



Specialists in Ground Engineering & Energy

Phase 1 Desk Study, Ground Stability Risk Assessment & Preliminary Phase 2 Geoenvironmental Report for Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN



Client

Rochdale
Development
Agency



Project No: NX570



DOCUMENT VERIFICATION

Report Reference: NX570 **Issue:** Final **Date:** 30th September 2024

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Revision History

Revision	Date	Description	Reviewed by	Approved by
Issue	September 2024	Final		

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EXECUTIVE SUMMARY

Site Location & Access	Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN
Grid Reference	389922, 412707
Site Area	Approximately 0.08hectares.
Site description	A site walkover of external areas was carried out on the 25th of October 2023 by a suitably qualified engineer from NX Consulting. The site comprises an existing 3-storey brick-built building within the northwest of the site (construction circa 1990), hosting food outlets at ground floor and a basement covering part of the building. The remainder of the site and adjacent to this is a single-storey building of retail units occupying the majority of the site's area. A small courtyard area is present to the north of the retail units, where a 3m high brick wall with poor stability was observed within the northern boundary of the site and the courtyard. The property is bound to the north by a fire station and residential housing, to the east by open Station Road, commercial buildings and Rochdale Train Station, to the south by Station Road and Rochdale Train Station beyond that, and to the west Maclure Road, Rochdale Tram Stop (Stop E), St John the Baptist Church, commercial buildings and associated roads. No evidence of ground instability, major contamination sources and invasive plant species was observed during the walkover. Access for site investigation plant and equipment will be restricted and consideration required to both pre and post demolition intrusive works.
Geology	The Groundsure Report and BGS Mapping shows the presence of Made Ground 20m southeast of the site. Superficial deposits on site and the surrounding area comprises Glaciofluvial deposits – sand and gravel. The solid geology on site and the surrounding area comprises Old Lawrence Rock (sandstone) is also found to underlie the surrounding area to the south of the site. Pennine Lower Coal Measures Formation (mudstone siltstone & sandstone) are also recorded to underlie the site (area within the north of site) and the surrounding area. There are 4no. bedrock faults and other linear features recorded

	within 500m of site: • On site: Normal fault, (inferred) • 91m NE: Normal fault, (inferred) • 131m W: Coal Seam, (inferred) • 349m SW: Coal Seam, (inferred)
Mining Risk & Ground Stability	The site and surrounding area are within a coal mining area as defined by the Coal Authority. The Coal Mining (CON29M) Assessment considers the property to be low from coal mining related instability and ground gas risk, and that no further action is required with regards to past coal mining.
Flood Risk	The site is not recorded to be at risk of flooding from rivers and the sea. The site is not located within a Flood Risk Zones 2 or 3. The site is stated to be at moderate risk from groundwater flooding. The site does not benefit from Environment Agency defined flood defences. The site is stated to be at negligible risk from surface water flooding. The highest risk on site from pluvial flooding shows a 1 in 30-year, risk of between 0.3 - 1.0m.
Site History	On-Site Historical mapping initially shows the site comprised predominantly undeveloped land until 1910 where a 3-storey building was developed. By 1985-1989, a garage is present until further redevelopment of 4no. single retail units between 2003 and the present day. Offsite Potentially contaminative uses identified in the surrounding area have included train/tram stations (former Lancashire and Yorkshire Railway lines), works, garages, depots, warehouses, mills, Canal Wharf, fire station, offices, community centre, employment exchange, residential houses, potential coal workings, schools, churches, workhouses and unnamed buildings. General reprofiling has taken place in the surrounding area. Known Made Ground deposits are recorded on site and within the wider area.

Utility Locations	Underground services impact the site and the design team should familiarise themselves with their presence and implications on the development. An overhead cable runs from the northeastern corner of the existing building (4m high) to a utility pole approximately 8m NE off site.
Landfill Sites & Ground Gases	No active or recent landfill sites are recorded within 500m of the site. No historic (BGS records or EA/NRW records) landfill sites are recorded within 500m of the site. 1no. historic landfills (EA/NRW records) have been identified within 500m of site, which is situated 303m E of site. Given the developmental history of the site and surrounding area, and nearby borehole logs, the risk from hazardous ground gas is considered to be Low to Moderate due to the possible presence of Made Ground, possible peat deposits and potential coal workings (within the Arley Coal seam to the north and within the surrounding area of the site. The property is within a Radon Affected Area, with an estimated properties affected between 1% and 3%. As such, no radon protection measures are required.
Geotechnical Assessment	It is understood that the site is to be redeveloped with a new six storey apartment block with retail at ground floor level. It is likely that a post-development foundation system cannot fully be confirmed until final building levels, post demolition, and any 'Build Near' restrictions are established. The Made Ground deposits and shallow fluvioglacial deposits are considered unsuitable as an adequate founding stratum, for the main building, due to the possible risks of unacceptable total and differential settlements occurring. BGS mapping suggests bedrock is present at a depth of > 50m to External boreholes have been carried out where access is available and further boreholes should be undertaken to 20m depth to provide information for final foundation design (once the building is demolished). It is considered that a piled foundation solution is considered the most suitable for foundations for the proposed main building development. The risk associated with obstructions, vibration and bands of stiff to very stiff clay should be assessed adequately by

the designer.

NHBC guidance in relation to trees should be followed, due to the presence of clay bands. Heave protection measures should be used for foundations and drainage where trees are present within influencing distance. Heave protection measures should be assessed in the presence of any trees.

Concrete Design

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.

Pavement Construction

A CBR value of 2% could be used for pavement construction within the Made Ground. Any soft spots or other unsuitable materials should be excavated out prior to construction. Where access roads are to be adopted, design CBR values should be confirmed by carrying out in-situ plate load tests.

Soakaways

In order to facilitate any planned soakaway test design, soakaway tests should be undertaken in accordance with BRE Digest 365, if soakaways are to be considered.

Groundwater and Excavations

Excavation stability is likely to be poor, due to the granular materials present. Excavations would need to be battered back to a suitable angle of repose or fully supported during construction.

Excavations should be feasible with conventional plant.

Groundwater was encountered during ground gas monitoring at approximately 2.40m bgl. Shallow foundation excavations (<1.50m bgl) may therefore be expected to remain dry. Where saturated sand deposits are present rapid groundwater inundation and collapse should be anticipated.

Any excavations extending below the water table, would need to be dewatered in advance of the main excavation works to prevent running sand conditions from developing. Sump pumps or possibly well points may be required for this. It is recommended that groundwater levels are monitored during the construction

	work to enable any dewatering requirements to be identified in advance and advice sought from a specialist hydrogeologist.
Conceptual Model	Further intrusive works and contaminated testing are recommended once the building is demolished to confirm this conceptual model. Based upon the testing to date, soil concentrations are not considered to pose an unacceptable risk to human health. No visual or olfactory evidence of hydrocarbon or solvent contamination was encountered during the NX Consulting investigation. Asbestos was not recorded during initial screening. Given the age of the building and limited investigation works to date, recorded exceedances are probable present within underlying made ground deposits post demolition and a potentially unacceptable risk may be posed to future end users of the site from shallow soils present within limited 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. 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 any unrecorded contamination the most cost effective remedial solution is likely to comprise a simple capping layer. Within areas of proposed landscaping it is recommended that either additional testing is carried out or 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. For any imported materials required to complete the cover soils, the frequency of testing to be undertaken shall be as given in the

YALPAG document Verification Requirements for Cover Systems, Version 3.4 dated November 2017.

All operations may 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.

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

Soil concentrations are not considered to pose an unacceptable risk to controlled waters.

A watching brief should be carried out by the appointed contractor during development and if fuel tanks/ and or hydrocarbon/solvent contamination is encountered, NX Consulting should be notified so that appropriate testing and a refined risk assessment can be carried out and local authority representatives can be notified.

Elevated GSV values, Carbon Dioxide concentrations within greater than 5.0% resulting in the determination of Characteristic Situation 2 classification were noted in site boreholes. Gas protection measures should be installed in accordance with BS8485: 2015.

Based on a Type B development and CS2 classification a gas protection score of 3.5 to will need to be achieved.

Gas protection measures should be installed as prescribed in BRE 414 with the ventilation of the sub-floor void designed to provide a minimum of one complete volume change per 24 hours.

Independent validation of gas protection measures is needed to achieve the required points score.

Prior to the adoption of any gas protection measures, agreement should be sought from the local authority environmental health department and building control.

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.

On completion of the supplementary report, soil samples will be 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.

If new pipework is to adopted we recommend that additional testing is carried out along the line of the new pipework.

This report should be issued to the regulatory authorities to prevent delays in the project. A remediation strategy and validation report will be required prior to discharge of any outlying planning conditions.



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1.0 INTRODUCTION

1.1 Instruction

NX Consulting Limited have been commissioned by Booth King on behalf of Rochdale Development Agency (The Client) to conduct a Phase 1 Geoenvironmental Desk Study and Ground Stability Risk Assessment & Preliminary (Pre-demolition) Phase 2 Site Investigation Report at Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN.

It is understood that the proposed development of the site includes the following;

- Demolition of the existing single-storey retail building.
- Refurbishment of the existing 3-storey building, including removal of some internal walls to form ground floor retail space and conversion of upper storeys to residential space.
- Construction of new 6-storey residential building with curved frontage on the footprint of the former single-storey retail buildings.

Site investigation works were significantly restricted in access availability and the pre-demolition works have been developed to provide indicative information only. A supplementary phase of works will be required (post demolition) to better establish contaminants risks to human health and controlled water receptors and geotechnical information for pile design. This information being used to confirm the findings of this report and the pre demolition remediation strategy developed for the site.

1.2 Previous Assessments

NX have not been provided with information indicating that previous reports have been carried out at the site.

A preliminary Phase 2 Environmental Assessment of land at Central Retail Park, Richard Street, Rochdale, was undertaken by Clarke Bond (report reference: ZM01991E/R1).

Central Retail Park is situated approximately 100m north of the site where a desk study and geoenvironmental investigation (Ref: 22254E/R1 Dated March 2010) on a proposed extension were undertaken. The investigation comprised 8no cable tool boreholes to depths circa 20.00mbgl, 17no window sampler boreholes to depths circa 5.00mbgl and was carried out between 11th and 26th April 2011.

The site was to be redeveloped for commercial purposes comprising a retail development with associated hardstanding, access roads, car parking and limited landscaped areas.

Made Ground was encountered in all exploratory holes at typical depths ranging from 0.75m and 2.2m. A maximum depth of 4.00mbgl was recorded in WS3 beneath a concrete slab in the very north of the site.

Underlying the Made Ground, superficial deposits were encountered to a maximum depth of 20.00mbgl+ in BH1A. The superficial deposits generally consisted of fine to coarse silty sand and/or subrounded to rounded gravel interbedded with soft to stiff

laminated clay/silt. Organic sand with peat lenses was also recorded within a number of window sample boreholes. Soft organic clay/ peaty clay was recorded within BH6A from 3.00mbgl to 4.80mbgl.

SPT 'N' values recorded within granular deposits within the upper 4.00m of strata generally indicate a loose to medium dense state of compaction, before encountering medium dense to dense conditions thereafter.

SPT 'N' values ranged from 1 (very loose) to 63 (very dense/refusal) within window sample boreholes at depths ranging from 1.20mbgl to a maximum depth of 5.00mbgl. SPT 'N' values in superficial deposits indicate a generally loose to medium dense state of compaction.

Bedrock was not encountered within the depth of drilling in any boreholes across the site.

Groundwater was encountered in the majority of window sample boreholes formed to 5.00mbgl. The general groundwater table appeared to be present at depths between 4.0m and 5.0m below ground level and was confined to the granular deposits. Damp or wet conditions generally being recorded from 4.00mbgl.

No visual or olfactory evidence of hydrocarbon, solvent or dyestuff, contamination was observed during the site investigation works.

Ground gas monitoring visits concluded that CO₂ levels ranged from 0.0%v/v to 9.0%v/v and recorded CH₄ levels ranged from 0.0%v/v to 7.6%v/v. Maximum flow rates of 0.6 litres/hr. The results indicated Characteristic Situation 2 measures were required.

Soil and groundwater contamination beneath the site during the Phase 1 desk study was considered to pose a medium risk. The chemical analysis of heavy metals in the site soils showed that all UCL values are below the SGV's or GAC's for commercial developments except for lead.

Records indicated that the River Roch was the nearest surface water feature, being 228m to the north of the site. The risk to surface water features was considered low, and the risks to Controlled Water receptors from leaching and groundwater migration are therefore, perceived to be negligible, post construction.

The Phase 2 report concluded that as an alternative to piled foundations, the Made Ground may respond to ground improvement technique such as vibro compaction.

Similar ground conditions should be anticipated but not guaranteed due to the proximity of the sites.

1.3 Scope of Work

The aim of any Desk Top Study is to assess the potential ground related risks at the site and to inform a decision with the purchase of the site. In order to achieve the above stated aims and objectives, the following scope of works has been determined:

- Present a discussion of the current site status and key environmental influences around the site.

- Undertake and present a historical site and area review, primarily referring to old Ordnance Survey Maps.
- Present a discussion of the ground and groundwater conditions within the topographical and area context.
- Undertake preliminary data searches.
- Present a preliminary geotechnical and ground contamination assessment discussing the results of the research above, not only concerning potential on-site conditions and contamination but also with an overview of the potential for migration on or off-site with respect to the surrounding / neighbouring sites.
- Present a preliminary qualitative risk assessment and make recommendations for a characterisation stage of physical investigation and testing, if appropriate.

Site investigation works were significantly restricted in access availability and the pre-demolition works have been developed to provide indicative information only. A supplementary phase of works will be required post demolition to better establish contaminants risks to human health and controlled water receptors and geotechnical information for pile design.

The objectives of the NX Consulting geoenvironmental site investigation were as follows:

- To provide further information on ground conditions to facilitate design of buildings and infrastructure for the site.
- To conduct limited 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.
- 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 overall scope of the site investigation work included the following:

- 4no. window sample boreholes with associated in-situ testing to maximum depths of up to 5.45m bgl.
- 1no. cable tool borehole with associated in-situ testing to maximum depths of up to 25.00m bgl.

- 1no. manually excavated trial pit for foundation exposure to maximum depths of up to 1.30m bgl.

1.4 Report Layout

- Section 2 of this report provides a summary of the Phase 1 desk study findings; including the site history, as established from available public record information.
- 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.

1.5 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 Geosight, Enviroinsight Reports and Historical Mapping. Full copies are presented in Appendix B and C respectively.

2.1 Site Location& Setting

Table 2.1 – Site location and Setting

Site Location	Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN	
Site Description	A site walkover of external areas was carried out on the 25th of October 2023 by a suitably qualified engineer from NX Consulting. The site comprises an existing 3-storey brick-built building within the northwest of the site (construction circa 1990), hosting food outlets at ground floor and a basement covering part of the building. The remainder of the site and adjacent to this is a single-storey building of retail units occupying the majority of the site's area. A small courtyard area is present to the north of the retail units, where a 3m high brick wall with poor stability was observed within the northern boundary of the site and the courtyard. The property is bound to the north by a fire station and residential housing, to the east by open Station Road, commercial buildings and Rochdale Train Station, to the south by Station Road and Rochdale Train Station beyond that, and to the west Maclure Road, Rochdale Tram Stop (Stop E), St John the Baptist Church, commercial buildings and associated roads. No evidence of ground instability, major contamination sources and invasive plant species was observed during the walkover. Access for site investigation plant and equipment will be restricted and consideration required to both pre and post demolition intrusive works.	
Grid Reference	389922, 412707	
Site Area	Approximately 0.08 hectares	
Site Setting	Surrounding area:	North: Fireground fire station, fire station yard and associated car parking, residential housing. East: Station Road, commercial buildings and Rochdale Train Station South: Station Road, High Level Road and Rochdale Train Station

		West: Maclure Road, Rochdale Train Station Tram Stop (Stop E), St John the Baptist Church, commercial buildings and associated roads.
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2.2 Geology, Hydrology and Hydrogeology

Table 2.2 – Summary of Geology Hydrology and Hydrogeology	
Made Ground	On site: None indicated
	Immediate surrounding area: 20m south-west, infilled ground indicated.
Drift Geology	BGS Sheet 85 'Manchester', 1:50000 dated 2010, and the Groundsure report indicates that Glaciofluvial deposits – sand and gravel are recorded to underlie the site and the surrounding area of site. Rochdale Station and surrounding area is was located within the centre of the Proto-Roch river paleo-valley. Anecdotal evidence suggests that some areas of these deposits are poorly consolidated due to glacial oscillation (ice retreat and advance). Mapping indicates that the drift deposits may be in the order of >65m thick underlying the Site.
Solid Geology	BGS Sheet 85 'Manchester', 1:50000 dated 2010, indicates that the Old Lawrence Rock (sandstone) is also found to underlie the surrounding area to the south of the site. Pennine Lower Coal Measures Formation (mudstone siltstone & sandstone) are also recorded to underlie the site (area within the north of site) and the surrounding area. BGS record the lithology of the Old Lawrence Rock to be a grey-green fine-grained sandstone. BGS record the lithology of the Pennine Lower Coal Measures Formation to be an interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part. The Groundsure report indicates that there are a number of boreholes held by the BGS which are publicly available. The nearest available BGS borehole log is located approximately 160m to the east of site (ref SD91SW191) has not encountered bedrock at a depth of 19.00mbgl.

Table 2.2 – Summary of Geology Hydrology and Hydrogeology

British Geological Survey (BGS) Boreholes	Borehole BGS Reference: SD91SW191, Fishwich Street, Rochdale, (situated approximately 160m east off site) recorded firm black clayey ash over Made Ground of loose brown silty sand with much gravel to 3.0mbgl. Soft brown and black sandy clay with much gravel of brick, cinder and mudstone was found beneath this to 5.00m bgl. Beneath the Made Ground, natural strata of loose brown silty fine to medium SAND and fine to coarse gravel was found beneath this to 6.50m bgl. Loose with very loose bands of light brown silty fine to medium SAND with rare gravel was encountered between 6.50m to 16.00m bgl. Medium dense light brown very silty fine SAND with soft clay bands was recorded as the final strata within the log, between 16.00m bgl and 19.00m bgl. Bedrock was not encountered within this borehole, nor within any other surrounding boreholes on the BGS website. A water strike was observed at 8.00m bgl during the drilling works, which rose to 7.80m bgl after 20 minutes.
Faults	There are 4no. bedrock faults and other linear features recorded within 500m of site. There are 2no. coal seams (inferred), 2no. are faults (inferred) recorded. The significant features are summarized below: • On site: Normal fault, (inferred) • 91m NE: Normal fault, (inferred) • 131m W: Coal Seam, (inferred) • 349m SW: Coal Seam, (inferred)
Hydrology	There are no surface water features within 250m of the site.
Hydrogeology	Superficial deposits – Secondary A Aquifer. Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers. Bedrock deposits – Secondary A Aquifer. Assigned as 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.
Water Abstractions	There are no water abstractions within 250m.

Table 2.2 – Summary of Geology Hydrology and Hydrogeology

Source Protection Zone	The site is not within 500m of a currently defined groundwater source protection zone.
Flood Risk	The site is not recorded to be at risk of flooding from rivers and the sea. The site is not located within a Flood Risk Zones 2 or 3. The site is stated to be at moderate risk from groundwater flooding. The site does not benefit from Environment Agency defined flood defences. The site is stated to be at negligible risk from surface water flooding. The highest risk on site from pluvial flooding shows a 1 in 30 year, risk of between 0.3 - 1.0m.
Shrink Swell Clays	Negligible risk.
Landslides	Very low risk.
Ground Dissolution of soluble Rocks	Negligible risk.
Compressible deposits	Negligible risk.
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 and surrounding area are within a coal mining area as defined by the Coal Authority. As such a Coal Authority report (CON29M) was obtained which indicates the following: • The property does not lie within a potential zone of physical influence of any recorded underground coal workings. • No coal mine entries are recorded within 20m of the site. • The property does not lie within the boundary of an opencast site
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	from which coal was removed by opencast methods. • The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994. • No mine gas emissions are recorded within the boundary of the property. The Coal Mining (CON29M) Assessment considers the property to generally low from coal mining related ground instability and ground gas risk, and that no further action is required with regards to past coal mining. <u>NX Consulting Considerations:</u> The solid geology underlying the site consists of: • Old Lawrence Rock (OL) • The Pennine Lower Coal Measures Group (PLCM) which is comprised of interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part. BGS mapping shows that the Old Lawrence Rock (OL) is present across the majority of the site. OL is also recorded within southern and some eastern areas of the surrounding area. Geology of the PLCM is recorded within a small portion of the north of the site, and north and western portion of the surrounding area. A fault runs through the northern area of the site, separating these two bedrock types within the site boundary (illustrated within Figure 3 of Section A of this report). The fault is recorded to be downthrown to the north, dipping away from the site. BGS Geology generalized vertical sections (GVS) of PLCM Group strata within the Rochdale district is shown in Figure 3 of this report. The Arley Coal Seam (A) is situated approximately 300m to the west of the site. The seam contours visible on BGS mapping indicates that the seams are dipping towards the north/northwest, and are therefore dipping away from the site. This indicates the Arley Coal Seam is dipping away from the site. No dip directions are available on geological mapping. Due to the sites proximity from the Arley Coal Seam and dip direction demonstrated on BGS mapping, there is a low-risk present to the site and the proposed development.
Johnson Poole and Bloomer	The Groundsure report indicates that Johnson Poole & Bloomer (JPB) do not 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. This is unlikely to impact the proposed development.

Other mining	1no. BritPit is recorded within 500m of the site, and is situated 493m south of the site.
Historic Ground Workings	16no. surface ground workings within 250m of the site are recorded within the Groundsure report.

2.4 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	Surrounding Area Potentially Contaminative Past Uses
1851	The site predominantly hosts undeveloped open land. A small section of the western corner of site forms part of a landscaped area.	- The surrounding area comprises predominately undeveloped land with some residential properties and associated streets. - Lancashire and Yorkshire Railway lines runs trending SW-NE, approximately 75m SE of the site. - A mill is situated 100m NE of site.
1891	The site comprises undeveloped land across the entire site and majority of the immediate surrounding area.	- Station Road runs along the south of the sites southeastern boundary. - Rochdale station is now present 50m southeast of the site. - Industrial buildings are present beyond Rochdale station; including the Railway Leather Works, and numerous mills. Residential buildings and associated roads area also present. 4no. mills are recorded between 100m and 200m northeast of the site. - Canal Wharf is present 150m north of the site. - Residential houses and associated roads comprises the majority of the land to the west of the site.
1910	An unnamed building occupies the land within the northwest of the site.	- Maclure Street is recorded along the western boundary of the site. - No other significant changes are recorded within the site immediate surrounding area of the site.
1930	No significant changes to site.	A building is recorded on adjacent land to the east of the site, labeled as an employment exchange.

Table 2.4 – Site History

Map Date	On Site Potentially Contaminative Past Uses	Surrounding Area Potentially Contaminative Past Uses
		General increase in development within the wider surrounding area, including residential housing, roads and unnamed buildings.
1957	The building present on site since 1910 now appears to be labelled as 29 & 31 Maclure Street.	- A shelter is recorded 1m to the west of the site. - Residential properties are now recorded within the immediate surrounding area to the north and northeast of site, opposite employment exchange building. - A Fire Station is now recorded 15m north of site. - A garage is recorded 80m SW of site. - A works is recorded 110m SW of site. 2no garages are recorded 140m NW of site.
1975-1978	A building recorded as 33-41 Maclure Street is now present on site, and occupies the remaining land within the site boundary.	No significant changes to the surrounding area.
1985-1989	33-41 Maclure Street is now recorded as a garage. No other changes to site noted.	- The employment exchange is now labelled as offices. - The garage previously recorded 80m SW of site is now recorded as 2 works and a garage (smaller garage occupies northwest of former garage area). A garage and a depot occupy adjacent land to the west. - A community centre is situated 75m west of the site (1985). Sparrow Hill Community School replaces community centre (1988-1992).
2003-Present Day	In-between 2003 and the present day (2023), the garage present on site has been redeveloped to comprise 4no. retail units.	2no. garages and 1no. works, situated 80m SW of site are redeveloped and now comprises Station Approach Business Centre (1992-1995).

2.5 Environmental Information

Table 2.5 – Environmental Information

Environmental permits,	There are 6no pollution incidents within 500m of the site (3no. within 250m). The nearest and most significant are summarised below. Other
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incidents and registers	incidents can be viewed within the Groundsure report. • Date: 08/08/2001. Located 212m NW. Pollutant: Specific Waste Materials. Pollutant Description: Commercial Waste. Water Impact: No Impact. Land and Air Impact: Minor. No sites identified as contaminated under Section 78R of the Environmental protection Act 1990 are recorded within 250m of the site. There are no List 1 Dangerous Substance recorded within 500m of site. 8no. Part A(2) or Part B Licenced Pollutant Release Activities have been identified within 500m of the site. The nearest incident is located 107m northeast of site at Henly Ford (Oldham Rd, OL11 1BU) involving spraying of road vehicles. More details can be viewed in the Groundsure report.
Landfill Sites and Other Waste Disposal Facilities	No active or recent landfill sites are recorded within 500m of the site. No historic (BGS records or EA/NRW records) landfill sites are recorded within 500m of the site. 1no. historic landfills (EA/NRW records) have been identified within 500m of site, which is situated 303m E of site. 4no. licenced waste sites are recorded within 500m of the site, with the nearest situated 221m SE. There are 25no. waste exemptions recorded within 500m of site. The nearest of which is 110m SE of site. Further information can be viewed within the GroundSure report.
Potentially contaminative land uses	36no. current potentially contaminative land uses within 250m of the site have been identified by the GroundSure report, the most potentially significant are summarised as follows: • Meezan Beds, Carpets & Blinds. – On site. • P3 Logistics Ltd – 16m E. • Rochdale Tram Station – 27m E. • Ur Auto Care (Vehicle repair, testing and servicing) – 36m N. 136no. historical, potentially contaminative land uses within 500m have been identified by the GroundSure report, the most potentially significant are summarised as follows: • 9m N – Fire Station. • 21m S to 57m E – Railway Station and Railway Sidings. • 79m N – Canal Wharf • 86m NE – Warehouse. Further information can be viewed within the GroundSure report. 1no. current or recent petrol station (obsolete) is recorded within 500m of



	the site, which is situated 484m NE.
Ecological Setting	No significant SSSI, Conserved wetland, Special Protection Areas sites within 400m. The Rochdale Canal is situated 450m SE, which is recorded as an SSSI within the GroundSure report. The features of interest recorded are floating water-plantain.
Unexploded Ordnance	The regional unexploded bomb risk map from Zetica indicates that the site is in an area at <u>low</u> risk from possible Unexploded Ordnance (UXO) resulting from the Second World War. (Zetica, 2020).
Radon	The property is within a Radon Affected Area, with an estimated properties affected between 1% and 3%. As such, no radon protection measures are required.

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 <i>Draft Circular on Contaminated Land</i> , 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 & Proposed 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 associated with the former garage and surrounding areas: - Heavy metals, sulphates and PAHs. - Hydrocarbons - Asbestos Containing Material (ACM), Asbestos Containing Materials may also present within existing buildings.	Possibly within sub surface strata & Groundwater.	Ground water (Superficial and bedrock Secondary A Aquifer)	Vertical percolation to groundwater	Groundwater (Severe – pollution of sensitive water resource)	Unlikely Site is completely covered with buildings/hardstanding which will reduce/prevent rainwater percolation/infiltration. It is not known as to whether perched groundwater may be present beneath the site. If it is, contamination present within any remaining Made Ground could leach out and contaminate this water; also, any hydrocarbon/solvent etc type contamination could be remobilised. Glacial Till (typically low permeability) is likely to be present beneath the site. This material would reduce the potential for contaminated leachate etc to percolate down to the Aquifer.	Low to moderate Site Investigation Required
	Possibly within existing structures	Surface Water (No surface water features identified within 250m of the site)	Lateral percolation & Surface Run-off to surface water	Groundwater (Medium – pollution of sensitive water resource)	Unlikely. No surface water features identified within 250m of the site, and majority hardstanding & building cover will restrict infiltration and percolation. Due to distance from site - site derived contaminant concentrations within any perched groundwater would be diluted by attenuation on route to these watercourses. Any perched groundwater table is likely to be discontinuous.	Low Site Investigation Required



		End user of site.	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Human Health (Severe).	Low likelihood, The property is completely covered with buildings/hardstanding and end users will not be coming into direct contact with any contaminated soils present beneath the site. Vapour intrusion from hydrocarbon impacted soils from the former garage may impact end users. Asbestos could be present within the existing buildings.	Moderate Site Investigation Required
		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 Site Investigation Required

* 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.

SOURCE -PATHWAY -RECEPTOR LINKAGE				QUALITATIVE RISK ASSESSMENT		
Contaminant	Location	Receptors	Pathways to Receptors	Associated Hazard (Potential Severity)	Likelihood of Occurrence	Risk*
Hazardous Ground Gas associated with potential Made Ground/peat deposits and potential Coal Mining within the Arley Coal Seam. Radon gas	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 historical landfills within 250m of the site boundary. Made Ground recorded on and near to the site. Coal mining and peat deposits recorded within surrounding area. Gas monitoring recommended prior to future development.	Low to moderate Site Investigation Required
		Buildings & Infrastructure	Migration through strata and accumulation under buildings of explosive and asphyxiating gases.	Buildings & Infrastructure (Severe)	Low likelihood, No recorded landfills within 250m of the site boundary. Made Ground is recorded on and near to the site. Coal mining and peat deposits recorded within surrounding area. Gas monitoring recommended prior to future development.	Moderate Site Investigation Required

* 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

An intrusive investigation was carried by Taylor Drilling Services and monitored by an engineer from NX Consulting on the 13th and 14th of August 2024, and the 2nd, 3rd and 4th September 2024.

A plan showing all the exploratory hole locations is presented in Appendix A. All locations were checked for services against available service plans and scanned with a cable avoidance tool (CAT) prior to the intrusive investigation; in line with NX Consulting health and safety methodology.

4.3 Window Sample Boreholes

4no. window sample boreholes were advanced across areas of the proposed development (north/northeast of the site), to depths of between 3.45mbgl and 5.45mbgl. Representative samples were taken for geotechnical and chemical analysis. No obstructions were recorded within WS boreholes.

All WS boreholes were drilled within external areas of the site. WS01 and WS03 were drilled beneath the footprint of the proposed development. WS02 and WS04 were drilled within the access road, Fire Station Yard, running along the northeastern perimeter of the site.

Standard Penetration Tests (SPTs) were undertaken at 1m intervals within the WS boreholes. Groundwater as gas monitoring wells were placed within 2no. WS boreholes on completion.

Table 4.3.1 below provides details of boreholes installations highlighting depths and response zones.

Table 4.3.1 – Window Sample Installation Details

Borehole & Installation Depth (mbgl)	Response Zone (mbgl)	Strata Type
WS01 – 3.00	1.00 to 3.00	- Made Ground (demolition type rubble/uncompact sand with gravel); - Slightly clayey SAND AND GRAVEL.
WS03 – 4.00	1.00 to 4.00	- Made Ground (demolition type rubble/uncompact black ashy sand/uncompact gravelly sand); - SAND AND GRAVEL; - Slightly clayey SAND AND GRAVEL.

Detailed window sample log sheets are included in Appendix C.

4.4 Cable Percussive Boreholes (CP)

1no. Cable Percussive boreholes was advanced to the rear of the site to a depth of 25.00mbgl. Representative samples were taken for geotechnical and chemical analysis.

All Cable Percussive boreholes were completed with a Dando CP rig with 1no. borehole drilled within the northern area of the site beneath the footprint of the proposed extension. All boreholes were drilled to their intended depths. No significant obstructions were not encountered during the drilling works.

Standard Penetration Tests (SPTs & CPTs) were undertaken at 1m intervals within CP01 to 5mbgl, then at 1.5m intervals thereafter. Groundwater as gas monitoring wells were not placed within any CP boreholes on completion.

Detailed window sample log sheets are included in Appendix C.

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 Ground Conditions

A summary of ground conditions and respective water strikes, from the window sampler boreholes and cable tool boreholes are provided within the Table 5.1.1.

	Made Ground	SAND/GRAVEL	Clay	Sand/Silt	Groundwater Strike(s)
WS01	0.0-1.1m	1.1-2.6m	NR	2.6-5.00m	3.00m during drilling, 2.53m post drilling
WS02	0.0-1.45m	NR	3.55-5.00m+	1.45-3.55m	Observed at 5.0m bgl during and after drilling.
WS03	0.0-1.1m	1.9-2.4m	1.1-1.9m	2.4-5.0m+	NR
WS04	0.0-1.05m	1.05-3.00m	NR	NR	NR
CP01	0.0-1.0m	2.5-5.0m, 5.45-10.40m, 11-15.0m.	5.0-5.45m, 10.4-11.00m	1.0-5.0m+, 15.0-25.45	5.80m bgl. Water added throughout

Table 5.1.1. Ground Conditions Summary

Note – Bedrock was not recorded within any exploratory holes during the drilling works.

M – Denotes metres below ground level

NR – Denotes Not Recorded

Topsoil

No Topsoil was encountered during the drilling works.

Made Ground

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

- Black and grey concrete hardstand & Sandstone Flags - surface cover.
- (Compact) Grey ashy brown gravel of limestone (rare to occasional cobbles) - 6F2/6F5 type crushed stone (Subbase).
- Uncompact brown ashy sandy clayey gravel.
- Uncompact black ashy sand with rare gravel and pockets of soft black clay. Gravel is fine to coarse, angular to subrounded of brick, concrete, sandstone and other mixed lithology. Some cobbles of brick.

Made Ground was encountered in all the boreholes, from ground level to depths between 1.00m bgl and 1.45 mbgl (CP01 and WS2, respectively).

Beneath the surface cover of concrete and sandstone paving flags, subbase comprising compact grey gravel of limestone was encountered within WS02, and WS04. These deposits were absent in CP01, WS1 & WS3 where uncompact ashy sandy gravel was recorded to maximum depths of 1.45m bgl in WS04.

Drift deposits were recorded beneath this strata within all boreholes.

Drift Deposits

The Made Ground is underlain by interbedded drift deposits recorded to depths of between 1.0-25.45m bgl+ (CP01).

Drift deposits were recorded to typically comprise an initial layer of loose to medium dense light brown, fine to coarse SAND/SAND & GRAVEL/sandy GRAVEL was recorded to depths ranging from 1.00m to 15.00m bgl.

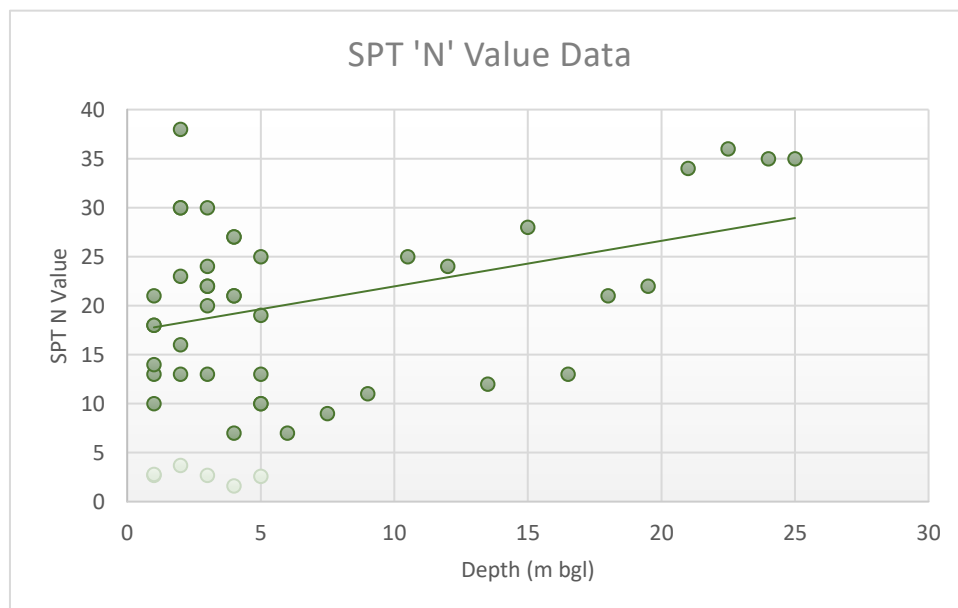
WS03 recorded soft to firm dark brown mottled grey CLAY with rare gravel between 1.10m bgl and 1.90m bgl. Soft to firm brown CLAY with rare pockets of fine to coarse sand were recorded in WS02 between 3.55 and 5.00m mbgl+. Firm to very stiff clay was recorded within CP01 between 3.00m bgl and 3.45m bgl and 10.4m and 11.00m.

Brown slightly sandy clayey SILT was recorded between 15.00m and 25.45m bgl within CP01.

Loose to dense red/brown SAND/sandy GRAVEL was recorded within all exploratory boreholes between 1.0mbgl and 11.0mbgl. Gravel content within this strata typically comprised angular to subrounded mudstone, sandstone and other mixed lithology.

Uncorrected SPT 'N' values within the drift deposits were in the range of 7 to 38, with an average uncorrected 'N' of 20.64 and generally increased with depth, as the line of best fit displays within Graph 5.1.1 below. The standard deviation for the data is 8.53. The results indicate that the granular deposits are generally loose to dense within the upper 10.00m of strata and medium dense to dense within between 10.00m and 25.0m bgl.

Graph 5.1.1 – SPT N Value Data within Drift Deposits



Bedrock



Bedrock was not encountered during the intrusive drilling works.

5.2 Groundwater

Groundwater was encountered within CP01 at 5.80m bgl in CP01 and rose to 3.50m bgl. Groundwater may have been masked by the addition of water to aid drilling in CP01 at deeper depths.

5.3 Underground Service Plans

Underground services, overhead BT Lines, gas mains, combined and foul sewers, CCTV and possible fibre optic cables may all impact the site and the design team and Client should familiarise themselves with their presence.

5.4 Below ground obstructions

None encountered in the exploratory holes with the exception of surface cover hardstand and occasional brick within made ground deposits.

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 E 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

Sulphate and pH

8no samples were analysed for pH and 3no for soluble sulphate:

Property	Range (mg/l)
Sulphate as SO ₄	11 – 67
pH	6.6 – 8.8

Moisture Content

4no. samples of clay were tested for natural moisture content. The results are summarised below:

Property	Range	Mean
Moisture Content	20 - 26	21.13

Plasticity Index

4no. samples of clay were analysed for plasticity index and hence shrinkage/swelling potential. The results of testing are summarised below:

Property	Range
Plasticity index	11%-30%
*Amended Plasticity index	11.0% – 30.0%

***Amended for percentage of particles passing a 425mm sieve**



The results indicate that the clay is of low to high plasticity with a corresponding low to medium volume change potential based on amended plasticity.

Particle Size Distribution

18no. samples were selected for the determination of particle size distribution. The resultant grading curves have been included in Appendix D.

GEOTECHNICAL ASSESSMENT

7.1 Foundations

It is understood that the site is to be redeveloped with a new six storey apartment block.

No building loads or finished site/building levels have been provided to NX Consulting at the time of drafting this document.

It is likely that a post-development foundation system cannot fully be confirmed until final building levels and any 'Build Near' restrictions are established. The Made Ground deposits and shallow fluvioglacial deposits are considered unsuitable as an adequate founding stratum, for the main building, due to the possible risks of unacceptable total and differential settlements occurring. Given the nature of the former end use of the site and varying glaciofluvial soils, we consider that the conventional foundations are unlikely to be suitable at this property.

BGS mapping suggests bedrock is present at a depth of >75m and that there are loose and very loose sands described in nearby deeper boreholes SW191 and SW192, presented in Figure 7.1.1 below. We consider it likely that the low 'N' values are likely to result from improperly balanced groundwater during the drilling works. In BGS boreholes SW192, the 'N' values are 32 at 4m and 14 at 5m, then drop to 6 and 3 below the water strike at 7m depth.

External boreholes have been carried out, by NX, where access is available and further boreholes are required to be undertaken to 20m depth, to look at soil classification, water levels, and SPTs/CPTs to providing the information required for final foundation design (once the building is demolished).

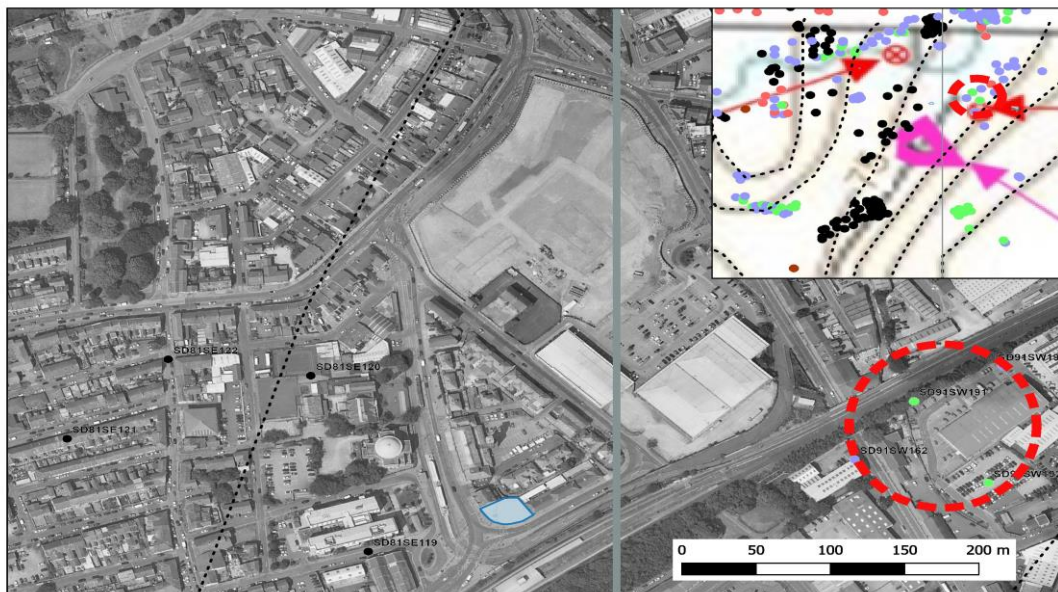


Figure 7.1.1 below BGS Borehole Locations

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

Piles

Piled foundation are likely to be the most suitable foundation solution for the proposed property.

Soil properties are presented in Table 7.2.1 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.

If adopted, piled foundation options would need to consider the effects of noise and vibration on nearby structures and the potential presence of below ground obstructions associated and localised very stiff clay bands recorded during this preliminary assessment.

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, any potential obstructions, below ground services, Made Ground, and fluvioglacial strata.

A piling matt will be required in line with BRE 470 Piling Matt Design.

Following treatment, in-situ load tests should be carried out to verify performance and foundation.

Trees may be 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. Heave protection measures should be anticipated for foundations and drainage.

Floor Slabs

Suspended floor slabs 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 7.1.1 –Soil Properties adopted in the Preliminary Pile Design

Table 7.1.1		
Parameter	Typical data range	Suggested Design
Moisture Content (%)	20 - 26	21
Amended Plasticity Index (%)	11.0 – 30.0	30
Bulk Density (Mg/m ³)	-	2.20

SPT N-value (Clay) SPT N-value (Silt)	7 - 25 13-35	7 – 1.10m-5.00m, 25 – 10.4-11.0m 13 - 15.00m – 25.45m
Undrained Shear Strength (kN/m ²) Till - Clay	5.0m – 5.45	22
Effective Cohesion (kN/m ²)	-	0
Coefficient of compressibility (m ² /MN)	-	10/Cu
Angle of Friction (phi°)	-	26 (localised granular GT also applied – conservative)
Permeability (m/sec)	-	10 ⁻⁸
ACEC	DS1	AC1s

Table 7.1.2 – Fluvioglacial Sand/Sand & Gravel

Parameter	Typical data range	Recommended Design
Moisture Content (%)	-	-
Plasticity Index (%)	-	-
Bulk Density (Mg/m ³)	-	2.0
SPT/CPT N-value	12 to 38	12 (1.1-15.00m)
Net Allowable Bearing Capacity kN/m ² (Foundation 1m width) Strip Foundations	126 to 399 -	125 100
Undrained Shear Strength (kN/m ²)	-	-
Effective Cohesion (kN/m ²)	-	0
Angle of Friction (phi°)	-	38
Coefficient of compressibility (m ² /MN)	-	-
Infiltration Rate (m/sec)	5 x 10 ⁻⁶	5 x 10 ⁻⁶ Soakaways recommended to prove design
ACEC	DS-1	DS-1

7.2 Earthworks, Excavations and Groundwater

Earthworks materials should be classified in accordance with Table 6/1 of Department of Transports Specification for Highways Works.

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 removal from site to a suitably licensed waste management facility.

The stability of foundation excavations are likely to be poor and collapse and spalling of the Made Ground and sand/sand and gravel deposits should be anticipated. For shallow excavations (<1m depth), either battering back to a suitable angle of repose, or the use of temporary support could be considered. 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.

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.

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

Pavement Construction

A a CBR value of 2% should be used for pavement construction within the Made Ground where it comprises granular sub-base type material. Any soft spots or other unsuitable materials should be excavated out prior to construction.

Groundwater

Groundwater was encountered during drilling at approximately 2.40m bgl at the end of drilling and within monitoring boreholes. Shallower foundation excavations may therefore be expected to remain dry. Where granular deposits are present rapid groundwater inundation and collapse should be anticipated.

However, it should be appreciated that groundwater levels could vary seasonally and excavations could potentially extend below the water table.

Any excavations extending below the water table would need to be dewatered in advance of the main excavation works to prevent running sand conditions from developing. Sump pumps or possibly well points are likely to be required for this. It is recommended that groundwater levels are monitored during the construction work to enable any dewatering requirements to be identified in advance.

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.

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 should be adopted.



7.3 Soakaway Drainage

Soakaways did not form part of the NX Consulting scope of works.

7.4 Mining Considerations

The site is not within a coal mining area.

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

8.0 GEOCHEMICAL GROUND AND GROUNDWATER ASSESSMENT

8.1 Introduction

The preliminary conceptual site model identified that, the potential for the existence of contamination beneath the site, was low to moderate. No visual or olfactory evidence of hydrocarbon/solvent contamination was recorded. Access to the site was severely restricted and further works are recommended to confirm this assessment site wide.

Selected samples of made ground were tested for a number of general screening tests including pH and metals, cyanide, phenols, asbestos, sulphide, sulphur and speciated PAH were undertaken during the intrusive investigation to confirm, or otherwise, the site's anticipated risk status.

The preliminary risk assessment established that risks to controlled water receptors post construction is deemed to be low. Leachate was carried out to confirm this.

Waste Acceptance Testing was carried out to enable materials to be classified prior to disposal to landfill; if deemed necessary by the appointed contractor.

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 more simple 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

8.51 NX Consulting Investigation

The chemistry analysis results, presented in Appendix F, have been compared against the Tier 1 criteria for a *commercial end* use with plant uptake to reflect the development proposals which comprise retail units at ground floor level and residential apartments from first floor above. It is not expected that landscaping areas or gardens are proposed.

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 assumed for both the Made Ground and natural strata. The pH of the soils is generally very slightly acidic to slightly alkaline range 6.6-8.4.

Made Ground & Natural Soils

Table 8.5.1 displays the contaminant results details and any Tier 1 thresholds exceedances:

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 Exceedances
Inorganics, Carbon and Asbestos					
Asbestos Quantification (%)	4	NONE DETECTED		-	-
pH	10	6.6 – 8.3	7.38	-	-
Total Sulphate	9	100 - 663	221.33	-	-
Total Cyanide	9	<0.1 – 0.4	0.21	527	0
Sulphide	9	<10 - 70	28.11	-	-
Total Organic Carbon (%)	9	<0.5 – 7.8	2.43	-	-
Metals and Semi-Metals					
DETERMINAND	No. of samples	Range	Average	GAC	No of Exceedances
Arsenic	9	3.2 – 48	11.09	640	0
Cadmium	9	<0.1 – 1.3	0.31	190	0
Chromium III	9	9.5 – 29	17.6	8600	0
Copper	9	9.6 – 140	39.96	68,000	0
Lead	9	8.4 – 520	93.93	750	0
Mercury (Inorganic)	9	<0.05 – 0.83	0.21	1,100	0
Nickel	9	8.1 – 41	20.11	980	0
Selenium	9	<0.5 - 0.8	0.53	1,200	0
Zinc	9	23 – 200	77.22	730,000	0
Boron	9	<0.2 – 2.2	0.51	240,000	0



Speciated Petroleum Hydrocarbons (TPH-CWG)					
TPH-CWG - Aliphatic >EC5 - EC6	4	< 0.01	< 0.01	3,200	0
TPH-CWG - Aliphatic >EC6 - EC8	4	< 0.01	< 0.01	7,800	0
TPH-CWG - Aliphatic >EC8 - EC10	4	< 0.01	< 0.01	2,000	0
TPH-CWG - Aliphatic >EC10 - EC12	4	< 1.5	< 1.5	9,700	0
TPH-CWG - Aliphatic >EC12 - EC16	4	< 1.2	< 1.2	59,000	0
TPH-CWG - Aliphatic >EC16 - EC21	4	< 1.5	< 1.5	1,600,000	0
TPH-CWG - Aliphatic >EC21 - EC35	4	< 3.4	< 3.4	1,600,000	0
TPH-CWG - Aliphatic (EC5 - EC35)	4	< 10	< 10	-	-
TPH-CWG - Aromatic >EC5 - EC7	4	< 0.01	< 0.01	26,000	0
TPH-CWG - Aromatic >EC7 - EC8	4	< 0.01	< 0.01	56,000	0
TPH-CWG - Aromatic >EC8 - EC10	4	< 0.01	< 0.01	3,500	0
TPH-CWG - Aromatic >EC10 - EC12	4	< 0.9	< 0.9	16,000	0
TPH-CWG - Aromatic >EC12 - EC16	4	< 0.5	0.5	36,000	0
TPH-CWG - Aromatic >EC16 - EC21	4	< 0.6	< 0.6	28,000	0
TPH-CWG - Aromatic >EC21 - EC35	4	< 1.4	< 1.4	28,000	0
TPH-CWG - Aromatic (EC5 - EC35)	4	< 10	< 10	-	-
TPH Ali/Aro Total C5-C35	4	< 10	< 10	-	-
Polynuclear Aromatic Hydrocarbons (PAHs)					
Naphthalene	9	< 0.03 – 4.3	0	190	0
Acenaphthylen	9	< 0.03 – 0.06	0	83,000	0
Acenaphthene	9	< 0.03 – 2.8	0	84,000	0
	9				0

	9				0
	9				0
Fluoranthene	9	< 0.03 – 11	1	23,000	0
Pyrene	9	< 0.03 – 8.5	1	54,000	0
Benzo(a)anthr	9	< 0.03 – 3	0	170	0
Chrysene	9	< 0.03 – 3.3	0	350	0
Benzo(b)fluora	9	< 0.03 – 2.5	0	44	0
Benzo(k)fluora	9	< 0.03 - 0.8	0	1,200	0
Benzo(a)pyren	9	< 0.03 – 1.8	0	35	0
Indeno(1,2,3-	9	< 0.03 - 0.55	0	500	0
Dibenz(a,h)ant	9	< 0.03 – 0.18	0	3.5	0
Benzo(ghi)per	9	< 0.03 - 0.64	0	3,900	0
Total PAH (Sum of	9	< 0.1 – 55	7	-	0
BTEX and MTBE (µg/kg)					
Benzene	4	< 0.01	< 0.01	27	0
Toluene	4	< 0.01	< 0.01	55,600	0
Ethylbenzene	4	< 0.01	< 0.01	5,700	0
p&m-xylene	4	< 0.01	< 0.01	5,900	0
o-xylene	4	< 0.01	< 0.01	5,900	0
MTBE (Methyl Tertiary Butyl	4	< 0.01	< 0.01	-	0

Table 8.5.1 above shows that there were no Tier 1 exceedances for the soils analysed to date, beneath the proposed development for both natural soils and reworked Made Ground soils.

Asbestos was not recorded within any of the samples analyzed.

8.5.2 Water Supply

If new water supply pipework is required for the proposed development. 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".

A UKWIR risk assessment will be required to be completed at the depth of the proposed pipes. If so, 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.

No plants or trees are proposed within the proposed works and as such the associated risks are deemed to be low.

8.5.2 Discussion and Recommendations

The environmental chemistry results are consistent with the site's historical uses. Soil sampling of reworked Made Ground and drift deposits has recorded contaminant concentrations below Tier 1 values for a commercial end use with plant uptake. Soil concentrations are not considered to pose an unacceptable risk to human health.

No visual or olfactory evidence of hydrocarbon or solvent contamination was encountered during the NX Consulting investigation.

Asbestos was not recorded during initial screening. Given the age of the building and limited investigation works to date, recorded exceedances are probable elsewhere within underlying made ground deposits post demolition and a potentially unacceptable risk may be posed to future end users of the site from shallow soils present within limited 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 either additional testing is carried out or 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.

For any imported materials required to complete the cover soils, the frequency of testing to be undertaken shall be as given in the YALPAG document Verification Requirements for Cover Systems, Version 3.4 dated November 2017.

All operations may 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.

Soil concentrations are not considered to pose an unacceptable risk to controlled waters.

Further intrusive works and contaminated testing are recommended once the building is demolished to confirm this conceptual model.

Risks to Controlled Water Receptors

Based upon the total soils concentrations, lack of groundwater within the clay deposits and predominantly low permeability clay we consider there to be a negligible risk to controlled water receptors.

The risks presented to controlled water receptors are deemed to be low post construction. This will need to be confirmed with the local authority and Environment Agency.

Further intrusive works and contaminated testing are recommended once the building is demolished to confirm this conceptual model.

8.5.3 Waste Classification

On completion of the supplementary report, soil samples will be 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.

The 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 D.

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 maximum depths of 1.10+ 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.

Given the developmental history of the site and surrounding area, the risk from hazardous ground gas is considered to be low.

To date 6No.rounds of monitoring have been undertaken with a barometric pressure of 986mb to 1012mb. No monitoring was possible at low pressure during this period.

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 86.1 – Summary of Gas Monitoring Results

Borehole Reference	CO2 Range (%v/v)	Flow (l/hr)	Max GSV (l/hr)	CH4 Range (%v/v)	Max GSV (l/hr)
WS01	1.0-9.0	<0.10	<0.05	0.0-0.2	<0.05
WS03	1.4-4.7	<0.10	<0.05	0.1-0.1	<0.05

In line with CIRIA 665 Guidance on Methane and Carbon Dioxide, the site is to be developed for commercial end use and the ground gas investigation has identified a maximum carbon dioxide concentration of 9.0% with no flows recorded to date. The maximum-recorded concentration for methane was 0.2%. In addition, hydrogen sulphide and carbon monoxide concentrations of 0.0 ppm and 0.7ppm were recorded respectively.

Elevated GSV values, Carbon Dioxide concentrations within greater than 5.0% resulting in the determination of Characteristic Situation 2 classification were noted in WS1. The building includes a commercial ground floor building with residential entrance lobby, bike stores and apartments from 1st floor upwards (managed apartments / commercial). Gas protection measures should be installed in accordance with BS8485: 2015. Based on a Type B development and CS2 classification a gas protection score of 3.5 to will need to be achieved.

Table 8.6.2 Gas Protection – Rochdale Corner Plot

Building Type	Floor Slab Type	Ventilation	Available Points Score
C	Cast in situ monolithic reinforced ground bearing raft or reinforced cast in ground bearing slab	Full gas Membrane, ventilation installed to BS8485:2015 and validated to CIRIA 735	4.0 to 5.0

Gas protection measures should be installed as prescribed in BRE 414 with the ventilation of the sub-floor void designed to provide a minimum of one complete volume change per 24 hours.



Independent validation of gas protection measures is needed to achieve the required points score.

Prior to the adoption of any gas protection measures, agreement should be sought from the local authority environmental health department and building control.

8.6.2 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.

No hydrocarbon/solvent contamination was recorded during the site investigation works and no specific protection measures are deemed necessary to reduce potential volatilisation via indoor air migration pathways to adversely impact site occupiers.

9.0 PRE-REMEDATION CONSTRAINTS AND OUTLINE REMEDIATION STRATEGY

9.1 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

Underground services, comprising overhead BT Lines, gas mains, combined and foul sewers, CCTV and possible fibre optic cables may all impact the site and the design team and Client should familiarise themselves with their presence. Other services may be present not identified in this assessment.

9.3 Hardstanding & Surface Cover

The site comprises majority building cover with sandstone paving flags in the yard to the rear. The adjacent access road is of concrete construction with underlying subbase (in parts). Appendix A shows the nature of surface cover in the area of the proposed extension.

9.4 Land Condition and Outline Remediation

9.4.1 Foundations and Ground Stability

The Made Ground, anticipated depths of made ground beneath the existing building and shallow fluvioglacial 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.

It is considered that a piled foundation solution is considered the most suitable for foundations for both the proposed development.

The risk associated with obstructions, vibration and stiff to very stiff clays should be assessed adequately by the designer.

NHBC guidance in relation to trees should be followed, due to the presence of clay bands. Heave protection measures should be used for foundations and drainage where trees are present within influencing distance. Heave protection measures should be assessed in the presence of any trees.

Concrete Design

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.

Pavement Construction

A CBR value of 2% could be used for pavement construction within the Made Ground. Any soft spots or other unsuitable materials should be excavated out prior to construction. Where access roads are to be adopted, design CBR values should be confirmed by carrying out in-situ plate load tests.

Groundwater

Groundwater was encountered during drilling at approximately 2.40m bgl during ground gas monitoring. Shallow excavations may therefore be expected to remain dry. Where saturated sand/sand and gravel deposits are present rapid groundwater inundation and collapse should be anticipated.

However, it should be appreciated that groundwater levels could vary seasonally and excavations could potentially extend below the water table.

Any excavations extending below the water table would need to be dewatered in advance of the main excavation works to prevent running sand conditions from developing. Sump pumps or possibly well points may be required for this. It is recommended that groundwater levels are monitored during the construction work to enable any dewatering requirements to be identified in advance and advice sought from a specialist hydrogeologist.

Soakaways

If soakaways are to be considered then soakaways should be carried out in line with BRE 365 Soakaway Design.

9.4.2 Contamination

Based upon the testing to date, soil concentrations are not considered to pose an unacceptable risk to human health.

No visual or olfactory evidence of hydrocarbon or solvent contamination was encountered during the NX Consulting investigation.

Asbestos was not recorded during initial screening. Given the age of the building and limited investigation works to date, recorded exceedances are probable present within underlying made ground deposits post demolition and a potentially unacceptable risk may be posed to future end users of the site from shallow soils present within limited 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.

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 any unrecorded

contamination the most cost effective remedial solution is likely to comprise a simple capping layer.

Within areas of proposed landscaping it is recommended that either additional testing is carried out or 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.

For any imported materials required to complete the cover soils, the frequency of testing to be undertaken shall be as given in the YALPAG document Verification Requirements for Cover Systems, Version 3.4 dated November 2017.

All operations may 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.

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

Soil concentrations are not considered to pose an unacceptable risk to controlled waters.

Further intrusive works and contaminated testing are recommended once the building is demolished to confirm this conceptual model.

A watching brief should be carried out by the appointed contractor during development and if fuel tanks/ and or hydrocarbon/solvent contamination is encountered, NX Consulting should be notified so that appropriate testing and a refined risk assessment can be carried out and local authority representatives can be notified.

Elevated GSV values, Carbon Dioxide concentrations within greater than 5.0% resulting in the determination of Characteristic Situation 2 classification were noted in site boreholes. Gas protection measures should be installed in accordance with BS8485: 2015.

Based on a Type B development and CS2 classification a gas protection score of 3.5 to will need to be achieved.

Gas protection measures should be installed as prescribed in BRE 414 with the ventilation of the sub-floor void designed to provide a minimum of one complete volume change per 24 hours.



Independent validation of gas protection measures is needed to achieve the required points score.

Prior to the adoption of any gas protection measures, agreement should be sought from the local authority environmental health department and building control.

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.

On completion of the supplementary report, soil samples will be 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.

If new pipework is to adopted we recommend that additional testing is carried out along the line of the new pipework.

This report should be issued to the regulatory authorities to prevent delays in the project. A remediation strategy and validation report will be required prior to discharge of any outlying planning conditions.



APPENDICES

Appendix A – Drawings & Site Photographs

Appendix B – GroundSure Information

Appendix C – Historical Mapping

Appendix D - Exploratory Hole Logs

Appendix E– Geotechnical Laboratory Test Results

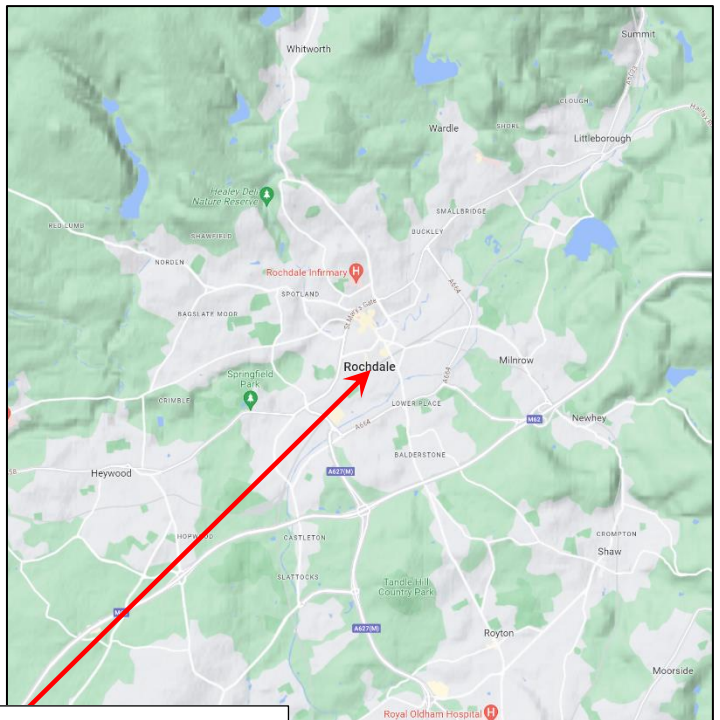
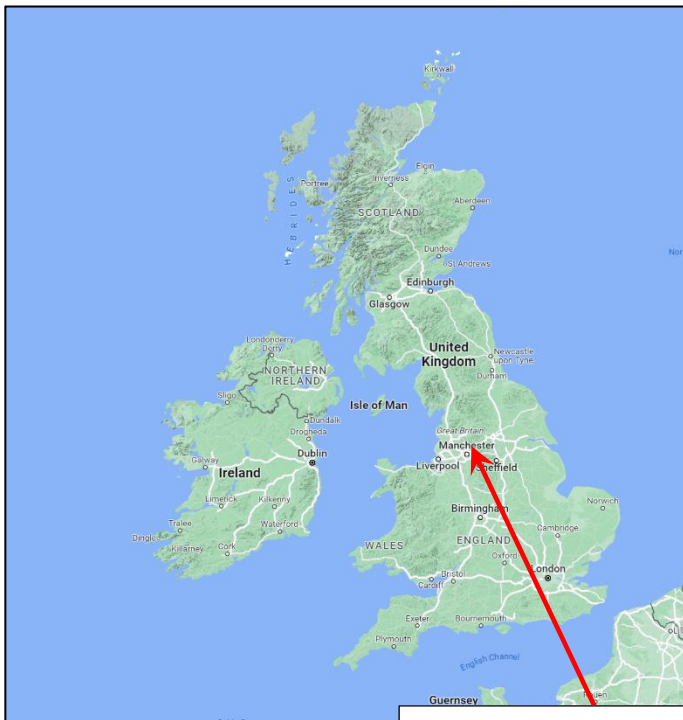
Appendix F – Chemical Test Results

Appendix G – Gas monitoring Record Sheet

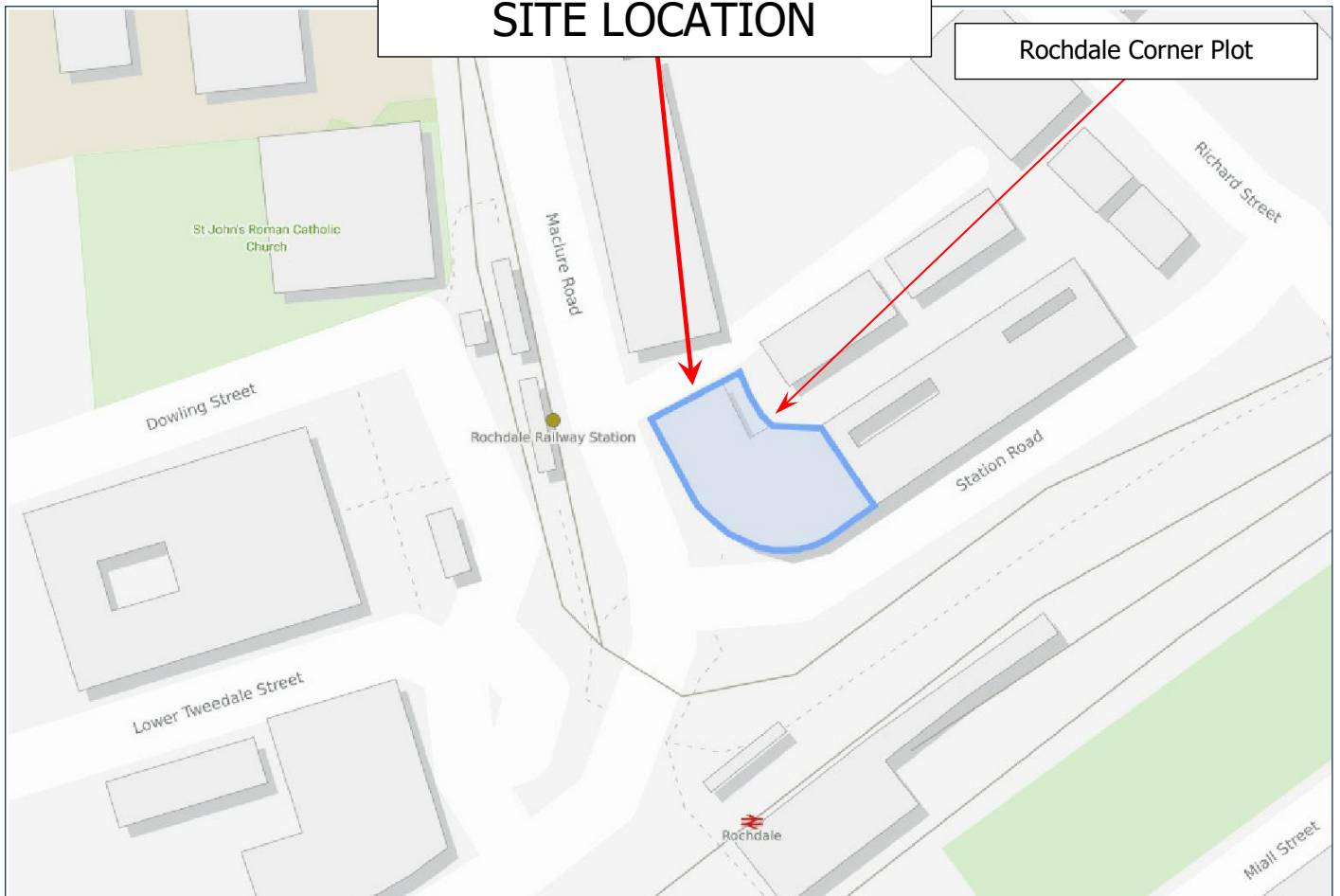
Appendix H – Conceptual Models & Risk Assessments



Appendix A – Drawings & Site Photographs



SITE LOCATION



Project:

Rochdale Corner Plot, Maclure Street,
Rochdale, OL11 1DN

Title:

Site Location Plan

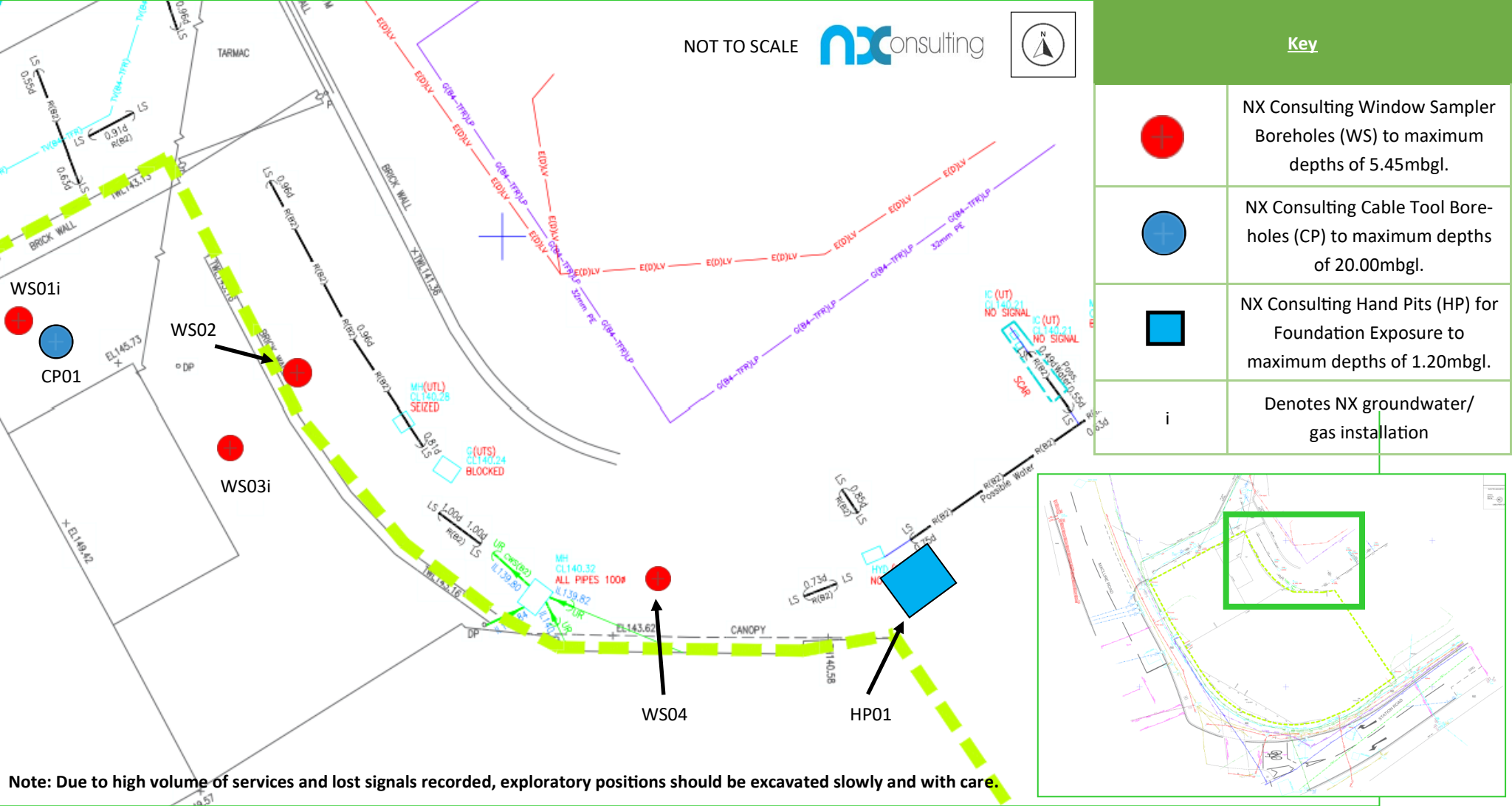


Next Generation Engineering Consultancy Services

Tel: 0161 904 0187
E-mail: admin@nxconsulting.org.uk
Web: www.nxconsulting.org.uk

Ref: NX570 Figure 1

Note: WS locations will occupy positions for approximately 1 hour.



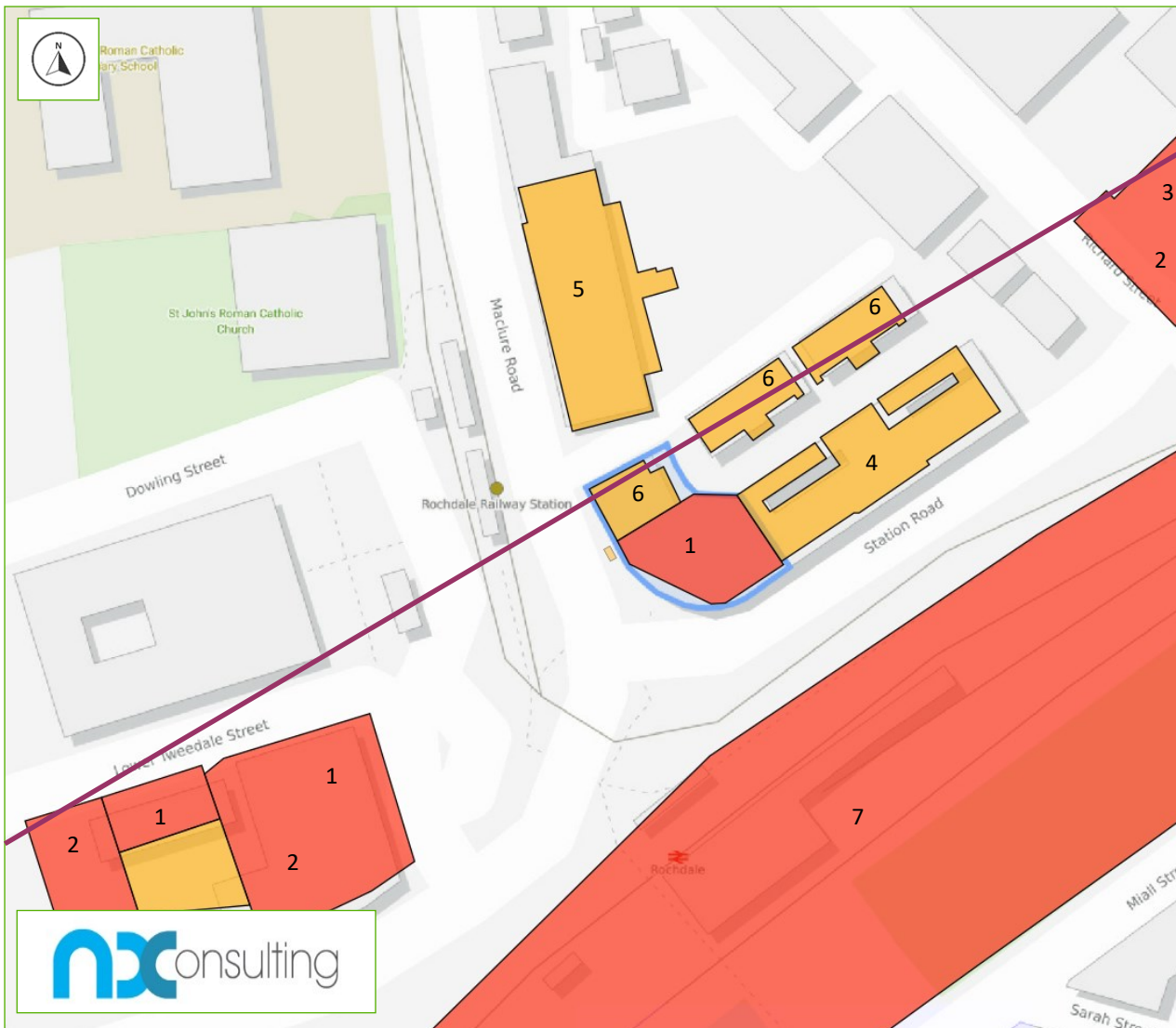
Ref: NX570 Figure 3 - Plate 1

Project:

Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN

Title:

Proposed Exploratory Hole Location Plan

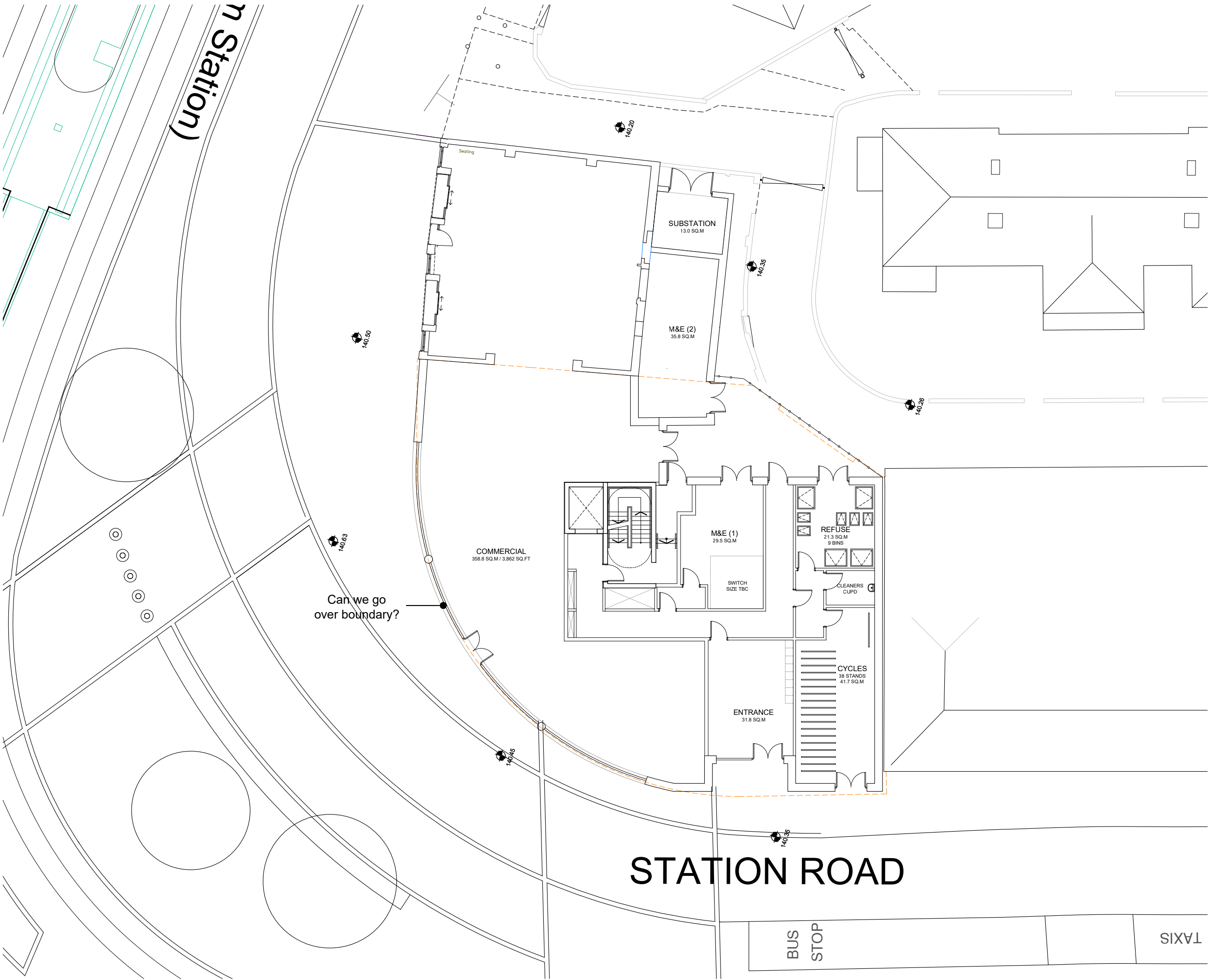


Key	
	Approximate Site Boundary
	Denotes Significant Former Developments
	Denotes Subordinate Former Developments
	Approximate position of Geological Fault
1	Former Garage
2	Former Works
3	Former Mill
4	Former Employment Exchange or Offices
5	Former Fire Station
6	Residential Housing
7	Rochdale Train Station Development (Railway lines and Train Station)

Ref: NX570 Figure 2 - Plate 1

Project:
Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN

Title:
Conceptual Site Plan



GENERAL NOTES:

ALL DIMENSIONS ARE TO BE CHECKED ON SITE WITH ANY DISCREPANCIES REPORTED TO THE ARCHITECT PRIOR TO THE WORKS BEING CARRIED OUT.

ALL WORKS ARE TO BE IN ACCORDANCE WITH THE PLANNING APPROVAL AND ANY SUBSEQUENT APPROVED LOCAL AUTHORITY PLANNING CORRESPONDENCE INCLUDING DRAWINGS, DOCUMENTS AND REPORTS.

ALL WORKS ARE TO COMPLY WITH THE BUILDING REGULATIONS, BRITISH STANDARDS, CODE OF PRACTICE, AND ANY LOCAL STATUTORY REQUIREMENTS.

ALL WORKS ARE TO COMPLY WITH CURRENT HEALTH AND SAFETY LEGISLATION, H.S.E. RECOMMENDATIONS/GUIDANCE AND THE CURRENT C.D.M. REGULATIONS.



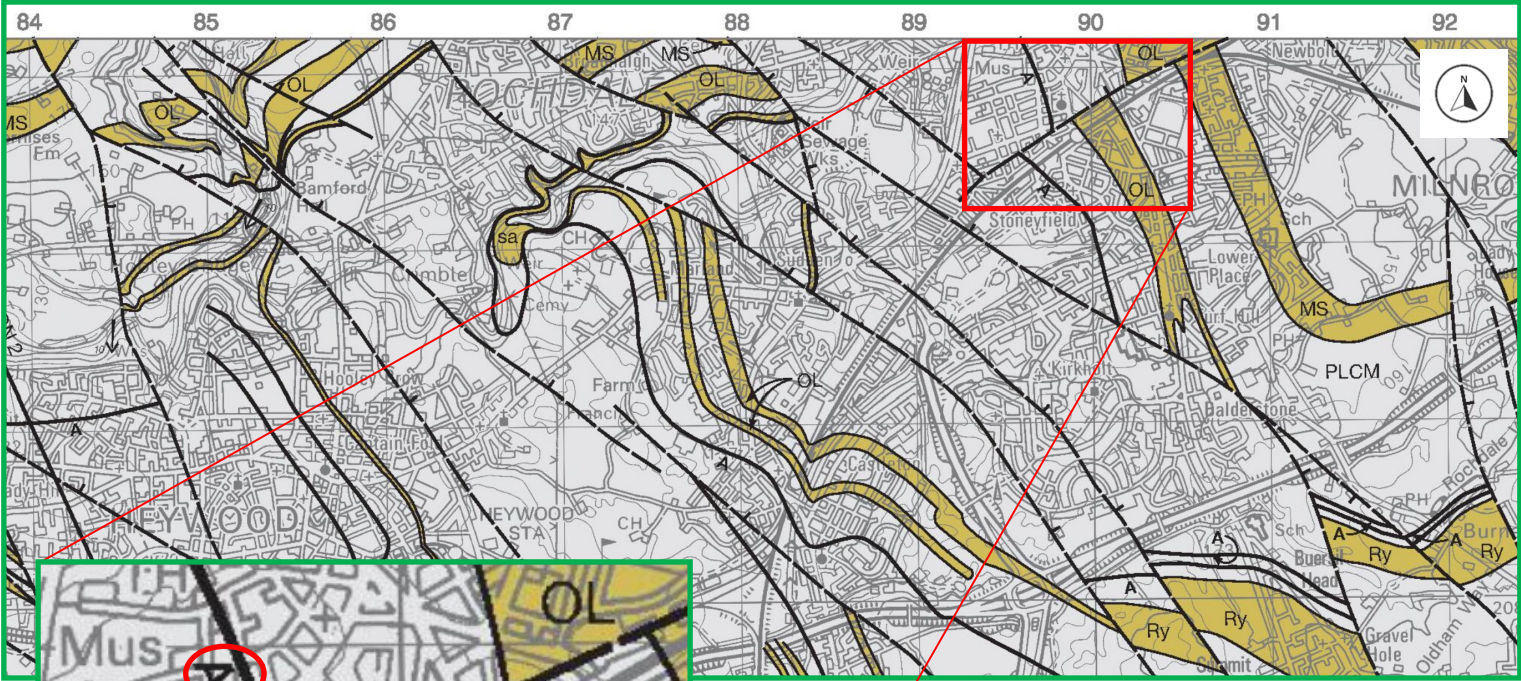
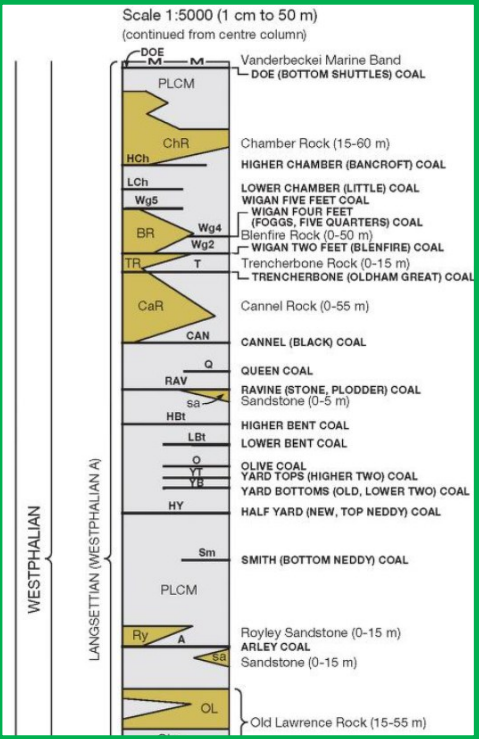
P01	FIRST ISSUE	TT	DL	15.09.23
rev	description	drwn	auth	date

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CLIENT ROCHDALE DEVELOPMENT AGENCY			
PROJECT ROCHDALE STATION			
DOCUMENT NAME 8337-LRW-ZZ-00-DR-A-00-174			
DESCRIPTION PROPOSED GROUND FLOOR PLAN			
REVISION P01		SCALE 1:200@ A3	
LRW PROJECT No. 8337	DATE CREATED 15.09.23	CREATED BY TT	AUTHORISED BY CJG
PURPOSE OF ISSUE PLANNING ☐ BUILDING REGS ☐ TENDER ☐ PRELIM.COMMENT ☐ APPROVAL ☒ CONSTRUCTION ☐			



Significant Geology, Coal Seams and Faulting:

Normal Fault passing through the north of the site, downthrown to the north/northwest.

PLCM Bedrock

Old Lawrence Rock (OL) Bedrock

Arley Coal Seam (A)

Key



Significant Coal Seams/Faults



Denotes site location



Ref: NX570 Figure 3

Project:

Rochdale Corner Plot, Maclure Road, Rochdale,
OL11 1DN

Title:

BGS Geological Mapping and Significant Geology/
Coal Seams/Geological Faults



Plate 1 – Rochdale Corner Plot, looking north across from Station Road.



Plate 2 – Adjacent property to the east of site, looking north.



Plate 3 – 3-storey building present on site, looking south.



Plate 4 – Single storey building on site hosting vacant units, looking north.



Plate 5 – Existing retail unit in the east of site, looking north.



Plate 6 – Station Road (left) and High Level Road (right), the sites southern boundary, looking east.



Plate 7 – Alleyway to the north of the 3-storey building, leading to courtyard area, looking west.



Plate 8 – Gated entrance to courtyard in the north of site, looking southeast.



Plate 1 – Window Sampler Borehole 01 (WS01) ground level (gl) to 1.20m below ground level (bgl).



Plate 2 – WS01, 1.20m bgl and 5.00m bgl.



Plate 3 – WS02, gl to 1.20m bgl.



Plate 4 - WS02, 1.20m bgl and 5.00m bgl.



Plate 5 – WS03, gl to 1.20m bgl.



Plate 6 – WS03, 1.20m bgl and 5.00m bgl.



Plate 7 – WS04, gl to 1.20m bgl.



Plate 8 – WS04, 1.20m bgl and 3.00m bgl.



Plate 1 - Hand pit 01 (HP01) arisings ground level to 1.3mbgl.



Plate 2 - HP01 concrete slab projects 270mm from the brick wall.



Plate 3 - HP01 possible concrete footing at a depth of 0.85mbgl. Projects 270mm. Underside proven.



Plate 4 - HP01 brick foundation at a depth of 0.55mbgl, projects 0.120mm away from brick wall.



Plate 5 - HP01 final depth of 1.30mbgl



Appendix B –GroundSure Information

Rochdale Corner Plot, Maclure Road, Rochdale, OL11 1DN

Order Details

Date: 24/10/2023
Your ref: NX570
Our Ref: GS-C3J-KDZ-FYD-2TO

Site Details

Location: 389922 412707
Area: 0.08 ha
Authority: [Rochdale Metropolitan Borough Council](#) ↗



Summary of findings

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

[p. 9 >](#)

OS MasterMap site plan

[p.14 >](#) groundsure.com/insightuserguide ↗

Contact us with any questions at:

info@groundsure.com ↗

01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
15 >	1.1 >	Historical industrial land uses >	0	13	38	85	-
21 >	1.2 >	Historical tanks >	0	0	4	10	-
21 >	1.3 >	Historical energy features >	0	0	3	16	-
22	1.4	Historical petrol stations	0	0	0	0	-
23 >	1.5 >	Historical garages >	1	3	21	25	-
25	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
26 >	2.1 >	Historical industrial land uses >	0	22	46	124	-
33 >	2.2 >	Historical tanks >	0	0	4	14	-
34 >	2.3 >	Historical energy features >	0	0	8	46	-
37	2.4	Historical petrol stations	0	0	0	0	-
37 >	2.5 >	Historical garages >	2	4	35	46	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
41	3.1	Active or recent landfill	0	0	0	0	-
41	3.2	Historical landfill (BGS records)	0	0	0	0	-
42	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
42 >	3.4 >	Historical landfill (EA/NRW records) >	0	0	0	1	-
42	3.5	Historical waste sites	0	0	0	0	-
42 >	3.6 >	Licensed waste sites >	0	0	4	0	-
44 >	3.7 >	Waste exemptions >	0	0	8	17	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
46 >	4.1 >	Recent industrial land uses >	1	3	32	-	-
49 >	4.2 >	Current or recent petrol stations >	0	0	0	1	-
49	4.3	Electricity cables	0	0	0	0	-
49	4.4	Gas pipelines	0	0	0	0	-
49	4.5	Sites determined as Contaminated Land	0	0	0	0	-



50 >	4.6 >	Control of Major Accident Hazards (COMAH) >	0	0	0	1	-
50	4.7	Regulated explosive sites	0	0	0	0	-
50	4.8	Hazardous substance storage/usage	0	0	0	0	-
50	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
51	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
51 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	0	0	2	6	-
52	4.12	Radioactive Substance Authorisations	0	0	0	0	-
52	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
53	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
53	4.15	Pollutant release to public sewer	0	0	0	0	-
53	4.16	List 1 Dangerous Substances	0	0	0	0	-
53	4.17	List 2 Dangerous Substances	0	0	0	0	-
53 >	4.18 >	Pollution Incidents (EA/NRW) >	0	0	3	3	-
54	4.19	Pollution inventory substances	0	0	0	0	-
55	4.20	Pollution inventory waste transfers	0	0	0	0	-
55	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
56 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
58 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
60 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
61	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
61	5.5	Groundwater vulnerability- local information	None (within 0m)				
62 >	5.6 >	Groundwater abstractions >	0	0	0	0	8
65 >	5.7 >	Surface water abstractions >	0	0	0	0	12
68	5.8	Potable abstractions	0	0	0	0	0
68	5.9	Source Protection Zones	0	0	0	0	-
68	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
69	6.1	Water Network (OS MasterMap)	0	0	0	-	-



69	6.2	Surface water features	0	0	0	-	-
70 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
70 >	6.4 >	WFD Surface water bodies >	0	0	0	-	-
71 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
72	7.1	Risk of flooding from rivers and the sea	None (within 50m)				
72	7.2	Historical Flood Events	0	0	0	-	-
72	7.3	Flood Defences	0	0	0	-	-
73	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
73	7.5	Flood Storage Areas	0	0	0	-	-
74	7.6	Flood Zone 2	None (within 50m)				
74	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding >					
75 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
77 >	9.1 >	Groundwater flooding >	Moderate (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
78 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	0	1	4
79	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
79 >	10.3 >	Special Areas of Conservation (SAC) >	0	0	0	1	4
80	10.4	Special Protection Areas (SPA)	0	0	0	0	0
80	10.5	National Nature Reserves (NNR)	0	0	0	0	0
80	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
81	10.7	Designated Ancient Woodland	0	0	0	0	0
81	10.8	Biosphere Reserves	0	0	0	0	0
81	10.9	Forest Parks	0	0	0	0	0
81	10.10	Marine Conservation Zones	0	0	0	0	0
81	10.11	Green Belt	0	0	0	0	0
82	10.12	Proposed Ramsar sites	0	0	0	0	0



82	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
82	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
82	10.15	Nitrate Sensitive Areas	0	0	0	0	0
83	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
84 >	10.17 >	SSSI Impact Risk Zones >	1	-	-	-	-
85 >	10.18 >	SSSI Units >	0	0	0	1	4
Page	Section	Visual and cultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
88	11.1	World Heritage Sites	0	0	0	-	-
89	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
89	11.3	National Parks	0	0	0	-	-
89 >	11.4 >	Listed Buildings >	0	0	2	-	-
90 >	11.5 >	Conservation Areas >	1	0	0	-	-
90	11.6	Scheduled Ancient Monuments	0	0	0	-	-
90	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
91 >	12.1 >	Agricultural Land Classification >	Urban (within 250m)				
92	12.2	Open Access Land	0	0	0	-	-
92	12.3	Tree Felling Licences	0	0	0	-	-
92	12.4	Environmental Stewardship Schemes	0	0	0	-	-
92	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations >	On site	0-50m	50-250m	250-500m	500-2000m
93 >	13.1 >	Priority Habitat Inventory >	0	0	2	-	-
94 >	13.2 >	Habitat Networks >	0	0	1	-	-
94	13.3	Open Mosaic Habitat	0	0	0	-	-
94	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
95 >	14.1 >	10k Availability >	Identified (within 500m)				
96 >	14.2 >	Artificial and made ground (10k) >	0	1	2	1	-
98 >	14.3 >	Superficial geology (10k) >	1	0	1	0	-

99	14.4	Landslip (10k)	0	0	0	0	-
100 >	14.5 >	Bedrock geology (10k) >	2	1	4	1	-
101 >	14.6 >	Bedrock faults and other linear features (10k) >	1	0	2	1	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
102 >	15.1 >	50k Availability >	Identified (within 500m)				
103	15.2	Artificial and made ground (50k)	0	0	0	0	-
103	15.3	Artificial ground permeability (50k)	0	0	-	-	-
104 >	15.4 >	Superficial geology (50k) >	1	0	0	1	-
105 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
105	15.6	Landslip (50k)	0	0	0	0	-
105	15.7	Landslip permeability (50k)	None (within 50m)				
106 >	15.8 >	Bedrock geology (50k) >	2	1	1	3	-
107 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
107 >	15.10 >	Bedrock faults and other linear features (50k) >	1	0	1	1	-
Page	Section	Boreholes >	On site	0-50m	50-250m	250-500m	500-2000m
108 >	16.1 >	BGS Boreholes >	0	0	5	-	-
Page	Section	Natural ground subsidence >					
110 >	17.1 >	Shrink swell clays >	Negligible (within 50m)				
111 >	17.2 >	Running sands >	Very low (within 50m)				
112 >	17.3 >	Compressible deposits >	Negligible (within 50m)				
113 >	17.4 >	Collapsible deposits >	Very low (within 50m)				
114 >	17.5 >	Landslides >	Very low (within 50m)				
115 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	Mining and ground workings >	On site	0-50m	50-250m	250-500m	500-2000m
117 >	18.1 >	BritPits >	0	0	0	1	-
118 >	18.2 >	Surface ground workings >	0	0	16	-	-
119	18.3	Underground workings	0	0	0	0	0
119	18.4	Underground mining extents	0	0	0	0	-
119	18.5	Historical Mineral Planning Areas	0	0	0	0	-

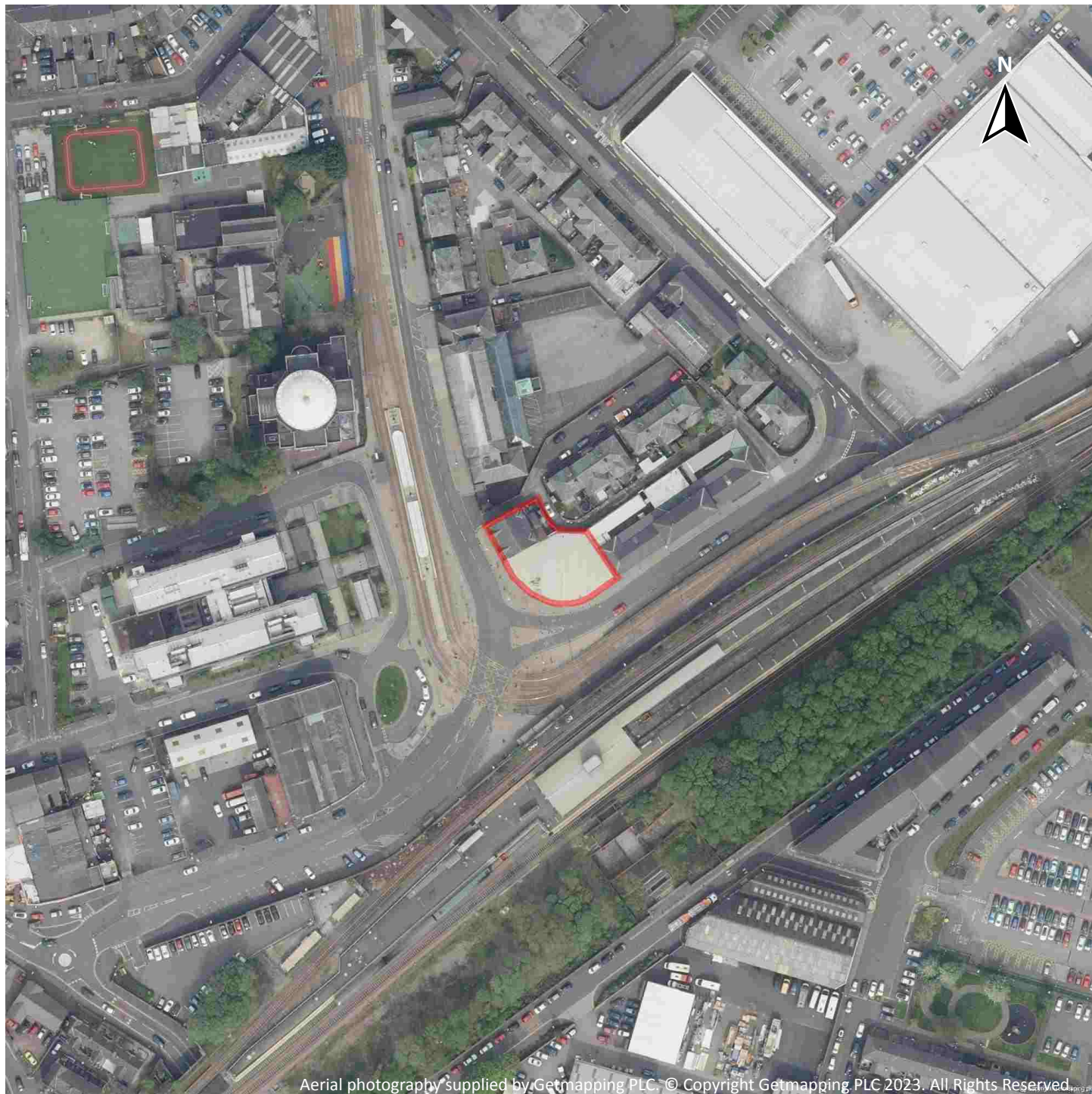


119	18.6	Non-coal mining	0	0	0	0	0
120	18.7	JPB mining areas	None (within 0m)				
120	18.8	The Coal Authority non-coal mining	0	0	0	0	-
120	18.9	Researched mining	0	0	0	0	-
120	18.10	Mining record office plans	0	0	0	0	-
121	18.11	BGS mine plans	0	0	0	0	-
121 >	18.12 >	Coal mining >	Identified (within 0m)				
121	18.13	Brine areas	None (within 0m)				
121	18.14	Gypsum areas	None (within 0m)				
121	18.15	Tin mining	None (within 0m)				
122	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
123	19.1	Natural cavities	0	0	0	0	-
123	19.2	Mining cavities	0	0	0	0	0
123	19.3	Reported recent incidents	0	0	0	0	-
123	19.4	Historical incidents	0	0	0	0	-
124	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
125 >	20.1 >	Radon >	Between 1% and 3% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
127 >	21.1 >	BGS Estimated Background Soil Chemistry >	2	1	-	-	-
127	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
127	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
128	22.1	Underground railways (London)	0	0	0	-	-
128	22.2	Underground railways (Non-London)	0	0	0	-	-
129	22.3	Railway tunnels	0	0	0	-	-
129 >	22.4 >	Historical railway and tunnel features >	0	12	16	-	-
130	22.5	Royal Mail tunnels	0	0	0	-	-



130	22.6	Historical railways	0	0	0	-	-
131 >	22.7 >	Railways >	0	10	22	-	-
132	22.8	Crossrail 1	0	0	0	0	-
132	22.9	Crossrail 2	0	0	0	0	-
132	22.10	HS2	0	0	0	0	-

Recent aerial photograph

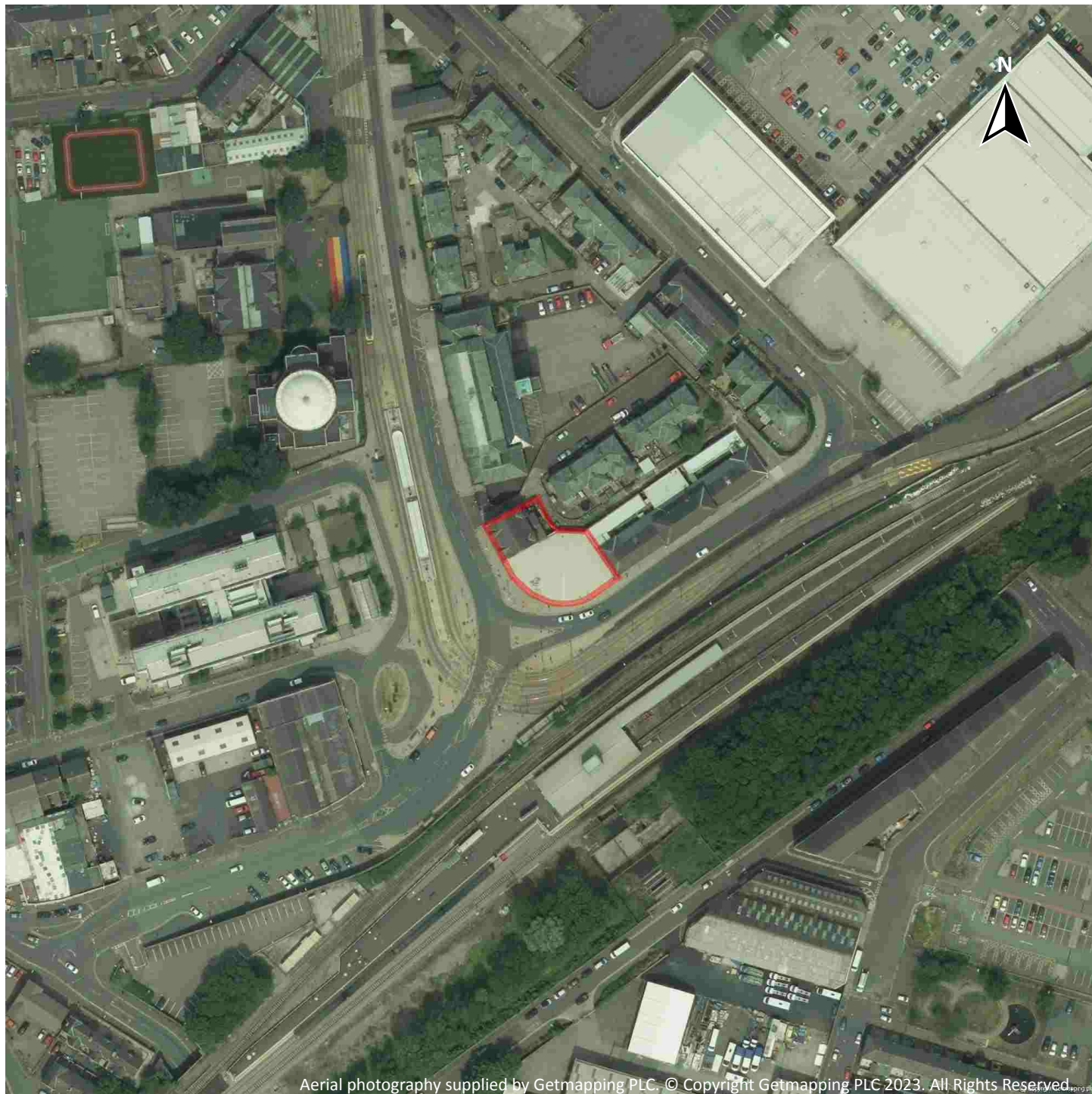


Capture Date: 23/05/2019

Site Area: 0.08ha



Recent site history - 2018 aerial photograph



Capture Date: 01/07/2018

Site Area: 0.08ha



Recent site history - 2012 aerial photograph



Capture Date: 26/03/2012

Site Area: 0.08ha



Recent site history - 2000 aerial photograph



Capture Date: 19/06/2000

Site Area: 0.08ha



Recent site history - 1999 aerial photograph

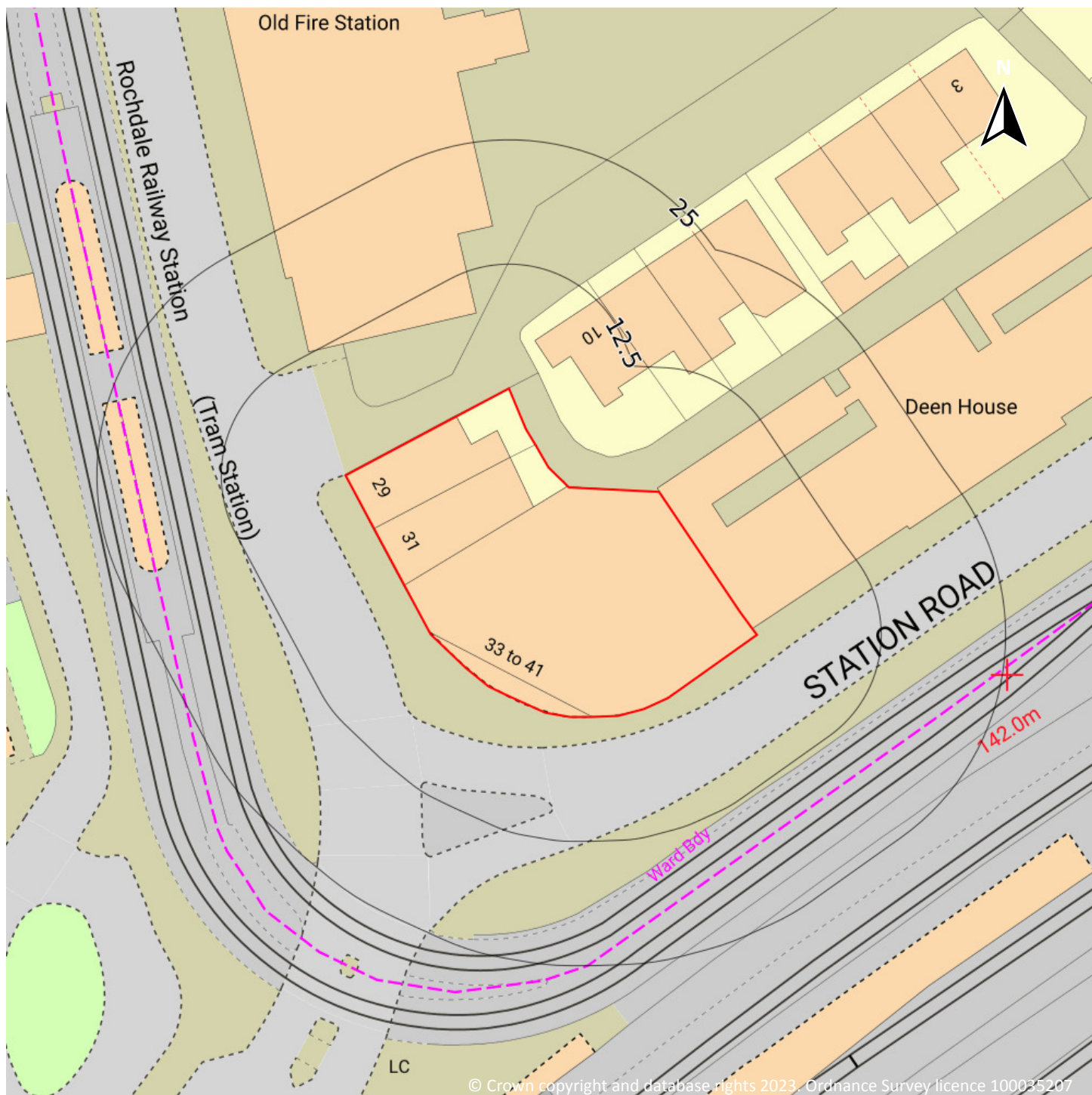


Capture Date: 10/09/1999

Site Area: 0.08ha



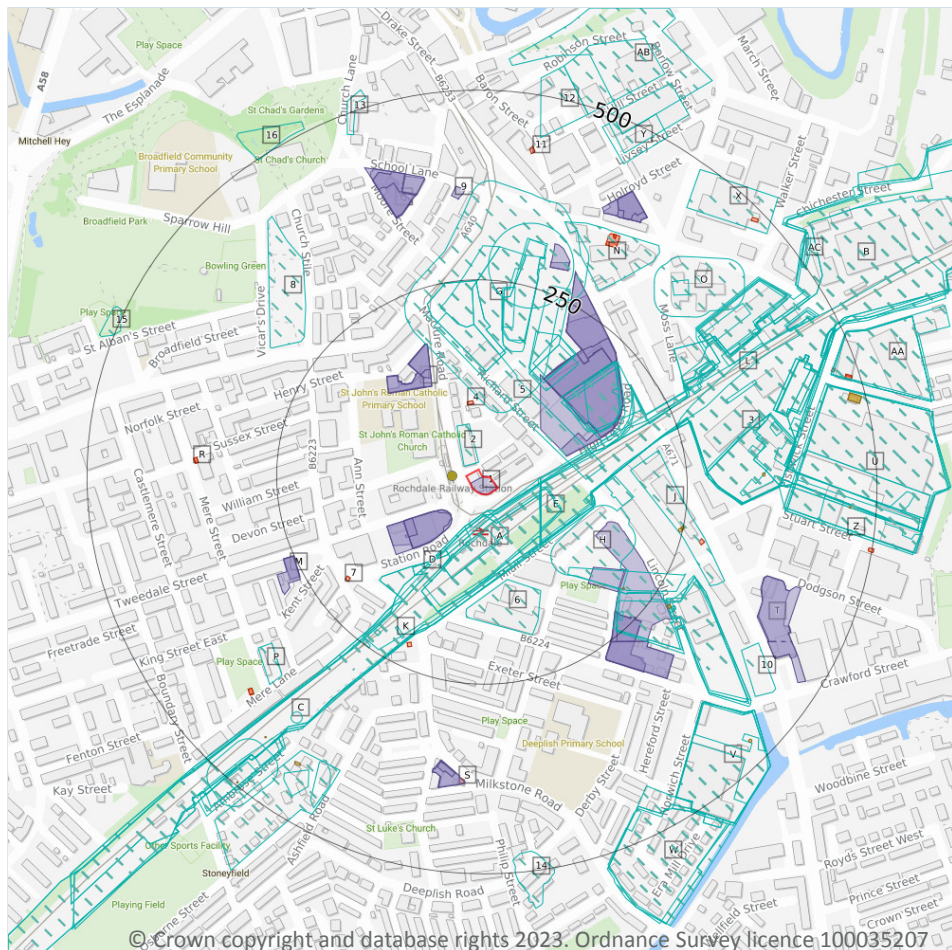
OS MasterMap site plan



Site Area: 0.08ha



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

136

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

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

ID	Location	Land use	Dates present	Group ID
2	9m N	Fire Station	1968 - 1992	750274



ID	Location	Land use	Dates present	Group ID
A	21m S	Railway Station	1891 - 1938	699770
B	21m S	Railway Sidings	1938	728101
B	21m S	Railway Sidings	1891	730419
A	22m SE	Railway Sidings	1987 - 1992	748827
3	22m SE	Railway Sidings	1968 - 1976	750008
B	26m SE	Railway Sidings	1908	695416
B	26m SE	Railway Sidings	1928	696938
C	27m S	Railway Sidings	1949	710047
A	27m S	Railway Station	1949	705819
A	27m S	Railway Station	1968	788533
A	35m S	Railway Station	1987 - 1992	715420
A	45m S	Railway Station	1975	736403
E	57m E	Railway Buildings	1954	681657
F	57m E	Railway Sidings	1954	724457
E	57m E	Railway Station	1967	776975
F	57m E	Railway Sidings	1967	748671
G	79m N	Canal Wharf	1891	709844
5	86m NE	Warehouse	1851	685830
H	106m SE	Unspecified Works	1967 - 1976	704354
D	112m SW	Railway Building	1908 - 1928	707164
B	114m E	Railway Building	1954	670147
6	115m S	Unspecified Works	1987 - 1992	723379
G	130m N	Unspecified Commercial/Industrial	1891	699512
G	130m N	Unspecified Commercial/Industrial	1938	730493
G	136m NE	Cotton Mill	1851	644264
G	136m NE	Unspecified Mills	1891	784043
G	138m NE	Cotton Mill	1851	644263
H	141m SE	Unspecified Mills	1938	653260



ID	Location	Land use	Dates present	Group ID
G	141m NE	Unspecified Commercial/Industrial	1976	643269
G	141m NE	Unspecified Works	1967	678971
B	141m E	Corn Mill	1851	672560
G	143m NE	Canal Wharf	1851	743911
G	143m NE	Unspecified Mills	1891 - 1928	751941
G	149m NE	Unspecified Mills	1928 - 1938	760532
G	151m NE	Unspecified Mills	1938	747712
G	154m N	Canal Basin	1851	656579
G	162m N	Canal Wharf	1851	758041
G	175m N	Canal Wharf	1908 - 1928	719474
G	175m N	Canal Wharf	1938	765554
J	177m E	Cotton Mill	1851	644262
G	188m N	Canal Wharf	1851	781586
G	190m N	Unspecified Depot	1968	668804
K	206m SW	Railway Building	1938	670145
H	209m SE	Unspecified Mill	1967	657141
H	212m SE	Unspecified Mills	1954	771371
H	218m SE	Unspecified Mills	1891	699796
G	221m N	Unspecified Wharf	1949	675228
K	224m SW	Railway Building	1938	670146
H	229m SE	Saw Pit	1851	680286
K	244m SW	Railway Building	1938	670144
L	250m E	Railway Sidings	1851	700493
H	266m SE	Unspecified Mills	1908 - 1938	722970
H	266m SE	Unspecified Works	1967 - 1976	707456
H	273m SE	Unspecified Mills	1954	752158
F	275m E	Railway Works	1954	714102
F	276m E	Unspecified Works	1967 - 1976	780465



ID	Location	Land use	Dates present	Group ID
F	277m E	Railway Works	1928 - 1938	768281
F	277m E	Unspecified Commercial/Industrial	1891 - 1908	780404
H	278m SE	Unspecified Tank	1891	674683
L	281m NE	Railway Buildings	1954	734495
8	281m NW	Grave Yard	1908	668096
L	282m NE	Railway Buildings	1967	734808
L	283m NE	Railway Buildings	1891 - 1938	700219
N	284m NE	Unspecified Mill	1976	657142
L	306m NE	Goods Station	1954	742210
L	307m NE	Goods Station	1891 - 1938	757419
L	308m NE	Railway Building	1976	670148
O	313m NE	Goods Station	1967 - 1976	721908
L	324m E	Railway Station	1851	672375
L	331m NE	Warehouse	1851	685828
L	334m NE	Goods Shed	1967	704013
P	334m SW	Unspecified Mill	1908	657143
L	335m NE	Goods Shed	1976	783873
L	336m NE	Goods Shed	1954	722112
L	337m NE	Goods Shed	1891 - 1938	716811
O	341m NE	Smithy	1908	692927
L	343m NE	Warehouse	1851	685829
F	367m E	Railway Building	1967 - 1976	703711
F	368m E	Railway Building	1967 - 1976	778489
C	373m SW	Unspecified Tank	1891	674715
F	378m E	Goods Shed	1967	720470
F	378m E	Railway Building	1976	784623
U	378m E	Unspecified Works	1967 - 1976	764500
U	380m E	Railway Works	1954	734615



ID	Location	Land use	Dates present	Group ID
F	381m E	Railway Building	1908	695310
F	381m E	Railway Building	1928 - 1938	778206
F	381m E	Goods Shed	1891	784020
F	382m E	Railway Building	1954	761337
U	383m E	Iron Works	1891	672265
U	383m E	Railway Works	1908 - 1938	783940
10	386m SE	Unspecified Works	1976	678970
V	390m SE	Unspecified Commercial/Industrial	1891	643268
V	390m SE	Unspecified Mills	1908	715677
V	390m SE	Unspecified Mill	1928 - 1938	735007
V	391m SE	Unspecified Mill	1967 - 1976	720646
V	392m SE	Unspecified Mills	1954	759502
F	392m E	Railway Building	1976	670150
C	406m SW	Unspecified Pit	1968	690677
C	409m SW	Unspecified Commercial/Industrial	1968 - 1992	762836
C	409m SW	Unspecified Works	1975 - 1992	726519
C	416m SW	Shuttle Works	1908	672399
C	416m SW	Engineering Works	1928 - 1938	722806
V	422m SE	Unspecified Mill	1967 - 1976	696391
C	423m SW	Engineering Works	1949	714422
C	428m SW	Cuttings	1968	642613
F	435m NE	Railway Building	1967 - 1976	754982
F	435m NE	Railway Building	1954	787164
F	437m NE	Railway Building	1891 - 1938	741586
W	437m SE	Unspecified Works	1967 - 1976	713295
C	437m SW	Unspecified Works	1908	707560
X	440m NE	Unspecified Works	1976	678979
12	445m N	Unspecified Works	1976	784990



ID	Location	Land use	Dates present	Group ID
Y	446m NE	Rope Walk	1851	641261
W	456m SE	Iron Works	1928 - 1938	725459
W	456m SE	Unspecified Mills	1908	766175
Y	459m NE	Unspecified Mill	1976	657137
W	459m SE	Iron Works	1954	723576
F	460m E	Railway Buildings	1954	774628
F	461m E	Railway Buildings	1938	705301
F	461m E	Railway Buildings	1908	698514
F	464m E	Railway Buildings	1928	789144
AA	464m E	Unspecified Commercial/Industrial	1976	643278
AA	464m E	Unspecified Works	1967	678981
AA	464m E	Iron Works	1954	788568
Z	465m E	Pump	1851	675586
AA	467m E	Iron Works	1928 - 1938	777339
C	467m SW	Iron Works	1891	672264
13	471m N	Unspecified Ground Workings	1968	648013
14	474m S	Gravel Pit	1851	652943
AB	481m N	Brick Field	1851	668540
AB	490m N	Unspecified Works	1976	731372
15	494m NW	Unspecified Pit	1968	690683
AC	495m NE	Railway Building	1954	744947
AC	497m NE	Railway Building	1908 - 1928	783366
16	499m NW	Unspecified Pit	1949	704246

This data is sourced from Ordnance Survey / Groundsure.



1.2 Historical tanks

Records within 500m

14

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

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

ID	Location	Land use	Dates present	Group ID
H	211m SE	Unspecified Tank	1957	84318
J	245m E	Unspecified Tank	1891	88900
J	247m E	Unspecified Tank	1957	89359
J	247m E	Unspecified Tank	1957	94891
H	272m SE	Unspecified Tank	1891	84335
F	350m E	Unspecified Tank	1891 - 1910	101382
C	426m SW	Unspecified Tank	1957	100879
C	426m SW	Unspecified Tank	1957	89432
C	427m SW	Unspecified Tank	1971 - 1990	99677
Z	464m E	Unspecified Tank	1910	84333
V	469m SE	Unspecified Tank	1891	84305
F	476m E	Tanks	1985	89774
F	476m E	Tanks	1985 - 1988	89871
C	495m SW	Tank or Trough	1910	88429

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

19

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



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

ID	Location	Land use	Dates present	Group ID
4	86m N	Electricity Substation	1995	45542
7	200m SW	Electricity Substation	1989 - 1995	58130
K	216m SW	Electricity Substation	1971 - 1996	55097
J	274m E	Electricity Substation	1982 - 1993	52057
N	340m NE	Electricity Substation	1982 - 1986	51185
N	340m NE	Electricity Substation	1975	53685
N	353m NE	Electricity Substation	1989	59415
N	353m NE	Electricity Substation	1995	50361
R	353m W	Electricity Substation	1978 - 1989	58417
R	354m W	Electricity Substation	1995	52691
S	374m S	Electricity Substation	1984 - 1996	54791
P	393m SW	Electricity Substation	1971 - 1996	54141
P	393m SW	Electricity Substation	1984	47865
11	422m N	Electricity Substation	1988 - 1998	54805
F	466m E	Electricity Substation	1985 - 1993	46743
F	479m E	Electricity Substation	1985 - 1993	56808
F	481m E	Electricity Substation	1982 - 1988	54361
X	483m NE	Electricity Substation	1975 - 1989	50695
Z	495m E	Electricity Substation	1985 - 1993	53306

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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.



1.5 Historical garages

Records within 500m

50

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

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

ID	Location	Land use	Dates present	Group ID
1	On site	Garage	1989 - 1995	17556
D	45m SW	Garage	1957	15896
D	45m SW	Garage	1957	16699
D	46m SW	Garage	1978 - 1985	17427
D	89m SW	Garage	1989	16249
G	92m NE	Garage	1982	17639
G	97m NE	Garage	1985	17744
D	101m SW	Garage	1989	15383
I	126m NW	Garage	1978 - 1988	19829
I	126m NW	Garage	1957	17288
I	130m NW	Garage	1957	16876
I	136m NW	Garage	1957	15286
G	141m NE	Garage	1988	16161
G	141m NE	Garage	1993	16719
G	142m NE	Garage	1957	19710
G	142m NE	Garage	1982	19729
H	143m SE	Garage	1988	17013
I	146m NW	Garage	1978 - 1988	18965
H	164m SE	Garage	1957	18332
G	194m NE	Garage	1985	16568
G	203m NE	Garage	1982	18330



ID	Location	Land use	Dates present	Group ID
G	208m NE	Garage	1985	16481
H	224m SE	Garage	1985	16004
H	224m SE	Garage	1991 - 1993	17470
H	226m SE	Garage	1985	15908
M	251m W	Garage	1978 - 1988	17912
M	251m W	Garage	1957	15049
H	251m SE	Garage	1993 - 1995	18575
H	251m SE	Garage	1987	15194
M	251m W	Garage	1957	16405
H	252m SE	Garage	1984	17210
G	283m N	Garage	1957	15559
G	283m N	Garage	1957	17517
Q	348m N	Garage	1994 - 1998	19097
Q	349m N	Garage	1988	15081
Q	350m N	Garage	1978 - 1987	18400
Q	350m N	Garage	1959	15305
S	354m S	Garage	1984	15674
S	355m S	Garage	1957	16533
S	356m S	Garage	1957 - 1971	17891
9	357m N	Garage	1959	19131
T	370m E	Garage	1991 - 1995	19062
Q	370m N	Garage	1994 - 1998	19222
T	371m E	Garage	1984 - 1988	17906
Q	372m N	Garage	1988	15931
N	376m NE	Garage	1957	15558
N	376m NE	Garage	1982 - 1989	18889
Q	380m N	Garage	1959	16449
N	380m NE	Garage	1975 - 1995	17879



ID	Location	Land use	Dates present	Group ID
N	382m NE	Garage	1957	15501

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

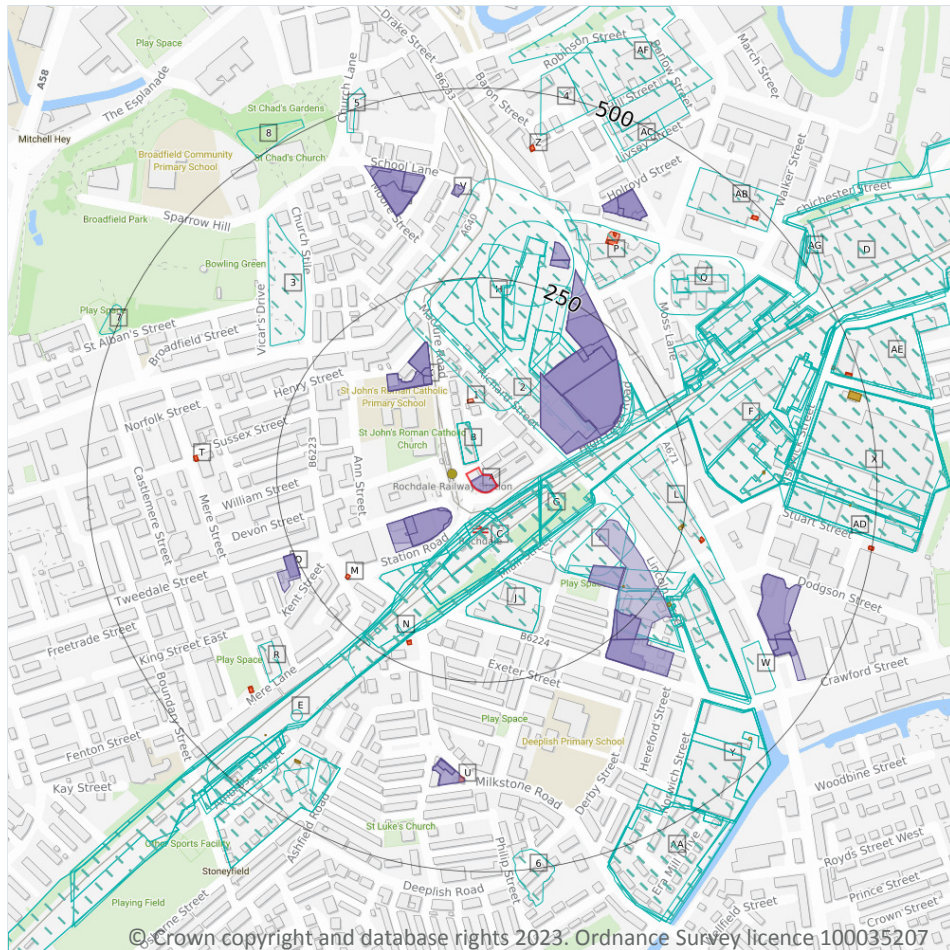
0

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

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



2 Past land use - un-grouped



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

2.1 Historical industrial land uses

Records within 500m

192

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

Features are displayed on the Past land use - un-grouped map on [page 26](#) >

ID	Location	Land Use	Date	Group ID
B	9m N	Fire Station	1992	750274
B	9m N	Fire Station	1987	750274
B	9m N	Fire Station	1975	750274



ID	Location	Land Use	Date	Group ID
B	9m N	Fire Station	1968	750274
C	21m S	Railway Station	1938	699770
C	21m S	Railway Station	1928	699770
C	21m S	Railway Station	1908	699770
C	21m S	Railway Station	1891	699770
D	21m S	Railway Sidings	1938	728101
D	21m S	Railway Sidings	1891	730419
C	22m SE	Railway Sidings	1992	748827
C	22m SE	Railway Sidings	1987	748827
C	22m SE	Railway Sidings	1975	750008
D	26m SE	Railway Sidings	1928	696938
D	26m SE	Railway Sidings	1908	695416
E	27m S	Railway Sidings	1949	710047
E	27m S	Railway Sidings	1968	750008
C	27m S	Railway Station	1949	705819
C	27m S	Railway Station	1968	788533
C	35m S	Railway Station	1992	715420
C	35m S	Railway Station	1987	715420
C	45m S	Railway Station	1975	736403
F	54m E	Railway Sidings	1976	750008
F	57m E	Railway Sidings	1954	724457
G	57m E	Railway Buildings	1954	681657
F	57m E	Railway Sidings	1967	748671
G	57m E	Railway Station	1967	776975
H	79m N	Canal Wharf	1891	709844
2	86m NE	Warehouse	1851	685830
I	106m SE	Unspecified Works	1967	704354
C	112m SW	Railway Building	1928	707164



ID	Location	Land Use	Date	Group ID
C	112m SW	Railway Building	1908	707164
D	114m E	Railway Building	1954	670147
J	115m S	Unspecified Works	1992	723379
J	115m S	Unspecified Works	1987	723379
H	130m N	Unspecified Commercial/Industrial	1938	730493
H	130m N	Unspecified Commercial/Industrial	1891	699512
I	132m SE	Unspecified Works	1976	704354
H	136m NE	Cotton Mill	1851	644264
H	136m NE	Unspecified Mills	1891	784043
H	138m NE	Cotton Mill	1851	644263
I	141m SE	Unspecified Mills	1938	653260
H	141m NE	Unspecified Commercial/Industrial	1976	643269
H	141m NE	Unspecified Works	1967	678971
D	141m E	Corn Mill	1851	672560
H	143m NE	Canal Wharf	1851	743911
H	143m NE	Unspecified Mills	1928	751941
H	143m NE	Unspecified Mills	1908	751941
H	143m NE	Unspecified Mills	1891	751941
H	149m NE	Unspecified Mills	1938	760532
H	149m NE	Unspecified Mills	1928	760532
H	151m NE	Unspecified Mills	1938	747712
H	154m N	Canal Basin	1851	656579
H	162m N	Canal Wharf	1851	758041
H	175m N	Canal Wharf	1928	719474
H	175m N	Canal Wharf	1908	719474
H	175m N	Canal Wharf	1938	765554
L	177m E	Cotton Mill	1851	644262
H	188m N	Canal Wharf	1851	781586



ID	Location	Land Use	Date	Group ID
H	190m N	Unspecified Depot	1968	668804
N	206m SW	Railway Building	1938	670145
I	209m SE	Unspecified Mill	1967	657141
I	212m SE	Unspecified Mills	1954	771371
I	218m SE	Unspecified Mills	1891	699796
H	221m N	Unspecified Wharf	1949	675228
N	224m SW	Railway Building	1938	670146
I	229m SE	Saw Pit	1851	680286
N	244m SW	Railway Building	1938	670144
F	250m E	Railway Sidings	1851	700493
I	266m SE	Unspecified Mills	1938	722970
I	266m SE	Unspecified Mills	1928	722970
I	266m SE	Unspecified Mills	1908	722970
I	266m SE	Unspecified Works	1967	707456
I	273m SE	Unspecified Mills	1954	752158
F	275m E	Railway Works	1954	714102
F	276m E	Unspecified Works	1976	780465
F	276m E	Unspecified Works	1967	780465
F	277m E	Railway Works	1938	768281
F	277m E	Railway Works	1928	768281
F	277m E	Unspecified Commercial/Industrial	1908	780404
F	277m E	Unspecified Commercial/Industrial	1891	780404
I	278m SE	Unspecified Tank	1891	674683
I	279m SE	Unspecified Works	1976	707456
F	281m NE	Railway Buildings	1954	734495
3	281m NW	Grave Yard	1908	668096
F	282m NE	Railway Buildings	1967	734808
F	283m NE	Railway Buildings	1938	700219



ID	Location	Land Use	Date	Group ID
F	283m NE	Railway Buildings	1928	700219
F	283m NE	Railway Buildings	1908	700219
F	283m NE	Railway Buildings	1891	700219
P	284m NE	Unspecified Mill	1976	657142
F	306m NE	Goods Station	1954	742210
F	307m NE	Goods Station	1938	757419
F	307m NE	Goods Station	1928	757419
F	307m NE	Goods Station	1908	757419
F	307m NE	Goods Station	1891	757419
F	308m NE	Railway Building	1976	670148
Q	313m NE	Goods Station	1967	721908
F	324m E	Railway Station	1851	672375
F	331m NE	Warehouse	1851	685828
F	334m NE	Goods Shed	1967	704013
R	334m SW	Unspecified Mill	1908	657143
F	335m NE	Goods Shed	1976	783873
F	336m NE	Goods Shed	1954	722112
F	337m NE	Goods Shed	1938	716811
F	337m NE	Goods Shed	1928	716811
F	337m NE	Goods Shed	1908	716811
F	337m NE	Goods Shed	1891	716811
Q	341m NE	Smithy	1908	692927
F	343m NE	Warehouse	1851	685829
Q	345m NE	Goods Station	1976	721908
F	367m E	Railway Building	1976	703711
F	367m E	Railway Building	1967	703711
F	368m E	Railway Building	1976	778489
F	368m E	Railway Building	1967	778489



ID	Location	Land Use	Date	Group ID
E	373m SW	Unspecified Tank	1891	674715
F	378m E	Railway Building	1976	784623
F	378m E	Goods Shed	1967	720470
X	378m E	Unspecified Works	1976	764500
X	378m E	Unspecified Works	1967	764500
X	380m E	Railway Works	1954	734615
F	381m E	Railway Building	1938	778206
F	381m E	Railway Building	1928	778206
F	381m E	Railway Building	1908	695310
F	381m E	Goods Shed	1891	784020
F	382m E	Railway Building	1954	761337
X	383m E	Railway Works	1938	783940
X	383m E	Railway Works	1928	783940
X	383m E	Railway Works	1908	783940
X	383m E	Iron Works	1891	672265
W	386m SE	Unspecified Works	1976	678970
Y	390m SE	Unspecified Mill	1938	735007
Y	390m SE	Unspecified Mill	1928	735007
Y	390m SE	Unspecified Mills	1908	715677
Y	390m SE	Unspecified Commercial/Industrial	1891	643268
Y	391m SE	Unspecified Mill	1976	720646
Y	391m SE	Unspecified Mill	1967	720646
Y	392m SE	Unspecified Mills	1954	759502
F	392m E	Railway Building	1976	670150
E	406m SW	Unspecified Pit	1968	690677
E	409m SW	Unspecified Commercial/Industrial	1992	762836
E	409m SW	Unspecified Commercial/Industrial	1987	762836
E	409m SW	Unspecified Commercial/Industrial	1975	762836



ID	Location	Land Use	Date	Group ID
E	409m SW	Unspecified Commercial/Industrial	1968	762836
E	409m SW	Unspecified Works	1992	726519
E	409m SW	Unspecified Works	1987	726519
E	409m SW	Unspecified Works	1975	726519
E	416m SW	Engineering Works	1938	722806
E	416m SW	Engineering Works	1928	722806
E	416m SW	Shuttle Works	1908	672399
Y	422m SE	Unspecified Mill	1976	696391
Y	422m SE	Unspecified Mill	1967	696391
E	423m SW	Engineering Works	1949	714422
E	428m SW	Cuttings	1968	642613
F	435m NE	Railway Building	1976	754982
F	435m NE	Railway Building	1967	754982
F	435m NE	Railway Building	1954	787164
F	437m NE	Railway Building	1938	741586
F	437m NE	Railway Building	1928	741586
F	437m NE	Railway Building	1908	741586
F	437m NE	Railway Building	1891	741586
AA	437m SE	Unspecified Works	1976	713295
AA	437m SE	Unspecified Works	1967	713295
E	437m SW	Unspecified Works	1908	707560
AB	440m NE	Unspecified Works	1976	678979
4	445m N	Unspecified Works	1976	784990
AC	446m NE	Rope Walk	1851	641261
AA	456m SE	Iron Works	1938	725459
AA	456m SE	Iron Works	1928	725459
AA	456m SE	Unspecified Mills	1908	766175
AC	459m NE	Unspecified Mill	1976	657137



ID	Location	Land Use	Date	Group ID
AA	459m SE	Iron Works	1954	723576
F	460m E	Railway Buildings	1954	774628
F	461m E	Railway Buildings	1938	705301
F	461m E	Railway Buildings	1908	698514
F	464m E	Railway Buildings	1928	789144
AE	464m E	Unspecified Commercial/Industrial	1976	643278
AE	464m E	Unspecified Works	1967	678981
AE	464m E	Iron Works	1954	788568
AD	465m E	Pump	1851	675586
AE	467m E	Iron Works	1938	777339
AE	467m E	Iron Works	1928	777339
E	467m SW	Iron Works	1891	672264
5	471m N	Unspecified Ground Workings	1968	648013
6	474m S	Gravel Pit	1851	652943
AF	481m N	Brick Field	1851	668540
AF	490m N	Unspecified Works	1976	731372
7	494m NW	Unspecified Pit	1968	690683
AG	495m NE	Railway Building	1954	744947
AG	497m NE	Railway Building	1928	783366
AG	497m NE	Railway Building	1908	783366
8	499m NW	Unspecified Pit	1949	704246

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

18

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

Features are displayed on the Past land use - un-grouped map on [page 26 >](#)



ID	Location	Land Use	Date	Group ID
I	211m SE	Unspecified Tank	1957	84318
L	245m E	Unspecified Tank	1891	88900
L	247m E	Unspecified Tank	1957	89359
L	247m E	Unspecified Tank	1957	94891
I	272m SE	Unspecified Tank	1891	84335
F	350m E	Unspecified Tank	1910	101382
F	350m E	Unspecified Tank	1891	101382
E	426m SW	Unspecified Tank	1957	100879
E	426m SW	Unspecified Tank	1957	89432
E	427m SW	Unspecified Tank	1984	99677
E	427m SW	Unspecified Tank	1990	99677
E	428m SW	Unspecified Tank	1971	99677
AD	464m E	Unspecified Tank	1910	84333
Y	469m SE	Unspecified Tank	1891	84305
F	476m E	Tanks	1985	89774
F	476m E	Tanks	1988	89871
F	476m E	Tanks	1985	89871
E	495m SW	Tank or Trough	1910	88429

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m

54

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

Features are displayed on the Past land use - un-grouped map on [page 26 >](#)

ID	Location	Land Use	Date	Group ID
1	86m N	Electricity Substation	1995	45542
M	200m SW	Electricity Substation	1989	58130



ID	Location	Land Use	Date	Group ID
M	200m SW	Electricity Substation	1995	58130
N	216m SW	Electricity Substation	1984	55097
N	216m SW	Electricity Substation	1990	55097
N	216m SW	Electricity Substation	1996	55097
N	216m SW	Electricity Substation	1994	55097
N	217m SW	Electricity Substation	1971	55097
L	274m E	Electricity Substation	1982	52057
L	274m E	Electricity Substation	1982	52057
L	274m E	Electricity Substation	1982	52057
L	274m E	Electricity Substation	1988	52057
L	274m E	Electricity Substation	1985	52057
L	274m E	Electricity Substation	1985	52057
L	275m E	Electricity Substation	1993	52057
P	340m NE	Electricity Substation	1982	51185
P	340m NE	Electricity Substation	1986	51185
P	340m NE	Electricity Substation	1975	53685
P	353m NE	Electricity Substation	1989	59415
P	353m NE	Electricity Substation	1995	50361
T	353m W	Electricity Substation	1978	58417
T	353m W	Electricity Substation	1985	58417
T	353m W	Electricity Substation	1988	58417
T	354m W	Electricity Substation	1995	52691
T	355m W	Electricity Substation	1989	58417
U	374m S	Electricity Substation	1996	54791
U	374m S	Electricity Substation	1994	54791
U	375m S	Electricity Substation	1984	54791
U	375m S	Electricity Substation	1990	54791
R	393m SW	Electricity Substation	1996	54141



ID	Location	Land Use	Date	Group ID
R	393m SW	Electricity Substation	1994	54141
R	393m SW	Electricity Substation	1984	47865
R	394m SW	Electricity Substation	1971	54141
Z	422m N	Electricity Substation	1994	54805
Z	422m N	Electricity Substation	1998	54805
Z	423m N	Electricity Substation	1988	54805
F	466m E	Electricity Substation	1993	46743
F	467m E	Electricity Substation	1988	46743
F	467m E	Electricity Substation	1985	46743
F	479m E	Electricity Substation	1985	56808
F	480m E	Electricity Substation	1993	56808
F	481m E	Electricity Substation	1982	54361
F	481m E	Electricity Substation	1982	54361
F	481m E	Electricity Substation	1982	54361
F	481m E	Electricity Substation	1988	54361
F	481m E	Electricity Substation	1985	54361
AB	483m NE	Electricity Substation	1982	50695
AB	483m NE	Electricity Substation	1986	50695
AB	483m NE	Electricity Substation	1989	50695
AB	483m NE	Electricity Substation	1975	50695
AD	495m E	Electricity Substation	1993	53306
AD	496m E	Electricity Substation	1985	53306
AD	496m E	Electricity Substation	1988	53306
AD	496m E	Electricity Substation	1985	53306

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

87

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

Features are displayed on the Past land use - un-grouped map on [page 26 >](#)

ID	Location	Land Use	Date	Group ID
A	On site	Garage	1989	17556
A	On site	Garage	1995	17556
C	45m SW	Garage	1957	15896
C	45m SW	Garage	1957	16699
C	46m SW	Garage	1978	17427
C	46m SW	Garage	1985	17427
C	89m SW	Garage	1989	16249
H	92m NE	Garage	1982	17639
H	92m NE	Garage	1982	17639
H	92m NE	Garage	1982	17639
H	97m NE	Garage	1985	17744
C	101m SW	Garage	1989	15383
K	126m NW	Garage	1988	19829
K	126m NW	Garage	1978	19829
K	126m NW	Garage	1985	19829
K	126m NW	Garage	1957	17288



ID	Location	Land Use	Date	Group ID
K	127m NW	Garage	1957	17288
K	130m NW	Garage	1957	16876
K	136m NW	Garage	1957	15286
H	141m NE	Garage	1988	16161
H	141m NE	Garage	1985	17744
H	141m NE	Garage	1993	16719
H	142m NE	Garage	1957	19710
H	142m NE	Garage	1982	19729
H	142m NE	Garage	1982	19729
H	142m NE	Garage	1982	19729
H	142m NE	Garage	1957	19710
I	143m SE	Garage	1988	17013
K	146m NW	Garage	1988	18965
K	146m NW	Garage	1978	18965
K	146m NW	Garage	1985	18965
I	164m SE	Garage	1957	18332
I	164m SE	Garage	1957	18332
H	194m NE	Garage	1985	16568
H	203m NE	Garage	1982	18330
H	203m NE	Garage	1982	18330
H	203m NE	Garage	1982	18330
H	208m NE	Garage	1985	16481
I	224m SE	Garage	1985	16004
I	224m SE	Garage	1993	17470
I	226m SE	Garage	1985	15908
O	251m W	Garage	1988	17912
O	251m W	Garage	1978	17912
O	251m W	Garage	1985	17912



ID	Location	Land Use	Date	Group ID
O	251m W	Garage	1957	15049
I	251m SE	Garage	1995	18575
I	251m SE	Garage	1993	18575
I	251m SE	Garage	1987	15194
O	251m W	Garage	1957	16405
I	252m SE	Garage	1984	17210
I	252m SE	Garage	1991	17470
H	283m N	Garage	1957	15559
H	283m N	Garage	1957	17517
H	289m N	Garage	1957	17517
H	290m N	Garage	1957	17517
S	348m N	Garage	1998	19097
S	348m N	Garage	1994	19097
S	349m N	Garage	1988	15081
S	350m N	Garage	1987	18400
S	350m N	Garage	1978	18400
S	350m N	Garage	1959	15305
U	354m S	Garage	1984	15674
U	355m S	Garage	1957	16533
U	356m S	Garage	1971	17891
U	356m S	Garage	1957	17891
V	357m N	Garage	1959	19131
V	358m N	Garage	1959	19131
W	370m E	Garage	1993	19062
S	370m N	Garage	1998	19222
S	370m N	Garage	1994	19222
W	371m E	Garage	1988	17906
W	371m E	Garage	1985	17906

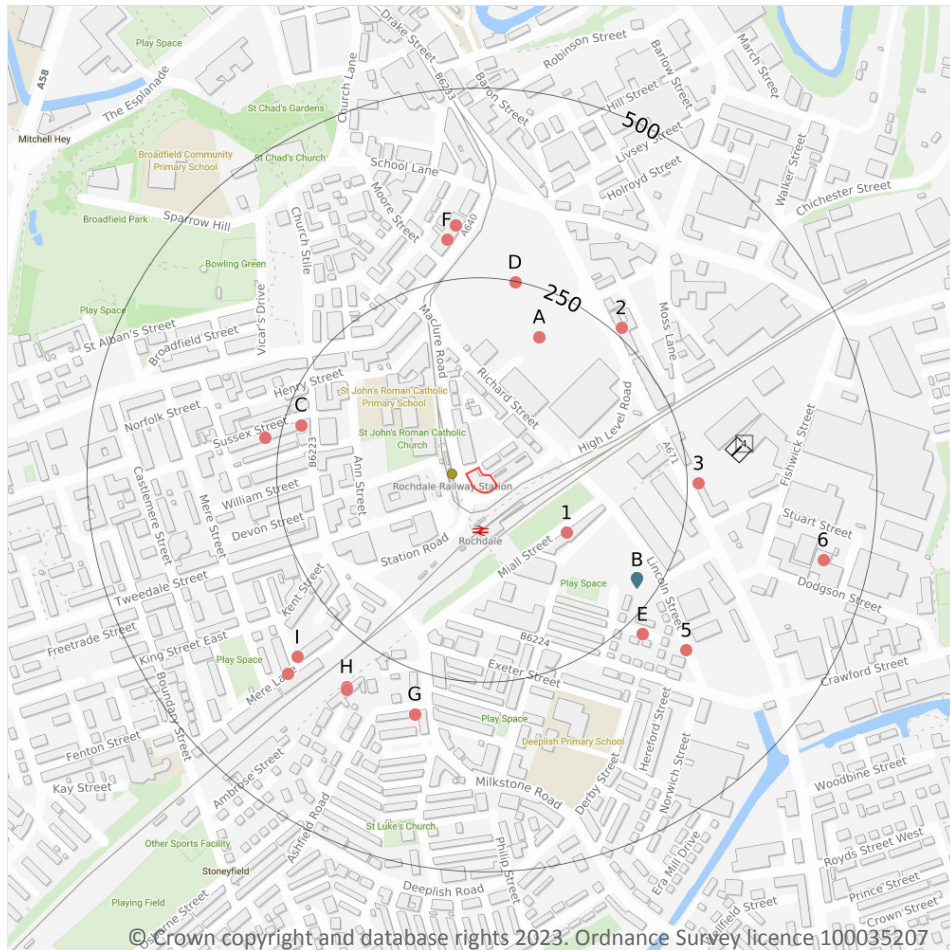


ID	Location	Land Use	Date	Group ID
S	372m N	Garage	1988	15931
P	376m NE	Garage	1957	15558
P	376m NE	Garage	1982	18889
P	376m NE	Garage	1986	18889
P	376m NE	Garage	1989	18889
S	380m N	Garage	1959	16449
P	380m NE	Garage	1995	17879
P	382m NE	Garage	1957	15501
P	382m NE	Garage	1975	17879
W	409m SE	Garage	1984	17906
W	409m SE	Garage	1991	19062
W	414m SE	Garage	1985	17906
W	419m SE	Garage	1995	19062
W	419m SE	Garage	1993	19062
W	419m SE	Garage	1987	17906

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (EA/NRW)
- Licensed waste sites
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m

0

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m

1

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.

Features are displayed on the Waste and landfill map on [page 41 >](#)

ID	Location	Details		
4	303m E	Site Address: Fishwick Street, Rochdale Licence Holder Address: Off Fishwick Street, Rochdale	Waste Licence: Yes Site Reference: RD/LIC/477/87 Waste Type: Inert, Industrial, Commercial Environmental Permitting Regulations (Waste) Reference: - Licence Issue: 04/06/1987 Licence Surrender: 10/10/1990	Operator: - Licence Holder: Rochdale Timber Company First Recorded 01/07/1987 Last Recorded: 31/12/1989

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

4

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

Features are displayed on the Waste and landfill map on [page 41 >](#)

ID	Location	Details		
B	221m SE	Site Name: Rochdale Auto Spares Site Address: Cronshaw Industrial Estate, Lincoln Street, Deeplish, Rochdale, Lancashire, OL11 1LR Correspondence Address: 4, Harwin Close, Shawclough, Rochdale, Lancashire, OL12 7UY	Type of Site: Metal Recycling Site (mixed MRS's) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: AAL001 EPR reference: - Operator: Mohammed Asam & Habib Ahmed Latif Waste Management licence No: 50378 Annual Tonnage: 0	Issue Date: 04/04/2005 Effective Date: 03/10/2006 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Transferred
B	221m SE	Site Name: Rochdale Auto Spares Site Address: Cronshaw Industrial Estate, Lincoln Street, Deeplish, Rochdale, Lancashire, OL11 1LR Correspondence Address: 81-119, Durham Street, Cronshaw Ind. Estate, Rochdale, Lancs, OL11 1LR	Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JAP001 EPR reference: - Operator: Shehzad Suleman And Habib Latif Waste Management licence No: 50378 Annual Tonnage: 0	Issue Date: 04/04/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
B	221m SE	Site Name: Rochdale Auto Spares Site Address: Cronshaw Industrial Estate, Lincoln Street, Deeplish, Rochdale, Lancashire, OL11 1LR Correspondence Address: Shehzad Suleman, 81-119, Durham Street, Cronshaw Ind. Estate, Rochdale, Lancs, OL11 1LR	Type of Site: ELV Facility Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: JAP001 EPR reference: - Operator: Shehzad Suleman And Habib Latif Waste Management licence No: 50378 Annual Tonnage: 0	Issue Date: 04/04/2005 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
B	221m SE	Site Name: Rochdale Auto Spares Site Address: Mohammed Asam & Habib Ahmed Latif, Cronshaw Industrial Estate, Lincoln Street, Deeplish, Rochdale, Lancashire, OL11 1LR Correspondence Address: -	Type of Site: Metal Recycling Site (Vehicle Dismantler) Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: 655049 EPR reference: EA/EPR/ZP3194CL Operator: Mohammed Asam & Habib Ahmed Latif Waste Management licence No: 50378 Annual Tonnage: 0	Issue Date: 04/04/2005 Effective Date: 04/04/2005 Modified: - Surrendered Date: 04/04/2005 Expiry Date: - Cancelled Date: 04/04/2005 Status: Surrendered

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



3.7 Waste exemptions

Records within 500m

25

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 41 >](#)

ID	Location	Site	Reference	Category	Sub-Category	Description
1	110m SE	Regal House Miall Street ROCHDALE Lancashire OL11 1HY	EPR/DE5682Q M/A001	Storing waste exemption	Non- Agricultura l Waste Only	Storage of waste in a secure place
A	189m N	-	WEX335497	Using waste exemption	Not on a farm	Use of waste in construction
A	189m N	-	WEX335497	Using waste exemption	Not on a farm	Use of mulch
A	189m N	-	WEX335497	Treating waste exemption	Not on a farm	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
C	227m W	Liley street autos, Liley street, Rochdale, OL111el	WEX271696	Treating waste exemption	Not on a farm	Recovery of scrap metal
C	227m W	Liley street autos, Liley street, Rochdale, OL111el	WEX271696	Using waste exemption	Not on a farm	Use of depolluted end-of-life vehicles for vehicle parts
D	248m N	-	WEX342033	Using waste exemption	Not on a farm	Use of waste in construction
D	248m N	-	WEX342033	Treating waste exemption	Not on a farm	Screening and blending of waste
2	259m NE	81-83, OLDHAM ROAD, ROCHDALE, OL16 5QR	WEX352740	Treating waste exemption	Not on a farm	Recovery of scrap metal
3	265m E	The Landing Oldham Road Rochdale Rochdale OL16 5QY	EPR/LF0306NP /A001	Storing waste exemption	Non- Agricultura l Waste Only	Storage of waste in a secure place
C	269m W	Liley street autos, Liley street, Rochdale, OL111el	WEX130172	Treating waste exemption	Not on a farm	Recovery of scrap metal
C	269m W	Liley street autos, Liley street, Rochdale, OL111el	WEX130172	Using waste exemption	Not on a farm	Use of depolluted end-of-life vehicles for vehicle parts
E	274m SE	-	WEX156841	Treating waste exemption	Not on a Farm	Screening and blending of waste

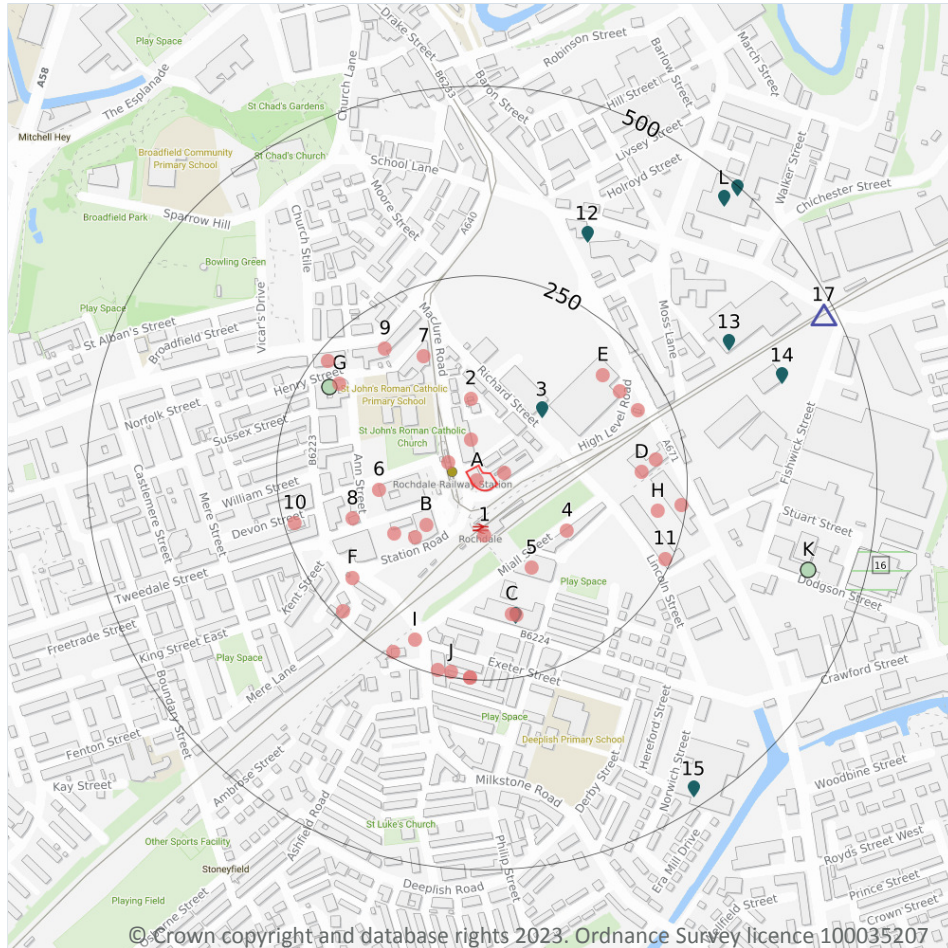


ID	Location	Site	Reference	Category	Sub-Category	Description
E	274m SE	-	WEX156841	Using waste exemption	Not on a Farm	Use of waste in construction
F	302m N	130 Drake Street, Rochdale, OL16 1PN	EA/EPR/VP394 5UX/A001	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
G	306m S	Unit 1 The Old Bakery, Ashfield Road, Rochdale, OL11 1PX	EA/EPR/WP30 44UF/A001	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
G	306m S	UNIT 1, THE OLD BAKERY,ASHFIELD ROAD,ROCHDALE OL11 1PX	EXP/WP3044U F	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
H	312m SW	Unit 1, Ashfield Road, Rochdale, OL11 1PX	EA/EPR/VP378 9MX/A001	Treating waste exemption	Non-Agricultural waste only	Repair or refurbishment of WEEE
H	315m SW	Unit 1, Ashfield Road, Rochdale, OL11 1PX	EA/EPR/VP394 3FF/A001	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
F	320m N	130 Drake Street, Rochdale, OL16 1PN	NC3/000012	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
F	320m N	130 Drake Street,Rochdale OL16 1PN	EXP/WP3045L M	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
I	324m SW	38, MERE LANE, ROCHDALE, OL11 3TD	WEX345161	Treating waste exemption	Not on a farm	Recovery of scrap metal
5	330m SE	-	WEX230901	Using waste exemption	Not on a farm	Use of waste in construction
I	348m SW	41 Mere Lane, Rochdale, Lancashire, OL11 3TD	EA/EPR/VP388 4NQ/A001	Treating waste exemption	Not on a farm	Repair or refurbishment of WEEE
6	440m E	The Warehouse, 1 Stuart Street, Rochdale, OL16 5NB	WEX298965	Storing waste exemption	Not on a Farm	Storage of waste in a secure place

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- ▲ Current or recent petrol stations
- Control of Major Accident Hazards
- Licensed pollutant release (Part A(2)/B)
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

36

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 46](#) >

ID	Location	Company	Address	Activity	Category
A	On site	Meezan Beds Carpets & Blinds	33-35, Maclure Road, Rochdale, Greater Manchester, OL11 1DN	Beds and Bedding	Consumer Products
A	16m E	P3 Logistics Ltd	Ground Floor Unit 2 Deen House, Station Road, Milkstone, Rochdale, Greater Manchester, OL11 1DS	Packaging	Industrial Products



ID	Location	Company	Address	Activity	Category
A	27m NW	Rochdale Railway Station (Manchester Metrolink)	Greater Manchester, OL11	Tram, Metro and Light Railway Stations and Stops	Public Transport, Stations and Infrastructure
A	36m N	Ur Auto Care	-, Maclure Road, Rochdale, Greater Manchester, OL11 1DN	Vehicle Repair, Testing and Servicing	Repair and Servicing
1	59m S	Rochdale Rail Station	Greater Manchester, OL11	Railway Stations, Junctions and Halts	Public Transport, Stations and Infrastructure
B	81m SW	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
2	89m N	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
B	104m SW	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
4	110m SE	C N C Profile Engineering Ltd	Regal House, Miall Street, Rochdale, Greater Manchester, OL11 1HY	Precision Engineers	Engineering Services
5	117m SE	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
6	117m W	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
B	122m SW	Business Estate	Greater Manchester, OL11	Business Parks and Industrial Estates	Industrial Features
7	161m NW	U R Auto Care	Unit 3 10, Maclure Road, Rochdale, Greater Manchester, OL11 1DN	Vehicle Repair, Testing and Servicing	Repair and Servicing
8	162m W	Stylish Curtains	3-5, Lower Tweedale Street, Rochdale, Greater Manchester, OL11 1HG	Curtains and Blinds	Consumer Products
C	166m S	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
C	168m S	Mellor Coachcraft	-, Miall Street, Rochdale, Greater Manchester, OL11 1HY	Vehicle Bodybuilders	Industrial Products
D	190m E	Heap Economiser Ltd	2, Oldham Road, Rochdale, Greater Manchester, OL11 1BU	Cooling and Refrigeration	Industrial Products
9	195m NW	Heritage Healthcare Rochdale	115, Drake Street, Rochdale, Greater Manchester, OL16 1PZ	Vehicle Repair, Testing and Servicing	Repair and Servicing



ID	Location	Company	Address	Activity	Category
E	197m NE	Halfords	Unit 1a Central Retail Park, Oldham Road, Rochdale, Greater Manchester, OL11	Vehicle Parts and Accessories	Motoring
F	201m SW	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
E	202m NE	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
G	204m NW	3 G Autos	Unit 5, 35 Henry Street, Rochdale, Greater Manchester, OL11 1EP	Vehicle Repair, Testing and Servicing	Repair and Servicing
E	209m NE	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
D	211m E	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
H	214m E	Halfpenny Bridge Industrial Estate	Greater Manchester, OL11	Business Parks and Industrial Estates	Industrial Features
I	216m SW	Electricity Sub Station	Greater Manchester, OL11	Electrical Features	Infrastructure and Facilities
G	234m NW	Rochdale Battery Service	137, Drake Street, Rochdale, Greater Manchester, OL16 1QB	Electrical Production and Manipulation Equipment	Industrial Products
10	236m W	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
F	240m SW	Cooker Appliances	Unit 10, Mere Lane, Rochdale, Greater Manchester, OL11 3TD	Electrical Equipment Repair and Servicing	Repair and Servicing
11	241m SE	T B A Protective Solutions	Unit 11 Halfpenny Bridge Industrial Estate, Lincoln Close, Rochdale, Greater Manchester, OL11 1NR	Electrical Components	Industrial Products
I	243m SW	Mars Car Sales	6, Vine Place, Rochdale, Greater Manchester, OL11 1QZ	Secondhand Vehicles	Motoring
J	243m S	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
J	244m S	Auto Shop	77, Milkstone Road, Rochdale, Greater Manchester, OL11 1NT	Vehicle Repair, Testing and Servicing	Repair and Servicing
H	244m E	Expert Safety Supplies	Unit 3 Halfpenny Bridge Industrial Estate, Lincoln Street, Rochdale, Greater Manchester, OL11 1NS	Workwear	Industrial Products



ID	Location	Company	Address	Activity	Category
J	247m S	Works	Greater Manchester, OL11	Unspecified Works Or Factories	Industrial Features
J	248m S	Sporteq Ltd	Unit 1, Maldon Street, Rochdale, Greater Manchester, OL11 1JR	Hobby, Sports and Pastime Products	Consumer Products

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

1

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on [page 46](#) >

ID	Location	Company	Address	LPG	Status
17	484m NE	OBSOLETE	Milnrow Road, Rochdale, Greater Manchester, OL16 1SY	Not Applicable	Obsolete

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m

0

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

This data is sourced from Local Authority records.



4.6 Control of Major Accident Hazards (COMAH)

Records within 500m**1**

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.

Features are displayed on the Current industrial land use map on [page 46](#) >

ID	Location	Company	Address	Operational status	Tier
16	478m E	Quat-Chem Limited	Quat-Chem Limited, Rochdale, 1-4 Sandfield Industrial Park, Dodgson Street, Rochdale, Lancashire, OL16 5SJ	Current COMAH Site	COMAH Lower Tier Operator

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

8

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 46 >](#)

ID	Location	Address	Details	
3	107m NE	Henly Ford, Oldham Rd, OL11 1BU	Process: Respraying of Road Vehicles Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
C	168m S	Mellor Coachcraft, Miall Street, Rochdale, Lancashire, OL11 1HY	Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
12	336m NE	Northern Accident Repair Ltd, Wood Street, Rochdale, Lancashire, OL16 5QN	Process: Respraying of Road Vehicles Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
13	357m NE	Dresser Mouldings Ltd, Station Yard Sawmills, Wood Street, Rochdale, Lancashire, OL16 5QN	Process: Coating Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified



ID	Location	Address	Details	
14	401m E	Precision Poured Concrete Ltd, The Old Railway Yard, Fishwick Street, Rochdale, Lancashire, OL16 5NA	Process: Use of Bulk Cement Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
L	475m NE	Taylor Engineering & Plastics, Molesworth Street, Rochdale, Lancashire, OL16 1TP	Process: Manufacture Of Fibre Reinforced Plastics ; Di-isocyanate Processes Status: Current Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
15	477m SE	JJ Makin Converting, Norwich St	Process: Various Foam Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified
L	497m NE	Taylor Engineering and Plastics, 3 March Street, Rochdale, OL16 2AP	Process: Coating Processes Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcements Notified Date of enforcement: No Enforcements Notified Comment: No Enforcements Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

0

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

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**6**

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 46](#) >



ID	Location	Details	
G	212m NW	Incident Date: 08/08/2001 Incident Identification: 22851 Pollutant: Specific Waste Materials Pollutant Description: Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
G	212m NW	Incident Date: 08/08/2001 Incident Identification: 22851 Pollutant: Specific Waste Materials:Specific Waste Materials Pollutant Description: Commercial Waste:Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
G	212m NW	Incident Date: 08/08/2001 Incident Identification: 22851 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
K	425m E	Incident Date: 25/09/2001 Incident Identification: 32825 Pollutant: Inert Materials and Wastes:Specific Waste Materials Pollutant Description: Construction and Demolition Materials and Wastes:Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
K	425m E	Incident Date: 25/09/2001 Incident Identification: 32825 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
K	425m E	Incident Date: 25/09/2001 Incident Identification: 32825 Pollutant: Specific Waste Materials Pollutant Description: Household Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) 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

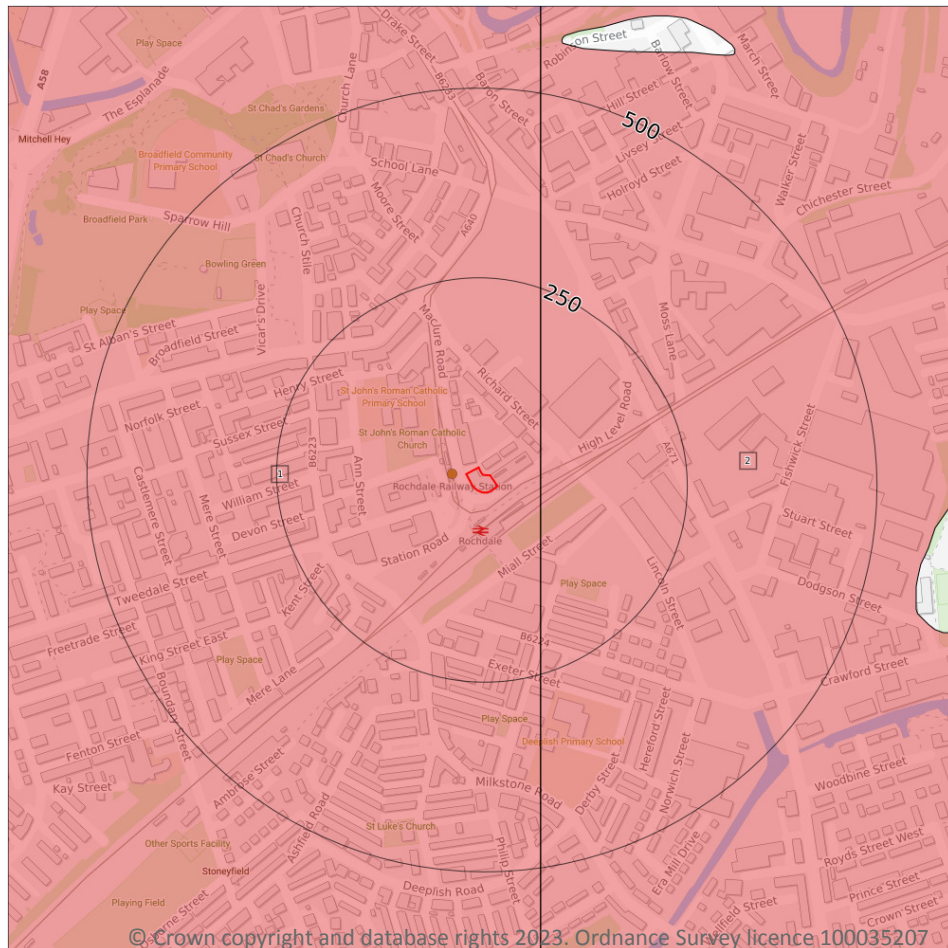
0

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



- 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 56 >](#)

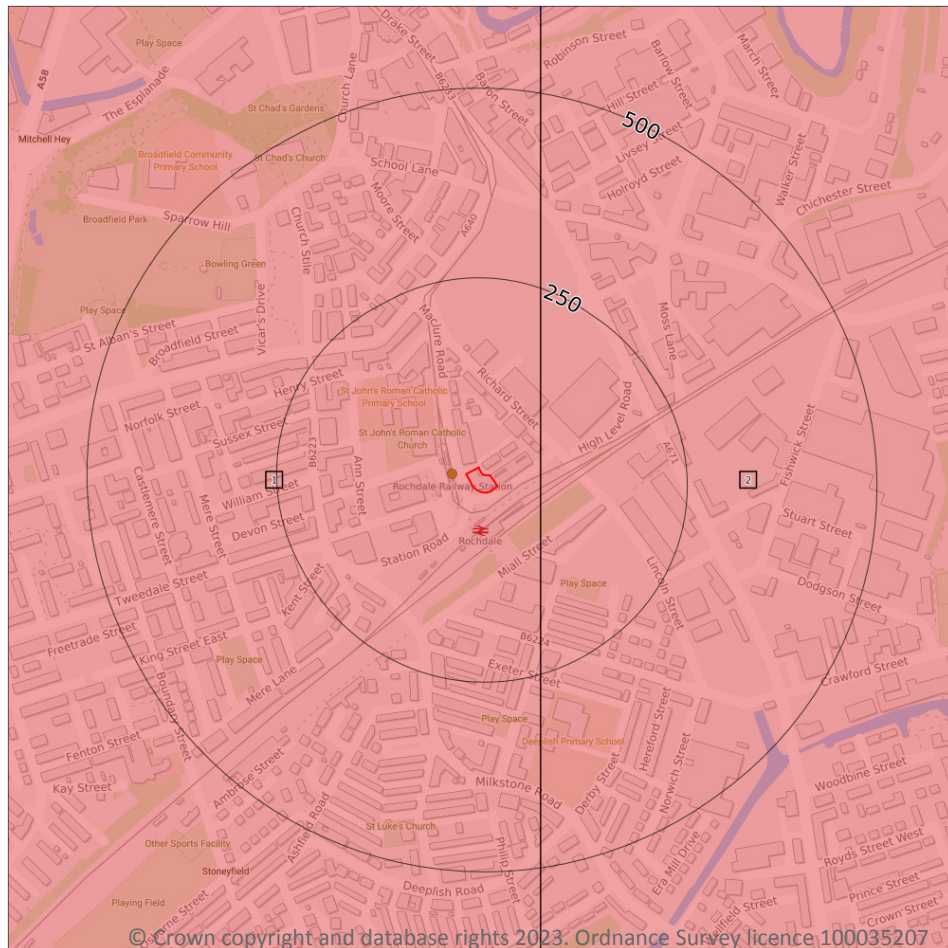
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	57m E	Secondary 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



- Site Outline**
- Search buffers in metres (m)**
- Principal
 - Secondary A
 - Secondary B
 - Secondary Undifferentiated
 - Unproductive

5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 58](#) >

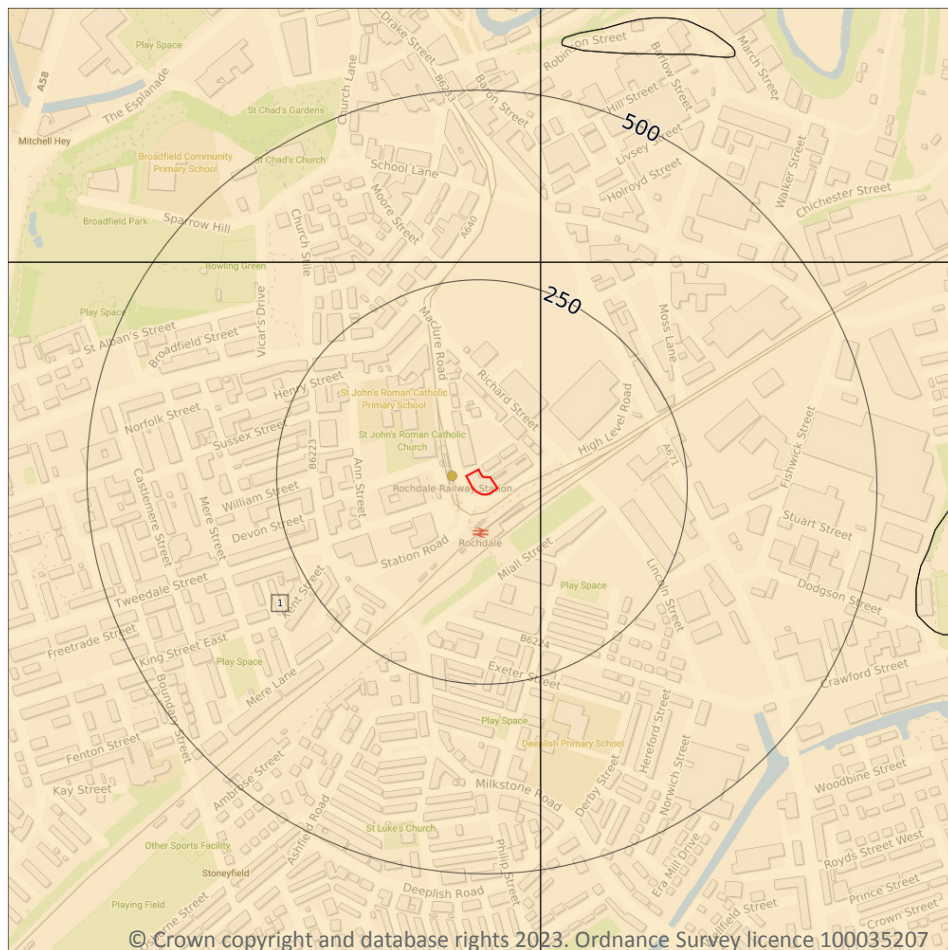
ID	Location	Designation	Description
1	On site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	57m E	Secondary 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.



Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

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

Bedrock vulnerability

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

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m

1

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

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

Features are displayed on the Groundwater vulnerability map on [page 60](#) >



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

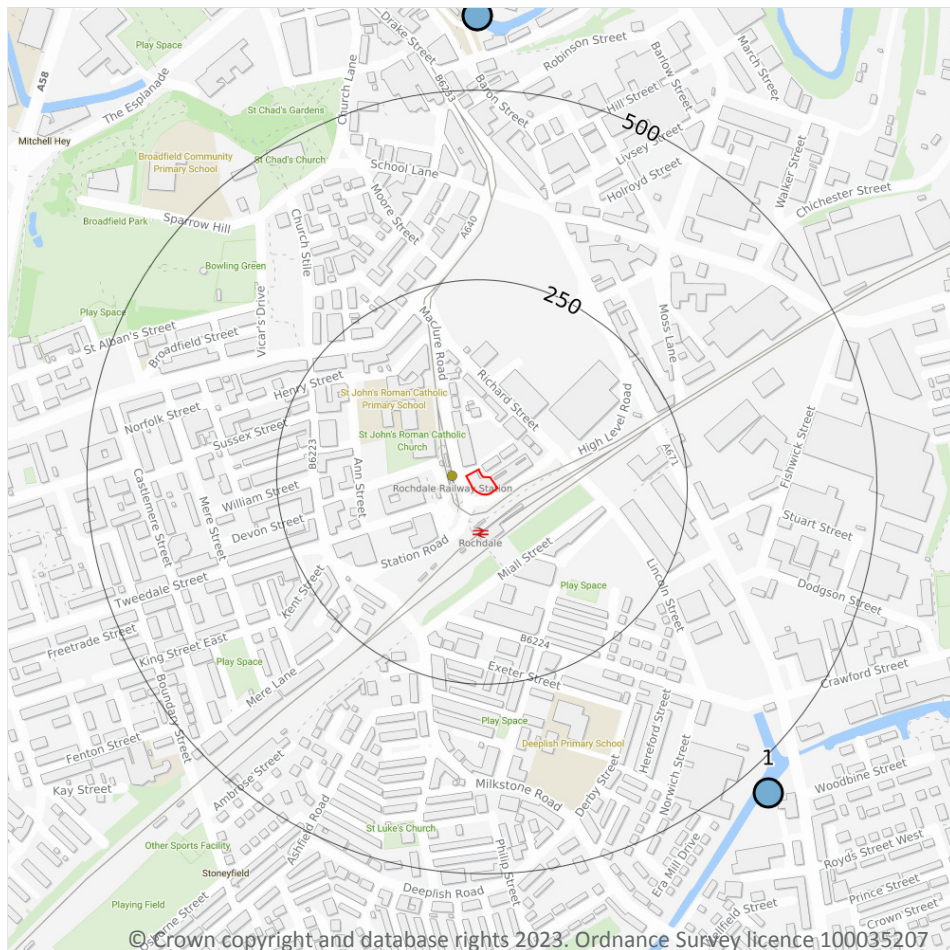
0

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
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

8

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 62 >](#)

ID	Location	Details	
-	1434m NW	Status: Historical Licence No: 2569002050 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, SPOTLAND, ROCHDALE" Data Type: Point Name: ALEXANDER DREW & SONS LTD Easting: 388700 Northing: 413500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 02/05/2000 Version End Date: -
-	1434m NW	Status: Historical Licence No: 2569002050 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, SPOTLAND, ROCHDALE Data Type: Point Name: ALEXANDER DREW LTD. Easting: 388700 Northing: 413500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 10/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2003 Version End Date: -
-	1434m NW	Status: Historical Licence No: 2569002050 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES SPOTLAND ROCHDALE Data Type: Point Name: ALEXANDER DREW LTD Easting: 388700 Northing: 413500	Annual Volume (m ³): 500000 Max Daily Volume (m ³): 2100 Original Application No: - Original Start Date: 10/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2003 Version End Date: -
-	1826m SE	Status: Historical Licence No: 2569002159 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: "WELL AT FARM, LOWER LANE, MILNROW, ROCHDALE" Data Type: Point Name: HARTLE Easting: 391400 Northing: 411600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1966 Version End Date: -



ID	Location	Details	
-	1826m SE	Status: Historical Licence No: 2569002159 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: WELL AT FARM, LOWER LANE, MILNROW, ROCHDALE Data Type: Point Name: HARTLE Easting: 391400 Northing: 411600	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/02/1966 Version End Date: -
-	1826m SE	Status: Historical Licence No: 2569002159 Details: General Farming & Domestic Direct Source: Ground Water - North West Region Point: WELL AT FARM LOWER LANE MILNROW ROCHDALE Data Type: Point Name: HARTLE Easting: 391400 Northing: 411600	Annual Volume (m ³): 5123.34 Max Daily Volume (m ³): 31.822 Original Application No: - Original Start Date: 01/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2007 Version End Date: -
-	1888m SE	Status: Historical Licence No: 2569002060 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: "WELL AT CASTLE FARM, LOWER LANE, MILNROW" Data Type: Point Name: SANDERSON Easting: 391400 Northing: 411500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/02/1966 Version End Date: -
-	1888m SE	Status: Historical Licence No: 2569002060 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: WELL AT CASTLE FARM, LOWER LANE, MILNROW Data Type: Point Name: SANDERSON Easting: 391400 Northing: 411500	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 11/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 11/02/1966 Version End Date: -

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



5.7 Surface water abstractions

Records within 2000m

12

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 62](#) >

ID	Location	Details	
1	537m SE	Status: Historical Licence No: 2569002076 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT ROCHDALE, LANCS Data Type: Point Name: J & J MAKIN CONVERTORS LTD Easting: 390300 Northing: 412300	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/01/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/1993 Version End Date: -
A	598m N	Status: Historical Licence No: NW/069/0002/001 Details: Hydroelectric Power Generation Direct Source: Surface, Non-Tidal - North West Region Point: RIVER ROCH AT ROCHDALE WEIR Data Type: Point Name: Transport for Greater Manchester Easting: 389917 Northing: 413325	Annual Volume (m ³): 36100000 Max Daily Volume (m ³): 164160 Original Application No: NPS/WR/007499 Original Start Date: 15/06/2010 Expiry Date: 31/03/2026 Issue No: 2 Version Start Date: 01/04/2015 Version End Date: -
A	598m N	Status: Historical Licence No: NW/069/0002/003 Details: Transfer Between Sources (Post Water Act 2003) Direct Source: Surface, Non-Tidal - North West Region Point: RIVER ROCH AT ROCHDALE WEIR Data Type: Point Name: Transport for Greater Manchester Easting: 389916 Northing: 413325	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: NPS/WR/007633 Original Start Date: 15/06/2010 Expiry Date: 31/03/2026 Issue No: 2 Version Start Date: 23/06/2011 Version End Date: -
-	747m S	Status: Historical Licence No: 2569002107 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT QUEENSWAY,ROCHDALE" Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/12/1993 Version End Date: -



ID	Location	Details	
-	747m S	Status: Historical Licence No: 2569002107 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: "Surface, Non-Tidal - North West Region" Point: "ROCHDALE CANAL AT QUEENSWAY,ROCHDALE" Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 20/12/1993 Version End Date: -
-	747m S	Status: Historical Licence No: 2569002107 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT QUEENSWAY,ROCHDALE Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m ³): 10455.8 Max Daily Volume (m ³): 45.46 Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	747m S	Status: Historical Licence No: 2569002107 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Surface, Non-Tidal - North West Region Point: ROCHDALE CANAL AT QUEENSWAY,ROCHDALE Data Type: Point Name: SEALOCRETE PLA LTD Easting: 390070 Northing: 411960	Annual Volume (m ³): 10455.8 Max Daily Volume (m ³): 45.46 Original Application No: - Original Start Date: 02/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	933m S	Status: Historical Licence No: 2569002178 Details: Boiler Feed Direct Source: "Surface, Non-Tidal - North West Region" Point: "CATCHPIT FED BY SURFACE DRAINAGE AT PREMISES, ROCHDALE" Data Type: Point Name: DUNPHY COMBUSTION LTD. Easting: 390200 Northing: 411800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 18/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 12/02/1991 Version End Date: -

ID	Location	Details	
-	933m S	Status: Historical Licence No: 2569002178 Details: Boiler Feed Direct Source: Surface, Non-Tidal - North West Region Point: CATCHPIT FED BY SURFACE DRAINAGE AT PREMISES, ROCHDALE Data Type: Point Name: DUNPHY COMBUSTION LTD Easting: 390200 Northing: 411800	Annual Volume (m ³): 2318.46 Max Daily Volume (m ³): 34.09 Original Application No: CW 1093 Original Start Date: 18/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 12/02/1991 Version End Date: -
-	1387m NE	Status: Historical Licence No: 2569002249 Details: Process water Direct Source: "Surface, Non-Tidal - North West Region" Point: "RIVER ROCH AT MELLOROID WORKS, BELFIELD ROAD" Data Type: Point Name: BRITISH MILLERAIN 1922 CO LTD Easting: 390800 Northing: 413800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/11/1991 Expiry Date: - Issue No: 100 Version Start Date: 04/11/1991 Version End Date: -
-	1387m NE	Status: Historical Licence No: 2569002249 Details: Process water Direct Source: Surface, Non-Tidal - North West Region Point: RIVER ROCH AT MELLOROID WORKS, BELFIELD ROAD Data Type: Point Name: BRITISH MILLERAIN 1922 CO LTD Easting: 390800 Northing: 413800	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 04/11/1991 Expiry Date: - Issue No: 100 Version Start Date: 04/11/1991 Version End Date: -
-	1387m NE	Status: Historical Licence No: 2569002249 Details: Process Water Direct Source: Surface, Non-Tidal - North West Region Point: RIVER ROCH AT MELLOROID WORKS BELFIELD ROAD Data Type: Point Name: BRITISH MILLERAIN 1922 CO LTD Easting: 390800 Northing: 413800	Annual Volume (m ³): 213662 Max Daily Volume (m ³): 1136.49 Original Application No: - Original Start Date: 04/11/1991 Expiry Date: - Issue No: 100 Version Start Date: 04/11/1991 Version End Date: -

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



5.8 Potable abstractions

Records within 2000m

0

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

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

5.9 Source Protection Zones

Records within 500m

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

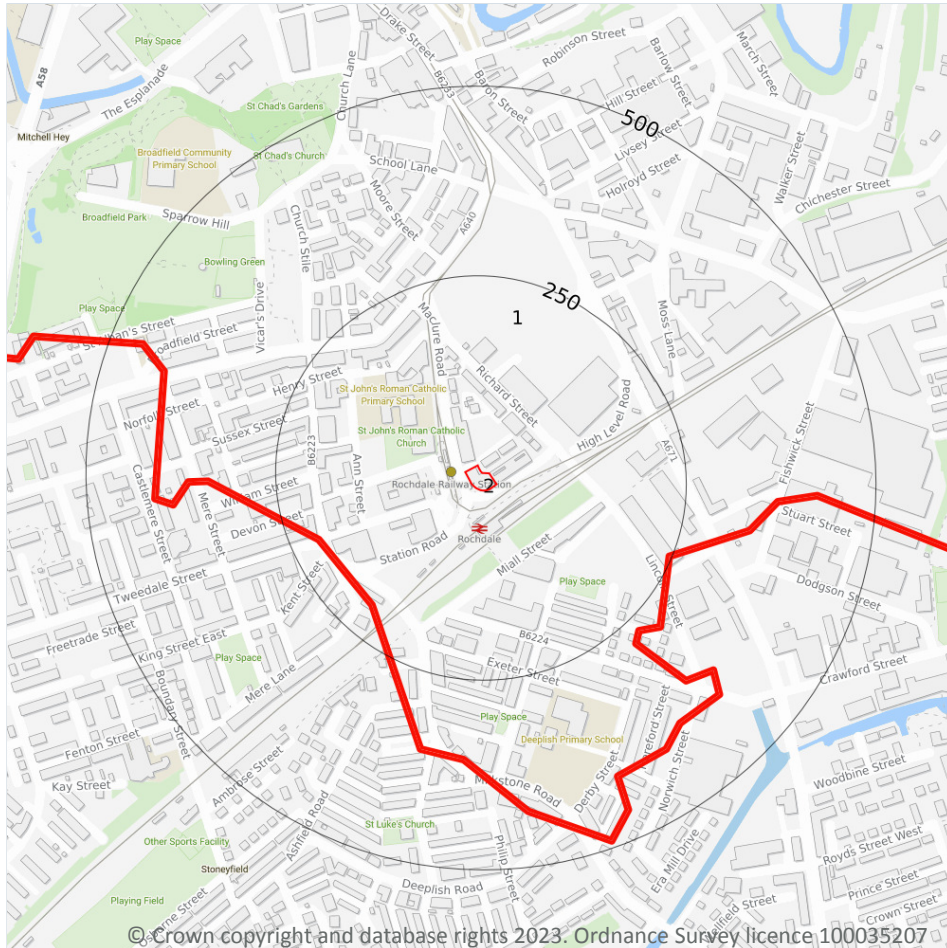
0

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



- Site Outline
- Search buffers in metres (m)
- Water Network (OS MasterMap)
- Surface water features (wider than 5m)
- Surface water features (narrower than 5m)
- ⋯ WFD River, canal and surface water transfer water bodies
- WFD Lake water bodies
- WFD Transitional and coastal water bodies
- WFD Surface water body catchments boundaries
- WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m

0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

0

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



This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site

1

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 69](#) >

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Roch (Source to Spodden)	GB112069064720	Roch Irk Medlock	Irwell

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

6.4 WFD Surface water bodies

Records identified

1

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 69](#) >

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	588m N	River	Roch (Source to Spodden)	GB112069064720 ↗	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 69](#) >

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	On site	Northern Manchester Carboniferous Aquifers	GB41202G101800 ↗	Poor	Poor	Good	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

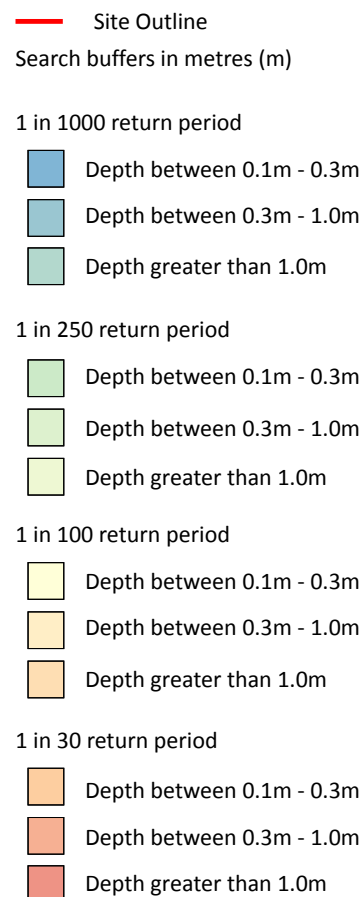
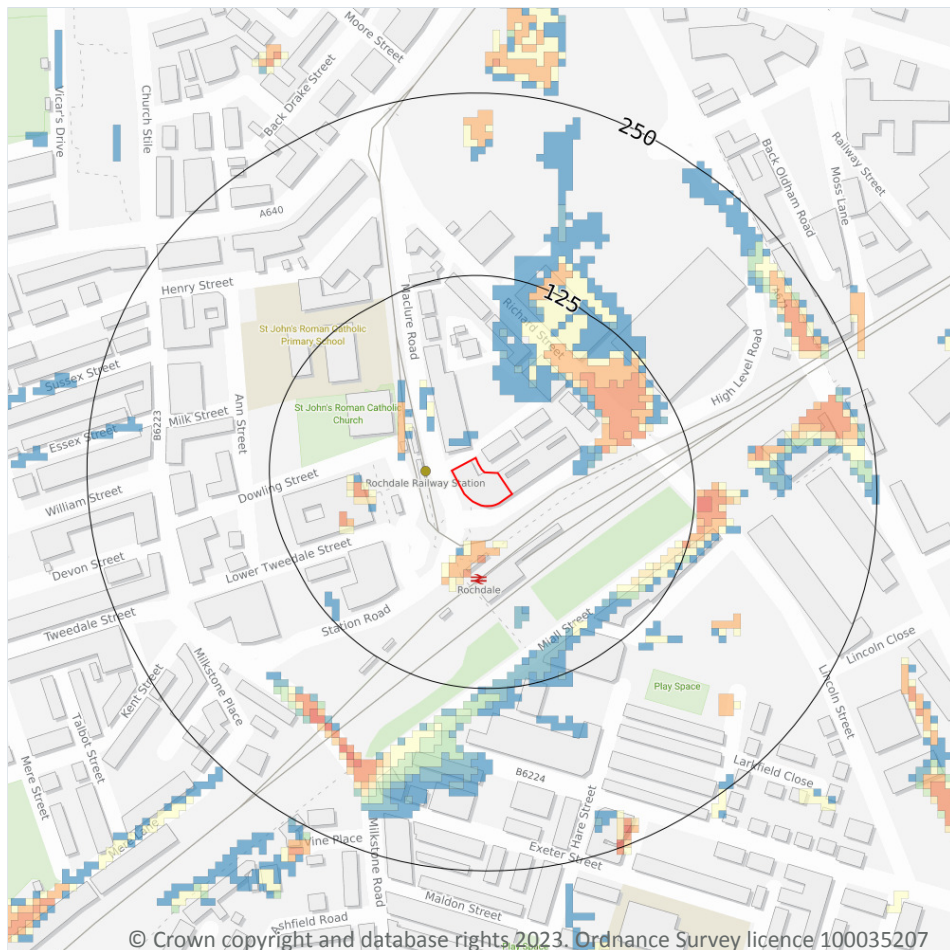
0

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



8.1 Surface water flooding

Highest risk on site

Negligible

Highest risk within 50m

1 in 30 year, 0.3m - 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 75 >](#)

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 Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

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

9.1 Groundwater flooding

Highest risk on site

Moderate

Highest risk within 50m

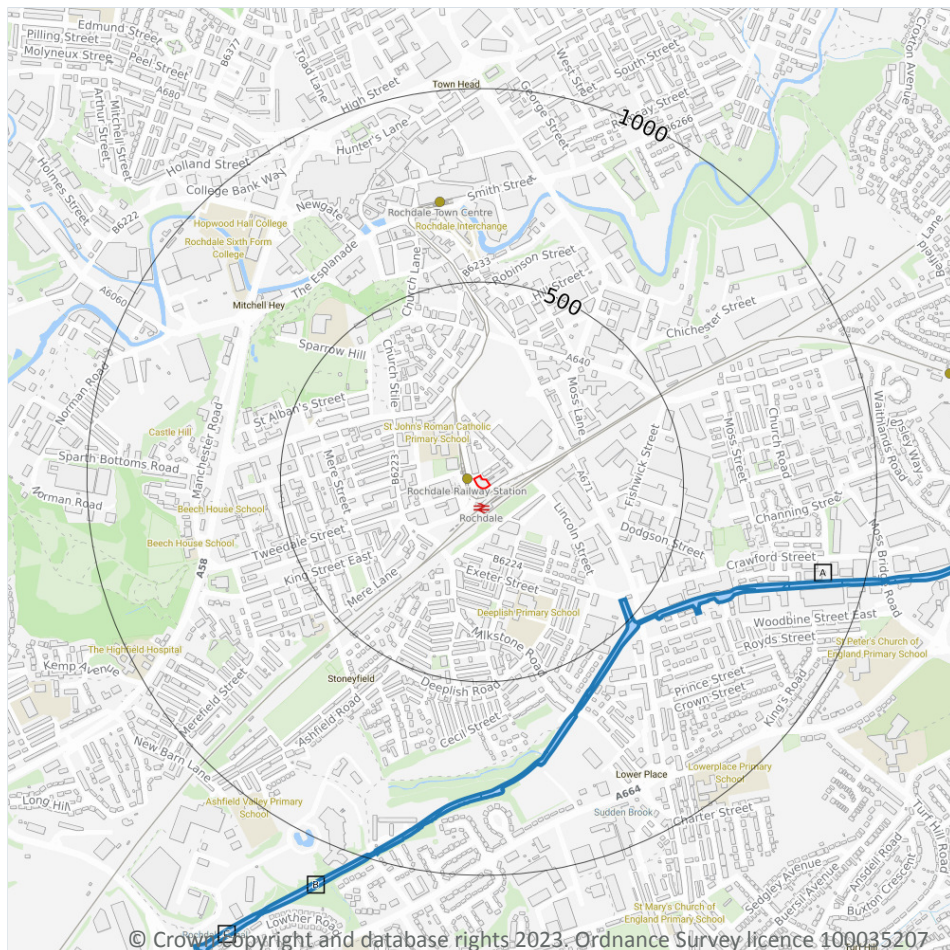
Moderate

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 77 >](#)

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- + Special Areas of Conservation (SAC)

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

5

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.

Features are displayed on the Environmental designations map on [page 78 >](#)

ID	Location	Name	Data source
A	450m SE	Rochdale Canal	Natural England



ID	Location	Name	Data source
B	988m S	Rochdale Canal	Natural England
C	1234m SW	Rochdale Canal	Natural England
-	1649m SW	Rochdale Canal	Natural England
-	1846m E	Rochdale Canal	Natural England

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	5
-----------------------------	----------

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.

Features are displayed on the Environmental designations map on [page 78 >](#)

ID	Location	Name	Features of interest	Habitat description	Data source
A	450m SE	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England
B	988m S	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England
C	1234m SW	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England



ID	Location	Name	Features of interest	Habitat description	Data source
-	1649m SW	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England
-	1846m E	Rochdale Canal	Floating water-plantain.	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland water bodies (Standing water, Running water)	Natural England

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

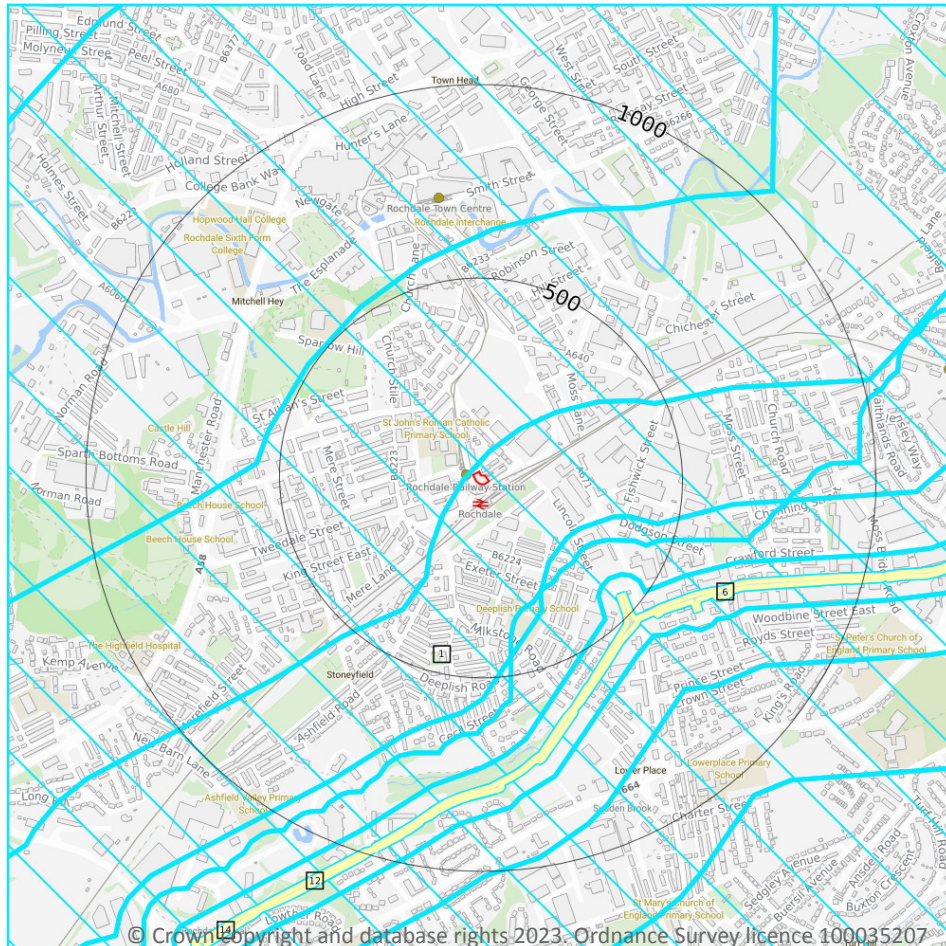
0

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.

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 84 >](#)

ID	Location	Type of developments requiring consultation
1	On site	Infrastructure - Pipelines and underground cables, pylons and overhead cables. Any transport proposal including road, rail and by water (excluding routine maintenance). Airports, helipads and other aviation proposals. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. Oil & gas exploration/extraction. Residential - Residential development of 100 units or more. Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas. Air pollution - Any development that could cause AIR POLLUTION (incl: industrial/commercial processes, livestock & poultry units, slurry lagoons & digestate stores, manure stores). Combustion - All general combustion processes. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Mechanical and biological waste treatment, inert landfill, non-hazardous landfill, hazardous landfill, household civic amenity recycling facilities construction, demolition and excavation waste, other waste management Composting - Any composting proposal. Incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	5
-----------------------------	----------

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.

Features are displayed on the SSSI Impact Zones and Units map on [page 84 >](#)

ID: 6
 Location: 450m SE
 SSSI name: Rochdale Canal
 Unit name: Failsworth
 Broad habitat: Standing Open Water And Canals
 Condition: Unfavourable - Recovering
 Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010



ID: 12
Location: 988m S
SSSI name: Rochdale Canal
Unit name: Failsworth
Broad habitat: Standing Open Water And Canals
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010

ID: 14
Location: 1234m SW
SSSI name: Rochdale Canal
Unit name: Failsworth
Broad habitat: Standing Open Water And Canals
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010

ID: -
Location: 1649m SW
SSSI name: Rochdale Canal
Unit name: Failsworth
Broad habitat: Standing Open Water And Canals
Condition: Unfavourable - Recovering
Reportable features:

Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010

ID: -
Location: 1846m E
SSSI name: Rochdale Canal
Unit name: Failsworth
Broad habitat: Standing Open Water And Canals
Condition: Unfavourable - Recovering
Reportable features:

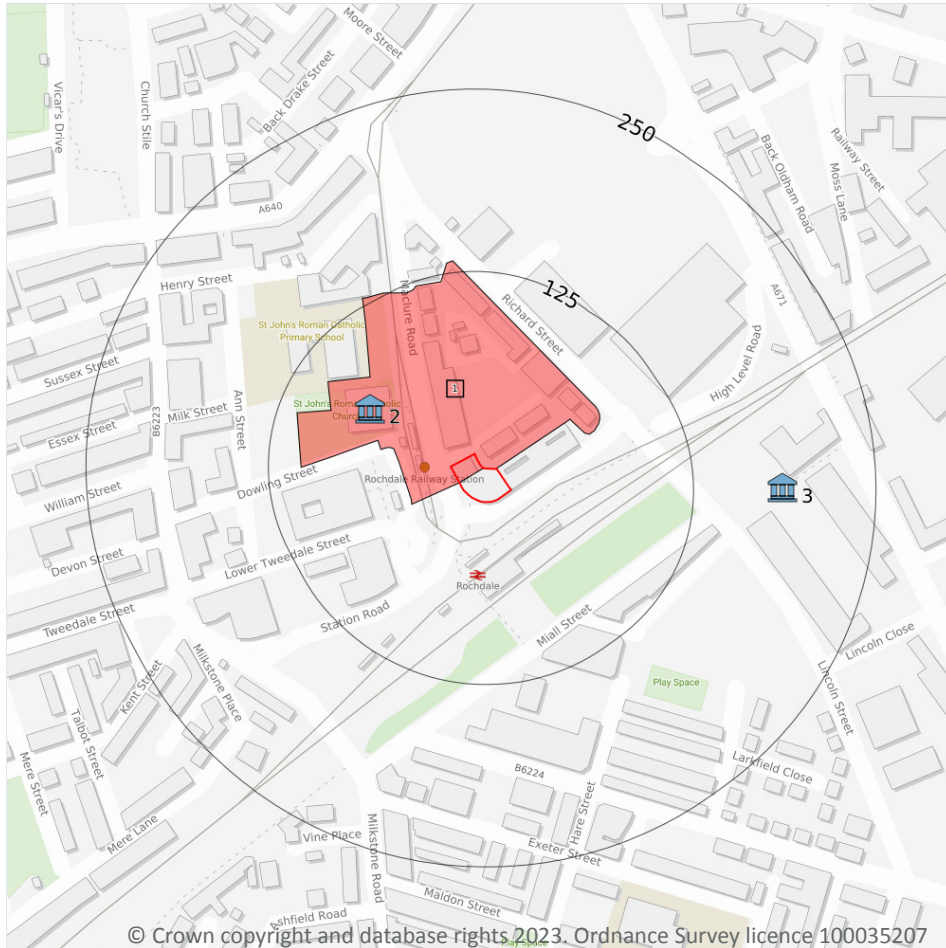


Feature name	Feature condition	Date of assessment
Population of Schedule 8 plant - Luronium natans, Floating Water-plantain	Unfavourable - Recovering	25/11/2010

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

2

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 88](#) >

ID	Location	Name	Grade	Reference Number	Listed date
2	68m NW	Roman Catholic Church Of St John The Baptist	II*	1376506	15/09/1998
3	186m E	Rochdale Canal Branch Arm Halfpenny Bridge	II	1031919	22/02/1977

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



11.5 Conservation Areas

Records within 250m

1

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

Features are displayed on the Visual and cultural designations map on [page 88](#) >

ID	Location	Name	District	Date of designation
1	On site	Maclure Road	Rochdale	22/12/2006

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 91](#) >

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

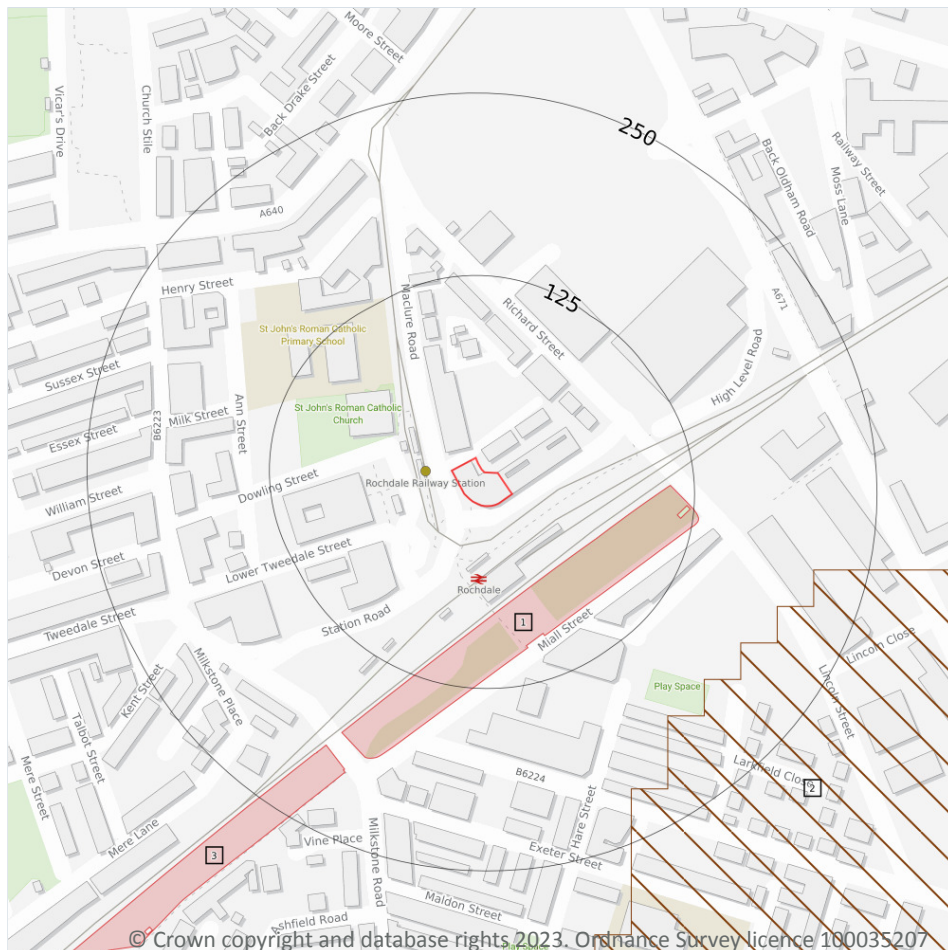
0

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



- Site Outline
- Search buffers in metres (m)
- Priority Habitat Inventory
- Open Mosaic Habitat
- Limestone Pavement Orders
- Habitat Networks
- Primary Habitat
- Restorable Habitat
- Associated Habitats
- Habitat Restoration-Creation
- Network Enhancement Zone 1
- Network Enhancement Zone 2

13.1 Priority Habitat Inventory

Records within 250m

2

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

Features are displayed on the Habitat designations map on [page 93](#) >

ID	Location	Main Habitat	Other habitats
1	59m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	195m SW	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.



13.2 Habitat Networks

Records within 250m

1

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.

Features are displayed on the Habitat designations map on [page 93](#) >

ID	Location	Type	Habitat
2	183m SE	Network Enhancement Zone 2	Not specified

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

2

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.

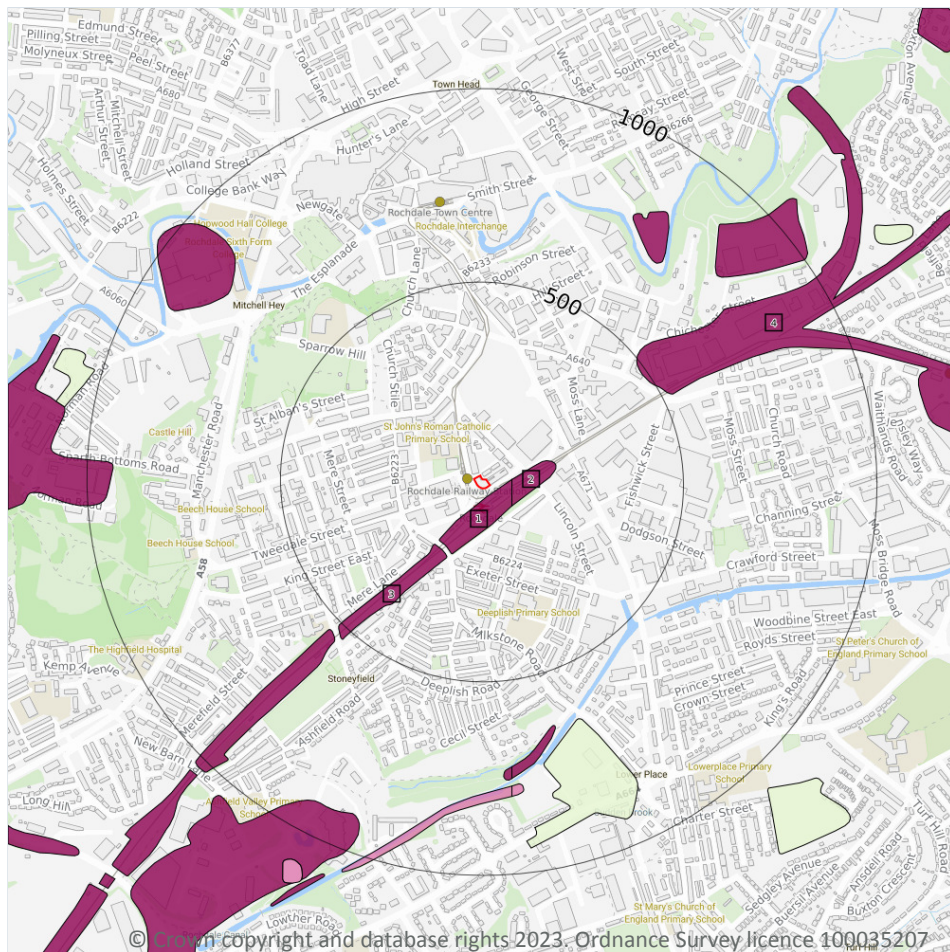
Features are displayed on the Geology 1:10,000 scale - Availability map on [page 95](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	Full	SD81SE
2	57m E	Full	Full	Full	Full	SD91SW

This data is sourced from the British Geological Survey.



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



— Site Outline
Search buffers in metres (m)

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

14.2 Artificial and made ground (10k)

Records within 500m

4

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

Features are displayed on the Geology 1:10,000 scale - Artificial and made ground map on [page 96](#) >

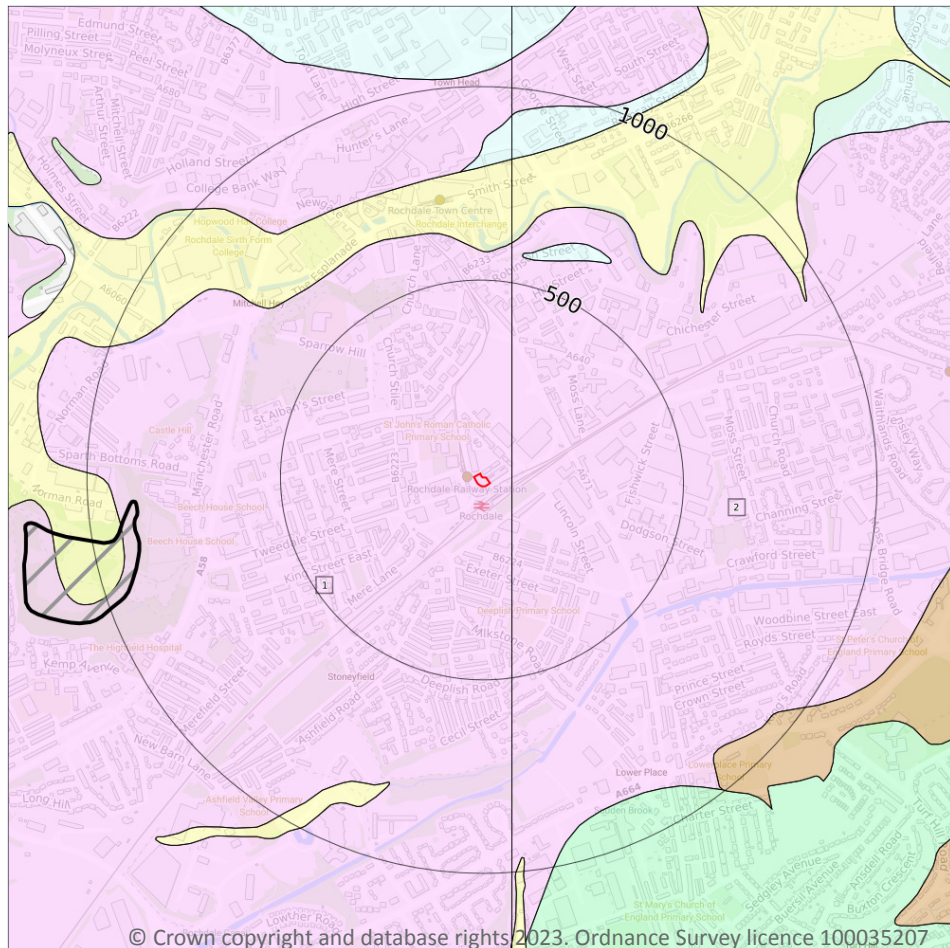
ID	Location	LEX Code	Description	Rock description
1	20m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	57m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	187m SW	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	486m NE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit



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

2

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 98](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel
2	57m E	GFDUD-XSV	Glaciofluvial Deposits, Devensian - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

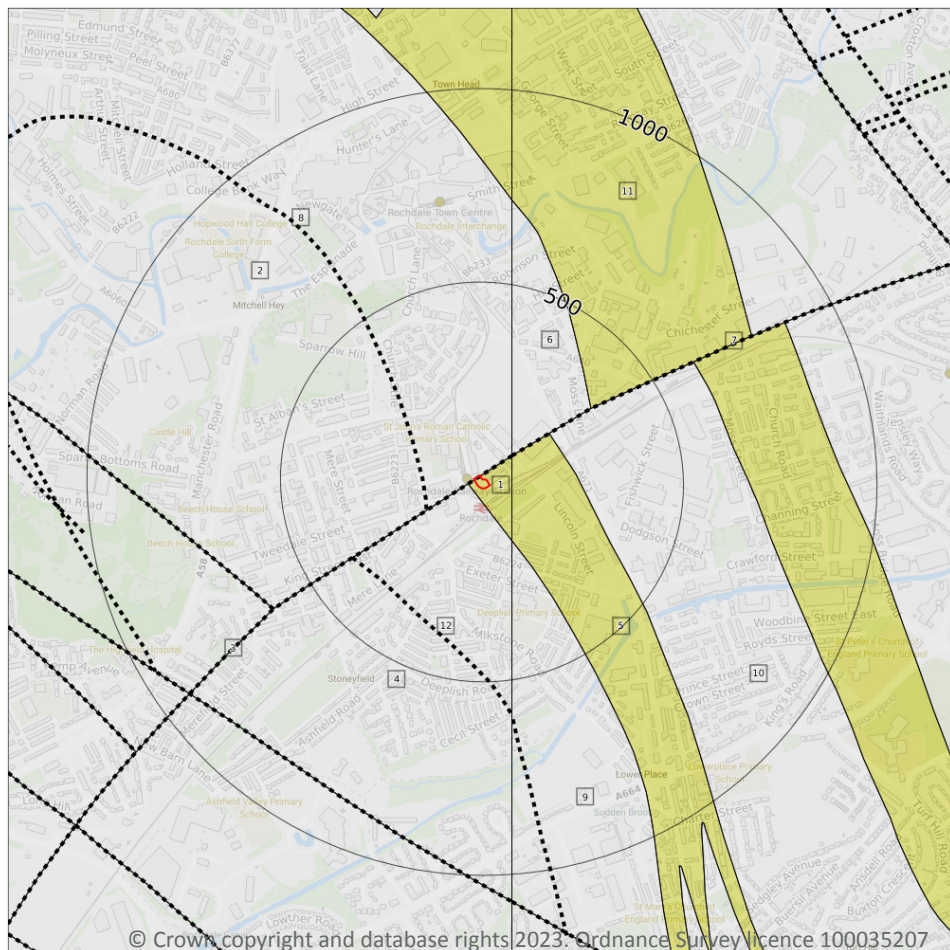
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

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

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

14.5 Bedrock geology (10k)

Records within 500m

8

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 100](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	OL-SDST	Old Lawrence Rock - Sandstone	Langsettian Sub-age
2	On site	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
4	17m SW	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age



ID	Location	LEX Code	Description	Rock age
5	57m E	OL-SDST	Old Lawrence Rock - Sandstone	Langsettian Sub-age
6	91m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
9	152m SE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
10	202m NE	PLCM-MDSS	Pennine Lower Coal Measures Formation - Mudstone, Siltstone And Sandstone	Langsettian Sub-age
11	327m NE	OL-SDST	Old Lawrence Rock - Sandstone	Langsettian Sub-age

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.

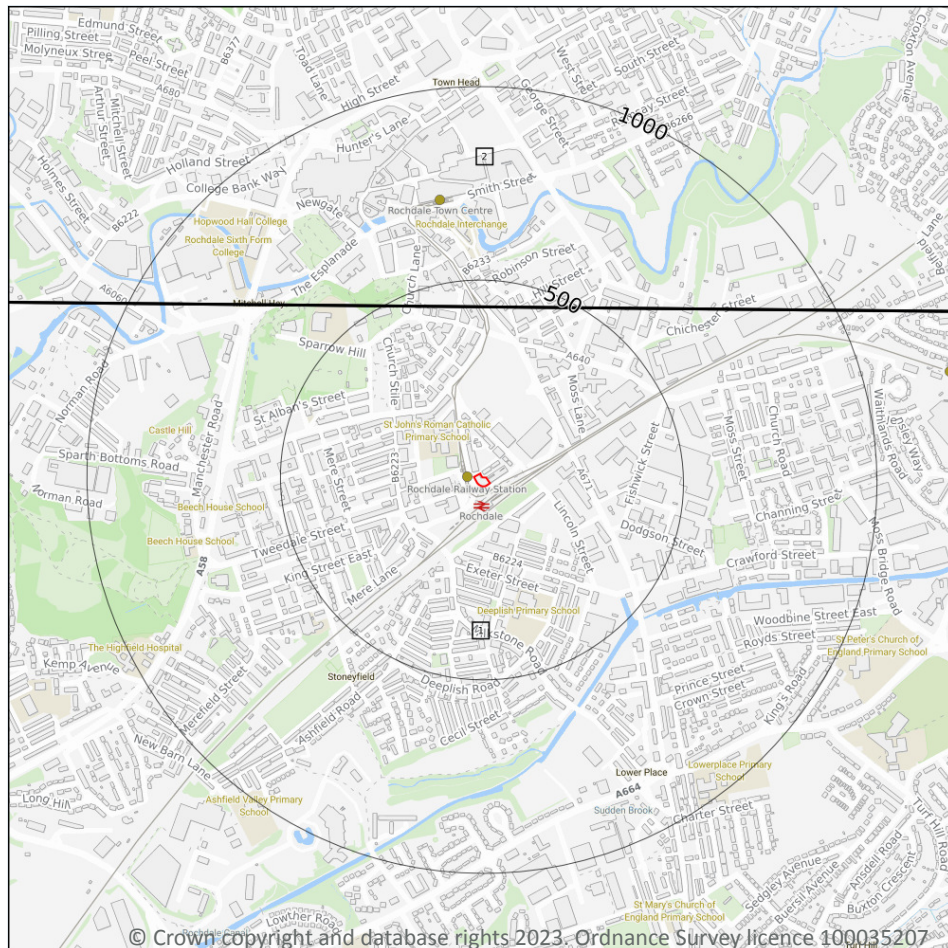
Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 100 >](#)

ID	Location	Category	Description
3	On site	FAULT	Normal fault, inferred; crossmarks on downthrow side
7	91m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
8	131m W	ROCK	Coal seam, inferred
12	349m SW	ROCK	Coal seam, inferred

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

2

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 102](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	EW085_manchester_v4
2	431m N	No coverage	Full	Full	Full	EW076_rochdale_v4

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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.

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

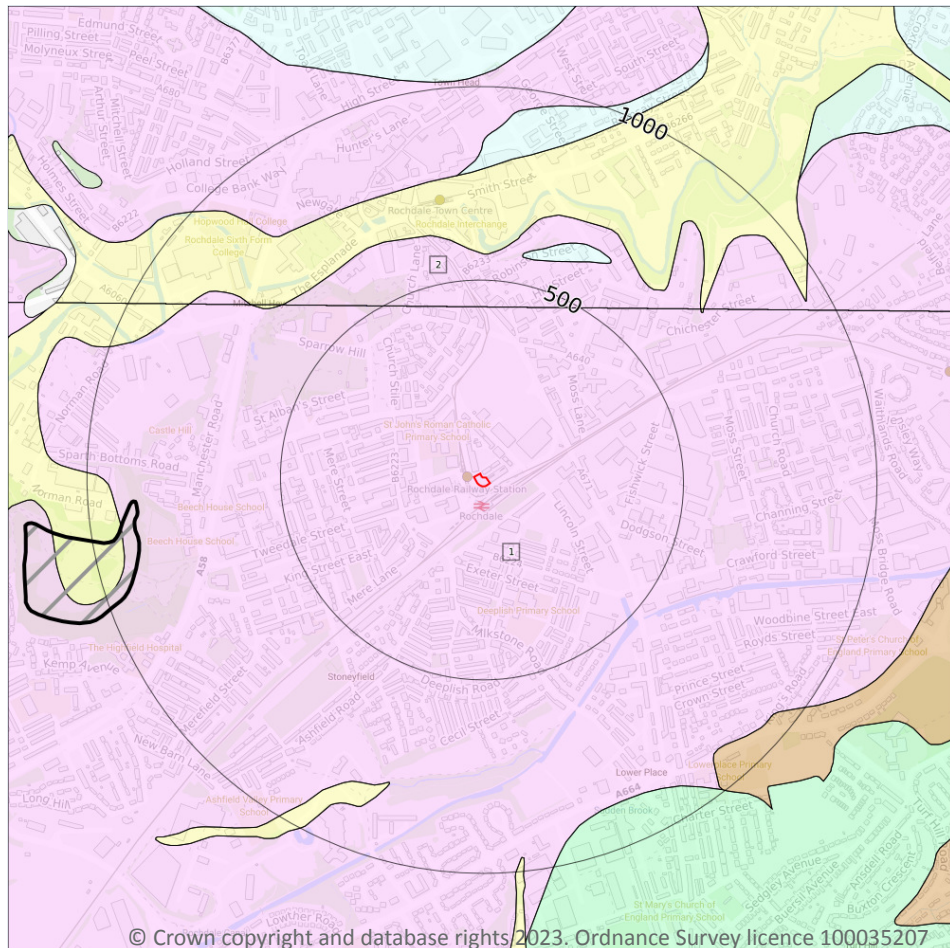
0

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

2

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 104](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL
2	431m N	GFDUD-XSV	GLACIOFLUVIAL DEPOSITS, DEVENSIAN	SAND AND GRAVEL

This data is sourced from the British Geological Survey.



15.5 Superficial permeability (50k)

Records within 50m**1**

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

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m**0**

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

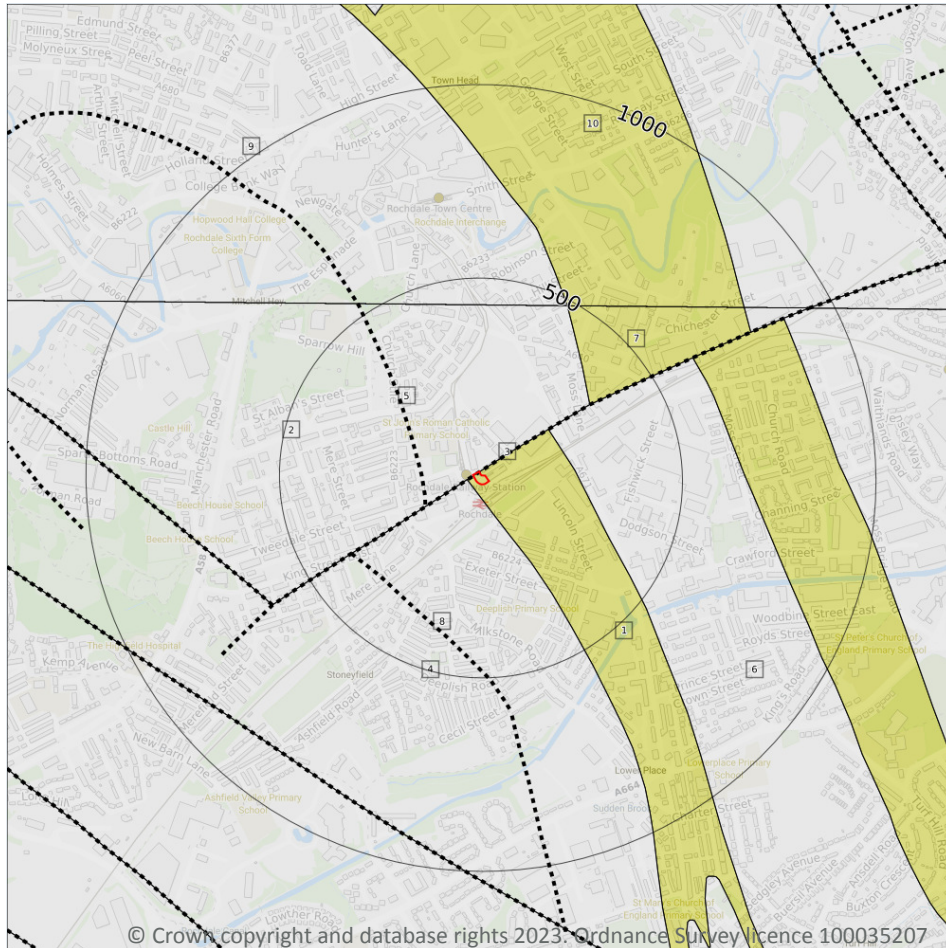
Records within 50m**0**

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

..... Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m

7

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 106 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	OL-SDST	OLD LAWRENCE ROCK - SANDSTONE	WESTPHALIAN
2	On site	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
4	16m SW	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN



ID	Location	LEX Code	Description	Rock age
6	202m NE	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
7	327m NE	OL-SDST	OLD LAWRENCE ROCK - SANDSTONE	WESTPHALIAN
9	431m N	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN
10	485m NE	OL-SDST	OLD LAWRENCE ROCK - SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	2
---------------------------	----------

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	Fracture	Moderate	Low
On site	Fracture	High	Moderate

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m	3
----------------------------	----------

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

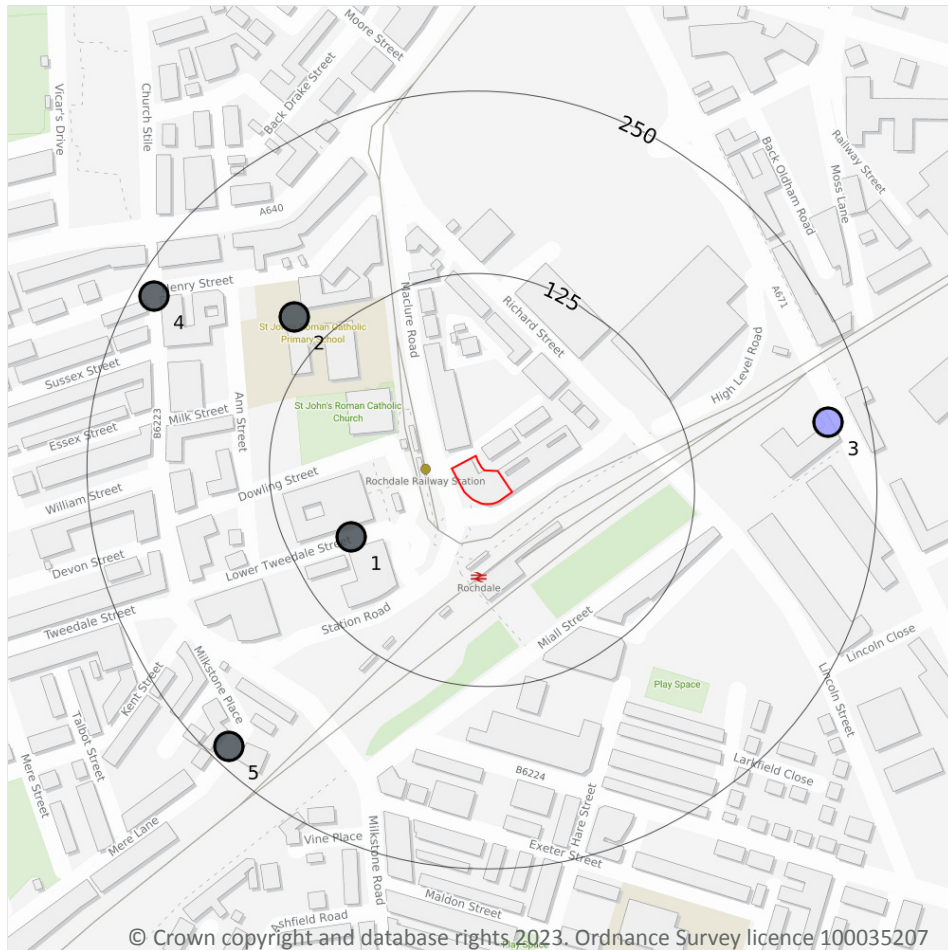
Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 106 >](#)

ID	Location	Category	Description
3	On site	FAULT	Fault, inferred
5	131m W	ROCK	Coal seam, inferred
8	349m SW	ROCK	Coal seam, inferred

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

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

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16.1 BGS Boreholes

Records within 250m

5

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 108](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	83m SW	389833 412671	W CENTRAL DIST ROCHDALE 12	-	Y	N/A
2	150m NW	389794 412822	W CENTRAL DIST ROCHDALE 13	-	Y	N/A
3	222m E	390160 412750	OLDHAM ROAD ROCHDALE BH1	5.0	N	35285 ↗

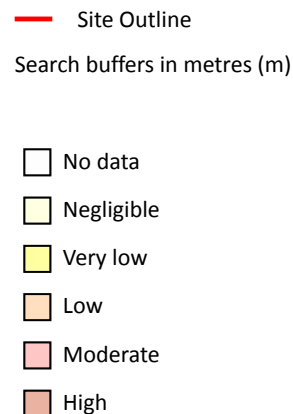
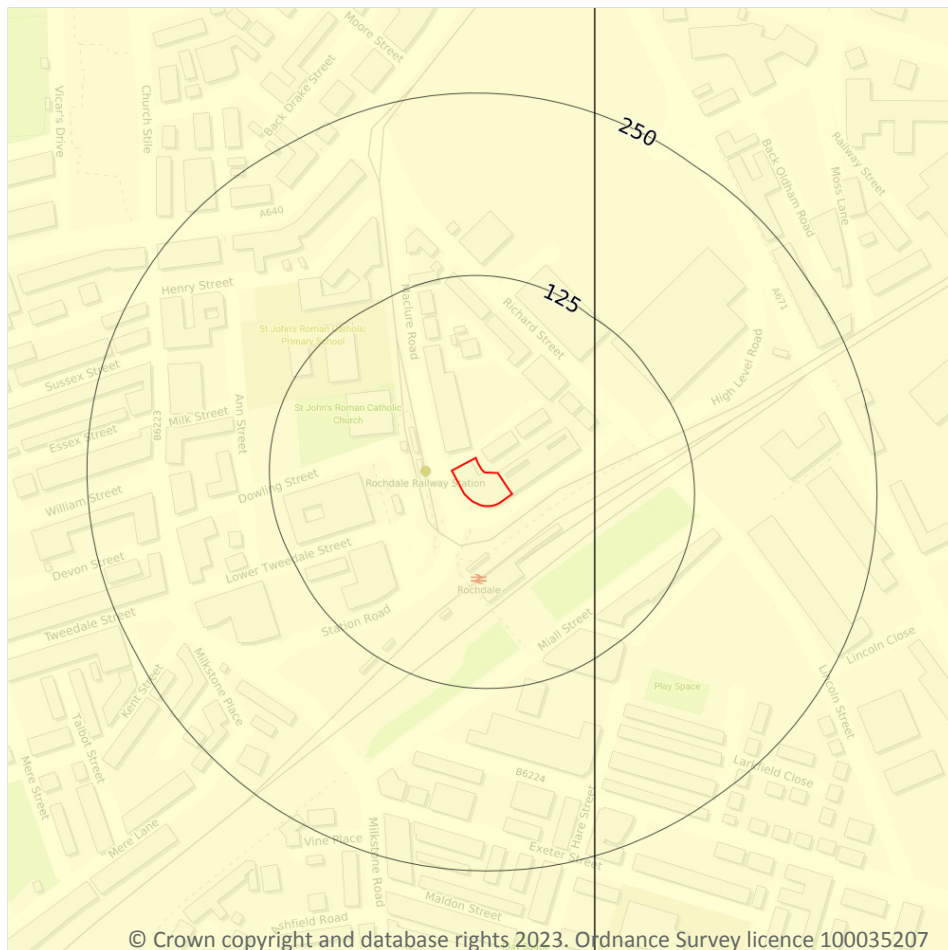


ID	Location	Grid reference	Name	Length	Confidential	Web link
4	236m NW	389698 412836	W CENTRAL DIST ROCHDALE 15	-	Y	N/A
5	238m SW	389749 412528	W CENTRAL DIST ROCHDALE 10	-	Y	N/A

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



17.1 Shrink swell clays

Records within 50m

1

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

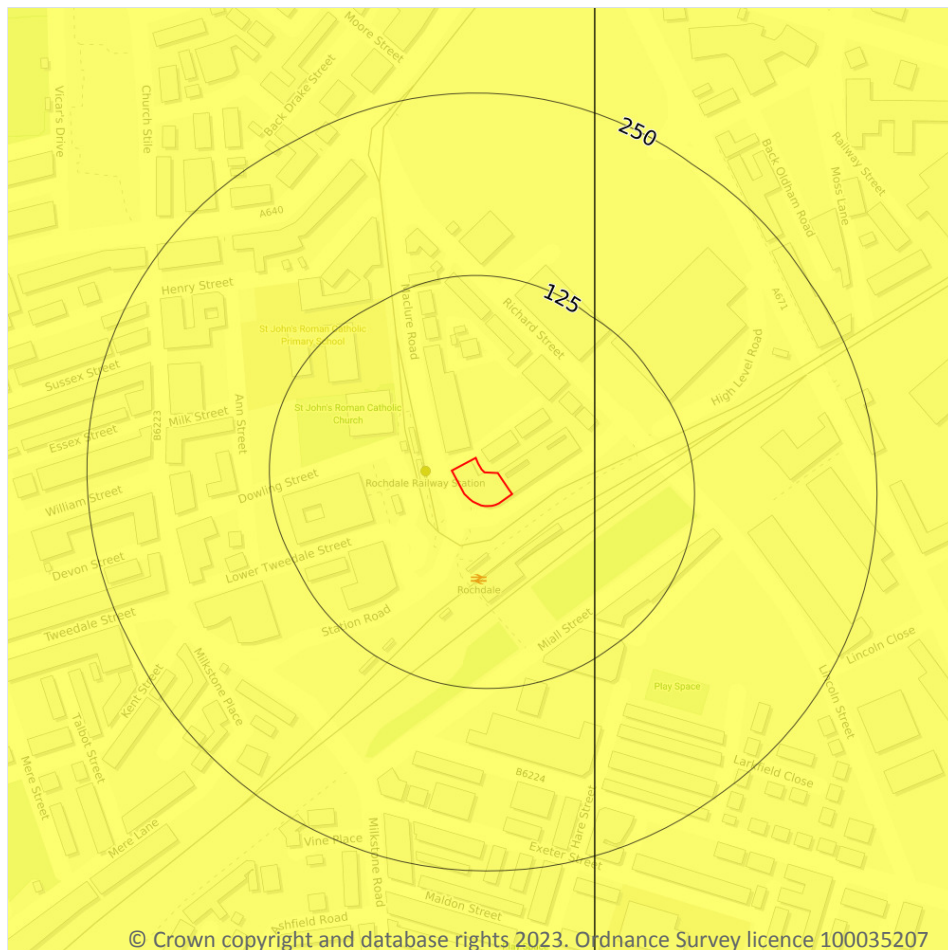
Features are displayed on the Natural ground subsidence - Shrink swell clays map on [page 110 >](#)

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

This data is sourced from the British Geological Survey.



Natural ground subsidence - Running sands



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

17.2 Running sands

Records within 50m

1

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

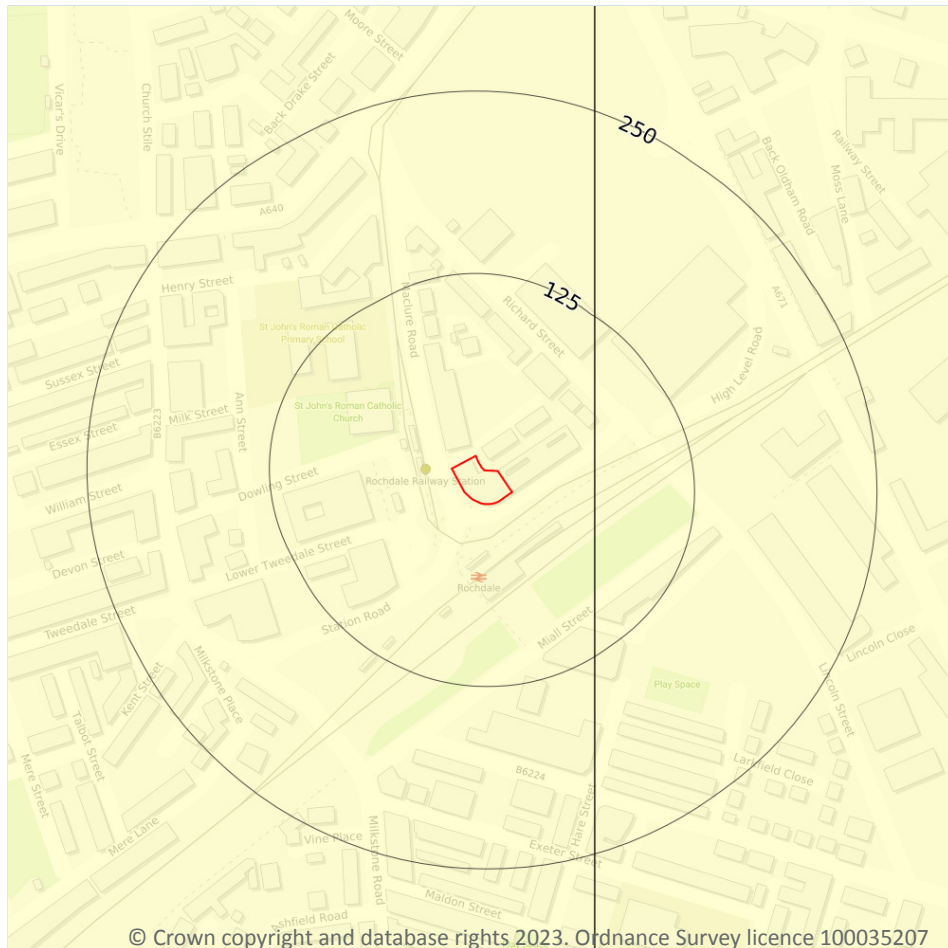
Features are displayed on the Natural ground subsidence - Running sands map on [page 111](#) >

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.

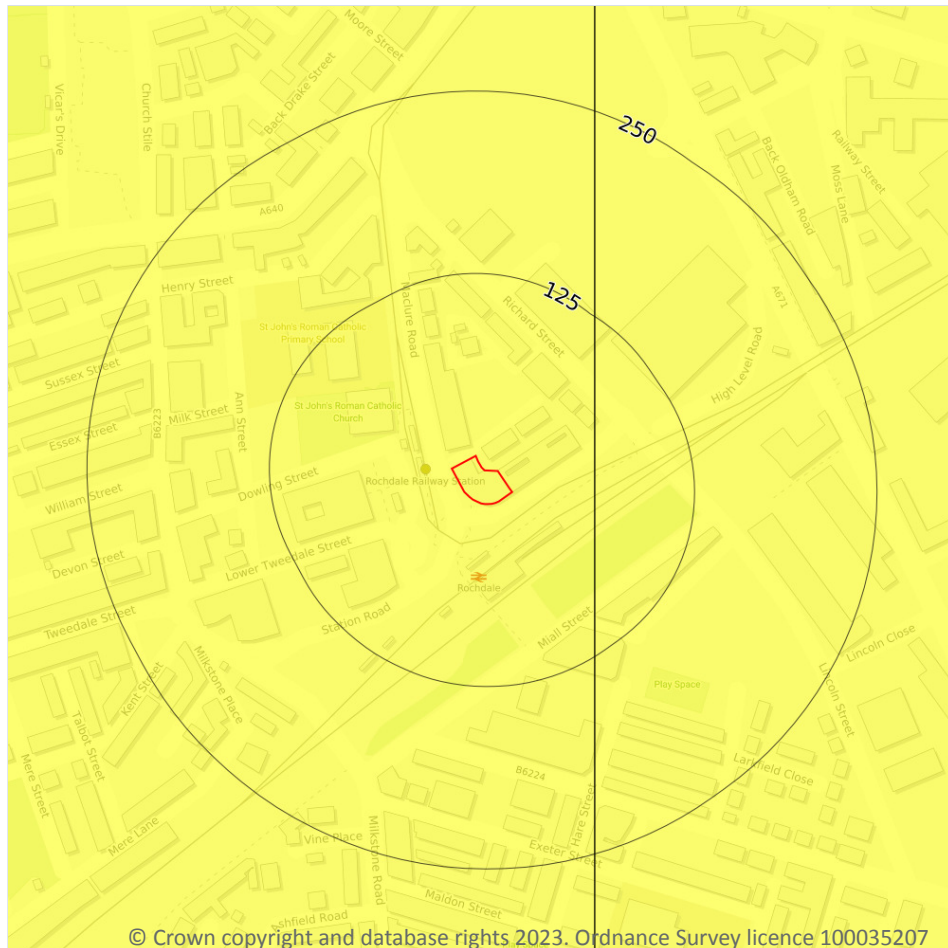
Features are displayed on the Natural ground subsidence - Compressible deposits map on [page 112](#) >

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.

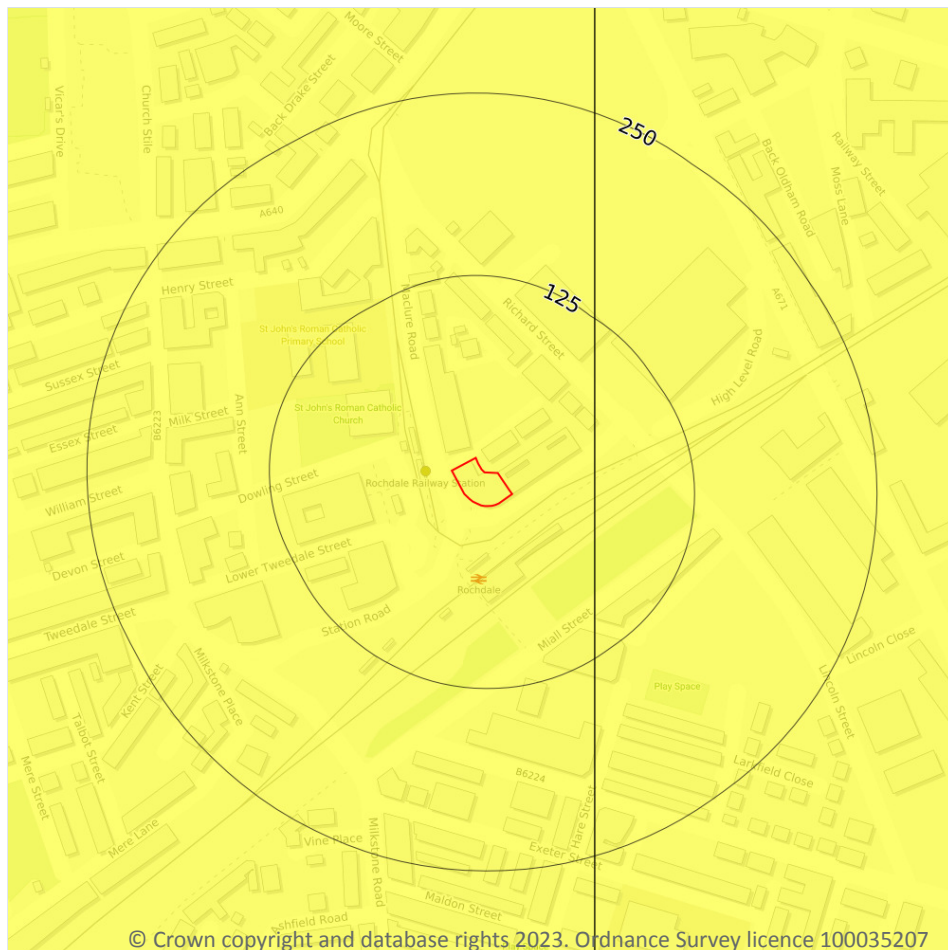
Features are displayed on the Natural ground subsidence - Collapsible deposits map on [page 113](#) >

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.

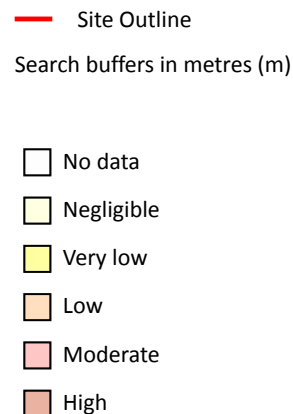
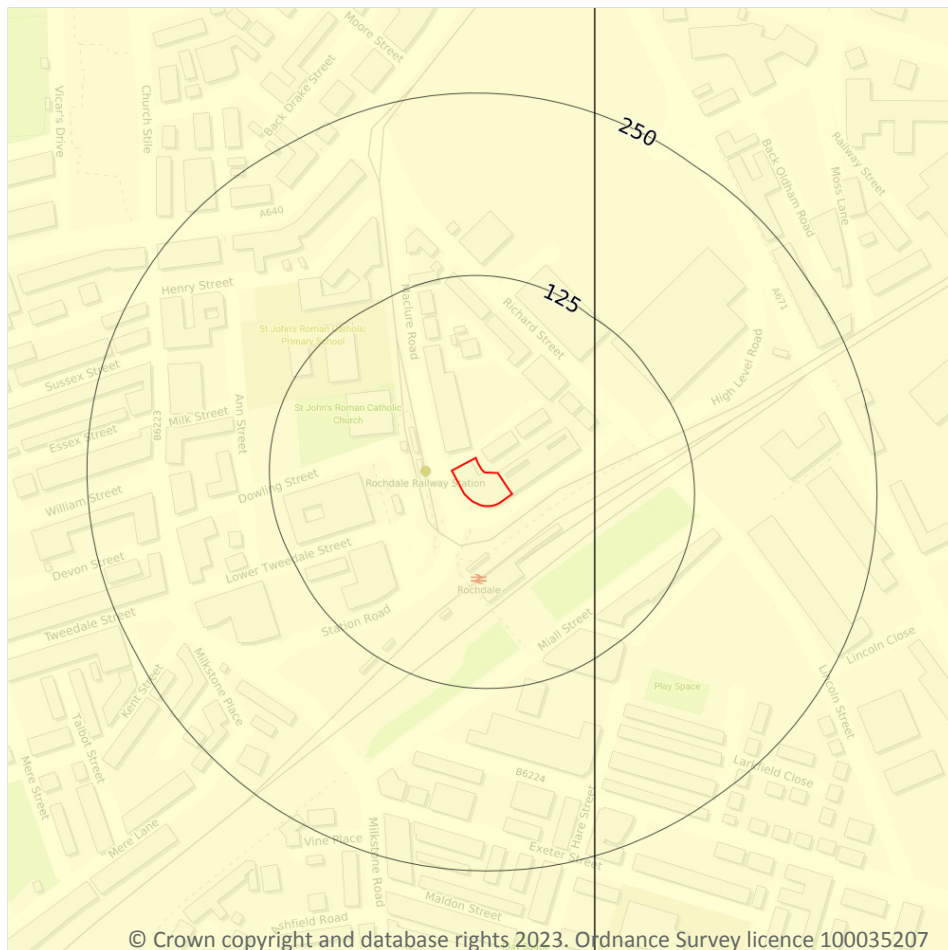
Features are displayed on the Natural ground subsidence - Landslides map on [page 114](#) >

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



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 115](#) >

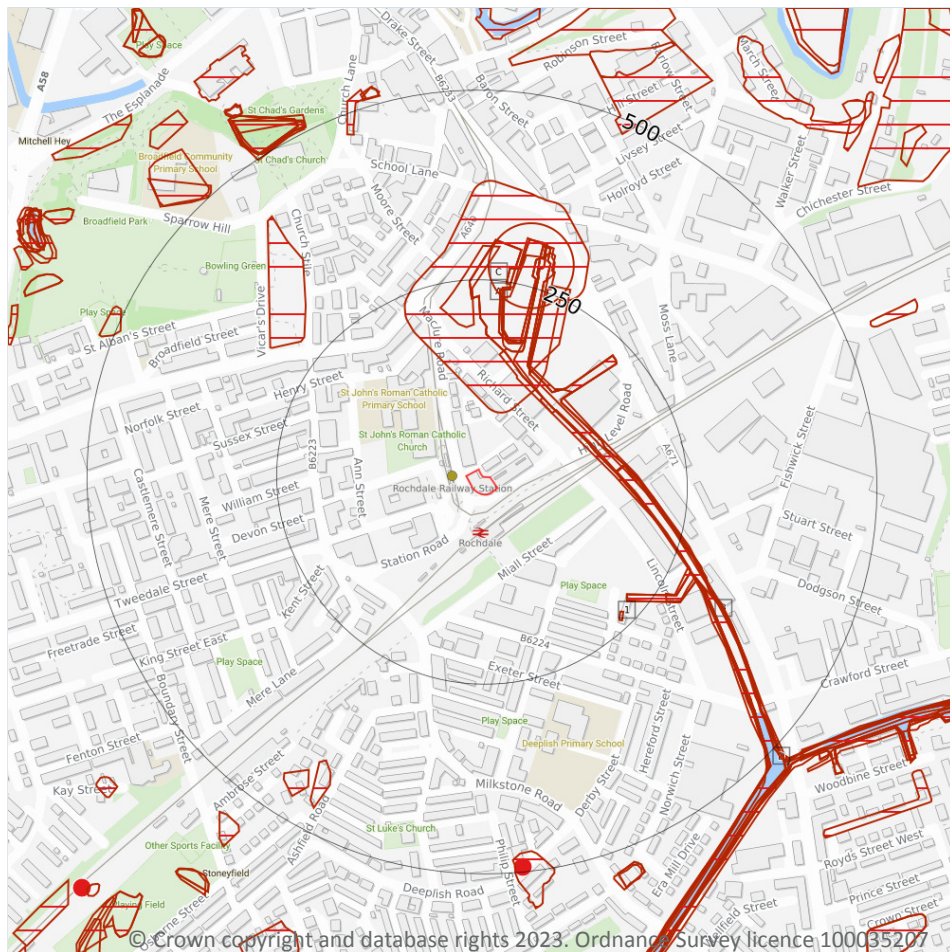
Location	Hazard rating	Details
On site	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.



This data is sourced from the British Geological Survey.



18 Mining and ground workings



- Site Outline
- Search buffers in metres (m)
- BritPits
- ▢ Surface ground workings
- ▢ Underground workings
- ▢ Underground mining extents
- ▢ Historical mineral planning areas
- ▢ TCA non-coal mining
- Non Coal Mining
- ▢ Sporadic underground mining of restricted extent possible
- ▢ Localised small scale underground mining possible
- ▢ Small scale mining possible
- ▢ Underground mining known or likely within or in close proximity
- ▢ Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m

1

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.

Features are displayed on the Mining and ground workings map on [page 117](#) >

ID	Location	Details	Description
G	493m S	Name: Deeplish Hall Gravel Pit Address: ROCHDALE, Lancashire Commodity: Sand & Gravel Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	16
----------------------------	-----------

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

Features are displayed on the Mining and ground workings map on [page 117 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
A	79m N	Canal Wharf	1891	1:10560
B	117m NE	Canal	1851	1:10560
B	117m NE	Canal	1938	1:10560
C	123m NE	Canal	1928	1:10560
C	123m NE	Canal	1908	1:10560
C	123m NE	Canal	1891	1:10560
A	143m NE	Canal Wharf	1851	1:10560
D	158m E	Canal	1954	1:10560
D	158m E	Canal	1967	1:10560
A	162m N	Canal Wharf	1851	1:10560
A	175m N	Canal Wharf	1928	1:10560
A	175m N	Canal Wharf	1908	1:10560
A	175m N	Canal Wharf	1938	1:10560
A	188m N	Canal Wharf	1851	1:10560
A	221m N	Unspecified Wharf	1949	1:10560
1	229m SE	Saw Pit	1851	1:10560



This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m

0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m

0

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

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m

0

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

This data is sourced from the British Geological Survey.



18.7 JPB mining areas

Records on site

0

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

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m

0

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

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m

0

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

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m

0

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

This data is sourced from Groundsure.



18.11 BGS mine plans

Records within 500m**0**

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

This data is sourced from Groundsure.

18.12 Coal mining

Records on site**1**

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

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

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site**0**

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

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

18.14 Gypsum areas

Records on site**0**

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site**0**

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.



18.16 Clay mining

Records on site

0

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

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



19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m

0

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

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m

0

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

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



This data is sourced from Groundsure.

19.5 National karst database

Records within 500m

0

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

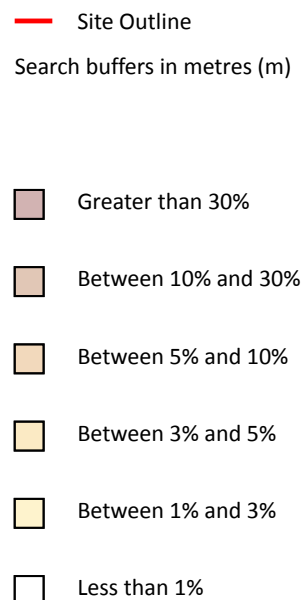
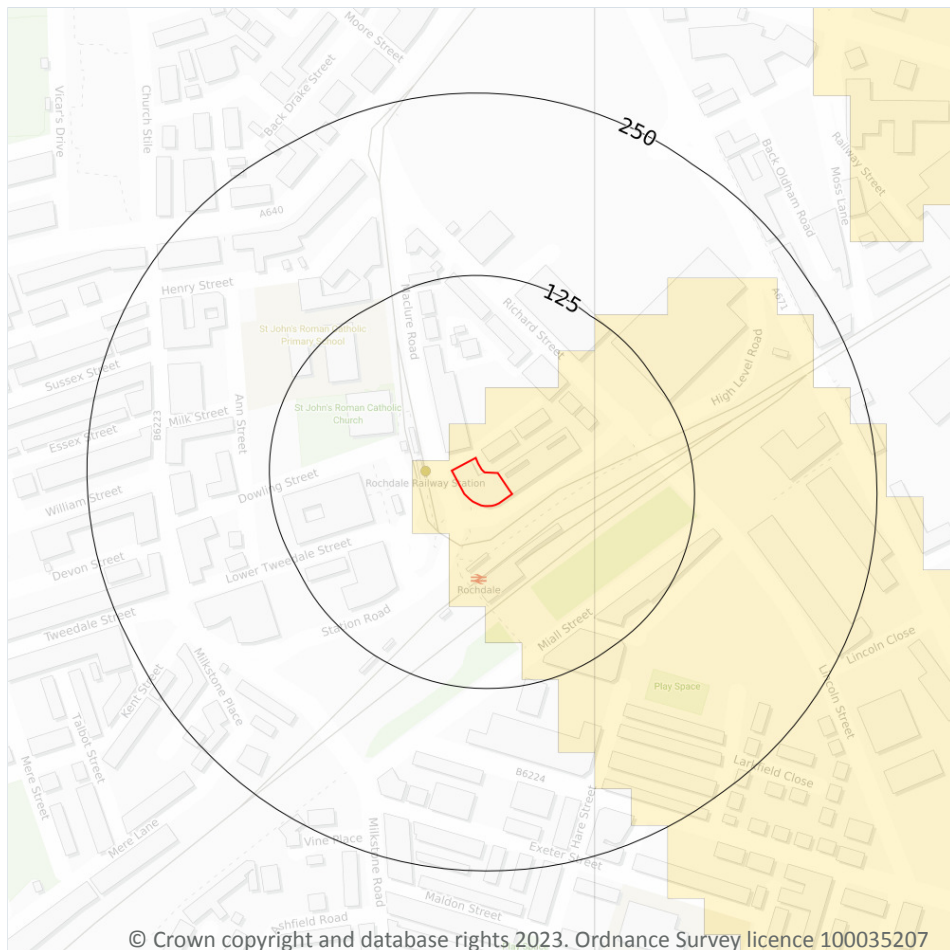
Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over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

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

This data is sourced from the British Geological Survey.



20 Radon



20.1 Radon

Records on site

1

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

Features are displayed on the Radon map on [page 125 >](#)

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	None



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



21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m

3

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km². In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km²; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
41m SW	15 - 25 mg/kg	No data	300 - 600 mg/kg	240 - 360 mg/kg	1.8 - 2.2 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m

0

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km²).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m

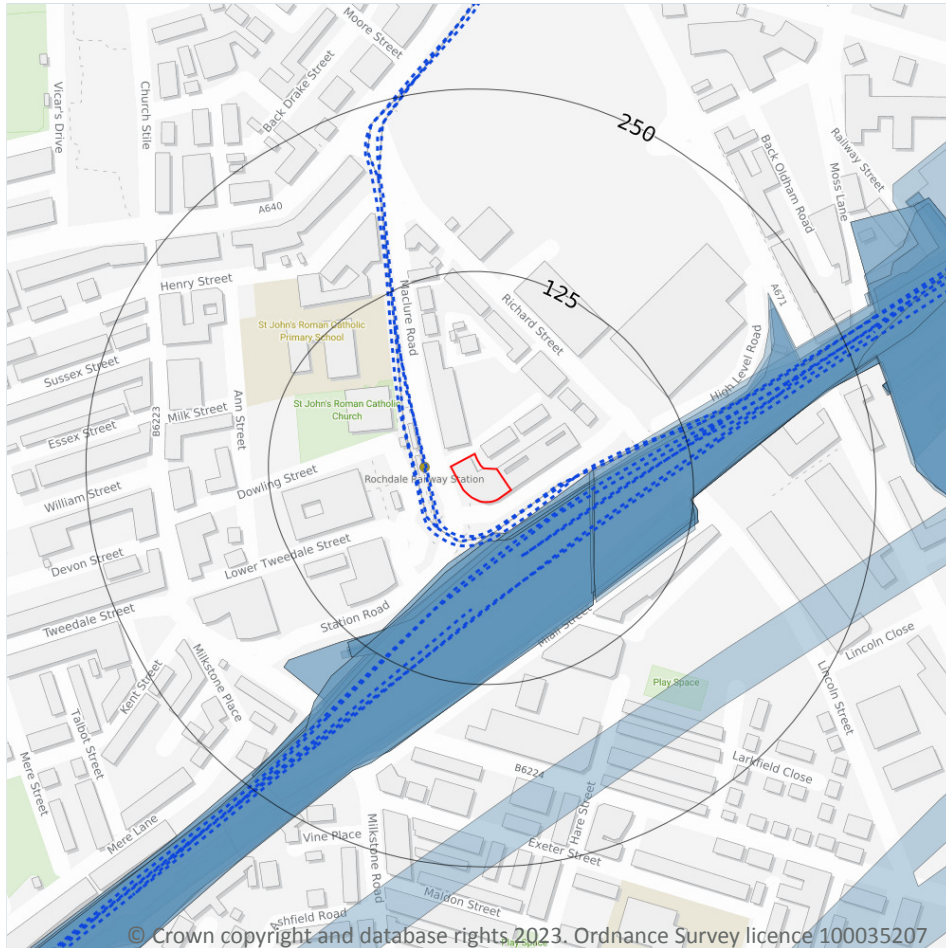
0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km².

This data is sourced from the British Geological Survey.



22 Railway infrastructure and projects



- Site Outline
- Search buffers in metres (m)
- C1 Crossrail 1 Stations
- Crossrail 1 Route
- C2 Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

22.1 Underground railways (London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m

0

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



This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m

28

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

Features are displayed on the Railway infrastructure and projects map on [page 128 >](#)

Location	Land Use	Year of mapping	Mapping scale
21m S	Railway Sidings	1938	10560
21m S	Railway Sidings	1891	10560
22m SE	Railway Sidings	1987	10000
22m SE	Railway Sidings	1992	10000
22m SE	Railway Sidings	1975	10000
26m SE	Railway Sidings	1928	10560
26m SE	Railway Sidings	1908	10560
27m S	Railway Sidings	1949	10560
27m S	Railway Sidings	1968	10560
38m SE	Railway Sidings	1985	1250
38m SE	Railway Sidings	1988	1250
39m SE	Railway Sidings	1989	1250
54m E	Railway Sidings	1976	10000
57m E	Railway Sidings	1954	10560
57m E	Railway Sidings	1967	10560
77m SE	Railway Sidings	1891	2500
80m SW	Railway Sidings	1957	2500



Location	Land Use	Year of mapping	Mapping scale
80m SE	Railway Sidings	1957	2500
83m SW	Railway Sidings	1930	2500
83m SE	Railway Sidings	1957	1250
84m SW	Railway Sidings	1910	2500
85m SE	Railway Sidings	1930	2500
85m SE	Railway Sidings	1910	2500
92m SW	Railway Sidings	1891	2500
169m E	Railway Sidings	1957	1250
172m SE	Railway Sidings	1892	-
219m SW	Railway Sidings	1957	2500
232m SW	Railway Sidings	1957	1250

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m

0

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

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m

0

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

This data is sourced from OpenStreetMap.



22.7 Railways

Records within 250m

32

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 128 >](#)

Location	Name	Type
16m SE		light_rail
16m SE	Not given	Multi Track
18m W	Not given	Single Track
21m SE		light_rail
30m SE	Caldervale Line	rail
32m E	Not given	Single Track
32m SE	Not given	Single Track
41m SE	Caldervale Line	rail
41m SE	Not given	Single Track
45m E		light_rail
53m NW		light_rail
54m SE	Not given	Single Track
55m SE	Caldervale Line	rail
61m NW		light_rail
74m S	Caldervale Line	rail
99m NW	Not given	Multi Track
139m E		light_rail
142m E	Caldervale Line	rail
144m E	Caldervale Line	rail
148m E	Caldervale Line	rail
160m E	Not given	Multi Track
171m E	Not given	Multi Track
180m SW	Not given	Single Track
193m SW	Caldervale Line	rail



Location	Name	Type
195m E	Not given	Single Track
197m SW		rail
200m N	Not given	Single Track
201m SW	Caldervale Line	rail
203m E	Not given	Multi Track
219m E	Not given	Multi Track
224m E	Not given	Single Track
224m E	Not given	Multi Track

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m

0

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

This data is sourced from HS2 Ltd.



Data providers

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

Terms and conditions

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



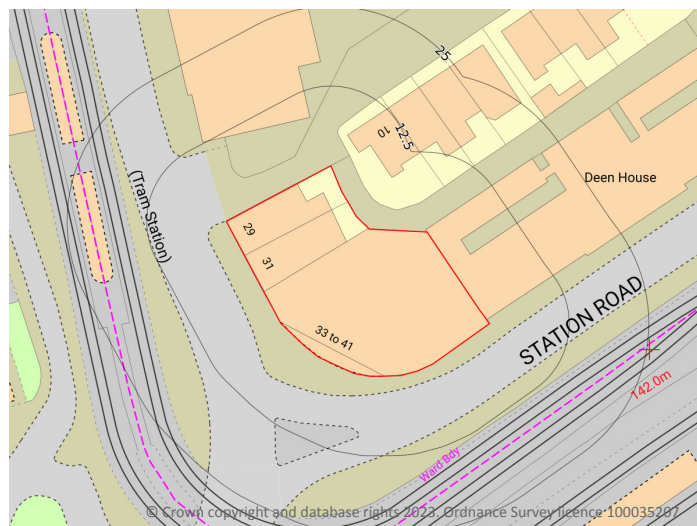
Rochdale Corner Plot, Maclure Road, Rochdale, OL11 1DN

Professional opinion

Inc. integrated mine entry interpretive assessment



Site plan



Search results



1. Past underground coal mining
Not identified



2. Present underground coal mining
Not identified



3. Future underground coal mining
Not identified



4. Mine entries
Not identified



5. Coal mining geology
Not identified



6. Past opencast coal mining
Not identified



7. Present opencast coal mining
Not identified



8. Future opencast coal mining
Not identified



9. Coal mining subsidence claims
Not identified



10. Mine gas emissions
Not identified



11. Emergency Call Out incidents
Not identified



12. Withdrawal of support
Not identified



13. Working facilities orders
Not identified



14. Payments to copyhold owners
Not identified



Cheshire Brine
Not identified

Coal mining (CON29M) assessment

We consider the property to be acceptably free from coal mining related risk. No further action is required with regards to past coal mining.

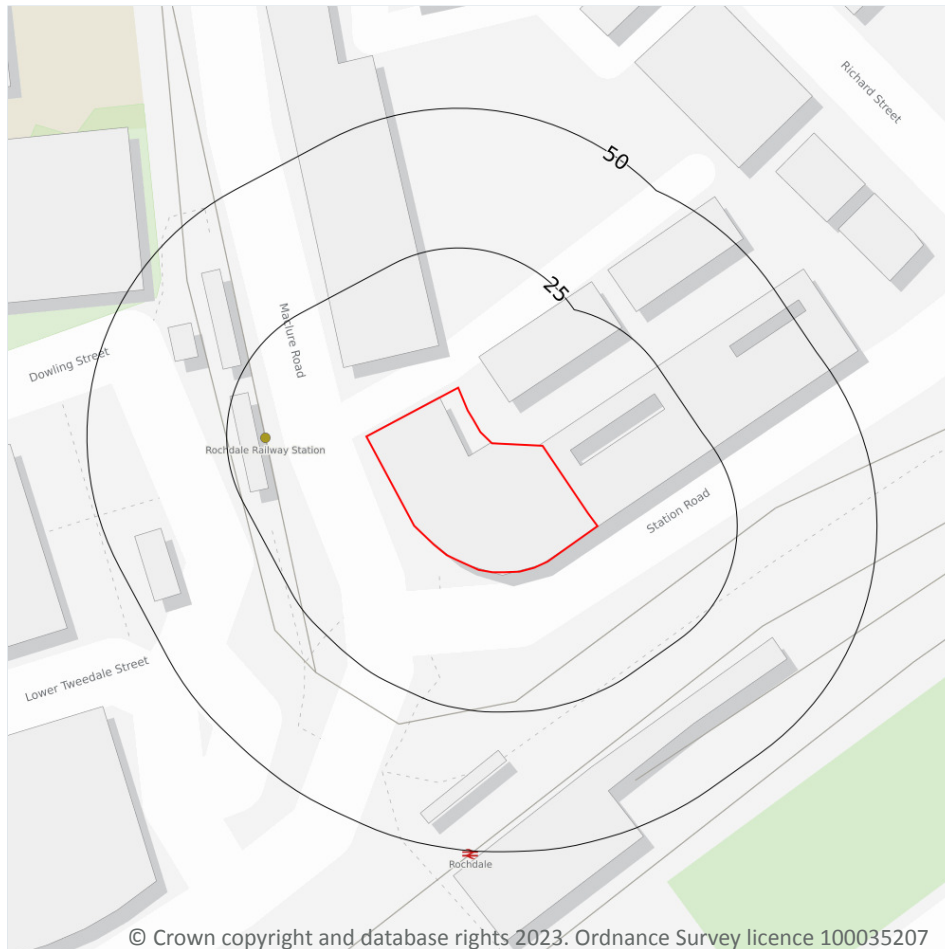


Coal mining

CON29M reports are a requirement for conveyancing and are recommended throughout the official Coal Mining Reporting Area. This is the area within which it is deemed prudent to clarify the risk presented by coal mining, using the questions laid out in the Law Society's CON29M form. The need for a CON29M does not always translate to an identification of risk, and reports will often be assessed as free from risk or 'Passed' even though they are within the official Coal Mining Reporting Area.



Coal mining (CON29M)



- Site Outline
- Search buffers in metres (m)
- Mine entries
 - Adits
 - Shafts
 - Calculated 'zone of influence'
- Subsidence claims
 - Awaiting decision
 - Rejected
 - Admitted
 - Deferred
 - Settled
 - Withdrawn
 - Probable shallow coal mine workings
 - Coal outcrops
 - Past shallow coal mine workings

Coal mining (CON29M)

The map above shows relevant, mappable hazards identified that could constitute a risk to the property. It does not necessarily show all features or potential issues identified in this report. Further details of any features shown indicating the location of Mine Entries or Subsidence Claims can be found in the relevant sections of this report (4 and 9 respectively).

Responses to the Law Society CON29M Coal Mining search enquiries are produced using official Coal Authority data and the expert interpretation of Groundsure. This report is prepared in accordance with The Law Society CON29M (2018) Guidance Notes. Additional interpretation and calculation of mine entry zones of influence has also been carried out by Groundsure using Coal Authority and British Geological Survey data.

Please read this report carefully, and in particular any sections flagged with an amber 'i'.


[Back to Summary](#)

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

Ref: GS-VRS-JDG-TZE-PEL
 Your ref: NX570
 Grid ref: 389922 412707

**The Law Society**

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1. Past underground coal mining



Is the property within the zone of likely physical influence on the surface of past underground coal workings?

- The property does not lie within the potential zone of influence of any recorded underground coal workings.

2. Present underground coal mining



Is the property within the zone of likely physical influence on the surface of present underground coal workings?

- The property does not lie within the boundary of an underground site from which coal is being removed by underground methods.

3. Future underground coal mining



(a) Is the property within any geographical area for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods?

- The property does not lie within the boundary of an underground site for which the Coal Authority is determining whether to grant a licence to remove coal by underground methods.

(b) Is the property within any geographical area for which a licence to remove coal by underground methods has been granted?

- The property does not lie within the boundary of an underground site for which a licence to remove coal by underground methods has been granted.

(c) Is the property within the zone of likely physical influence on the surface of planned future underground coal workings?

- The property does not lie within the zone of likely physical influence on the surface of planned future underground workings.

(d) Has any notice of proposals relating to underground coal mining operations been given under section 46 of

[Back to Summary](#)

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01273 257 755

Ref: GS-VRS-JDG-TZE-PEL
Your ref: NX570
Grid ref: 389922 412707

the Coal Mining Subsidence Act 1991?

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

4. Mine entries



Are there any shafts and adits or other entries to underground coal mine workings within the property or within 20 metres of the boundary of the property?

- No coal mine entries are recorded to lie within 20 metres of the property.

5. Coal mining geology



Is there any record of any fault or other line of weakness due to coal mining at the surface within the boundary of the property that has made the property unstable?

- No damage arising from geological faults or other lines of weakness activated by coal mining are recorded within the property.

6. Past opencast coal mining



Is the property situated within the geographical boundary of an opencast site from which coal has been removed in the past by opencast methods?

- The property does not lie within the boundary of an opencast site from which coal was removed by opencast methods.

7. Present opencast coal mining



Is the property within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods?

- The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining



(a) Is the property within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods?



- The property does not lie within 800 metres of the boundary of an opencast site for which the Coal Authority are determining whether to grant a licence to remove coal by opencast methods.

(b) Is the property within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted?

- The property does not lie within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. Coal mining subsidence claims



(a) Has any damage notice or claim for alleged coal mining subsidence damage to the property been given, made or pursued since 31st October 1994?

- We have no evidence of a damage notice or subsidence claim for the property or within 50m of the property since 31st October 1994.

(b) In respect of any such notice or claim has the responsible person given notice agreeing that there is a remedial obligation or otherwise accepted that a claim would lie against them?

- Not applicable.

(c) In respect of any such notice or acceptance has the remedial obligation or claim been discharged?

- Not applicable.

(d) Does any current "Stop Notice" delaying the start of remedial works or repairs affect the property?

- There are no current Stop Notices delaying the start of remedial works or repairs to the property.

(e) Has any request been made under Section 33 of the 1991 Act to execute preventive works before coal is worked, which would prevent the occurrence or reduce the extent of subsidence damage to any buildings, structures or works and, if yes, has any person withheld consent or failed to comply with any such request to execute preventive works?

- There is no record of a request that has been made to carry out preventive works before coal is worked under Section 33 of the Coal Mining Subsidence Act 1991.

NB. Records of damage notices or subsidence claims before 31st October 1994 are excluded from The Coal Authority data from which this search is compiled.

10. Mine gas emissions



Does the Coal Authority have record of any mine gas emission within the boundary of the property being reported that subsequently required action by the Authority to mitigate the effects of the mine gas emission?

- No mine gas emissions are recorded within the boundary of the property.



11. Emergency Surface Hazard Call Out incidents



Have the Coal Authority carried out any work on or within the boundaries of the property following a report of an alleged hazard related to coal mining under the Authority's Emergency Surface Hazard Call Out procedures?

- **No Emergency Surface Hazard Call Out procedures are recorded against the property.**

12. Withdrawal of support



(a) Does the land lie within a geographical area in respect of which a notice of entitlement to withdraw support has been published?

- **The property does not lie in an area where the right to withdraw support has been granted.**

(b) Does the land lie within a geographical area in respect of which a revocation notice has been given under section 41 of the Coal Industry Act 1994?

- **The property does not lie within a geographical area in which a revocation notice has been given under section 41 of the Coal Industry Act 1994.**

13. Working facilities orders



Is the property within a geographical area subject to an order in respect of the working of coal under the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof?

- **The property is not in an area where a court order has been issued.**

14. Payments to owners of former copyhold land



(a) Has any relevant notice, which may affect the property, been given?

- **The property does not lie within former copyholder land.**

(b) If yes, has any notice of retained interests in coal and coal mines been given?

- **No notices of retained interests in coal and coal mines been given.**

(c) If yes, has any acceptance notice or rejection notice been served?

- **No acceptance or rejection notices have been served.**

(d) If any such acceptance notice has been served, has any compensation been paid to a claimant?

- **No compensation has been paid to a claimant.**



CON29M notes and guidance

This report is prepared in accordance with [The Law Society Guidance Notes 2018](#); under which all replies to these enquiries are made. Groundsure's Terms and Conditions are applicable at the time the report was produced.

Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by telephoning 0345 762 6848. Further information can be found on their website:

www.groundstability.com ↗.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries).

The Coal Authority emergency telephone number at all times is 01623 646333.

Responses to The Law Society CON29M (2018) Coal Mining Search enquiries and associated findings and recommendations relating to coal mining risk have been provided by Groundsure Ltd. Groundsure Ltd have additionally provided information relating to the Cheshire Brine Compensation Area, and have compiled all information into this report.

Queries should be made of Groundsure Ltd on 01273 257 755, or via email: info@groundsure.com ↗.

CON29M report limitations

This CON29M (2018) Coal Mining Report has been carried out with reference to all available official Coal Authority licensed data, an extensive collection of abandoned mine plans, maps and records. From this material, we have endeavoured to provide as accurate a report as possible. Any and all analysis and interpretation of licensed Coal Authority data in this report is made by Groundsure

The information provided in this report by Groundsure Ltd has been compiled in response to The Law Society CON29M (2018) Coal Mining search enquiries. The scope of the assessment is limited to interpretation of past, present and future extraction of coal, and does not consider the impact from non-coal mining hazards and/or natural ground stability hazards. The Law Society's Guidance Notes 2018 recommends separate enquiries to the appropriate sources are made with regard to other minerals.

The Report is created by a remote investigation and reviews only information provided by the client (address and site location boundaries) and from the databases of publicly available and/or licensable information that enable a desk-based assessment of the Site. The Report does not include a Site Investigation, nor does Groundsure Ltd make additional specific information requests of the regulatory authorities for any relevant information they may hold.

This report is concerned solely with the Site searched and should not be used in connection with nearby properties, as only known coal mining features that could potentially have a direct influence upon the Site searched are considered relevant; other features present in the general area may have been omitted for ease of reference.

This report is confidential to the client, the client's legal advisor and the client's Mortgage lender, as defined in the Groundsure terms & conditions, and as such may be used by them for conveyancing or related purposes. Groundsure has no liability toward any person or organisation not party to commissioning this report. This report or any part of it is not permitted to be reproduced, copied, altered or in any other way distributed by any other person or organisation.

Additional mine entry assessment is based on and limited to the data supplied by the Coal Authority at the time of production. In order to determine whether a property is within the likely zone of influence of a disused coal mine entry the following is considered: the actual or plotted position of the mine entry, its known or assumed diameter and the thickness of superficial deposits above rockhead. Where these figures are not known, assumptions based on established estimations have been made.



CON29M report licensing

This report contains Data provided by the Coal Authority. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure Limited and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure Limited prior to any re-use. Due to data collection methods and processing time, there may be a period of up to 1 week between the Coal Authority updating their data and it appearing within the Groundsure report.

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This report may contain plans and records held by the Coal Authority and made publicly available at the time of inspection which may include British Geological Survey and Ordnance Survey data.



Conveyancing Information Executive and our terms & conditions

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- Conveyancing Information Executive Members shall act in a professional and honest manner at all times in line with the Conveyancing Information Executive Standards and carry out the delivery of the Search with integrity and due care and skill.
- Compliance with the Conveyancing Information Executive Standards will be a condition within the Conveyancing Information Executive Member's Terms and Conditions.
- Conveyancing Information Executive Members will promote the benefits of and deliver the Search to the agreed standards and in the best interests of the customer and associated parties.

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If you remain dissatisfied with the firm's final response, after your complaint has been formally considered, or if the firm has exceeded the response timescales, you may refer your complaint for consideration under The Property Ombudsman scheme (TPOs). The Ombudsman can award up to £5,000 to you if the Ombudsman finds that you have suffered actual financial loss and/or aggravation, distress or inconvenience as a result of your search provider failing to keep to the Standards.

Please note that all queries or complaints regarding your search should be directed to your search provider in the first instance, not to TPOs.

COMPLAINTS PROCEDURE: If you want to make a complaint, we will:

- acknowledge it within 5 working days of receipt
- normally deal with it fully and provide a final response, in writing, within 20 working days of receipt
- liaise, at your request, with anyone acting formally on your behalf

Complaints should be sent to:

Operations Director, Groundsure Ltd, Nile House, Nile Street, Brighton, BN1 1HW. Tel: 01273 257 755. Email: info@groundsure.com

↗ If you are not satisfied with our final response, or if we exceed the response timescales, you may refer the complaint to The Property Ombudsman scheme (TPOs): Tel: 01722 333306, E-mail: admin@tpos.co.uk ↗ We will co-operate fully with the Ombudsman during an investigation and comply with their final decision.

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Data providers

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



Coal Mining Report Insurance Policy



Coal Mining Report Insurance Policy

The Schedule

Policy Number: The Reference contained in the **Coal Mining Search Report**

Premium: £1.40 inclusive of Insurance Premium Tax at 12%

Property: The property which is the subject of the **Coal Mining Search Report**

Limit of Indemnity: £100,000 increasing by 10% compound per annum on each anniversary of and for the first 10 years following the **Commencement Date**

Commencement Date: The date of the **Coal Mining Search Report**

You/Your:

1. A purchaser of the **Property**
2. A lender providing a **Mortgage** in connection with a purchase of the **Property**
3. A lender providing a **Mortgage** by way of a re-mortgage of the **Property**

Definitions

Where a word is defined below or in the schedule it shall carry the same meaning wherever it appears in bold text in this policy

Insured Use: The continued use of the **Property** as a single house or flat or a single commercial premises

Market Value: The value as determined by a surveyor appointed by agreement between **You** and **Us** or (in default of agreement) the President for the time being of the Royal Institution of Chartered Surveyors

Mortgage: A mortgage or charge secured on the **Property** by an institutional mortgage lender

Coal Mining Search Report: The coal mining search report attached to this policy

Search: An official search comprising a search in form CON29M (2018) being mining searches relating to coal and brine in the area in which the **Property** is situated

We/Our/Us:

Zurich Insurance plc. A public limited company incorporated in Ireland. Registration No. 13460. Registered Office: Zurich House, Ballsbridge Park, Dublin 4, Ireland. UK Branch registered in England and Wales Registration No. BR7985. UK Branch Head Office: The Zurich Centre, 3000 Parkway, Whiteley, Fareham, Hampshire PO15 7JZ.

Zurich Insurance plc is authorised by the Central Bank of Ireland and authorised and subject to limited regulation by the Financial Conduct Authority. Details about the extent of our authorisation by the Financial Conduct Authority are available from us on request. Our FCA Firm Reference Number is 203093.

Communications may be monitored or recorded to improve our service and for security and regulatory purposes.

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Your Policy

This is a legal document and should be kept in a safe place.

This policy is an agreement between **You** and **Us** and cover is provided subject to the payment of the **Premium**.

You must read this policy and its conditions, exclusions, schedule and any endorsements as one contract. Please read all of them to make sure that they provide the cover **You** require. If they do not, please contact **Us** or **Your** insurance adviser who arranged the policy for **You**.

When **You** take out and make changes to the cover provided by this policy, **You** must take reasonable care to ensure that **You** accurately answer any questions which **We** ask of **You** and that any information **You** give **Us** is accurate. If **You** are taking out this policy for purposes which are mainly related to **Your** trade, business or profession, **You** must also let **Us** know about all facts which are material to **Our** decision to provide **You** with insurance. Failure to meet these obligations could result in this policy being invalidated, a claim not being paid, or an additional premium being charged.

Fair presentation of the risk

a) At inception of this policy and also whenever changes are made to it at **Your** request **You** must:

- i) where **You** have taken out this policy for purposes which are wholly or mainly related to **Your** trade, business or profession, disclose to **Us** all material facts in a clear and accessible manner and not misrepresent any material facts, and
- ii) where **You** have taken out this policy for purposes which are wholly or mainly unrelated to **Your** trade, business or profession, take reasonable care not to misrepresent any material facts.

b) If **You** do not comply with clause a) of this condition **We** may:

- i) avoid this policy which means that **We** will treat it as if it had never existed and refuse all claims where any non-disclosure or misrepresentation by **You** is proven by **Us** to be deliberate or reckless in which case **We** will not return the premium paid by **You**; and
- ii) recover from **You** any amount **We** have already paid for any claims including costs or expenses **We** have incurred.

c) If **You** do not comply with clause a) of this condition and the non-disclosure or misrepresentation is not deliberate or reckless this policy may be affected in one or more of the following ways depending on what **We** would have done if **We** had known about the facts which **You** failed to disclose or misrepresented:

- i) if **We** would not have provided **You** with any cover **We** will have the option to:
 1. avoid the policy which means that **We** will treat it as if it had never existed and repay the premium paid; and
 2. recover from **You** any amount **We** have already paid for any claims including costs or expenses **We** have incurred
- ii) if **We** would have applied different terms to the cover **We** will have the option to treat this policy as if those different terms apply. **We** may recover any payments made by **Us** on claims which have already been paid to the extent that such claims would not have been payable had such additional terms been applied
- iii) if **We** would have charged **You** a higher premium for providing the cover **We** will charge **You** the additional premium which **You** must pay in full.

d) If any insured person, other than **You**, is responsible for a misrepresentation or failure to make a fair presentation of the risk, **We** will invoke the remedies available to **Us** under this condition as against that particular person as if a separate insurance contract had been issued to them leaving the remainder of the policy unaffected.

NB: For the purposes of the duty of disclosure stated in paragraphs a) i) and ii) above the content of the **Coal Mining Search Report** will be deemed to satisfy **Your** disclosure obligations.

Cover

1. **You** are in the process of purchasing the **Property** relying on the **Coal Mining Search Report** and/or
2. **You** (being a lender) have agreed to provide a **Mortgage** in connection with **Your** borrower's purchase or re-mortgage of the **Property** relying on the **Coal Mining Search Report**.

We will pay the following losses sustained by **You** arising out of the **Property** being affected by any matter which would have been revealed by a **Search** had one been carried out on the date of the **Coal Mining Search Report** but which was not revealed by the **Coal Mining Search Report**:



1. any reduction in **Market Value** of the **Property** calculated at the date **You** become aware of the matter(s) and/or loss in connection with a **Mortgage** as a result of such reduction.
2. all other costs and expenses including out of court settlement costs incurred by **Us** or by **You** with **Our** prior written agreement.

Waiver of Breach of Policy Condition

We will not exercise **Our** right to avoid **Our** liability to **You** in respect of loss where **You** have inadvertently breached any term or condition of the policy provided that such breach does not prejudice **Our** rights and remedies under the policy or otherwise directly or indirectly result in or increase the amount of any loss.

Protection for Mortgagees and Successors in Title

We will not avoid **Our** liability to make a payment to **You** solely because another person breaches the terms and conditions of this policy, provided such breach was not committed on **Your** behalf or with **Your** agreement, and **We** will invoke the remedies available to **Us** under the Policy as against that other person as if a separate insurance contract had been issued to them leaving the remainder of the policy unaffected.

Joint Insured

Any party insured under this policy standing in the relation of parent company, subsidiary company, associated company, branch office or joint venture partner to each other will be deemed to be joint insured for the purposes of this policy and jointly liable and responsible for any breach of any terms and conditions of this policy. If there is any inconsistency between this clause and any other term of this policy, this clause shall prevail.

Exclusions

We will not pay for any:

1. amount in excess of the **Limit of Indemnity**.
2. loss which would be recoverable under a household buildings insurance policy.
3. loss arising from any matter that **You** were aware of at the **Commencement Date**.
4. loss if the **Property** is used for any purpose other than the **Insured Use**.

Claims Conditions and How to Claim

1. **You** must:

- i) give **Us** written notice as soon as possible of any potential or actual claim or any circumstances likely to result in a claim. Please provide the policy number, **Your** name, the full address of the **Property** and a brief description of the incident that has occurred. Notifications should be sent to: Speciality Lines Claims Team, Zurich Insurance, 8th Floor, 70 Mark Lane, London, EC3R 7NQ. Email: claims@uk.zurich.com ↗, Enquiry line: telephone 0207 648 3523
- ii) pass all court documents and/or other communications to **Us** as soon as possible after receipt
- iii) not deal with, make any admission of liability or attempt to settle a claim without **Our** prior written agreement.
- iv) agree to and carry out at **Our** expense all things necessary to minimise any loss.
- v) provide all information and assistance that **We** may require to help defend and settle the claim.

2. **We** are entitled to:

- i) decide how to settle or defend a claim and may carry out proceedings in the name of any person insured under this policy, including proceedings for recovering any claim.
- ii) pay to **You** at any time, an amount equal to the **Limit of Indemnity** or any lower amount for which the claim can be settled, after deduction of any sum already paid. **We** may then give up control of and have no further liability in connection with the claim.

3. If **We** admit liability for a claim but there is a dispute as to the amount to be paid the dispute will be referred to an arbitrator. The arbitrator will be appointed jointly by **You** and **Us** in accordance with the law at the time. **You** may not take any legal action against **Us** over the dispute before the arbitrator has reached a decision.

4. If **You** or anyone acting on **Your** behalf:



- a) makes a fraudulent or exaggerated claim under this policy; or
- b) uses fraudulent means or devices including the submission of false or forged documents in support of a claim whether or not the claim is itself genuine; or
- c) makes a false statement in support of a claim whether or not the claim is itself genuine; or
- d) submits a claim under this policy for loss or damage which **You** or anyone acting on **Your** behalf or in connivance with **You** deliberately caused; or
- e) realises after submitting what **You** reasonably believed was a genuine claim under this policy and then fails to tell **Us** that **You** have not suffered any loss or damage; or
- f) suppresses information which **You** know would otherwise enable **Us** to refuse to pay a claim under this policy

We will be entitled to refuse to pay the whole of the claim and recover any sums that **We** have already paid in respect of the claim.

If any fraud is perpetrated by or on behalf of an insured person and not on behalf of **You** this condition should be read as if it applies only to that insured person's claim and references to this policy should be read as if they were references to the cover effected for that person alone and not to the policy as a whole.

5. If any claim is covered by any other insurance, **We** will not pay for more than **Our** share of that claim.

6. The most **We** will pay for any loss (or all losses in the aggregate), including costs and expenses agreed by **Us** is the **Limit of Indemnity**. Once **We** have paid a loss or losses equal to the amount of the **Limit of Indemnity**, **We** will have no further liability under this policy.

General Conditions

1. Neither **You** (nor anyone acting on **Your** behalf) must disclose the existence of this policy to any other party except **Your** legal and other professional advisers, prospective purchasers, lessees and tenants of the **Property**, their respective mortgagees, legal and other professional advisers.
2. In the UK the law allows both **You** and **Us** to choose the law applicable to the contract. This contract will be subject to the relevant law of England and Wales, Scotland, Northern Ireland, the Isle of Man or the Channel Islands depending upon the Property address stated in the Schedule. If there is any dispute as to which law applies it will be English law. The parties agree to submit to the exclusive jurisdiction of the English courts.
3. Notwithstanding any other terms of this policy **We** will be deemed not to provide cover nor will **We** make any payment or provide any service or benefit to **You** or any other party to the extent that such cover, payment, service, benefit and/or any business or activity of **Yours** would violate any applicable trade or economic sanctions law or regulation.

Cancellation Clause

If **You** have taken out this policy for purposes which are wholly or mainly unrelated to **Your** trade, business or profession, **You** may cancel this policy within 14 days of receiving the policy by writing to **Us** and in such event **We** may, at **Our** discretion, charge **You** for the time that **You** have been on cover. Any refund will be made to the party who paid the premium. If **You** do cancel, **You** may be in breach of the terms of **Your** mortgage or the terms of the contract for the sale of **Your** property. If **You** are in doubt, **You** may wish to seek legal advice prior to cancellation.

Fair Processing and Complaints Procedure

Our Complaints Procedure

Our commitment to customer service

We are committed to providing a high level of customer service. If you feel we have not delivered this, we would welcome the opportunity to put things right for you.

Who to contact in the first instance

Many concerns can be resolved straight away. Therefore in the first instance, please get in touch with your usual contact at Zurich or your broker or insurance intermediary, as they will generally be able to provide you with a prompt response to your satisfaction.

Contact details will be provided on correspondence that we or our representatives have sent you.

Many complaints can be resolved within a few days of receipt

If we can resolve your complaint to your satisfaction within the first few days of receipt, we will do so. Otherwise, we will keep you



updated with progress and will provide you with our decision as quickly as possible.

Next steps if you are still unhappy

If you are not happy with the outcome of your complaint, you may be able to ask the Financial Ombudsman Service to review your case.

We will let you know if we believe the ombudsman service can consider your complaint when we provide you with our decision. The service they provide is free and impartial, but you would need to contact them within 6 months of the date of our decision.

More information about the ombudsman and the type of complaints they can review is available via their website www.financial-ombudsman.org.uk ↗.

You can also contact them as follows:

Post: Financial Ombudsman Service, Exchange Tower, London, E14 9SR

Telephone: 08000 234567 (free on mobile phones and landlines)

Email: complaint.info@financial-ombudsman.org.uk ↗

If the Financial Ombudsman Service is unable to consider your complaint, you may wish to obtain advice from the Citizens Advice Bureau or seek legal advice.

The Financial Services Compensation Scheme (FSCS)

We are covered by the Financial Services Compensation Scheme (FSCS) which means that you may be entitled to compensation if we are unable to meet our obligations to you. Further information is available on www.fscs.org.uk ↗ or by contacting the FSCS directly on 0800 678 1100.

How we use your information

Who controls your personal information

This notice tells you how Zurich Insurance plc ('Zurich'), as data controller, will deal with your personal information. Where Zurich introduces you to a company outside the group, that company will tell you how your personal information will be used.

You can ask for further information about our use of your personal information or complain about its use in the first instance, by contacting our Data Protection Officer at: Zurich Insurance Group, Tri-centre 1, Newbridge Square, Swindon, SN1 1HN or by emailing the Data Protection Officer at GBZ.General.Data.Protection@uk.zurich.com ↗.

If you have any concerns regarding our processing of your personal information, or are not satisfied with our handling of any request by you in relation to your rights, you also have the right to make a complaint to the Information Commissioner's Office. Their address is: First Contact Team, Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, SK9 5AF.

What personal information we collect about you

We will collect and process the personal information that you give us by phone, e-mail, filling in forms, including on our website, and when you report a problem with our website. We also collect personal information from your appointed agent such as your trustee, broker, intermediary or financial adviser in order to provide you with the services you have requested and from other sources, such as credit reference agencies and other insurance companies, for verification purposes. We will also collect information you have volunteered to be in the public domain and other industry-wide sources. We will only collect personal information that we require to fulfil our contractual or legal requirements unless you consent to provide additional information. The type of personal information we will collect includes; basic personal information (i.e. name, address and date of birth), occupation and financial details, health and family information, claims and convictions information and where you have requested other individuals be included in the arrangement, personal information about those individuals.

If you give us personal information on other individuals, this will be used to provide you with a quotation and/or contract of insurance and/or provision of financial services. You agree you have their permission to do so. Except where you are managing the contract on another's behalf, please ensure that the individual knows how their personal information will be used by Zurich. More information about this can be found in the 'How we use your personal information' section.

How we use your personal information

We and our selected third parties will only collect and use your personal information (i) where the processing is necessary in connection with providing you with a quotation and/or contract of insurance and/or provision of financial services that you have requested; (ii) to meet our legal or regulatory obligations; or (iii) for our 'legitimate interests'. It is in our legitimate interests to collect



your personal information as it provides us with the information that we need to provide our services to you more effectively including providing you with information about our products and services. We will always ensure that we keep the amount of information collected and the extent of any processing to the absolute minimum to meet this legitimate interest. Examples of the purposes for which we will collect and use your personal information are:

1. to provide you with a quotation and/or contract of insurance;
2. to identify you when you contact us;
3. to deal with administration and assess claims;
4. to make and receive payments;
5. to obtain feedback on the service we provide to you;
6. to administer our site and for internal operations including troubleshooting, data analysis, testing, research, statistical and survey purposes;
7. for fraud prevention and detection purposes.

We will contact you to obtain consent prior to processing your personal information for any other purpose, including for the purposes of targeted marketing unless we already have consent to do so.

Who we share your personal information with

Where necessary, we will share the personal information you gave us for the purposes of providing you with the goods and services you requested with the types of organisations described below:

associated companies including reinsurers, suppliers and service providers;
introducers and professional advisers;
regulatory and legal bodies;
survey and research organisations;
credit reference agencies;
healthcare professionals, social and welfare organisations; and
other insurance companies

Or, in order to meet our legal or regulatory requirements, with the types of organisations described below:

regulatory and legal bodies;
central government or local councils;
law enforcement bodies, including investigators;
credit reference agencies; and
other insurance companies

How we use your personal information for websites and email communications

When you visit one of our websites we may collect information from you such as your email address or IP address. This helps us to track unique visits and monitor patterns of customer website traffic, such as who visits and why they visit.

We use cookies and/or pixel tags on some pages of our website. A cookie is a small text file sent to your computer. A pixel tag is an invisible tag placed on certain pages of our website but not on your computer. Pixel tags usually work together with cookies to assist us to provide you with a more tailored service. This allows us to monitor and improve our email communications and website. Useful information about cookies, including how to remove them, can be found on our websites.

How we transfer your personal information to other countries

Where we transfer your personal information to countries that are outside of the UK and the European Union (EU) we will ensure that it is protected and that the transfer is lawful. We will do this by ensuring that the personal information is given adequate safeguards by using 'standard contractual clauses' which have been adopted or approved by the UK and the EU, or other solutions that are in line with the requirements of European data protection laws.

A copy of our security measures for personal information transfers can be obtained from our Data Protection Officer at: Zurich Insurance Group, Tri-centre 1, Newbridge Square, Swindon, SN1 1HN, or by emailing the Data Protection Officer at GBZ.General.Data.Protection@uk.zurich.com ↗.

How long we keep your personal information for

We will retain and process your personal information for as long as necessary to meet the purposes for which it was originally



collected. These periods of time are subject to legal, tax and regulatory requirements or to enable us to manage our business.

Your data protection rights

You have a number of rights under the data protection laws, namely:

- to access your data (by way of a subject access request);
 - to have your data rectified if it is inaccurate or incomplete;
 - in certain circumstances, to have your data deleted or removed;
 - in certain circumstances, to restrict the processing of your data;
 - a right of data portability, namely to obtain and reuse your data for your own purposes across different services;
 - to object to direct marketing;
 - not to be subject to automated decision making (including profiling), where it produces a legal effect or a similarly significant effect on you;
 - to claim compensation for damages caused by a breach of the data protection legislation.
- if we are processing your personal information with your consent, you have the right to withdraw your consent at any time.

We will, for the purposes of providing you with a contract of insurance, processing claims, reinsurance and targeted marketing, process your personal information by means of automated decision making and profiling where we have a legitimate interest or you have consented to this.

What happens if you fail to provide your personal information to us

If you do not provide us with your personal information, we will not be able to provide you with a contract or assess future claims for the service you have requested.

Fraud prevention and detection

In order to prevent and detect fraud we may at any time:

- check your personal data against counter fraud systems
- use your information to search against various publicly available and third party resources
- use industry fraud tools including undertaking credit searches and to review your claims history
- share information about you with other organisations including but not limited to the police, the Insurance Fraud Bureau (IFB), other insurers and other interested parties.

If you provide false or inaccurate information and fraud is identified, the matter will be investigated and appropriate action taken. This may result in your case being referred to the Insurance Fraud Enforcement Department (IFED) or other police forces and fraud prevention agencies. You may face fines or criminal prosecution. In addition, Zurich may register your name on the Insurance Fraud Register, an industry-wide fraud database.

Claims history

We may pass information relating to claims or potential claims to any relevant database. We and other insurers may search these databases when you apply for insurance, when claims or potential claims are notified to us or at time of renewal to validate your claims history or that of any other person or property likely to be involved in the policy or claim.

This helps to check information provided and prevent fraudulent claims.





Appendix C – Historical Mapping

Site Details:

Rochdale Corner Plot, Maclure Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: 1056 Scale Town Plan

Map date: 1851

Scale: 1:1,056

Printed at: 1:1,056



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

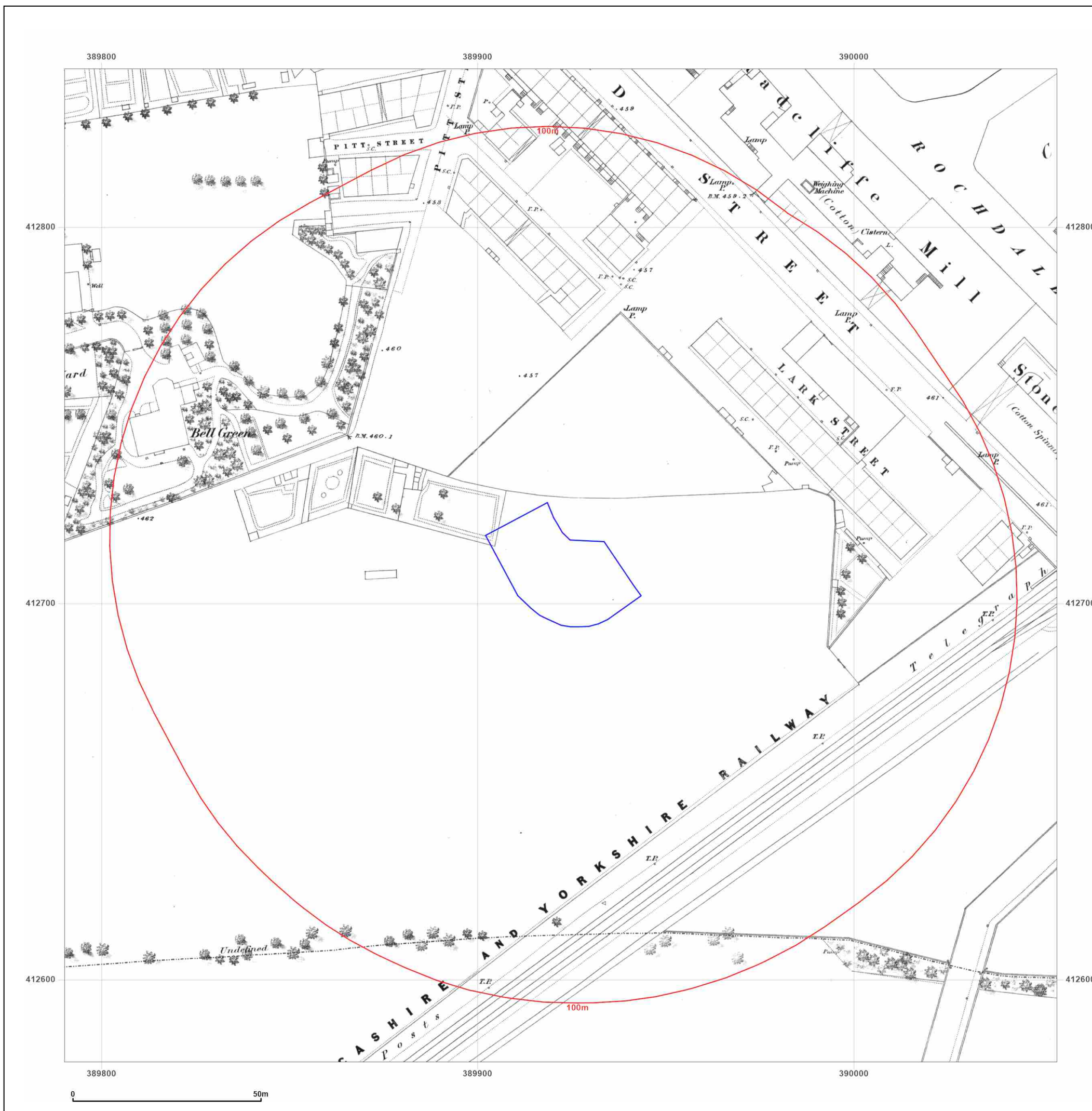


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Production date: 24 October 2023

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



Site Details:

Rochdale Corner Plot, Maclure
Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: County Series

Map date: 1891

Scale: 1:2,500

Printed at: 1:2,500



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

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

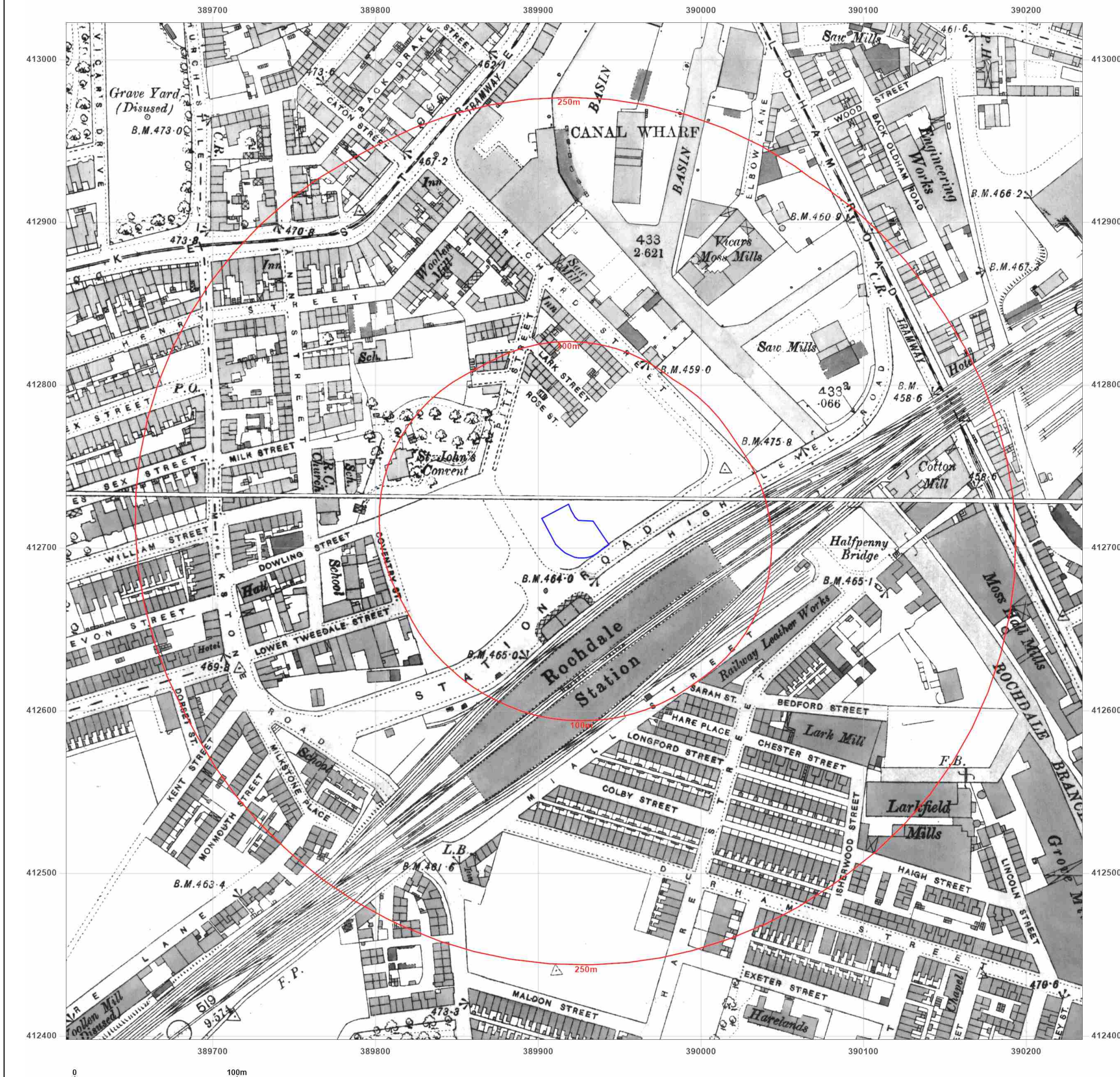


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Production date: 24 October 2023

Map legend available at:
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Site Details:

Rochdale Corner Plot, Maclure Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: County Series Town Plan

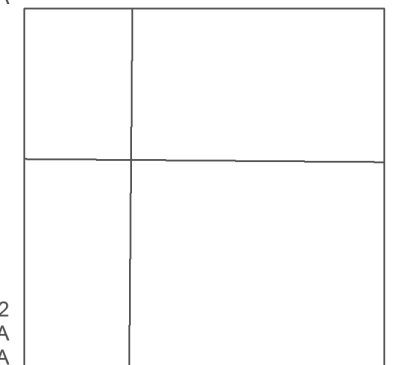
Map date: 1892

Scale: 1:500

Printed at: 1:1,000



Surveyed 1892
 Revised N/A
 Edition N/A
 Copyright N/A
 Levelled N/A



Surveyed 1892
 Revised N/A
 Edition N/A
 Copyright N/A
 Levelled N/A

Surveyed 1892
 Revised 1892
 Edition N/A
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 Levelled N/A



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Map legend available at:
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Site Details:

Rochdale Corner Plot, Maclure Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: County Series

Map date: 1910

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1910
Revised 1910
Edition N/A
Copyright N/A
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Surveyed 1910
Revised 1910
Edition N/A
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Site Details:

Rochdale Corner Plot, Maclure Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: County Series

Map date: 1930

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1930
 Revised 1930
 Edition N/A
 Copyright N/A
 Levelled N/A

Surveyed 1930
 Revised 1930
 Edition N/A
 Copyright N/A
 Levelled N/A

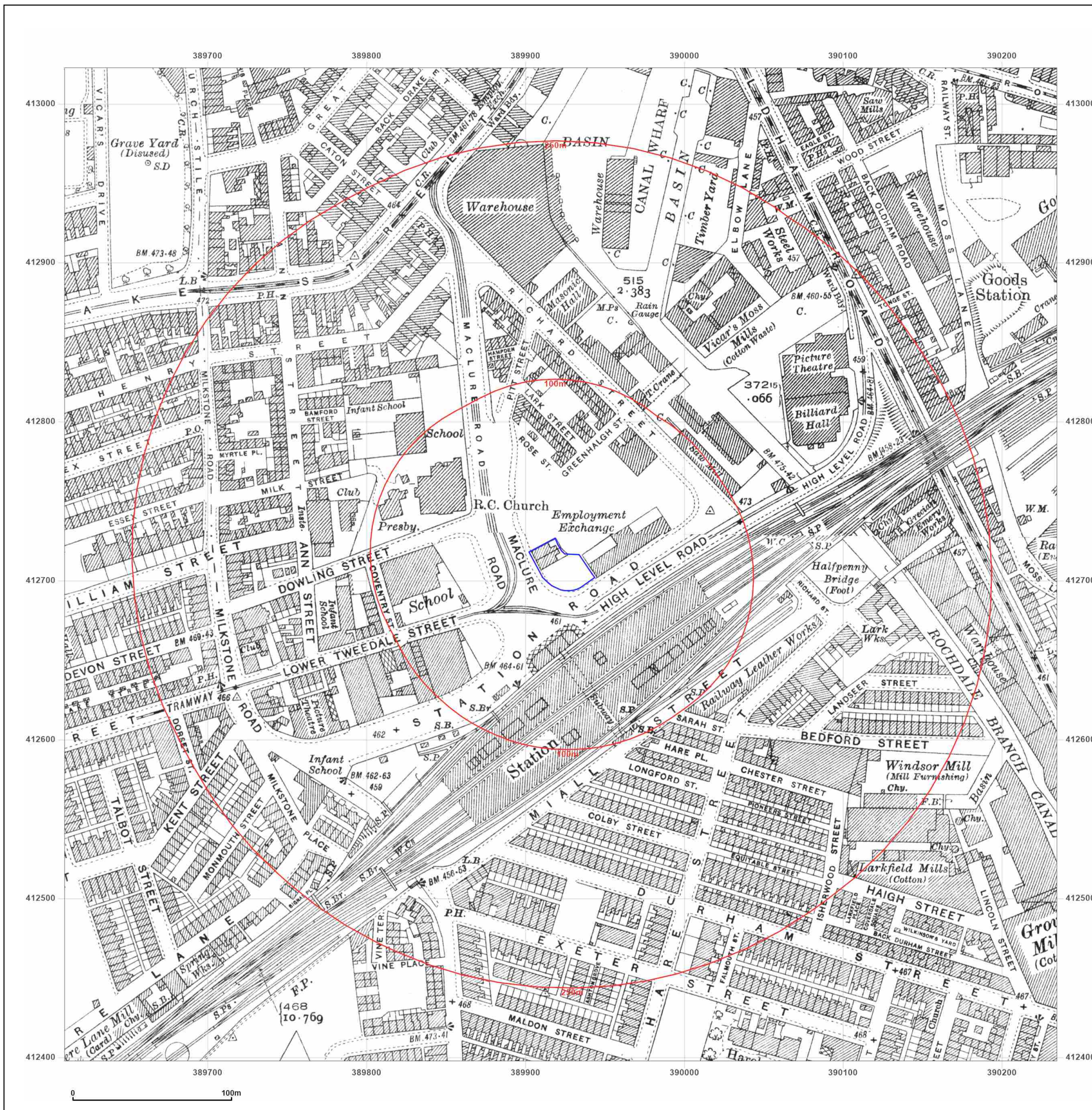


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Map legend available at:
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Site Details:

Rochdale Corner Plot, Maclure Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1957

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1957
 Revised 1957
 Edition N/A
 Copyright N/A
 Levelled 1928

Surveyed 1957
 Revised 1957
 Edition N/A
 Copyright N/A
 Levelled 1928

Surveyed 1957
 Revised 1957
 Edition N/A
 Copyright N/A
 Levelled 1928

Surveyed 1957
 Revised 1957
 Edition N/A
 Copyright N/A
 Levelled 1928

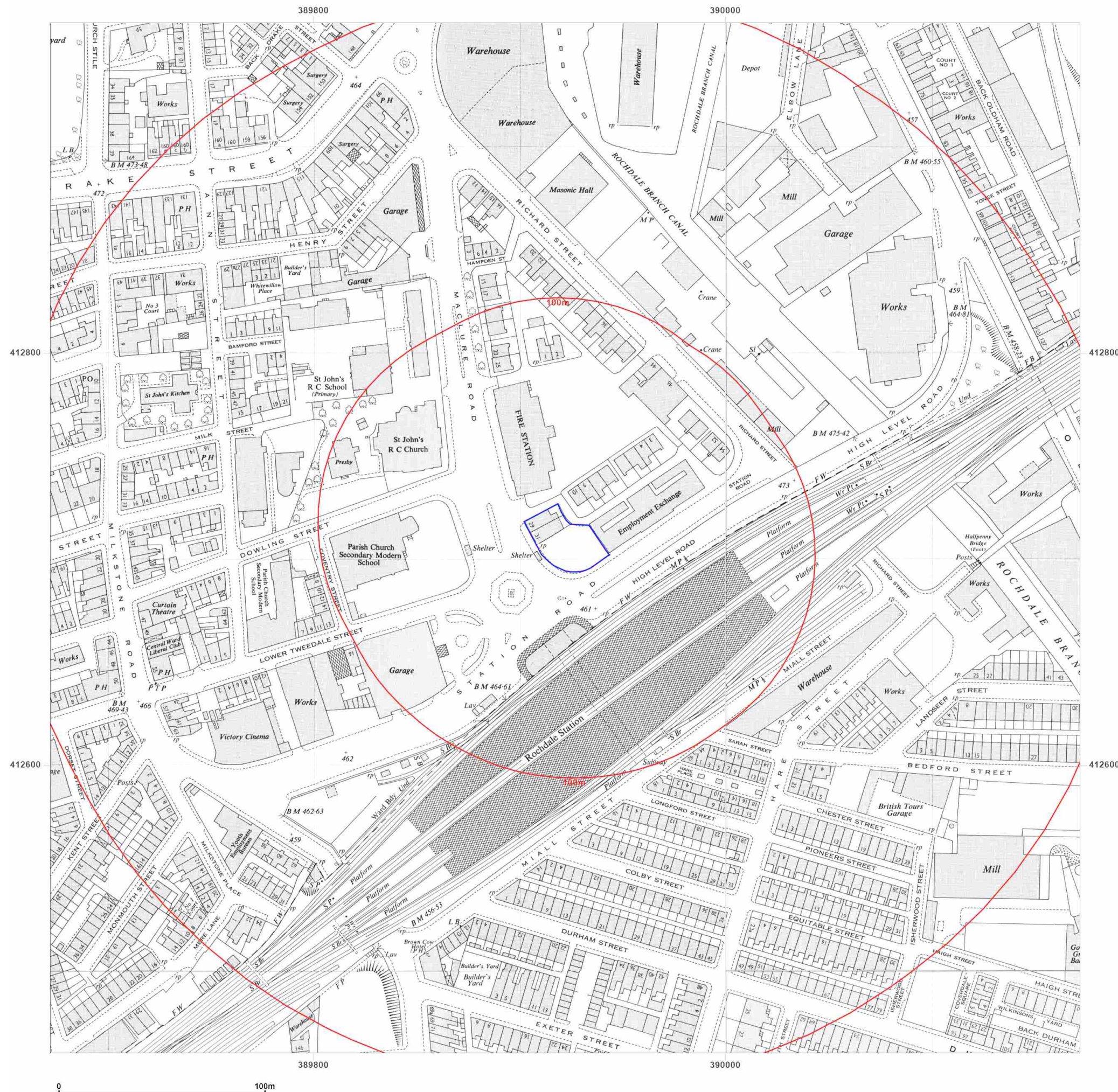


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Production date: 24 October 2023

Map legend available at:
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Site Details:

Rochdale Corner Plot, Maclure Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1958

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1957
 Revised N/A
 Edition N/A
 Copyright 1958
 Levelled 1928

Surveyed 1957
 Revised N/A
 Edition N/A
 Copyright 1958
 Levelled 1928

Surveyed 1957
 Revised N/A
 Edition N/A
 Copyright 1958
 Levelled 1928

Surveyed 1957
 Revised N/A
 Edition N/A
 Copyright 1958
 Levelled 1928

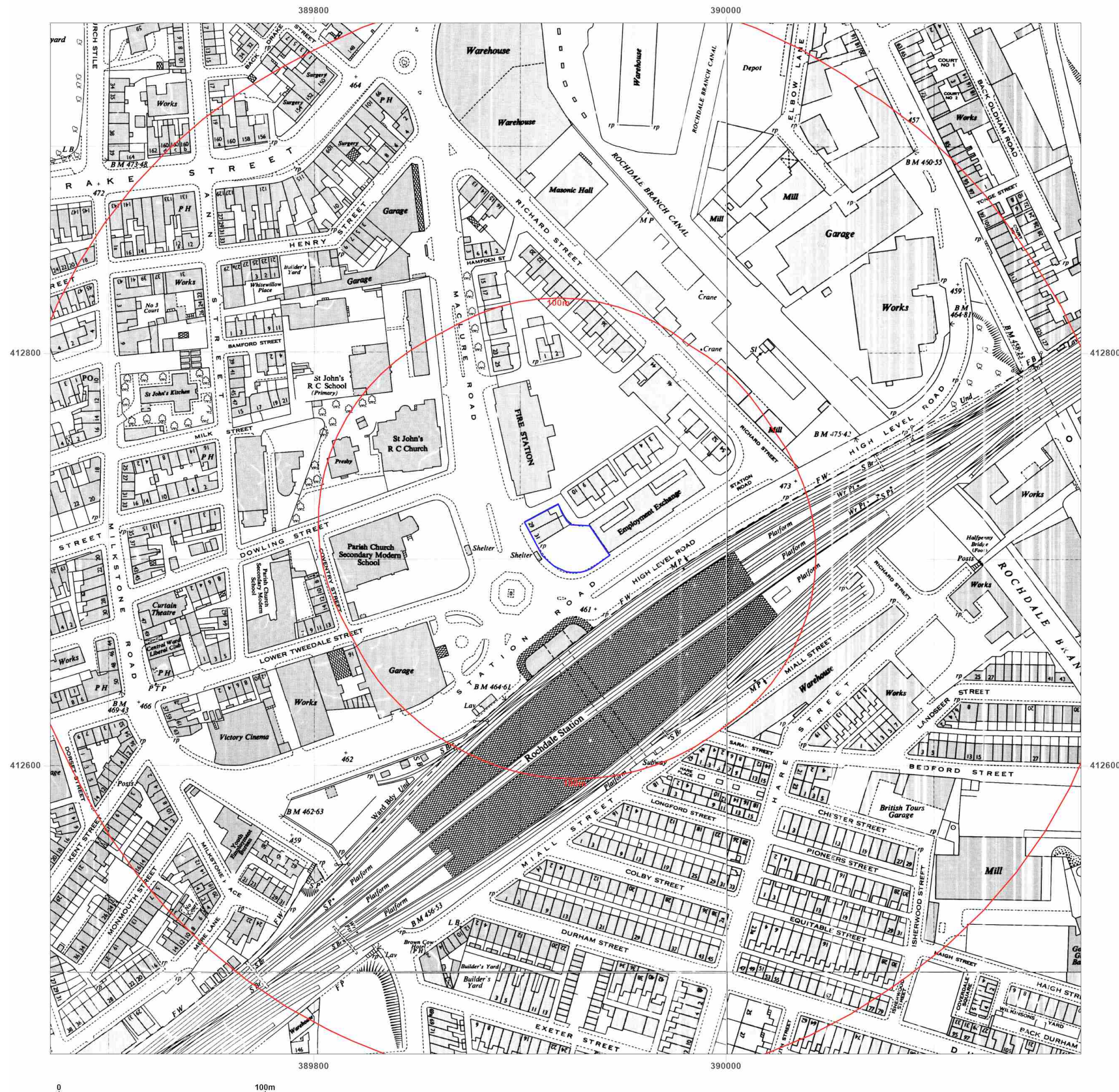


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Production date: 24 October 2023

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



Site Details:

Rochdale Corner Plot, Maclure
Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1957-1959

Scale: 1:2,500

Printed at: 1:2,500



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

Surveyed 1957
Revised 1957
Edition 1959
Copyright 1959
Levelled 1929

Surveyed 1957
Revised 1957
Edition 1958
Copyright N/A
Levelled 1928

Surveyed 1957
Revised 1957
Edition 1958
Copyright N/A
Levelled 1928

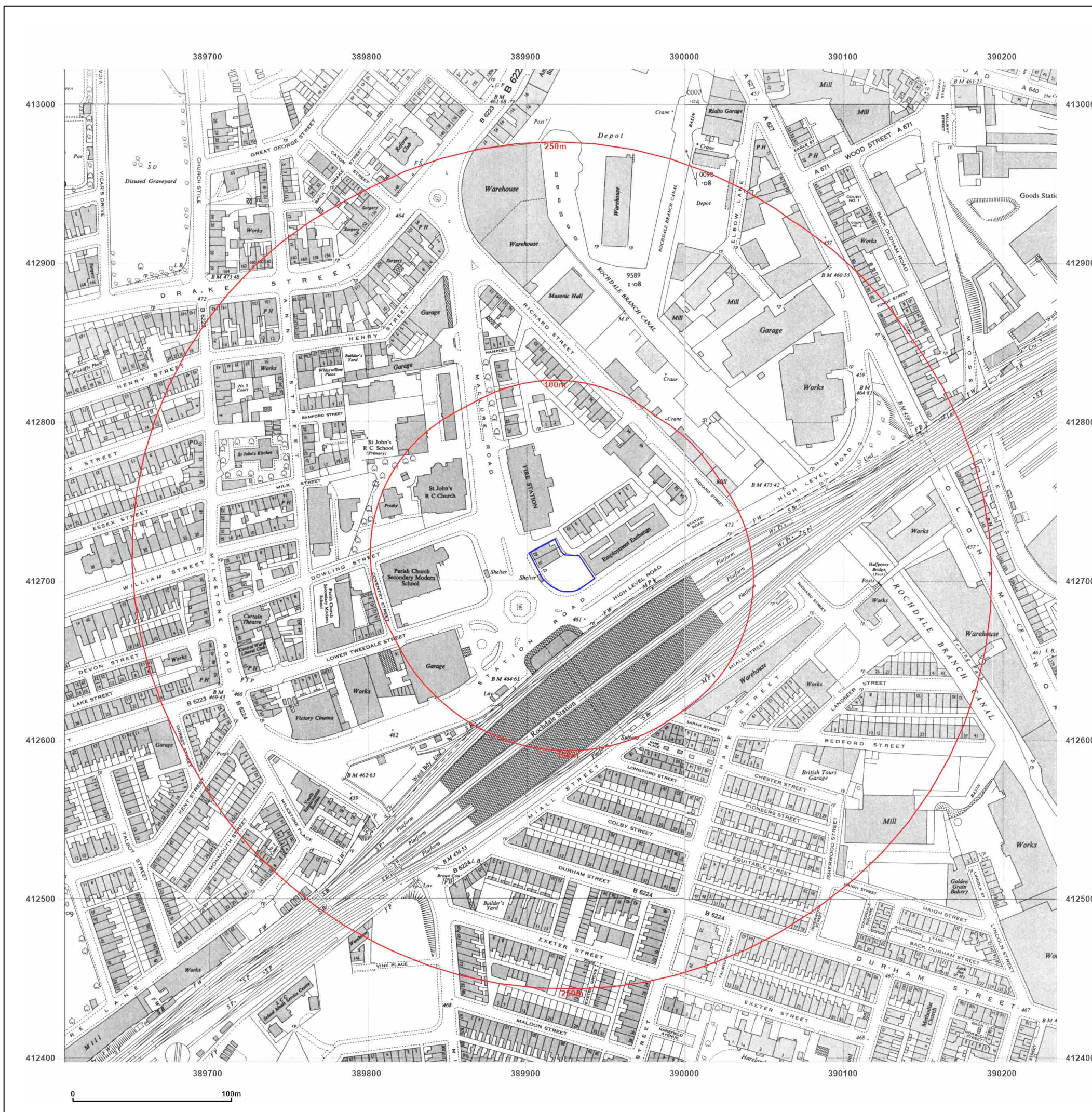


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Site Details:

Rochdale Corner Plot, Maclure Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1971-1976

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1957 Revised 1971 Edition N/A Copyright 1971 Levelled 1956		Surveyed N/A Revised N/A Edition N/A Copyright 1975 Levelled N/A
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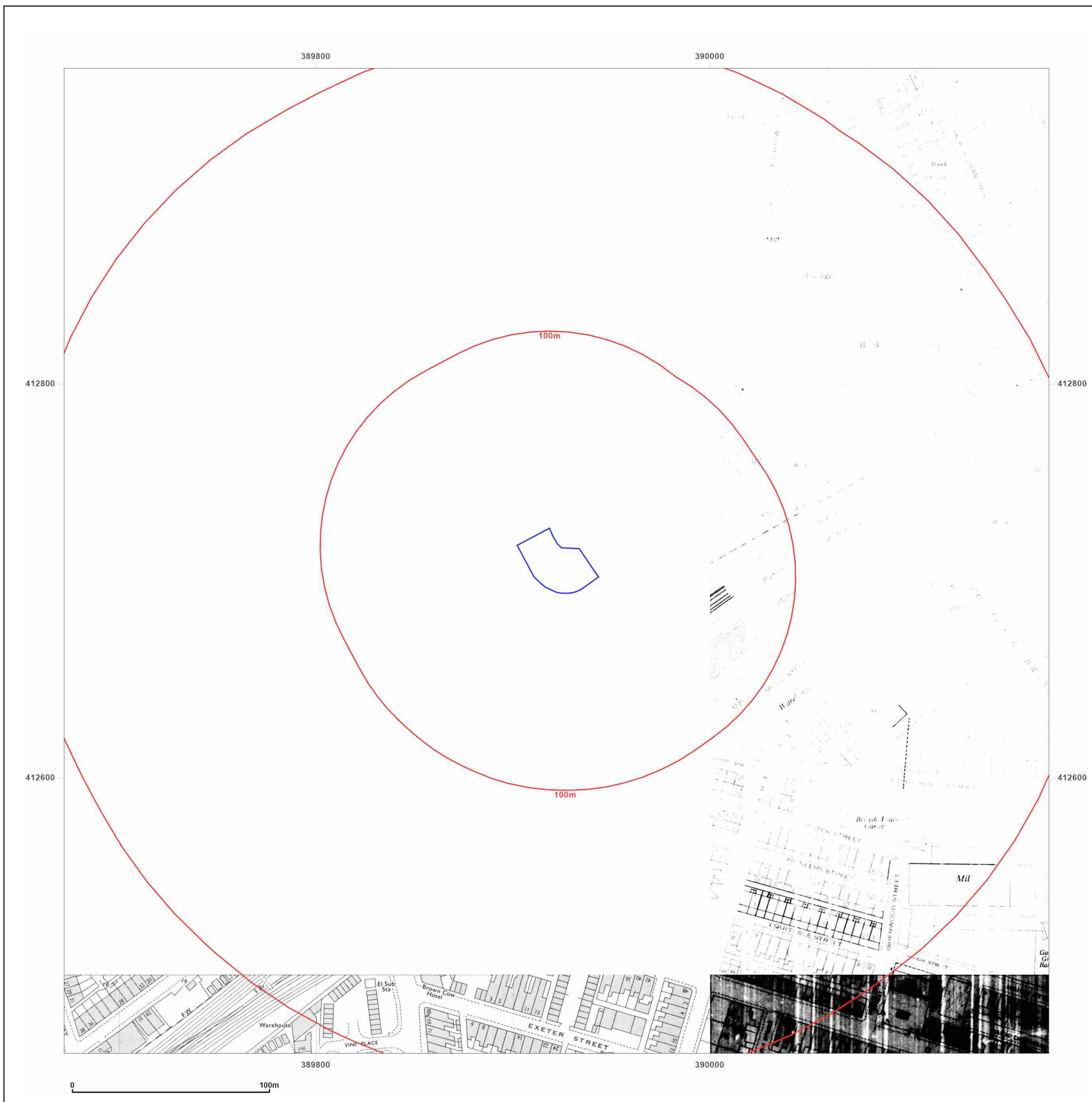


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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1975-1978

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
 Revised N/A
 Edition N/A
 Copyright 1978
 Levelled 1962

Surveyed N/A
 Revised N/A
 Edition N/A
 Copyright 1977
 Levelled 1956

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

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

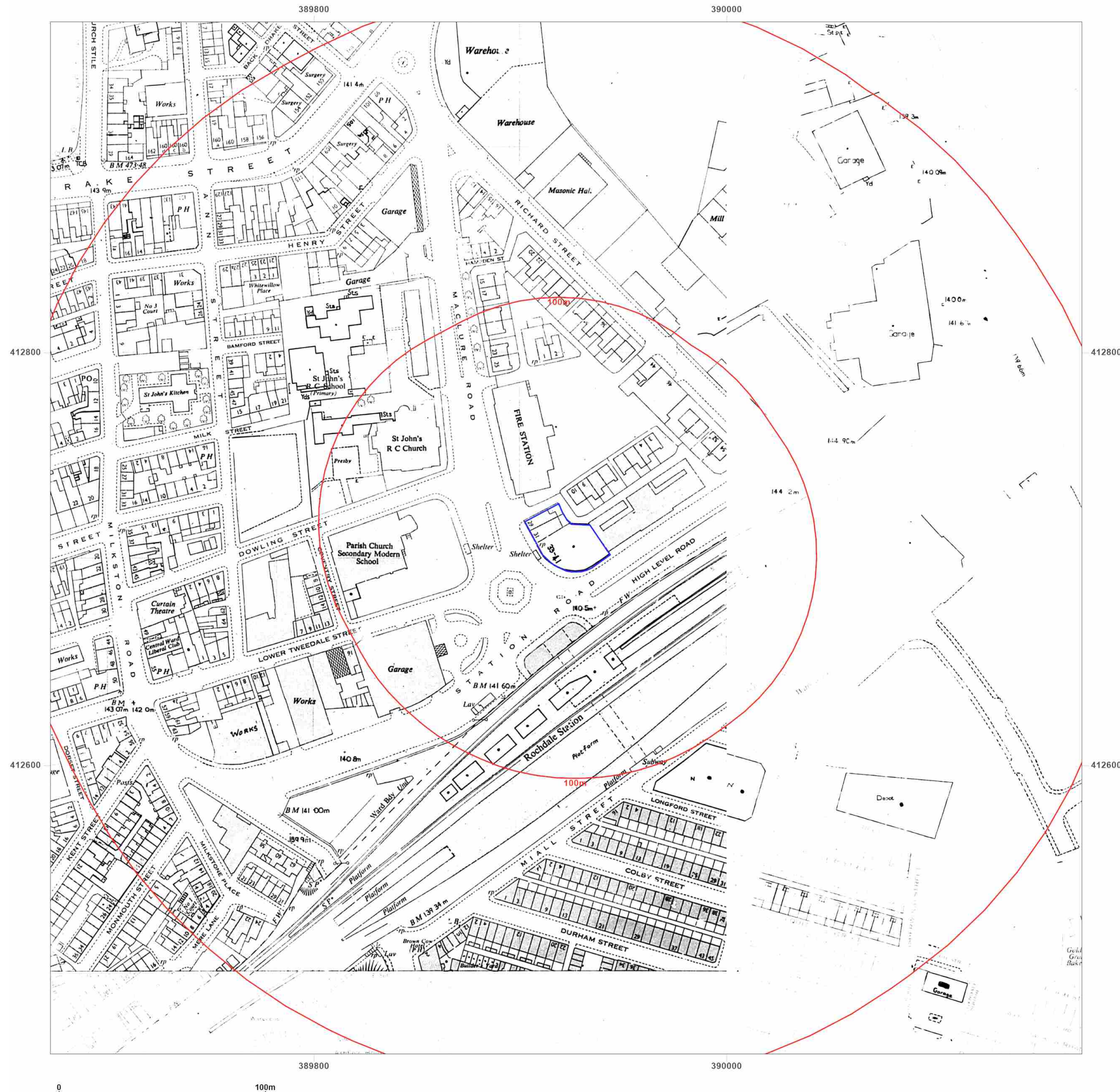


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Site Details:

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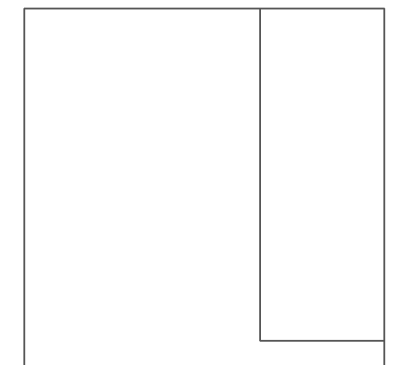
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Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1982

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1956
 Revised 1982
 Edition N/A
 Copyright 1982
 Levelled 1956

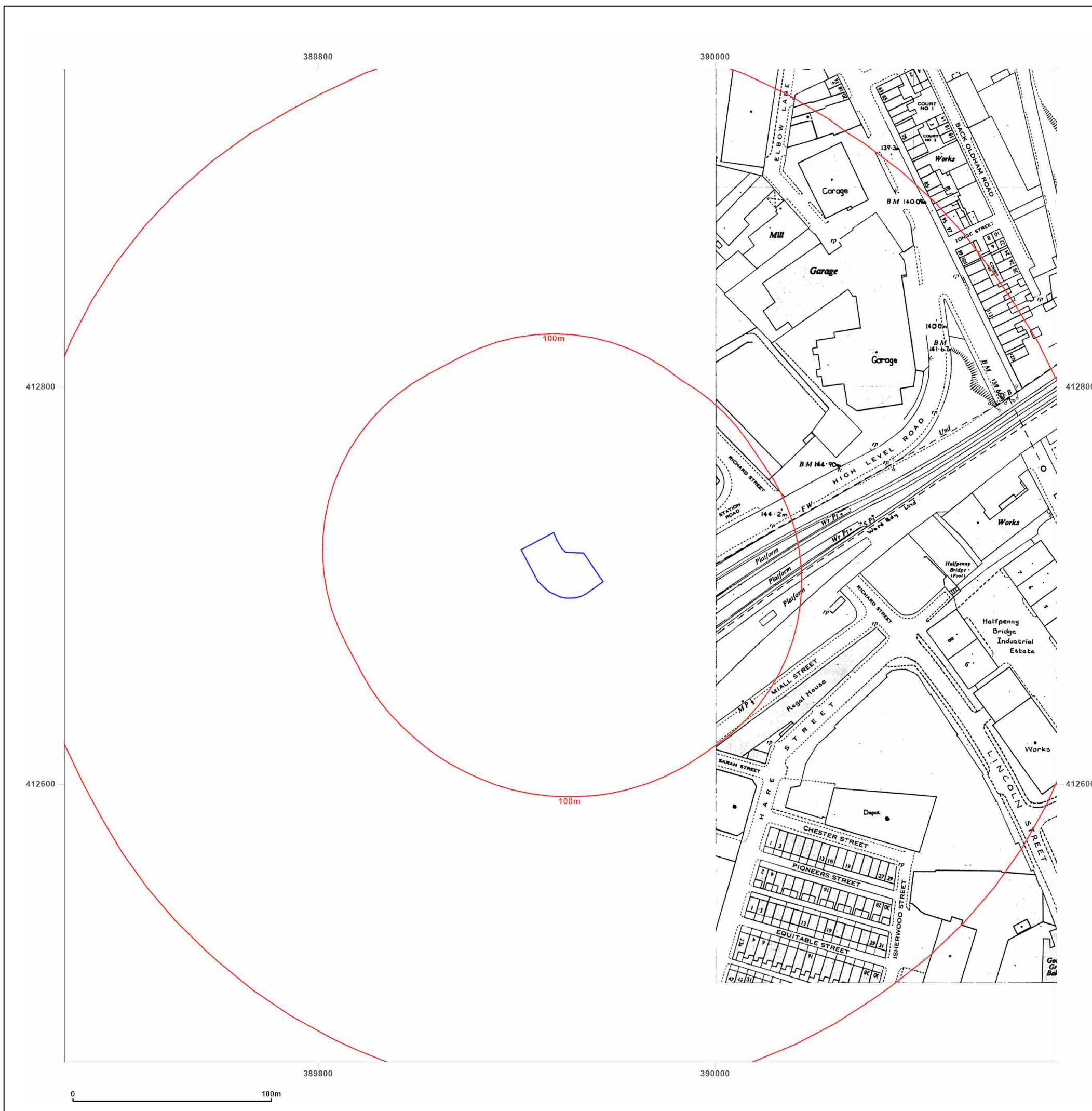


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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1982-1985

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1962
 Revised 1985
 Edition N/A
 Copyright 1985
 Levelled 1962

Surveyed N/A
 Revised N/A
 Edition N/A
 Copyright 1982
 Levelled 1956

Surveyed N/A
 Revised N/A
 Edition N/A
 Copyright 1984
 Levelled 1962

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 Revised N/A
 Edition N/A
 Copyright 1984
 Levelled 1956

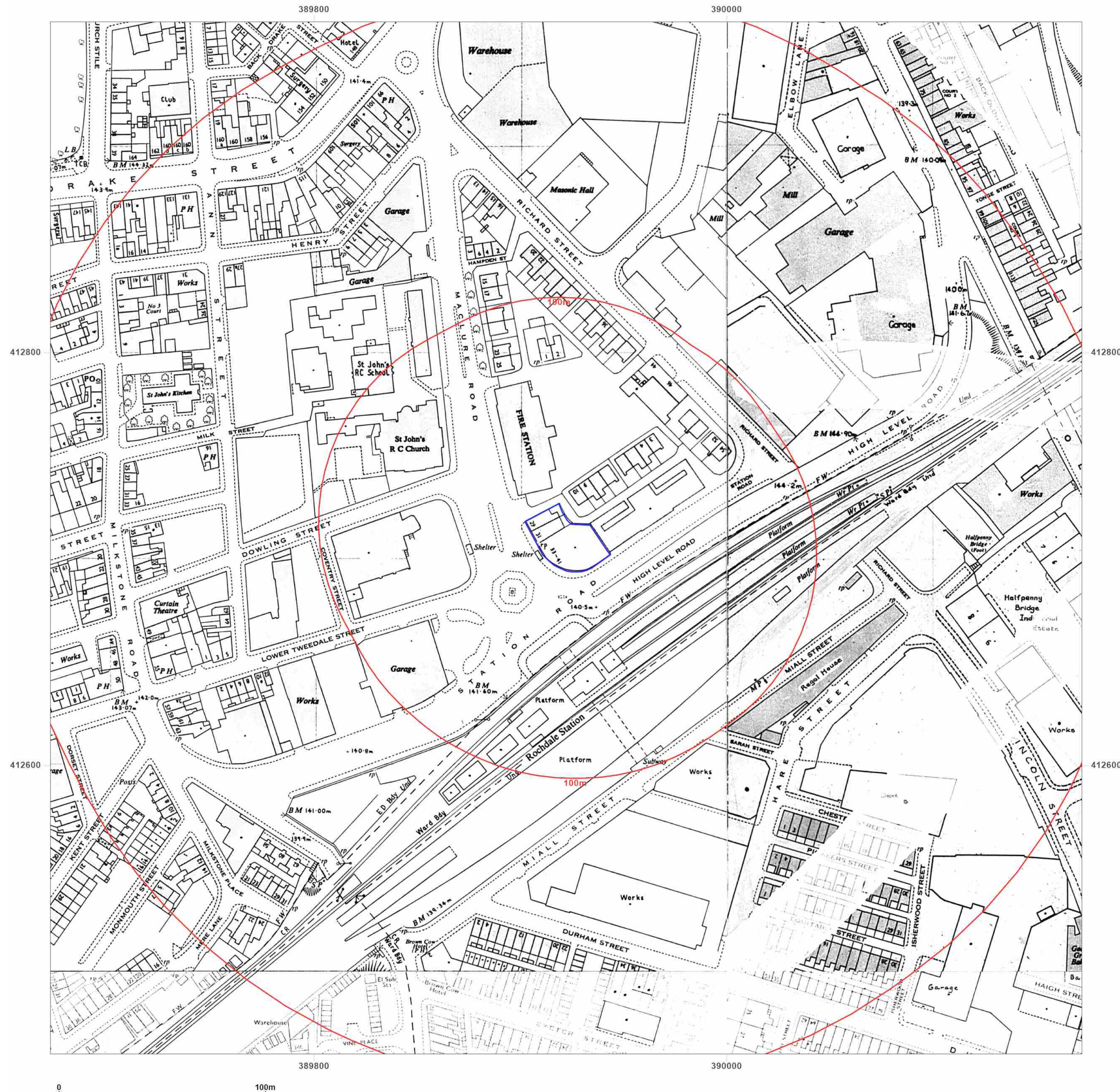


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Site Details:

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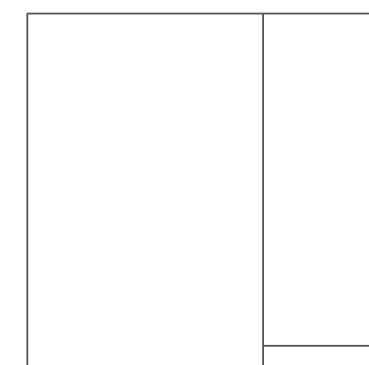
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Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1982-1987

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1956
 Revised 1982
 Edition N/A
 Copyright 1982
 Levelled 1956

Surveyed 1957
 Revised 1985
 Edition N/A
 Copyright 1987
 Levelled 1958

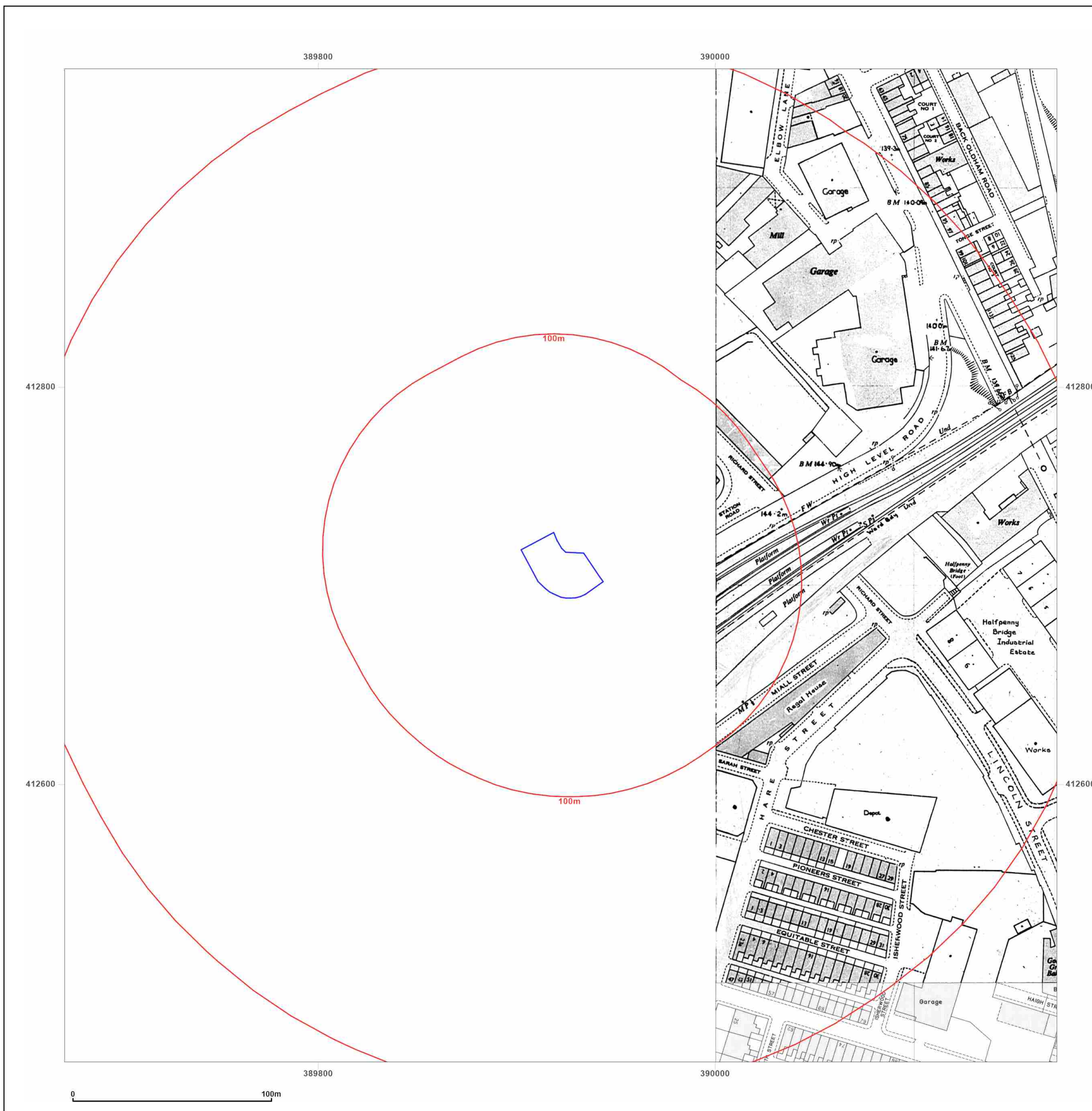


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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1985-1989

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1957
 Revised 1989
 Edition N/A
 Copyright 1989
 Levelled N/A

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

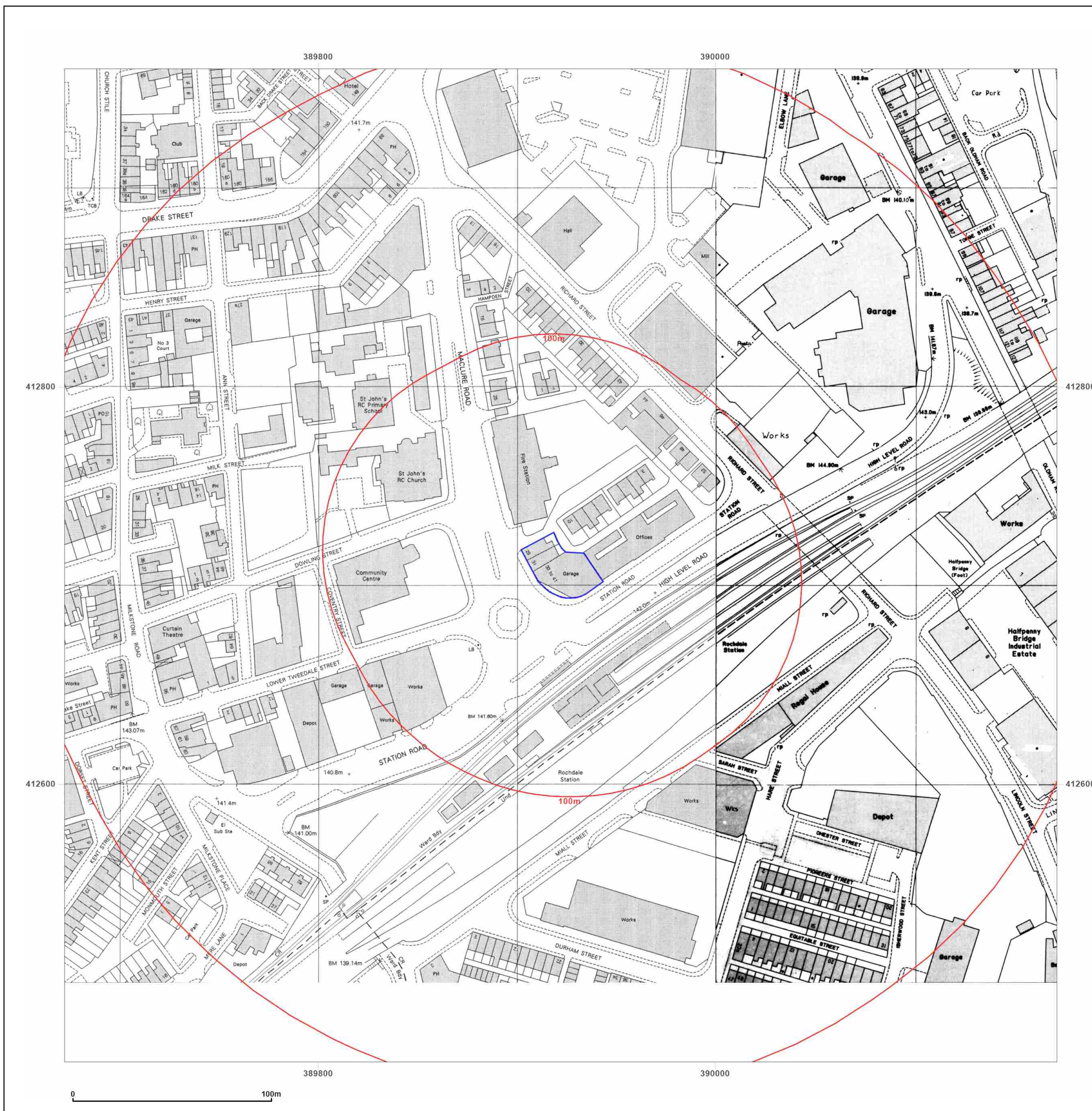


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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1985-1990

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1962
 Revised 1988
 Edition N/A
 Copyright 1988
 Levelled 1962

Surveyed 1957
 Revised 1984
 Edition N/A
 Copyright 1985
 Levelled 1956

Surveyed N/A
 Revised N/A
 Edition N/A
 Copyright 1990
 Levelled 1962

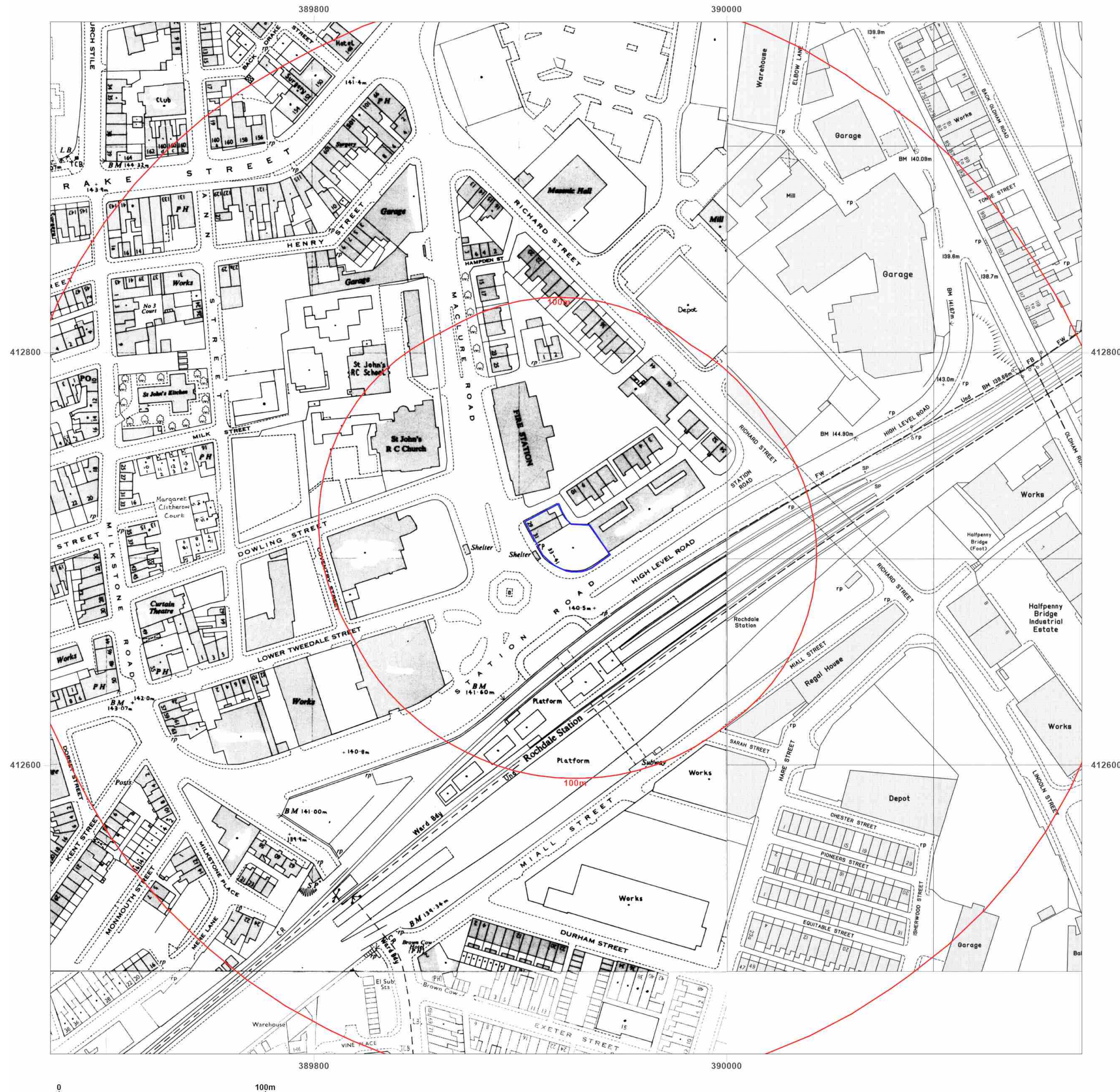


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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1988-1992

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed 1958
 Revised 1988
 Edition N/A
 Copyright 1988
 Levelled 1958

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

Surveyed 1957
 Revised 1985
 Edition N/A
 Copyright 1991
 Levelled 1956

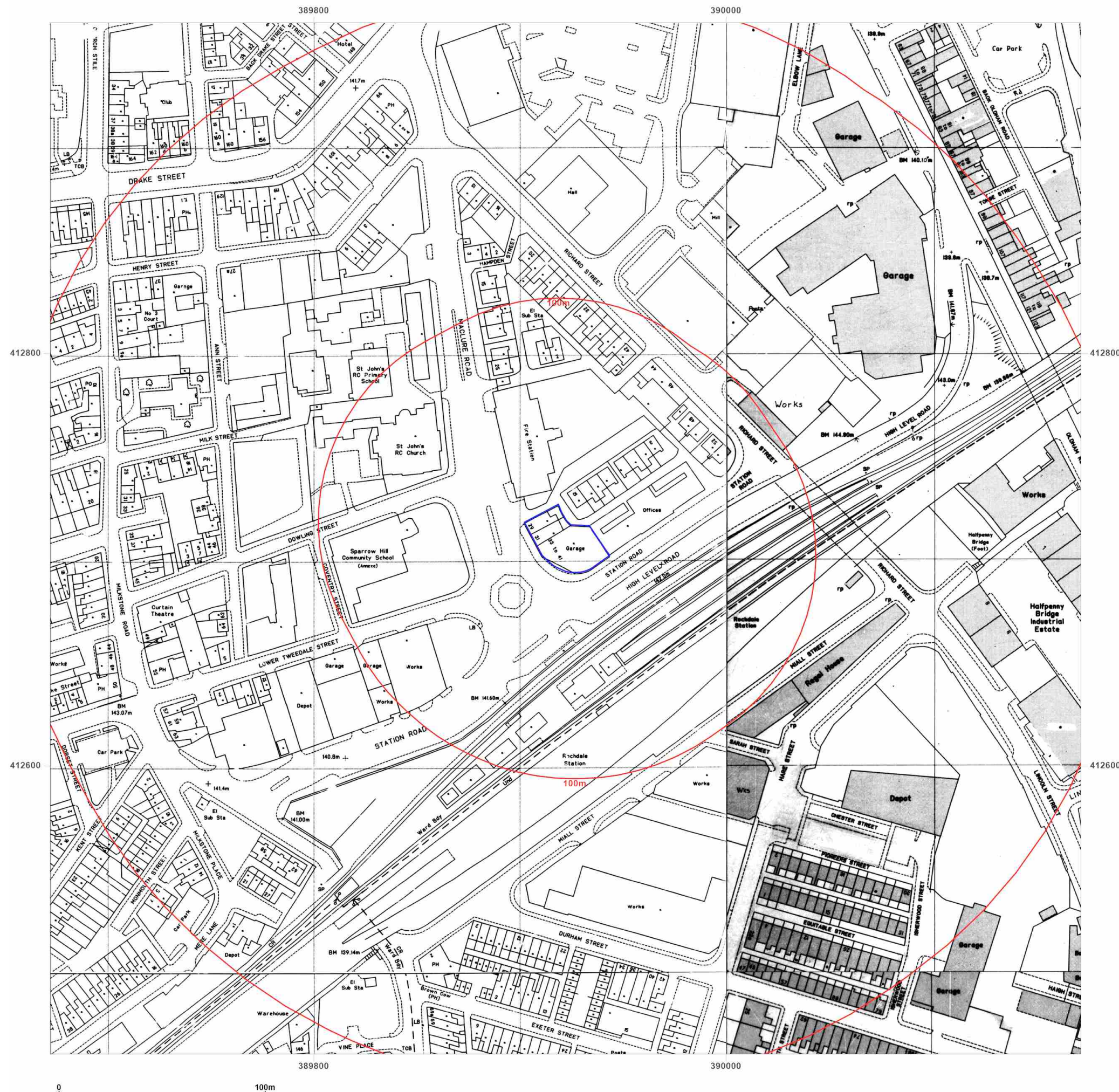


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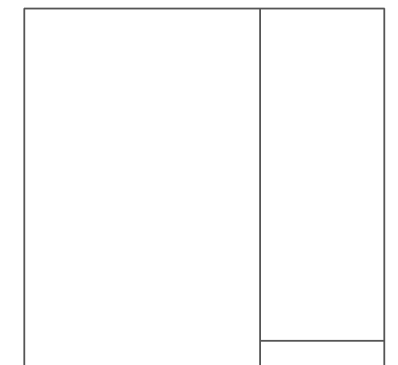
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Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1993

Scale: 1:1,250

Printed at: 1:2,000



Surveyed N/A
 Revised N/A
 Edition N/A
 Copyright 1993
 Levelled N/A

Surveyed N/A
 Revised N/A
 Edition N/A
 Copyright 1993
 Levelled N/A

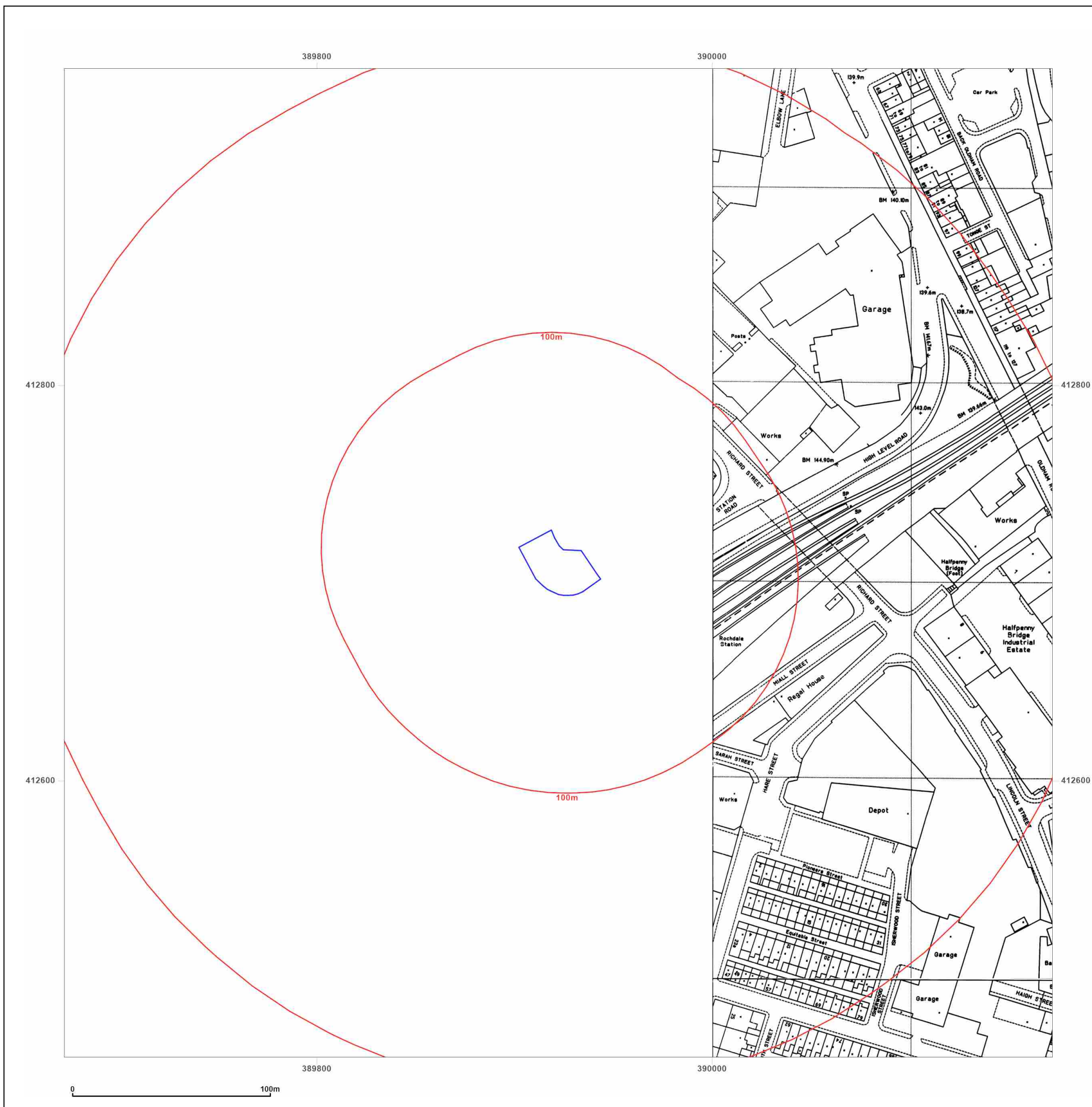


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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1992-1995

Scale: 1:1,250

Printed at: 1:2,000



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

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

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

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

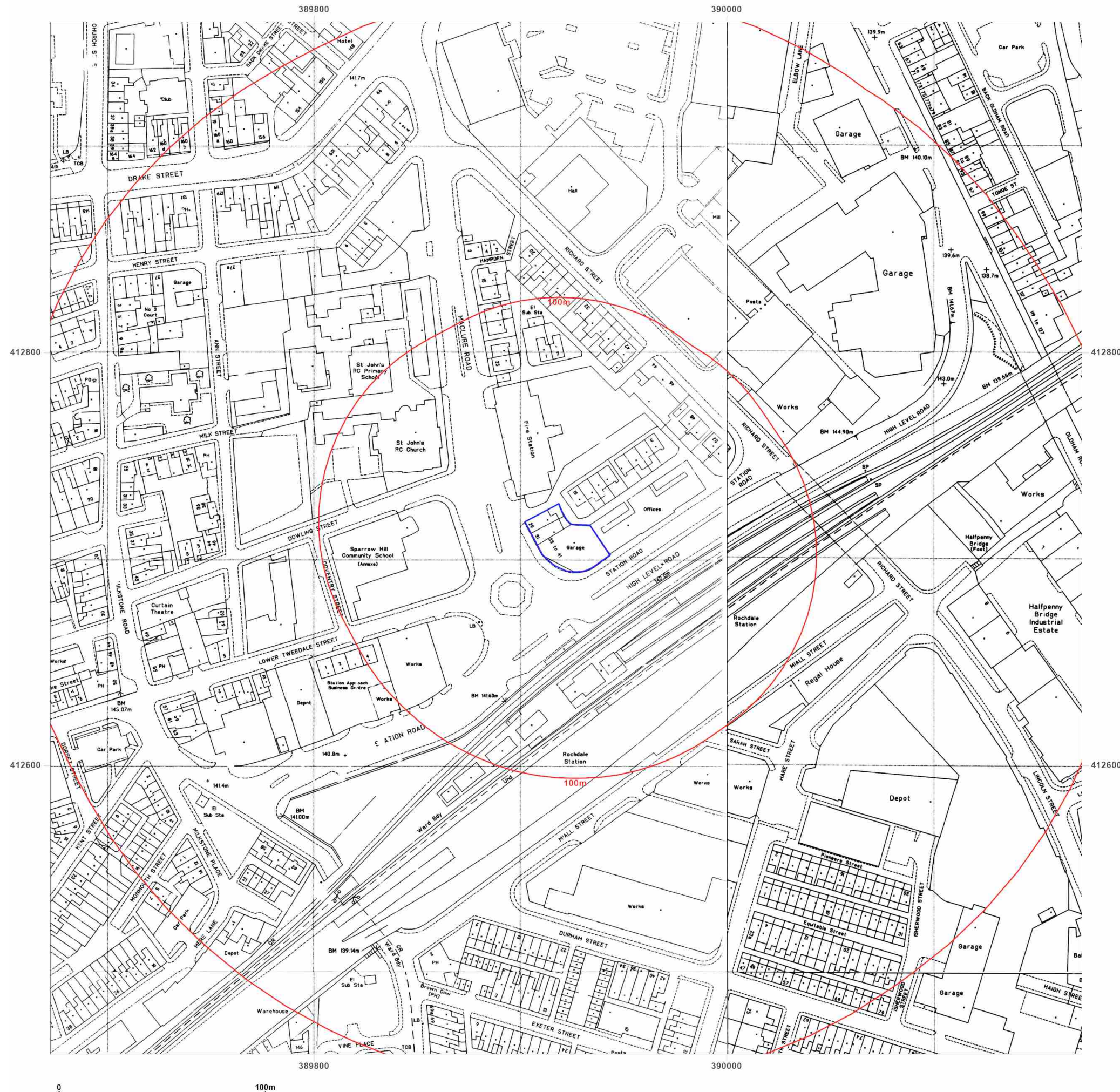


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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1993-1995

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed 1993
 Revised N/A
 Edition N/A
 Copyright 1993
 Levelled N/A

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

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 Revised N/A
 Edition N/A
 Copyright 1993
 Levelled N/A

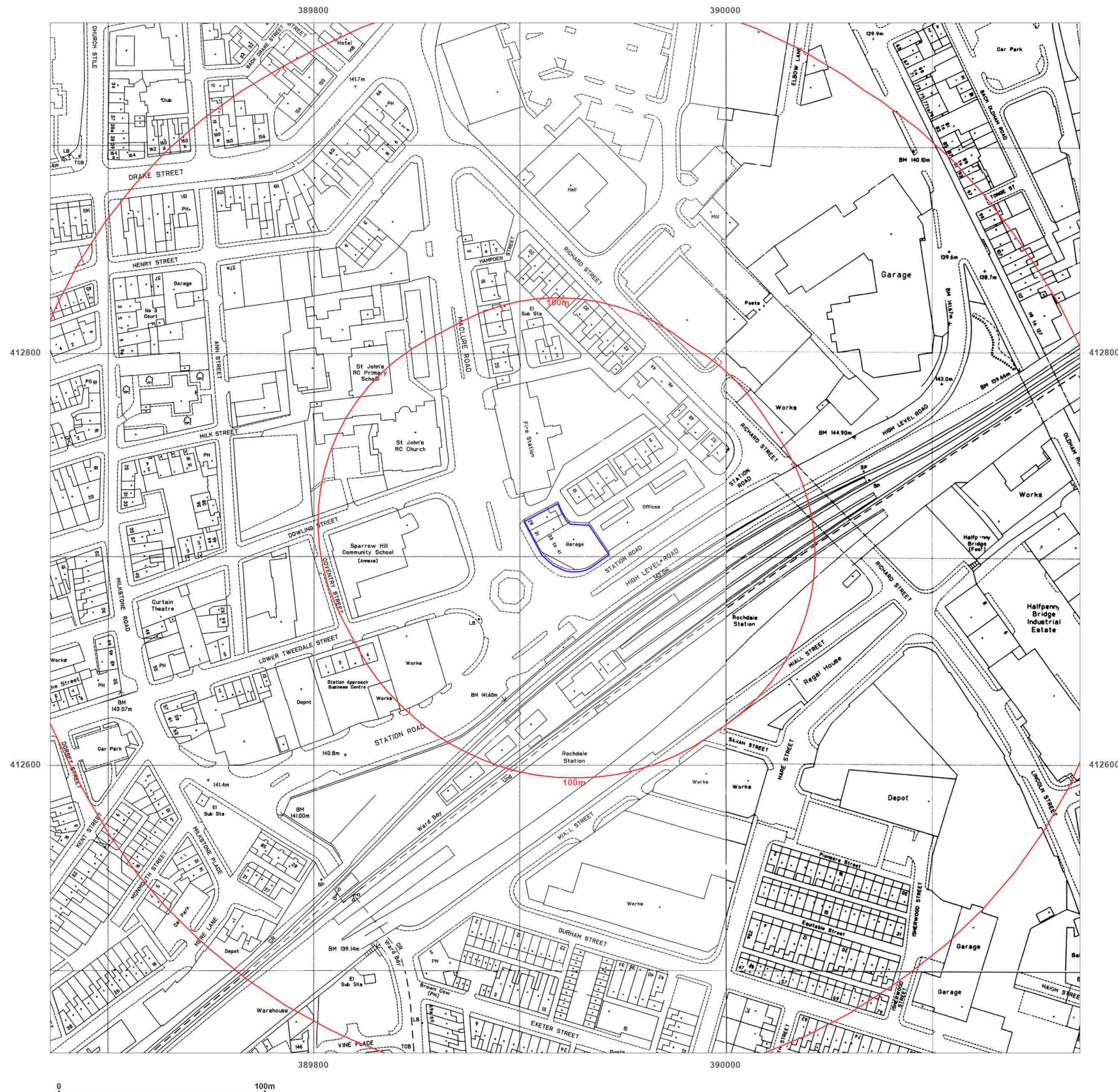


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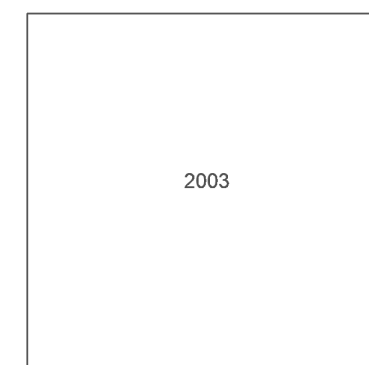
Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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Site Details:

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Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: County Series

Map date: 1851

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1847
Revised N/A
Edition 1851
Copyright N/A
Levelled N/A

Surveyed 1848
Revised N/A
Edition 1851
Copyright N/A
Levelled N/A



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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: County Series

Map date: 1908

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1908
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1908
Edition N/A
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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: County Series

Map date: 1928

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1928
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1928
Edition N/A
Copyright N/A
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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1848
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1848
Revised 1938
Edition N/A
Copyright N/A
Levelled N/A

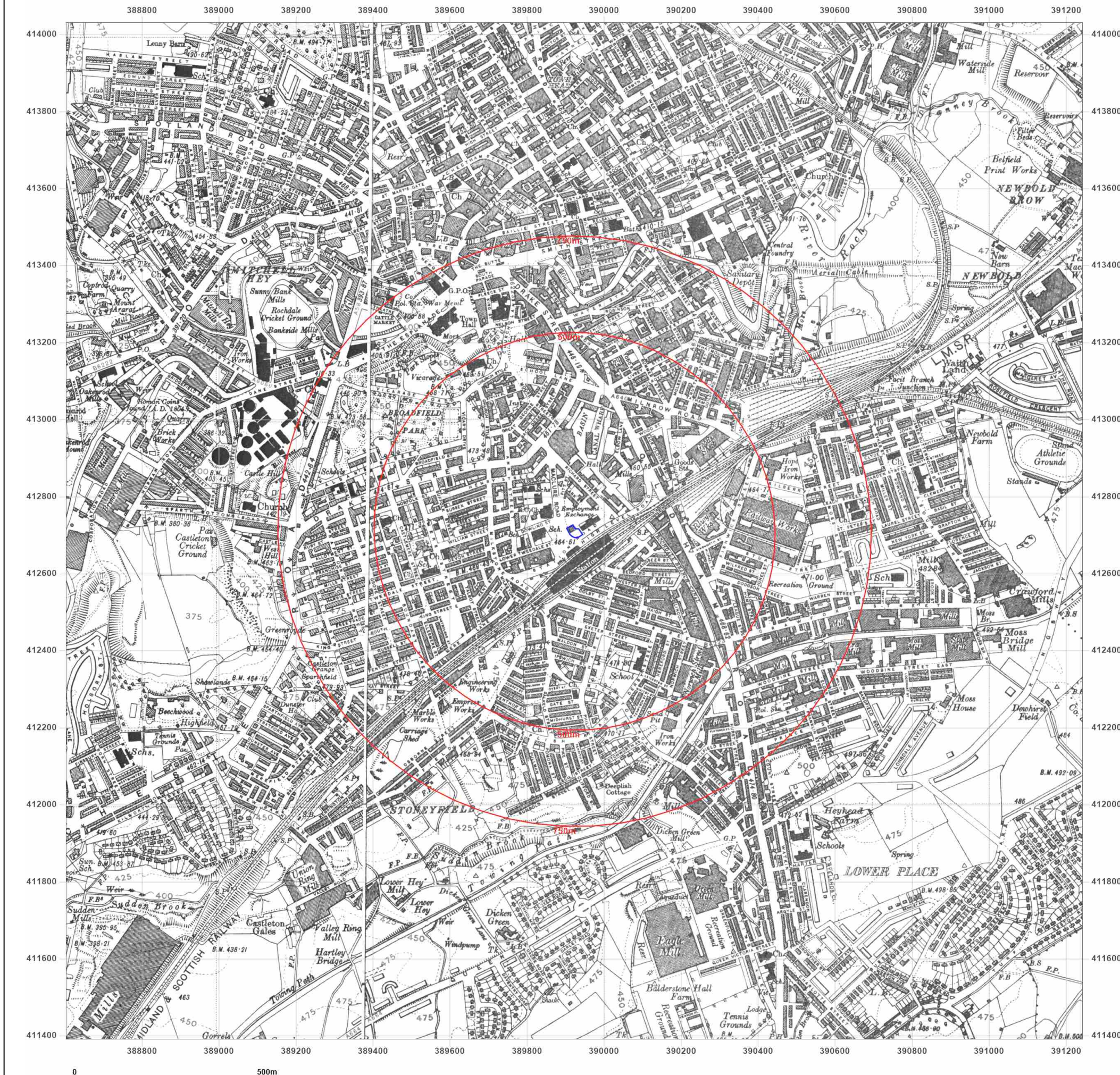


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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: Provisional

Map date: 1954-1956

Scale: 1:10,560

Printed at: 1:10,560



Surveyed N/A
Revised 1955
Edition 1956
Copyright N/A
Levelled N/A

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



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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: Provisional

Map date: 1967-1968

Scale: 1:10,560

Printed at: 1:10,560



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

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

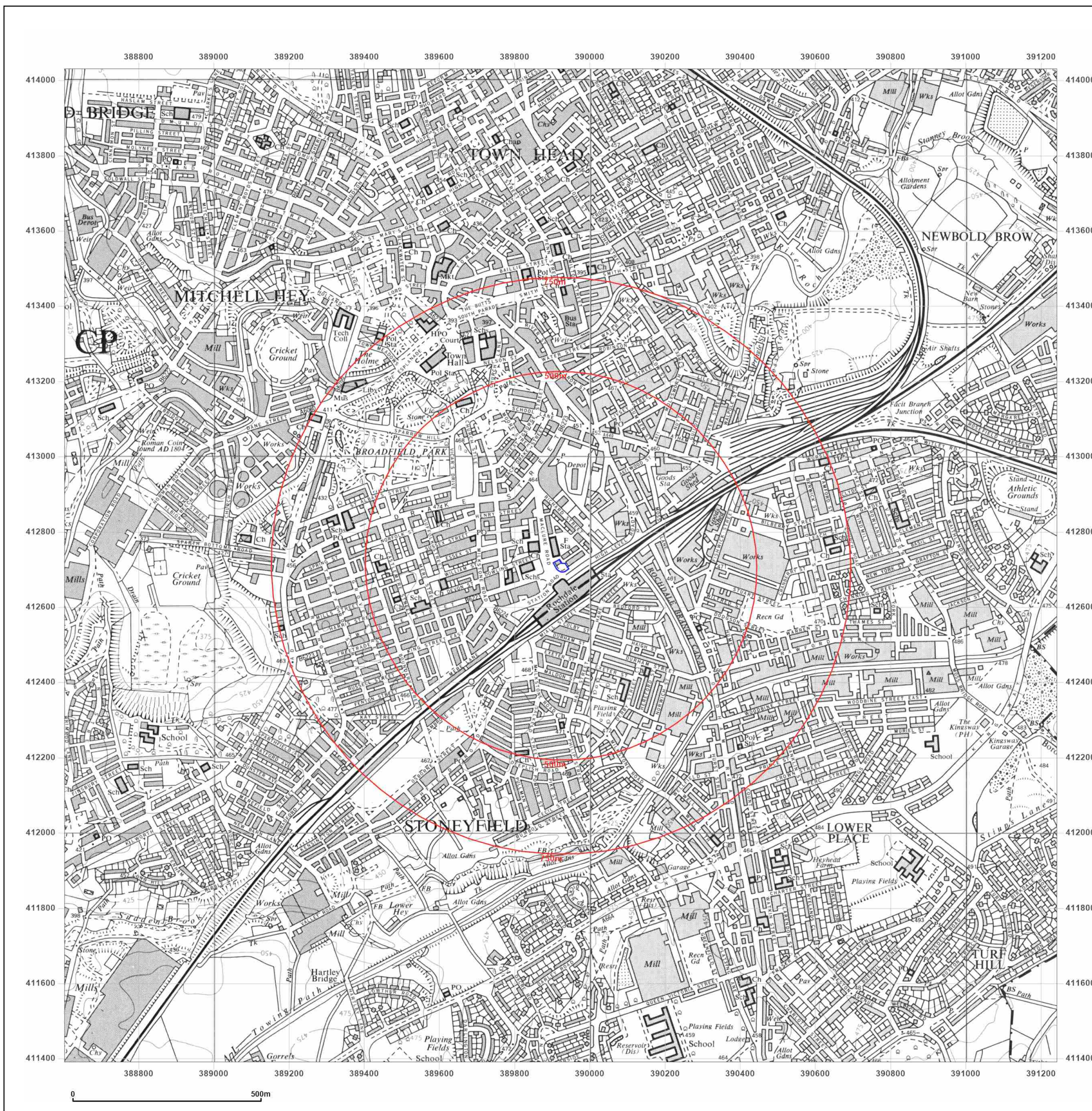


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Site Details:

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Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1975-1976

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1974
Revised 1975
Edition N/A
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Levelled N/A

Surveyed 1976
Revised 1976
Edition N/A
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Site Details:

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Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1987

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1984
Revised 1987
Edition N/A
Copyright N/A
Levelled N/A

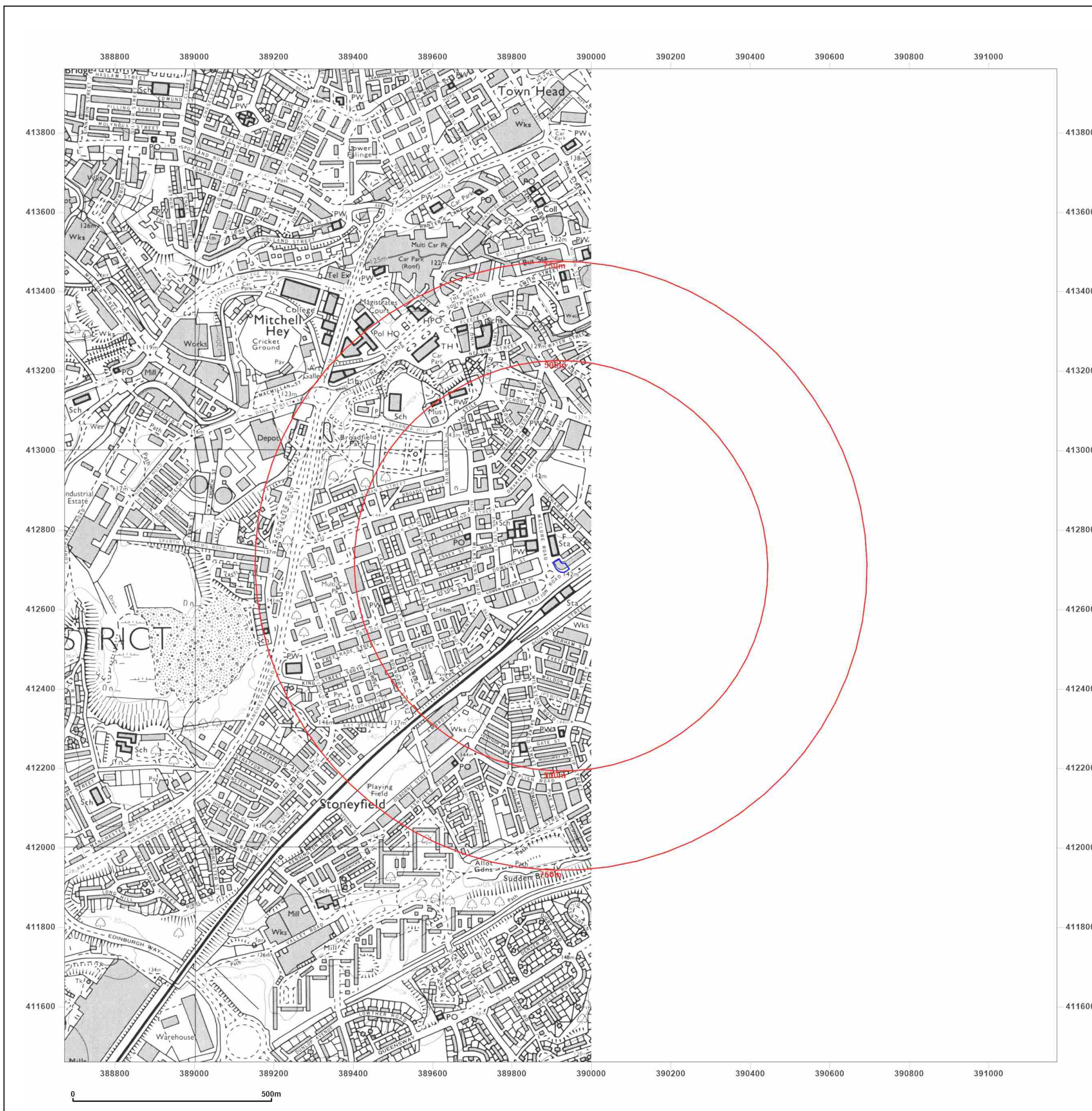


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Site Details:

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Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 1992

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1984
Revised 1992
Edition N/A
Copyright N/A
Levelled N/A

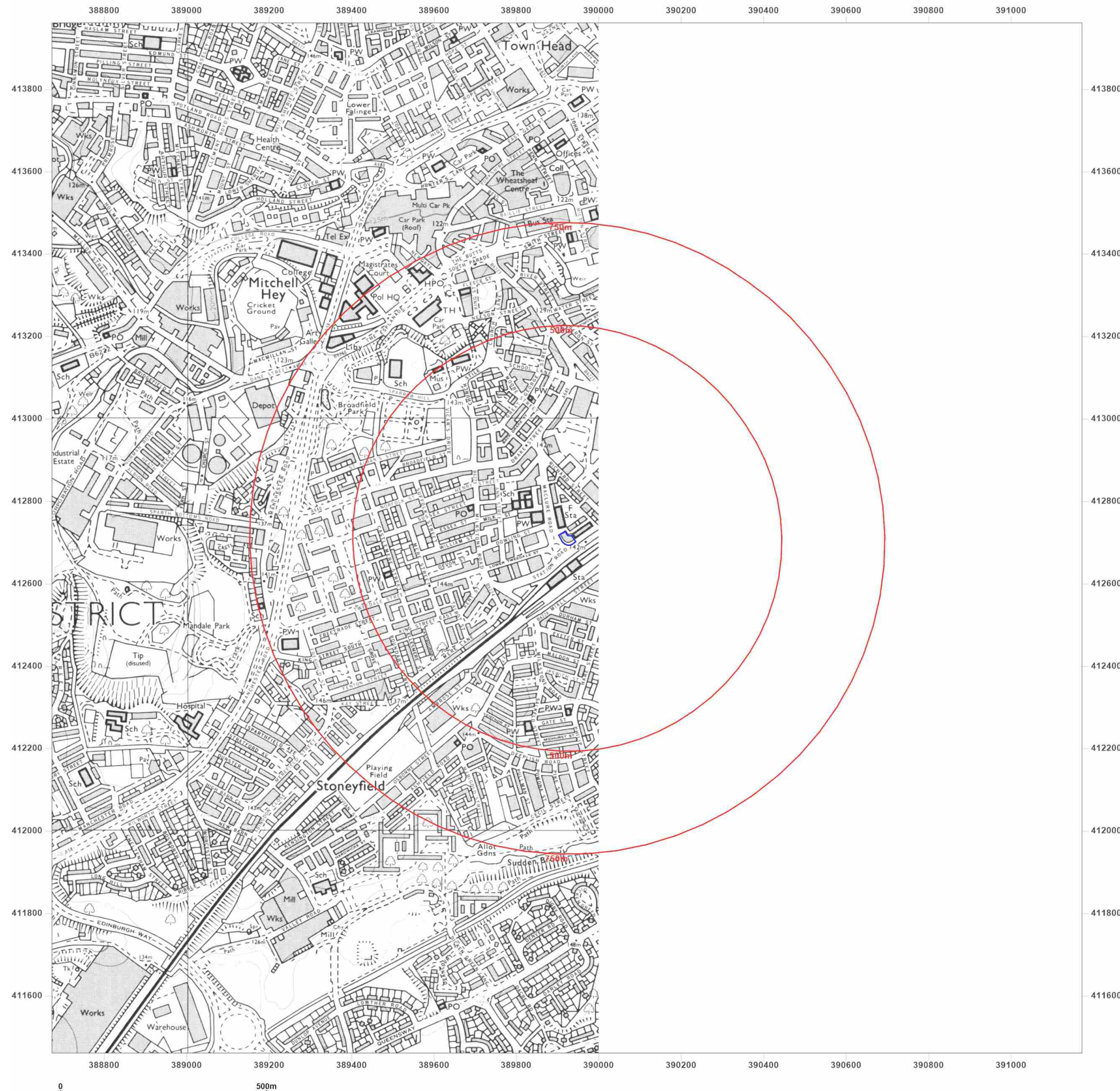


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Site Details:

Rochdale Corner Plot, Maclure
Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000



2001

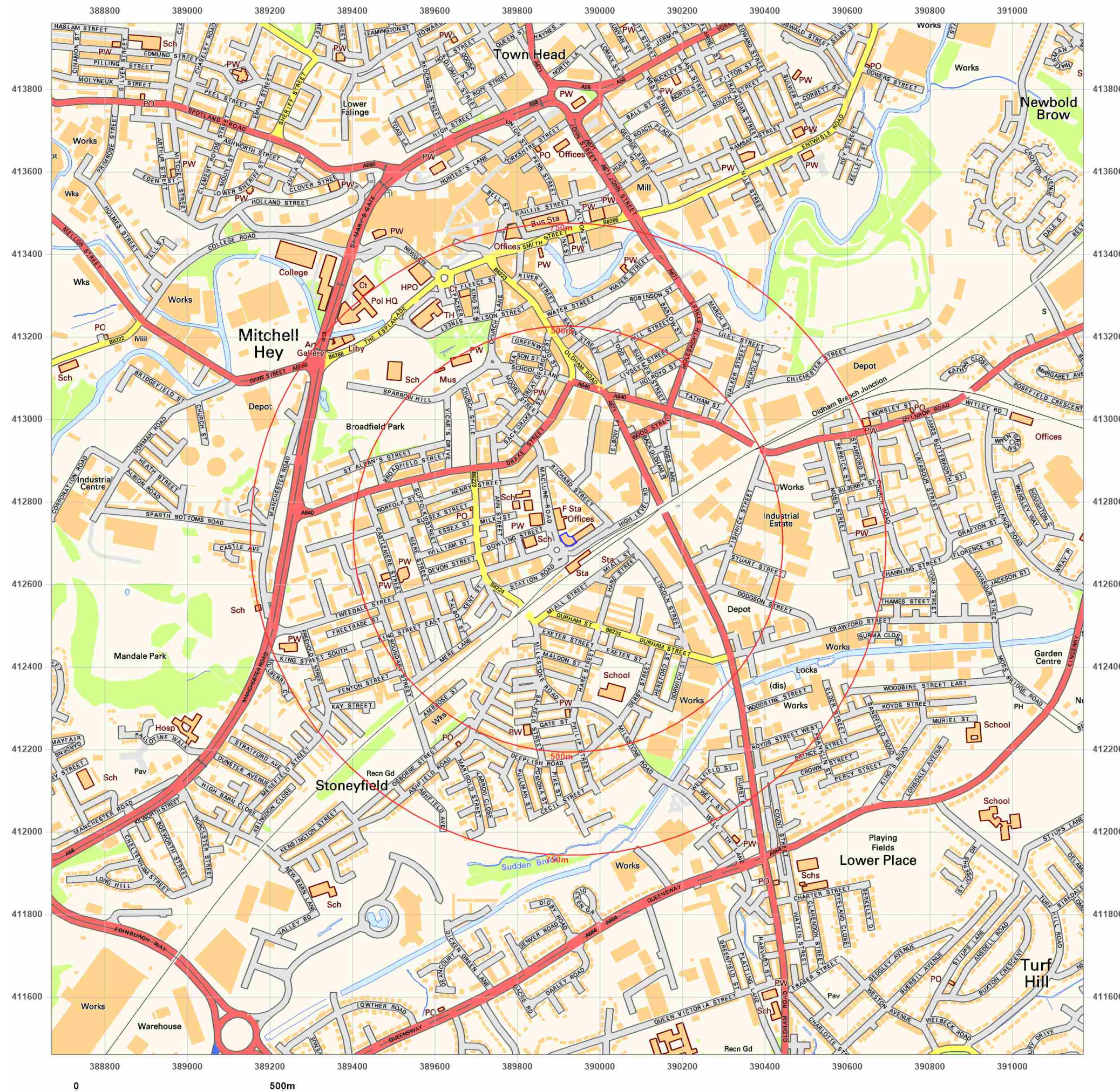


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Site Details:

Rochdale Corner Plot, Maclure Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000



2010

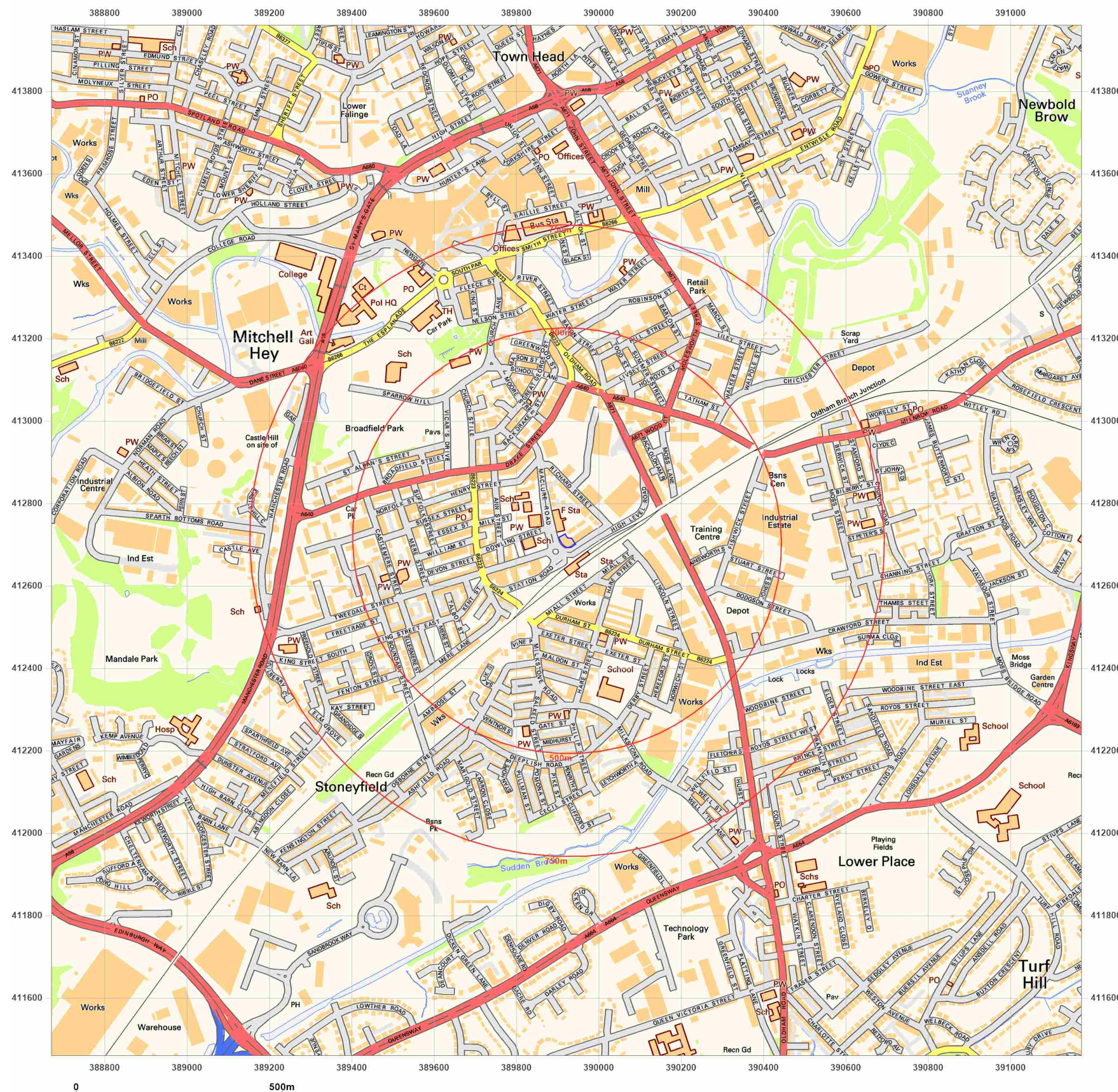


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Site Details:

Rochdale Corner Plot, Maclure Road, Rochdale, OL11 1DN

Client Ref: NX570
Report Ref: GS-8R1-FHM-INS-BJS
Grid Ref: 389922, 412710

Map Name: National Grid

Map date: 2023

Scale: 1:10,000

Printed at: 1:10,000



2023

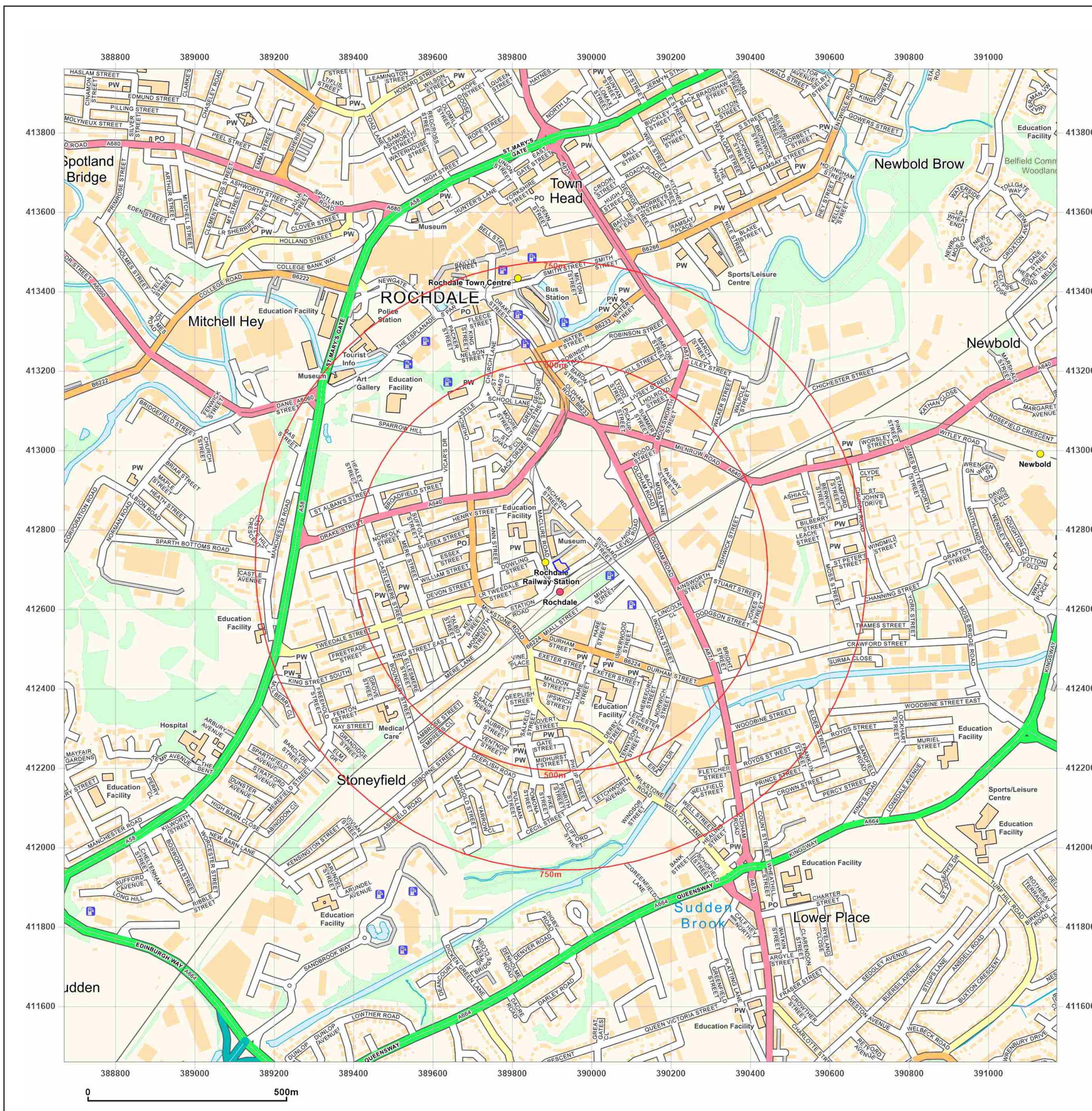


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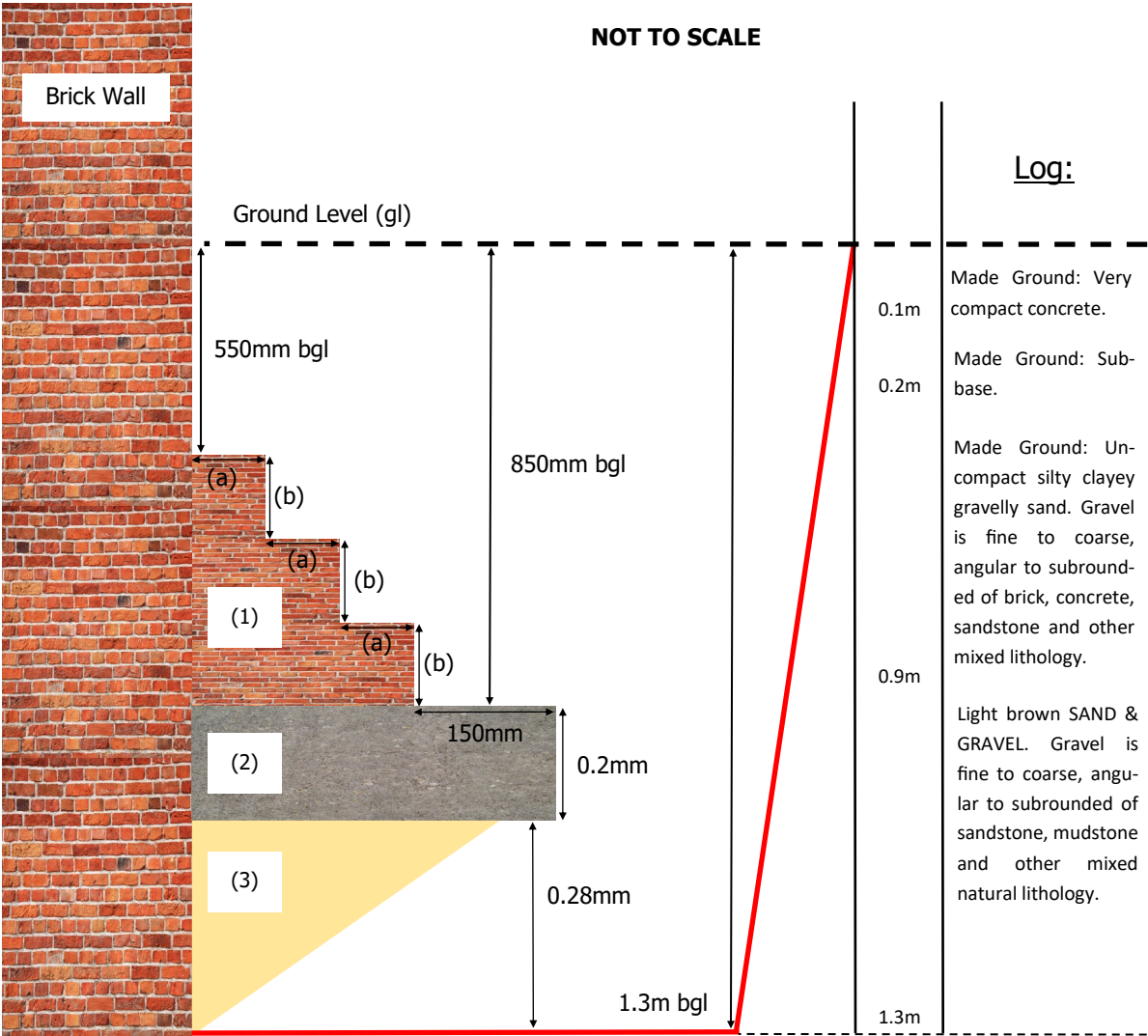


Appendix D - Exploratory Hole Logs

Cross Section

(1) Possible Brick Foundation (2) Possible Concrete Foundation (3) Sand and Gravel

Line of excavation (a) = 40mm (b) = 90mm



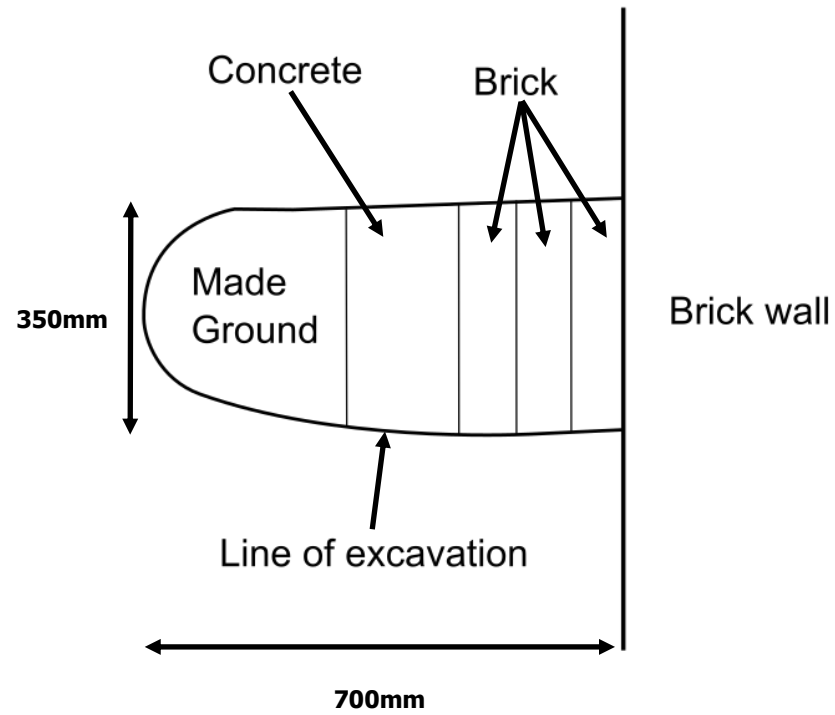
Ref: NX570 Figure 2 - Plate 1

Project:
Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN

Title:
Foundation Section - Cross Section

NOT TO SCALE

Plan View



Ref: NX570 Figure 2 - Plate 2

Project:

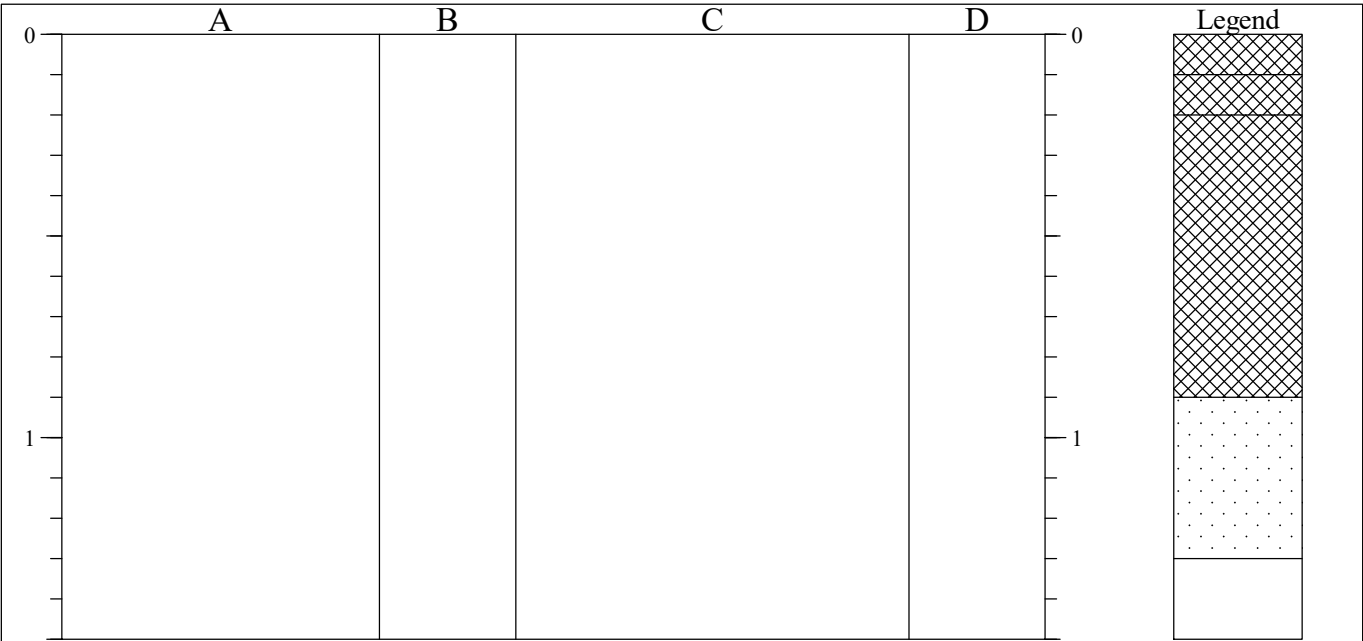
Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN

Title:

Foundation Section - Plan View

TRIAL PIT LOG

Project Rochdale Corner Plot				TRIAL PIT No HP01
Job No NX570	Date 14-08-24	Ground Level (m)	Co-Ordinates ()	
Contractor Taylor Drilling Services				Sheet 1 of 1



STRATA			SAMPLES & TESTS		
Depth	No	DESCRIPTION	Depth	No	Remarks/Tests
0.00-0.10		MADE GROUND: Very compact grey fine to coarse slightly sandy angular gravel of concrete.			
0.10-0.20		MADE GROUND: Compact grey ashy fine to coarse sandy gravel. Gravel is fine to coarse, angular to subrounded of limestone and other mixed lithology (Subbase).			
0.20-0.90		MADE GROUND: Uncompact fine to coarse slightly silty clayey gravelly sand. Gravel is fine to coarse, angular to subrounded of brick, sandstone, concrete, limestone and other mixed lithology. 0.55 - 0.85 ...possible brick foundation present within southern face of excavation. 0.85 - 1.05 ...possible concrete foundation present within southern face of excavation.			
0.90-1.30		Loose to medium dense dark brown fine to coarse slightly clayey SAND and GRAVEL. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, coal and other mixed lithology.			
1.30		...excavation ended at 1.30m bgl.			

Shoring/Support: Stability: Good			GENERAL REMARKS
			No visual or olfactory evidence of hydrocarbon or solvent contamination. No groundwater observed during the excavation.

All dimensions in metres Scale 1:18.75	Client Booth King	Method/ Plant Used Manually excavated	Logged By MT
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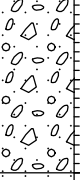
AGS3 UK TP NX570 ROCHDALE CORNER PLOT.GPJ AGS 3_1.GDT 27/8/24

Project Rochdale Corner Plot				BOREHOLE No CP01
Job No NX570	Date 02-09-24	Ground Level (m)	Co-Ordinates ()	
Contractor Taylor Drilling Services				Sheet 1 of 2

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill																																																																																																																		
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION																																																																																																																				
1.20-1.65	S D	18	Water 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 <tr><td></td><td></td><td></td><td></td><td></td><td></td><td>0.05</td><td>MADE GROUND: Sandstone paving slab.</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>(0.95)</td><td>MADE GROUND: Uncompact dark brown/black slightly clayey sand with rare gravel. Gravel is fine to coarse, angular to sub-rounded of sandstone, brick, concrete, mudstone and other mixed lithology. Very rare cobbles of brick.</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>1.00</td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>(1.50)</td><td>Medium dense light to mid brown SAND with rare gravel. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone and other mixed lithology.</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>2.50</td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>(2.50)</td><td>Medium dense, brown fine to coarse slightly silty slightly clayey SAND AND GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone and other mixed lithology. Very rare gravel of coal.</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>5.00</td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>5.45</td><td>Firm, locally stiff, brown slightly silty slightly sandy CLAY with rare gravel. Gravel is fine to coarse, sub-angular to sub-rounded of mudstone, sandstone and other mixed lithology.</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>(4.95)</td><td>Loose brown fine to coarse slightly silty slightly clayey SAND AND GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone and other mixed lithology. Very rare gravel of coal. Occasional pockets of firm sandy CLAY. 5.45 - 10.40 ...gravel generally becomes coarser with depth.</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>10.40</td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>11.00</td><td>Stiff, locally very stiff, brown slightly silty slightly sandy CLAY with rare gravel. Gravel is fine to coarse, sub-angular to sub-rounded of mudstone and other mixed lithology.</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Medium dense brown fine to coarse slightly silty slightly clayey SAND AND GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone and other mixed lithology. Very rare gravel of coal. Occasional pockets of firm to stiff sandy CLAY.</td><td></td><td></td></tr>							0.05	MADE GROUND: Sandstone paving slab.									(0.95)	MADE GROUND: Uncompact dark brown/black slightly clayey sand with rare gravel. Gravel is fine to coarse, angular to sub-rounded of sandstone, brick, concrete, mudstone and other mixed lithology. Very rare cobbles of brick.									1.00										(1.50)	Medium dense light to mid brown SAND with rare gravel. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone and other mixed lithology.									2.50										(2.50)	Medium dense, brown fine to coarse slightly silty slightly clayey SAND AND GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone and other mixed lithology. Very rare gravel of coal.									5.00										5.45	Firm, locally stiff, brown slightly silty slightly sandy CLAY with rare gravel. Gravel is fine to coarse, sub-angular to sub-rounded of mudstone, sandstone and other mixed lithology.									(4.95)	Loose brown fine to coarse slightly silty slightly clayey SAND AND GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone and other mixed lithology. Very rare gravel of coal. Occasional pockets of firm sandy CLAY. 5.45 - 10.40 ...gravel generally becomes coarser with depth.									10.40										11.00	Stiff, locally very stiff, brown slightly silty slightly sandy CLAY with rare gravel. Gravel is fine to coarse, sub-angular to sub-rounded of mudstone and other mixed lithology.										Medium dense brown fine to coarse slightly silty slightly clayey SAND AND GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone and other mixed lithology. Very rare gravel of coal. Occasional pockets of firm to stiff sandy CLAY.		
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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	
									1.2	25	No visual or olfactory evidence of hydrocarbon or solvent contamination. Groundwater observed at 5.8m bgl.
All dimensions in metres Scale 1:81.25			Client Booth King			Method/ Plant Used Dando			Logged By MT		

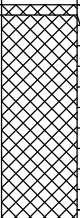
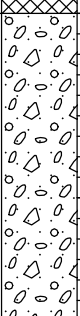
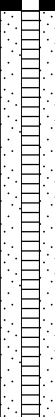
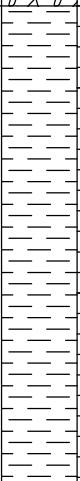
Project Rochdale Corner Plot				BOREHOLE No CP01	
Job No NX570	Date 02-09-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Services				Sheet 2 of 2	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
13.50-13.95	C B D	12				(4.00)	Medium dense brown fine to coarse slightly silty slightly clayey SAND AND GRAVEL. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone and other mixed lithology. Very rare gravel of coal. Occasional pockets of firm to stiff sandy CLAY. <i>(continued)</i>		
15.00-15.45	S D	28				15.00	Medium dense brown/grey fine clayey SAND (sandy SILT) with rare gravel. Gravel is fine to coarse, sub-angular to sub-rounded of sandstone, mudstone and other mixed lithology. Occasional pockets of firm/firm to stiff sandy CLAY. 15.00 - 25.00 ...reduced to 6" casing.		
16.50-16.95	S D	13							
18.00-18.45	S B	21							
19.50-19.95	S B	22				(10.45)			
21.00-21.45	S D	34					21.00 ...becoming dense.		
22.50-22.95	S	36							
24.00-24.45	S D	35							
25.00-25.45	S B D	35				25.45	...borehole ended at 25.45m bgl.		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											No visual or olfactory evidence of hydrocarbon or solvent contamination. Groundwater observed at 5.8m bgl.
All dimensions in metres Scale 1:81.25			Client Booth King			Method/ Plant Used Dando			Logged By MT		

AGS3 UK BH NX570 ROCHDALE CORNER PLOT GPJ AGS 3 1.GDT 4/9/24

Project Rochdale Corner Plot				BOREHOLE No WS01	
Job No NX570	Date 15-08-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Services				Sheet	1 of 1

SAMPLES & TESTS			Water	STRATA			Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)		
0.50	ES	13			0.05	MADE GROUND: Sandstone paving flag.		
1.00-2.00	CPT B				(1.05)	MADE GROUND: Uncompact black fine to coarse slightly clayey sand with rare gravel. Gravel is fine to coarse, angular to subrounded of brick, sandstone, and other mixed lithology.		
1.50	ES				1.10			
2.00	SPT D	16			(1.50)	Loose to medium dense brown fine to coarse slightly clayey SAND AND GRAVEL. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, and other mixed lithology.		
2.50	ES				2.60			
3.00-4.00	S B				(2.40)			
4.00	SPT	21			5.00	Loose to medium dense light brown fine to coarse slightly clayey SAND with very rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, and other mixed lithology.		
5.00	SPT				25			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											No visual or olfactory evidence of hydrocarbon or solvent contamination. Groundwater observed at 3.0m bgl during drilling, and 2.53m after drilling.

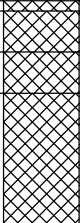
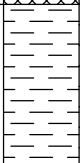
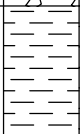
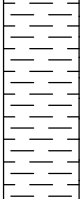
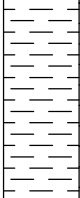
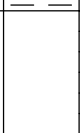
All dimensions in metres Scale 1:36.875	Client Booth King	Method/ Plant Used Tracked Archway Dart	Logged By MT
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Project Rochdale Corner Plot				BOREHOLE No WS02	
Job No NX570	Date 15-08-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Services				Sheet	1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick- ness)	DESCRIPTION		
0.50	ES	10			0.10	MADE GROUND: Very compact grey fine to coarse slightly sandy angular gravel of concrete. MADE GROUND: Compact grey fine to coarse ashy sandy gravel. Gravel is fine to coarse, angular to subrounded of limestone and other mixed lithology (Subbase). MADE GROUND: Uncompact black fine to coarse slightly clayey sand with rare gravel. Gravel is fine to coarse, angular to subrounded of brick, sandstone and other mixed lithology.			
					0.25				
					(1.20)				
1.00	SPT D	10			1.45				
1.50	ES					Medium dense brown fine to coarse slightly clayey SAND.			
2.00-3.00	B								
2.00	SPT D	38							
2.50	ES				(2.10)				
3.00	SPT D	13			3.55				
4.00-5.00	B					Soft to firm brown CLAY with rare pockets of fine to coarse SAND.			
4.00	SPT D	7			(1.45)				
					5.00				
5.00	SPT D	19				...borehole ended at 5.00m bgl.			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											No visual or olfactory evidence of hydrocarbon or solvent contamination. Groundwater observed at 5.0m bgl during and after drilling.
All dimensions in metres Scale 1:36.875			Client Booth King			Method/ Plant Used Tracked Archway Dart			Logged By MT		

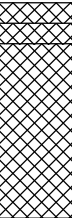
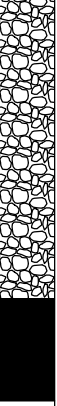
Project Rochdale Corner Plot				BOREHOLE No WS03	
Job No NX570	Date 15-08-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Services				Sheet	1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION		
0.50	ES	14				0.05	MADE GROUND: Sandstone paving flag.		
						0.25	MADE GROUND: Uncompact black fine to coarse ashy sand with rare gravel. Gravel is fine to coarse, angular to subrounded of brick, sandstone, and other mixed lithology.		
						0.45	MADE GROUND: Uncompact light brown fine to coarse sand with rare gravel. Gravel is fine to coarse, angular to subrounded of brick, sandstone, and other mixed lithology.		
1.00	SPT	14				(0.65)	MADE GROUND: Uncompact black fine to coarse ashy slightly clayey slightly gravelly sand. Gravel is fine to coarse, angular to subrounded of brick, concrete, sandstone, and other mixed lithology. Very rare gravel of ceramic. Very rare cobbles of brick.		
1.50	ES				(0.80)	Soft to firm dark brown mottled grey CLAY with rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, and other mixed lithology.			
2.00	CPT D	23				1.90	Medium dense brown fine to coarse SAND AND GRAVEL. Gravel is fine to coarse, angular to subrounded of sandstone, mudstone, and other mixed lithology.		
2.50	ES					(0.50)	Loose to medium dense light brown fine to coarse slightly clayey SAND with very rare gravel. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, and other mixed lithology. 2.80 ...becoming light brown.		
3.00	SPT D	24					4.00 - 5.00 ...very poor stability, hole collapsed post drilling.		
3.50-4.00	B					(2.60)			
4.00	SPT	21							
4.50-5.00	B								
5.00	SPT D	13				5.00	...borehole ended at 5.00m bgl.		

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 visual or olfactory evidence of hydrocarbon or solvent contamination.

All dimensions in metres Scale 1:36.875	Client Booth King	Method/ Plant Used Tracked Archway Dart	Logged By MT
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Project Rochdale Corner Plot				BOREHOLE No WS04	
Job No NX570	Date 15-08-24	Ground Level (m)	Co-Ordinates ()		
Contractor Taylor Drilling Services				Sheet	1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.50	ES	21				0.10	MADE GROUND: Very compact grey fine to coarse slightly sandy angular gravel of concrete.		
						0.20			
						(0.85)	MADE GROUND: Compact grey ashy sandy gravel. Gravel is fine to coarse, angular to subrounded of limestone and other mixed lithology (Subbase).		
1.00	C B D	21				1.05	MADE GROUND: Uncompact black ashy sand with rare gravel and pockets of soft black clay. Gravel is fine to coarse, angular to subrounded of brick, concrete, sandstone and other mixed lithology.		
1.50	ES								
2.00	CPT D	13				(1.95)	Loose to medium dense dark brown fine to coarse slightly clayey SAND and GRAVEL. Gravel is fine to coarse, angular to subrounded of mudstone, sandstone, coal and other mixed lithology.		
2.50-3.00	B ES	20					1.90 ...becoming medium brown.		
2.50							2.10 - 2.25 ...sandstone cobble.		
3.00	CPT D	20				3.00	2.80 - 3.00 ...becoming clayey.		
							...borehole ended at 3.00m bgl.		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											No visual or olfactory evidence of hydrocarbon or solvent contamination.
All dimensions in metres Scale 1:36.875			Client Booth King			Method/ Plant Used Tracked Archway Dart			Logged By MT		



Appendix E– Geotechnical Laboratory Test Results



Certificate of Analysis

Certificate Number 24-19524

Issued: 18-Sep-24

Client The Testing Laboratory
Unit 2 James Road
Adwick-le-Street
Doncaster
DN6 7HH

Our Reference 24-19524

Client Reference ~ J284729

Order No ~ 771

Contract Title ~ ROCHDALE

Description 2 Soil samples.

Date Received 13-Sep-24

Date Started 13-Sep-24

Date Completed 18-Sep-24

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

Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 3

Summary of Chemical Analysis

Soil Samples

Our Ref 24-19524

Client Ref ~ J284729

Contract Title ~ ROCHDALE

Lab No	2393614	2393615
Sample ID ~	BH01	BH01
Depth ~	21.00	9.00
Other ID ~		
Sample Type ~	D	D
Sampling Date ~	n/s	n/s
Sampling Time ~	n/s	n/s

Test	Method	LOD	Units		
Inorganics					
pH	DETSC 2008#		pH	8.8	8.7
Sulphate Aqueous Extract as SO ₄ (2:1)	DETSC 2076#	10	mg/l	62	130

Information in Support of the Analytical Results

Our Ref 24-19524
 Client Ref ~ J284729
 Contract ~ ROCHDALE

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2393614	BH01 21.00 SOIL		PG	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	
2393615	BH01 9.00 SOIL		PG	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	

Key: P-Plastic G-Bag

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.

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

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



Certificate of Analysis

Certificate Number 24-19863

Issued: 20-Sep-24

Client The Testing Laboratory
Unit 2 James Road
Adwick-le-Street
Doncaster
DN6 7HH

Our Reference 24-19863

Client Reference ~ Rochdale Corner

Order No ~ 778

Contract Title ~ J284729 - Sch 2

Description One Soil sample.

Date Received 18-Sep-24

Date Started 18-Sep-24

Date Completed 20-Sep-24

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

Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 3

Summary of Chemical Analysis

Soil Samples

Our Ref 24-19863

Client Ref ~ Rochdale Corner

Contract Title ~ J284729 - Sch 2

Lab No	2395486
Sample ID ~	BH01
Depth ~	15.00
Other ID ~	
Sample Type ~	SOIL
Sampling Date ~	n/s
Sampling Time ~	n/s

Test	Method	LOD	Units
Inorganics			
pH	DETSC 2008#		pH 8.4
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l 67

Information in Support of the Analytical Results

Our Ref 24-19863
 Client Ref ~ Rochdale Corner
 Contract ~ J284729 - Sch 2

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2395486	BH01 15.00 SOIL		PG	Sample date not supplied, Anions 2:1 (30 days), pH + Conductivity (7 days)	

Key: P-Plastic G-Bag

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.

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

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



LABORATORY REPORT



Contract Number: PSL24/6214

Report Date: 21 September 2024

Client's Reference: NX570

Client Name: NX Consulting
Station House
Altrincham
WA14 1EP

For the attention of: Mark Newton

Contract Title: Rochdale Corner Plot

Date Received: 27/8/2024

Date Commenced: 27/8/2024

Date Completed: 21/9/2024

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Managing Director)

R Berriman
(Associate Director)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)


D Nicholson
(Senior Technician)

T Watkins
(Senior Technician)

5 – 7 Hexthorpe Road,
Hexthorpe,
Doncaster,
DN4 0AR
Tel: 01302 768098
Email: rberriman@prosoils.co.uk
awatkins@prosoils.co.uk

Page 1 of

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

[illegible]

Rochdale

Contract No:

PSL24/6214

Client Ref:

NX570

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

[illegible]

SYMBOLS : NP : Non Plastic

*** : Liquid Limit and Plastic Limit Wet Sieved.**



Rochdale

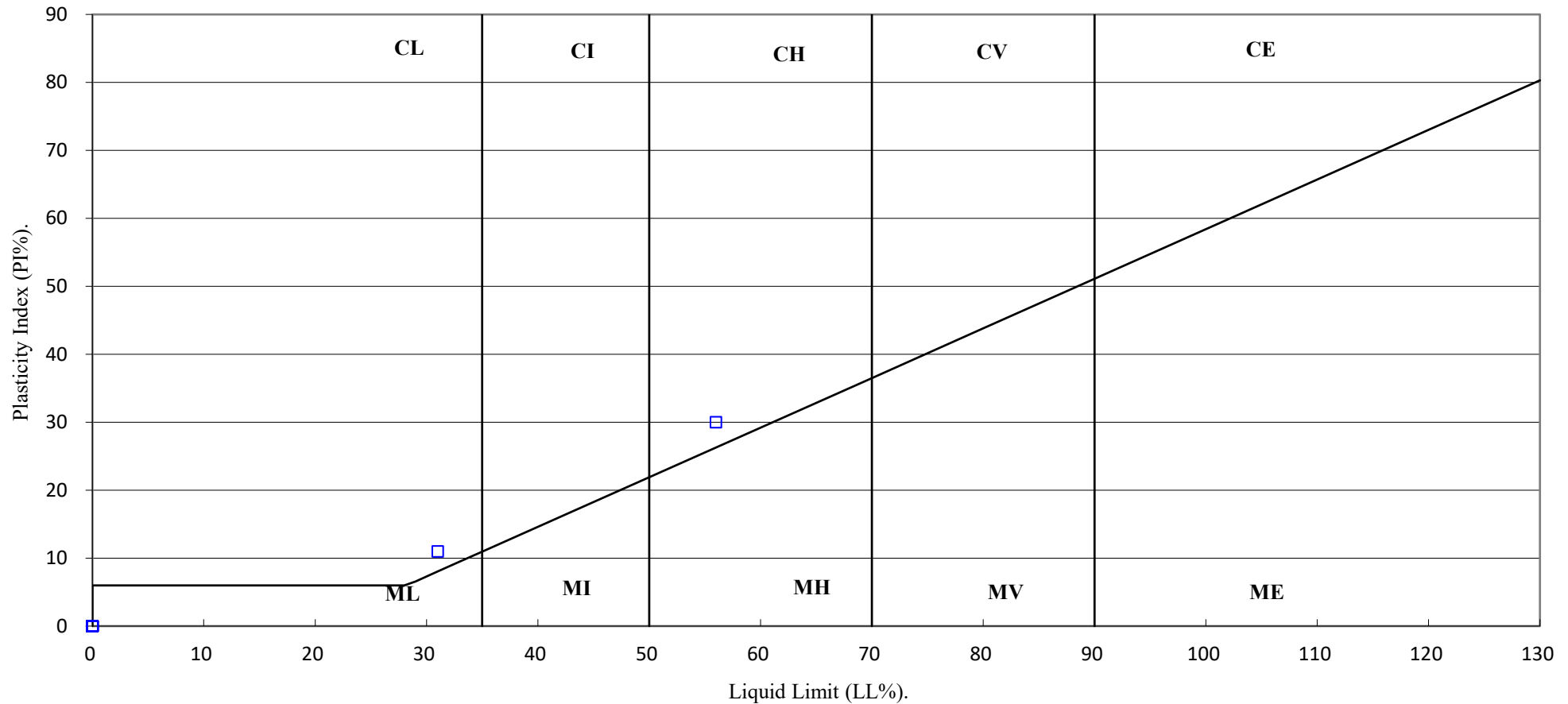
Contract No:

PSL24/6214

Client Ref:

NX570

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



Rochdale

Contract No:

PSL24/6214

Client Ref:

NX570

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:

WS01

Top Depth (m):

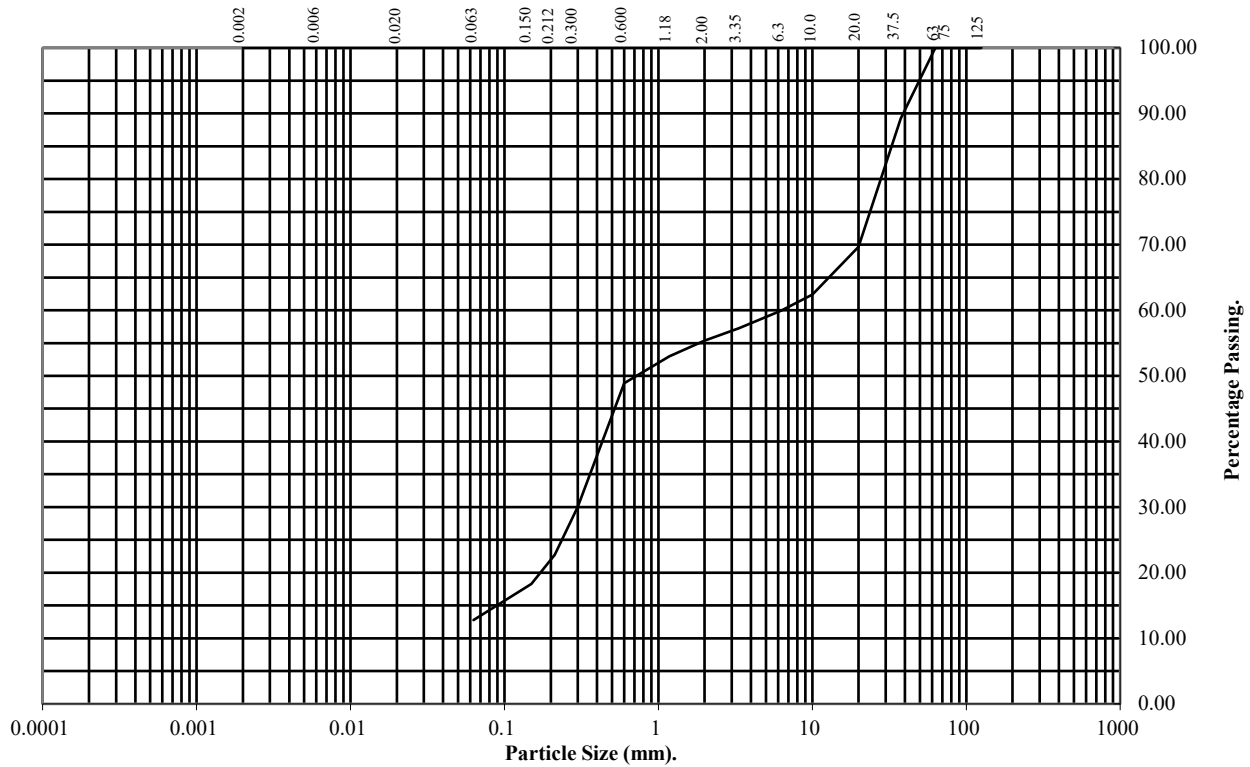
1.00

Sample Number:

Base Depth(m):

Sample Type:

B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	89
20	70
10	62
6.3	60
3.35	57
2	55
1.18	53
0.6	49
0.3	30
0.212	23
0.15	18
0.063	13

Soil Fraction	Total Percentage
Cobbles	0
Gravel	45
Sand	42
Silt/Clay	13

Remarks:

See Summary of Soil Descriptions



Rochdale

Contract No:
PSL24/6214
Client Ref:
NX570

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

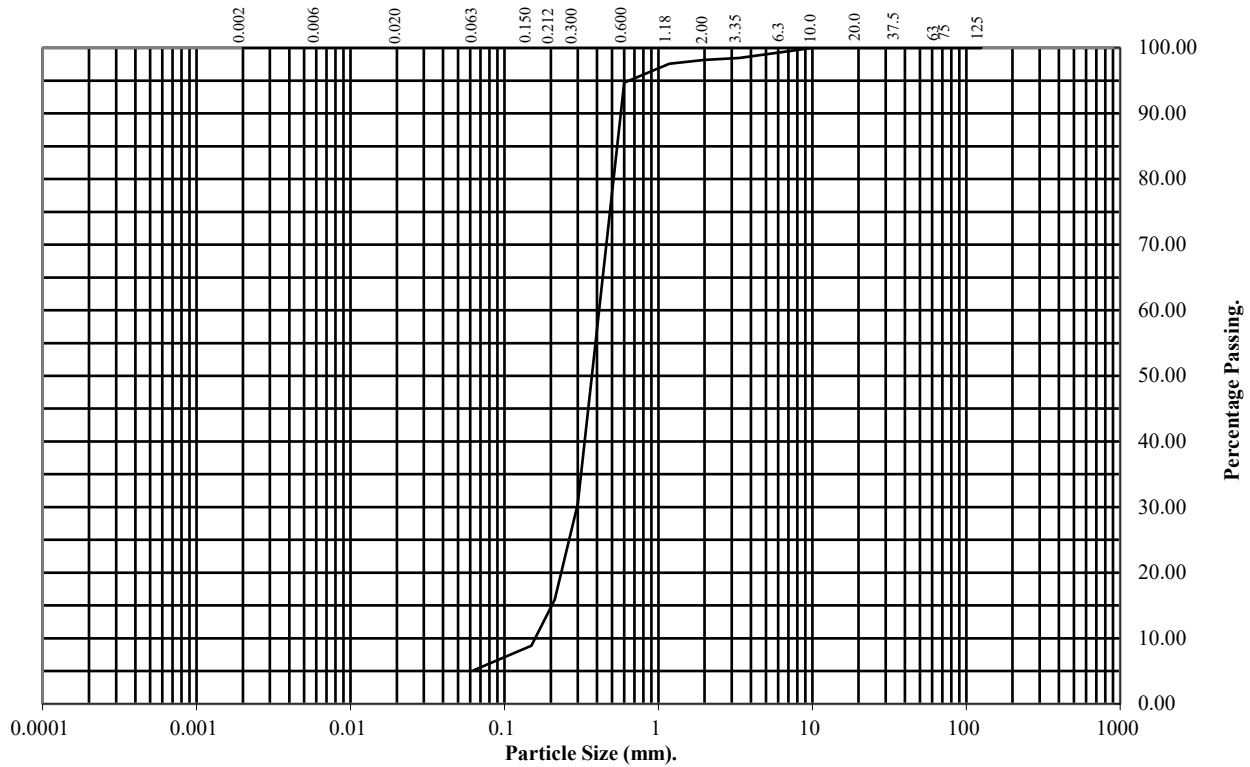
Hole Number: WS01

Top Depth (m): 3.00

Sample Number:

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	99
3.35	98
2	98
1.18	98
0.6	95
0.3	30
0.212	16
0.15	9
0.063	5

Soil Fraction	Total Percentage
Cobbles	0
Gravel	2
Sand	93
Silt/Clay	5

Remarks:

See Summary of Soil Descriptions



Rochdale

Contract No:
PSL24/6214
Client Ref:
NX570

PARTICLE SIZE DISTRIBUTION TEST

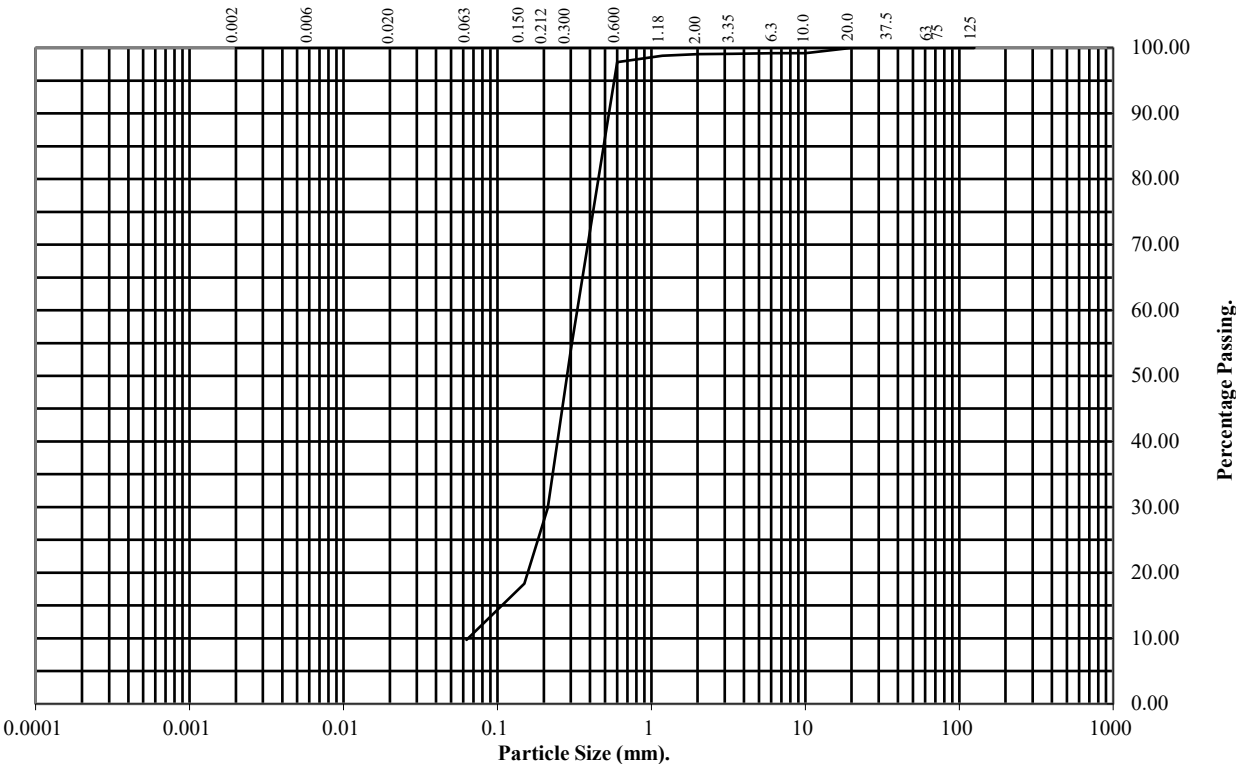
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: WS02 Top Depth (m): 2.00

Sample Number: Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	99
6.3	99
3.35	99
2	99
1.18	99
0.6	98
0.3	54
0.212	30
0.15	18
0.063	10

Soil Fraction	Total Percentage
Cobbles	0
Gravel	1
Sand	89
Silt/Clay	10

Remarks:
See Summary of Soil Descriptions



Rochdale

Contract No:
PSL24/6214
Client Ref:
NX570

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:

WS02

Top Depth (m):

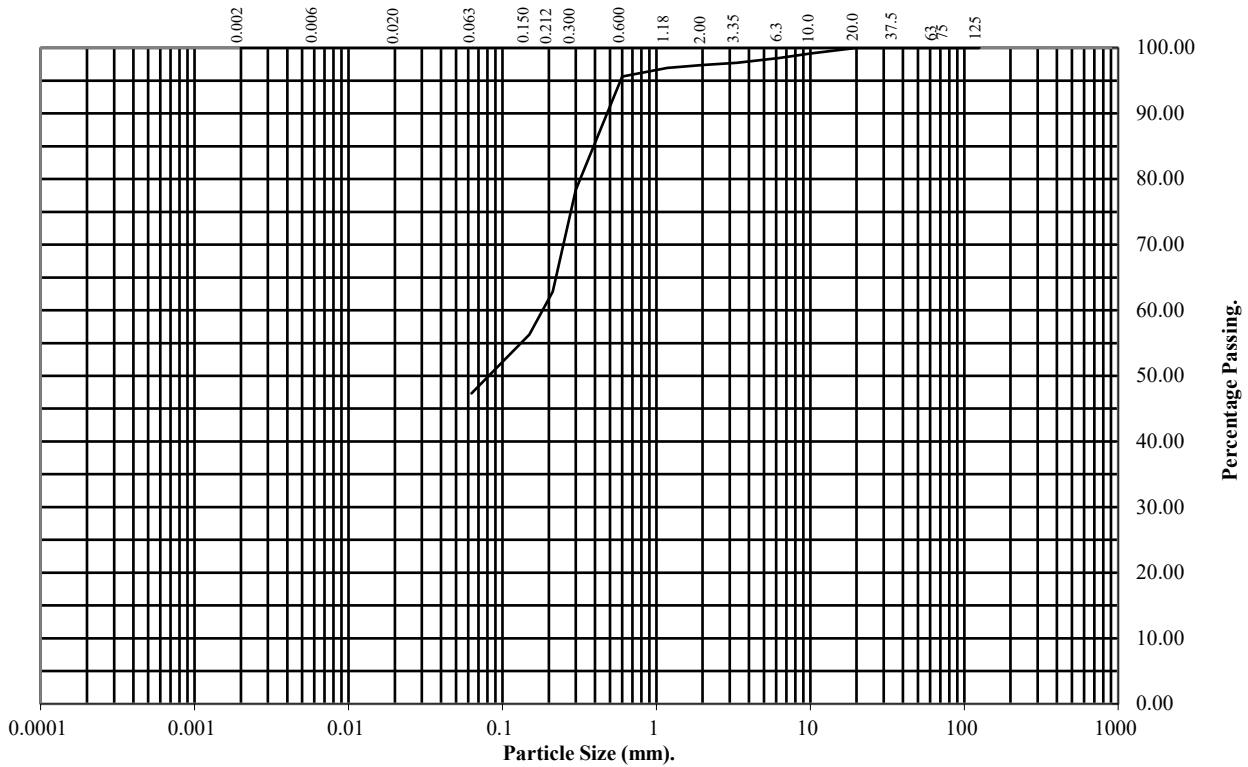
4.00

Sample Number:

Base Depth(m):

Sample Type:

B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	99
6.3	98
3.35	98
2	97
1.18	97
0.6	96
0.3	78
0.212	63
0.15	56
0.063	47

Soil Fraction	Total Percentage
Cobbles	0
Gravel	3
Sand	50
Silt/Clay	47

Remarks:

See Summary of Soil Descriptions



Rochdale

Contract No:
PSL24/6214
Client Ref:
NX570

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:

WS03

Top Depth (m):

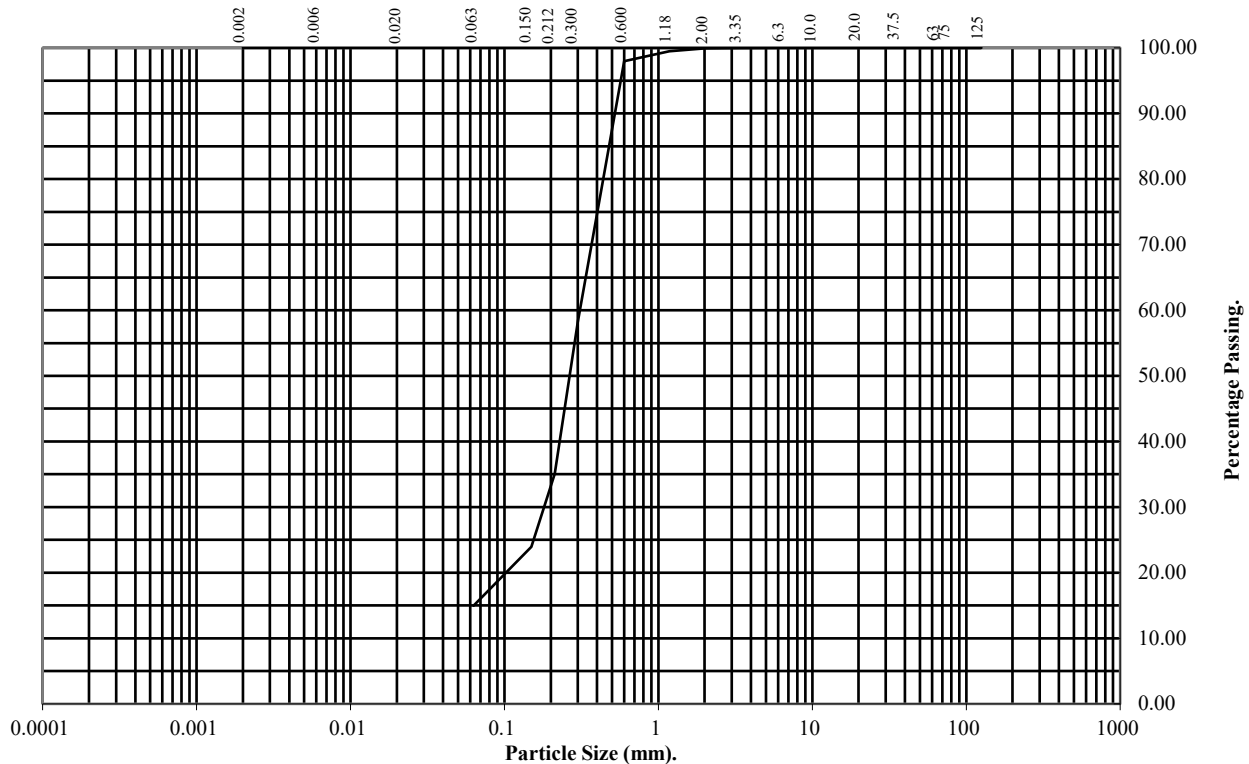
3.50

Sample Number:

Base Depth(m):

Sample Type:

B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	100
1.18	100
0.6	98
0.3	58
0.212	35
0.15	24
0.063	15

Soil Fraction	Total Percentage
Cobbles	0
Gravel	0
Sand	85
Silt/Clay	15

Remarks:

See Summary of Soil Descriptions



Rochdale

Contract No:
PSL24/6214
Client Ref:
NX570

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number:

WS03

Top Depth (m):

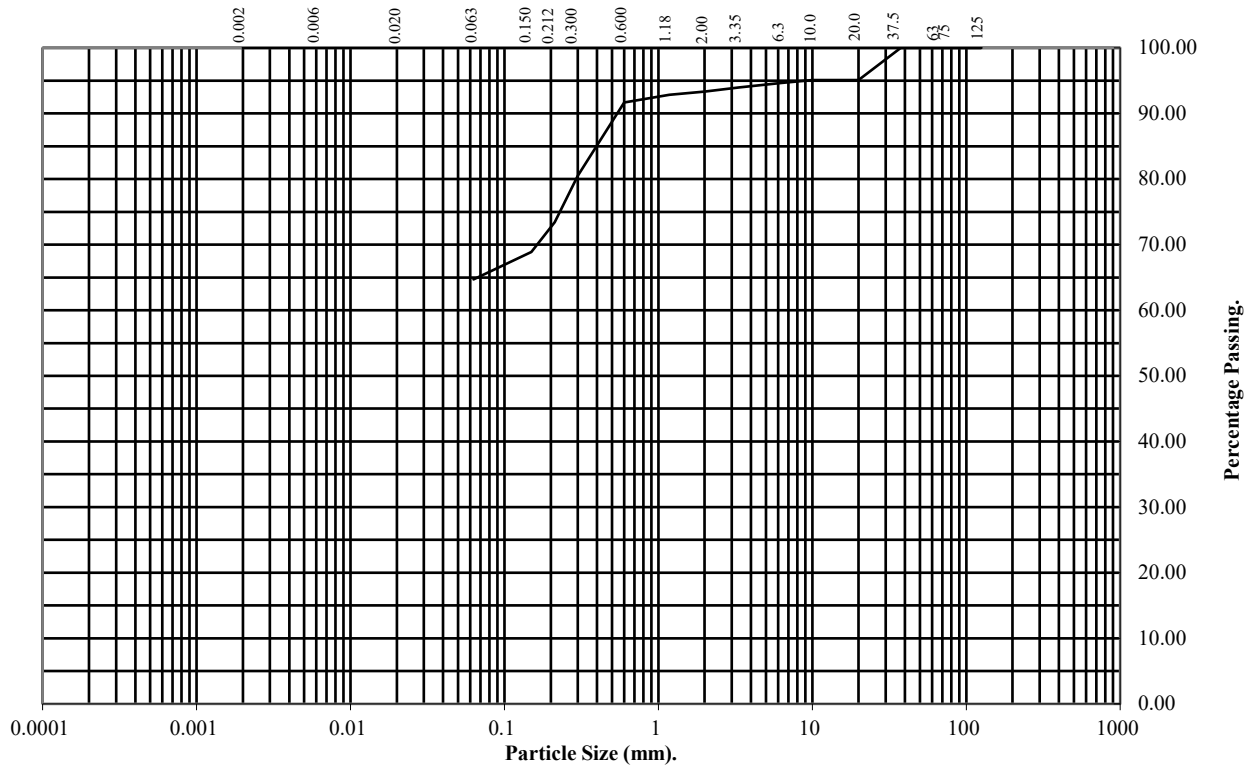
4.50

Sample Number:

Base Depth(m):

Sample Type:

B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	95
10	95
6.3	95
3.35	94
2	93
1.18	93
0.6	92
0.3	81
0.212	73
0.15	69
0.063	65

Soil Fraction	Total Percentage
Cobbles	0
Gravel	7
Sand	28
Silt/Clay	65

Remarks:

See Summary of Soil Descriptions



Rochdale

Contract No:
PSL24/6214
Client Ref:
NX570

PARTICLE SIZE DISTRIBUTION TEST

BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

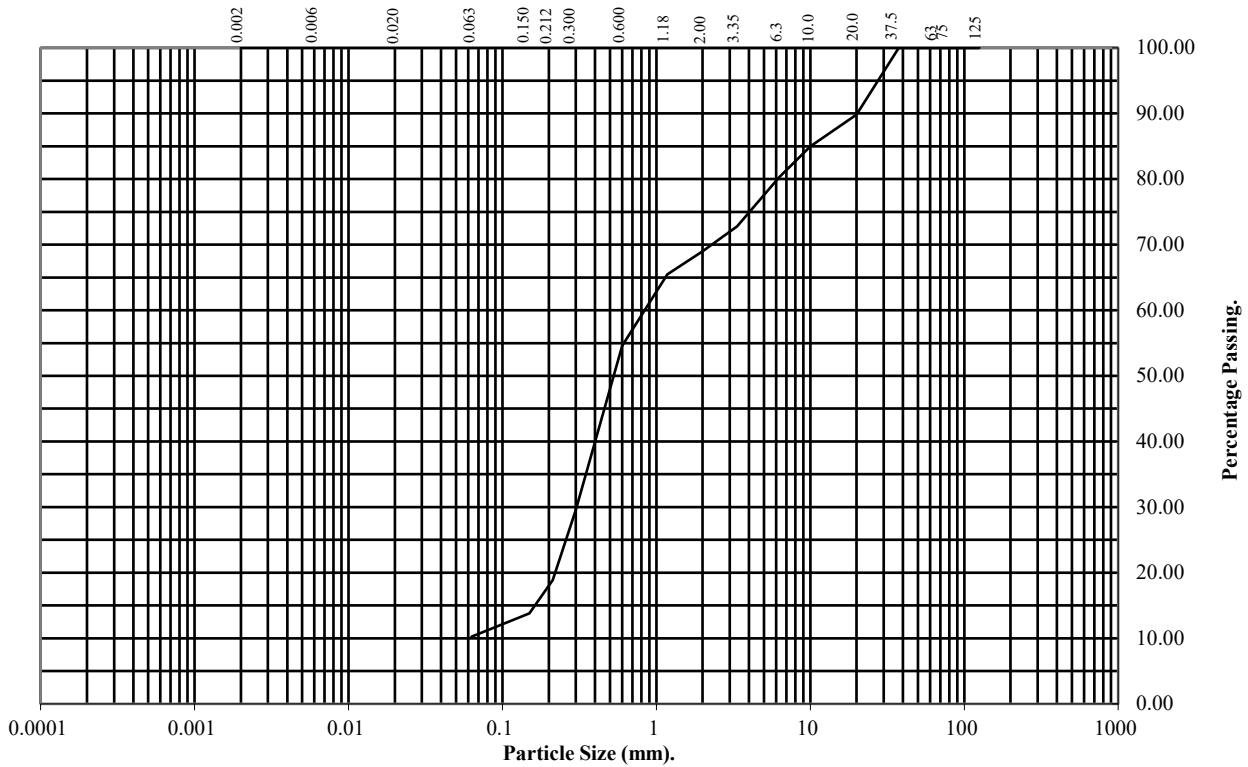
Hole Number: WS04

Top Depth (m): 1.00

Sample Number:

Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	90
10	85
6.3	80
3.35	73
2	69
1.18	65
0.6	55
0.3	30
0.212	19
0.15	14
0.063	10

Soil Fraction	Total Percentage
Cobbles	0
Gravel	31
Sand	59
Silt/Clay	10

Remarks:

See Summary of Soil Descriptions



Rochdale

Contract No:
PSL24/6214
Client Ref:
NX570

PARTICLE SIZE DISTRIBUTION TEST

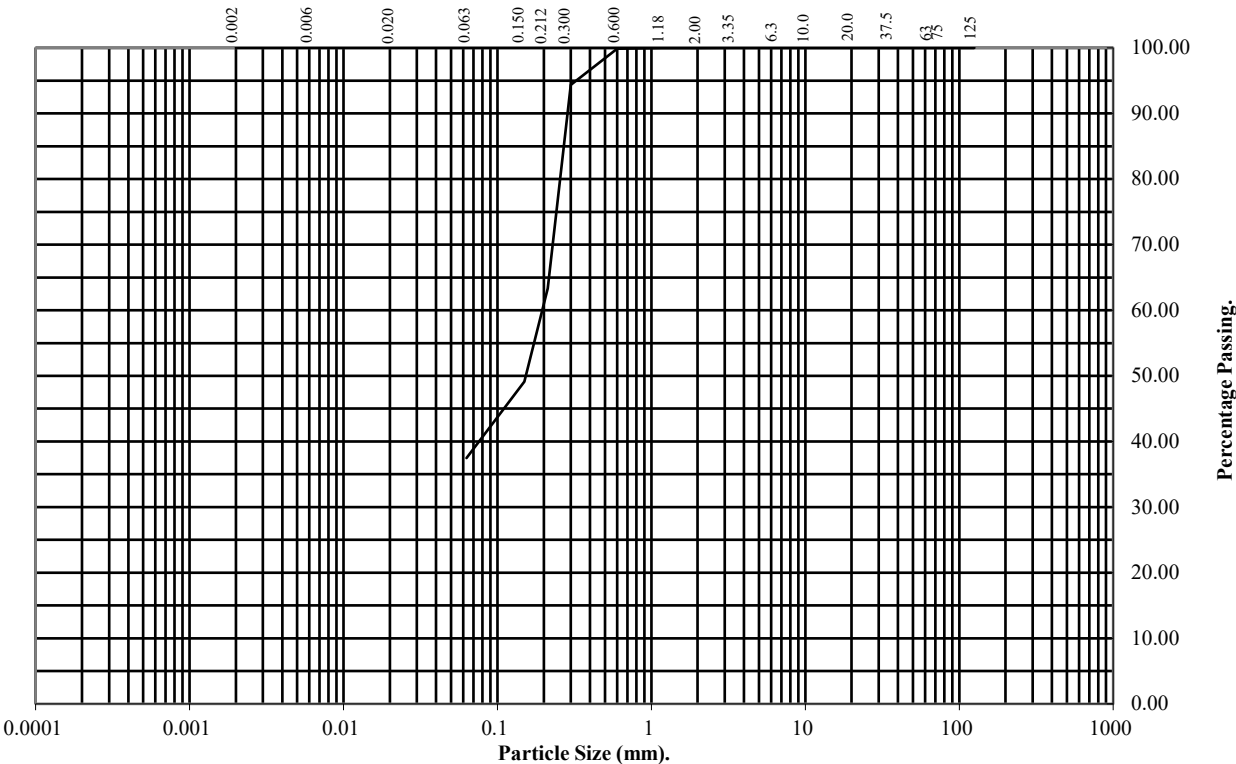
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: WS04 Top Depth (m): 2.50

Sample Number: Base Depth(m):

Sample Type: B



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	100
6.3	100
3.35	100
2	100
1.18	100
0.6	100
0.3	94
0.212	63
0.15	49
0.063	37

Soil Fraction	Total Percentage
Cobbles	0
Gravel	0
Sand	63
Silt/Clay	37

Remarks:
See Summary of Soil Descriptions



Rochdale

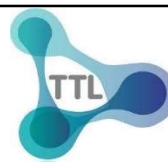
Contract No:
PSL24/6214
Client Ref:
NX570

Project Name	Rochdale Corner Plot
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Date Printed	20/09/2024
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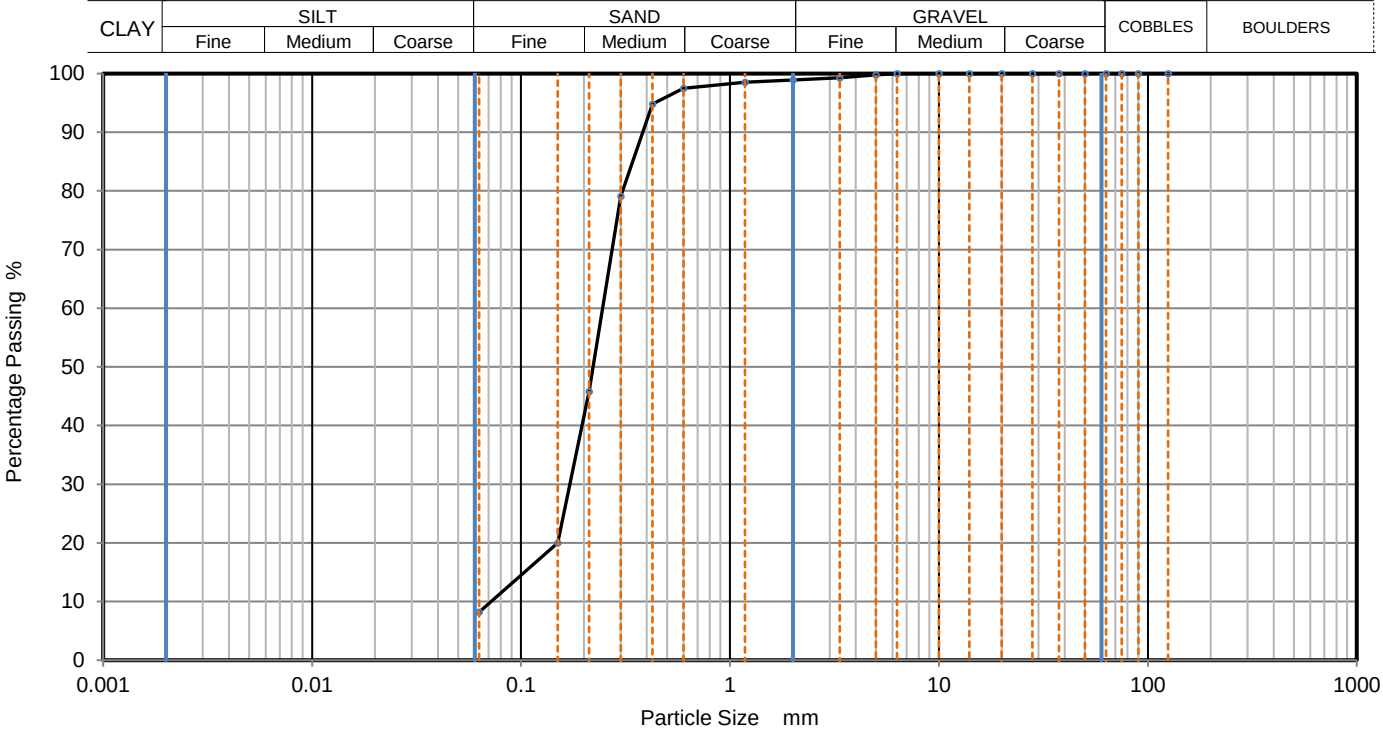
Particle density
sp - small pycnometer
qj - gas jar



INDEX

[illegible]

GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J284729
				Borehole/Pit No.	BH01
Project Name	Rochdale Corner Plot			Sample No.	
Soil Description	Brown silty SAND			Depth, m	2.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2			KeyLAB ID	TTLP2024091017



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	99		
2	99		
1.18	99		
0.6	98		
0.425	95		
0.3	79		
0.212	46		
0.15	20		
0.063	8		

Dry Mass of sample, g	2274
-----------------------	------

Sample Proportions	% dry mass
Very coarse	0
Gravel	1
Sand	91
Fines <0.063mm	8

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Date Printed	20/09/2024
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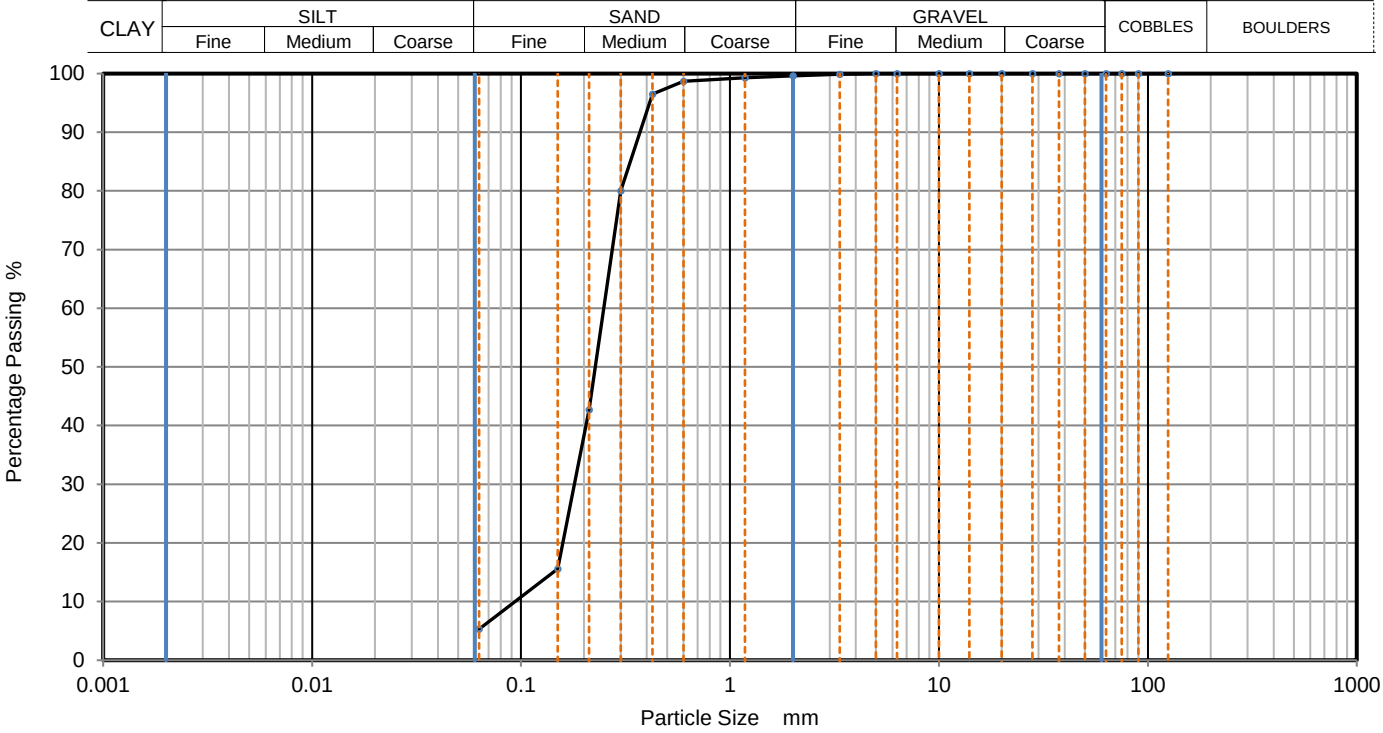


7758



PSD

GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J284729
				Borehole/Pit No.	BH01
Project Name	Rochdale Corner Plot			Sample No.	
Soil Description	Brown silty SAND			Depth, m	4.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2			KeyLAB ID	TTLP2024091018



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	99		
0.6	99		
0.425	97		
0.3	80		
0.212	43		
0.15	16		
0.063	5		

Dry Mass of sample, g	2368
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Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	94
Fines <0.063mm	5

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	2.7
Curvature Coefficient	1.4

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Date Printed	20/09/2024
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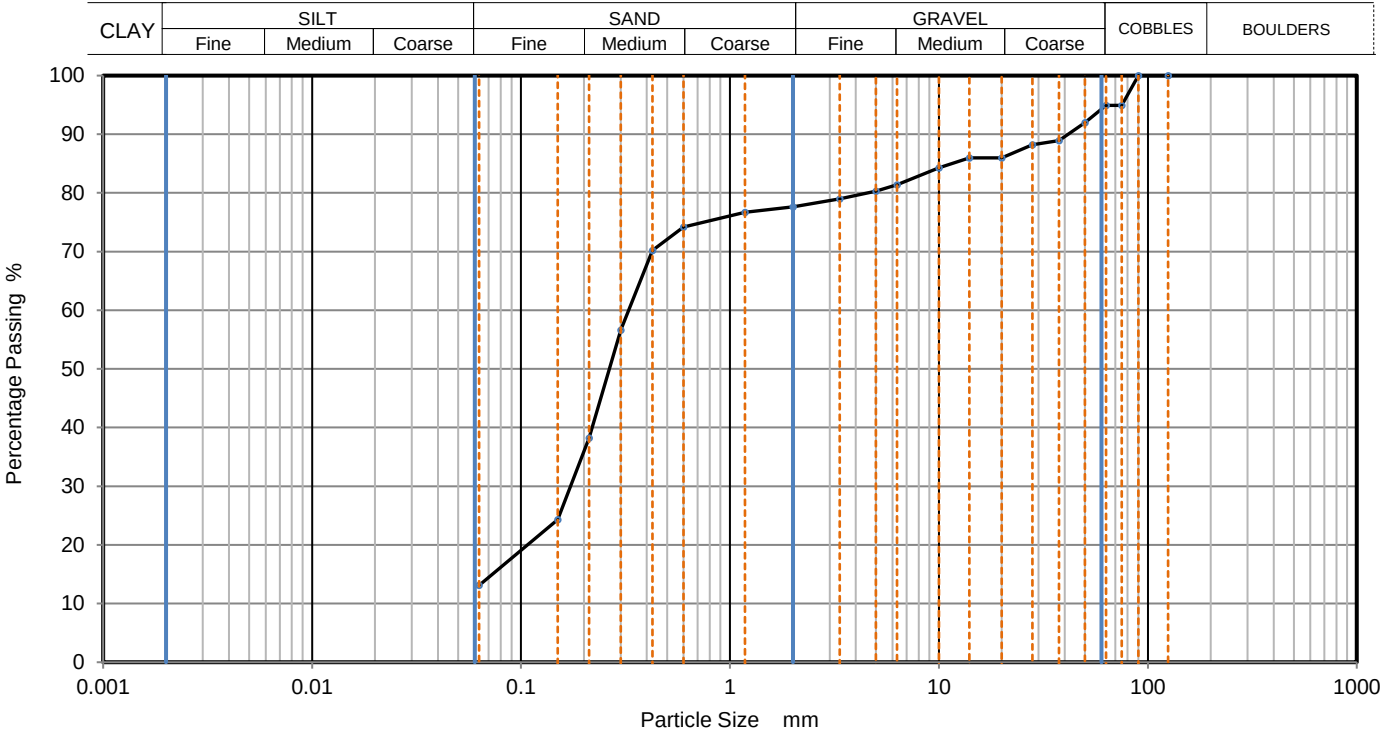


7758



PSD

GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J284729
				Borehole/Pit No.	BH01
Project Name	Rochdale Corner Plot			Sample No.	
Soil Description	Brown slightly gravelly silty SAND			Depth, m	6.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2			KeyLAB ID	TTLP2024091020



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	95		
63	95		
50	92		
37.5	89		
28	88		
20	86		
14	86		
10	84		
6.3	81		
5	80		
3.35	79		
2	78		
1.18	77		
0.6	74		
0.425	70		
0.3	57		
0.212	38		
0.15	24		
0.063	13		

Dry Mass of sample, g 8116

Sample Proportions	% dry mass
Very coarse	5
Gravel	17
Sand	65
Fines <0.063mm	13

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

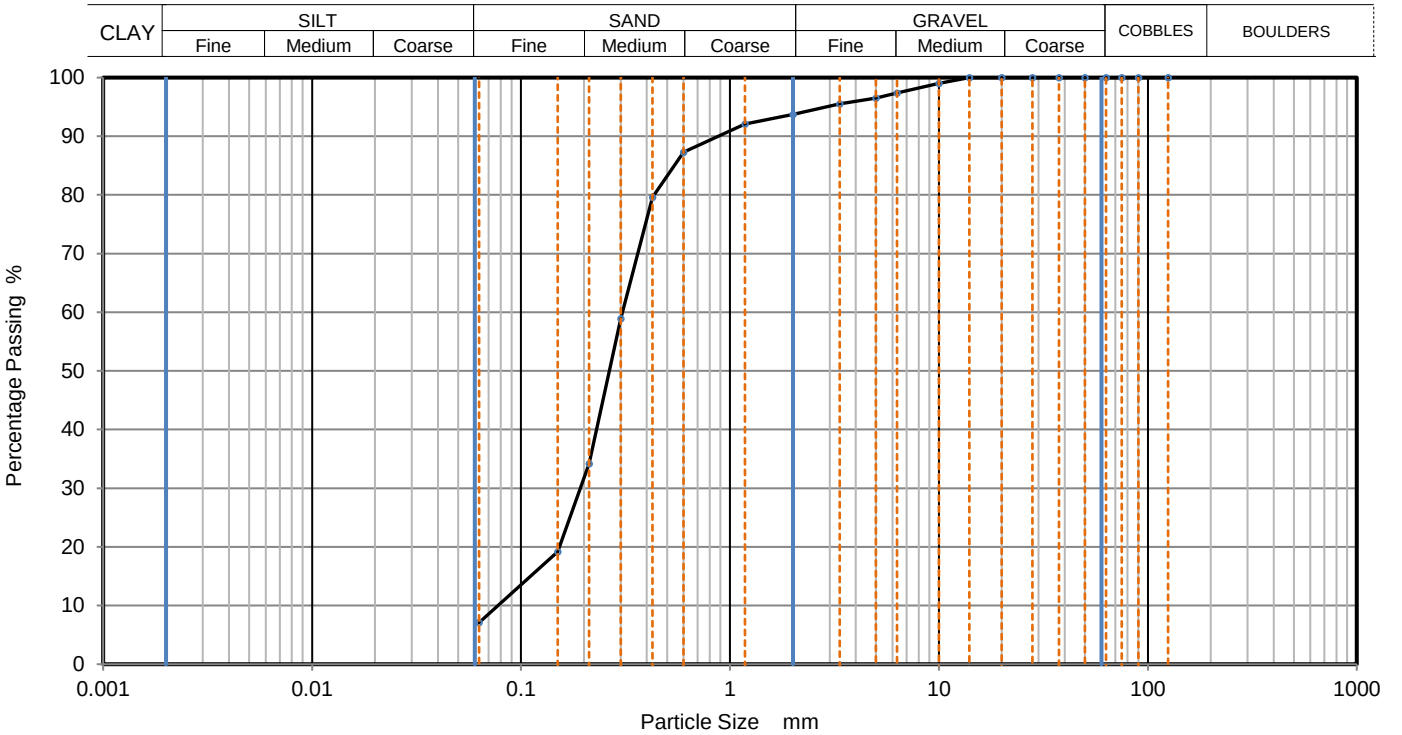
Remarks
Preparation and testing in accordance with BS1377 unless noted below

Date Printed 20/09/2024



PSD

GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J284729
				Borehole/Pit No.	BH01
Project Name	Rochdale Corner Plot			Sample No.	
Soil Description	Brown slightly gravelly silty SAND			Depth, m	9.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2			KeyLAB ID	TTLP2024091021



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	97		
5	97		
3.35	96		
2	94		
1.18	92		
0.6	87		
0.425	80		
0.3	59		
0.212	34		
0.15	19		
0.063	7		

Dry Mass of sample, g 577

Sample Proportions	% dry mass
Very coarse	0
Gravel	6
Sand	87
Fines <0.063mm	7

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

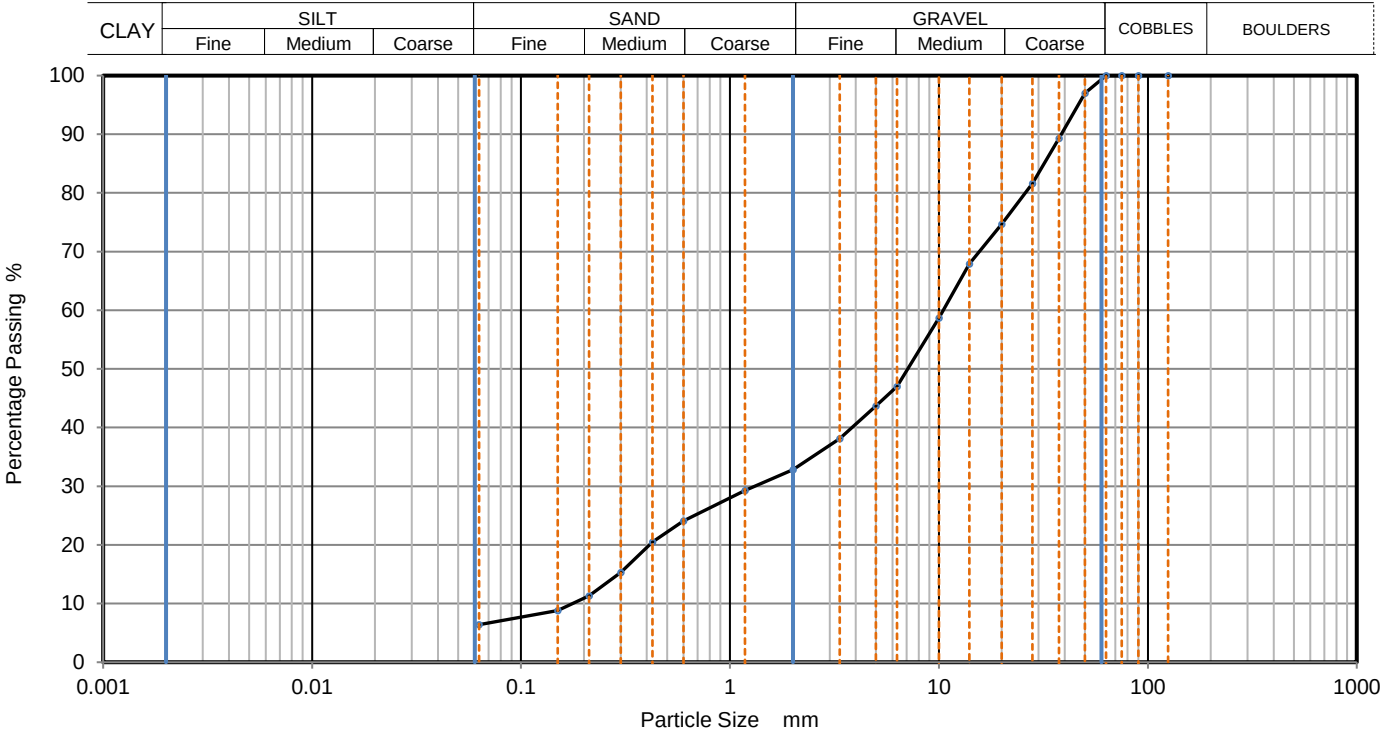
Remarks
Preparation and testing in accordance with BS1377 unless noted below

Date Printed 20/09/2024



PSD

GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J284729
				Borehole/Pit No.	BH01
Project Name	Rochdale Corner Plot			Sample No.	
Soil Description	Brown mottled grey clayey very sandy GRAVEL			Depth, m	12.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clause 9.2			KeyLAB ID	TTLP2024091023



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	97		
37.5	89		
28	82		
20	75		
14	68		
10	59		
6.3	47		
5	44		
3.35	38		
2	33		
1.18	29		
0.6	24		
0.425	21		
0.3	15		
0.212	11		
0.15	9		
0.063	6		

Dry Mass of sample, g	9586
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Sample Proportions	% dry mass
Very coarse	0
Gravel	67
Sand	26
Fines <0.063mm	6

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Date Printed	20/09/2024
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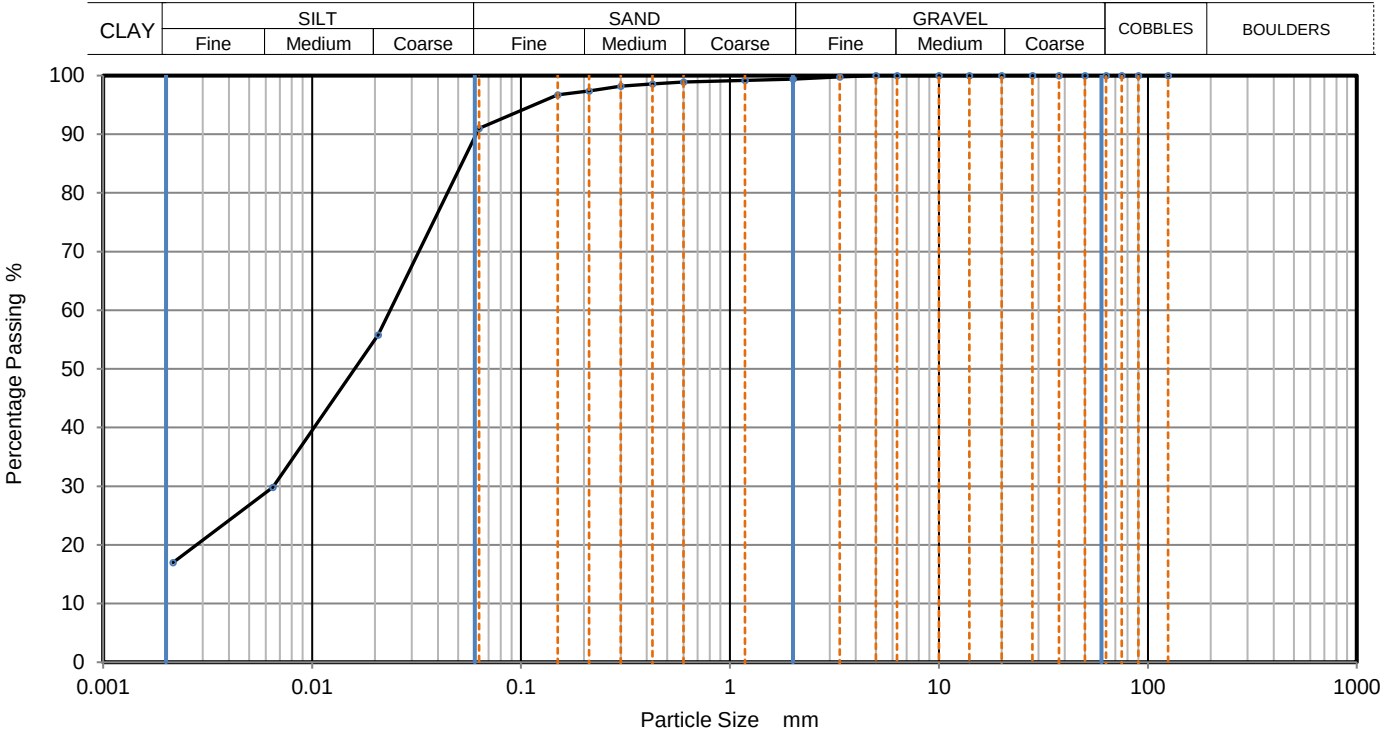


7758



PSD

GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J284729
				Borehole/Pit No.	BH01
Project Name	Rochdale Corner Plot			Sample No.	
Soil Description	Brown slightly sandy clayey SILT			Depth, m	18.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	TTLP2024091024



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0207	56
90	100	0.0065	30
75	100	0.0022	17
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	99		
0.6	99	Particle density (assumed) 2.65 Mg/m3	
0.425	99		
0.3	98		
0.212	97		
0.15	97		
0.063	91		

Dry Mass of sample, g	764
-----------------------	-----

Sample Proportions	% dry mass
Very coarse	0
Gravel	1
Sand	8
Fines <0.063mm	91

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	
Curvature Coefficient	

Remarks
Preparation and testing in accordance with BS1377 unless noted below

Date Printed	20/09/2024
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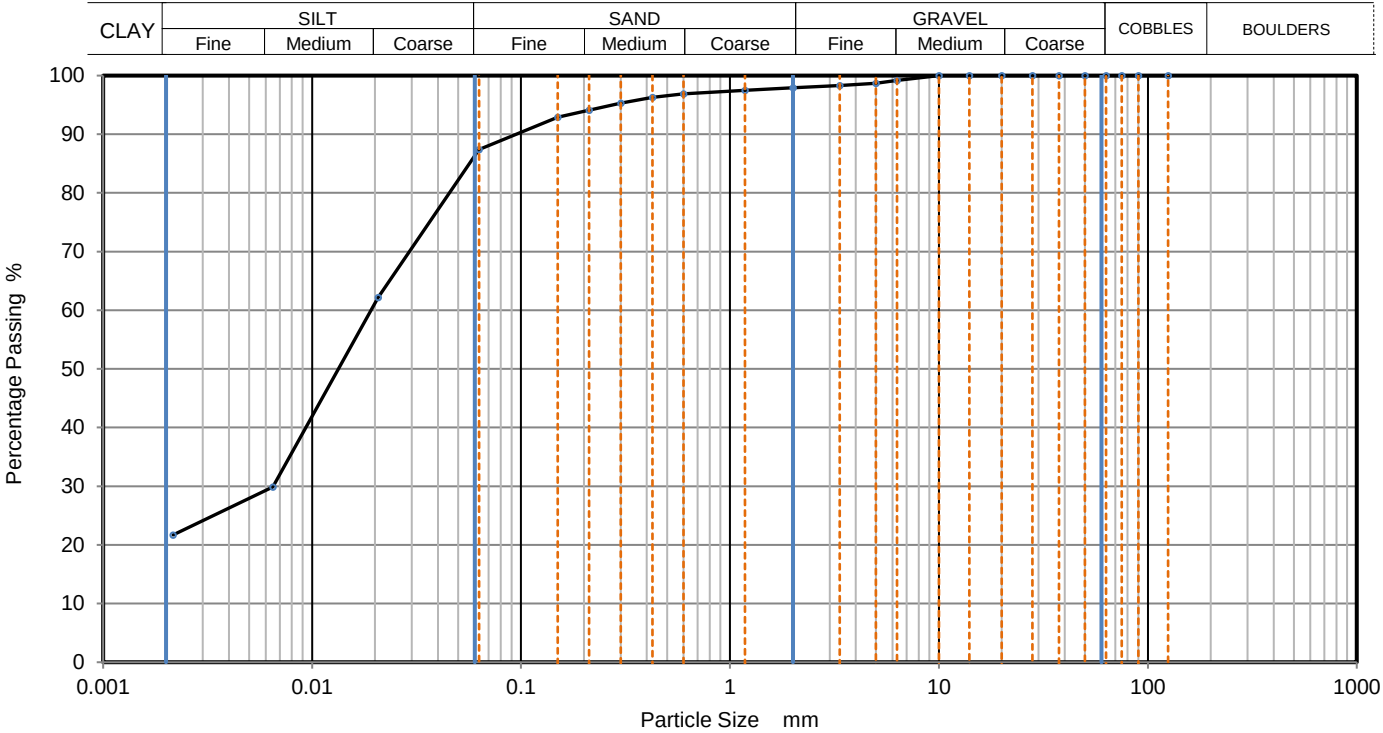


7758



PSD

GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J284729
				Borehole/Pit No.	BH01
Project Name	Rochdale Corner Plot			Sample No.	
Soil Description	Brown slightly sandy clayey SILT			Depth, m	19.50
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	TTLP2024091025



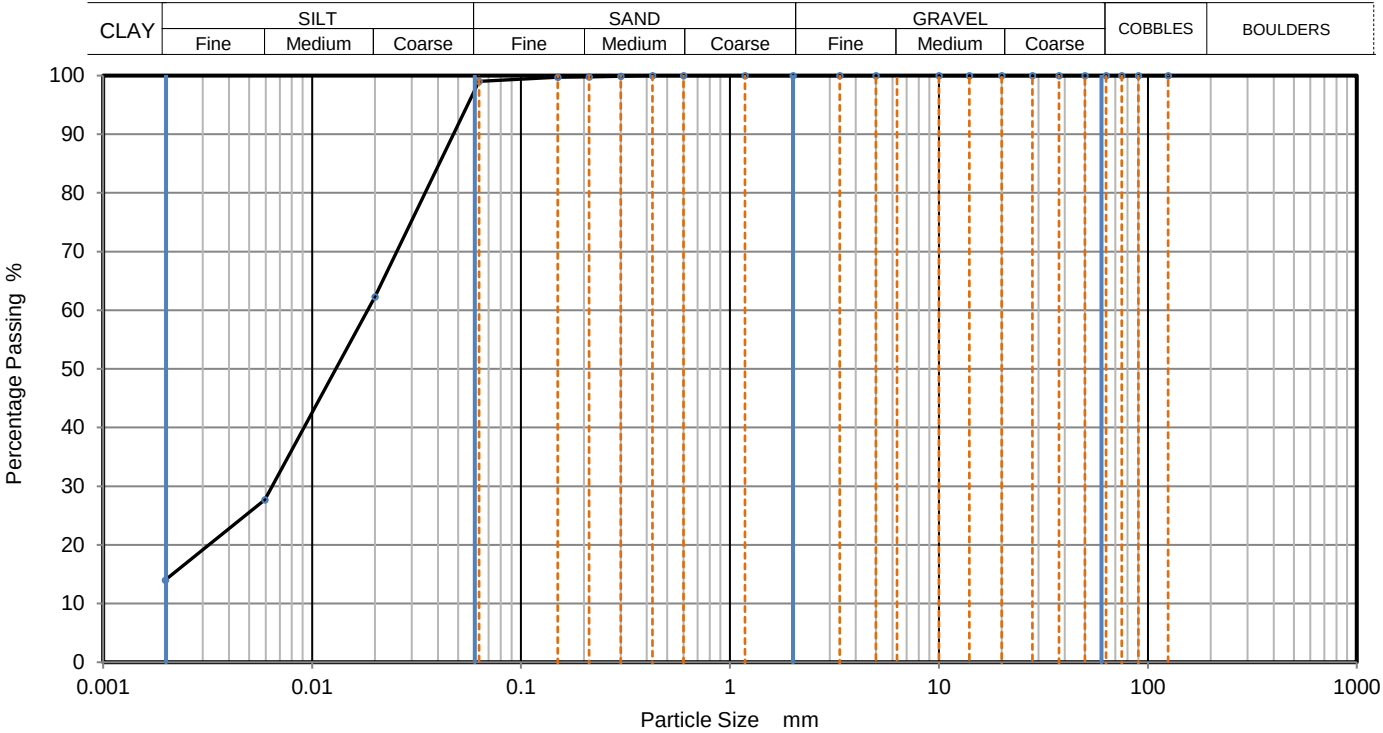
Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0207	62
90	100	0.0065	30
75	100	0.0022	22
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	99		
5	99		
3.35	98		
2	98		
1.18	98		
0.6	97	Particle density (assumed) 2.65 Mg/m3	
0.425	96		
0.3	95		
0.212	94		
0.15	93		
0.063	87		

Dry Mass of sample, g		2601
Sample Proportions		% dry mass
Very coarse		0
Gravel		2
Sand		11
Fines <0.063mm		87
Grading Analysis		
D100	mm	
D60	mm	0.0191
D30	mm	0.00651
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		
Remarks		
Preparation and testing in accordance with BS1377 unless noted below		
Date Printed	20/09/2024	



PSD

GQF-008-55 Issue 01 - Oct 22	PARTICLE SIZE DISTRIBUTION			Job Ref	J284729
				Borehole/Pit No.	BH01
Project Name	Rochdale Corner Plot			Sample No.	
Soil Description	Brown clayey SILT			Depth, m	25.00
Specimen Reference		Specimen Depth	m	Sample Type	B
Test Method	BS1377:Part 2:1990, clauses 9.2 and 9.4			KeyLAB ID	TTLP2024091026



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100	0.0200	62
90	100	0.0059	28
75	100	0.0020	14
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100	Particle density (assumed) 2.65 Mg/m3	
0.425	100		
0.3	100		
0.212	100		
0.15	100		
0.063	99		

Dry Mass of sample, g		304
Sample Proportions		% dry mass
Very coarse		0
Gravel		0
Sand		1
Silt		85
Clay		14
Grading Analysis		
D100	mm	
D60	mm	0.0184
D30	mm	0.00645
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		
Remarks		
Preparation and testing in accordance with BS1377 unless noted below		
Date Printed	20/09/2024	



7758



PSD



Appendix F – Chemical Test Results



Certificate of Analysis

Certificate Number 24-17225

Issued: 22-Aug-24

Client NX Consulting Ltd
Station House
Stamford New Road
Altricham
WA14 1EP

Our Reference 24-17225

Client Reference ~ NX570

Order No ~ (not supplied)

Contract Title ~ Rochdale Corner Plot, Maclure Street, Rochdaole, OL11 1DN

Description 10 Soil samples, 7 Leachate prepared by DETS samples.

Date Received 16-Aug-24

Date Started 16-Aug-24

Date Completed 22-Aug-24

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

Kirk Bridgewood
General Manager



2139

Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 11

Summary of Chemical Analysis

Soil Samples

Our Ref 24-17225

Client Ref ~ NX570

Contract Title ~ Rochdale Corner Plot, Maclure Street, Rochdaole, OL11 1DN

Lab No	2379357	2379358	2379359	2379360	2379361	2379362
Sample ID ~	WS01	WS01	WS01	WS02	WS02	WS03
Depth ~	0.50	1.50	2.50	0.50	1.50	0.50
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	13/08/2024	13/08/2024	13/08/2024	13/08/2024	13/08/2024	13/08/2024
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	48	5.8	4.3	6.2	3.2	13
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.5	0.3	0.3	0.3	< 0.2	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.6	< 0.1	0.2	< 0.1	< 0.1	0.2
Chromium	DETSC 2301#	0.15	mg/kg	20	14	21	10	9.5	15
Copper	DETSC 2301#	0.2	mg/kg	140	13	23	18	9.6	88
Lead	DETSC 2301#	0.3	mg/kg	520	18	26	36	8.4	150
Mercury	DETSC 2325#	0.05	mg/kg	0.83	0.05	< 0.05	0.06	< 0.05	0.64
Nickel	DETSC 2301#	1	mg/kg	41	11	22	8.9	8.1	22
Selenium	DETSC 2301#	0.5	mg/kg	0.8	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Zinc	DETSC 2301#	1	mg/kg	200	30	55	29	23	140
Inorganics									
pH	DETSC 2008#		pH	8.3	7.1	7.3	7.4	7.5	8.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.4	0.1	< 0.1	0.4	< 0.1	0.3
Total Organic Carbon	DETSC 2084#	0.5	%	7.8	0.8	0.7	2.5	< 0.5	5.4
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l			18		11	41
Sulphide	DETSC 2024*	10	mg/kg	49	29	< 10	< 10	25	70
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	663	< 100	< 100	168	< 100	417
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 C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5			< 1.5		< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2			< 1.2		< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5			< 1.5		< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4			< 3.4		< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10			< 10		< 10
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 C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9			< 0.9		< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5			< 0.5		< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6			< 0.6		< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4			< 1.4		< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10			< 10		< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10			< 10		< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01			< 0.01		< 0.01
MTBE	DETSC 3321	0.01	mg/kg	< 0.01			< 0.01		< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 24-17225

Client Ref ~ NX570

Contract Title ~ Rochdale Corner Plot, Maclure Street, Rochdaole, OL11 1DN

Lab No	2379357	2379358	2379359	2379360	2379361	2379362
Sample ID ~	WS01	WS01	WS01	WS02	WS02	WS03
Depth ~	0.50	1.50	2.50	0.50	1.50	0.50
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	13/08/2024	13/08/2024	13/08/2024	13/08/2024	13/08/2024	13/08/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	0.41	< 0.03	< 0.03	< 0.03	< 0.03	4.3
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.06
Acenaphthene	DETSC 3303#	0.03	mg/kg	0.51	< 0.03	< 0.03	< 0.03	< 0.03	2.8
Fluorene	DETSC 3303	0.03	mg/kg	0.25	< 0.03	< 0.03	< 0.03	< 0.03	1.8
Phenanthrene	DETSC 3303#	0.03	mg/kg	1.9	< 0.03	< 0.03	0.09	< 0.03	13
Anthracene	DETSC 3303	0.03	mg/kg	0.23	< 0.03	< 0.03	< 0.03	< 0.03	1.9
Fluoranthene	DETSC 3303#	0.03	mg/kg	1.5	< 0.03	< 0.03	0.07	0.03	11
Pyrene	DETSC 3303#	0.03	mg/kg	1.3	< 0.03	< 0.03	0.06	0.03	8.5
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.33	< 0.03	< 0.03	< 0.03	< 0.03	3.0
Chrysene	DETSC 3303	0.03	mg/kg	0.42	< 0.03	< 0.03	0.04	< 0.03	3.3
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.25	< 0.03	< 0.03	< 0.03	< 0.03	2.5
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.11	< 0.03	< 0.03	< 0.03	< 0.03	0.80
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.13	< 0.03	< 0.03	< 0.03	< 0.03	1.8
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.07	< 0.03	< 0.03	< 0.03	< 0.03	0.55
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	0.18
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.06	< 0.03	< 0.03	< 0.03	< 0.03	0.64
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	7.5	< 0.10	< 0.10	0.25	< 0.10	55
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4	< 0.3	< 0.3	< 0.3	< 0.3	0.4

Summary of Chemical Analysis

Soil Samples

Our Ref 24-17225

Client Ref ~ NX570

Contract Title ~ Rochdale Corner Plot, Maclure Street, Rochdaole, C

Lab No	2379363	2379364	2379365	2379366
Sample ID ~	WS03	WS03	WS04	WS04
Depth ~	1.50	2.50	0.50	1.50
Other ID ~				
Sample Type ~	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	13/08/2024	13/08/2024	13/08/2024	13/08/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	4.2	5.8	9.3	
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.2	2.2	0.3	
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	1.3	
Chromium	DETSC 2301#	0.15	mg/kg	20	20	29	
Copper	DETSC 2301#	0.2	mg/kg	11	22	35	
Lead	DETSC 2301#	0.3	mg/kg	26	12	49	
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.08	
Nickel	DETSC 2301#	1	mg/kg	19	21	28	
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	
Zinc	DETSC 2301#	1	mg/kg	41	57	120	
Inorganics							
pH	DETSC 2008#		pH	6.9	7.0	6.6	7.6
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	< 0.1	0.3	
Total Organic Carbon	DETSC 2084#	0.5	%	0.6	0.7	2.9	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l		14		13
Sulphide	DETSC 2024*	10	mg/kg	25	25	< 10	
Sulphate as SO4, Total	DETSC 2321#	100	mg/kg	< 100	< 100	244	
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg			< 0.01	
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg			< 0.01	
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01	
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg			< 1.5	
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg			< 1.2	
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg			< 1.5	
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg			< 3.4	
Aliphatic C5-C35	DETSC 3072*	10	mg/kg			< 10	
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg			< 0.01	
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg			< 0.01	
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg			< 0.01	
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg			< 0.9	
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg			< 0.5	
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg			< 0.6	
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg			< 1.4	
Aromatic C5-C35	DETSC 3072*	10	mg/kg			< 10	
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg			< 10	
Benzene	DETSC 3321#	0.01	mg/kg			< 0.01	
Ethylbenzene	DETSC 3321#	0.01	mg/kg			< 0.01	
Toluene	DETSC 3321#	0.01	mg/kg			< 0.01	
Xylene	DETSC 3321#	0.01	mg/kg			< 0.01	
MTBE	DETSC 3321	0.01	mg/kg			< 0.01	

Summary of Chemical Analysis

Soil Samples

Our Ref 24-17225

Client Ref ~ NX570

Contract Title ~ Rochdale Corner Plot, Maclure Street, Rochdaole, C

Lab No	2379363	2379364	2379365	2379366
Sample ID ~	WS03	WS03	WS04	WS04
Depth ~	1.50	2.50	0.50	1.50
Other ID ~				
Sample Type ~	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	13/08/2024	13/08/2024	13/08/2024	13/08/2024
Sampling Time ~	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.09	
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.05	
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.45	
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.05	
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.64	
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.57	
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.20	
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	0.29	
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.18	
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.09	
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.11	
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.07	
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	
PAH - USEPA 16, Total	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	2.9	
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	0.4	

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-17225

Client Ref ~ NX570

Contract Title ~ Rochdale Corner Plot, Maclure Street, Rochdaole, OL11 1DN

Lab No	2379367	2379368	2379369	2379370	2379371	2379372
Sample ID ~	WS01	WS01	WS01	WS01	WS01	WS02
Depth ~	0.50	0.50	1.50	1.50	0.50	0.50
Other ID ~						
Sample Type ~	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE	LEACHATE
Sampling Date ~	13/08/2024	13/08/2024	13/08/2024	13/08/2024	13/08/2024	13/08/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
BS EN 12457 10:1	DETS 1009*							Y	Y
BS EN 12457 2:1 WAC	DETS 1009*			Y		Y			
BS EN 12457 8:1 WAC	DETS 1009*				Y		Y		
Metals									
Arsenic, Dissolved	DETS 2306	0.16	ug/l					2.4	1.4
Boron, Dissolved	DETS 2306*	12	ug/l					< 12	< 12
Cadmium, Dissolved	DETS 2306	0.03	ug/l					< 0.03	< 0.03
Chromium, Dissolved	DETS 2306	0.25	ug/l					< 0.25	< 0.25
Copper, Dissolved	DETS 2306	0.4	ug/l					2.0	0.8
Lead, Dissolved	DETS 2306	0.09	ug/l					2.4	1.2
Mercury, Dissolved	DETS 2306	0.01	ug/l					< 0.01	< 0.01
Nickel, Dissolved	DETS 2306	0.5	ug/l					< 0.5	< 0.5
Selenium, Dissolved	DETS 2306	0.25	ug/l					< 0.25	< 0.25
Zinc, Dissolved	DETS 2306	1.3	ug/l					< 1.3	< 1.3
Inorganics									
pH	DETS 2008		pH					8.1	7.9
Cyanide, Total	DETS 2130	40	ug/l					< 40	< 40
Sulphate as SO4	DETS 2055	0.1	mg/l					1.4	1.2
Sulphide	DETS 2208	10	ug/l					15	10
Total Organic Carbon	DETS 2085	1	mg/l					2.9	1.9
PAHs									
Naphthalene	DETS 3304	0.05	ug/l					< 0.05	< 0.05
Acenaphthylene	DETS 3304	0.01	ug/l					< 0.01	< 0.01
Acenaphthene	DETS 3304	0.01	ug/l					< 0.01	< 0.01
Fluorene	DETS 3304	0.01	ug/l					< 0.01	< 0.01
Phenanthrene	DETS 3304	0.01	ug/l					0.03	0.02
Anthracene	DETS 3304	0.01	ug/l					< 0.01	< 0.01
Fluoranthene	DETS 3304	0.01	ug/l					0.06	0.01
Pyrene	DETS 3304	0.01	ug/l					0.06	0.01
Benzo(a)anthracene	DETS 3304*	0.01	ug/l					0.03	< 0.01
Chrysene	DETS 3304	0.01	ug/l					0.03	< 0.01
Benzo(b)fluoranthene	DETS 3304	0.01	ug/l					0.06	< 0.01
Benzo(k)fluoranthene	DETS 3304	0.01	ug/l					0.02	< 0.01
Benzo(a)pyrene	DETS 3304	0.01	ug/l					0.05	< 0.01
Indeno(1,2,3-c,d)pyrene	DETS 3304	0.01	ug/l					0.05	< 0.01
Dibenzo(a,h)anthracene	DETS 3304	0.01	ug/l					< 0.01	< 0.01
Benzo(g,h,i)perylene	DETS 3304	0.01	ug/l					0.05	0.01
PAH Total	DETS 3304	0.2	ug/l					0.44	< 0.20
Phenols									
Phenol - Monohydric	DETS 2130	0.1	mg/l					< 0.1	< 0.1

Summary of Chemical Analysis

Leachate Samples

Our Ref 24-17225

Client Ref ~ NX570

Contract Title ~ Rochdale Corner Plot, Maclure Street, Roch

Lab No	2379373
Sample ID ~	WS03
Depth ~	0.50
Other ID ~	
Sample Type ~	LEACHATE
Sampling Date ~	13/08/2024
Sampling Time ~	n/s

Test	Method	LOD	Units	
Preparation				
BS EN 12457 10:1	DETSC 1009*			Y
BS EN 12457 2:1 WAC	DETSC 1009*			
BS EN 12457 8:1 WAC	DETSC 1009*			
Metals				
Arsenic, Dissolved	DETSC 2306	0.16	ug/l	1.3
Boron, Dissolved	DETSC 2306*	12	ug/l	< 12
Cadmium, Dissolved	DETSC 2306	0.03	ug/l	< 0.03
Chromium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Copper, Dissolved	DETSC 2306	0.4	ug/l	1.4
Lead, Dissolved	DETSC 2306	0.09	ug/l	0.99
Mercury, Dissolved	DETSC 2306	0.01	ug/l	< 0.01
Nickel, Dissolved	DETSC 2306	0.5	ug/l	< 0.5
Selenium, Dissolved	DETSC 2306	0.25	ug/l	< 0.25
Zinc, Dissolved	DETSC 2306	1.3	ug/l	1.4
Inorganics				
pH	DETSC 2008		pH	7.4
Cyanide, Total	DETSC 2130	40	ug/l	< 40
Sulphate as SO4	DETSC 2055	0.1	mg/l	12
Sulphide	DETSC 2208	10	ug/l	10
Total Organic Carbon	DETSC 2085	1	mg/l	1.8
PAHs				
Naphthalene	DETSC 3304	0.05	ug/l	< 0.05
Acenaphthylene	DETSC 3304	0.01	ug/l	0.04
Acenaphthene	DETSC 3304	0.01	ug/l	0.04
Fluorene	DETSC 3304	0.01	ug/l	0.02
Phenanthrene	DETSC 3304	0.01	ug/l	0.09
Anthracene	DETSC 3304	0.01	ug/l	0.03
Fluoranthene	DETSC 3304	0.01	ug/l	0.15
Pyrene	DETSC 3304	0.01	ug/l	0.14
Benzo(a)anthracene	DETSC 3304*	0.01	ug/l	0.07
Chrysene	DETSC 3304	0.01	ug/l	0.09
Benzo(b)fluoranthene	DETSC 3304	0.01	ug/l	0.14
Benzo(k)fluoranthene	DETSC 3304	0.01	ug/l	0.05
Benzo(a)pyrene	DETSC 3304	0.01	ug/l	0.10
Indeno(1,2,3-c,d)pyrene	DETSC 3304	0.01	ug/l	0.09
Dibenzo(a,h)anthracene	DETSC 3304	0.01	ug/l	0.02
Benzo(g,h,i)perylene	DETSC 3304	0.01	ug/l	0.09
PAH Total	DETSC 3304	0.2	ug/l	1.2
Phenols				
Phenol - Monohydric	DETSC 2130	0.1	mg/l	< 0.1

WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-17225

Client Ref NX570

Contract Title Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN

Sample Numbers 2379357 2379367 2379368

Sample Id WS01 0.50

Date Analysed 21/08/2024

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETS 2084# Total Organic Carbon	%	7.8
DETS 2003# Loss On Ignition	%	8.2
DETS 3321# BTEX	mg/kg	< 0.04
DETS 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETS 3311# TPH (C10 - C40)	mg/kg	150.0
DETS 3301 PAHs	mg/kg	7.5
DETS 2008# pH	pH Units	8.3
DETS 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0
DETS 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate				
Determinand and Method Reference	Conc in Eluate ug/l		Amount Leached* mg/kg	
	2:1	8:1	LS2	LS10
DETS 2306 Arsenic as As	3	1.9	0.006	0.021
DETS 2306 Barium as Ba	13	7	0.03	< 0.1
DETS 2306 Cadmium as Cd	< 0.030	< 0.030	< 0.004	< 0.02
DETS 2306 Chromium as Cr	0.63	< 0.25	< 0.02	< 0.1
DETS 2306 Copper as Cu	2.5	1.3	0.005	< 0.02
DETS 2306 Mercury as Hg	< 0.010	< 0.010	< 0.0004	< 0.002
DETS 2306 Molybdenum as Mo	8.6	3.2	< 0.02	< 0.1
DETS 2306 Nickel as Ni	0.71	< 0.50	< 0.02	< 0.1
DETS 2306 Lead as Pb	4.3	2.4	< 0.01	< 0.05
DETS 2306 Antimony as Sb	2.3	0.56	< 0.01	< 0.05
DETS 2306 Selenium as Se	1.1	< 0.25	< 0.006	< 0.03
DETS 2306 Zinc as Zn	4.8	2	0.01	0.024
DETS 2055 Chloride as Cl	1600	810	< 20	< 100
DETS 2055* Fluoride as F	360	310	0.72	3.17
DETS 2055 Sulphate as SO4	8100	2000	< 20	< 100
DETS 2009* Total Dissolved Solids	39000	14000	78	176.5
DETS 2130 Phenol Index	< 100	< 100	< 0.2	< 1
DETS 2085 Dissolved Organic Carbon	3800	< 2000	< 10	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETS 2008 pH	7.8	8.2
DETS 2009 Conductivity uS/cm	56.0	20.0
* Temperature*	19.0	19.0

Mass of Sample Kg*	0.140
Mass of dry Sample Kg*	0.106

Stage 1

Volume of Leachant L2*	0.179
Volume of Eluate VE1*	0.155

Stage 2

Volume of Leachant L8*	0.85
Volume of Eluate VE2*	0.8

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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.

* 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 24-17225

Client Ref NX570

Contract Title Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN

Sample Numbers 2379358 2379369 2379370

Sample Id WS01 1.50

Date Analysed 21/08/2024

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	0.8
DETSC 2003# Loss On Ignition	%	2.1
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	< 10
DETSC 3301 PAHs	mg/kg	< 1.6
DETSC 2008# pH	pH Units	7.1
DETSC 2073* Acid Neutralisation Capacity (pH4)	mol/kg	< 1.0
DETSC 2073* Acid Neutralisation Capacity (pH7)	mol/kg	< 1.0

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate				
Determinand and Method Reference	Conc in Eluate ug/l		Amount Leached* mg/kg	
	2:1	8:1	LS2	LS10
DETSC 2306 Arsenic as As	2.7	2	0.005	0.021
DETSC 2306 Barium as Ba	0.8	4.1	< 0.02	< 0.1
DETSC 2306 Cadmium as Cd	< 0.030	< 0.030	< 0.004	< 0.02
DETSC 2306 Chromium as Cr	1.1	< 0.25	< 0.02	< 0.1
DETSC 2306 Copper as Cu	2.8	1.6	0.006	< 0.02
DETSC 2306 Mercury as Hg	< 0.010	< 0.010	< 0.0004	< 0.002
DETSC 2306 Molybdenum as Mo	3	1.2	< 0.02	< 0.1
DETSC 2306 Nickel as Ni	0.75	< 0.50	< 0.02	< 0.1
DETSC 2306 Lead as Pb	1.2	0.47	< 0.01	< 0.05
DETSC 2306 Antimony as Sb	0.9	0.22	< 0.01	< 0.05
DETSC 2306 Selenium as Se	0.59	< 0.25	< 0.006	< 0.03
DETSC 2306 Zinc as Zn	1.4	< 1.3	0.003	< 0.01
DETSC 2055 Chloride as Cl	1900	1300	< 20	< 100
DETSC 2055* Fluoride as F	610	130	1.22	2.09
DETSC 2055 Sulphate as SO4	2700	890	< 20	< 100
DETSC 2009* Total Dissolved Solids	31000	25000	62	259.9
DETSC 2130 Phenol Index	< 100	< 100	< 0.2	< 1
DETSC 2085 Dissolved Organic Carbon	5300	3200	10.6	< 50

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

Additional Information

DETSC 2008 pH	7.7	8.2
DETSC 2009 Conductivity uS/cm	44.8	35.4
* Temperature*	19.0	19.0

Mass of Sample Kg*	0.140
Mass of dry Sample Kg*	0.120

Stage 1

Volume of Leachant L2*	0.219
Volume of Eluate VE1*	0.197

Stage 2

Volume of Leachant L8*	0.958
Volume of Eluate VE2*	0.905

TBE - To Be Evaluated
SNRHW - Stable Non-Reactive
Hazardous Waste

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.

* 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 24-17225

Client Ref ~ NX570

Contract Title ~ Rochdale Corner Plot, Maclure Street, Rochdaole, OL11 1DN

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2379357	WS01 0.50	SOIL	NAD	none	Josh Best
2379360	WS02 0.50	SOIL	NAD	none	Josh Best
2379362	WS03 0.50	SOIL	NAD	none	Josh Best
2379365	WS04 0.50	SOIL	NAD	none	Josh Best

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 24-17225
 Client Ref ~ NX570
 Contract ~ Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
2379357	WS01 0.50 SOIL	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379358	WS01 1.50 SOIL	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379359	WS01 2.50 SOIL	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379360	WS02 0.50 SOIL	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379361	WS02 1.50 SOIL	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379362	WS03 0.50 SOIL	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379363	WS03 1.50 SOIL	13/08/24	GJ 60ml, PT 1L		
2379364	WS03 2.50 SOIL	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379365	WS04 0.50 SOIL	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379366	WS04 1.50 SOIL	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379367	WS01 0.50 LEACHATE	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379368	WS01 0.50 LEACHATE	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379369	WS01 1.50 LEACHATE	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379370	WS01 1.50 LEACHATE	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379371	WS01 0.50 LEACHATE	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379372	WS02 0.50 LEACHATE	13/08/24	GJ 250ml, GJ 60ml, PT 1L		
2379373	WS03 0.50 LEACHATE	13/08/24	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.

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

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



Appendix G – Gas monitoring Record Sheet



Next Generation Engineering Consultancy Services

Job No:	NX570	Site:	Rochdale Corner Plot, Maclure Street, Rochdale, OL11 1DN
Date:	14.08.2024	Client:	Booth King
Engineer:	MT	Equipment:	GA5000

*Groundwater bailed before monitoring

WS01	Flow Rate (l/h)	Pressure Differential	Gas Concentration										Water		Start		Finish	
			Peak					Steady					Depth to Water	Depth to Base	Barometric Pressure		Barometric Pressure	
			CH ₄ %	CO ₂ %	O ₂ %	LEL %	H ₂ S/ CO (ppm)	CH ₄ %	CO ₂ %	O ₂ %	LEL %	H ₂ S/ CO (ppm)						
14.08.2024	0.0	0.02	0.2	2.3	17.4	4.0	0/7	0.2	2.3	17.4	4.0	0/7	2.41	2.89	1000		1000	
22.08.2024	0.0	0.01	0.1	9.0	7.9	2.0	0/0	0.1	9.0	7.9	2.0	0/0	2.44	2.90	986		986	
29.08.2024	0.0	0.01	0.1	7.6	12.2	2.0	0/0	0.1	7.6	12.2	2.0	0/0	2.44	2.89	1001		1001	
05.09.2024	0.0	0.01	0.0	2.4	19.4	0.0	0/0	0.0	2.4	19.4	0.0	0/0	2.45	2.88	999		999	
12.09.2024	0.0	0.02	0.0	6.1	10.7	0.0	0/0	0.0	6.1	10.7	0.0	0/0	2.36	2.87	1004		1004	
19.09.2024	0.0	-0.02	0.0	1.0	20.0	0.0	0/0	0.0	1.0	20.0	0.0	0/0	2.38	2.89	1012		1012	

WS03	Flow Rate (l/h)	Pressure Differential	Gas Concentration										Water		Start		Finish	
			Peak					Steady					Depth to Water	Depth to Base	Barometric Pressure		Barometric Pressure	
			CH ₄ %	CO ₂ %	O ₂ %	LEL %	H ₂ S/ CO (ppm)	CH ₄ %	CO ₂ %	O ₂ %	LEL %	H ₂ S/ CO (ppm)						
14.08.2024	0.0	0.04	0.1	1.4	18.9	2.0	0/4	0.1	1.4	18.9	2.0	0/4	3.84	3.94	1000		1000	
22.08.2024	0.0	0.01	0.1	4.7	17.1	2.0	0/0	0.1	4.7	17.1	2.0	0/0	3.84	3.94	986		986	
29.08.2024	0.0	0.01	0.1	2.6	18.8	2.0	0/0	0.1	2.6	18.8	2.0	0/0	3.85	3.94	1001		1001	
05.09.2024	Did not monitor due to access restrictions & Unsafe Wall														999		999	
12.09.2024	Did not monitor due to access restrictions & Unsafe Wall														1004		1004	
19.09.2024	Did not monitor due to access restrictions & Unsafe Wall														1012		1012	

CH ₄	Above the 1.0% vlv guideline value in Waste Management Paper no 27 (WMP27).										CO ₂	Above the 1.5% vlv guideline value given in WMP27.									
Date	Weather					Pressure Trend					Ground Conditions										
14.08.2024	Warm, sunny and cloudy					Low and steady					Dry										
22.08.2024	Warm, sunny and cloudy					Low and steady					Dry										
29.08.2024	Warm, sunny and cloudy					High and steady					Dry										
05.09.2024	Mild, Cloudy					Low and rising					Dry										
12.09.2024	Rain, showers					High and falling					Wet										
19.09.2024	Overcast					High and steady					Dry										



Appendix H – Conceptual Models & Risk Assessments

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 <i>Draft Circular on Contaminated Land</i> , 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

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 (Superficial and bedrock Secondary A Aquifer)	Vertical percolation to groundwater	Groundwater (Medium – pollution of sensitive water resource)	Unlikely Low contaminant levels to date. Site is completely covered with buildings/hardstanding which will reduce/prevent rainwater percolation/infiltration. Further works required once building demolished.	Low post construction
		Surface Water (No surface water features identified within 250m of the site)	Lateral percolation to surface water	Surface Water (Medium – pollution of Sensitive water resource)	Low contaminant levels and no nearby receptor. Any unrecorded contamination would reduce the potential for contaminated leachate etc to impact given distance.	Low post construction
		End user of site (Staff and patrons)	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Human Health (Medium)	Unlikely Low contaminant levels to date. Site is completely covered with buildings/hardstanding which will reduce/prevent rainwater percolation/infiltration. Further works required once building demolished. Hardstanding & 600mm cover system required in new landscaped areas.	Low post construction Further SI required.

		Construction workers if applicable	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Groundwater (Medium – pollution of sensitive water resource)	Possible in soil samples retrieved within Made Ground. Appropriate PPE required & asbestos control measures	Low post construction
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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 Further works required once building demolished.	Low post construction Further SI required.
		Construction workers if applicable	Direct contact, Ingestion, Inhalation (Dust and Vapours)	Human Health (Minor – Providing suitable PPE equipment is worn)	Likely Appropriate PPE required & asbestos control measures.	Low post construction Further SI required.
Gas associated with Made Ground, Alluvium, Coal Measures & Refuse Tip directly to west.	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)	Likely Ground gas monitoring indicates CIRIA 665 CS2 protection measures. Type B Building & 3.5 points score required in line with BS8485. No specialist radon measures needed. Further works required post building demolition.	Reassessed as low post construction
		Buildings & Infrastructure	Coal/Brine mining beneath the site causing surface ground instability causing building subsidence	Buildings & Infrastructure (Severe)	Unlikely Ground stability risk assessment indicates low risk.	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.