0.03	2.0

Summary of Chemical Analysis
Soil Samples

Our Ref 25-00996
Client Ref ~ NX587
Contract Title ~ Manchester One Extension

			Lab No	2450152	2450153	2450155	2450156
			Sample ID ~	WS8	WS8	WS8	BH03
			Depth ~	0.15	1.00	3.50	3.50
			Other ID ~				
			Sample Type ~	SOIL	SOIL	SOIL	SOIL
			Sampling Date ~	13/01/2025	13/01/2025	13/01/2025	14/01/2025
			Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**				
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	0.05	< 0.03	0.38
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.26	0.52	< 0.03	2.7
Pyrene	DETSC 3303#	0.03	mg/kg	0.24	0.46	< 0.03	2.4
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.09	0.21	< 0.03	1.1
Chrysene	DETSC 3303	0.03	mg/kg	0.09	0.19	< 0.03	1.0
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.12	0.25	< 0.03	1.3
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.04	0.10	< 0.03	0.49
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.09	0.19	< 0.03	1.1
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.04	0.11	< 0.03	0.52
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	0.15
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.04	0.12	< 0.03	0.67
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	1.1	2.4	< 0.10	14
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis
Leachate Samples

Our Ref 25-00996
Client Ref ~ NX587
Contract Title ~ Manchester One Extension

	Lab No	2450157	2450158	2450159	2450160	2450161	2450162	2450163
	Sample ID ~	WS2	WS3	WS4	WS6	WS8	WS1	WS2
	Depth ~	1.50	4.80	1.40	0.90	2.00	1.00	3.50
	Other ID ~							
	Sample Type ~	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
	Sampling Date ~	07/01/2025	07/01/2025	10/01/2025	10/01/2025	13/01/2025	07/01/2025	07/01/2025
	Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**					
Preparation								
BS EN 12457 10:1	DETSC 1009*						Y	Y
BS EN 12457 10:1	DETSC 1009*			Y	Y	Y	Y	Y
Metals								
Arsenic, Dissolved	DETSC 2306	0.16	ug/l				4.8	5.1
Boron, Dissolved	DETSC 2306*	12	ug/l				22	22
Cadmium, Dissolved	DETSC 2306	0.03	ug/l				< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l				1.5	1.2
Copper, Dissolved	DETSC 2306	0.4	ug/l				4.6	3.6
Lead, Dissolved	DETSC 2306	0.09	ug/l				19	30
Mercury, Dissolved	DETSC 2306	0.01	ug/l				0.02	0.03
Nickel, Dissolved	DETSC 2306	0.5	ug/l				< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l				0.39	0.50
Zinc, Dissolved	DETSC 2306	1.3	ug/l				7.7	2.4
Inorganics								
pH	DETSC 2008		pH				7.7	8.6
Cyanide, Total	DETSC 2130	40	ug/l				< 40	< 40
Sulphate as SO4	DETSC 2055	0.1	mg/l				8.0	8.7
Sulphide	DETSC 2208	10	ug/l				< 10	< 10
Total Organic Carbon	DETSC 2085	1	mg/l				4.1	5.1
PAHs								
Naphthalene	DETSC 3304	0.05	ug/l				0.06	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l				0.02	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l				0.13	< 0.01
Fluorene	DETSC 3304	0.01	ug/l				0.04	< 0.01
Phenanthrene	DETSC 3304	0.01	ug/l				0.25	0.03
Anthracene	DETSC 3304	0.01	ug/l				0.05	< 0.01
Fluoranthene	DETSC 3304	0.01	ug/l				0.34	0.05
Pyrene	DETSC 3304	0.01	ug/l				0.30	0.05
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l				0.17	0.03
Chrysene	DETSC 3304	0.01	ug/l				0.14	0.03
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l				0.31	0.06
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l				0.09	0.02
Benzo(a)pyrene	DETSC 3304	0.01	ug/l				0.27	0.04
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l				0.18	0.03
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l				0.03	< 0.01
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l				0.21	0.05
PAH Total	DETSC 3304	0.2	ug/l				2.6	0.39
Phenols								
Phenol - Monohydric	DETSC 2130	0.1	mg/l				< 0.1	< 0.1

Summary of Chemical Analysis
Leachate Samples

Our Ref 25-00996
Client Ref ~ NX587
Contract Title ~ Manchester One Extension

	Lab No	2450164	2450165	2450166	2450167
	Sample ID ~	WS3	WS5	WS7	BH03
	Depth ~	4.80	5.00	1.50	3.50
	Other ID ~				
	Sample Type ~	LEACHATE	LEACHATE	LEACHATE	LEACHATE
	Sampling Date ~	07/01/2025	10/01/2025	13/01/2025	14/01/2025
	Sampling Time ~	n/s	n/s	n/s	n/s
Test	**Method**	**LOD**	**Units**		
Preparation					
BS EN 12457 10:1	DETSC 1009*			Y	Y	Y	Y
BS EN 12457 10:1	DETSC 1009*						
Metals							
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	3.2	0.40	0.62	1.1
Boron, Dissolved	DETSC 2306*	12	ug/l	16	< 12	< 12	21
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03	< 0.03	< 0.03	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	0.66	< 0.25	< 0.25	4.7
Copper, Dissolved	DETSC 2306	0.4	ug/l	5.4	1.2	2.2	3.6
Lead, Dissolved	DETSC 2306	0.09	ug/l	46	11	11	6.1
Mercury, Dissolved	DETSC 2306	0.01	ug/l	0.02	< 0.01	< 0.01	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5	< 0.5	< 0.5	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25	0.41	0.25	0.60
Zinc, Dissolved	DETSC 2306	1.3	ug/l	7.2	5.0	19	6.6
Inorganics							
pH	DETSC 2008		pH	8.3	8.0	7.7	8.1
Cyanide, Total	DETSC 2130	40	ug/l	< 40	< 40	< 40	< 40
Sulphate as SO4	DETSC 2055	0.1	mg/l	6.4	6.3	120	12
Sulphide	DETSC 2208	10	ug/l	< 10	< 10	< 10	< 10
Total Organic Carbon	DETSC 2085	1	mg/l	2.3	1.4	1.1	1.2
PAHs							
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	DETSC 3304	0.01	ug/l	0.04	< 0.01	< 0.01	0.05
Fluorene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 0.01	0.02
Phenanthrene	DETSC 3304	0.01	ug/l	0.08	0.02	0.03	0.16
Anthracene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 0.01	0.04
Fluoranthene	DETSC 3304	0.01	ug/l	0.06	0.03	0.02	0.23
Pyrene	DETSC 3304	0.01	ug/l	0.08	0.03	0.02	0.21
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.03	0.01	< 0.01	0.10
Chrysene	DETSC 3304	0.01	ug/l	0.03	0.01	< 0.01	0.09
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.05	0.02	0.01	0.15
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.02	< 0.01	< 0.01	0.05
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.05	0.01	< 0.01	0.16
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.04	0.01	< 0.01	0.09
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	< 0.01	< 0.01	< 0.01	0.02
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.07	0.02	0.01	0.10
PAH Total	DETSC 3304	0.2	ug/l	0.58	< 0.20	< 0.20	1.5
Phenols							
Phenol - Monohydric	DETSC 2130	0.1	mg/l	< 0.1	< 0.1	< 0.1	< 0.1

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 25-00996
Client Ref NX587
Contract Title Manchester One Extension
Sample Id WS2 1.50

Sample Numbers 2450137 2450157
Date Analysed 24/01/2025

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	5.2	3	5	6
DETSC 2003# Loss On Ignition	%	7.1	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311* Mineral Oil (C10 - C40)	mg/kg	170.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	2.0	100	n/a	n/a
DETSC 2008# pH	pH Units	8.4	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	1.6	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	5.7	0.06	0.5	2	25
DETSC 2306 Barium as Ba	13	0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.39	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	4.2	0.04	2	50	100
DETSC 2306 Mercury as Hg	0.019	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	2.2	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	5.8	0.06	0.5	10	50
DETSC 2306 Antimony as Sb	1.7	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.26	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	43	0.43	4	50	200
DETSC 2055 Chloride as Cl	1900	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	440	4.4	10	150	500
DETSC 2055 Sulphate as SO4	6700	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	150000	1500	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2700	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	8.0
DETSC 2009 Conductivity uS/cm	209.0
* Temperature*	17.0

Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.098

Stage 1

Volume of Leachant L2*	0.953
Volume of Eluate VE1*	0.907

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 25-00996
Client Ref NX587
Contract Title Manchester One Extension
Sample Id WS3 4.80

Sample Numbers 2450142 2450158
Date Analysed 24/01/2025

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	3.2	3	5	6
DETSC 2003# Loss On Ignition	%	3.3	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311* Mineral Oil (C10 - C40)	mg/kg	1700.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	12.0	100	n/a	n/a
DETSC 2008# pH	pH Units	9.1	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	2.7	0.03	0.5	2	25
DETSC 2306 Barium as Ba	37	0.4	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.48	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	2.4	0.02	2	50	100
DETSC 2306 Mercury as Hg	0.011	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	48	0.48	0.5	10	50
DETSC 2306 Antimony as Sb	16	0.16	0.06	0.7	5
DETSC 2306 Selenium as Se	0.31	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	20	0.2	4	50	200
DETSC 2055 Chloride as Cl	870	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	320	3.2	10	150	500
DETSC 2055 Sulphate as SO4	9600	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	58000	580	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	8.1
DETSC 2009 Conductivity uS/cm	82.4
* Temperature*	18.0

Mass of Sample Kg*	0.120
Mass of dry Sample Kg*	0.099

Stage 1

Volume of Leachant L2*	0.967
Volume of Eluate VE1*	0.92

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 25-00996
Client Ref NX587
Contract Title Manchester One Extension
Sample Id WS4 1.40

Sample Numbers 2450144 2450159
Date Analysed 24/01/2025

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	4.8	3	5	6
DETSC 2003# Loss On Ignition	%	6.1	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311* Mineral Oil (C10 - C40)	mg/kg	89.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	5.6	100	n/a	n/a
DETSC 2008# pH	pH Units	9.2	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	2.8	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	1.1	0.01	0.5	2	25
DETSC 2306 Barium as Ba	12	0.1	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	0.48	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	4.4	0.04	2	50	100
DETSC 2306 Mercury as Hg	0.02	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	< 1.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	1	< 0.05	0.5	10	50
DETSC 2306 Antimony as Sb	0.43	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	< 0.25	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	17	0.17	4	50	200
DETSC 2055 Chloride as Cl	960	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	140	1.4	10	150	500
DETSC 2055 Sulphate as SO4	2900	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	88000	880	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	< 2000	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	10.5
DETSC 2009 Conductivity uS/cm	126.0
* Temperature*	18.0

Mass of Sample Kg*	0.100
Mass of dry Sample Kg*	0.097

Stage 1

Volume of Leachant L2*	0.972
Volume of Eluate VE1*	0.923

Disclaimer: *The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.*

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 25-00996
Client Ref NX587
Contract Title Manchester One Extension
Sample Id WS6 0.90

Sample Numbers 2450148 2450160
Date Analysed 24/01/2025

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	1.3	3	5	6
DETSC 2003# Loss On Ignition	%	1.8	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311* Mineral Oil (C10 - C40)	mg/kg	500.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	32.0	100	n/a	n/a
DETSC 2008# pH	pH Units	12.1	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	8.4	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	0.87	< 0.01	0.5	2	25
DETSC 2306 Barium as Ba	26	0.3	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	5	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	4.2	0.04	2	50	100
DETSC 2306 Mercury as Hg	0.018	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	2.1	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	8.8	0.09	0.5	10	50
DETSC 2306 Antimony as Sb	0.48	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.4	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	8.5	0.09	4	50	200
DETSC 2055 Chloride as Cl	9800	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	300	3	10	150	500
DETSC 2055 Sulphate as SO4	6600	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	350000	3500	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2300	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	11.3
DETSC 2009 Conductivity uS/cm	505.0
* Temperature*	18.0

Mass of Sample Kg*	0.100
Mass of dry Sample Kg*	0.093

Stage 1

Volume of Leachant L2*	0.926
Volume of Eluate VE1*	0.879

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WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 25-00996
Client Ref NX587
Contract Title Manchester One Extension
Sample Id WS8 2.00

Sample Numbers 2450154 2450161
Date Analysed 23/01/2025

Test Results On Waste

Determinand and Method Reference	Units	Result	WAC Limit Values: Inert Waste	SNRHW	Hazardous Waste
DETSC 2084# Total Organic Carbon	%	5.9	3	5	6
DETSC 2003# Loss On Ignition	%	9.4	n/a	n/a	10
DETSC 3321# BTEX	mg/kg	< 0.04	6	n/a	n/a
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01	1	n/a	n/a
DETSC 3311* Mineral Oil (C10 - C40)	mg/kg	120000.0	500	n/a	n/a
DETSC 3301 PAHs	mg/kg	110.0	100	n/a	n/a
DETSC 2008# pH	pH Units	7.6	n/a	>6	n/a
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0	n/a	TBE	TBE
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0	n/a	TBE	TBE

Test Results On Leachate

Determinand and Method Reference	Conc in Eluate ug/l 10:1	Amount Leached* mg/kg LS10	WAC Limit Values (Limit values for LS10 Leachate): Inert Waste	SNRHW	Hazardous Waste
DETSC 2306 Arsenic as As	3.2	0.03	0.5	2	25
DETSC 2306 Barium as Ba	61	0.6	20	100	300
DETSC 2306 Cadmium as Cd	< 0.030	< 0.02	0.04	1	5
DETSC 2306 Chromium as Cr	1.5	< 0.1	0.5	10	70
DETSC 2306 Copper as Cu	8.2	0.08	2	50	100
DETSC 2306 Mercury as Hg	0.023	< 0.002	0.01	0.2	2
DETSC 2306 Molybdenum as Mo	1.2	< 0.1	0.5	10	30
DETSC 2306 Nickel as Ni	< 0.50	< 0.1	0.4	10	40
DETSC 2306 Lead as Pb	46	0.46	0.5	10	50
DETSC 2306 Antimony as Sb	2.8	< 0.05	0.06	0.7	5
DETSC 2306 Selenium as Se	0.38	< 0.03	0.1	0.5	7
DETSC 2306 Zinc as Zn	20	0.2	4	50	200
DETSC 2055 Chloride as Cl	7700	< 100	800	15,000	25,000
DETSC 2055* Fluoride as F	390	3.9	10	150	500
DETSC 2055 Sulphate as SO4	7100	< 100	1000	20,000	50,000
DETSC 2009* Total Dissolved Solids	87000	870	4000	60,000	100,000
DETSC 2130 Phenol Index	< 100	< 1	1	n/a	n/a
DETSC 2085 Dissolved Organic Carbon	2300	< 50	500	800	1000

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive Hazardous Waste

Additional Information

DETSC 2008 pH	8.7
DETSC 2009 Conductivity uS/cm	124.0
* Temperature*	18.0

Mass of Sample Kg*	0.130
Mass of dry Sample Kg*	0.097

Stage 1

Volume of Leachant L2*	0.937
Volume of Eluate VE1*	0.889

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V.2.06 ** DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.*

Summary of Asbestos Analysis
Soil Samples

Our Ref 25-00996
Client Ref ~ NX587
Contract Title ~ Manchester One Extension

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2450133	WS1 0.10	SOIL	NAD	none	Pierce Booth
2450134	WS1 1.00	SOIL	NAD	none	Pierce Booth
2450136	WS2 0.20	SOIL	NAD	none	Pierce Booth
2450138	WS2 3.50	SOIL	NAD	none	Pierce Booth
2450141	WS3 2.50	SOIL	NAD	none	Pierce Booth
2450143	WS4 0.50	SOIL	NAD	none	Pierce Booth
2450144	WS4 1.40	SOIL	NAD	none	Pierce Booth
2450146	WS5 0.50	SOIL	NAD	none	Pierce Booth
2450148	WS6 0.90	SOIL	NAD	none	Pierce Booth
2450149	WS7 0.50	SOIL	NAD	none	Pierce Booth
2450151	WS7 4.80	SOIL	NAD	none	Pierce Booth
2450152	WS8 0.15	SOIL	NAD	none	Pierce Booth
2450153	WS8 1.00	SOIL	NAD	none	Pierce Booth
2450156	BH03 3.50	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 25-00996
Client Ref ~ NX587
Contract ~ Manchester One Extension

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2450133	WS1 0.10 SOIL	07/01/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2450134	WS1 1.00 SOIL	07/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450135	WS1 3.00 SOIL	07/01/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2450136	WS2 0.20 SOIL	07/01/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2450137	WS2 1.50 SOIL	07/01/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2450138	WS2 3.50 SOIL	07/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450139	WS2 4.50 SOIL	07/01/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2450140	WS3 0.80 SOIL	07/01/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2450141	WS3 2.50 SOIL	07/01/25	PT 1L	pH + Conductivity (7 days)	BTEX / C5-C10, EPH/Aliphatic/Aromatic
2450142	WS3 4.80 SOIL	07/01/25	GJ 250ml, GJ 60ml, PT 1L	pH + Conductivity (7 days)	
2450143	WS4 0.50 SOIL	10/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450144	WS4 1.40 SOIL	10/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450145	WS4 4.00 SOIL	10/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450146	WS5 0.50 SOIL	10/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450147	WS5 5.00 SOIL	10/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450148	WS6 0.90 SOIL	10/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450149	WS7 0.50 SOIL	13/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450150	WS7 1.50 SOIL	13/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450151	WS7 4.80 SOIL	13/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450152	WS8 0.15 SOIL	13/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450153	WS8 1.00 SOIL	13/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450154	WS8 2.00 SOIL	13/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450155	WS8 3.50 SOIL	13/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450156	BH03 3.50 SOIL	14/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450157	WS2 1.50 LEACHATE	07/01/25	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2450158	WS3 4.80 LEACHATE	07/01/25	GJ 250ml, GJ 60ml, PT 1L	pH/Cond (1 days)	
2450159	WS4 1.40 LEACHATE	10/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450160	WS6 0.90 LEACHATE	10/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450161	WS8 2.00 LEACHATE	13/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450162	WS1 1.00 LEACHATE	07/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450163	WS2 3.50 LEACHATE	07/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450164	WS3 4.80 LEACHATE	07/01/25	GJ 250ml, GJ 60ml, PT 1L	Kone (Sulphide) (5 days), pH/Cond (1 days), PAH MS (4 days)	
2450165	WS5 5.00 LEACHATE	10/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450166	WS7 1.50 LEACHATE	13/01/25	GJ 250ml, GJ 60ml, PT 1L		
2450167	BH03 3.50 LEACHATE	14/01/25	GJ 250ml, GJ 60ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Information in Support of the Analytical Results

Our Ref 25-00996
Client Ref ~ NX587
Contract ~ Manchester One Extension

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Information in Support of the Analytical Results

Our Ref 25-00996
Client Ref ~ NX587
Contract ~ Manchester One Extension

Key:
~ Sample details are provided by the client and can affect the validity of the results
***** -not accredited.
# -MCERTS (accreditation only applies if report carries the MCERTS logo).
$ -subcontracted.
n/s -not supplied.
I/S -insufficient sample.
U/S -unsuitable sample.
t/f -to follow.
nd -not detected.

End of Report

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

HRBKX-BRXR6-XM9HL

Report is invalid if pages are removed.

Job name

NX587 Manchester One Extension

Description/Comments

Classification from the Site Investigation samples taken to characterise the materials for basic waste characterisation and potential costs of removal should this be required.

Project

NX587

Site

Manchester One Extension

Classified by

Name:
Alicia Becker
Date:
06 Mar 2025 12:43 GMT
Telephone:
07388153226

Company:
ERGO Environmental
Unit 38B, North Tyne Industrial Estate, Benton
Newcastle upon Tyne
NE12 9SZ

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: CERTIFIED

Course	Date
Hazardous Waste Classification	10 Feb 2022
Most recent 3 year Refresher	04 Feb 2025

Next 3 year Refresher due by Feb 2028

Purpose of classification

2 - Material Characterisation

Address of the waste

49-53 Portland Street **Post Code** M1 3LD

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

extension of existing building

Description of the specific process, sub-process and/or activity that created the waste

samples taken during the Phase 2 Site Investigation to indicate likely waste classification should materials need to be removed during development works.

Description of the waste

generally Made Ground comprising clayey sandy gravels with occasional reworked topsoil.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS1	0.10	Non Hazardous		3
2	WS1[2]	1.00	Non Hazardous		5
3	WS1[3]	3.00	Hazardous	HP 7	6
4	WS2	0.20	Non Hazardous		8
5	WS2[2]	1.50	Non Hazardous		10
6	WS2[3]	3.50	Non Hazardous		12
7	WS2[4]	4.50	Non Hazardous		13
8	WS3	0.80	Hazardous	HP 7, HP 10, HP 14	15
9	WS3[2]	2.50	Non Hazardous		17
10	WS3[3]	4.80	Hazardous	HP 7	18
11	WS4	0.50	Hazardous	HP 7	20
12	WS4[2]	1.40	Hazardous	HP 7, HP 10, HP 14	22
13	WS4[3]	4.00	Hazardous	HP 8	25
14	WS5	0.50	Non Hazardous		27
15	WS5[2]	5.00	Hazardous	HP 7	29
16	WS6	0.90	Hazardous	HP 8	31
17	WS7	1.50	Hazardous	HP 7, HP 10, HP 14	33
18	WS7[2]	4.80	Hazardous	HP 8	36
19	WS8	0.15	Hazardous	HP 7, HP 10, HP 14	38
20	WS8[2]	1.00	Hazardous	HP 7, HP 10, HP 14	40
21	WS8[3]	3.50	Hazardous	HP 7, HP 10, HP 14	42
22	BH03	3.50	Hazardous	HP 7, HP 10, HP 14	44

Related documents

#	Name	Description
1	Ergo i2 Waste Template	waste stream template used to create this Job

Report

Created by: Alicia Becker

Created date: 06 Mar 2025 12:43 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	47
Appendix B: Rationale for selection of metal species	48
Appendix C: Version	49

Classification of sample: WS1

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS1
Sample Depth:
0.10 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		27	mg/kg	1.32	35.649	mg/kg	0.00356 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1.8	mg/kg	1.142	2.056	mg/kg	0.000206 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20	mg/kg	1.462	29.231	mg/kg	0.00292 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		52	mg/kg	1.126	58.546	mg/kg	0.00585 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	200	mg/kg		200	mg/kg	0.02 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.67	mg/kg	1.353	0.907	mg/kg	0.0000907 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		16	mg/kg	2.637	42.187	mg/kg	0.00422 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.6	mg/kg	2.554	1.532	mg/kg	0.000153 %	✓	
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		210	mg/kg	2.469	518.552	mg/kg	0.0519 %	✓	
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.3	mg/kg	1.884	0.565	mg/kg	0.0000565 %	✓	
11	pH			PH		9.6	pH		9.6	pH	9.6 pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
14	acenaphthene		201-469-6	83-32-9		0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
15	fluorene		201-695-5	86-73-7		0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		phenanthrene	201-581-5	85-01-8		0.41	mg/kg		0.41	mg/kg	0.000041 %	✓	
17		anthracene	204-371-1	120-12-7		0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
18		fluoranthene	205-912-4	206-44-0		0.86	mg/kg		0.86	mg/kg	0.000086 %	✓	
19		pyrene	204-927-3	129-00-0		0.82	mg/kg		0.82	mg/kg	0.000082 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.36	mg/kg		0.36	mg/kg	0.000036 %	✓	
21		chrysene	601-048-00-0	205-923-4	218-01-9	0.33	mg/kg		0.33	mg/kg	0.000033 %	✓	
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.44	mg/kg		0.44	mg/kg	0.000044 %	✓	
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.15	mg/kg		0.15	mg/kg	0.000015 %	✓	
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.36	mg/kg		0.36	mg/kg	0.000036 %	✓	
25		indeno[123-cd]pyrene	205-893-2	193-39-5		0.19	mg/kg		0.19	mg/kg	0.000019 %	✓	
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
27		benzo[ghi]perylene	205-883-8	191-24-2		0.24	mg/kg		0.24	mg/kg	0.000024 %	✓	
28		phenol	604-001-00-2	203-632-7	108-95-2	<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
										Total:	0.0894 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS1[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
WS1[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1.00 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
1	●	TPH (C6 to C40) petroleum group		TPH		52.48	mg/kg		52.48	mg/kg	0.00525 %	✓	
										Total:	0.00525 %		

Key

	User supplied data
●	Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 5000 mg/kg (0.5%) because: Samples are not considered flammable in their current state. It should be noted however that C35-C40 results are not available, though this is not likely to change the flammability of the samples.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00525%)

Classification of sample: WS1[3]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS1[3]
Sample Depth:
3.00 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.11%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16	mg/kg	1.32	21.125	mg/kg	0.00211 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.8	mg/kg	1.142	0.914	mg/kg	0.0000914 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		22	mg/kg	1.462	32.154	mg/kg	0.00322 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		110	mg/kg	1.126	123.848	mg/kg	0.0124 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	1100	mg/kg		1100	mg/kg	0.11 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.41	mg/kg	1.353	0.555	mg/kg	0.0000555 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		20	mg/kg	2.637	52.734	mg/kg	0.00527 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		230	mg/kg	2.469	567.938	mg/kg	0.0568 %	✓	
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.2	mg/kg	1.884	0.377	mg/kg	0.0000377 %	✓	
11	pH			PH		10	pH		10	pH	10pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-917-1	208-96-8									
14		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			201-469-6	83-32-9									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.19 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS2

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS2
Sample Depth:
0.20 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7.8	mg/kg	1.32	10.299	mg/kg	0.00103 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2	mg/kg	1.142	0.228	mg/kg	0.0000228 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		24	mg/kg	1.462	35.077	mg/kg	0.00351 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		25	mg/kg	1.126	28.147	mg/kg	0.00281 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	32	mg/kg		32	mg/kg	0.0032 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		30	mg/kg	2.637	79.101	mg/kg	0.00791 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		61	mg/kg	2.469	150.627	mg/kg	0.0151 %	✓	
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
11	pH			PH		8.7	pH		8.7	pH	8.7 pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15	fluorene		201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16	●	phenanthrene	201-581-5	85-01-8		0.23	mg/kg		0.23	mg/kg	0.000023 %	✓	
17	●	anthracene	204-371-1	120-12-7		0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
18	●	fluoranthene	205-912-4	206-44-0		0.49	mg/kg		0.49	mg/kg	0.000049 %	✓	
19	●	pyrene	204-927-3	129-00-0		0.46	mg/kg		0.46	mg/kg	0.000046 %	✓	
20		benzo[a]anthracene	200-280-6	56-55-3		0.18	mg/kg		0.18	mg/kg	0.000018 %	✓	
21		chrysene	205-923-4	218-01-9		0.17	mg/kg		0.17	mg/kg	0.000017 %	✓	
22		benzo[b]fluoranthene	205-911-9	205-99-2		0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
23		benzo[k]fluoranthene	205-916-6	207-08-9		0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
24		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		0.15	mg/kg		0.15	mg/kg	0.000015 %	✓	
25	●	indeno[123-cd]pyrene	205-893-2	193-39-5		0.08	mg/kg		0.08	mg/kg	0.000008 %	✓	
26		dibenz[a,h]anthracene	200-181-8	53-70-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
27	●	benzo[ghi]perylene	205-883-8	191-24-2		0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
28		phenol	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
										Total:	0.034 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS2[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS2[2]
Sample Depth:
1.50 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17	mg/kg	1.32	22.446	mg/kg	0.00224 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.7	mg/kg	1.142	0.8	mg/kg	0.00008 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		56	mg/kg	1.462	81.847	mg/kg	0.00818 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		220	mg/kg	1.126	247.695	mg/kg	0.0248 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	310	mg/kg		310	mg/kg	0.031 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.34	mg/kg	1.353	0.46	mg/kg	0.000046 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		18	mg/kg	2.637	47.46	mg/kg	0.00475 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		2	mg/kg	2.554	5.108	mg/kg	0.000511 %	✓	
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		200	mg/kg	2.469	493.859	mg/kg	0.0494 %	✓	
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.5	mg/kg	1.884	0.942	mg/kg	0.0000942 %	✓	
11	pH			PH		8.4	pH		8.4	pH	8.4 pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
14	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15	fluorene		201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		phenanthrene	201-581-5	85-01-8		0.21	mg/kg		0.21	mg/kg	0.000021 %	✓	
17		anthracene	204-371-1	120-12-7		0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
18		fluoranthene	205-912-4	206-44-0		0.45	mg/kg		0.45	mg/kg	0.000045 %	✓	
19		pyrene	204-927-3	129-00-0		0.44	mg/kg		0.44	mg/kg	0.000044 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.17	mg/kg		0.17	mg/kg	0.000017 %	✓	
21		chrysene	601-048-00-0	205-923-4	218-01-9	0.15	mg/kg		0.15	mg/kg	0.000015 %	✓	
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.19	mg/kg		0.19	mg/kg	0.000019 %	✓	
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.15	mg/kg		0.15	mg/kg	0.000015 %	✓	
25		indeno[123-cd]pyrene	205-893-2	193-39-5		0.08	mg/kg		0.08	mg/kg	0.000008 %	✓	
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
27		benzo[ghi]perylene	205-883-8	191-24-2		0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
28		phenol	604-001-00-2	203-632-7	108-95-2	<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
										Total:	0.121 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS2[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS2[3]
Sample Depth:
3.50 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number							
1	•	TPH (C6 to C40) petroleum group		TPH		20.26 mg/kg		20.26 mg/kg	0.00203 %	✓	
								Total:	0.00203 %		

Key

	User supplied data
•	Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 5000 mg/kg (0.5%) because: Samples are not considered flammable in their current state. It should be noted however that C35-C40 results are not available, though this is not likely to change the flammability of the samples.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00203%)

Classification of sample: WS2[4]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
WS2[4]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
4.50 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		26	mg/kg	1.32	34.328	mg/kg	0.00343 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		1	mg/kg	1.142	1.142	mg/kg	0.000114 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17	mg/kg	1.462	24.846	mg/kg	0.00248 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		330	mg/kg	1.126	371.543	mg/kg	0.0372 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	820	mg/kg		820	mg/kg	0.082 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.56	mg/kg	1.353	0.758	mg/kg	0.0000758 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		34	mg/kg	2.637	89.647	mg/kg	0.00896 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.6	mg/kg	2.554	1.532	mg/kg	0.000153 %	✓	
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		330	mg/kg	2.469	814.868	mg/kg	0.0815 %	✓	
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.5	mg/kg	1.884	0.942	mg/kg	0.0000942 %	✓	
11	pH			PH		8.4	pH		8.4	pH	8.4 pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		0.08	mg/kg		0.08	mg/kg	0.000008 %	✓	
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
14	acenaphthene		201-469-6	83-32-9		0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
15	fluorene		201-695-5	86-73-7		0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		phenanthrene	201-581-5	85-01-8		0.74	mg/kg		0.74	mg/kg	0.000074 %	✓	
17		anthracene	204-371-1	120-12-7		0.12	mg/kg		0.12	mg/kg	0.000012 %	✓	
18		fluoranthene	205-912-4	206-44-0		0.98	mg/kg		0.98	mg/kg	0.000098 %	✓	
19		pyrene	204-927-3	129-00-0		1	mg/kg		1	mg/kg	0.0001 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
21		chrysene	601-048-00-0	205-923-4	218-01-9	0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.47	mg/kg		0.47	mg/kg	0.000047 %	✓	
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.18	mg/kg		0.18	mg/kg	0.000018 %	✓	
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.42	mg/kg		0.42	mg/kg	0.000042 %	✓	
25		indeno[123-cd]pyrene	205-893-2	193-39-5		0.18	mg/kg		0.18	mg/kg	0.000018 %	✓	
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
27		benzo[ghi]perylene	205-883-8	191-24-2		0.22	mg/kg		0.22	mg/kg	0.000022 %	✓	
28		phenol	604-001-00-2	203-632-7	108-95-2	<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
										Total:	0.217 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS3

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:	
WS3	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.80 m	Entry:	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.56%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 1A; H360Df "May damage the unborn child. Suspected of damaging fertility."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.56%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.56%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		26	mg/kg	1.32	34.328	mg/kg	0.00343 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4	mg/kg	1.142	0.457	mg/kg	0.0000457 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		22	mg/kg	1.462	32.154	mg/kg	0.00322 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		100	mg/kg	1.126	112.589	mg/kg	0.0113 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	5600	mg/kg		5600	mg/kg	0.56 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.89	mg/kg	1.353	1.205	mg/kg	0.00012 %	✓	

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		20	mg/kg	2.637	52.734	mg/kg	0.00527 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		170	mg/kg	2.469	419.78	mg/kg	0.042 %	✓	
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.7	mg/kg	1.884	1.319	mg/kg	0.000132 %	✓	
11	pH			PH		8.8	pH		8.8	pH	8.8 pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
14	acenaphthene		201-469-6	83-32-9		0.15	mg/kg		0.15	mg/kg	0.000015 %	✓	
15	fluorene		201-695-5	86-73-7		0.15	mg/kg		0.15	mg/kg	0.000015 %	✓	
16	phenanthrene		201-581-5	85-01-8		1.7	mg/kg		1.7	mg/kg	0.00017 %	✓	
17	anthracene		204-371-1	120-12-7		0.49	mg/kg		0.49	mg/kg	0.000049 %	✓	
18	fluoranthene		205-912-4	206-44-0		2.6	mg/kg		2.6	mg/kg	0.00026 %	✓	
19	pyrene		204-927-3	129-00-0		2.2	mg/kg		2.2	mg/kg	0.00022 %	✓	
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
21	chrysene	601-048-00-0	205-923-4	218-01-9		0.9	mg/kg		0.9	mg/kg	0.00009 %	✓	
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.5	mg/kg		1.5	mg/kg	0.00015 %	✓	
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.59	mg/kg		0.59	mg/kg	0.000059 %	✓	
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.5	mg/kg		1.5	mg/kg	0.00015 %	✓	
25	indeno[123-cd]pyrene		205-893-2	193-39-5		0.75	mg/kg		0.75	mg/kg	0.000075 %	✓	
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.16	mg/kg		0.16	mg/kg	0.000016 %	✓	
27	benzo[ghi]perylene		205-883-8	191-24-2		0.98	mg/kg		0.98	mg/kg	0.000098 %	✓	
28	phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
										Total:	0.627 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS3[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
WS3[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
2.50 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
1	●	TPH (C6 to C40) petroleum group		TPH		77	mg/kg		77	mg/kg	0.0077 %	✓	
2	●	pH		PH		9.5	pH		9.5	pH	9.5 pH		
										Total:	0.0077 %		

Key

	User supplied data
●	Determinand defined or amended by HazWasteOnline (see Appendix A)

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 5000 mg/kg (0.5%) because: Samples are not considered flammable in their current state. It should be noted however that C35-C40 results are not available, though this is not likely to change the flammability of the samples.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0077%)

Classification of sample: WS3[3]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS3[3]
Sample Depth:
4.80 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.21%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15 mg/kg	1.32	19.805 mg/kg	0.00198 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4 mg/kg	1.142	0.457 mg/kg	0.0000457 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		14 mg/kg	1.462	20.462 mg/kg	0.00205 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		120 mg/kg	1.126	135.107 mg/kg	0.0135 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	2100 mg/kg		2100 mg/kg	0.21 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.24 mg/kg	1.353	0.325 mg/kg	0.0000325 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		17 mg/kg	2.637	44.824 mg/kg	0.00448 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.7 mg/kg	2.554	1.788 mg/kg	0.000179 %	✓	
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		170 mg/kg	2.469	419.78 mg/kg	0.042 %	✓	
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.1 mg/kg	1.884	0.188 mg/kg	0.0000188 %	✓	
11	pH			PH		9.1 pH		9.1 pH	9.1 pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.3 mg/kg		<0.3 mg/kg	<0.00003 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		acenaphthylene				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
			205-917-1	208-96-8									
14		acenaphthene				0.38	mg/kg		0.38	mg/kg	0.000038 %	✓	
			201-469-6	83-32-9									
15		fluorene				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
			201-695-5	86-73-7									
16		phenanthrene				4.1	mg/kg		4.1	mg/kg	0.00041 %	✓	
			201-581-5	85-01-8									
17		anthracene				1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				4.7	mg/kg		4.7	mg/kg	0.00047 %	✓	
			205-912-4	206-44-0									
19		pyrene				9.4	mg/kg		9.4	mg/kg	0.00094 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				3.1	mg/kg		3.1	mg/kg	0.00031 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				2.7	mg/kg		2.7	mg/kg	0.00027 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				2.9	mg/kg		2.9	mg/kg	0.00029 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				0.85	mg/kg		0.85	mg/kg	0.000085 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				4.3	mg/kg		4.3	mg/kg	0.00043 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				1.7	mg/kg		1.7	mg/kg	0.00017 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				0.58	mg/kg		0.58	mg/kg	0.000058 %	✓	
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				2.9	mg/kg		2.9	mg/kg	0.00029 %	✓	
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.278 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS4

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS4
Sample Depth:
0.50 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.12%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		14 mg/kg	1.32	18.485 mg/kg	0.00185 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3 mg/kg	1.142	0.343 mg/kg	0.0000343 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17 mg/kg	1.462	24.846 mg/kg	0.00248 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		81 mg/kg	1.126	91.197 mg/kg	0.00912 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	1200 mg/kg		1200 mg/kg	0.12 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.19 mg/kg	1.353	0.257 mg/kg	0.0000257 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		16 mg/kg	2.637	42.187 mg/kg	0.00422 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5 mg/kg	2.554	<1.277 mg/kg	<0.000128 %		<LOD
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		90 mg/kg	2.469	222.237 mg/kg	0.0222 %	✓	
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.1 mg/kg	1.884	0.188 mg/kg	0.0000188 %	✓	
11	pH			PH		10.3 pH		10.3 pH	10.3 pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13	●	acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-917-1	208-96-8									
14	●	acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			201-469-6	83-32-9									
15	●	fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			201-695-5	86-73-7									
16	●	phenanthrene				0.23	mg/kg		0.23	mg/kg	0.000023 %	✓	
			201-581-5	85-01-8									
17	●	anthracene				0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
			204-371-1	120-12-7									
18	●	fluoranthene				0.68	mg/kg		0.68	mg/kg	0.000068 %	✓	
			205-912-4	206-44-0									
19	●	pyrene				0.65	mg/kg		0.65	mg/kg	0.000065 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.27	mg/kg		0.27	mg/kg	0.000027 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.26	mg/kg		0.26	mg/kg	0.000026 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.39	mg/kg		0.39	mg/kg	0.000039 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				0.14	mg/kg		0.14	mg/kg	0.000014 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.36	mg/kg		0.36	mg/kg	0.000036 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25	●	indeno[123-cd]pyrene				0.15	mg/kg		0.15	mg/kg	0.000015 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
27	●	benzo[ghi]perylene				0.18	mg/kg		0.18	mg/kg	0.000018 %	✓	
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.16 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS4[2]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS4[2]
Sample Depth:
1.40 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.51%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 1A; H360Df "May damage the unborn child. Suspected of damaging fertility."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.51%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.51%)
zinc sulphate (compound conc.: 0.156%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13 mg/kg	1.32	17.164 mg/kg	0.00172 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		3.3 mg/kg	1.142	3.77 mg/kg	0.000377 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13 mg/kg	1.462	19 mg/kg	0.0019 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		200 mg/kg	1.126	225.178 mg/kg	0.0225 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	5100 mg/kg		5100 mg/kg	0.51 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
6		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.16	mg/kg	1.353	0.217	mg/kg	0.0000217 %	✓	
7		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		14	mg/kg	2.637	36.914	mg/kg	0.00369 %	✓	
8		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
9		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		630	mg/kg	2.469	1555.657	mg/kg	0.156 %	✓	
10		TPH (C6 to C40) petroleum group			TPH		19.3	mg/kg		19.3	mg/kg	0.00193 %	✓	
11		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.4	mg/kg	1.884	0.754	mg/kg	0.0000754 %	✓	
12		pH			PH		9.2	pH		9.2	pH	9.2 pH		
13		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
14		acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15		acenaphthene		201-469-6	83-32-9		0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
16		fluorene		201-695-5	86-73-7		0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
17		phenanthrene		201-581-5	85-01-8		0.58	mg/kg		0.58	mg/kg	0.000058 %	✓	
18		anthracene		204-371-1	120-12-7		0.11	mg/kg		0.11	mg/kg	0.000011 %	✓	
19		fluoranthene		205-912-4	206-44-0		1.2	mg/kg		1.2	mg/kg	0.00012 %	✓	
20		pyrene		204-927-3	129-00-0		1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.44	mg/kg		0.44	mg/kg	0.000044 %	✓	
22		chrysene	601-048-00-0	205-923-4	218-01-9		0.4	mg/kg		0.4	mg/kg	0.00004 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.52	mg/kg		0.52	mg/kg	0.000052 %	✓	
24		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
25		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.41	mg/kg		0.41	mg/kg	0.000041 %	✓	
26		indeno[123-cd]pyrene		205-893-2	193-39-5		0.19	mg/kg		0.19	mg/kg	0.000019 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
28		benzo[ghi]perylene		205-883-8	191-24-2		0.24	mg/kg		0.24	mg/kg	0.000024 %	✓	
29		phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
											Total:	0.699 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 5000 mg/kg (0.5%) because: Samples are not considered flammable in their current state. It should be noted however that C35-C40 results are not available, though this is not likely to change the flammability of the samples.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00193%)

Classification of sample: WS4[3]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:	
WS4[3]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
4.00 m	Entry:	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 8: Corrosive "waste which on application can cause skin corrosion"

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH (conc.: 12.2 pH)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		1.9	mg/kg	1.32	2.509	mg/kg	0.000251 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.5	mg/kg	1.142	0.571	mg/kg	0.0000571 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		3.7	mg/kg	1.462	5.408	mg/kg	0.000541 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		11	mg/kg	1.126	12.385	mg/kg	0.00124 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	58	mg/kg		58	mg/kg	0.0058 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		**<LOD**
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		3	mg/kg	2.637	7.91	mg/kg	0.000791 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.7	mg/kg	2.554	1.788	mg/kg	0.000179 %	✓	
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		26	mg/kg	2.469	64.202	mg/kg	0.00642 %	✓	
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		**<LOD**
11	pH			PH		12.2	pH		12.2	pH	12.2 pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
13	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		acenaphthene	201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15		fluorene	201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
16		phenanthrene	201-581-5	85-01-8		0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
17		anthracene	204-371-1	120-12-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
18		fluoranthene	205-912-4	206-44-0		0.08	mg/kg		0.08	mg/kg	0.000008 %	✓	
19		pyrene	204-927-3	129-00-0		0.08	mg/kg		0.08	mg/kg	0.000008 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
21		chrysene	601-048-00-0	205-923-4	218-01-9	0.03	mg/kg		0.03	mg/kg	0.000003 %	✓	
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.03	mg/kg		0.03	mg/kg	0.000003 %	✓	
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
25		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
27		benzo[ghi]perylene	205-883-8	191-24-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
28		phenol	604-001-00-2	203-632-7	108-95-2	<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
										Total:	0.0154 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS5

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS5
Sample Depth:
0.50 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		1.1	mg/kg	1.32	1.452	mg/kg	0.000145 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.8	mg/kg	1.142	0.914	mg/kg	0.0000914 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		1.7	mg/kg	1.462	2.485	mg/kg	0.000248 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		9.5	mg/kg	1.126	10.696	mg/kg	0.00107 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	89	mg/kg		89	mg/kg	0.0089 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		**<LOD**
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		2.3	mg/kg	2.637	6.064	mg/kg	0.000606 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.6	mg/kg	2.554	1.532	mg/kg	0.000153 %	✓	
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		32	mg/kg	2.469	79.017	mg/kg	0.0079 %	✓	
10	TPH (C6 to C40) petroleum group			TPH		36.43	mg/kg		36.43	mg/kg	0.00364 %	✓	
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		**<LOD**
12	pH			PH		11.4	pH		11.4	pH	11.4 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
14	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
15	acenaphthene		201-469-6	83-32-9		0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		fluorene				0.03	mg/kg		0.03	mg/kg	0.000003 %	✓	
			201-695-5	86-73-7									
17		phenanthrene				0.43	mg/kg		0.43	mg/kg	0.000043 %	✓	
			201-581-5	85-01-8									
18		anthracene				0.08	mg/kg		0.08	mg/kg	0.000008 %	✓	
			204-371-1	120-12-7									
19		fluoranthene				0.76	mg/kg		0.76	mg/kg	0.000076 %	✓	
			205-912-4	206-44-0									
20		pyrene				0.69	mg/kg		0.69	mg/kg	0.000069 %	✓	
			204-927-3	129-00-0									
21		benzo[a]anthracene				0.29	mg/kg		0.29	mg/kg	0.000029 %	✓	
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				0.28	mg/kg		0.28	mg/kg	0.000028 %	✓	
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				0.45	mg/kg		0.45	mg/kg	0.000045 %	✓	
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				0.14	mg/kg		0.14	mg/kg	0.000014 %	✓	
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				0.37	mg/kg		0.37	mg/kg	0.000037 %	✓	
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				0.16	mg/kg		0.16	mg/kg	0.000016 %	✓	
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				0.2	mg/kg		0.2	mg/kg	0.00002 %	✓	
			205-883-8	191-24-2									
29		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0232 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 5000 mg/kg (0.5%)
because: Samples are not considered flammable in their current state. It should be noted however that C35-C40 results are not available, though this is not likely to change the flammability of the samples.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00364%)

Classification of sample: WS5[2]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:	
WS5[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
5.00 m	Entry:	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.14%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17 mg/kg	1.32	22.446 mg/kg	0.00224 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.228 mg/kg	0.0000228 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		26 mg/kg	1.462	38 mg/kg	0.0038 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		62 mg/kg	1.126	69.805 mg/kg	0.00698 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	1400 mg/kg		1400 mg/kg	0.14 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.6 mg/kg	1.353	0.812 mg/kg	0.0000812 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		27 mg/kg	2.637	71.19 mg/kg	0.00712 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.6 mg/kg	2.554	1.532 mg/kg	0.000153 %	✓	
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		77 mg/kg	2.469	190.136 mg/kg	0.019 %	✓	
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		**<LOD**
11	pH			PH		9.2 pH		9.2 pH	9.2 pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
13		acenaphthylene	205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
14		acenaphthene	201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
15		fluorene	201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
16		phenanthrene	201-581-5	85-01-8		0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
17		anthracene	204-371-1	120-12-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
18		fluoranthene	205-912-4	206-44-0		0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
19		pyrene	204-927-3	129-00-0		0.07	mg/kg		0.07	mg/kg	0.000007 %	✓	
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
21		chrysene	601-048-00-0	205-923-4	218-01-9	0.03	mg/kg		0.03	mg/kg	0.000003 %	✓	
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
25		indeno[123-cd]pyrene	205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
27		benzo[ghi]perylene	205-883-8	191-24-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
28		phenol	604-001-00-2	203-632-7	108-95-2	<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
										Total:	0.18 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS6

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:	
WS6	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.90 m	Entry:	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 8: Corrosive "waste which on application can cause skin corrosion"

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH (conc.: 12.1 pH)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		4.9	mg/kg	1.32	6.47	mg/kg	0.000647 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6	mg/kg	1.142	0.685	mg/kg	0.0000685 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6.4	mg/kg	1.462	9.354	mg/kg	0.000935 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		190	mg/kg	1.126	213.919	mg/kg	0.0214 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	840	mg/kg		840	mg/kg	0.084 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.07	mg/kg	1.353	0.0947	mg/kg	0.00000947 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		5.1	mg/kg	2.637	13.447	mg/kg	0.00134 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.5	mg/kg	2.554	1.277	mg/kg	0.000128 %	✓	
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		53	mg/kg	2.469	130.873	mg/kg	0.0131 %	✓	
10	TPH (C6 to C40) petroleum group			TPH		104.2	mg/kg		104.2	mg/kg	0.0104 %	✓	
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		**<LOD**
12	pH			PH		12.1	pH		12.1	pH	12.1 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		0.37	mg/kg		0.37	mg/kg	0.000037 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14	●	acenaphthylene	205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15	●	acenaphthene	201-469-6	83-32-9		0.9	mg/kg		0.9	mg/kg	0.00009 %	✓	
16	●	fluorene	201-695-5	86-73-7		0.5	mg/kg		0.5	mg/kg	0.00005 %	✓	
17	●	phenanthrene	201-581-5	85-01-8		3.4	mg/kg		3.4	mg/kg	0.00034 %	✓	
18	●	anthracene	204-371-1	120-12-7		1	mg/kg		1	mg/kg	0.0001 %	✓	
19	●	fluoranthene	205-912-4	206-44-0		6.1	mg/kg		6.1	mg/kg	0.00061 %	✓	
20	●	pyrene	204-927-3	129-00-0		5.2	mg/kg		5.2	mg/kg	0.00052 %	✓	
21		benzo[a]anthracene	200-280-6	56-55-3		2.4	mg/kg		2.4	mg/kg	0.00024 %	✓	
		601-033-00-9											
22		chrysene	205-923-4	218-01-9		1.9	mg/kg		1.9	mg/kg	0.00019 %	✓	
		601-048-00-0											
23		benzo[b]fluoranthene	205-911-9	205-99-2		3.2	mg/kg		3.2	mg/kg	0.00032 %	✓	
		601-034-00-4											
24		benzo[k]fluoranthene	205-916-6	207-08-9		1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
		601-036-00-5											
25		benzo[a]pyrene; benzo[def]chrysene	200-028-5	50-32-8		2.8	mg/kg		2.8	mg/kg	0.00028 %	✓	
		601-032-00-3											
26	●	indeno[123-cd]pyrene	205-893-2	193-39-5		1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
27		dibenz[a,h]anthracene	200-181-8	53-70-3		0.26	mg/kg		0.26	mg/kg	0.000026 %	✓	
		601-041-00-2											
28	●	benzo[ghi]perylene	205-883-8	191-24-2		1.4	mg/kg		1.4	mg/kg	0.00014 %	✓	
29		phenol	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2											
										Total:	0.135 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 5000 mg/kg (0.5%) because: Samples are not considered flammable in their current state. It should be noted however that C35-C40 results are not available, though this is not likely to change the flammability of the samples.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.0104%)

Classification of sample: WS7

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:	
WS7	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1.50 m	Entry:	17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 2.8%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 1A; H360Df "May damage the unborn child. Suspected of damaging fertility."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 2.8%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

dicopper oxide; copper (I) oxide (compound conc.: 0.146%)
lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 2.8%)
zinc sulphate (compound conc.: 0.161%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		29	mg/kg	1.32	38.289	mg/kg	0.00383 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.8	mg/kg	1.142	0.914	mg/kg	0.0000914 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		46	mg/kg	1.462	67.232	mg/kg	0.00672 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		1300	mg/kg	1.126	1463.655	mg/kg	0.146 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	28000	mg/kg		28000	mg/kg	2.8 %	✓	

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.06	mg/kg	1.353	0.0812	mg/kg	0.00000812 %	✓	
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		21	mg/kg	2.637	55.37	mg/kg	0.00554 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		<0.5	mg/kg	2.554	<1.277	mg/kg	<0.000128 %		<LOD
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		650	mg/kg	2.469	1605.043	mg/kg	0.161 %	✓	
10	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
11	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
12	pH			PH		8.2	pH		8.2	pH	8.2 pH		
13	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
14	acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15	acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
16	fluorene		201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17	phenanthrene		201-581-5	85-01-8		0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
18	anthracene		204-371-1	120-12-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
19	fluoranthene		205-912-4	206-44-0		0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
20	pyrene		204-927-3	129-00-0		0.12	mg/kg		0.12	mg/kg	0.000012 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
22	chrysene	601-048-00-0	205-923-4	218-01-9		0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
24	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.06	mg/kg		0.06	mg/kg	0.000006 %	✓	
26	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
28	benzo[ghi]perylene		205-883-8	191-24-2		0.03	mg/kg		0.03	mg/kg	0.000003 %	✓	
29	phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
										Total:	3.124 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS7[2]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS7[2]
Sample Depth:
4.80 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 8: Corrosive "waste which on application can cause skin corrosion"

pH; pH "Assumed to be irritant/corrosive because of pH value"

Because of determinand:

pH (conc.: 12.3 pH)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		2.3 mg/kg	1.32	3.037 mg/kg	0.000304 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.685 mg/kg	0.0000685 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		4.8 mg/kg	1.462	7.015 mg/kg	0.000702 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		13 mg/kg	1.126	14.637 mg/kg	0.00146 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	53 mg/kg		53 mg/kg	0.0053 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
7	nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		4.3 mg/kg	2.637	11.338 mg/kg	0.00113 %	✓	
8	selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.6 mg/kg	2.554	1.532 mg/kg	0.000153 %	✓	
9	zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		33 mg/kg	2.469	81.487 mg/kg	0.00815 %	✓	
10	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
11	pH			PH		12.3 pH		12.3 pH	12.3 pH		
12	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
13	acenaphthylene		205-917-1	208-96-8		<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
14		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			201-469-6	83-32-9									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			201-695-5	86-73-7									
16		phenanthrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			201-581-5	85-01-8									
17		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			204-371-1	120-12-7									
18		fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-912-4	206-44-0									
19		pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			204-927-3	129-00-0									
20		benzo[a]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.0174 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS8

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS8
Sample Depth:
0.15 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 4.3%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 1A; H360Df "May damage the unborn child. Suspected of damaging fertility."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 4.3%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 4.3%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12	mg/kg	1.32	15.844	mg/kg	0.00158 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.3	mg/kg	1.142	0.343	mg/kg	0.0000343 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		10	mg/kg	1.462	14.616	mg/kg	0.00146 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		780	mg/kg	1.126	878.193	mg/kg	0.0878 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	43000	mg/kg		43000	mg/kg	4.3 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
7		nickel { nickel sulfate }				16	mg/kg	2.637	42.187	mg/kg	0.00422 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
8		selenium { nickel selenate }				0.6	mg/kg	2.554	1.532	mg/kg	0.000153 %	✓	
		028-031-00-5	239-125-2	15060-62-5									
9		zinc { zinc sulphate }				360	mg/kg	2.469	888.947	mg/kg	0.0889 %	✓	
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10		TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
				TPH									
11		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.1	mg/kg	1.884	0.188	mg/kg	0.0000188 %	✓	
		006-007-00-5											
12		pH				8.2	pH		8.2	pH	8.2 pH		
				PH									
13		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
14		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			205-917-1	208-96-8									
15		acenaphthene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-469-6	83-32-9									
16		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			201-695-5	86-73-7									
17		phenanthrene				0.12	mg/kg		0.12	mg/kg	0.000012 %	✓	
			201-581-5	85-01-8									
18		anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
			204-371-1	120-12-7									
19		fluoranthene				0.26	mg/kg		0.26	mg/kg	0.000026 %	✓	
			205-912-4	206-44-0									
20		pyrene				0.24	mg/kg		0.24	mg/kg	0.000024 %	✓	
			204-927-3	129-00-0									
21		benzo[a]anthracene				0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
		601-033-00-9	200-280-6	56-55-3									
22		chrysene				0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
		601-048-00-0	205-923-4	218-01-9									
23		benzo[b]fluoranthene				0.12	mg/kg		0.12	mg/kg	0.000012 %	✓	
		601-034-00-4	205-911-9	205-99-2									
24		benzo[k]fluoranthene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
		601-036-00-5	205-916-6	207-08-9									
25		benzo[a]pyrene; benzo[def]chrysene				0.09	mg/kg		0.09	mg/kg	0.000009 %	✓	
		601-032-00-3	200-028-5	50-32-8									
26		indeno[123-cd]pyrene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
			205-893-2	193-39-5									
27		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
28		benzo[ghi]perylene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
			205-883-8	191-24-2									
29		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
										Total:	4.485 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS8[2]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS8[2]
Sample Depth:
1.00 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.48%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 1A; H360Df "May damage the unborn child. Suspected of damaging fertility."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.48%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 0.48%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		11 mg/kg	1.32	14.524 mg/kg	0.00145 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.2 mg/kg	1.142	0.228 mg/kg	0.0000228 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		23 mg/kg	1.462	33.616 mg/kg	0.00336 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		88 mg/kg	1.126	99.078 mg/kg	0.00991 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	4800 mg/kg		4800 mg/kg	0.48 %	✓	
6	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
7		nickel { nickel sulfate }				28	mg/kg	2.637	73.827	mg/kg	0.00738 %	✓	
		028-009-00-5	232-104-9	7786-81-4									
8		selenium { nickel selenate }				0.6	mg/kg	2.554	1.532	mg/kg	0.000153 %	✓	
		028-031-00-5	239-125-2	15060-62-5									
9		zinc { zinc sulphate }				88	mg/kg	2.469	217.298	mg/kg	0.0217 %	✓	
		030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
10		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		**<LOD**
		006-007-00-5											
11		pH				9.3	pH		9.3	pH	9.3 pH		
				PH									
12		naphthalene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-052-00-2	202-049-5	91-20-3									
13		acenaphthylene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			205-917-1	208-96-8									
14		acenaphthene				0.04	mg/kg		0.04	mg/kg	0.000004 %	✓	
			201-469-6	83-32-9									
15		fluorene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
			201-695-5	86-73-7									
16		phenanthrene				0.25	mg/kg		0.25	mg/kg	0.000025 %	✓	
			201-581-5	85-01-8									
17		anthracene				0.05	mg/kg		0.05	mg/kg	0.000005 %	✓	
			204-371-1	120-12-7									
18		fluoranthene				0.52	mg/kg		0.52	mg/kg	0.000052 %	✓	
			205-912-4	206-44-0									
19		pyrene				0.46	mg/kg		0.46	mg/kg	0.000046 %	✓	
			204-927-3	129-00-0									
20		benzo[a]anthracene				0.21	mg/kg		0.21	mg/kg	0.000021 %	✓	
		601-033-00-9	200-280-6	56-55-3									
21		chrysene				0.19	mg/kg		0.19	mg/kg	0.000019 %	✓	
		601-048-00-0	205-923-4	218-01-9									
22		benzo[b]fluoranthene				0.25	mg/kg		0.25	mg/kg	0.000025 %	✓	
		601-034-00-4	205-911-9	205-99-2									
23		benzo[k]fluoranthene				0.1	mg/kg		0.1	mg/kg	0.00001 %	✓	
		601-036-00-5	205-916-6	207-08-9									
24		benzo[a]pyrene; benzo[def]chrysene				0.19	mg/kg		0.19	mg/kg	0.000019 %	✓	
		601-032-00-3	200-028-5	50-32-8									
25		indeno[123-cd]pyrene				0.11	mg/kg		0.11	mg/kg	0.000011 %	✓	
			205-893-2	193-39-5									
26		dibenz[a,h]anthracene				<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		**<LOD**
		601-041-00-2	200-181-8	53-70-3									
27		benzo[ghi]perylene				0.12	mg/kg		0.12	mg/kg	0.000012 %	✓	
			205-883-8	191-24-2									
28		phenol				<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		**<LOD**
		604-001-00-2	203-632-7	108-95-2									
										Total:	0.524 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS8[3]

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
WS8[3]
Sample Depth:
3.50 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 1.1%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 1A; H360Df "May damage the unborn child. Suspected of damaging fertility."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 1.1%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 1.1%)
zinc sulphate (compound conc.: 0.148%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		25 mg/kg	1.32	33.008 mg/kg	0.0033 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.6 mg/kg	1.142	0.685 mg/kg	0.0000685 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17 mg/kg	1.462	24.846 mg/kg	0.00248 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		860 mg/kg	1.126	968.264 mg/kg	0.0968 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	11000 mg/kg		11000 mg/kg	1.1 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
6		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.19	mg/kg	1.353	0.257	mg/kg	0.0000257 %	✓	
7		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		21	mg/kg	2.637	55.37	mg/kg	0.00554 %	✓	
8		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.7	mg/kg	2.554	1.788	mg/kg	0.000179 %	✓	
9		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		600	mg/kg	2.469	1481.578	mg/kg	0.148 %	✓	
10		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.4	mg/kg	1.884	0.754	mg/kg	0.0000754 %	✓	
11		pH			PH		10.1	pH		10.1	pH	10.1 pH		
12		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
13		acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
14		acenaphthene		201-469-6	83-32-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15		fluorene		201-695-5	86-73-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
16		phenanthrene		201-581-5	85-01-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
17		anthracene		204-371-1	120-12-7		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
18		fluoranthene		205-912-4	206-44-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
19		pyrene		204-927-3	129-00-0		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
20		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
21		chrysene	601-048-00-0	205-923-4	218-01-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
22		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
23		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
24		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
25		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
26		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
27		benzo[ghi]perylene		205-883-8	191-24-2		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
28		phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
											Total:	1.357 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH03

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
BH03
Sample Depth:
3.50 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1A; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 1.8%)

HP 10: Toxic for reproduction "waste which has adverse effects on sexual function and fertility in adult males and females, as well as developmental toxicity in the offspring"

Hazard Statements hit:

Repr. 1A; H360Df "May damage the unborn child. Suspected of damaging fertility."

Because of determinand:

lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 1.8%)

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

dicopper oxide; copper (I) oxide (compound conc.: 0.113%)
lead compounds with the exception of those specified elsewhere in this Annex (worst case) (Note 1 conc.: 1.8%)
zinc sulphate (compound conc.: 0.111%)

Determinands

Moisture content: 0% Dry Weight Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		22	mg/kg	1.32	29.047	mg/kg	0.0029 %	✓	
2	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.4	mg/kg	1.142	0.457	mg/kg	0.0000457 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20	mg/kg	1.462	29.231	mg/kg	0.00292 %	✓	
4	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		1000	mg/kg	1.126	1125.888	mg/kg	0.113 %	✓	
5	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }	082-001-00-6			1	18000	mg/kg		18000	mg/kg	1.8 %	✓	

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
6		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.18	mg/kg	1.353	0.244	mg/kg	0.0000244 %	✓	
7		nickel { nickel sulfate }	028-009-00-5	232-104-9	7786-81-4		17	mg/kg	2.637	44.824	mg/kg	0.00448 %	✓	
8		selenium { nickel selenate }	028-031-00-5	239-125-2	15060-62-5		0.9	mg/kg	2.554	2.298	mg/kg	0.00023 %	✓	
9		zinc { zinc sulphate }	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]		450	mg/kg	2.469	1111.183	mg/kg	0.111 %	✓	
10		TPH (C6 to C40) petroleum group			TPH		36.93	mg/kg		36.93	mg/kg	0.00369 %	✓	
11		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				1	mg/kg	1.884	1.884	mg/kg	0.000188 %	✓	
12		pH			PH		8.5	pH		8.5	pH	8.5 pH		
13		naphthalene	601-052-00-2	202-049-5	91-20-3		0.14	mg/kg		0.14	mg/kg	0.000014 %	✓	
14		acenaphthylene		205-917-1	208-96-8		<0.03	mg/kg		<0.03	mg/kg	<0.000003 %		<LOD
15		acenaphthene		201-469-6	83-32-9		0.24	mg/kg		0.24	mg/kg	0.000024 %	✓	
16		fluorene		201-695-5	86-73-7		0.17	mg/kg		0.17	mg/kg	0.000017 %	✓	
17		phenanthrene		201-581-5	85-01-8		2	mg/kg		2	mg/kg	0.0002 %	✓	
18		anthracene		204-371-1	120-12-7		0.38	mg/kg		0.38	mg/kg	0.000038 %	✓	
19		fluoranthene		205-912-4	206-44-0		2.7	mg/kg		2.7	mg/kg	0.00027 %	✓	
20		pyrene		204-927-3	129-00-0		2.4	mg/kg		2.4	mg/kg	0.00024 %	✓	
21		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
22		chrysene	601-048-00-0	205-923-4	218-01-9		1	mg/kg		1	mg/kg	0.0001 %	✓	
23		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.3	mg/kg		1.3	mg/kg	0.00013 %	✓	
24		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.49	mg/kg		0.49	mg/kg	0.000049 %	✓	
25		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.1	mg/kg		1.1	mg/kg	0.00011 %	✓	
26		indeno[123-cd]pyrene		205-893-2	193-39-5		0.52	mg/kg		0.52	mg/kg	0.000052 %	✓	
27		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		0.15	mg/kg		0.15	mg/kg	0.000015 %	✓	
28		benzo[ghi]perylene		205-883-8	191-24-2		0.67	mg/kg		0.67	mg/kg	0.000067 %	✓	
29		phenol	604-001-00-2	203-632-7	108-95-2		<0.3	mg/kg		<0.3	mg/kg	<0.00003 %		<LOD
											Total:	2.04 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"
Force this Hazardous Property to non-hazardous for cumulative determinand results below the threshold of: 5000 mg/kg (0.5%) because: Samples are not considered flammable in their current state. It should be noted however that C35-C40 results are not available, though this is not likely to change the flammability of the samples.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group (conc.: 0.00369%)

Appendix A: Classifier defined and non GB MCL determinands

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **lead compounds with the exception of those specified elsewhere in this Annex (worst case)**

GB MCL index number: 082-001-00-6
Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A
Additional Hazard Statement(s): Carc. 1A; H350
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected.

lead {lead compounds with the exception of those specified elsewhere in this Annex (worst case)}

Second worst case CLP species based on site history - while Chromium (VI) was not specifically tested for, there are no historic industrial uses on the site which are typical sources of Chromium (VI), therefore it is most likely that Chromium, where noted, is Chromium (III).

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel sulfate}

Most likely worst case CLP species based on site history

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight

zinc {zinc sulphate}

Second worst case CLP species based on site history - while Chromium (VI) was not specifically tested for, there are no historic industrial uses on the site which are typical sources of Chromium (VI), therefore it is most likely that Chromium, where noted, is Chromium (III).

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

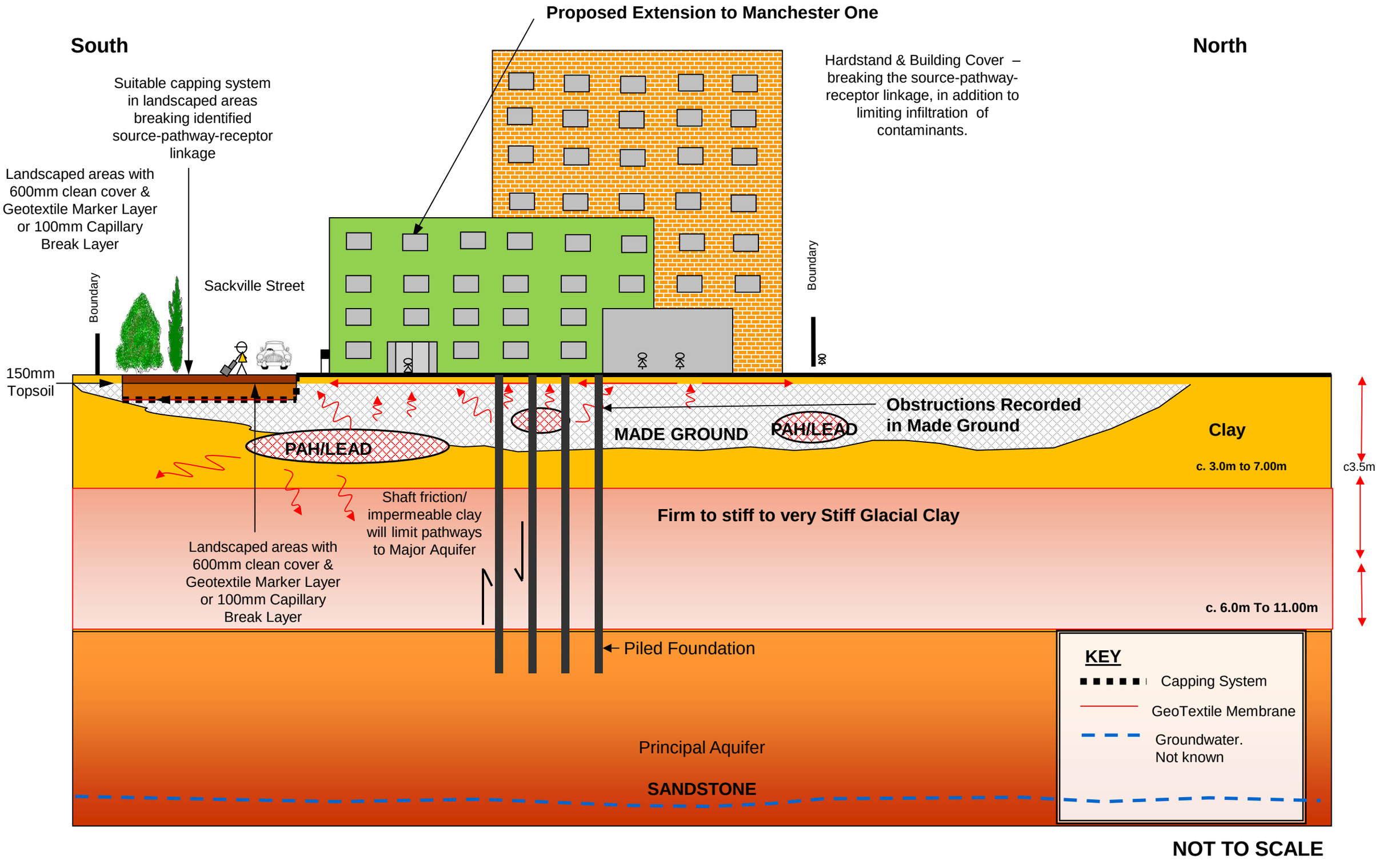
Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2025.64.6479.11811 (05 Mar 2025)
HazWasteOnline Database: 2025.64.6479.11811 (05 Mar 2025)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021
GB MCL List v2.0 - version 2.0 of 20th October 2023
GB MCL List v3.0 - version 3.0 of 11th January 2024
GB MCL List v4.0 - version 4.0 of 2nd March 2024
GB MCL List v5.0 - version 5.0 of 26th June 2024

Appendix F – Conceptual Models & Risk Assessments



Specialists in Ground Engineering & Energy	**Site Conceptual Model**	Project No: NX587
	Project Title: Proposed Extension Manchester One	Date: 10.03.2025

PRINCIPLES OF RISK ASSESSMENT

MONITORING AND ASSESSMENT CRITERIA

C 1.0 GENERAL

C 1.1 The purpose of this appendix is to describe in detail the concepts underlying the risk-based approach to assessing potentially contaminated land, introduce the roles of key legislation and describe the qualitative methodology adopted for evaluating and characterising risk.

C 1.2 Current best practice in the UK promotes a risk-based approach to dealing with both soil and groundwater contamination. The principal aim of the approach is to ensure protection of human health and the environment in a thorough, transparent and cost-effective manner.

C 1.3 Fundamental to the risk-based approach is the concept that for 'Contaminated Land' to be designated, as a consequence of historic activities, a pathway for contamination must be shown to exist between a source of contamination and a receptor. The combined presence of a source, pathway and a receptor is described as a 'pollutant linkage'.

C 1.4 The concepts associated with a contaminant source, pathway and receptor are defined in DETR Circular 02/2000 'Contaminated Land Environmental Protection Act 1990: Part II A'. A ***source*** of contamination may be considered as a 'substance which is in, on or under land that has the potential to cause harm or to cause pollution of controlled waters'. A ***receptor*** can be considered as either 'a living organism, a group of living organisms, an ecological system or a piece of property which is being, or could be harmed, by a contaminant or controlled waters which are being, or could be, polluted by a contaminant'. A ***pathway*** may be considered as one or more routes by, or through, which a receptor is being, or could be, exposed to or affected by a contaminant. Typical pathways may include migration in groundwater, surface water run-off or infiltration, inhalation, dermal contact and ingestion.

C 1.5 The risks posed by an identified pollutant linkage can often be mitigated by removing the source of contamination, treating the source of contamination, blocking the relevant pathway(s) or by protecting the receptor.

C 2.0 PRINCIPLES OF RISK EVALUATION

C 2.1 The risk evaluation methodology presented below is qualitative in nature, and is therefore a subjective method. It is based upon guidance presented in CIRIA publication referenced C552, 'Contaminated land risk assessment ~ A guide to good practice', 2001 and involves the classification of the following.

C 2.2 The magnitude of the potential **consequence** (severity) of risk occurring (Table C 1).

C 2.3 The magnitude of the **probability** (likelihood) of the risk occurring (Table C 2).

C 2.4 These are then considered in conjunction to give a risk matrix (Table C 3)

Classification	Definition	Examples
Severe	Short-term (acute) risk to human health likely to result in 'significant harm' as defined by the Environmental Protection Act 1990, Part II A. Short-term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem (note the definitions of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000).	High concentrations of cyanide on the surface of an informal recreation area. Major spillage of contaminants from site into controlled water. Explosion, causing building collapse (can also equate to a short-term human health risk if buildings are occupied).
Medium	Chronic damage to Human Health ('significant harm' as defined in DETR, 2000). Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution). A significant change in a particular ecosystem, or organism forming part of such ecosystem. (Note: the definitions of ecological systems within Draft Circular on Contaminated Land, DETR, 2000).	Concentrations of a contaminant from site exceed the generic, or site-specific assessment criteria. Leaching of contaminants from a site to a major or minor aquifer. Death of a species within a designated nature reserve.
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ('significant harm' as defined in the *Draft Circular on Contaminated Land,* DETR, 2000). Damage to sensitive buildings/structures/ services or the environment.	Pollution of non-classified groundwater. Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability).
Minor	Harm although not necessarily significant harm, which may result in a financial loss, or expenditure to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc). Easily repairable effects of damage to buildings, structures and services.	The presence of contaminants at such concentrations that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discolouration of concrete.

Table C 1: Classification of Consequence

Classification	Definition
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such event would take place, and is less likely in the shorter term.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

Table C 2: Classification of Probability

		Consequence			
		Severe	*Medium*	*Mild*	*Minor*
Probability	High Likelihood	Very High Risk	High Risk	Moderate Risk	Moderate/Low Risk
	Likely	High Risk	Moderate Risk	Moderate/Low Risk	Low Risk
	Low Likelihood	Moderate Risk	Moderate/Low Risk	Low Risk	Very Low Risk
	Unlikely	Moderate/Low Risk	Low Risk	Very Low Risk	Very Low Risk

Table C 3: Comparison of Consequence Against Probability

Very High Risk	There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening. This risk, if realised, is likely to result in a substantial liability. Urgent investigation (if not undertaken already) and remediation are likely to be required.
High Risk	Harm is likely to arise to a designated receptor from an identified hazard. Realisation of the risk is likely to present a substantial liability. Urgent investigation (if not undertaken already) is required and remedial works may be necessary in the short term and are likely over the longer term.
Moderate Risk	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required to clarify the risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low Risk	It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.
Very Low Risk	There is a low possibility that harm could arise to a receptor. In the event of such harm being realised, it is not likely to be severe.

Table C 4: Description of the classified risks and likely action required

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Conceptual Site Model (CSM) and Refined Risk Assessment
Table 2.0 (Phase 2)

Table and Summary of Potential Risks, Sheet 1

SOURCE – PATHWAY -RECEPTOR LINKAGE				QUANTITATIVE RISK ASSESSMENT		
Contaminant	**Location**	**Receptors**	**Pathways to Receptors**	**Associated Hazard (Potential Severity)**	**Likelihood of Occurrence**	**Risk***
Potential contaminants may be present within Made Ground and natural strata beneath the site associated with historical past usage. - Ash, cinder and clinker used for levelling / drainage: heavy metals, sulphates and PAHs. - Hydrocarbons. - Asbestos Containing Material (ACM). - VOCs, SVOCs Asbestos Containing Materials may also present within existing structures	Possibly within sub surface strata.	Ground water (Undifferentiated Aquifer & Principal Aquifer	Vertical percolation to groundwater	Groundwater (Medium – pollution of sensitive water resource)	Elevated concentrations of PAH & lead in soils. Relatively impervious clay deposits exist below made ground preventing lateral and vertical migration pathways.	**Low/moderate reassessed as Low post construction**
		Surface Water 151m South – Rochdale Canal	Lateral percolation to surface water	Surface Water (Medium – pollution of Sensitive water resource)	Site groundwater unlikely to be in hydraulic continuity with Rochdale Canal and relatively impervious clay deposits exist below made ground preventing lateral and vertical migration pathways	**Low/moderate reassessed as Low**
		End user of site (Staff and patrons)	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Human Health (Medium)	Elevated concentrations of lead and PAH in soils. 600mm cover system required in new landscaped areas.	**Low/Moderate reassessed as low post construction**
		Construction workers if applicable	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Groundwater (Medium – pollution of sensitive water resource)	Appropriate PPE required & asbestos control measures	**Low/Moderate reassessed as low post construction**

** Where risk is evaluated as **moderate** or greater) either; a) remedial action is recommended to address this residual risk (Section 8.0 in the main body of the report) or, b) further investigation is recommended to better inform the risk classification and/or to enable a more detailed, quantitative risk assessment to be undertaken.*

Table and Summary of Potential Risks, Sheet 2

SOURCE – PATHWAY -RECEPTOR LINKAGE				QUANTITATIVE RISK ASSESSMENT		
Contaminant	**Location**	**Receptors**	**Pathways to Receptors**	**Associated Hazard (Potential Severity)**	**Likelihood of Occurrence**	**Risk***
Off site contaminants from surrounding land use	Possibly within made-ground surrounding site.	End user of site (Staff and patrons)	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Human Health (Medium)	Unlikely. Based upon soil concentrations.	**Low/Moderate reassessed as low post construction**
		Construction workers if applicable	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Human Health (Minor – Providing suitable PPE equipment is worn)	Possible in soil samples retrieved within Made Ground. Appropriate PPE required & asbestos control measures	**Low/Moderate reassessed as low post construction**
Gas associated with Made Ground	Possibly within strata beneath the site.	End user of site (Staff and patrons)	Migration through strata and accumulation under buildings of explosive and asphyxiating gases.	Human Health (Severe)	Possible – ground gas monitoring confirm low risk. No nearby landfills.	**Low/Moderate reassessed as low post construction**

** Where risk is evaluated as **moderate** or greater) either; a) remedial action is recommended to address this residual risk (Section 8.0 in the main body of the report) or, b) further investigation is recommended to better inform the risk classification and/or to enable a more detailed, quantitative risk assessment to be undertaken.*

Appendix G – Gas Monitoring Results

Specialists in Ground Engineering & Energy

Job No:	NX587
Date:	23.02.2025
Engineer:	MN

Site:	Manchester One Extension
Client:	Booth King
Equipment:	GA5000

*Groundwater bailed before monitoring

WS01	Flow Rate (l/h)	Pressure Differential	Gas Concentration										Water		Start		Finish	
			Peak					Steady										
			CH_4 %	CO_2 %	O_2 %	LEL %	H2S/ CO (ppm)	CH_4 %	CO_2 %	O_2 %	LEL %	H2S/ CO (ppm)	Depth to Water	Depth to Base		Barometric Pressure		Barometric Pressure
15.01.2025	0.0	0.00	0.2	0.2	20.5	4.0	0/0	0.2	0.2	20.5	8.0	0/0	Dry	2.53		999		999
24.01.2025	0.2	0.01	0.2	0.2	20.4	4.0	0/0	0.2	0.1	20.4	4.0	0/0	Dry	2.53		985		985
07.02.2025	0.0	0.05	0.0	0.2	20.4	0.0	0/0	0.0	0.2	20.4	0.0	0/0	Dry	2.52		1023		1023
14.02.2025	0.0	0.12	0.3	0.2	20.6	6.0	0/0	0.3	0.2	20.6	6.0	0/0	Dry	2.53		1019		1019
21.02.2025	0.1	0.00	0.2	0.1	20.5	4.0	0/0	0.2	0.1	20.5	4.0	0/0	Dry	2.52		983		983
03.03.2025	0.0	0.30	0.1	0.1	20.4	2.0	0/0	0.1	0.1	20.4	2.0	0/0	Dry	2.52		1015		1015

WS03	Flow Rate (l/h)	Pressure Differential	Gas Concentration										Water		Start		Finish	
			Peak					Steady										
			CH_4 %	CO_2 %	O_2 %	LEL %	H2S/ CO (ppm)	CH_4 %	CO_2 %	O_2 %	LEL %	H2S/ CO (ppm)	Depth to Water	Depth to Base		Barometric Pressure		Barometric Pressure
15.01.2025	0.3	0.02	0.1	0.4	20.3	2.0	0/0	0.1	0.4	20.3	2.0	0/0	Dry	3.97		999		999
24.01.2025	0.0	0.07	0.1	0.1	20.4	2.0	0/0	0.1	0.1	20.4	2.0	0/0	Dry	3.97		985		985
07.02.2025	0.1	0.16	0.2	0.1	20.3	4.0	0/0	0.2	0.1	20.3	4.0	0/0	Dry	3.95		1023		1023
14.02.2025	0.1	0.11	0.2	0.5	20.2	4.0	0/0	0.0	0.5	20.2	4.0	0/0	Dry	3.97		1019		1019
21.02.2025	0.0	0.07	0.3	0.6	18.0	6.0	0/0	0.3	0.6	18.0	6.0	0/0	Dry	3.97		983		983
03.03.2025	0.0	0.03	0.2	0.5	17.9	4.0	0/0	0.2	0.5	17.9	4.0	0/0	Dry	3.97		1015		1015

WS05	Flow Rate (l/h)	Pressure Differential	Gas Concentration										Water		Start		Finish	
			Peak					Steady										
			CH_4 %	CO_2 %	O_2 %	LEL %	H2S/ CO (ppm)	CH_4 %	CO_2 %	O_2 %	LEL %	H2S/ CO (ppm)	Depth to Water	Depth to Base		Barometric Pressure		Barometric Pressure
15.01.2025	0.0	0.14	0.2	0.1	20.6	4.0	0/0	0.2	0.2	20.6	4.0	0/0	Dry	1.23		999		999
24.01.2025	0.0	0.02	0.2	0.4	20.3	4.0	0/0	0.2	0.4	20.3	4.0	0/0	Dry	1.23		985		985
07.02.2025	0.1	0.02	0.0	0.1	20.4	0.0	0/0	0.0	0.1	20.4	0.0	0/0	Dry	1.27		1023		1023
14.02.2025	0.0	0.02	0.0	0.9	20.1	0.0	0/0	0.0	0.9	20.1	0.0	0/0	Dry	1.25		1019		1019
21.02.2025	0.0	0.00	0.0	0.1	20.3	0.0	0/0	0.0	0.1	20.3	0.0	0/0	Dry	1.23		983		983
03.03.2025	0.0	0.01	0.0	0.1	20.4	0.0	0/0	0.0	0.1	20.4	0.0	0/0	Dry	1.23		1015		1015

WS07	Flow Rate (l/h)	Pressure Differential	Gas Concentration										Water		Start		Finish	
			Peak					Steady										
			CH_4 %	CO_2 %	O_2 %	LEL %	H2S/ CO (ppm)	CH_4 %	CO_2 %	O_2 %	LEL %	H2S/ CO (ppm)	Depth to Water	Depth to Base		Barometric Pressure		Barometric Pressure
15.01.2025	0.0	0.01	0.0	0.2	20.5	0.2	0/0	0.0	0.2	20.5	0.0	0/0	Dry	4.52		999		999
24.01.2025	0.0	0.09	0.0	0.1	20.5	0.0	0.0	0.0	0.1	20.5	0.0	0/0	Dry	4.53		985		985
07.02.2025	0.0	0.00	0.4	0.3	20.2	8.0	0/0	0.4	0.3	20.2	8.0	0/0	Dry	4.50		1023		1023
14.02.2025	0.1	0.12	0.2	0.2	20.5	4.0	0/0	0.2	0.2	20.5	4.0	0/0	Dry	4.54		1019		1019
21.02.2025	0.0	0.00	0.0	0.1	20.3	0.0	0/0	0.0	0.1	20.3	0.0	0/0	Dry	4.53		983		983
03.03.2025	0.0	0.08	0.0	0.1	20.2	0.0	0/0	0.0	0.1	20.2	0.0	0/0	Dry	4.53		1015		1015

CH_4	Above the 1.0% v/v guideline value in Waste Management Paper no 27 (WMP27).	CO_2	Above the 1.5% v/v guideline value given in WMP27.

Date	Weather	Pressure Trend	Ground Conditions
15.01.2025	Overcast/cold	Low and falling	Damp
24.01.2025	Dry and cold	low and steady	Damp
07.02.2025	Sunny. Very cold	High and steady	Damp
14.02.2025	Overcast windy. Cold	High and falling	Damp
21.02.2025	Overcast dry.	Low and falling	Damp
02/02/1900	Sunny. Cold	High and steady	Damp