

ENVIRONMENT

Express Solicitors
Palatine Road and Brett Street
Northenden, Manchester
Phase 1 Geo-Environmental Assessment

ENVIRONMENT

Express Solicitors
Palatine Road and Brett Street
Northenden, Manchester
Phase 1 Geo-Environmental Assessment

Birmingham
Livery Place, 35 Livery Street, Colmore Business District, Birmingham, B3 2PB
T: 0121 233 3322

Leeds
Whitehall Waterfront, 2 Riverside Way, Leeds, LS1 4EH
T: 0113 233 8000

London
11 Borough High Street, London, SE1 9SE
T: 0207 407 3879

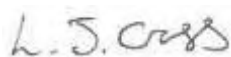
Manchester
11, Portland Street, Manchester M1 3HU
T: 0161 233 4260

Nottingham
Waterfront House, Station Street, Nottingham NG2 3DQ
T: 0115 924 1100

March 2023

DOCUMENT ISSUE RECORD

Document Number:	NNM-BWB-ZZ-XX-RP-YE-0001_Ph1
BWB Reference:	221105

Rev.	Date of Issue	Status	Author:	Checked:	Approved:
P01	March 2023	S2	Charley Mullen BSc (Hons)	Richard Robinson BSc (Hons) MCIWEM	Mike Harper BSc(Hons) MSc CEnv
			Luke Cross BSc (Hons)		
			 		

Notice

This document has been prepared for the sole use of the Client in accordance with the terms of the appointment under which it was produced. BWB Consulting Limited accepts no responsibility for any use of or reliance on the contents of this document by any third party. No part of this document shall be copied or reproduced in any form without the prior written permission of BWB.

EXECUTIVE SUMMARY

Executive Summary	
Site Address	Palatine Road & Brett Street, Northenden, Manchester.
Proposed Development	The proposed development is anticipated to comprise the construction of a cluster of mews houses along Allanson Road, and a four-storey new-build mixed-use development along Palatine Road.
Current Site Use	The site comprises two parcels of land, a northern irregular shaped plot located along Palatine Road currently occupied by two commercial building blocks up to three storeys high, with associated open air car park. The southern plot is rectangular and accessible from Brett Street and Allanson Road and currently comprises a two storey commercial building with associated open air car parking.
Site History	Prior to 1897, the site comprised undeveloped, open land. The site was first developed in 1897, with northern plot developed into four residential buildings with associated gardens and outbuildings and the southern plot comprising gardens for neighbouring residential buildings to the west. By 1980, both areas of the site have been redeveloped and resemble their present-day layouts. Limited potentially contaminative land uses have been identified through review of the historical maps. The surrounding 250m of the site were developed for residential use by 1897 which expanded through the mapping periods reviewed. Since 1977 there has been little change in land use for the site and its surroundings.
Ground Conditions	Ground conditions are anticipated to comprise Glaciofluvial deposits (Secondary A Aquifer). Bedrock is understood to comprise the Helsby Sandstone Formation in the northern parcel and north-eastern half of the southern parcel (Principal Aquifer) with Tarporley Siltstone Formation bedrock (Secondary B Aquifers) encroaching across the southwestern half of the southern parcel. Made Ground is anticipated to be present across both site areas. BGS historical borehole records indicate that groundwater is continuously present within the Glaciofluvial deposits.
Geotechnical Review	Shallow spread foundation bearing into the underling Glaciofluvial deposits are anticipated to be suitable for the proposed mews housing given their anticipated low loading requirements. Foundations may require setting into the underlying bedrock deposits for the northern mixed-use buildings given the higher loadings required for a four-story building. A piled foundation solution may not be an option given the site is within a subsurface safeguarding zone for the HS2 rail line.
Environmental Review	The Proposed Development is considered to pose a moderate risk to human health. It is considered that the main driver for the risk rating is due to a risk of hazardous ground gas being present. The risk posed to controlled waters is predominantly considered to be low due to the limited sources of contamination identified.
Recommendations	A ground investigation should be undertaken at the Site to confirm ground conditions at the Site, assess the ground gas regime and allow for in-situ and laboratory testing to inform foundation options. Detailed UXO Risk Assessment should be completed to further assess the potential for UXO to be present on site.
This summary should be read in conjunction with BWB's full report (ref. NNM-BWB-ZZ-XX-RP-YE-0001_Ph1) and reflects an assessment of the site based on information received by BWB at the time of production.	

CONTENTS

EXECUTIVE SUMMARY	iii
1. INTRODUCTION.....	1
Instruction	1
Objectives	1
Scope of Work.....	1
2. THE SITE	3
Site Location.....	3
Site Description	3
Site Walkover.....	4
Potential Constraints to Ground Investigation	5
Site Surroundings.....	5
3. ANTICIPATED GROUND CONDITIONS	7
4. SITE HISTORY	9
Operational / Company Records	9
Planning History.....	9
Unexploded Ordnance	9
5. REGULATORY SETTING.....	11
Permits Consents and Authorisations	11
Landfilling and Waste Management	11
6. GEOTECHNICAL APPRAISAL	12
7. PRELIMINARY ENVIRONMENTAL RISK ASSESSMENT	14
Introduction	14
Conceptual Site Model.....	14
8. ENVIRONMENTAL LIABILITY ASSESSMENT AND DEVELOPMENT IMPLICATIONS.....	18
Statutory Liability.....	18
Third Party Liability.....	18
Public Relations	18
Development Implications	19
9. CONCLUSION AND RECOMMENDATIONS	20
Conclusions	20
Recommendations.....	21
10. REFERENCES	22

FIGURES

Figure 2:1: Site Location Plan

Figure 2:2: Aerial Photograph

TABLES

Table 2:2: Surrounding Land Use

Table 3:1: Summary of Anticipated Ground Conditions

Table 6:1: Landfill Sites

Table 6:1: Ground Related Constraints & Opportunities

Table 7:1: Potential Sources of Contamination

Table 7:2: Relevant Potential Pathways and Receptors

Table 7:3: Preliminary Conceptual Site Model

APPENDICES

Appendix 1: Site Photographs

Appendix 2: Groundsure Report

Appendix 3: Historical Maps

Appendix 4: Preliminary Unexploded Risk Assessment

Appendix 5: Classification of Risk

1. INTRODUCTION

Instruction

- 1.1 BWB Consulting (BWB) was instructed by Express Solicitors (the Client) to carry out a Phase 1 Geo-Environmental Assessment for the site at Palatine Road and Brett Street, Northenden, Manchester.
- 1.2 The proposed development is anticipated to comprise the construction three single aspect mews houses presenting a residential edge onto Allanson Road, and a four-storey new-build mixed-use development fronting Palatine Road comprising a retail/commercial base at ground floor level with a mix of one- and two- bedroom apartments on the upper floor levels.

Objectives

- 1.3 This report has been completed to present pertinent information into the environmental risks and liabilities associated with the site. It has been completed to fulfil the requirements of a preliminary risk assessment in accordance with BS 10175:2011+A2:2017 '*Investigation of potentially contaminated sites, code of practice*' and EA Guidance on Risk Management of Land Contamination <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>.
- 1.4 The report has also been prepared with reference to land contamination technical guidance available through <https://www.gov.uk/government/collections/land-contamination-technical-guidance>.
- 1.5 The objectives of this report are to:
- Assess historical activities at the site with respect to their potential impact on the site environment;
 - Characterise the environmental setting of the site, identify migration pathways and vulnerable receptors for contamination originating at the site, focusing on potential soil and groundwater liabilities;
 - Assess historical and current surrounding land use in relation to known or potential off-site contamination issues that may impact the site;
 - Review existing site investigation and remediation information for the site, where available;
 - Develop a preliminary Conceptual Site Model (CSM); and
 - Assess potential environmental liabilities associated with the site.

Scope of Work

- 1.6 The scope of work included:
- A site visit to inspect the current site and immediate surroundings, identify potential hazards associated with ground conditions or contamination and to determine

potential constraints with regards to ground investigation (photographs presented as **Appendix 2**);

- A review of the following information:
 - o Groundsure report, reference HMD-214-9389597 (**Appendix 2**);
 - o Historical Ordnance Survey Mapping (**Appendix 3**);
 - o Historical aerial photographs (Google Earth) and other imagery (Groundsure);
 - o British Geological Survey (BGS) 1:50 000 Scale, "Stockport", Sheet 98, Solid, (1977); and British Geological Survey (BGS) 1:63 360 Scale, "Stockport", Sheet 98, Drift, (1971);
 - o BGS online geological maps and exploratory hole records (www.bgs.ac.uk);
 - o MAGIC website (www.natureonthemap.naturalengland.org.uk/magicmap);
 - o Coal Authority Interactive Map Viewer (<http://mapapps2.bgs.ac.uk/coalauthority/home.html>);
 - o Regional unexploded bomb risk maps;
 - o Preliminary Unexploded Ordnance Risk Assessment, by 1st Line Defence, reference PA17506-00 (**Appendix 4**).
- A summary of the key hazards or uncertainties that require additional investigation in order to further characterise the associated risks; and
- Production of a Geo-Environmental Assessment (this report), concluding in a qualitative assessment of the risks from contamination and ground-related constraints which may impact on the site.

2. THE SITE

Site Location

- 2.1 The site is located at Palatine Road and Brett Street, in Northenden, Manchester, centred at National Grid reference 383069, 390298. The approximate location of the site is shown below in **Figure 2:1**.

Figure 2:1: Site Location Plan



Site Description

- 2.2 The site consists of two parcels of land; a northern irregularly shaped plot and a southern rectangular plot, with a total area of 0.21 ha.
- 2.3 The sites are both generally level, and are occupied by existing buildings and hardstanding within a built up area of the high street (Palatine Road) and adjacent side and back streets (Brett Street and Allanson Road). The southern plot is accessible by

vehicle and pedestrian access from Brett Street and Allanson Road, and the northern plot is accessible by pedestrian access on Palatine Road, and vehicle access from Allanson Road. Both sites are private land, with no public right of way through the gated alley between the two structures on the northern plot.

- 2.4 The surrounding streets and buildings are a mixture of commercial and residential properties, with on-street parking on Brett Street and Allanson Road, and bollards blocking vehicle access on the pavement along Palatine Road.
- 2.5 The current layout of the site and the main site features identified are shown on the aerial plan at the front of **Appendix 1**. Further site descriptions are included in the site walkover section below in reference to photographs.

Site Walkover

- 2.6 A site walkover of external areas was completed on 02/03/2023 by a representative of BWB. No site personnel were interviewed as part of the walkover. No internal walkover of structures or gated areas was undertaken. Photographs from the walkover and a plan showing the location and direction of photographs are presented in **Appendix 1**.
- 2.7 Inspection of the external areas did not encounter evidence of spillages, ground surface staining or bulk storage. No evidence of invasive species was noted on site, and the area is entirely covered with structures or hardstanding.
- 2.8 The site comprises two main areas:
- A southern plot comprising a commercial building and open-air car parking on the junction of Brett Street and Allanson Road (Photos 1 to 5).
 - A northern plot comprising 315 to 321 Palatine Road, two commercial building blocks occupied by Express Solicitors and associated open air carparking backing onto Allanson Road (Photos 6 to 13).

Southern Plot

- 2.9 The southern plot was occupied by a single two-storey commercial building with six parking bays on the south elevation facing Brett Street. The building was constructed of brick. Air conditioning units were observed on the western side (Photo 1). There was a pedestrian-gated area to the immediate west which housed refuse bins and a back door. There was no vehicle access to this area.
- 2.10 The eastern side of the building immediately abutted the pavement on Allanson Road (Photo 2) and existing external buried services (electric, water supply stop tap, foul water, and surface drainage) were observed with access hatches and manholes in the pavement (Photo 3). There was a telegraph pole with overhead telegraph cables adjacent to the north east corner of the site (Photo 4).
- 2.11 The northern side of the building was gated (Photo 4) and one storey high, in contrast to the southern frontage. The gated alley was potentially wide enough for a single narrow vehicle, but had potted plants in it, presumed to be associated with the

adjacent residential property. Residential refuse bins were grouped outside of the alley (Photo 5).

- 2.12 No damage or distortion of the existing structure was observed from the external inspection undertaken.

Northern Plot

- 2.13 The northern plot was occupied by two structures fronting onto Palatine Road, and a rear car park on Allanson Road. The southernmost building (317-319 Palatine Road) was three storeys high and had a roof garden (Photo 6 and Aerial Plan). The northern building (321 Palatine Road) was two storeys high, with a third storey single room/shed on the roof (Photo 7).
- 2.14 The two buildings were separated by an alley wide enough for a single vehicle (Photo 8 and Photo 9). Both structures housed external fans for air conditioning units above head-height (Photo 11).
- 2.15 Covers to buried services were present in the alleyway, and in the curbs along Palatine Road and Allanson Road. There was a water stop tap outside 317-319 Palatine Road.
- 2.16 The puddle shown in Photo 8 was due to someone washing a car next to the northern structure at the time of the inspection. No other storage or liquids were observed on site.
- 2.17 There was a bike store with wooden gates on the northern boundary of the northern building (Photo 10).

Potential Constraints to Ground Investigation

- 2.18 The ground investigation works may need to be in phased due to the sites ongoing occupation. Investigation works to inform the planning process could be completed utilising a dynamic sampling rig whilst the buildings are in use, with deeper boreholes advanced once the buildings are empty and any demolition works completed to allow for detailed geotechnical design.

Site Surroundings

- 2.19 The surrounding land uses at the time of the walkover survey are summarised in **Table 2:1**.

Table 2:1: Surrounding Land Use

Surrounding Land Use	
North	Commercial / retail outlets along Palatine Road and residential properties along Allanson Road.
East	Residential properties.
South	Commercial / retail outlets along Palatine Road and residential properties along Allanson Road.
West	Further commercial / retail outlets with residential properties and a school beyond.

2.20 An aerial photograph representative of the site and surroundings, from Google Satellite Imagery dated March 2021, is presented as **Figure 2:2**.

Figure 2:2: Aerial Photograph



3. ANTICIPATED GROUND CONDITIONS

- 3.1 The anticipated ground conditions for the site and controlled waters vulnerability is discussed within **Table 3:1**.

Table 3:1: Summary of Anticipated Ground Conditions

Anticipated Ground Conditions	
Geology	Information published by the BGS indicates that the site is directly underlain by Glaciofluvial (sand and gravel) superficial deposits. Bedrock is understood to comprise the Helsby Sandstone Formation in the northern parcel and northeast half of the southern parcel with the Tarporley Siltstone Formation bedrock encroaching across the southwestern half of the southern parcel. As both parcels contain existing buildings, Made Ground will likely be present overlying the superficial deposits. A BGS borehole is present approximately 100m to the south east of the southern parcel, BGS reference SJ89SW819 records Made Ground to a depth of 0.50m, followed by brown sandy clay and clayey gravelly sand (Glaciofluvial deposits) to 3.40m, underlain by dark brown boulder clay (Possible Till) to a depth of 4.3m, overlying hard red marl bedrock (possible Tarporley Siltstone Formation). A further seven BGS records between 100 and 200m southeast of the site generally confirm the record detailed above with varying layers of glacial deposits overlying the weathered bedrock typically between 4.30m and 4.90m below ground level (bgl).
Hydrogeology	The Environment Agency (EA) describe the Glaciofluvial deposits as a Secondary A aquifer. The Helsby Sandstone Formation bedrock is a Principal Aquifer, with the Tarporley Siltstone bedrock as a Secondary B Aquifer. Groundwater vulnerability for these aquifers is recorded as high. The BGS borehole SJ89SW819 indicated that groundwater was struck at 2.1m bgl with the other BGS records typically indicating a water strike within the shallow granular Glaciofluvial deposits. No discharge consents, pollution incidents or abstractions related to groundwater are recorded within 500m of the site. The site is not indicated to be within, or within close proximity to, an EA groundwater Source Protection Zone.
Surface Waters	The closest surface water feature to the site is the River Mersey, approximately 125m to the northeast of the site. The site is located within the surface water body catchment area of the River Mersey. No pollution incidents or abstractions from surface water have been recorded within 500m of the site. A licensed discharge is recorded approximately 200m to the northeast of the site of site drainage to the River Mersey. The site is located in a combination of EA flood zones 2 and 3 for river and coastal flooding and is rated at Moderate risk of groundwater flooding.
Ground Gas & Radon	Less than 1% of homes in this area are above the Radon Action Level, therefore no Radon protection measures are required in new buildings. Made Ground likely to be present on site given its developed history which is considered a potential source of hazardous ground gas. The Groundsure Report indicates a historical landfill associated with a sewage works was present approximately 450m north of the site. BWB do not consider this feature a significant to the site given the distance from site, the River Mersey is also considered a barrier preventing hazardous gas migration.

Anticipated Ground Conditions	
Mining and Mineral Extraction	The site is not located within a Coal Mining Reporting Area. There is no record of other mineral extractions within 500m of the site.
Environmental Sensitivity	The site is located within an SSSI Impact Risk Zone, but the proposed development does not require consultation. The site is not within a Nitrate Vulnerable Zone.
HS2 Subsurface Safeguarding	The site sits directly above the current tunnelling route for the HS2 line into Manchester. Buildings with piled foundations set deep within the underlying soils and bedrock are likely to be impacted by this. BWB do not consider this a significant risk to the proposed development.

4. SITE HISTORY

- 4.1 Historical Ordnance Survey (OS) mapping for the site area has been reviewed. These maps and plans date from 1849 to 2023. The historical plans reviewed are provided in **Appendix 3**.
- 4.2 Prior to 1897, the site and its surroundings comprised undeveloped, open land. The site was first developed in 1897, with northern plot developed into four residential buildings with associated gardens and outbuildings and the southern plot comprising gardens for neighbouring residential buildings to the west. By 1905, the southern plot had also been built on, this area appears to have demolished by 1955, leaving the parcel empty. By 1980, both parcels resemble their present-day layouts, no detail on the site usages is given on the maps reviewed.
- 4.3 The surrounding 250m of the site were developed for residential use by 1897. The River Mersey runs approximately 100m to the east of the site and is indicated to flow to the north-northwest. The residential area was expanded in excess of 500m of the site by 1934, and to 750m by 1938. A tank, associated with the Corn Mill 75m northeast of the site was present in the maps dated 1956 and 1961. Electrical substations have been present 50m north of the site since the 1960s. By 1977, the M60 appears on historical maps, approximately 400m to the east of the site. Since 1977, there has been little change in land use for the site and its surroundings. Limited potentially contaminative land uses have been identified via a review of the historical maps.
- 4.4 Google Earth historical imagery from 2003-2023 confirms that there have been no significant changes either on site or in the surrounding area within that time.

Operational / Company Records

- 4.5 No operational records have been made available for review as part of this assessment.

Planning History

- 4.6 The Manchester City Council Planning Portal was accessed on 01/03/2023 and indicated that no planning applications have been submitted for the site since 2000.

Unexploded Ordnance

- 4.7 A Preliminary Unexploded Ordnance Risk Assessment has been completed by 1st Line Defence (ref: PA17506-00, dated 6th March 2023) and is presented as **Appendix 4**.
- 4.8 The report indicates that the southern area of the site was subject to a high explosive bomb strike. In addition, the southern area was noted to be cleared of buildings on post-war mapping which is often an indication of bomb damage. Both site areas were noted to have structural changes between pre and post war mapping.
- 4.9 Given the above, the report concludes that further research is recommended in the form of a Detailed UXO Risk Assessment.

- 4.10 Appropriate UXO risk management measures are required for any ground works on site until the risk of UXOs being present can be fully discounted.

5. REGULATORY SETTING

Permits Consents and Authorisations

5.1 A full listing of permits, consents and authorisations including discharge consents, pollution incidences and other environmental information, is included in the Groundsure report, presented in **Appendix 2**. The following pertinent features have been identified which have the potential to have a detrimental impact on site:

- Current petrol station located 65m north of the site a Part B permit is also held at the feature.
- Part B permit is held by a dry cleaners located 35m west of the site; and
- Electricity substation 50m northeast of the site.

Landfilling and Waste Management

5.2 A full listing of EA, BGS and Local Authority recorded landfills are provided in the Groundsure report presented in **Appendix 2**.

5.3 Two historical landfill sites were identified within 500m of the site, as detailed in **Table 5:1**.

Table 5:1: Landfill and Waste Management Sites

Name	Distance from Site	Details
Sewage Works	460m north	Historical landfill site, accepting inert, industrial, commercial, household and liquid sludge. Last recorded in December 1965.
Various breaker yards	55 – 159m southeast	Seven records in total referring to a breakers yard. All entries are considered likely to reference the same feature.
GMW Depot (recycling Centre)	460m southwest	A materials recycling centre.
Blue Lagoon No. 2	431m west	Accepted inert waste from 1981 to 1984.

5.4 There are five entries for waste exemptions within 500m of the site, including one entry for “all roads in Greater Manchester” for the screening and bleeding of wastes. None of these entries are considered a significant risk to the site as waste exemptions are given to low-risk waste activities.

5.5 None of the above landfill sites are considered a significant risk to the site by BWB given the distance from site or activities/wastes handled.

6. GEOTECHNICAL APPRAISAL

- 6.1 The Groundsure report, site history, current site setting and geology setting have all been considered in order to provide an indication of the potential ground related constraints and opportunities in the context of the proposed development as set out in **Table 6:1**.

Table 6:1: Ground Related Constraints & Opportunities

Potential Constraint / Opportunity	Explanation	Potential Mitigation Options
Made Ground	Made Ground is expected to be present across the site given its developed history.	Made Ground may be suitable for reuse on site, subject to confirmation of chemical status and engineering properties via ground investigation, and confirmation of potential restrictions on reuse associated with waste management licencing.
Topsoil	Topsoil is not present on site.	Topsoil would need to be imported onto site should landscaped areas form part of the proposed development. Any soils imported on to site would need to be tested to ensure its suitable for use.
Preliminary Foundation Solution	Shallow spread foundation bearing into the underling Glaciofluvial deposits are anticipated to be suitable for the proposed mews housing given the anticipated low loadings. Foundations may require setting into the underlying bedrock deposits for the northern mixed-use buildings given the higher loadings required by a four-story building.	Ground investigation should be undertaken to confirm ground conditions at the site and allow for in-situ and laboratory testing to inform foundation design. The site is within a HS2 Subsurface Safeguarding area which may prevent the use of a piled foundation.
Buried Obstructions	Given the developed nature of the site there is potential for buried obstructions such as services, former foundations and basements to be present.	Buried obstructions may require removal from site within areas of proposed development. If basements are present then these may require backfilling in line with an end product specification (earthworks specification).
Ground Subsidence Risks	The Groundsure Report indicates a negligible to very low risk on site associated with shrink/swell clays, running sands, collapsible deposits, landslides, compressible deposits and dissolution of soluble rocks. A moderate compressibility risk is reported where	Ground investigation should be undertaken to confirm ground conditions at the site

Potential Constraint / Opportunity	Explanation	Potential Mitigation Options
	Alluvium is mapped (125m to the north east).	
Earthworks	The proposed development is not expected to include any significant changes to site levels.	No further assessment is required.
Drainage Soakaways and	Soakaways may be a viable option at the site, depending on the thickness of the Glaciofluvial deposits beneath the site.	Should soakaways be considered as part of the drainage strategy, it is recommended that infiltration testing in accordance with current guidance is undertaken. Soakaway testing may have to be completed following the demolition of the site due to the trial pitting required being very intrusive.

7. PRELIMINARY ENVIRONMENTAL RISK ASSESSMENT

Introduction

- 7.1 The risk posed by any contaminants in soil or groundwater will depend on the nature of the hazard, the probability of exposure, the pathway by which exposure occurs, and the likely effects on the receptors. A contaminant is defined as a substance that has the potential to cause harm, while a risk is considered to exist if such a substance is present in sufficient concentration to cause harm and a pathway exists for a receptor to be exposed to the substance.
- 7.2 Three impact potentials exist for any given site, all of which need to be considered in a risk assessment, which are:
- The site impacting upon itself;
 - The site impacting on its surroundings; and
 - The surroundings impacting on the site.
- 7.3 The following sections discuss all the identified potential on and off-site sources, pathways and receptors in the context of the proposed development and plausible pollutant linkages which may represent a risk to identified receptors such as human health and/or controlled waters from the data gained from the desk study.
- 7.4 The assessment is qualitative and aimed to determine all likely pollutant linkages, with consideration of significance and allowing for uncertainties.
- 7.5 **Sources (S):** These are potential or known sources of contamination that may relate to a former land use or present site feature or process (e.g. fuel storage tanks).
- 7.6 **Pathways (P):** A pathway is defined as a mechanism or route by which a contaminant comes into contact with, or otherwise affects a receptor. Pathways by which the identified receptors may be impacted upon in the context of the proposed development.
- 7.7 **Receptors (R):** Receptors are defined as people, living organisms, ecological systems, controlled waters, atmosphere, structures and utilities that could be adversely affected by contaminant(s).

Conceptual Site Model

- 7.8 Consideration has been given to the likely sources, pathways and receptors which may be present, based on the information in the previous sections. These are presented in **Table 7:1** and **Table 7:2** and further information about the risk classification scheme is included within **Appendix 5**, with reference to CIRIA C552 '*Contaminated land risk assessment - a guide to good practice*'.
- 7.9 A tabulated version of the Preliminary CSM based on the desk study and site observations is presented in **Table 7:3**.

Table 7:1: Potential Sources of Contamination

Location	Potential Source	Contaminants of Potential Concern (CoPC)
On-site	MADE GROUND associated with the developed history of the site.	- Heavy metals - Inorganics, such as cyanides, sulphates and nitrates - pH - Asbestos Containing Materials (ACMs) - Polycyclic aromatic hydrocarbons (PAHs) - Petroleum hydrocarbons - Methane, carbon dioxide
Off-site	Contamination associated with neighbouring commercial activity – namely the petrol station and dry cleaners	- Heavy metals - Inorganics, such as cyanides, sulphates and nitrates - VOCs - SVOCs - PAHs - Petroleum hydrocarbons
	MADE GROUND associated with the developed history of the land surrounding the site.	- Heavy metals - Inorganics, such as cyanides, sulphates and nitrates - VOCs - SVOCs - PAHs - Petroleum hydrocarbons - Methane, carbon dioxide

Table 7:2: Relevant Potential Pathways and Receptors

Receptors	Pathways
Human Health: - Future site users (residential & commercial) - Intrusive maintenance workers	- Dermal contact with soil or dust - Incidental ingestion of soil and/or dust - Inhalation of dust and/or fibres - Investigation of contaminated vegetables - Migration and accumulation of ground gas in enclosed spaces leading to inhalation or explosion
Controlled Waters: - Groundwater (Secondary A, B & Principal Aquifers) - Surface water (River Mersey)	- Leaching of soil contaminants - Vertical and lateral migration

7.10 A number of potential sources of contamination, identified during the review, are not considered likely to impact on the site. These are detailed below, along with the appropriate justification for not being included within the preliminary CSM:

- Electrical substation 50m northeast; Polychlorinated biphenyls are not a highly mobile contaminant, therefore, given the distance between they are considered unlikely to represent to the site environs. Furthermore, groundwater is likely to migrate towards the River Mersey to the north, taking any contamination away from site.
- Landfill 450m north; BWB do not consider this feature a significant to the site given the distance from site, the River Mersey is also considered a barrier preventing hazardous gas migration towards the site.

Table 7:3: Preliminary Conceptual Site Model

Source	Pathway	Receptor	Con	Prob	Risk	Potential Mitigation/Investigation Requirements
On-site sources as detailed in Table 7:1 .	Dermal contact with, and incidental ingestion of soil and/or dust. Inhalation of dust and/or fibres.	Future site users (residential)	Md	Lw	M/L	Limited potential sources of contamination have been identified on site. As part of the proposed development, it is anticipated that hardstanding will be present across the majority of the site. This will limit the potential for direct contact with, and minimise dust generation from potentially contaminated soils at the site post construction. In any public open space/landscaped areas the provision of a clean capping layer would restrict direct access to potentially contaminated soils. No topsoil is present on site for re-use, therefore all topsoil materials will require importation onto site. These materials should be tested to ensure its suitable for both human exposure and a growing medium. It is recommended that an intrusive ground investigation be completed in order to assess the extent of any potential contamination at the site.
		Future site users (commercial)	Mi	UI	VL	
		Intrusive maintenance workers	Md	Lw	M/L	The exposure of intrusive maintenance workers can be mitigated by the adoption of suitable working methods, utilising appropriate personal protective equipment (PPE) and maintaining good hygiene. If significant asbestos is recorded, the requirements of the Control of Asbestos Regulations (CAR) 2012 should be complied with.
	Ingestion of contaminated vegetables and/or soil attached to vegetables.	Future site users (residential)	Md	UI	L	As mentioned above, no topsoil is present on site for re-use as part of the redevelopment, therefore all topsoil materials will require importation onto site. These materials should be tested to ensure its suitable for both human exposure and a growing medium.
	Migration and accumulation of ground gases in enclosed spaces leading to asphyxiation (carbon dioxide) or explosion (methane).	Future site users (residential & commercial)	Sv	Lw	M	Made Ground materials are expected across the Site. The above indicates a potential risk from ground gases. Ground investigation should include the installation of ground gas monitoring wells in order to determine the risk posed from ground gases.

Source	Pathway	Receptor	Con	Prob	Risk	Potential Mitigation/Investigation Requirements
	Leaching and permeation through soil profile followed by vertical and lateral migration of contaminants.	Groundwater: Underlying Secondary A & B Aquifers	Mi	Lw	L	No groundwater or surface water data is currently available for the site, however, limited sources of contamination have been identified on site through this assessment. Groundwater is anticipated within the granular Glaciofluvial deposits across the site.
		Groundwater: Underlying Principal Aquifers	Mi	Lw	L	
	Lateral migration of contaminated groundwater.	River Mersey	Md	UI	L	
Off-site sources as detailed in Table 7:1 .	Migration and accumulation of ground gases in enclosed spaces leading to asphyxiation (carbon dioxide) or explosion (methane).	Future site users (residential/commercial)	Md	Lw	M/L	Ground gas monitoring should be completed as part of an intrusive ground investigation in order to characterise the ground gas regime at the site.
	Lateral migration of contaminated groundwater.	Groundwater: Underlying Secondary A, B & Principal Aquifer	Mi	Lw	L	Limited sources of contamination have been identified near the site. If impact has migrated on to site it is likely to be low magnitude and of limited significance.
VH = Very High, H = High, M = Moderate, M/L = Moderate/Low, L = Low, VL = Very Low KEY: Sv = Severe, Md = Medium, Mi = Mild, Mr = Minor, Hi = High, Li = Likely, Lw = Low Likelihood, UI = Unlikely						
Pollutant Linkage Assessment Summary When considered in the context of the conceptual site model and the historical activities that have taken place (residential developments before redevelopment for commercial end uses), the proposed development is considered to pose a MODERATE risk to human health. It is considered that the main driver for the risk rating for human health is the potential for hazardous ground gas to be present. The risk posed to controlled waters is predominantly considered to be LOW due to the limited sources of contamination identified and the anticipated cohesive soils limited contamination migration to the Principal Aquifer. It is recommended that a ground investigation be undertaken to quantify the identified pollutant linkages and assess likely mitigation measures.						

8. ENVIRONMENTAL LIABILITY ASSESSMENT AND DEVELOPMENT IMPLICATIONS

Statutory Liability

- 8.1 The contaminated land regime has implications for those who cause or knowingly permit land to be contaminated, or who own or occupy land that is contaminated. Contaminated land is defined in Section 78A(2) of Part IIA of the Environmental Protection Act 1990 as:

"Any land which appears to the local authority in whose area it is situated to be in such a condition, by reason of substances in, on or under the land, that:

- i. Significant harm is being caused or there is a significant possibility of such harm being caused; or*
- ii. Significant pollution of controlled waters is being caused or there is a significant possibility of such pollution being caused."*

- 8.2 Harm is defined in Section 78A(4) of the Environmental Protection Act 1990 as:

"Harm to the health of living organisms or other interference with ecological systems of which they form part and, in the case of man, includes harm to his property."

- 8.3 Once an area of land has been identified as contaminated land, appropriate persons will be identified as being responsible for the cost of cleaning up the land by the enforcing authority. The appropriate person will be liable for all or part of the remediation of the land. Two classes of appropriate person have been identified:

- Class A appropriate persons are those who cause or knowingly permit the pollutants to be in, on or under the land.
- Class B appropriate persons are the owners(s) or occupier(s) of the land.

- 8.4 Where no Class A appropriate persons can be identified, then Class B appropriate persons may become liable.

- 8.5 Based on the information available regarding the site, the potential for Statutory Authority action based on "pollution of controlled water" or "significant harm" as defined by Part IIA of the Environmental Protection Act 1990 is considered to be low.

Third Party Liability

- 8.6 Based on the information contained in this report, it is the opinion of BWB that the potential for legal action by surrounding landowners, based on the potential for contamination to migrate off-site, is considered to be low.

Public Relations

- 8.7 The likelihood of public relations being tarnished due to contamination issues at the site are considered to be low.

Development Implications

- 8.8 A piled foundation design is unlikely going to be acceptable on the northern area given the site being located within a subsurface safeguarding zone for the HS2 railway.

9. CONCLUSION AND RECOMMENDATIONS

Conclusions

- 9.1 The site comprises two parcels of land, a northern irregular shaped plot located along Palatine Road currently occupied by two commercial building blocks, one two storey block with the second comprising three storeys, with associated open air car park. The south plot was rectangular and accessible from Brett Street and Allanson Road and comprised a two-storey commercial building with associated open air car parking.
- 9.2 Prior to 1897, the site comprised undeveloped, open land. The site was first developed in 1897, with northern plot developed into four residential buildings with associated gardens and outbuildings and the southern plot comprising gardens for neighbouring residential buildings to the west. By 1980, both areas of the site had been redeveloped and resemble their present-day layouts, no detail on the site usages is given on the maps reviewed.
- 9.3 Limited potentially contaminative land uses have been identified via a review of the historical maps. The surrounding 250m of the site were developed for residential use by 1897. A tank, associated with a nearby Corn Mill was present in the maps dated 1956 and 1961. Electrical substations have been present 50m north of the site since the 1960s. Since 1977 there has been little change in land use for the site and its surroundings.
- 9.4 Information published by the BGS indicates that the site is directly underlain by Glaciofluvial (sand and gravel) superficial deposits. Bedrock is understood to comprise the Helsby Sandstone Formation in the northern parcel and northeast half of the southern parcel with the Tarporley Siltstone Formation bedrock encroaching across the southwestern half of the southern parcel. Made Ground is anticipated to be present across the site given its developed nature. As both parcels contain existing buildings, Made Ground will likely be present overlying the superficial deposits.
- 9.5 BGS historical borehole records indicate that groundwater is continuously present within the Glaciofluvial deposits.
- 9.6 The Proposed Development is considered to pose a moderate risk to human health. It is considered that the main driver for the risk rating for human health is due to Made Ground presenting a risk of hazardous gas being present. The risk posed to controlled waters is predominantly considered to be low due to the limited sources of contamination identified.
- 9.7 Shallow spread foundations bearing into the underling Glaciofluvial deposits are anticipated to be suitable for the proposed mews housing given their anticipated low loading requirements. Foundations may require setting into the underlying bedrock deposits for the northern mixed-use buildings given the higher loadings required by a four-story building. A piled foundation solution may not be an option given the site is within a subsurface safeguarding zone for the HS2 rail line.

- 9.8 Evidence of a potential bomb strike on site has been identified by the Preliminary UXO Risk Assessment. As such, appropriate UXO risk management measures are required for any ground works on site until the risk of UXO being present can be fully discounted.

Recommendations

- 9.9 A ground investigation should be undertaken at the site to confirm ground conditions, determine the ground gas regime, allow for in-situ and laboratory testing to quantify pollutant linkages and inform foundation design. The latter of this requirements may have to been completed following the closure and demolition of the existing building.
- 9.10 A detailed UXO Risk Assessment should be completed to further assess the potential presence of UXO on site.

10. REFERENCES

1. BS 10175:2011+A2:2017 Investigation of potentially contaminated sites. Code of practice. British Standards Institute, 2017.
2. CIRIA C552 *Contaminated land risk assessment. A guide to good practice*. Rudland, D J, Lancefield, R M, Mayell, P N, 2001.
3. Environmental Protection Act 1990: Part 2A, Contaminated Land Statutory Guidance. Department for Environment Food and Rural Affairs (DEFRA), 2012.
4. Land Contamination Risk Management. Environment Agency, 2020.
5. <https://www.gov.uk/government/collections/land-contamination-technical-guidance>.
6. The Control of Asbestos Regulations. Health and Safety Executive, 2012.

APPENDICES

Appendix 1: Site Photographs

Project Number: 221105
Project Name: Northenden
Site Photographs

BWB



Plan—Google Earth Aerial Image and Photo Location Plan.



Photo 1—Existing building and car park on Brett Road.

Project Number: 221105
Project Name: Northenden
Site Photographs

BWB



Photo 2—Existing building and car park on Brett Road.



Photo 3—Allanson Road side of existing structure, showing service hatches.

Project Number: 221105
Project Name: Northenden
Site Photographs

BWB



Photo 4—Gated alley adjacent to Allanson Road side of existing structure.



Photo 5—Rear corner and gated alley behind Allanson Road side of structure.

Project Number: 221105
Project Name: Northenden
Site Photographs

BWB



Photo 6—Rear view of 317-319 Palatine Road, from Allanson Road.



Photo 7—Rear view of 315 Palatine Road, from Allanson Road.

Project Number: 221105
Project Name: Northenden
Site Photographs

BWB



Photo 8—Rear view of alley between 317-319 Palatine Road, and 315 Palatine Road, from Allanson Road.



Photo 9—Gated entrance to alley on Palatine Road.

Project Number: 221105
Project Name: Northenden
Site Photographs

BWB



Photo 10—Northern boundary of the site, with bike store, and Express Solicitors.



Photo 11— Gated entrance to alley and 315 Palatine Road.

Project Number: 221105
Project Name: Northenden
Site Photographs

BWB



Photo 12—Northern boundary of the site, with bike store, and Express Solicitors.



Photo 13— Water stop tap and access hatches outside 317-319 Palatine Road.

Appendix 2: Groundsure Report

BRETT STREET & PALATINE ROAD, MANCHESTER, M22 4HH

Order Details

Date: 01/03/2023
Your ref: 221105-4231
Our Ref: HMD-214-9389597

Site Details

Location: 383069 390298
Area: 0.21 ha
Authority: [Manchester City Council](#)



Summary of findings

p. 2

Aerial image

p. 8

OS MasterMap site plan

p.12

groundsure.com/insightuserguide

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	Historical industrial land uses	0	2	6	19	-
15	1.2	Historical tanks	0	0	3	1	-
15	1.3	Historical energy features	0	0	5	4	-
16	1.4	Historical petrol stations	0	0	0	0	-
16	1.5	Historical garages	0	0	11	0	-
17	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
18	2.1	Historical industrial land uses	0	7	7	23	-
20	2.2	Historical tanks	0	0	5	1	-
20	2.3	Historical energy features	0	0	9	10	-
21	2.4	Historical petrol stations	0	0	0	0	-
22	2.5	Historical garages	0	0	16	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
23	3.1	Active or recent landfill	0	0	0	0	-
23	3.2	Historical landfill (BGS records)	0	0	0	0	-
24	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
24	3.4	Historical landfill (EA/NRW records)	0	0	0	1	-
24	3.5	Historical waste sites	0	0	7	1	-
26	3.6	Licensed waste sites	0	0	0	0	-
26	3.7	Waste exemptions	0	1	2	2	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
27	4.1	Recent industrial land uses	0	0	11	-	-
28	4.2	Current or recent petrol stations	0	0	2	0	-
29	4.3	Electricity cables	0	0	0	0	-
29	4.4	Gas pipelines	0	0	0	0	-
29	4.5	Sites determined as Contaminated Land	0	0	0	0	-



29	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
29	4.7	Regulated explosive sites	0	0	0	0	-
30	4.8	Hazardous substance storage/usage	0	0	0	0	-
30	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
30	4.10	<u>Licensed industrial activities (Part A(1))</u>	0	0	0	5	-
31	4.11	<u>Licensed pollutant release (Part A(2)/B)</u>	0	2	0	1	-
32	4.12	Radioactive Substance Authorisations	0	0	0	0	-
32	4.13	<u>Licensed Discharges to controlled waters</u>	0	0	1	0	-
32	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
33	4.15	Pollutant release to public sewer	0	0	0	0	-
33	4.16	List 1 Dangerous Substances	0	0	0	0	-
33	4.17	List 2 Dangerous Substances	0	0	0	0	-
33	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	3	0	-
34	4.19	Pollution inventory substances	0	0	0	0	-
34	4.20	Pollution inventory waste transfers	0	0	0	0	-
34	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
35	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
37	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
39	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
40	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
40	5.5	Groundwater vulnerability- local information	None (within 0m)				
41	5.6	<u>Groundwater abstractions</u>	0	0	0	0	6
43	5.7	<u>Surface water abstractions</u>	0	0	0	0	2
44	5.8	Potable abstractions	0	0	0	0	0
44	5.9	Source Protection Zones	0	0	0	0	-
44	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
45	6.1	<u>Water Network (OS MasterMap)</u>	0	0	5	-	-



46	6.2	<u>Surface water features</u>	0	0	2	-	-
46	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
47	6.4	<u>WFD Surface water bodies</u>	0	0	1	-	-
47	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
48	7.1	<u>Risk of flooding from rivers and the sea</u>	Medium (within 50m)				
49	7.2	<u>Historical Flood Events</u>	1	1	3	-	-
49	7.3	<u>Flood Defences</u>	0	0	4	-	-
50	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
50	7.5	<u>Flood Storage Areas</u>	0	0	1	-	-
51	7.6	<u>Flood Zone 2</u>	Identified (within 50m)				
52	7.7	<u>Flood Zone 3</u>	Identified (within 50m)				
Page	Section	Surface water flooding					
53	8.1	<u>Surface water flooding</u>	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding					
55	9.1	<u>Groundwater flooding</u>	Moderate (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
56	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
57	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
57	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
57	10.4	Special Protection Areas (SPA)	0	0	0	0	0
57	10.5	National Nature Reserves (NNR)	0	0	0	0	0
58	10.6	<u>Local Nature Reserves (LNR)</u>	0	0	0	0	4
58	10.7	<u>Designated Ancient Woodland</u>	0	0	0	0	3
58	10.8	Biosphere Reserves	0	0	0	0	0
59	10.9	Forest Parks	0	0	0	0	0
59	10.10	Marine Conservation Zones	0	0	0	0	0
59	10.11	<u>Green Belt</u>	0	1	0	0	2
59	10.12	Proposed Ramsar sites	0	0	0	0	0



60	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
60	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
60	10.15	Nitrate Sensitive Areas	0	0	0	0	0
60	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
61	10.17	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
62	10.18	SSSI Units	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
63	11.1	World Heritage Sites	0	0	0	-	-
64	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
64	11.3	National Parks	0	0	0	-	-
64	11.4	<u>Listed Buildings</u>	0	0	5	-	-
65	11.5	<u>Conservation Areas</u>	0	0	1	-	-
65	11.6	Scheduled Ancient Monuments	0	0	0	-	-
65	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
66	12.1	<u>Agricultural Land Classification</u>	Urban (within 250m)				
67	12.2	Open Access Land	0	0	0	-	-
67	12.3	<u>Tree Felling Licences</u>	0	0	2	-	-
67	12.4	Environmental Stewardship Schemes	0	0	0	-	-
67	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
68	13.1	<u>Priority Habitat Inventory</u>	0	0	5	-	-
69	13.2	Habitat Networks	0	0	0	-	-
69	13.3	Open Mosaic Habitat	0	0	0	-	-
69	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
70	14.1	<u>10k Availability</u>	Identified (within 500m)				
71	14.2	<u>Artificial and made ground (10k)</u>	0	0	1	4	-
73	14.3	<u>Superficial geology (10k)</u>	1	0	2	5	-



74	14.4	Landslip (10k)	0	0	0	0	-
75	14.5	<u>Bedrock geology (10k)</u>	1	2	1	3	-
76	14.6	<u>Bedrock faults and other linear features (10k)</u>	0	1	0	2	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
77	15.1	<u>50k Availability</u>	Identified (within 500m)				
78	15.2	Artificial and made ground (50k)	0	0	0	0	-
78	15.3	Artificial ground permeability (50k)	0	0	-	-	-
79	15.4	<u>Superficial geology (50k)</u>	1	0	1	4	-
80	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
80	15.6	Landslip (50k)	0	0	0	0	-
80	15.7	Landslip permeability (50k)	None (within 50m)				
81	15.8	<u>Bedrock geology (50k)</u>	2	0	1	2	-
82	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
82	15.10	<u>Bedrock faults and other linear features (50k)</u>	0	0	1	3	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
83	16.1	<u>BGS Boreholes</u>	0	0	38	-	-
Page	Section	Natural ground subsidence					
86	17.1	<u>Shrink swell clays</u>	Negligible (within 50m)				
87	17.2	<u>Running sands</u>	Very low (within 50m)				
88	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
89	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
90	17.5	<u>Landslides</u>	Very low (within 50m)				
91	17.6	<u>Ground dissolution of soluble rocks</u>	Negligible (within 50m)				
Page	Section	Mining, ground workings and natural cavities	On site	0-50m	50-250m	250-500m	500-2000m
92	18.1	Natural cavities	0	0	0	0	-
93	18.2	BritPits	0	0	0	0	-
93	18.3	<u>Surface ground workings</u>	0	0	1	-	-
93	18.4	Underground workings	0	0	0	0	0
93	18.5	Historical Mineral Planning Areas	0	0	0	0	-



94	18.6	Non-coal mining	0	0	0	0	0
94	18.7	Mining cavities	0	0	0	0	0
94	18.8	<u>JPB mining areas</u>	Identified (within 0m)				
94	18.9	Coal mining	None (within 0m)				
95	18.10	Brine areas	None (within 0m)				
95	18.11	Gypsum areas	None (within 0m)				
95	18.12	Tin mining	None (within 0m)				
95	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
96	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
98	20.1	<u>BGS Estimated Background Soil Chemistry</u>	2	1	-	-	-
98	20.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
98	20.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects	On site	0-50m	50-250m	250-500m	500-2000m
99	21.1	Underground railways (London)	0	0	0	-	-
99	21.2	Underground railways (Non-London)	0	0	0	-	-
100	21.3	Railway tunnels	0	0	0	-	-
100	21.4	Historical railway and tunnel features	0	0	0	-	-
100	21.5	Royal Mail tunnels	0	0	0	-	-
100	21.6	Historical railways	0	0	0	-	-
100	21.7	Railways	0	0	0	-	-
101	21.8	Crossrail 1	0	0	0	0	-
101	21.9	Crossrail 2	0	0	0	0	-
101	21.10	<u>HS2</u>	0	1	0	0	-



Recent aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2023. All Rights Reserved.

Capture Date: 22/04/2019

Site Area: 0.21ha



Recent site history - 2015 aerial photograph



Capture Date: 11/06/2015

Site Area: 0.21ha



Recent site history - 2009 aerial photograph



Capture Date: 02/06/2009

Site Area: 0.21ha



Recent site history - 2000 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2023. All Rights Reserved.

Capture Date: 27/06/2000

Site Area: 0.21ha



OS MasterMap site plan



Site Area: 0.21ha



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

27

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

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

ID	Location	Land use	Dates present	Group ID
A	41m NE	Unspecified Mill	1897 - 1905	898483



ID	Location	Land use	Dates present	Group ID
A	41m NE	Unspecified Mill	1911 - 1938	925869
A	50m NE	Unspecified Mill	1966	876346
A	51m NE	Unspecified Mill	1955	967882
A	53m NE	Unspecified Mill	1908	865123
3	168m SE	Police Station	1988	832579
E	222m NW	Nursery	1938	911892
E	233m NW	Nursery	1955 - 1966	926182
F	296m E	Boat House	1938	900566
G	302m SW	Laundry	1938	972819
G	302m SW	Laundry	1911	873011
G	305m SW	Laundry	1905	893150
G	305m SW	Laundry	1916 - 1923	949053
6	318m S	Laundry	1908	798087
F	320m SE	Boat House	1905 - 1911	956846
H	348m SE	Nursery	1938	919971
H	350m SE	Nursery	1966	892320
H	392m SE	Nursery	1955	971034
I	394m SW	Police Station	1897	832580
8	399m NE	Unspecified Heap	1916	804013
J	400m W	Unspecified Pit	1988	877843
J	400m W	Unspecified Pit	1966 - 1978	953076
K	418m SW	Cuttings	1978	859986
K	418m SW	Cuttings	1988	942594
K	436m SW	Unspecified Pit	1955 - 1966	984385
K	439m SW	Unspecified Pit	1938	877409
9	452m S	Nursery	1905	860460

This data is sourced from Ordnance Survey / Groundsure.



1.2 Historical tanks

Records within 500m

4

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 13**

ID	Location	Land use	Dates present	Group ID
A	65m NE	Unspecified Tank	1955	146600
2	74m S	Unspecified Tank	1910	114990
4	197m SE	Unspecified Tank	1898 - 1910	129456
10	476m SE	Unspecified Tank	1910	114989

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

9

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 13**

ID	Location	Land use	Dates present	Group ID
A	52m NE	Electricity Substation	1996	67412
A	52m NE	Electricity Substation	1980 - 1992	83685
D	208m SW	Electricity Substation	1956	68336
D	210m SW	Electricity Substation	1956 - 1992	80939
D	210m SW	Electricity Substation	1992	83721
5	278m NW	Electricity Substation	1975 - 1992	67413
7	328m SE	Electricity Substation	1984 - 1992	81560



ID	Location	Land use	Dates present	Group ID
I	468m SW	Electricity Substation	1989 - 1992	73885
11	480m W	Electricity Substation	1975 - 1992	66188

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	11
----------------------------	-----------

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 13**

ID	Location	Land use	Dates present	Group ID
1	54m N	Garage	1955	24722
B	119m N	Garage	1980	23702
B	119m N	Garage	1955	25989
C	127m SW	Garage	1992	22920
C	128m SW	Garage	1975	21735
C	136m SW	Garage	1992	23502
B	158m NE	Garage	1980	22575
B	158m NE	Garage	1989 - 1992	25806
B	160m NE	Garage	1996	23701



ID	Location	Land use	Dates present	Group ID
C	174m SW	Garage	1956	25816
B	177m N	Garage	1982 - 1992	25427

This data is sourced from Ordnance Survey / Groundsure.

1.6 Historical military land

Records within 500m

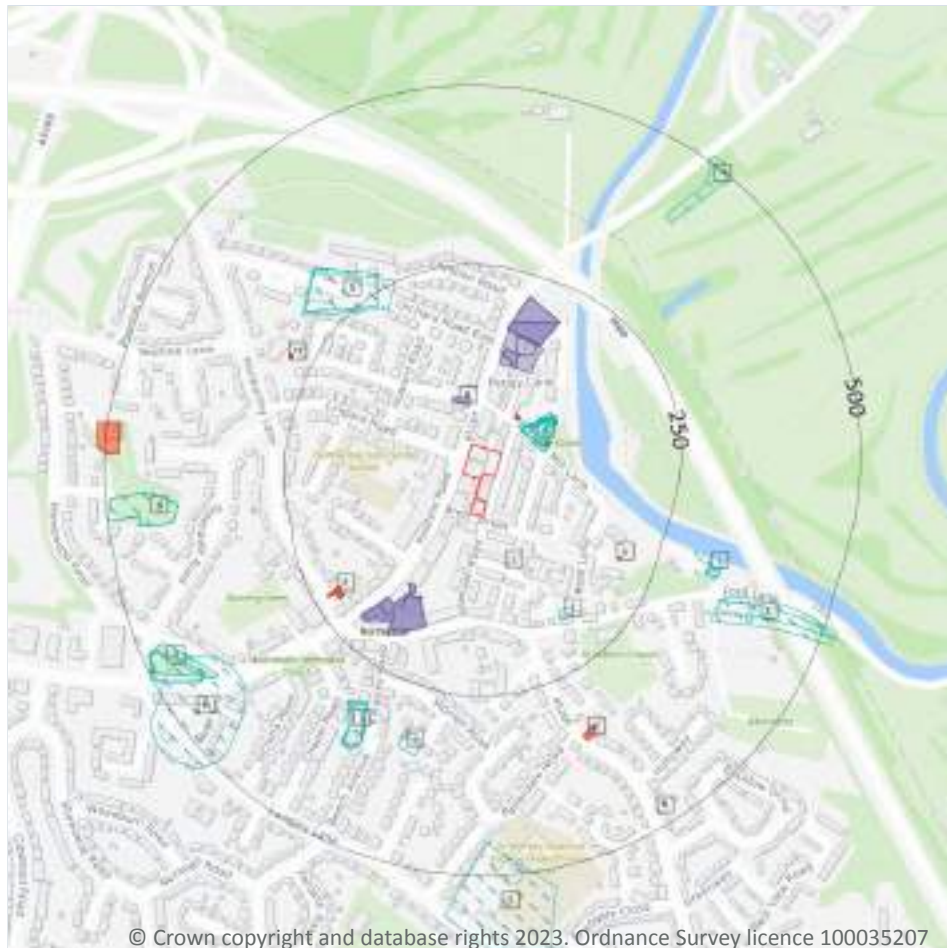
0

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

37

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 18**

ID	Location	Land Use	Date	Group ID
A	41m NE	Unspecified Mill	1938	925869
A	41m NE	Unspecified Mill	1916	925869
A	41m NE	Unspecified Mill	1905	898483

ID	Location	Land Use	Date	Group ID
A	41m NE	Unspecified Mill	1923	925869
A	43m NE	Unspecified Mill	1897	898483
A	44m NE	Unspecified Mill	1911	925869
A	45m NE	Unspecified Mill	1938	925869
A	50m NE	Unspecified Mill	1966	876346
A	51m NE	Unspecified Mill	1955	967882
A	53m NE	Unspecified Mill	1908	865123
2	168m SE	Police Station	1988	832579
G	222m NW	Nursery	1938	911892
G	233m NW	Nursery	1955	926182
G	233m NW	Nursery	1966	926182
I	296m E	Boat House	1938	900566
J	302m SW	Laundry	1938	972819
J	302m SW	Laundry	1911	873011
J	305m SW	Laundry	1916	949053
J	305m SW	Laundry	1905	893150
J	305m SW	Laundry	1923	949053
3	318m S	Laundry	1908	798087
I	320m SE	Boat House	1905	956846
I	323m SE	Boat House	1911	956846
L	348m SE	Nursery	1938	919971
L	350m SE	Nursery	1966	892320
L	392m SE	Nursery	1955	971034
M	394m SW	Police Station	1897	832580
4	399m NE	Unspecified Heap	1916	804013
N	400m W	Unspecified Pit	1978	953076
N	400m W	Unspecified Pit	1966	953076
N	400m W	Unspecified Pit	1988	877843



ID	Location	Land Use	Date	Group ID
O	418m SW	Cuttings	1978	859986
O	418m SW	Cuttings	1988	942594
O	436m SW	Unspecified Pit	1955	984385
O	436m SW	Unspecified Pit	1966	984385
O	439m SW	Unspecified Pit	1938	877409
5	452m S	Nursery	1905	860460

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m

6

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 18**

ID	Location	Land Use	Date	Group ID
A	65m NE	Unspecified Tank	1955	146600
A	66m NE	Unspecified Tank	1955	146600
1	74m S	Unspecified Tank	1910	114990
E	197m SE	Unspecified Tank	1898	129456
E	197m SE	Unspecified Tank	1910	129456
6	476m SE	Unspecified Tank	1910	114989

This data is sourced from Ordnance Survey / Groundsure.

2.3 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. 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 18**



ID	Location	Land Use	Date	Group ID
A	52m NE	Electricity Substation	1996	67412
A	52m NE	Electricity Substation	1980	83685
A	52m NE	Electricity Substation	1992	83685
A	52m NE	Electricity Substation	1989	83685
F	208m SW	Electricity Substation	1956	68336
F	210m SW	Electricity Substation	1992	80939
F	210m SW	Electricity Substation	1975	80939
F	210m SW	Electricity Substation	1956	80939
F	210m SW	Electricity Substation	1992	83721
H	278m NW	Electricity Substation	1992	67413
H	278m NW	Electricity Substation	1992	67413
H	278m NW	Electricity Substation	1975	67413
K	328m SE	Electricity Substation	1984	81560
K	330m SE	Electricity Substation	1992	81560
M	468m SW	Electricity Substation	1989	73885
M	469m SW	Electricity Substation	1992	73885
M	469m SW	Electricity Substation	1992	73885
P	480m W	Electricity Substation	1992	66188
P	481m W	Electricity Substation	1975	66188

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

16

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'.

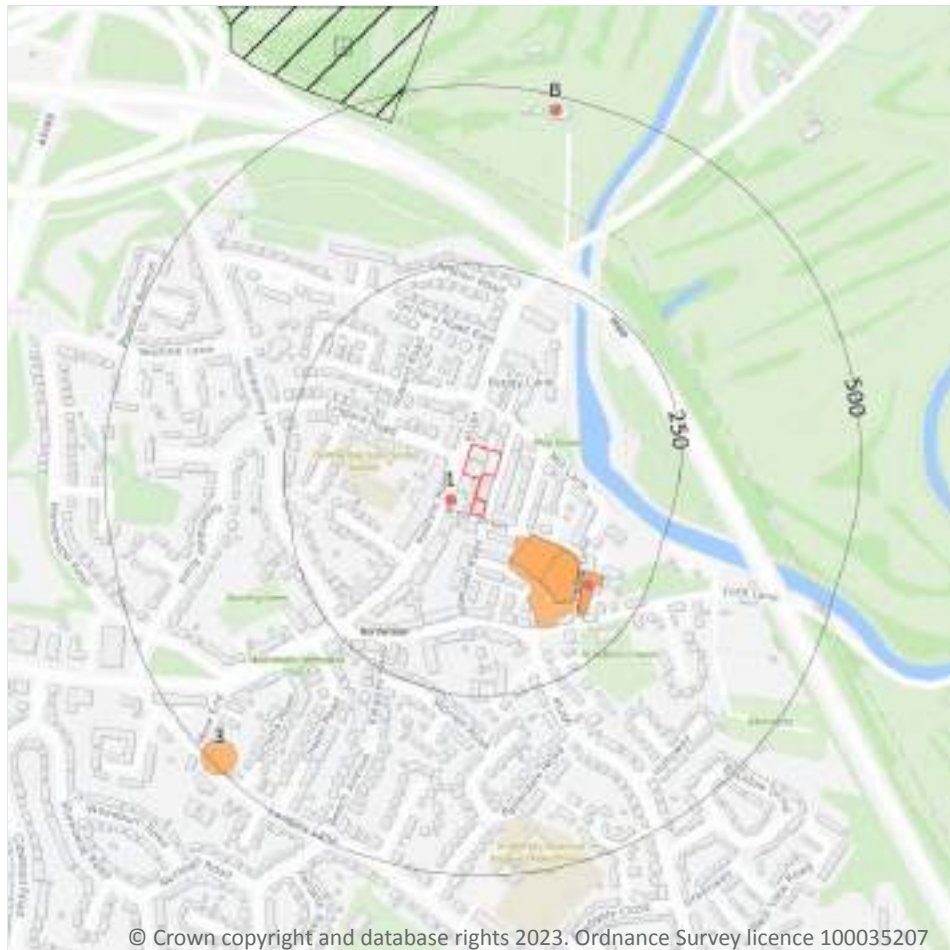
Features are displayed on the Past land use - un-grouped map on **page 18**

ID	Location	Land Use	Date	Group ID
B	54m N	Garage	1955	24722
B	55m N	Garage	1955	24722
C	119m N	Garage	1980	23702
C	119m N	Garage	1955	25989
C	120m N	Garage	1955	25989
D	127m SW	Garage	1992	22920
D	128m SW	Garage	1975	21735
D	136m SW	Garage	1992	23502
C	158m NE	Garage	1980	22575
C	158m NE	Garage	1992	25806
C	158m NE	Garage	1989	25806
C	160m NE	Garage	1996	23701
D	174m SW	Garage	1956	25816
D	174m SW	Garage	1956	25816
C	177m N	Garage	1992	25427
C	178m N	Garage	1982	25427

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (EA/NRW)
- Historical 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 23**

ID	Location	Details		
2	463m N	Site Address: Former Northenden Sewage Works, Princess Parkway, Greater Manchester Licence Holder Address: -	Waste Licence: - Site Reference: F052 Waste Type: Inert, Industrial, Commercial, Household, Liquid sludge Environmental Permitting Regulations (Waste) Reference: - Licence Issue: - Licence Surrender: -	Operator: - Licence Holder: Manchester City Council First Recorded 31/12/1950 Last Recorded: 31/12/1965

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

3.5 Historical waste sites

Records within 500m

8

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

Features are displayed on the Waste and landfill map on **page 23**

ID	Location	Address	Further Details	Date
A	56m SE	Site Address: N/A	Type of Site: Breaker's Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1989



ID	Location	Address	Further Details	Date
A	68m SE	Site Address: N/A	Type of Site: Breaker's Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1979
A	115m SE	Site Address: N/A	Type of Site: Scrap Metal Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1978
A	158m SE	Site Address: N/A	Type of Site: Breaker's Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1992
A	158m SE	Site Address: N/A	Type of Site: Breaker's Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1989
A	158m SE	Site Address: N/A	Type of Site: Breaker's Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1996
A	159m SE	Site Address: N/A	Type of Site: Breaker's Yard Planning application reference: N/A Description: N/A Data source: Historic Mapping Data Type: Polygon	1979
3	463m SW	Site Address: GMW Depot,15 Longley Lane, Wythenshawe, MANCHESTER, Greater Manchester, M22 4JL	Type of Site: Recycling Centre Planning application reference: 073854/VO/2004/S2 Description: Scheme comprises a materials recycling centre of excellence. Works include concrete hardstanding, cover for green waste areas and access improvements. Construction - kerbing, reinforced concrete surfacing, road drainage, road signage, white lining site orks. An application (ref: 063199/VO/SOUTH2/01) for outline planning permission was granted by Manchester C.C. Please note addition of mechanical and electrical sub contractor. Data source: Historic Planning Application Data Type: Point	14/03/2005

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



3.6 Licensed waste sites

Records within 500m

0

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

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

3.7 Waste exemptions

Records within 500m

5

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 23**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	32m SW	All roads in Greater Manchester	EPR/NF0108LP /A001	Treating waste exemption	Non-Agricultural Waste Only	Screening and blending of waste
A	175m SE	7a Boat Lane MANCHESTER M22 4HR	EPR/QF0237FP /A001	Storing waste exemption	Non-Agricultural Waste Only	Storage of waste in a secure place
A	175m SE	7a Boat Lane MANCHESTER M22 4HR	EPR/QF0237FP /A001	Treating waste exemption	Non-Agricultural Waste Only	Recovery of scrap metal
B	479m N	Northenden Golf Club Palatine Road Manchester Manchester M22 4FR	EPR/PF0508V D/A001	Treating waste exemption	Non-Agricultural Waste Only	Screening and blending of waste
B	479m N	Northenden Golf Club Palatine Road Manchester Manchester M22 4FR	EPR/PF0508V D/A001	Using waste exemption	Non-Agricultural Waste Only	Use of waste in construction

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- ▽ Part A(1) industrial activities
- Licensed pollutant release (Part A(2)/B)
- Licensed Discharges to controlled waters
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

11

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Company	Address	Activity	Category
A	57m NE	Electricity Sub Station	Greater Manchester, M22	Electrical Features	Infrastructure and Facilities
A	59m N	Esso	304, Palatine Road, Manchester, Greater Manchester, M22 4FW	Petrol and Fuel Stations	Road and Rail

ID	Location	Company	Address	Activity	Category
A	59m N	Wash'n Drive	304, Palatine Road, Manchester, Greater Manchester, M22 4FW	Vehicle Cleaning Services	Personal, Consumer and Other Services
A	59m N	Rss St Hildas	304, Palatine Road, Manchester, Greater Manchester, M22 4FW	Vehicle Cleaning Services	Personal, Consumer and Other Services
A	81m N	Manchester Trophy Market	287, Palatine Road, Manchester, Greater Manchester, M22 4ET	Medals, Trophies, Ceremonial and Religious Goods	Consumer Products
A	130m NE	Halfords Autocentre	Wm Morrison Supermarkets Plc 269, Palatine Road, Manchester, Greater Manchester, M22 4ET	Vehicle Repair, Testing and Servicing	Repair and Servicing
2	142m S	A1 Northenden Domestic Appliances	69, Church Road, Manchester, Greater Manchester, M22 4WD	Electrical Equipment Repair and Servicing	Repair and Servicing
4	188m NW	J P Domestic	15, St Hilda's Road, Manchester, Greater Manchester, M22 4FP	Electrical Equipment Repair and Servicing	Repair and Servicing
7	213m SW	Electricity Sub Station	Greater Manchester, M22	Electrical Features	Infrastructure and Facilities
B	219m N	Electricity Sub Station	Greater Manchester, M22	Electrical Features	Infrastructure and Facilities
8	249m E	Gantry	Greater Manchester, M22	Travelling Cranes and Gentries	Industrial Features

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

2

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Company	Address	LPG	Status
A	63m N	ESSO	304, Palatine Road, St Hildas Road, Northenden, Manchester, Greater Manchester, M22 4FW	No	Open
3	187m NE	OBSOLETE	265, Palatine Road, Northenden, Manchester, Greater Manchester, M22 4ET	Not Applicable	Obsolete



This data is sourced from Experian.

4.3 Electricity cables

Records within 500m

0

High voltage underground electricity transmission cables.

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m

0

High pressure underground gas transmission pipelines.

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m

0

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

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m

0

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

This data is sourced from the Health and Safety Executive.



4.8 Hazardous substance storage/usage

Records within 500m

0

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

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m

0

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

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

4.10 Licensed industrial activities (Part A(1))

Records within 500m

5

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

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Details	
C	379m E	Operator: DUNTON TECHNOLOGIES LIMITED Installation Name: ELLESMERE PORT WASTE TREATMENT FACILITY Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING BIOLOGICAL TREATMENT Permit Number: HP3403BL Original Permit Number: HP3403BL	EPR Reference: - Issue Date: 05/08/2021 Effective Date: 05/08/2021 Last date noted as effective: 01/12/2022 Status: EFFECTIVE
C	379m E	Operator: DUNTON TECHNOLOGIES LIMITED Installation Name: ELLESMERE PORT WASTE TREATMENT FACILITY Process: ASSOCIATED PROCESS Permit Number: HP3403BL Original Permit Number: HP3403BL	EPR Reference: - Issue Date: 05/08/2021 Effective Date: 05/08/2021 Last date noted as effective: 01/12/2022 Status: EFFECTIVE



ID	Location	Details	
C	379m E	Operator: DUNTON TECHNOLOGIES LIMITED Installation Name: ELLESMERE PORT WASTE TREATMENT FACILITY Process: DISPOSAL OR RECOVERY OF HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 10 TONNES PER DAY INVOLVING PHYSICO-CHEMICAL TREATMENT Permit Number: HP3403BL Original Permit Number: HP3403BL	EPR Reference: - Issue Date: 05/08/2021 Effective Date: 05/08/2021 Last date noted as effective: 01/12/2022 Status: EFFECTIVE
C	379m E	Operator: DUNTON TECHNOLOGIES LIMITED Installation Name: ELLESMERE PORT WASTE TREATMENT FACILITY Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF > 50 T/D NON-HAZARDOUS WASTE (> 100 T/D IF ONLY AD) INVOLVING BIOLOGICAL TREATMENT Permit Number: HP3403BL Original Permit Number: HP3403BL	EPR Reference: - Issue Date: 05/08/2021 Effective Date: 05/08/2021 Last date noted as effective: 01/12/2022 Status: EFFECTIVE
C	379m E	Operator: DUNTON TECHNOLOGIES LIMITED Installation Name: ELLESMERE PORT WASTE TREATMENT FACILITY Process: TEMPORARY STORAGE OF HAZ WASTE NOT UNDER S 5.2 PENDING ACTIVITIES LISTED IN S 5.1, 5.2, 5.3 AND PARAGRAPH (B) OF THIS SECTION WITH A TOTAL CAPACITY > 50 TONNES, EXCL TEMP STORAGE WHERE GENERATED Permit Number: HP3403BL Original Permit Number: HP3403BL	EPR Reference: - Issue Date: 05/08/2021 Effective Date: 05/08/2021 Last date noted as effective: 01/12/2022 Status: EFFECTIVE

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

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

Records within 500m

3

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

Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Address	Details	
1	37m W	Northenden Dry Cleaners, 328 Palatine Road, Northenden, Manchester, M22 4HE	Process: Dry Cleaning Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified



ID	Location	Address	Details	
A	44m N	St Hildas Service Station, 304-308 Palatine Road, Northenden, M22 4FY	Process: Unloading of Petrol into Storage at Service Stations Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
9	329m SW	Northenden Laundry Services Ltd, 17 Kinsley Road, Northenden, Manchester, M22 4NL	Process: Dry Cleaning Status: Historical Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m

0

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

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

4.13 Licensed Discharges to controlled waters

Records within 500m

1

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991. Features are displayed on the Current industrial land use map on **page 27**

ID	Location	Address	Details	
5	191m NE	M60 PALATINE ROAD, BALVAC SITE COMPOUND, ACCESS VIA WITHINGTON GOLF CLUB, PALATINE ROAD, MANCHESTER, M20 2UE	Effluent Type: TRADE DISCHARGES - SITE DRAINAGE Permit Number: EPRNB3990WE Permit Version: 1 Receiving Water: RIVER MERSEY	Status: NEW ISSUED UNDER EPR 2010 Issue date: 27/02/2020 Effective Date: 27/02/2020 Revocation Date: -

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

3

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 27**

ID	Location	Details	
A	112m N	Incident Date: 22/02/2002 Incident Identification: 60025 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)
B	180m N	Incident Date: 13/03/2001 Incident Identification: 267 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)

ID	Location	Details	
6	197m E	Incident Date: 18/11/2001 Incident Identification: 43530 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m

0

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

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

4.20 Pollution inventory waste transfers

Records within 500m

0

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

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

4.21 Pollution inventory radioactive waste

Records within 500m

0

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

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



5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

4

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 35**

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	229m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers



ID	Location	Designation	Description
3	396m SE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	409m SE	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

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



Bedrock aquifer



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

5.2 Bedrock aquifer

Records within 500m

4

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 37**

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

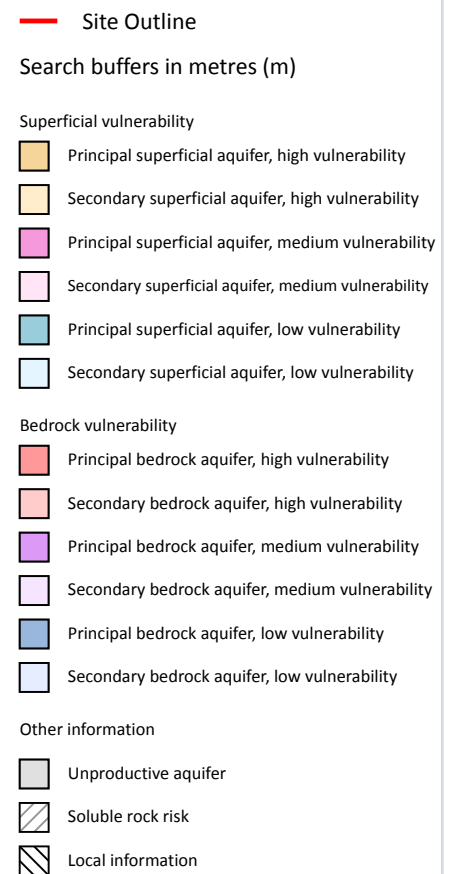


ID	Location	Designation	Description
3	229m S	Secondary B	Predominantly lower permeability layers which may store/yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers
4	267m SE	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

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



Groundwater vulnerability



5.3 Groundwater vulnerability

Records within 50m

3

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 39**



ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300- 550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: High	Vulnerability: Medium Aquifer type: Principal Flow mechanism: Well connected fractures
2	On site	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300- 550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: High	Vulnerability: Medium Aquifer type: Secondary Flow mechanism: Well connected fractures
3	44m W	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300- 550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: High	Vulnerability: Medium 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

6

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 41**

ID	Location	Details	
-	864m E	Status: Historical Licence No: 2569015006 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: "BOREHOLE AT DIDSBURY GOLF CLUB, NORTHENDEN, WYTHENSHAW," Data Type: Point Name: DIDSBURY GOLF CLUB LTD Easting: 383950 Northing: 390470	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 22/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 24/12/1992 Version End Date: -
-	864m E	Status: Historical Licence No: 2569015006 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT DIDSBURY GOLF CLUB, NORTHENDEN, WYTHENSHAW Data Type: Point Name: DIDSBURY GOLF CLUB LTD Easting: 383950 Northing: 390470	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 22/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 24/12/1992 Version End Date: -
-	864m E	Status: Active Licence No: 2569015006 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT DIDSBURY GOLF CLUB NORTHENDEN WYTHENSHAW Data Type: Point Name: DIDSBURY GOLF CLUB LTD Easting: 383950 Northing: 390470	Annual Volume (m ³): 9,092 Max Daily Volume (m ³): 68.19 Original Application No: 1053 Original Start Date: 22/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 01/04/2008 Version End Date: -
-	1471m S	Status: Historical Licence No: 2569014037 Details: Laundry Use Direct Source: Ground Water - North West Region Point: "UNDERGROUND STRATA: BOREHOLE AT SHARSTON, MANCHESTER" Data Type: Point Name: MR KHALID SALEEM Easting: 383610 Northing: 388860	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 15/11/2002 Expiry Date: 31-Mar-18 Issue No: 1 Version Start Date: 15/11/2002 Version End Date: -



ID	Location	Details	
-	1471m S	Status: Historical Licence No: 2569014037 Details: Laundry Use Direct Source: Ground Water - North West Region Point: UNDERGROUND STRATA: BOREHOLE AT SHARSTON, MANCHESTER Data Type: Point Name: MR KHALID SALEEM Easting: 383610 Northing: 388860	Annual Volume (m ³): 20975 Max Daily Volume (m ³): 80.67 Original Application No: - Original Start Date: 15/11/2002 Expiry Date: 31/03/2018 Issue No: 1 Version Start Date: 15/11/2002 Version End Date: -
-	1952m NW	Status: Active Licence No: 2569015015 Details: Spray Irrigation - Direct Direct Source: Ground Water - North West Region Point: BOREHOLE AT CHORLTON-CUM-HARDY GOLF CLUB Data Type: Point Name: CHORLTON CUM HARDY GOLF CO LTD Easting: 382230 Northing: 392100	Annual Volume (m ³): 8,500 Max Daily Volume (m ³): 70 Original Application No: 7427 Original Start Date: 04/09/1998 Expiry Date: - Issue No: 101 Version Start Date: 01/04/2019 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m

2

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

Features are displayed on the Abstractions and Source Protection Zones map on **page 41**

ID	Location	Details	
-	800m NW	Status: Historical Licence No: 2569015016 Details: Dust suppression Direct Source: Surface, Non-Tidal - North West Region Point: RIVER MERSEY AT TRAFFORD, MANCHESTER Data Type: Point Name: AMEC / ALFRED MCALPINE JV Easting: 382650 Northing: 391020	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/11/2003 Expiry Date: 31/12/2006 Issue No: 1 Version Start Date: 28/11/2003 Version End Date: -



ID	Location	Details	
-	800m NW	Status: Historical Licence No: 2569015016 Details: General Washing/Process Washing Direct Source: Surface, Non-Tidal - North West Region Point: RIVER MERSEY AT TRAFFORD, MANCHESTER Data Type: Point Name: AMEC / ALFRED MCALPINE JV Easting: 382650 Northing: 391020	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 28/11/2003 Expiry Date: 31/12/2006 Issue No: 1 Version Start Date: 28/11/2003 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

5

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

Features are displayed on the Hydrology map on **page 45**

ID	Location	Type of water feature	Ground level	Permanence	Name
A	124m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Mersey

ID	Location	Type of water feature	Ground level	Permanence	Name
4	128m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Mersey
A	128m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Mersey
6	148m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Mersey
B	202m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	2
----------------------------	----------

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

Features are displayed on the Hydrology map on **page 45**

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 45**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
1	On site	River	Mersey (upstream of Manchester Ship Canal)	GB112069061030	Bollin Dean Mersey Upper	Mersey Upper

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 45**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
5	129m E	River	Mersey (upstream of Manchester Ship Canal)	GB112069061030	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.

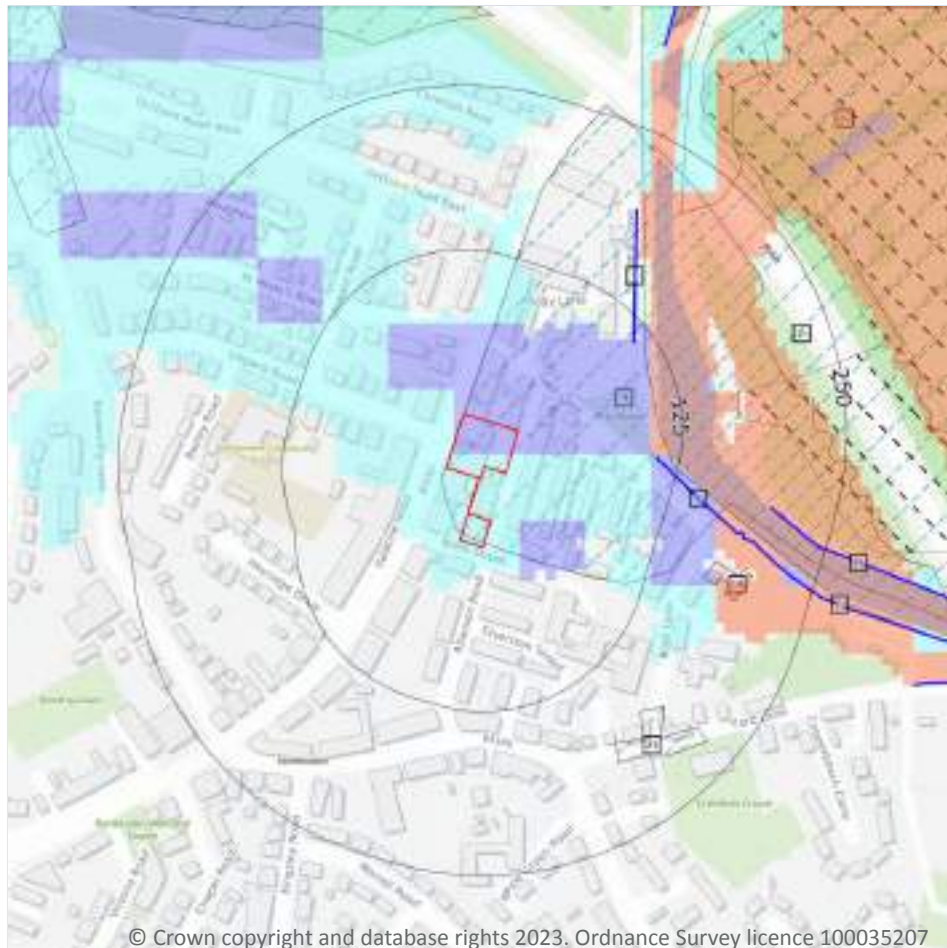
Features are displayed on the Hydrology map on **page 45**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
2	On site	Weaver and Dane Quaternary Sand and Gravel Aquifers	GB41202G991700	Poor	Poor	Good	2019

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



7 River and coastal flooding



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

7.1 Risk of flooding from rivers and the sea

Records within 50m

8

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

Features are displayed on the River and coastal flooding map on **page 48**

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

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

7.2 Historical Flood Events

Records within 250m	5
----------------------------	----------

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.

Features are displayed on the River and coastal flooding map on **page 48**

ID	Location	Event name	Date of flood	Flood source	Flood cause	Type of flood
4	On site	Mers	1964-01-01 1964-01-02	Unknown	Unknown	Fluvial
A	29m NE	Mers	1998-03-03 1998-03-04	Unknown	Channel capacity exceeded (no raised defences)	No data
D	106m E	Didsbury	2021-01-20 2021-01-20	Main river	Other	Fluvial
19	168m SE	Mers	1973-07-16 1973-07-17	Unknown	Channel capacity exceeded (no raised defences)	No data
23	173m SE	Mers	2000-10-10 2000-10-11	Unknown	Other	No data

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

7.3 Flood Defences

Records within 250m	4
----------------------------	----------

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.

Features are displayed on the River and coastal flooding map on **page 48**



ID	Location	Update
C	107m E	08/11/2022
F	111m NE	08/11/2022
G	186m E	08/11/2022
26	201m E	08/11/2022

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

1

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.

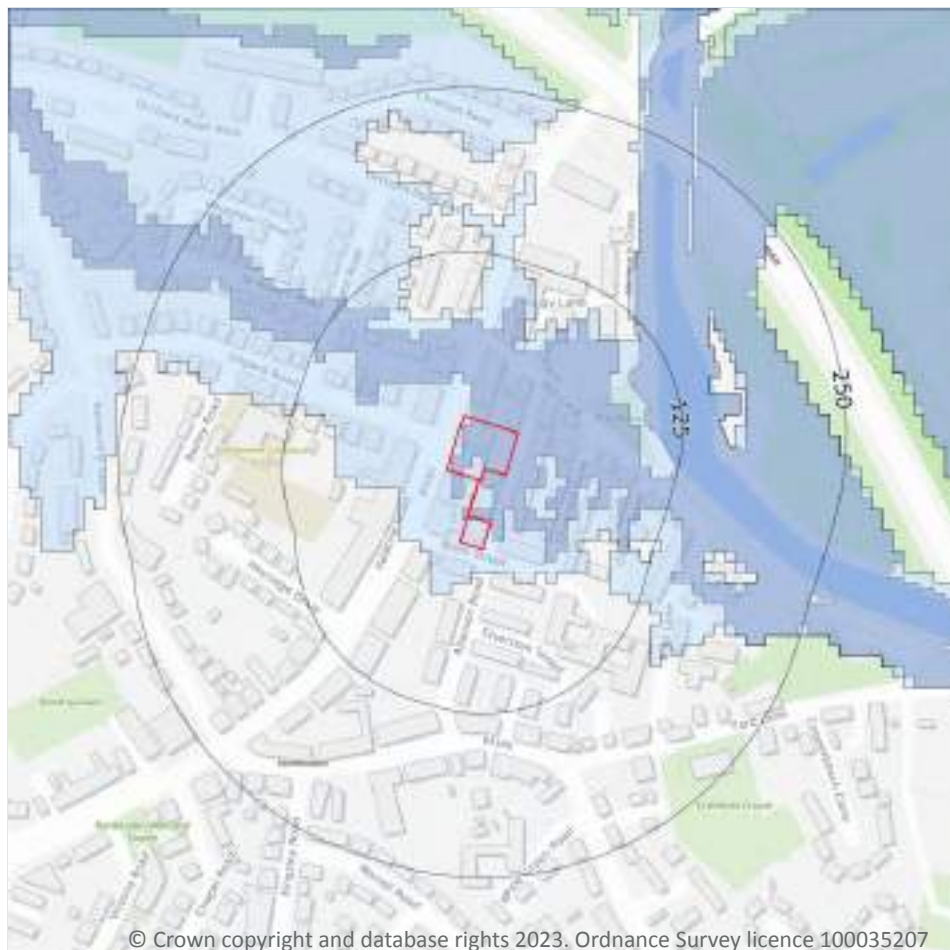
Features are displayed on the River and coastal flooding map on **page 48**

ID	Location	Update
20	168m E	Flood Storage Area

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



River and coastal flooding - Flood Zones



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

7.6 Flood Zone 2

Records within 50m

1

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

Features are displayed on the River and coastal flooding map on **page 48**

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

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

7.7 Flood Zone 3

Records within 50m

1

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.

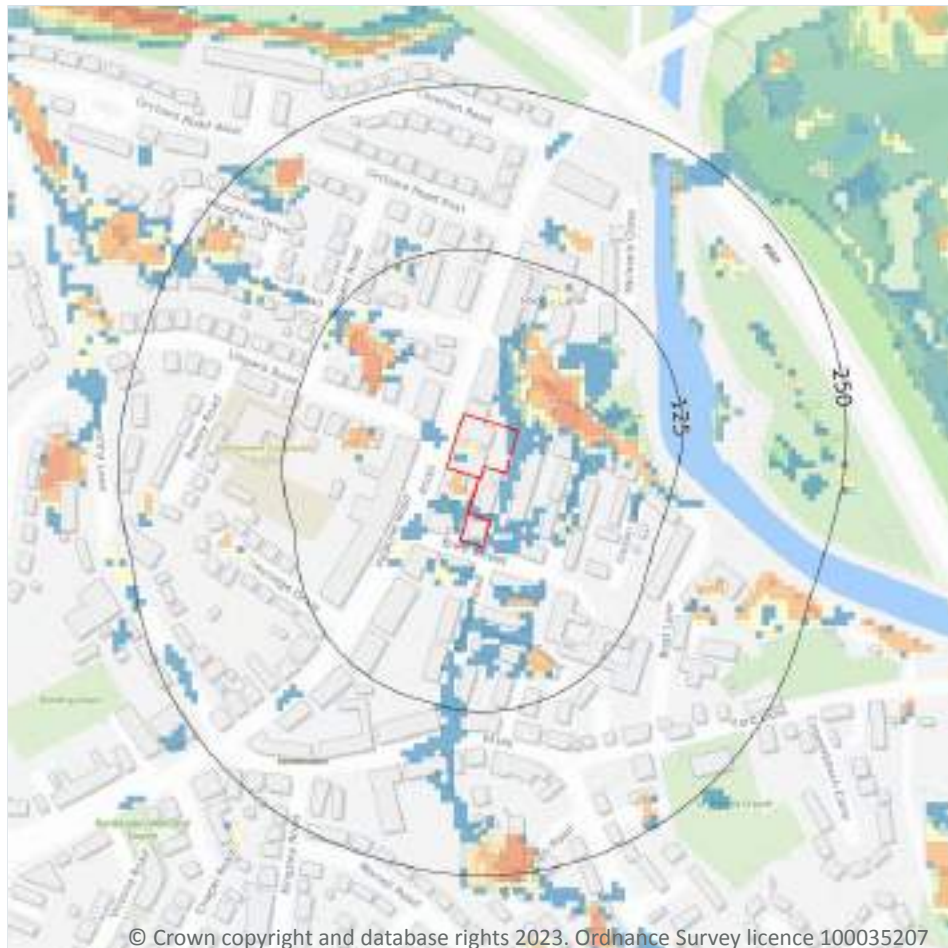
Features are displayed on the River and coastal flooding map on **page 48**

Location	Type
On site	Zone 3 - (Fluvial /Tidal Models)

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



8 Surface water flooding



— Site Outline

Search buffers in metres (m)

1 in 1000 return period

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

1 in 250 return period

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

1 in 100 return period

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

1 in 30 return period

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

8.1 Surface water flooding

Highest risk on site

1 in 100 year, 0.1m - 0.3m

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 53**

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

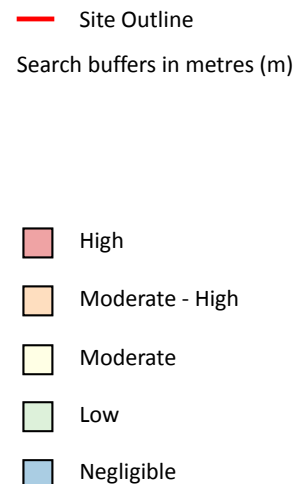
The table below shows the maximum flood depths for a range of return periods for the site.

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

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



9.1 Groundwater flooding

Highest risk on site

Moderate

Highest risk within 50m

Moderate

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

Features are displayed on the Groundwater flooding map on **page 55**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations



- Site Outline
- Search buffers in metres (m)
- + Local Nature Reserves (LNR)
- ▨ Designated Ancient Woodland
- ▨ Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

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

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

10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m

4

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.

Features are displayed on the Environmental designations map on **page 56**

ID	Location	Name	Data source
2	828m W	Wythenshawe Park	Natural England
3	913m SE	Stenner Woods and Milgate Fields, Didsbury	Natural England
-	1422m NW	Chorlton Water Park	Natural England
8	1525m SE	Gatley Carrs	Natural England

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

10.7 Designated Ancient Woodland

Records within 2000m

3

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.

Features are displayed on the Environmental designations map on **page 56**

ID	Location	Name	Woodland Type
4	971m SW	Black Field Wood	Ancient & Semi-Natural Woodland
5	1030m SW	Round's Wood	Ancient & Semi-Natural Woodland
10	1587m SW	Black Carr Wood	Ancient & Semi-Natural Woodland

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

3

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

Features are displayed on the Environmental designations map on **page 56**

ID	Location	Name	Local Authority name
1	46m NE	Merseyside and Greater Manchester	Manchester
6	1360m SE	Merseyside and Greater Manchester	Stockport
9	1573m NW	Merseyside and Greater Manchester	Trafford

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 61**

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

This data is sourced from Natural England.

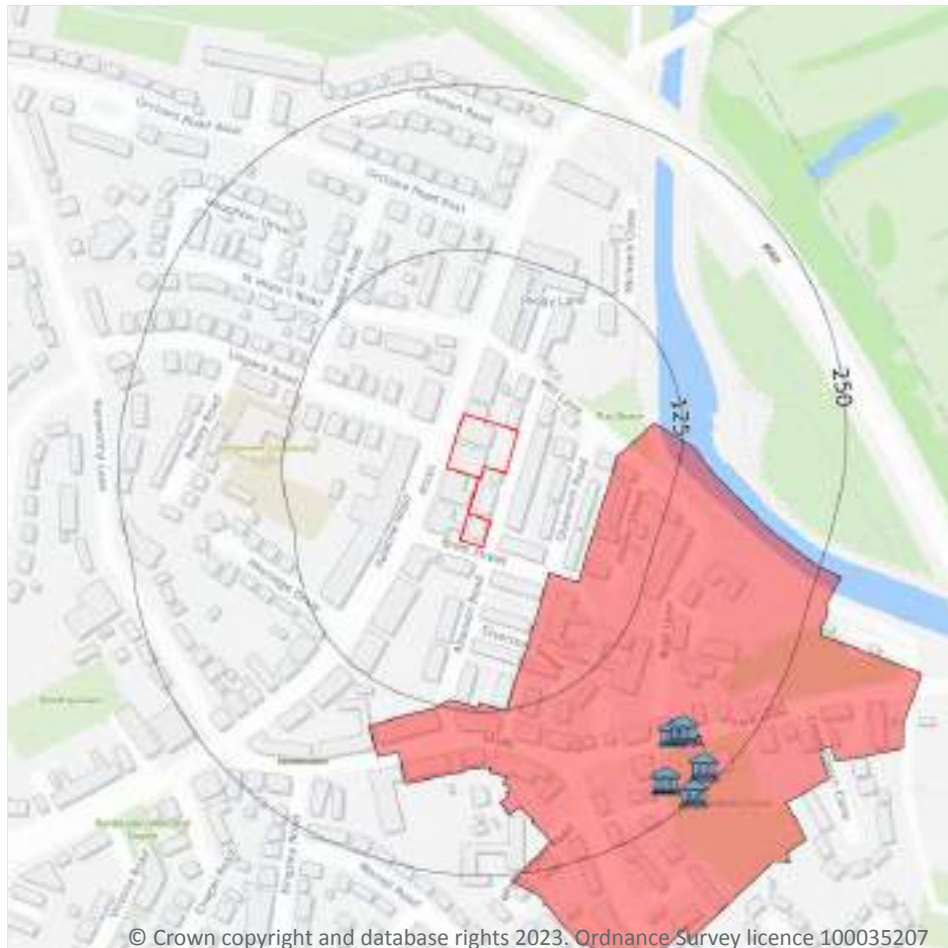
10.18 SSSI Units

Records within 2000m	0
----------------------	---

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

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

11 Visual and cultural designations



- Site Outline
- Search buffers in metres (m)
- Listed buildings
- Conservation areas
- Conservation areas - no data
- National Parks
- Areas of Outstanding Natural Beauty
- Registered parks and gardens
- Scheduled Monuments
- World Heritage Sites

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m

0

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

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

11.3 National Parks

Records within 250m

0

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

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

11.4 Listed Buildings

Records within 250m

5

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 63**

ID	Location	Name	Grade	Reference Number	Listed date
A	203m SE	Cottage Attached To West End of Northen House, Northenden, Manchester, M22	II	1200833	06/06/1994
A	207m SE	Northen House, Northenden, Manchester, M22	II	1292139	25/02/1952
B	226m SE	Churchyard Wall With Gateways To Church of St Wilfrid, Northenden, Manchester, M22	II	1218115	06/06/1994
B	238m SE	Church of St Wilfrid, Northenden, Manchester, M22	II*	1200834	25/02/1952



ID	Location	Name	Grade	Reference Number	Listed date
B	247m SE	Sundial in Churchyard of Church of St Wilfrid, Northenden, Manchester, M22	II	1282965	06/06/1994

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

11.5 Conservation Areas

Records within 250m

1

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

Features are displayed on the Visual and cultural designations map on **page 63**

ID	Location	Name	District	Date of designation
A	54m SE	Northenden	Manchester	01/12/1981

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



© Crown copyright and database rights 2023. Ordnance Survey licence 100035207

- 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

2

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 66**

ID	Location	Classification	Description
1	On site	Non Agricultural	-
2	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**2**

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.

Features are displayed on the Agricultural designations map on **page 66**

ID	Location	Description	Reference	Application date
3	197m NE	Selective Fell/Thin (Unconditional)	018/366/15-16	-
4	247m E	Selective Fell/Thin (Unconditional)	018/366/15-16	-

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

5

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 68**

ID	Location	Main Habitat	Other habitats
1	170m NE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
2	186m E	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
3	222m SE	Deciduous woodland	Main habitat: DWOOD (INV > 50%)
A	240m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)



ID	Location	Main Habitat	Other habitats
A	249m N	Deciduous woodland	Main habitat: DWOOD (INV > 50%)

This data is sourced from Natural England.

13.2 Habitat Networks

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

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

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

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

This data is sourced from Natural England.

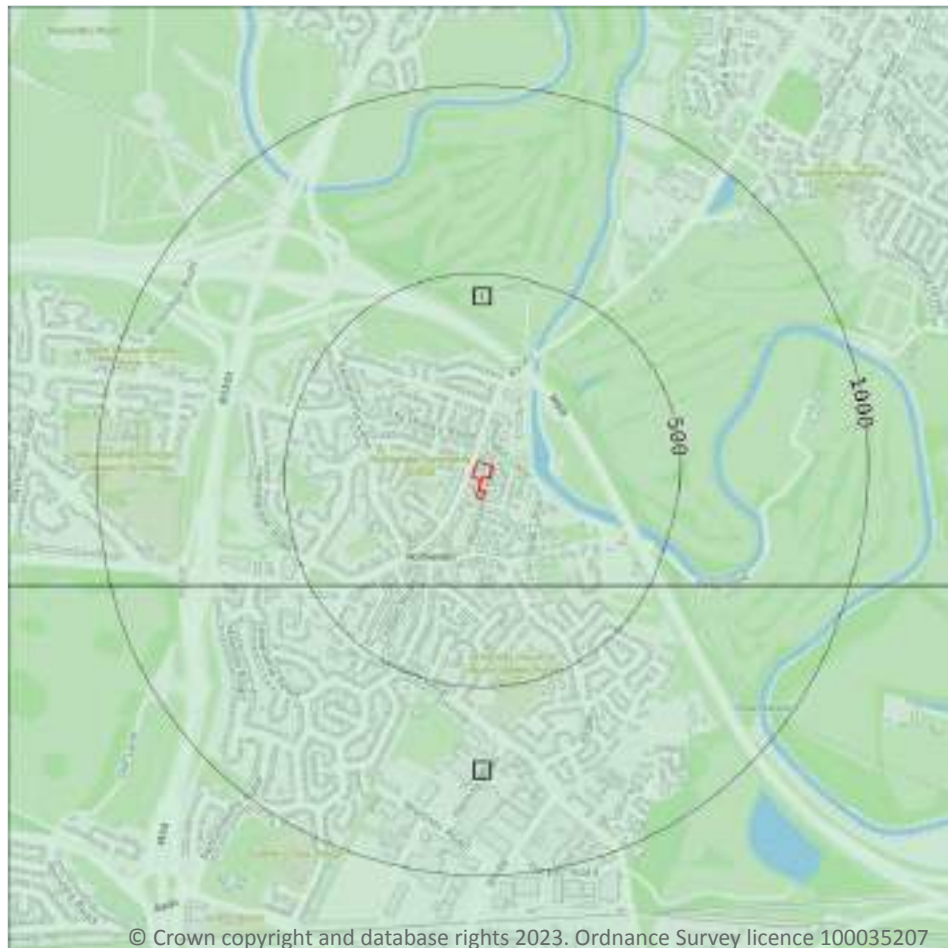
13.4 Limestone Pavement Orders

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

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

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability



- Site Outline
- Search buffers in metres (m)
- Full coverage
 - Partial coverage
 - No coverage

14.1 10k Availability

Records within 500m

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.

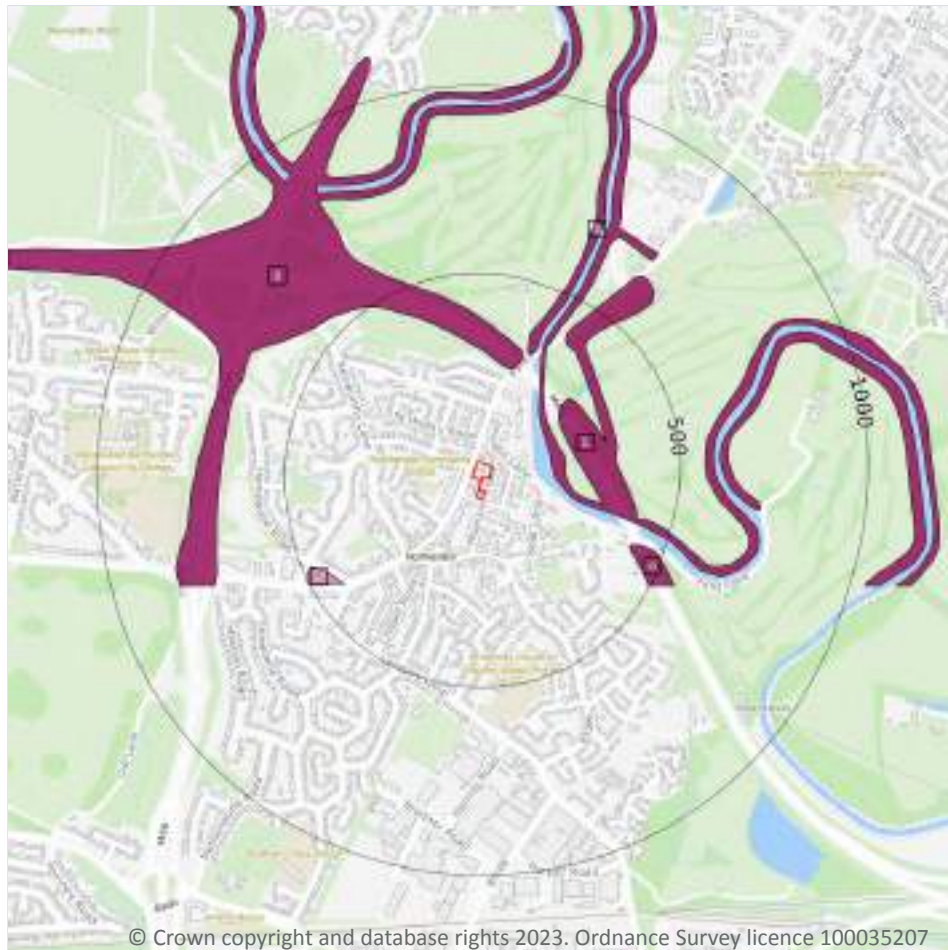
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 70**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	SJ89SW
2	229m S	No coverage	Full	Full	No coverage	SJ88NW

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

5

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 71**

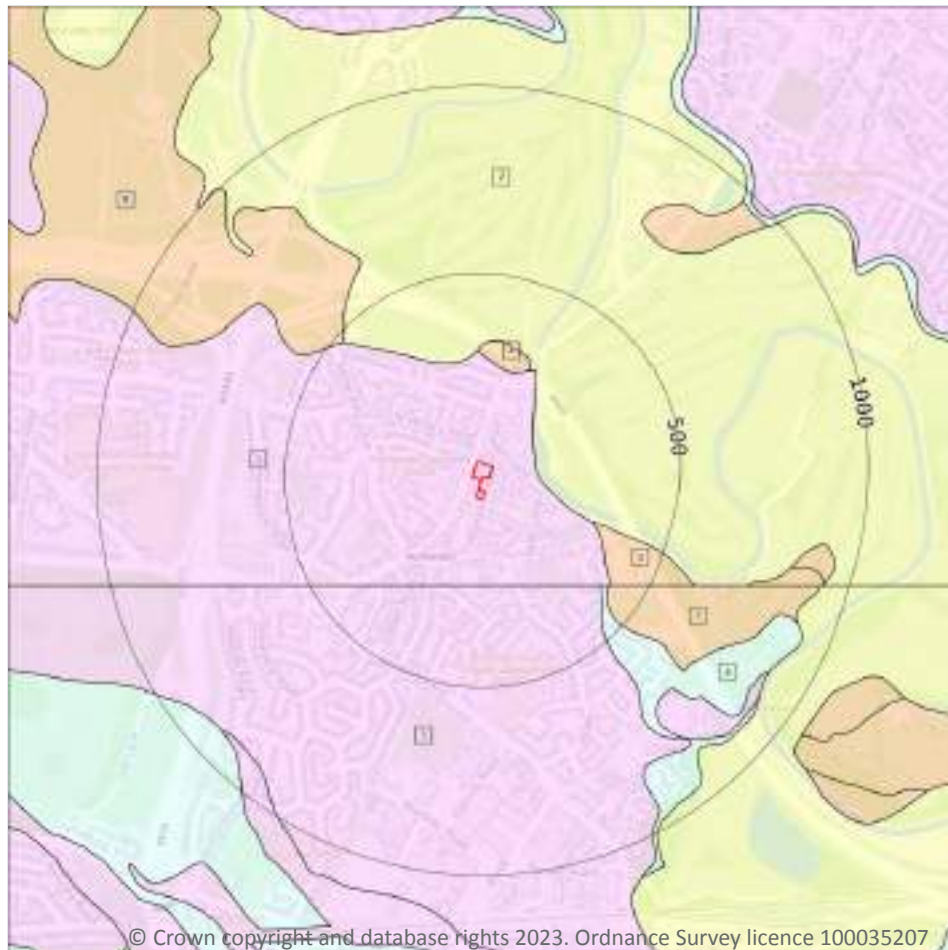
ID	Location	LEX Code	Description	Rock description
1	155m E	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
2	260m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
3	311m N	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit
4	411m SE	MGR-ARTDP	Made Ground (Undivided)	Artificial Deposit

ID	Location	LEX Code	Description	Rock description
5	419m SW	WGR-VOID	Worked Ground (Undivided)	Void

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (10k)

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

14.3 Superficial geology (10k)

Records within 500m

8

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 73**

ID	Location	LEX Code	Description	Rock description
1	On site	GFSDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
2	112m E	ALV-XCZSV	Alluvium - Clay, Silt, Sand And Gravel	Clay, Silt, Sand And Gravel
3	229m S	GFSDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
4	253m N	RTDU-XSV	River Terrace Deposits (undifferentiated) - Sand And Gravel	Sand And Gravel



ID	Location	LEX Code	Description	Rock description
5	298m SE	RTD2-XSV	River Terrace Deposits, 2 - Sand And Gravel	Sand And Gravel
6	390m SE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
7	401m SE	RTD2-XSV	River Terrace Deposits, 2 - Sand And Gravel	Sand And Gravel
8	476m NW	RTD1-XSV	River Terrace Deposits, 1 - Sand And Gravel	Sand And Gravel

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m

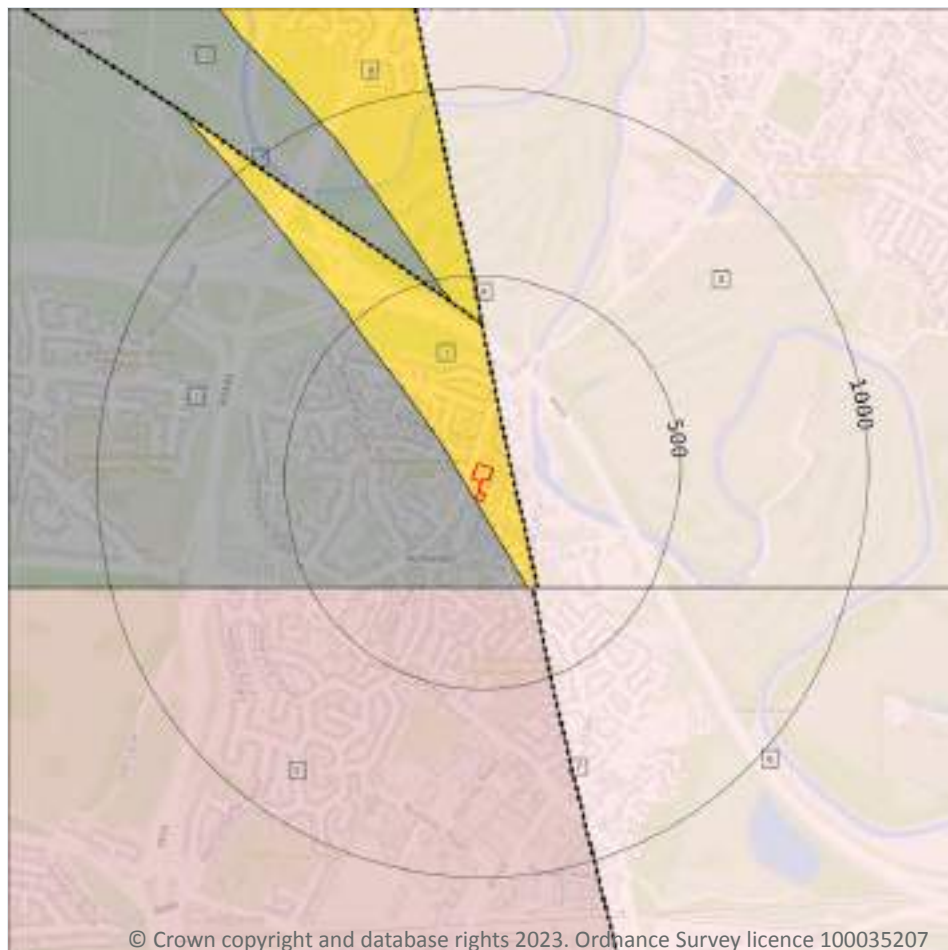
0

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

7

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 75**

ID	Location	LEX Code	Description	Rock age
1	On site	HEY-SDST	Helsby Sandstone Formation - Sandstone	Anisian Age - Early Triassic Epoch
2	2m S	TPSF-SLST	Tarporley Siltstone Formation - Siltstone	Anisian Age - Olenekian Age
3	48m NE	WLSF-SDST	Wilmslow Sandstone Formation - Sandstone	Early Triassic Epoch
5	229m S	TPSF-SISD	Tarporley Siltstone Formation - Siltstone And Sandstone	Anisian Age - Olenekian Age

ID	Location	LEX Code	Description	Rock age
6	266m SE	WLSF-SDST	Wilmslow Sandstone Formation - Sandstone	Early Triassic Epoch
8	371m N	HEY-SDST	Helsby Sandstone Formation - Sandstone	Anisian Age - Early Triassic Epoch
10	433m N	TPSF-SLST	Tarporley Siltstone Formation - Siltstone	Anisian Age - Olenekian Age

This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

3

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

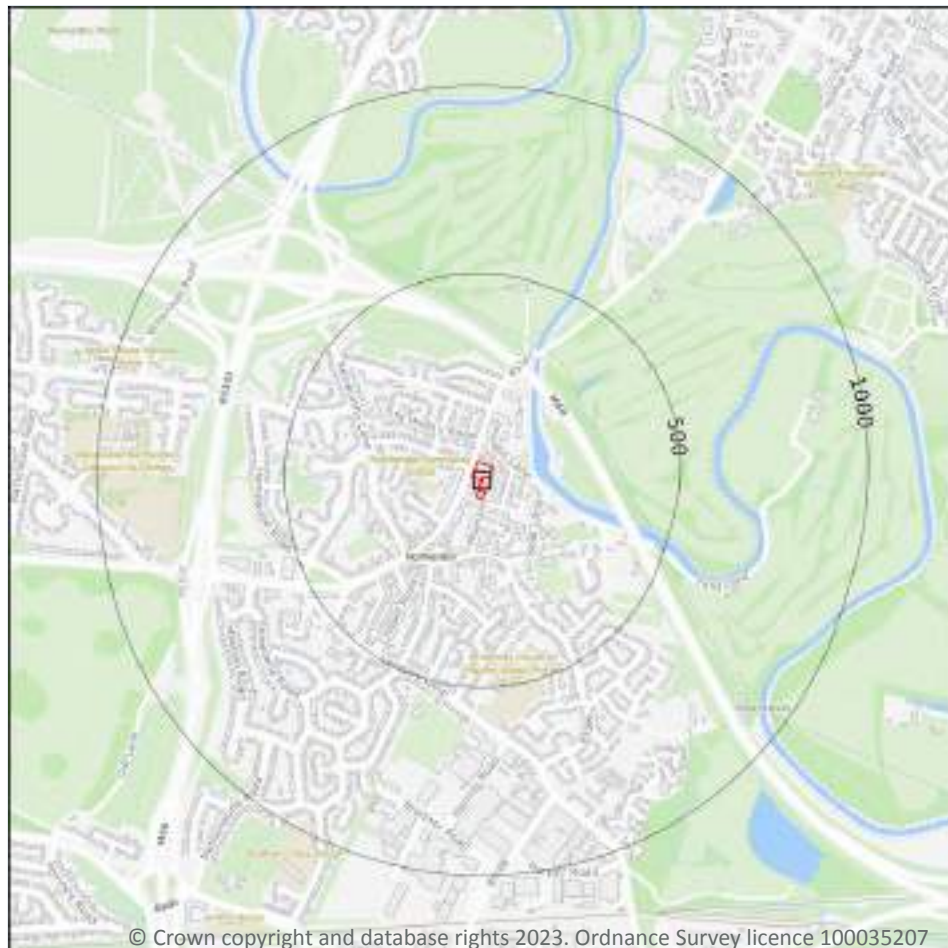
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 75**

ID	Location	Category	Description
4	48m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
7	266m SE	FAULT	Normal fault, inferred; crossmarks on downthrow side
9	371m N	FAULT	Normal fault, inferred; crossmarks on downthrow side

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



- Site Outline
- Search buffers in metres (m)
- ☐ Geological map tile

15.1 50k Availability

Records within 500m

1

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

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 77**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	Full	EW098_stockport_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

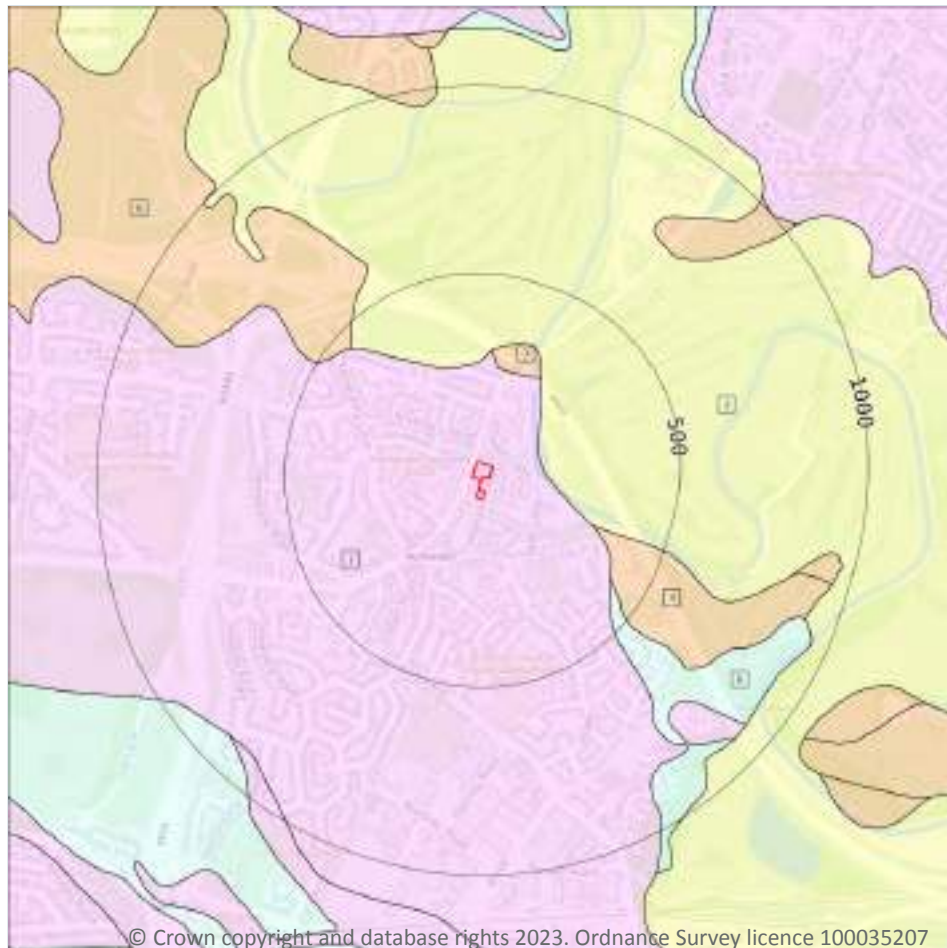
0

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

6

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 79**

ID	Location	LEX Code	Description	Rock description
1	On site	GFSDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
2	125m E	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
3	253m N	RTDU-XSV	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND AND GRAVEL
4	301m SE	RTDU-XSV	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND AND GRAVEL



ID	Location	LEX Code	Description	Rock description
5	396m SE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
6	448m NW	RTDU-XSV	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	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

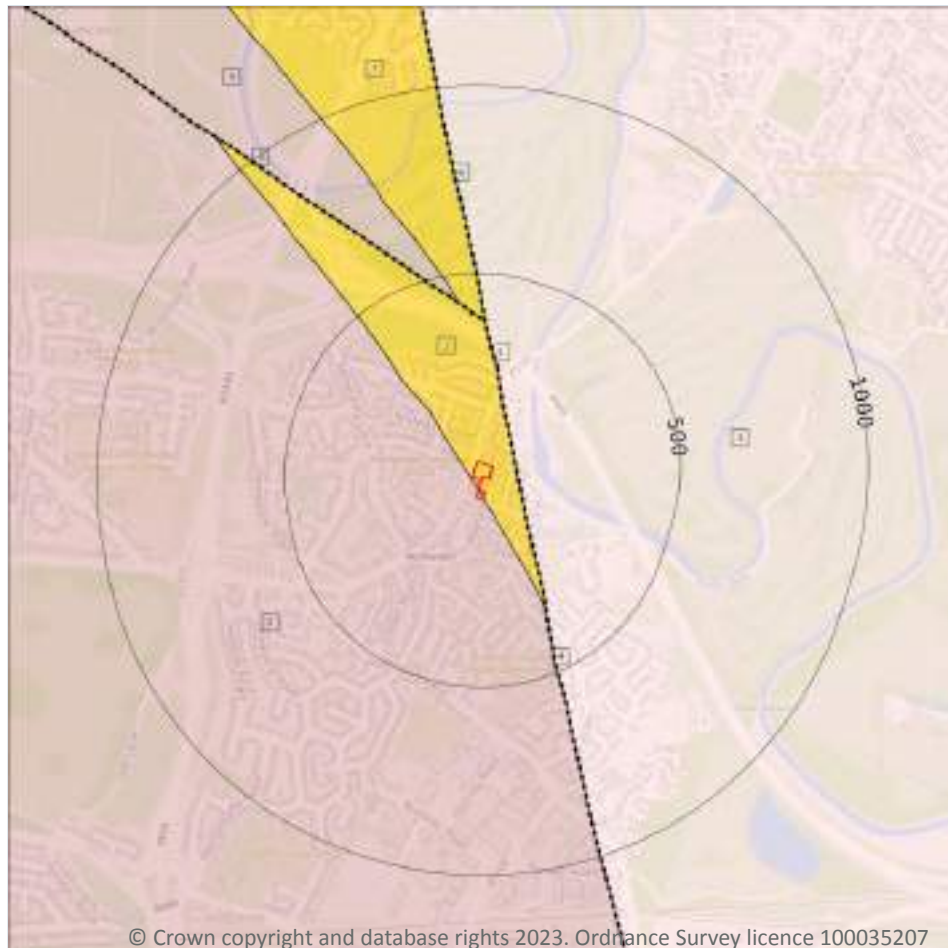
0

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

5

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 81**

ID	Location	LEX Code	Description	Rock age
1	On site	HEY-PESST	HELSBY SANDSTONE FORMATION - SANDSTONE, PEBBLY (GRAVELLY)	ANISIAN
2	On site	TPSF-SIMS	TARPORLEY SILTSTONE FORMATION - SILTSTONE, MUDSTONE AND SANDSTONE	OLENEKIAN
3	61m E	WLSF-SDST	WILMSLOW SANDSTONE FORMATION - SANDSTONE	-



ID	Location	LEX Code	Description	Rock age
7	375m N	HEY-PESST	HELSBY SANDSTONE FORMATION - SANDSTONE, PEBBLY (GRAVELLY)	ANISIAN
9	423m N	TPSF-SIMS	TARPORLEY SILTSTONE FORMATION - SILTSTONE, MUDSTONE AND SANDSTONE	OLENEKIAN

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	Mixed	High	Moderate

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

4

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 81**

ID	Location	Category	Description
4	61m E	FAULT	Fault, inferred
5	255m N	FAULT	Fault, inferred
6	299m N	FAULT	Fault, inferred
8	375m N	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

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

16.1 BGS Boreholes

Records within 250m

38

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 83**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	62m SE	383120 390190	BOAT LANE NORTHENDON MANCHESTER BH7	6.15	N	17093476
2	90m SE	383130 390160	BOAT LANE NORTHENDON MANCHESTER BH8	6.15	N	17093477
3	101m SE	383160 390180	BOAT LANE NORTHENDON MANCHESTER BH6	6.2	N	17093475



ID	Location	Grid reference	Name	Length	Confidential	Web link
4	101m E	383200 390320	NORTHEND WEIR PHASE 2 CP 15	-	Y	N/A
5	110m NE	383190 390380	NORTHEND WEIR PHASE 2 CP 16	-	Y	N/A
A	115m E	383210 390290	NORTHEND WEIR PHASE 2 CP 14	-	Y	N/A
6	122m N	383096 390447	PALATINE ROAD 3	-	Y	N/A
A	122m E	383220 390300	NORTHEND WEIR PHASE 2 CPR 1	-	Y	N/A
B	126m SE	383170 390150	BOAT LANE NORTHENDON MANCHESTER BH5	6.1	N	17093474
A	132m E	383230 390300	NORTHEND WEIR PHASE 2 CPR 2	-	Y	N/A
A	136m E	383230 390280	NORTHEND WEIR PHASE 2 CPR 5	-	Y	N/A
A	139m E	383230 390270	NORTHEND WEIR PHASE 2 CP 13	-	Y	N/A
7	141m SE	383200 390170	BOAT LANE NORTHENDON MANCHESTER BH1	6.15	N	17093470
A	144m E	383240 390290	NORTHEND WEIR PHASE 2 CPR 3	-	Y	N/A
B	147m SE	383180 390130	BOAT LANE NORTHENDON MANCHESTER BH4	6.0	N	17093473
A	149m E	383240 390270	NORTHEND WEIR PHASE 2 CPR 6	-	Y	N/A
A	154m E	383250 390290	NORTHEND WEIR PHASE 2 CPR 4	-	Y	N/A
8	154m S	383042 390078	MANHOLE IN NORTHENDEN INTERCEPTING SEWER. NO.6A	2.9	N	864914
B	156m SE	383200 390140	BOAT LANE NORTHENDON MANCHESTER BH2	6.15	N	17093471
A	168m E	383260 390270	NORTHEND WEIR PHASE 2 CPR 7	-	Y	N/A
B	168m SE	383200 390120	BOAT LANE NORTHENDON MANCHESTER BH3	6.15	N	17093472
C	169m E	383260 390370	NORTHEND WEIR PHASE 2 CP 12	-	Y	N/A
9	171m E	383270 390320	NORTHEND WEIR PHASE 2 CP 11	-	Y	N/A
10	171m S	383108 390062	MANHOLE IN NORTHENDEN INTERCEPTING SEWER. NO.6B	4.88	N	864915
A	173m E	383270 390290	NORTHEND WEIR PHASE 2 CP 10	-	Y	N/A
11	175m S	383016 390064	MANHOLE IN NORTHENDEN INTERCEPTING SEWER. NO.6	4.11	N	864913
C	176m E	383270 390360	SALE EASTERN/NORTHENDEN. 64	11.89	N	864973
A	181m E	383270 390260	NORTHEND WEIR PHASE 2 CPR 8	-	Y	N/A
12	195m S	383126 390042	MANHOLE IN NORTHENDEN INTERCEPTING SEWER. NO.7	5.49	N	864916

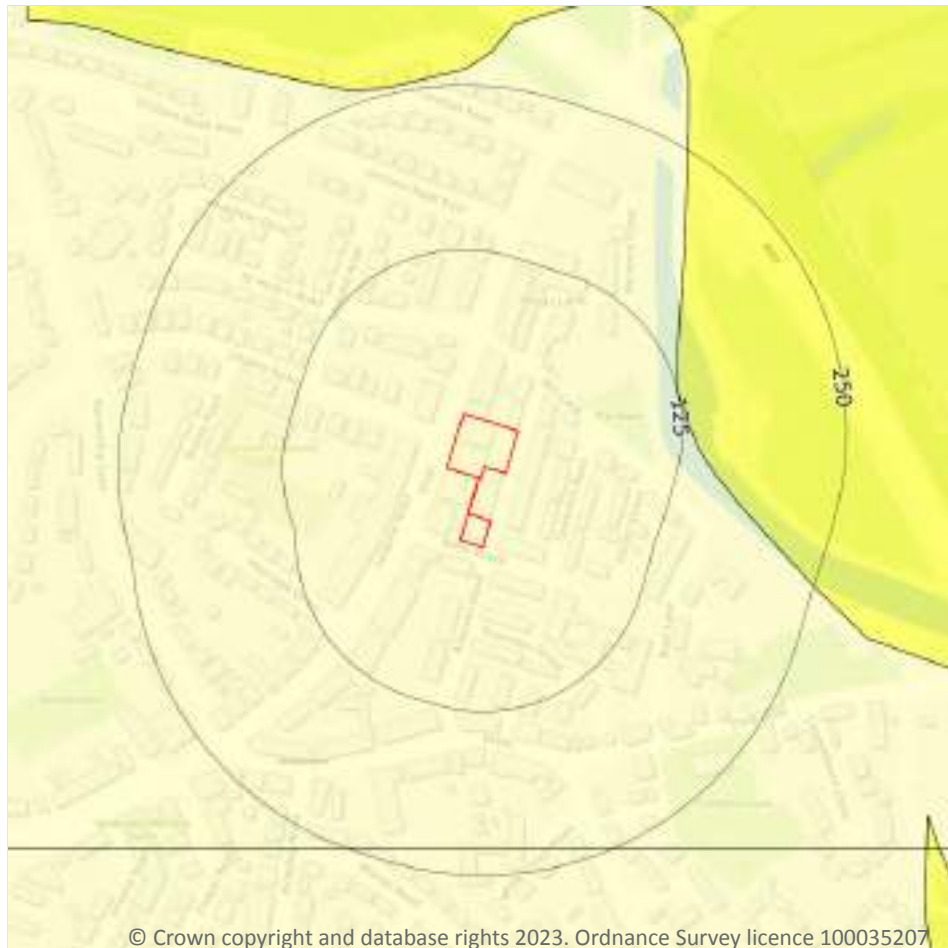


ID	Location	Grid reference	Name	Length	Confidential	Web link
A	200m E	383290 390260	NORTHEND WEIR PHASE 2 CP 9	-	Y	N/A
13	206m SW	382951 390057	MANHOLE IN NORTHENDEN INTERCEPTING SEWER. NO.5A	4.27	N	864912
D	221m N	383152 390533	PALATINE ROAD 2	-	Y	N/A
D	221m N	383141 390537	PALATINE ROAD 4	-	Y	N/A
14	224m NE	383192 390522	RIVER MERSEY FLOOD ALLEVIATION 26	-	Y	N/A
15	233m NW	382941 390533	PALATINE ROAD 1	-	Y	N/A
16	238m NE	383240 390510	SALE EASTERN/NORTHENDEN. 38	13.72	N	864966
17	242m SW	382884 390063	MANHOLE IN NORTHENDEN INTERCEPTING SEWER. NO.5	3.81	N	864911
18	249m NE	383330 390410	SALE EASTERN/NORTHENDEN. 40	7.01	N	864968

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



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

© Crown copyright and database rights 2023. Ordnance Survey licence 100035207

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 86**

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.

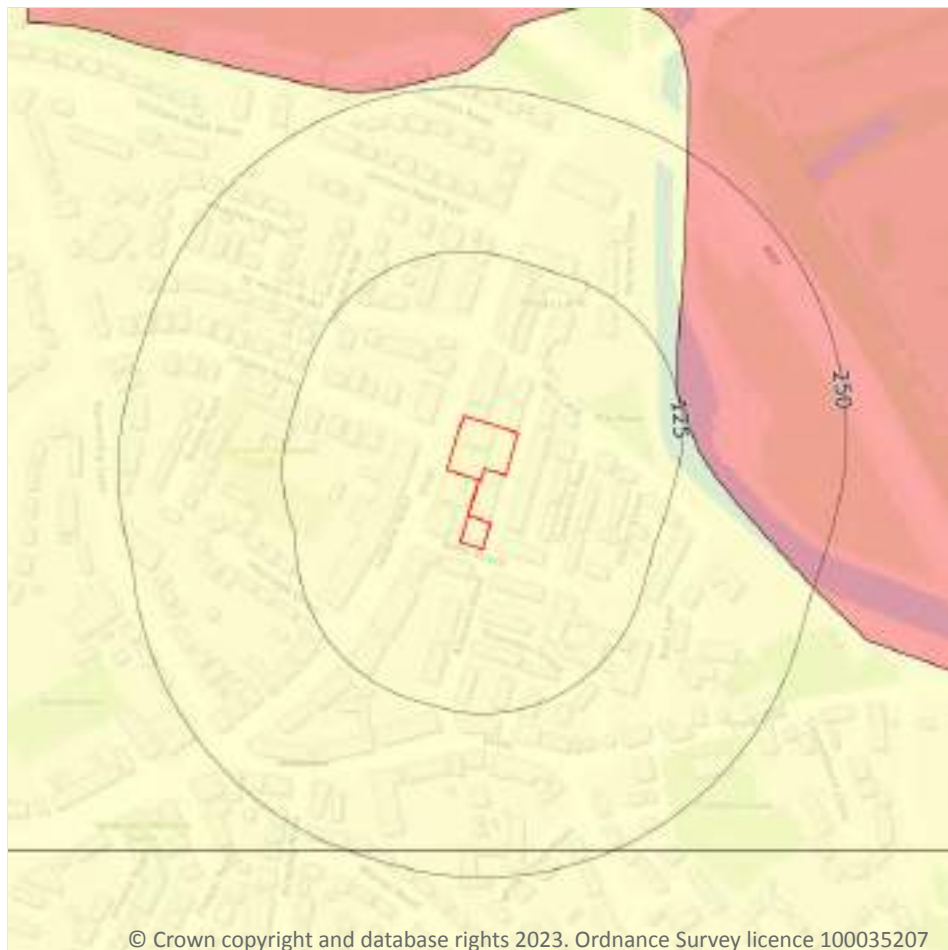
Features are displayed on the Natural ground subsidence - Running sands map on **page 87**

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.

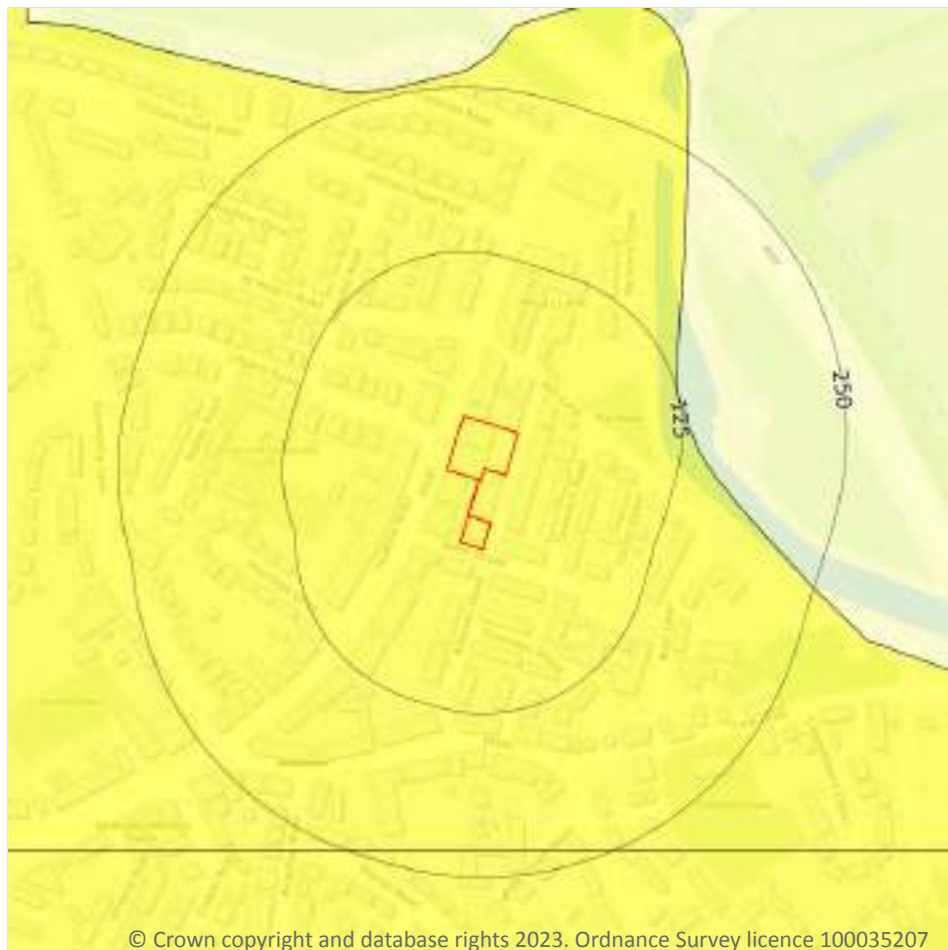
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 88**

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 89**

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.

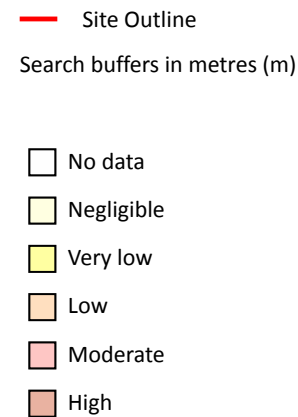
Features are displayed on the Natural ground subsidence - Landslides map on **page 90**

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 91**

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

This data is sourced from the British Geological Survey.



18 Mining, ground workings and natural cavities



- Site Outline
- Search buffers in metres (m)
- Natural cavities (Area)
- Natural cavities (Point)
- BritPits
- Surface ground workings
- Underground workings
- Historical Mineral Planning Areas
- Mining Cavities
- Non Coal Mining
- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m

0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m

0

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

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m

1

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 92**

ID	Location	Land Use	Year of mapping	Mapping scale
1	249m NW	Pond	1897	1:10560

This data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m

0

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

This data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m

0

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

This data is sourced from the British Geological Survey.



18.6 Non-coal mining

Records within 1000m

0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m

0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site

1

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

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site

0

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

This data is sourced from the Coal Authority.



18.10 Brine areas

Records on site	0
-----------------	---

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

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

18.11 Gypsum areas

Records on site	0
-----------------	---

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0
-----------------	---

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

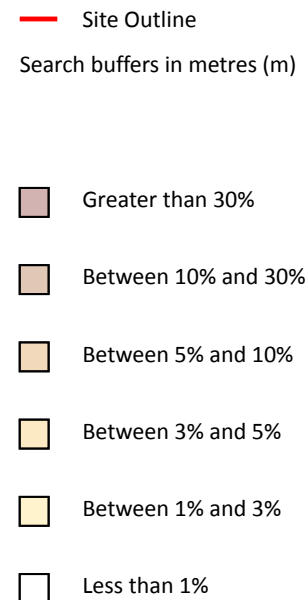
18.13 Clay mining

Records on site	0
-----------------	---

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

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

19 Radon



19.1 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 96**

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



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



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

3

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 mg/kg
44m W	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	15 mg/kg

This data is sourced from the British Geological Survey.

20.2 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.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

0

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

This data is sourced from the British Geological Survey.



21 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

21.1 Underground railways (London)

Records within 250m

0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m

0

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



This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m

0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m

0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m

0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m

0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m

0

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

This data is sourced from Ordnance Survey and OpenStreetMap.



21.8 Crossrail 1

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m

0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m

1

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

Features are displayed on the Railway infrastructure and projects map on **page 99**

Location	Track Type	Speed (mph)	Speed (km/h)	Status
8m S	Tunnel	143mph	230kph	Current preferred consultation route

This data is sourced from HS2 Ltd.

Data providers

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

Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: <https://www.groundsure.com/terms-and-conditions-jan-2020/>.



Appendix 3: Historical Maps

Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1872-1874

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1874
Revised 1874
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1872
Edition N/A
Copyright N/A
Levelled N/A

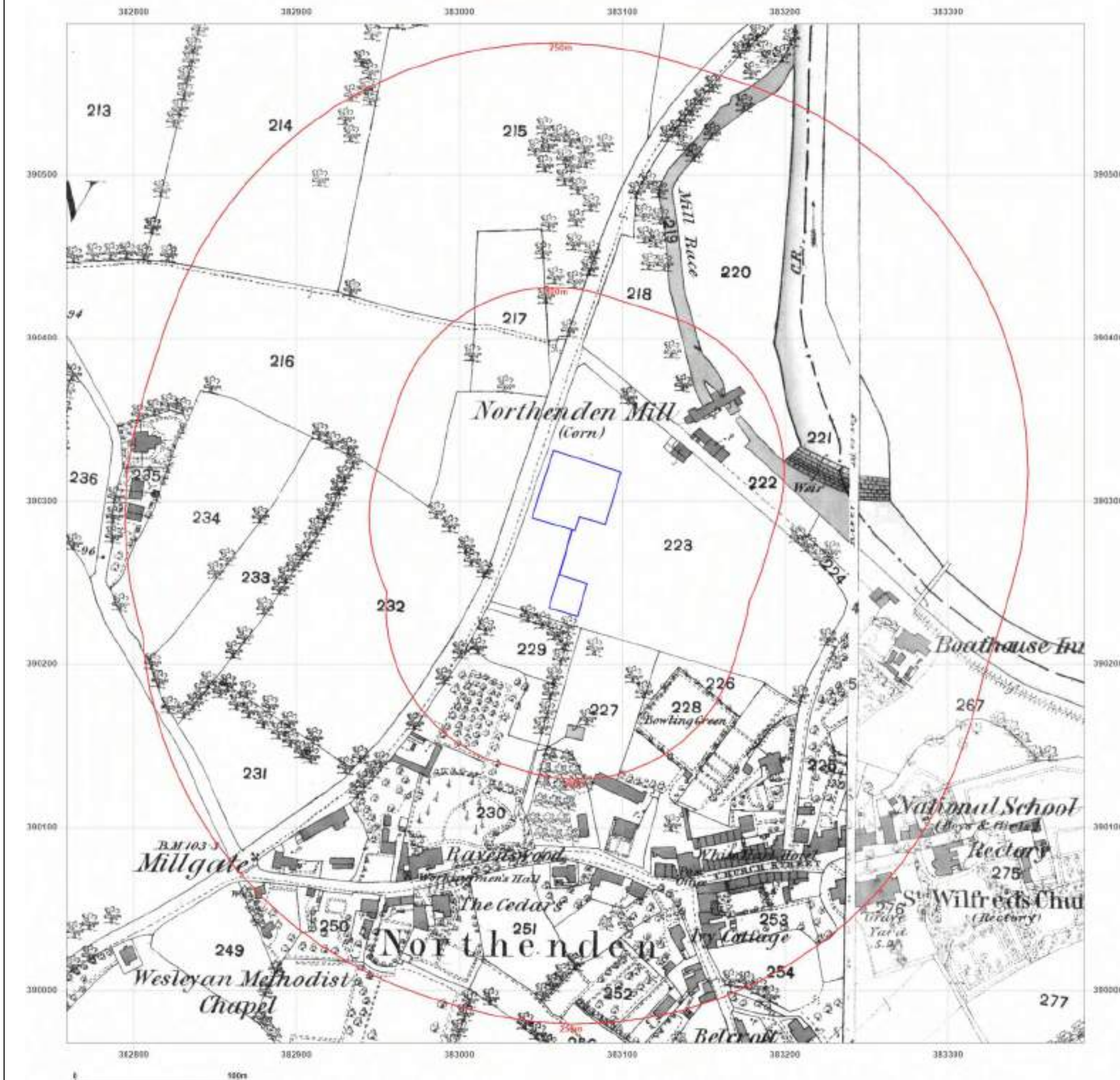


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1881

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1881
Revised N/A
Edition 1881
Copyright N/A
Levelled N/A

Surveyed 1881
Revised N/A
Edition 1881
Copyright N/A
Levelled N/A

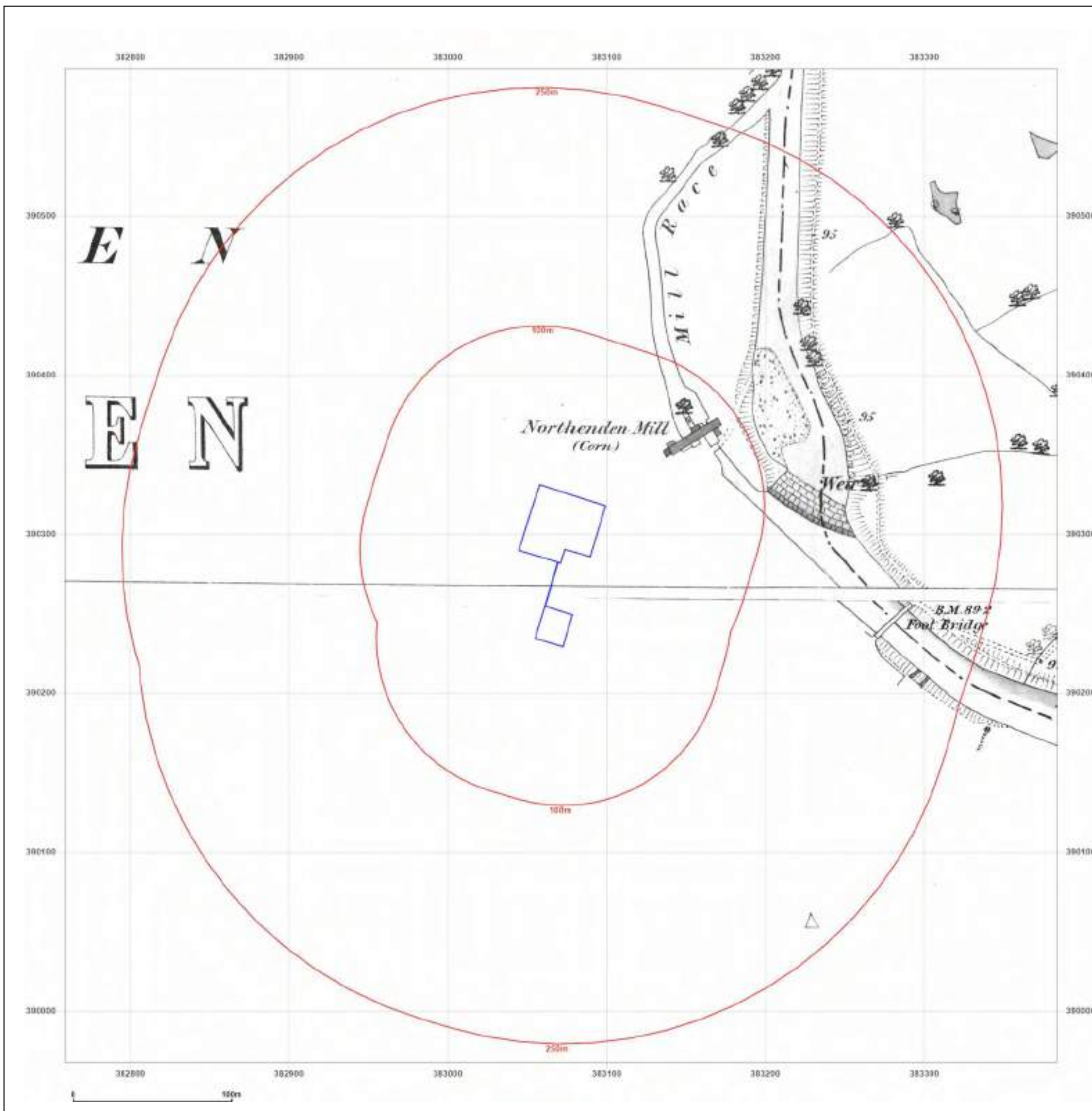


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1893-1894

Scale: 1:2,500

Printed at: 1:2,500



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

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

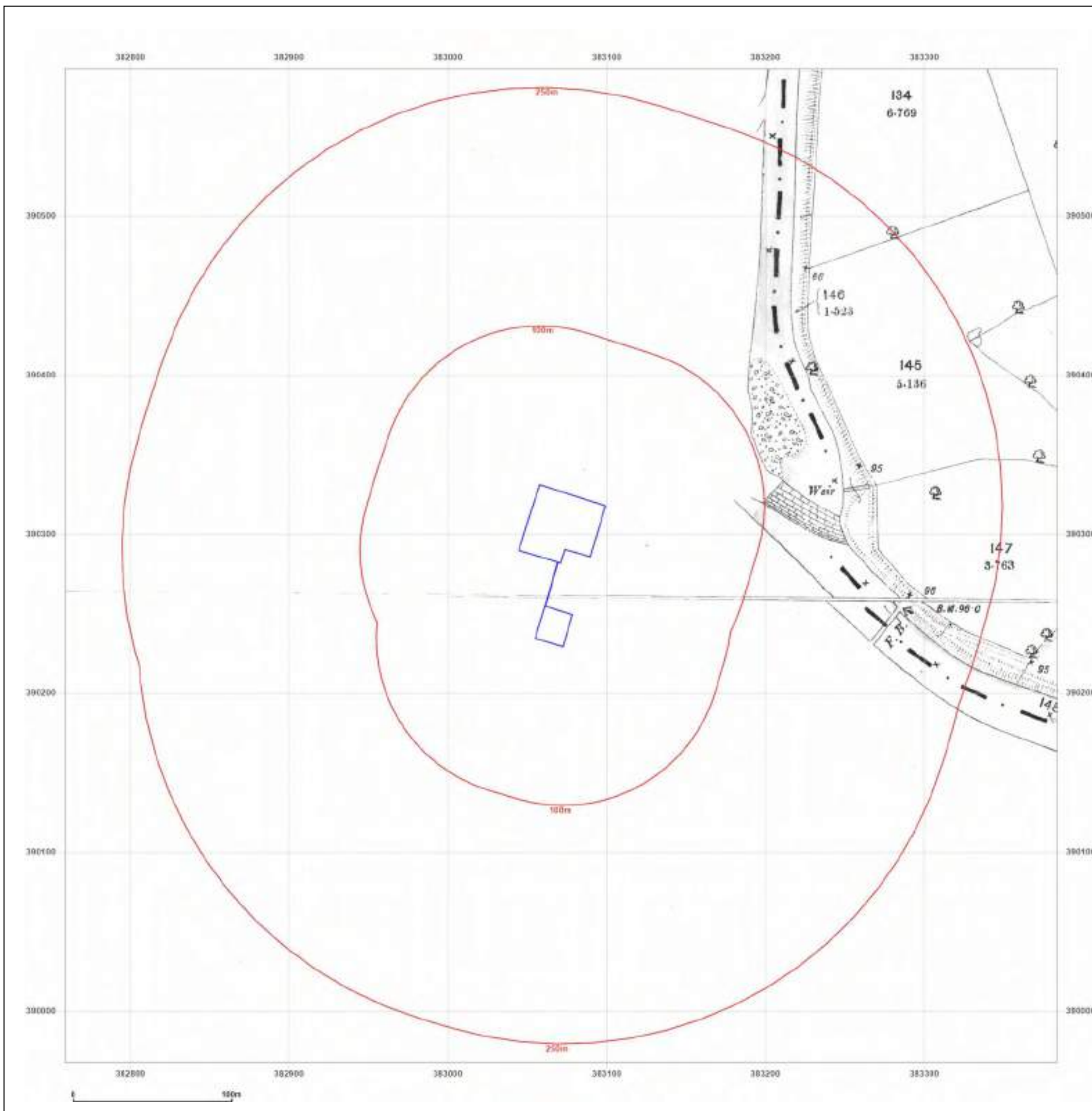


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE ROAD, MANCHESTER, M22 4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1898

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1877
Revised 1897
Edition 1898
Copyright N/A
Levelled N/A

Surveyed 1877
Revised 1897
Edition 1898
Copyright N/A
Levelled N/A

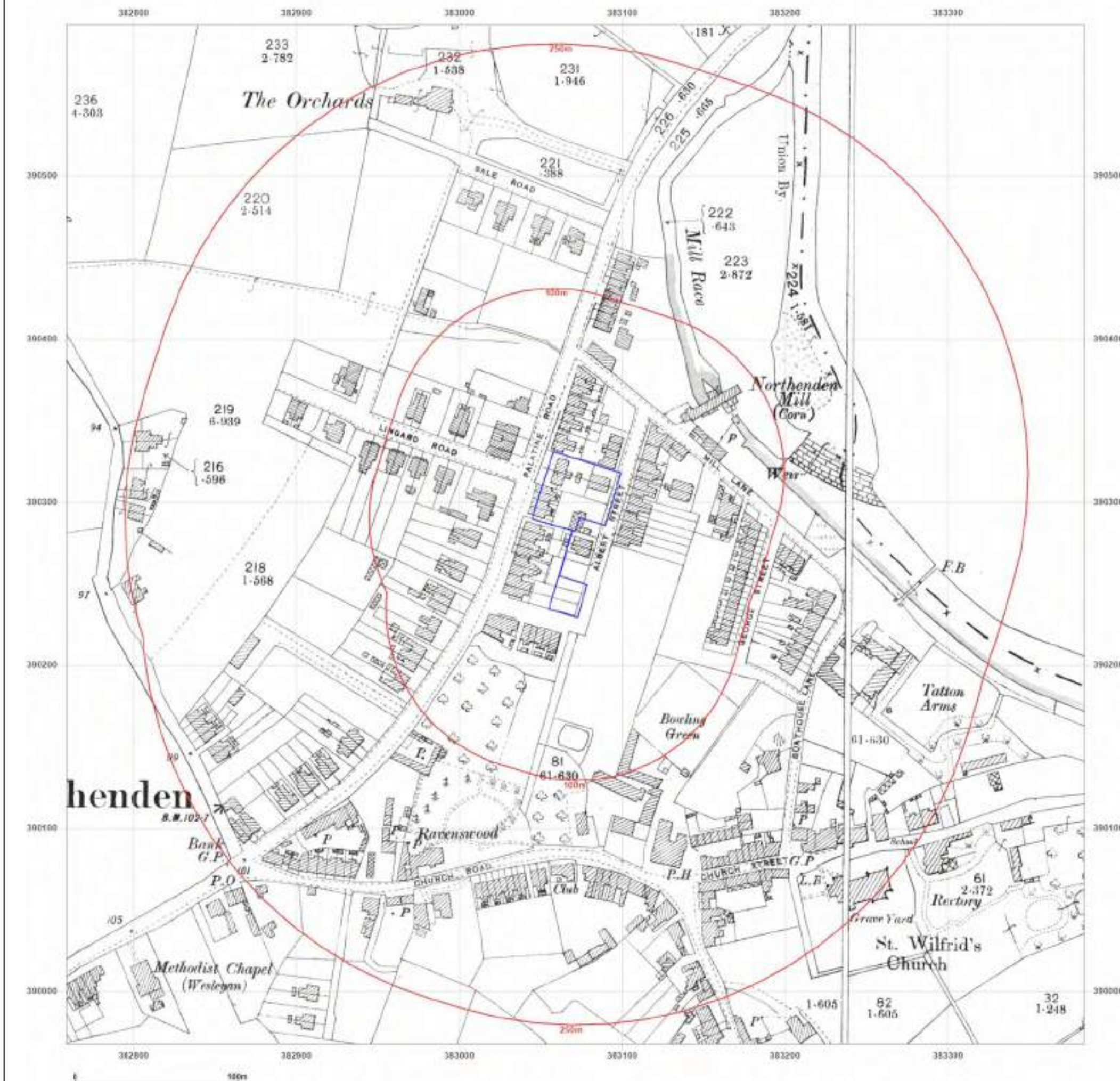


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1907

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1891
Revised 1905
Edition 1907
Copyright N/A
Levelled N/A

Surveyed 1891
Revised 1905
Edition 1907
Copyright N/A
Levelled N/A

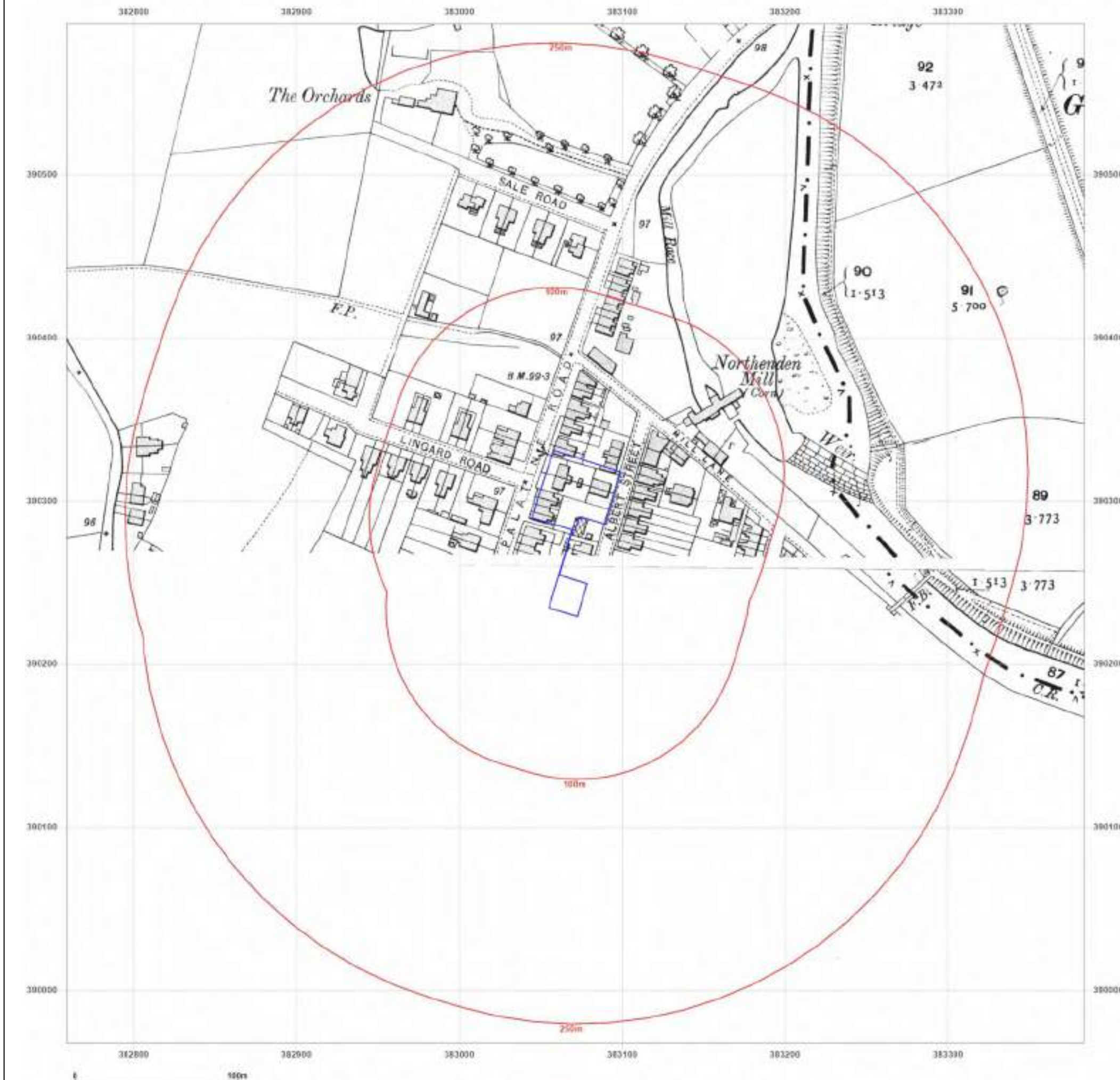


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE ROAD, MANCHESTER, M22 4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1910

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1910
Revised 1908
Edition 1910
Copyright N/A
Levelled N/A

Surveyed 1910
Revised 1908
Edition 1910
Copyright N/A
Levelled N/A



Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE ROAD, MANCHESTER, M22 4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1922

Scale: 1:2,500

Printed at: 1:2,500



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

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

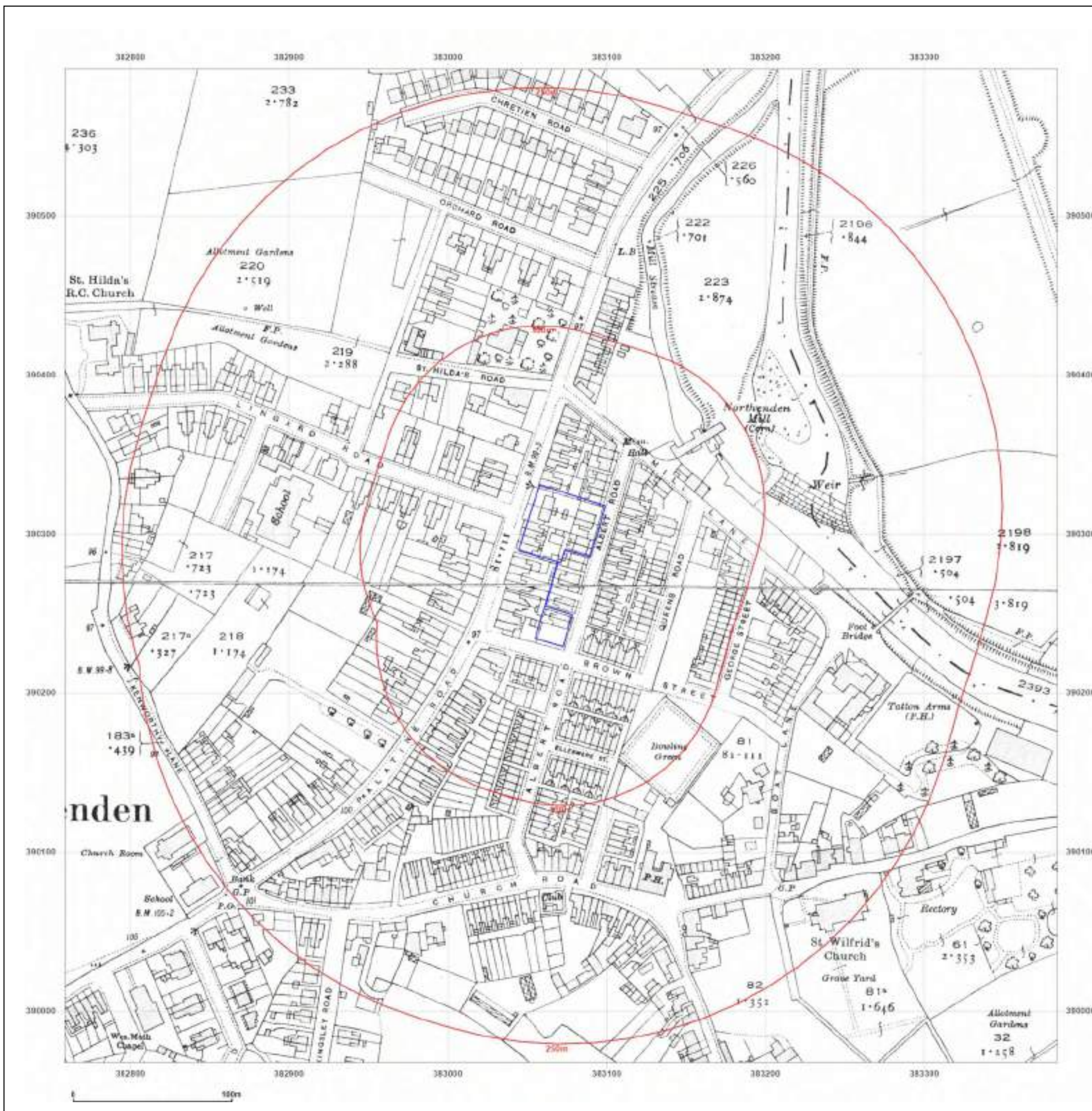


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1934-1935

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1873
Revised 1935
Edition N/A
Copyright N/A
Levelled 1927

Surveyed 1873
Revised 1934
Edition N/A
Copyright N/A
Levelled 1927

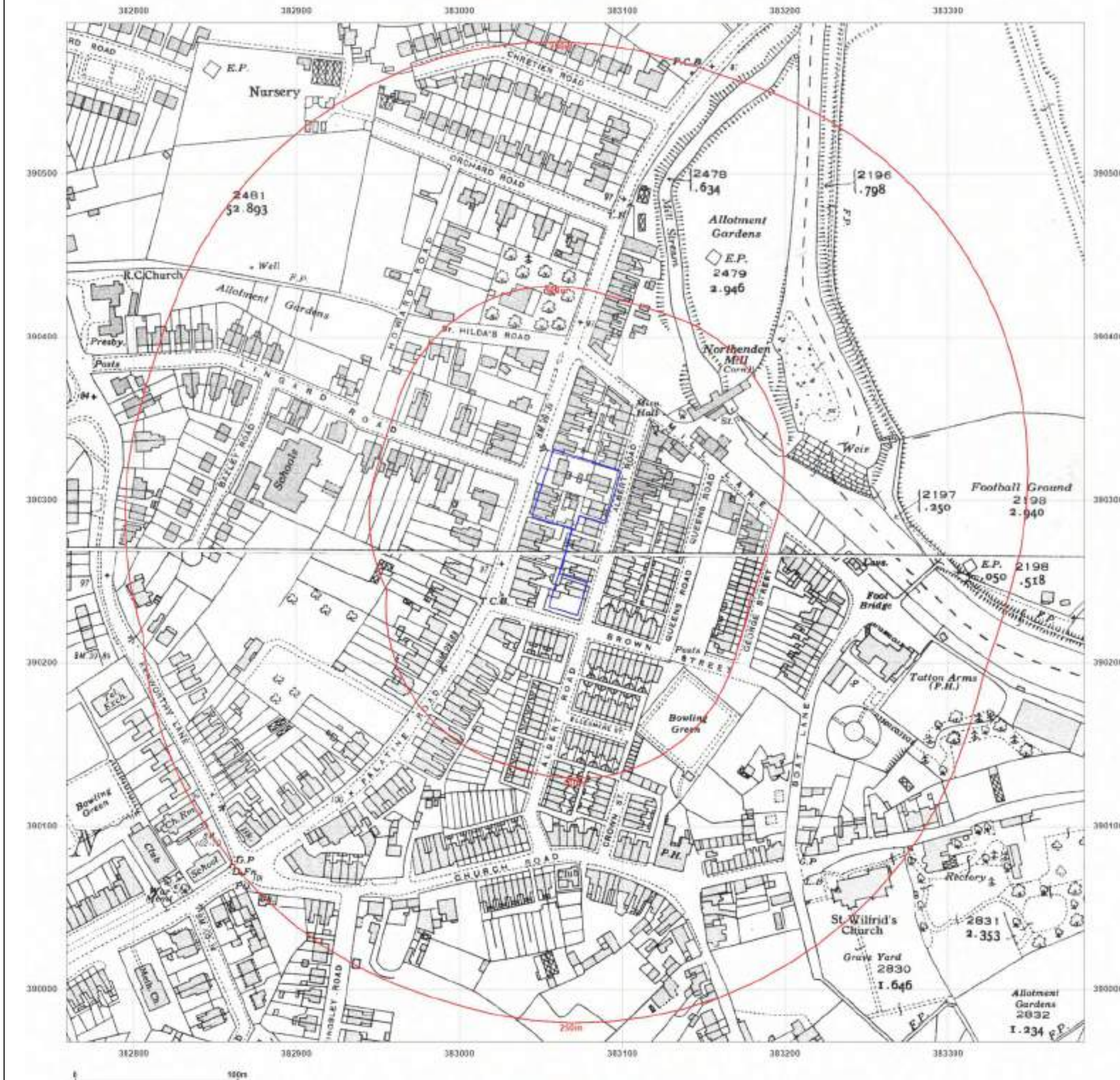


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE ROAD, MANCHESTER, M22 4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: National Grid

Map date: 1955-1956

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1956
 Revised 1956
 Edition N/A
 Copyright 1956
 Levelled 1949

Surveyed 1955
 Revised 1955
 Edition N/A
 Copyright 1955
 Levelled 1949

Surveyed 1956
 Revised 1956
 Edition N/A
 Copyright 1956
 Levelled 1949

Surveyed 1955
 Revised 1955
 Edition N/A
 Copyright 1955
 Levelled 1949

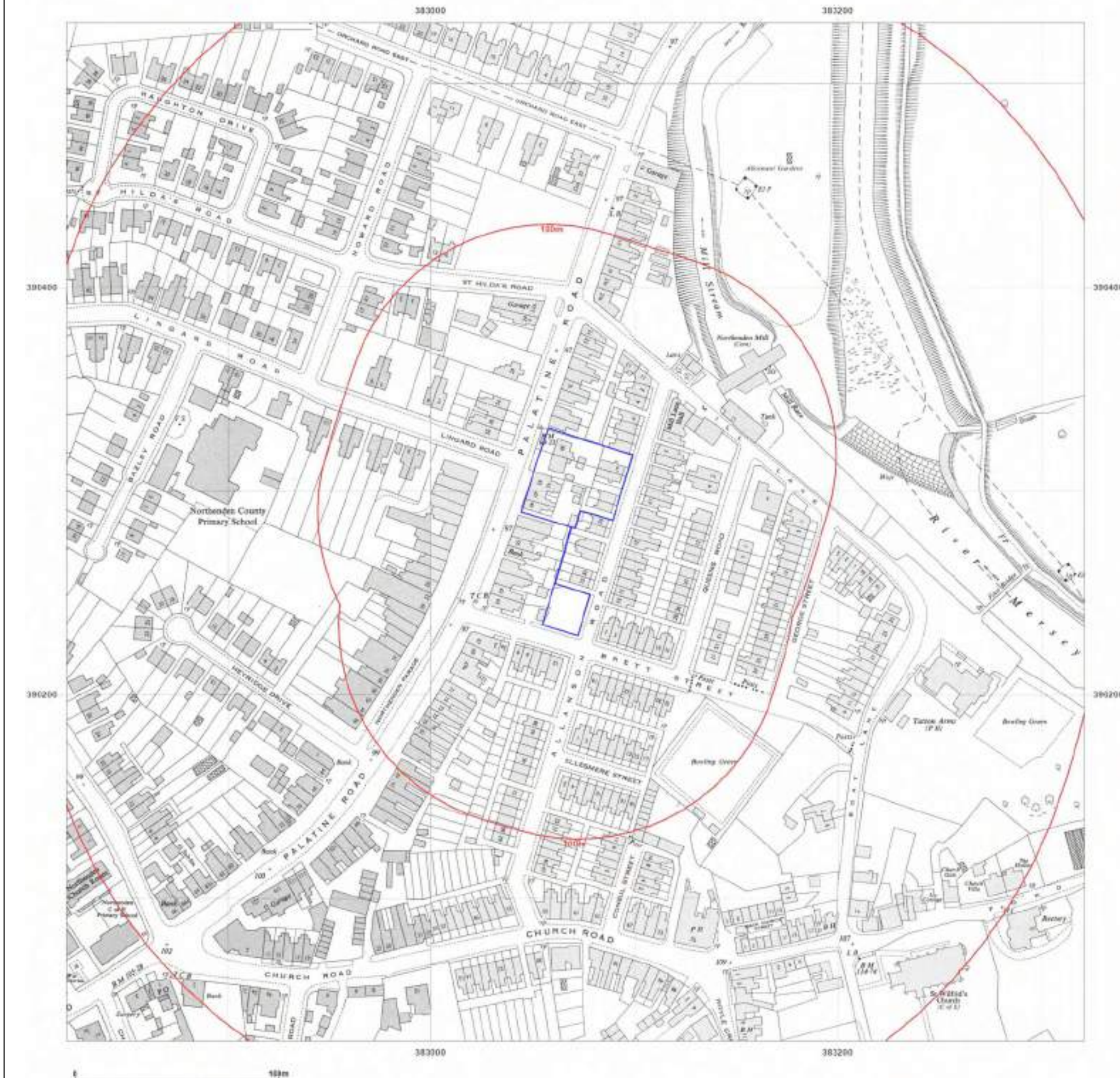


Produced by
 Groundsure Insights
 T: 08444 159000
 E: info@groundsure.com
 W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE ROAD, MANCHESTER, M22 4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: National Grid

Map date: 1956-1961

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1955
 Revised 1955
 Edition N/A
 Copyright 1956
 Levell'd 1949

Surveyed 1958
 Revised 1958
 Edition N/A
 Copyright 1961
 Levell'd 1956

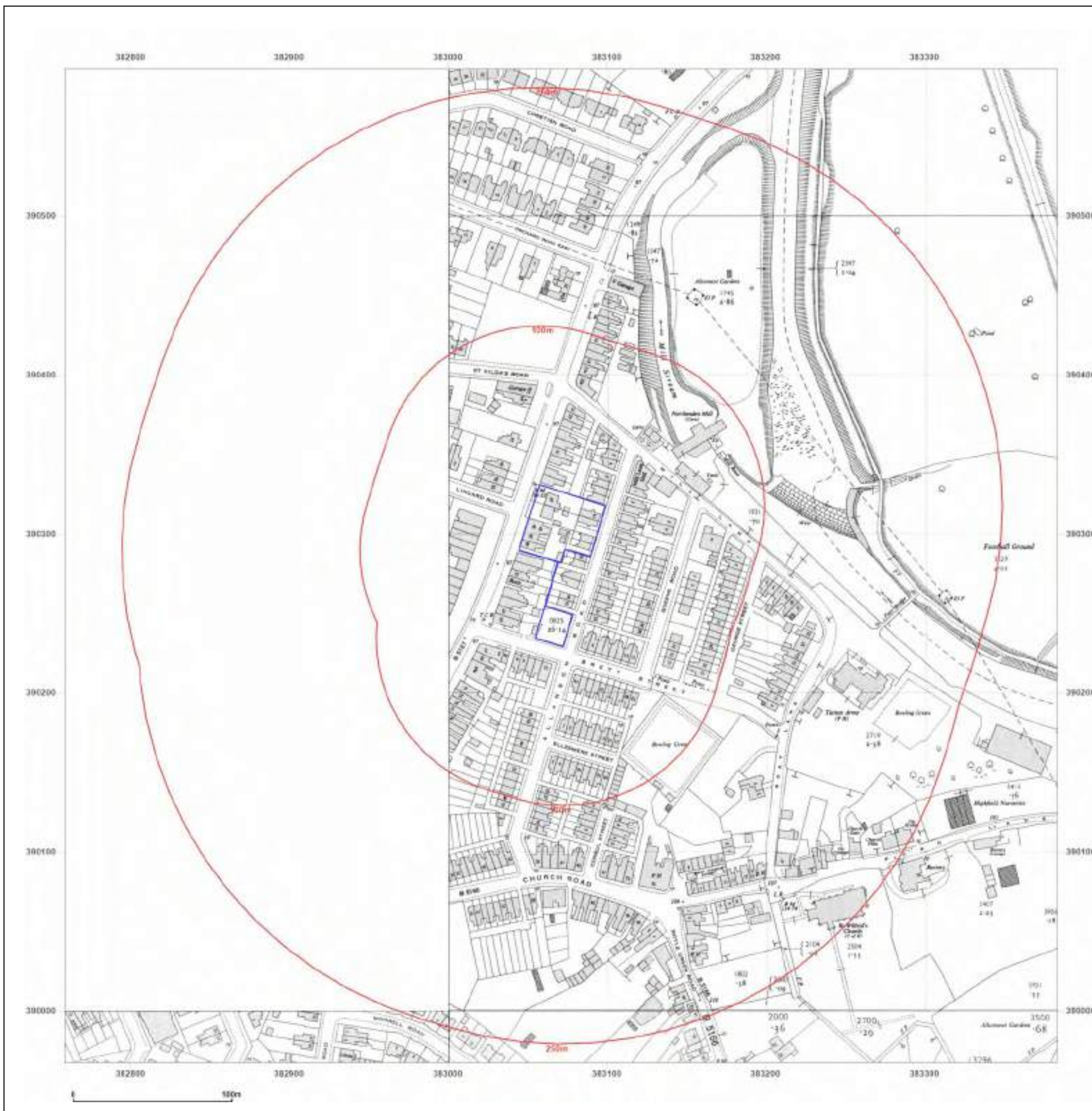


Produced by
 Groundsure Insights
 T: 08444 159000
 E: info@groundsure.com
 W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: National Grid

Map date: 1975-1980

Scale: 1:1,250

Printed at: 1:2,000



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

Surveyed 1958
Revised 1974
Edition N/A
Copyright 1975
Levelled 1958

Surveyed 1955
Revised 1979
Edition N/A
Copyright 1980
Levelled 1958

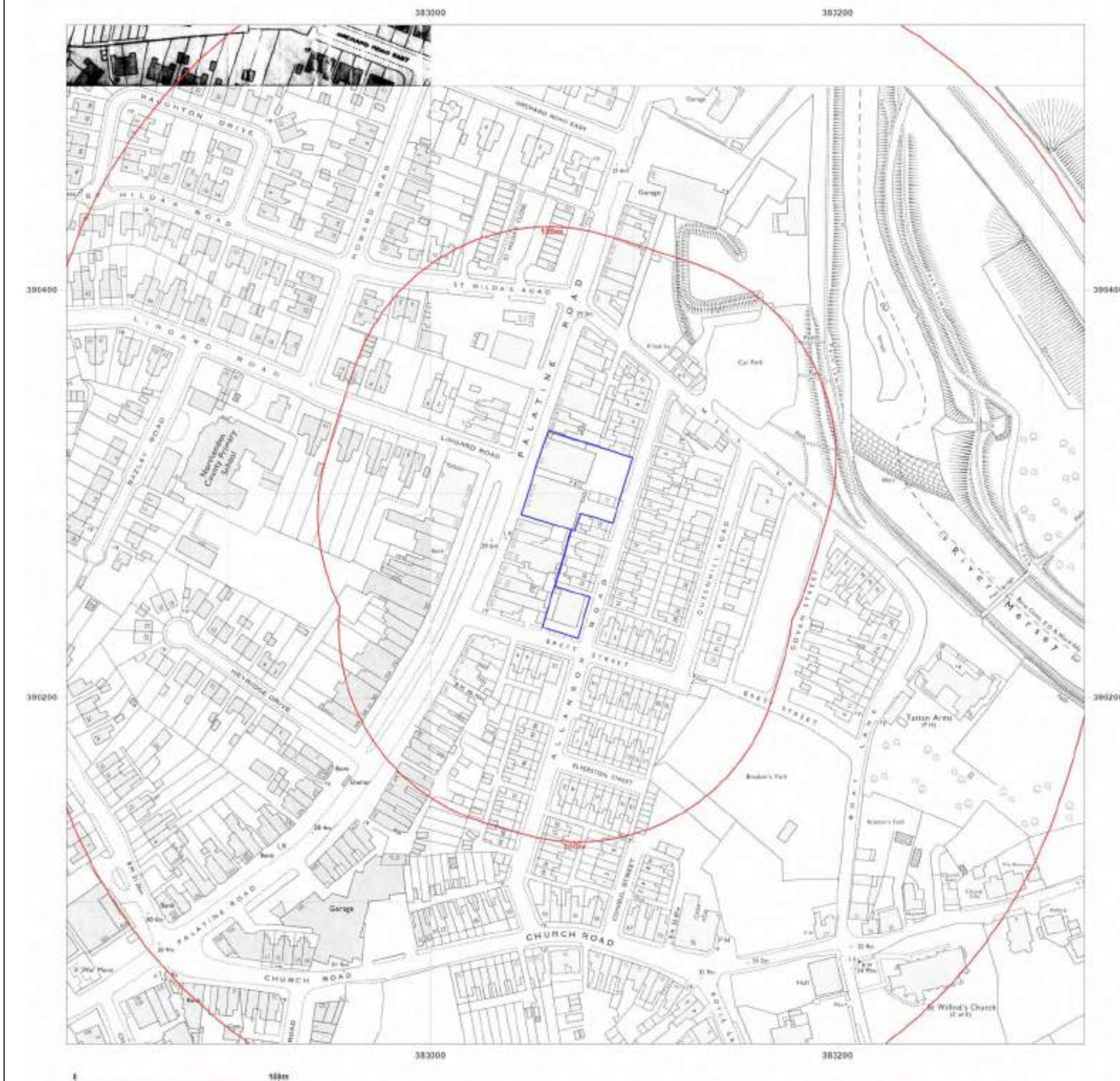


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: National Grid

Map date: 1989-1992

Scale: 1:1,250

Printed at: 1:2,000



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

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

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

Surveyed 1958
Revised 1989
Edition N/A
Copyright 1989
Levelled 1958



Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: National Grid

Map date: 1992

Scale: 1:1,250

Printed at: 1:2,000



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

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

Surveyed 1956
Revised 1974
Edition N/A
Copyright 1992
Levelled N/A

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

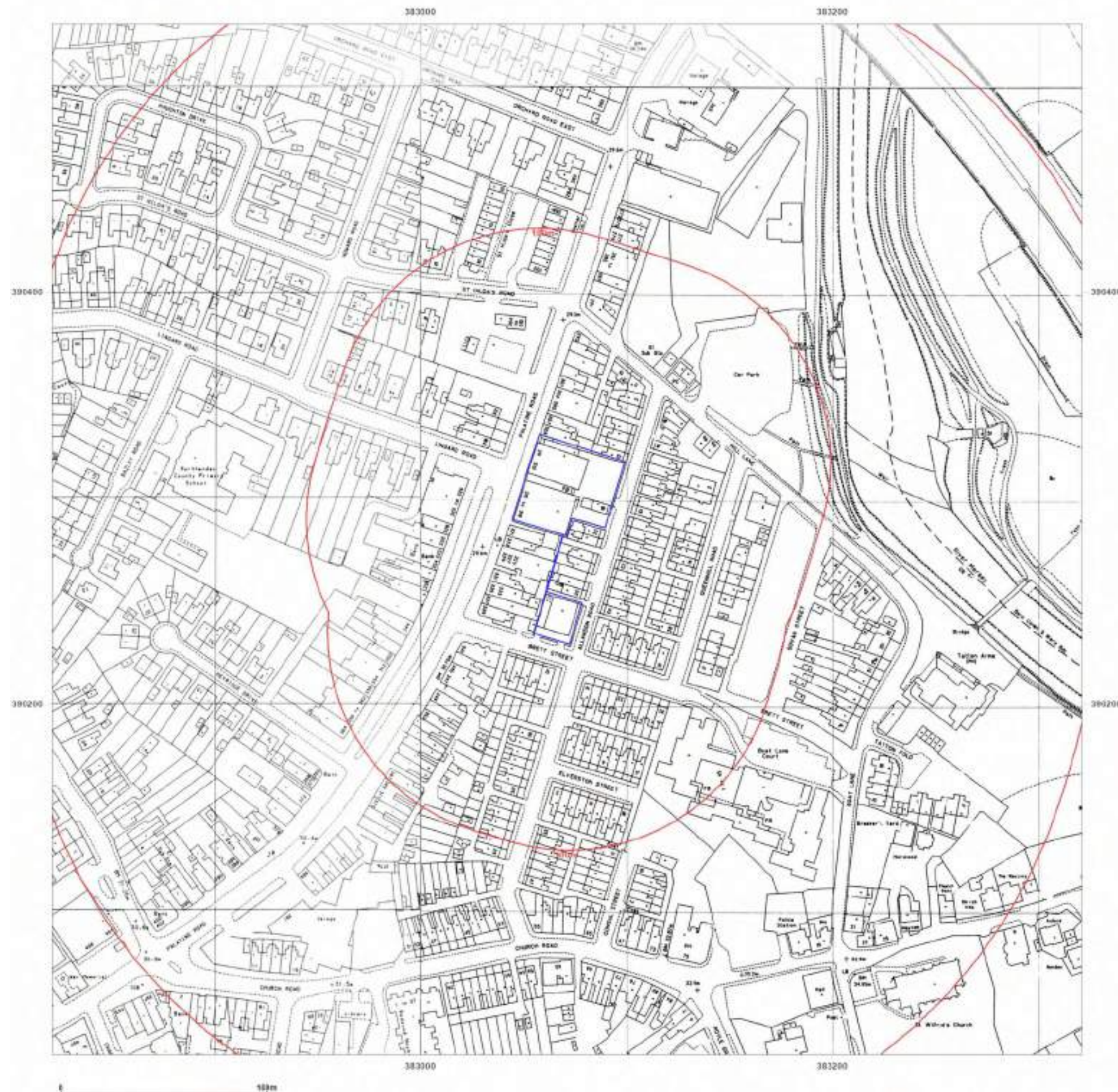


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

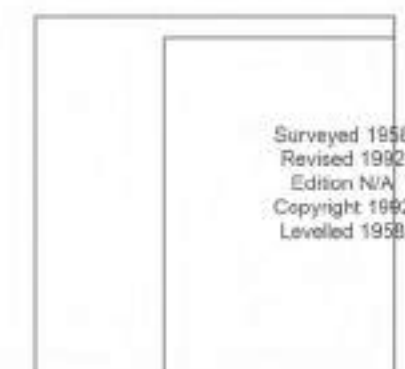
Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: National Grid

Map date: 1992

Scale: 1:1,250

Printed at: 1:2,000

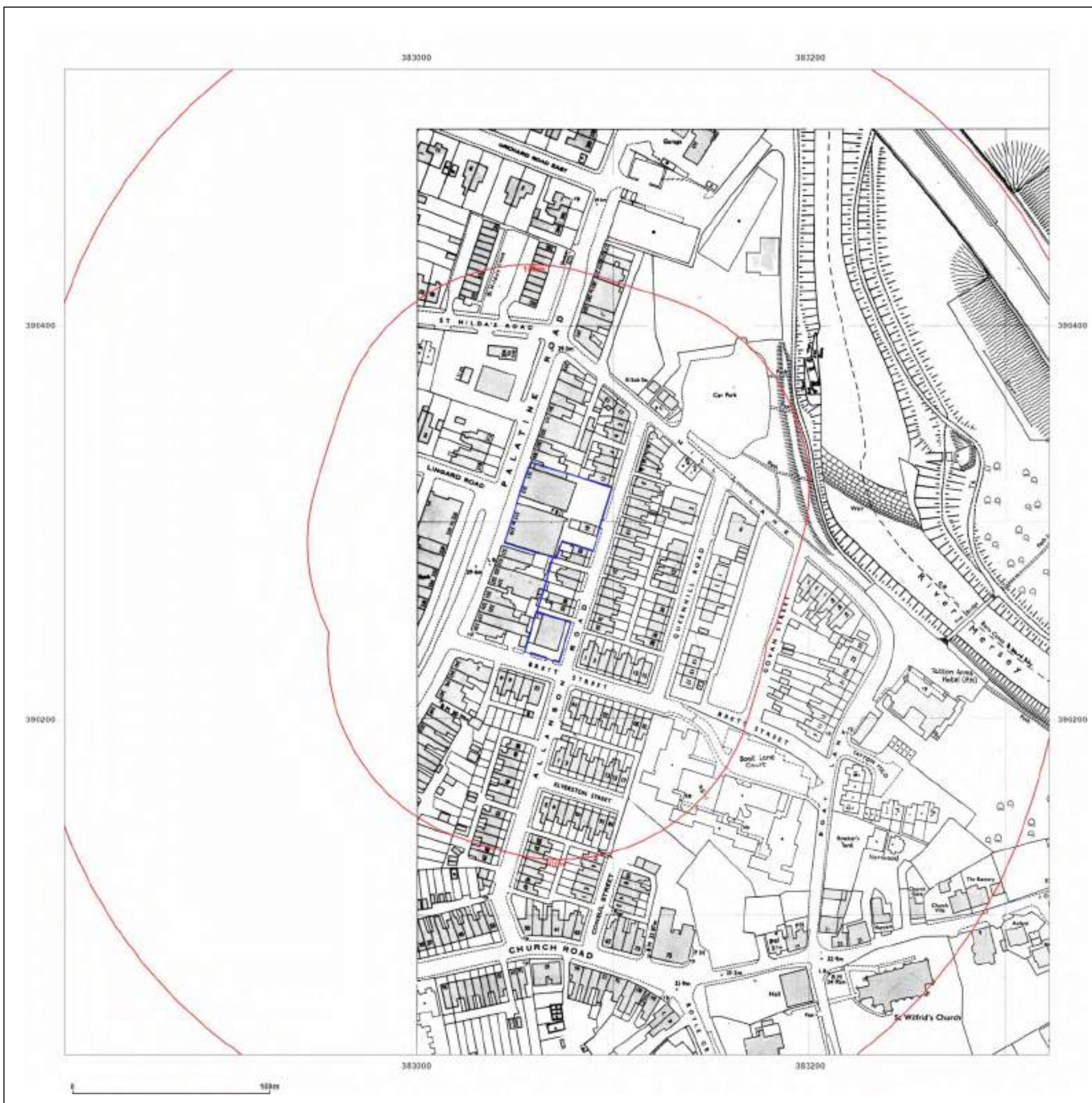


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE ROAD, MANCHESTER, M22 4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250

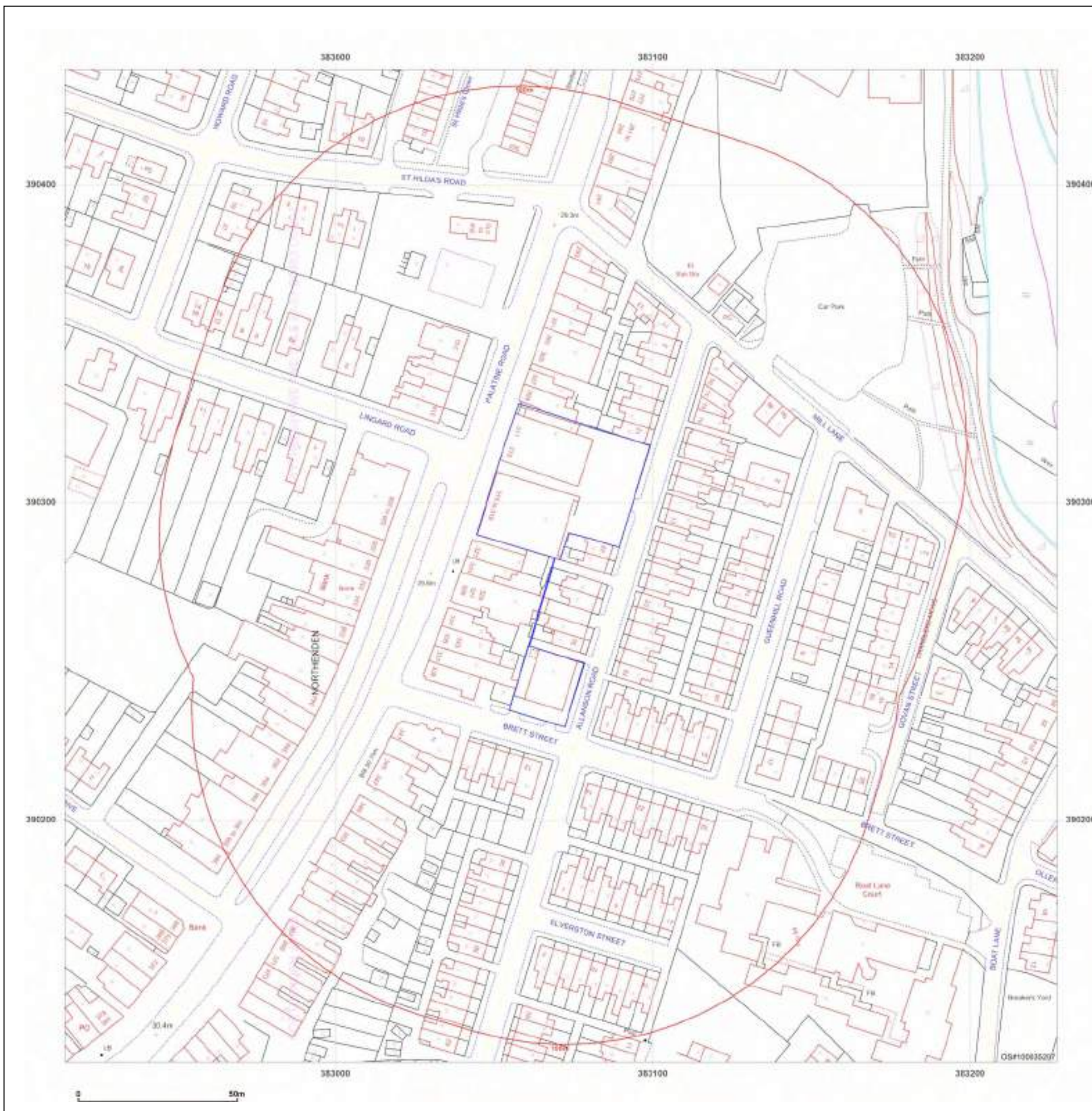


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1849

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1845
Revised 1849
Edition 1849
Copyright N/A
Levelled N/A

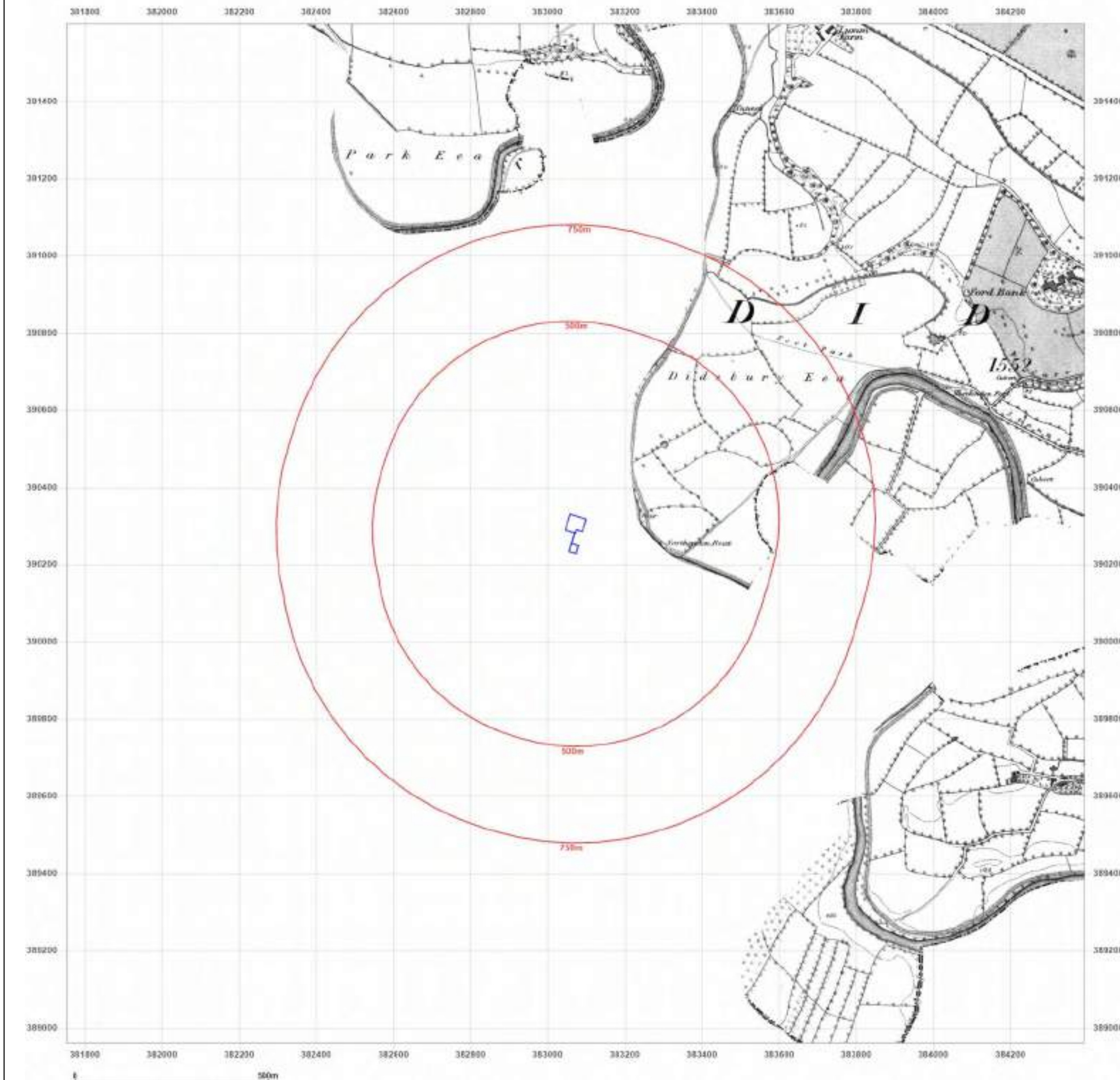


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1892

Scale: 1:10,560

Printed at: 1:10,560

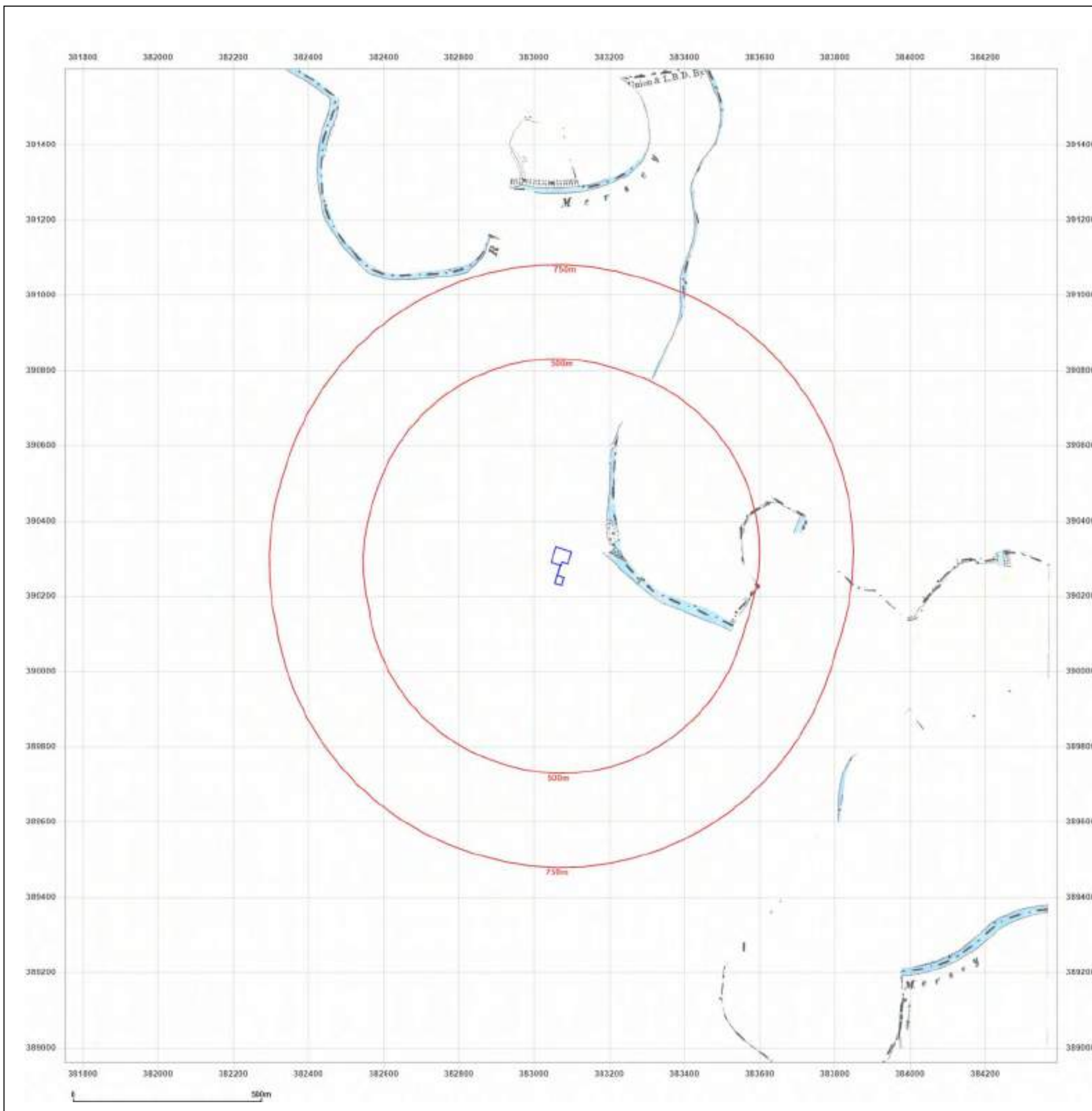


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1897

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1876
Revised 1897
Edition 1897
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1897
Edition 1897
Copyright N/A
Levelled N/A

Surveyed 1876
Revised 1897
Edition 1897
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1897
Edition 1897
Copyright N/A
Levelled N/A

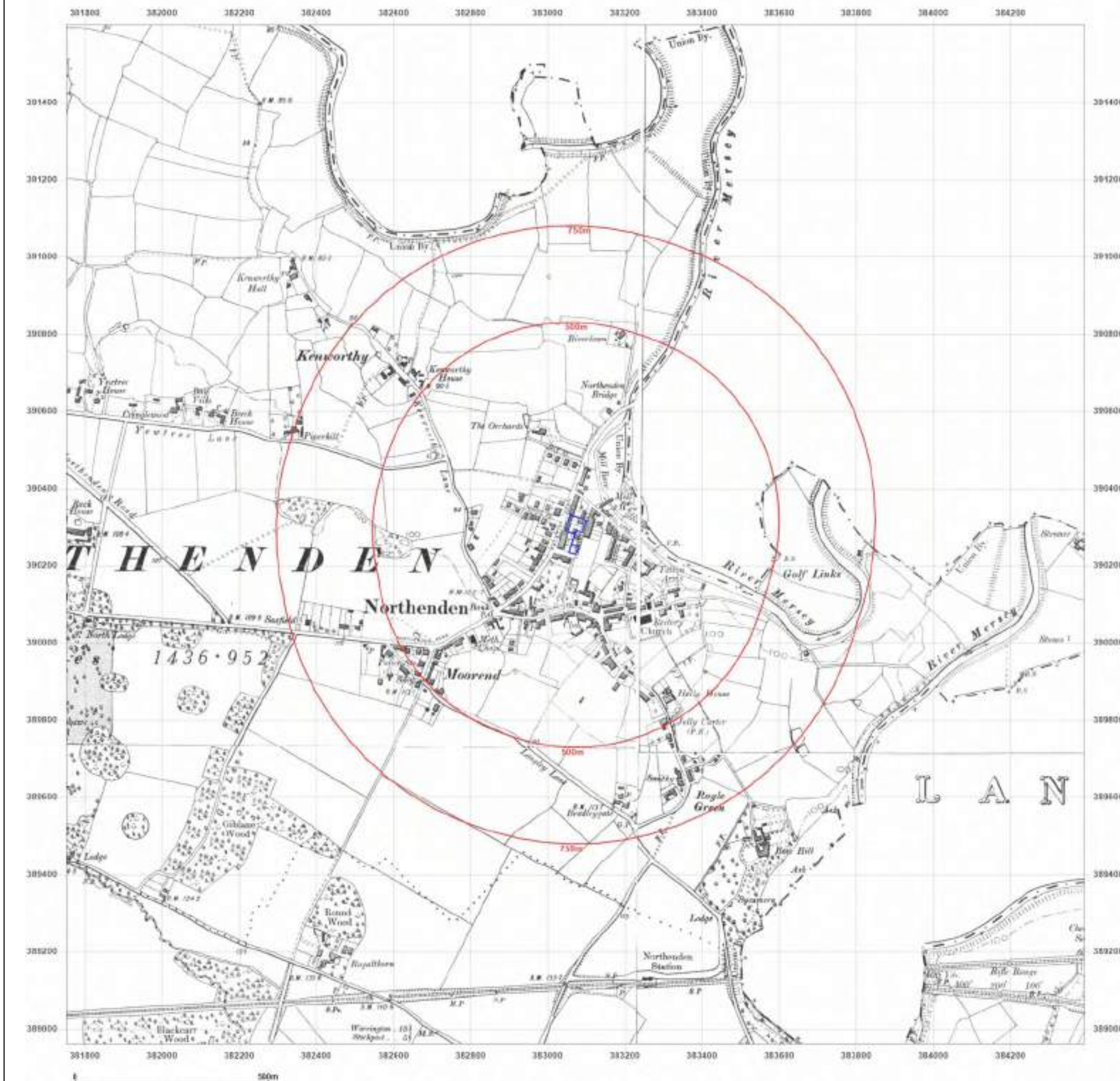


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1905

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1844
Revised 1905
Edition 1905
Copyright N/A
Levelled N/A

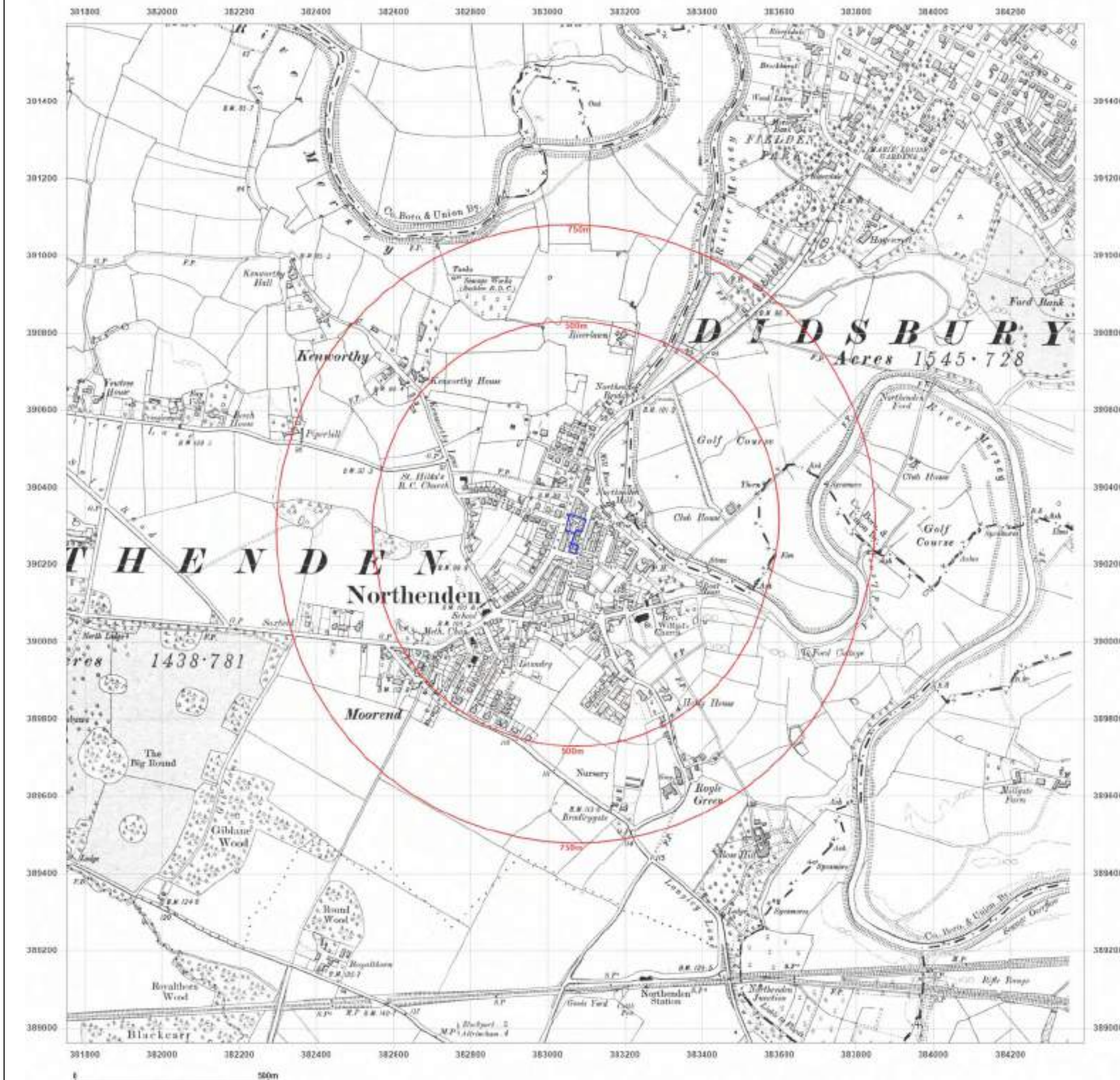


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE ROAD, MANCHESTER, M22 4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1907-1911

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1873
 Revised 1908
 Edition 1908
 Copyright N/A
 Levelled N/A

Surveyed 1872
 Revised 1908
 Edition 1911
 Copyright N/A
 Levelled N/A

Surveyed 1873
 Revised 1907
 Edition 1907
 Copyright N/A
 Levelled N/A

Surveyed 1872
 Revised 1908
 Edition 1908
 Copyright N/A
 Levelled N/A

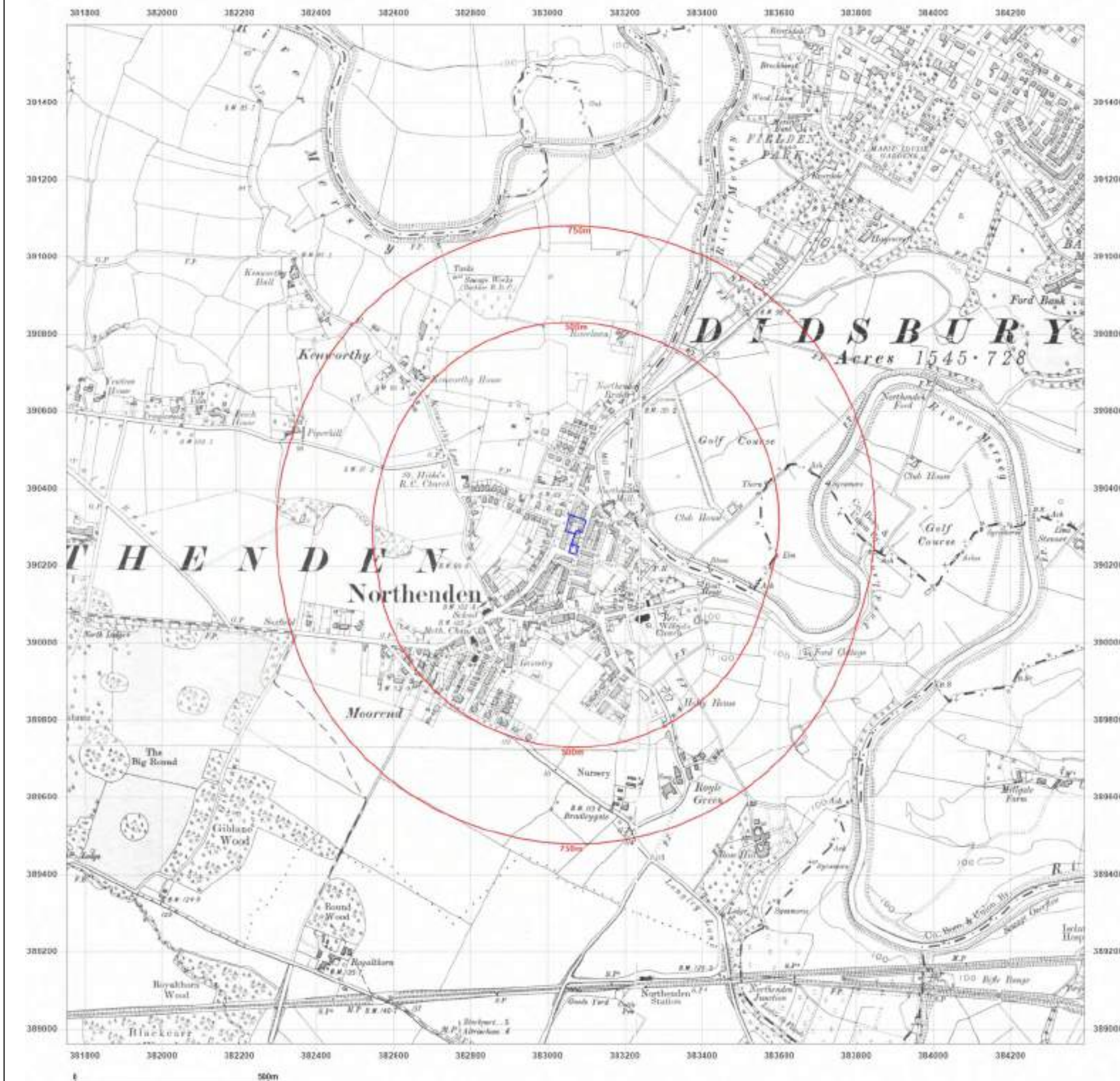


Produced by
 Groundsure Insights
 T: 08444 159000
 E: info@groundsure.com
 W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1907-1911

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1873
Revised 1909
Edition 1911
Copyright N/A
Levelled N/A



Surveyed 1844
Revised 1904
Edition 1911
Copyright N/A
Levelled N/A

Surveyed 1873
Revised 1907
Edition 1907
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1906
Edition 1911
Copyright N/A
Levelled N/A

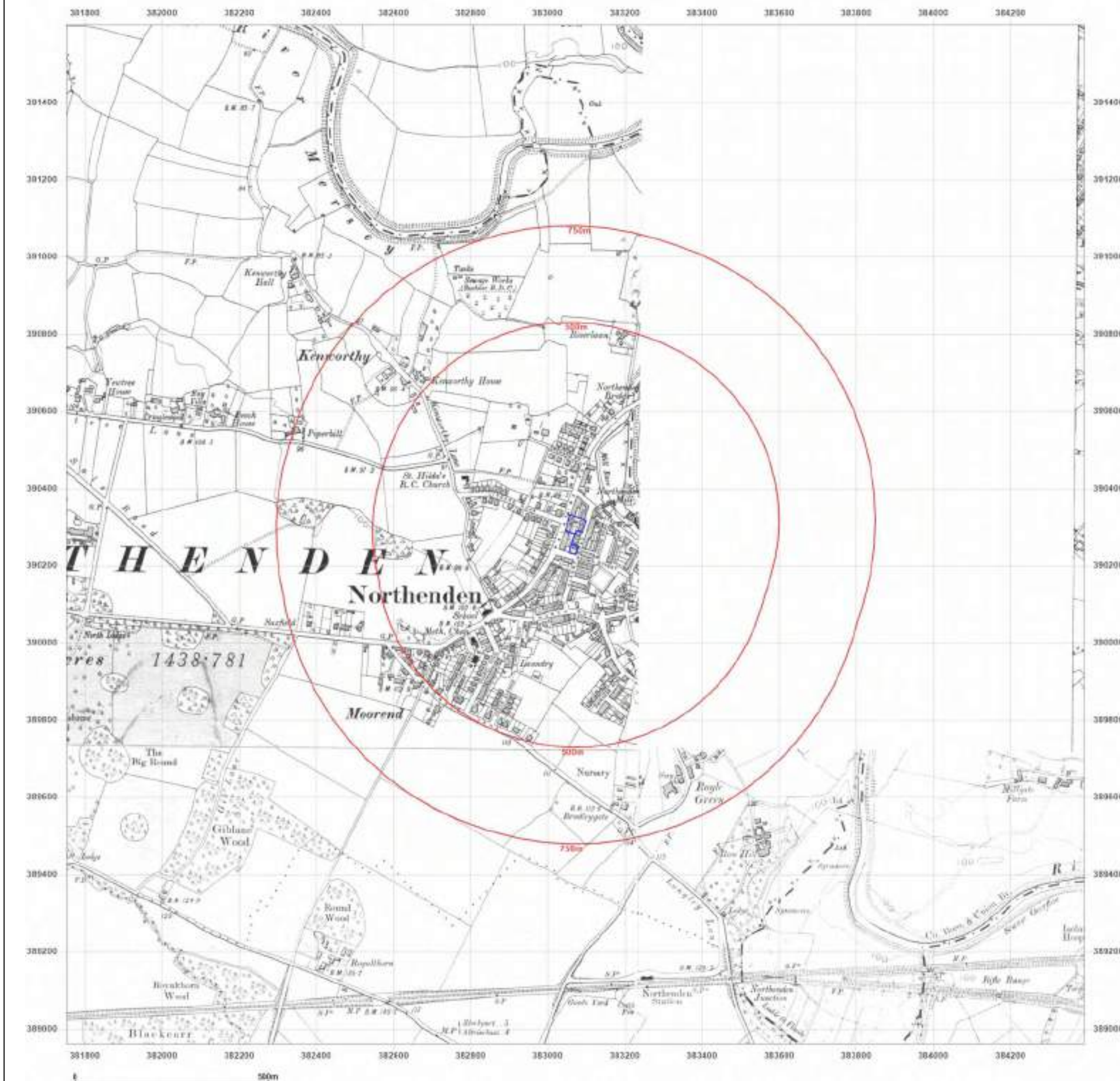


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1923

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1844
Revised 1910
Edition 1923
Copyright N/A
Levelled 1915

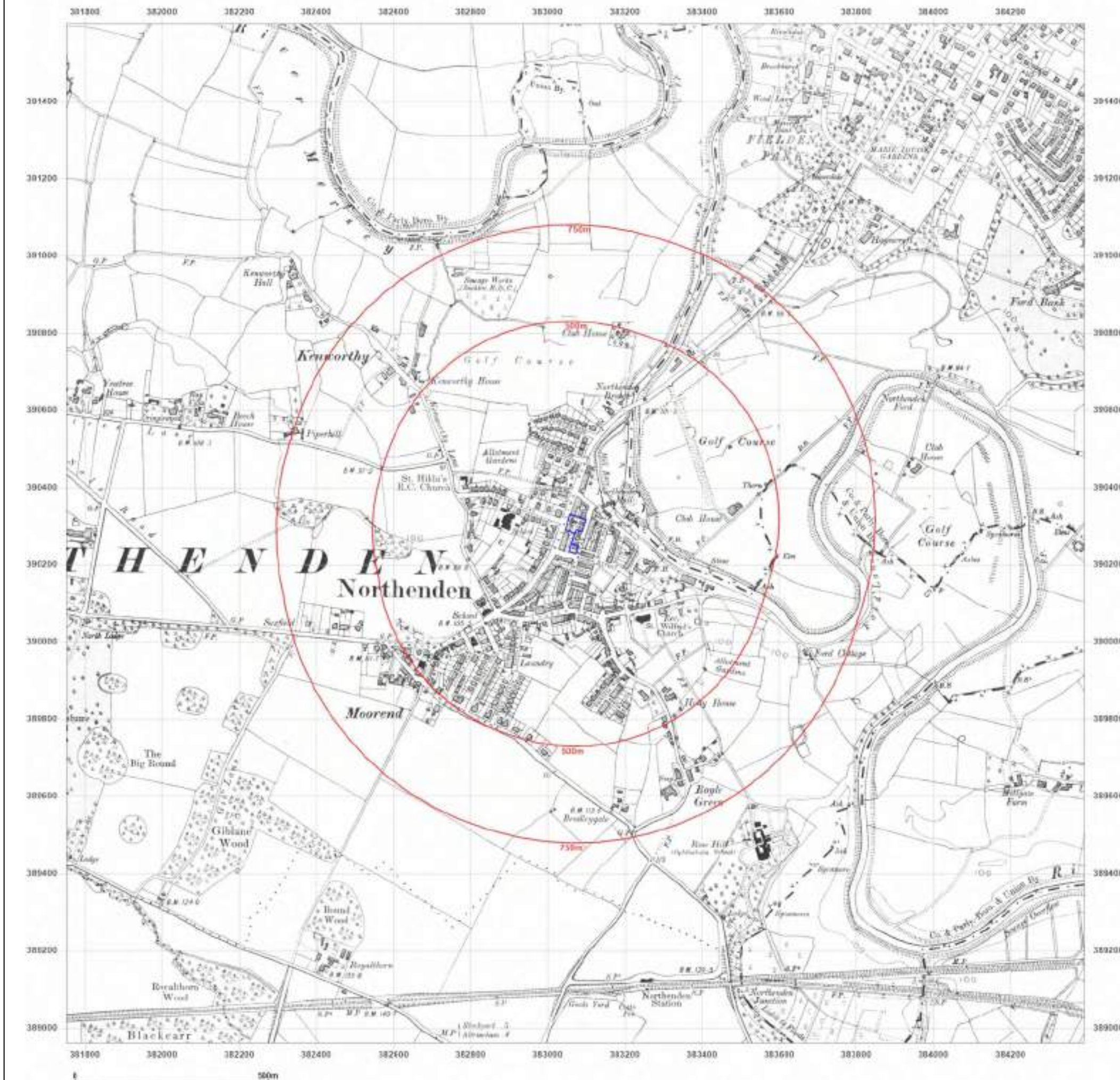


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1923

Scale: 1:10,560

Printed at: 1:10,560



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

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

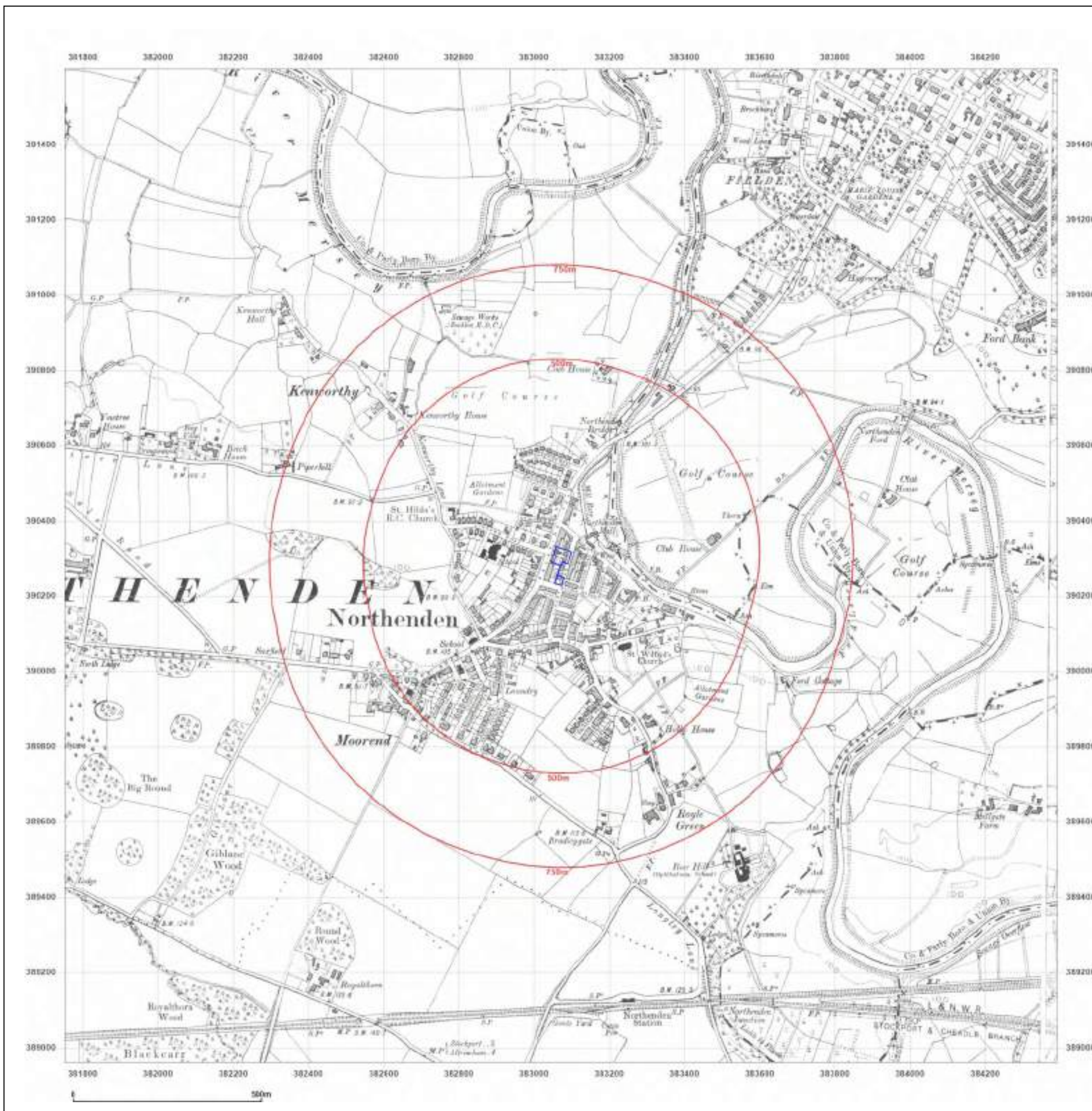


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE ROAD, MANCHESTER, M22 4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1934-1938

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1873
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1844
Revised 1934
Edition 1934
Copyright N/A
Levelled 1927

Surveyed 1873
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A

Surveyed 1872
Revised 1938
Edition 1938
Copyright N/A
Levelled N/A



Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: County Series

Map date: 1938

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1872
Revised 1938
Edition 1938
Copyright N/A
Levelled 1927

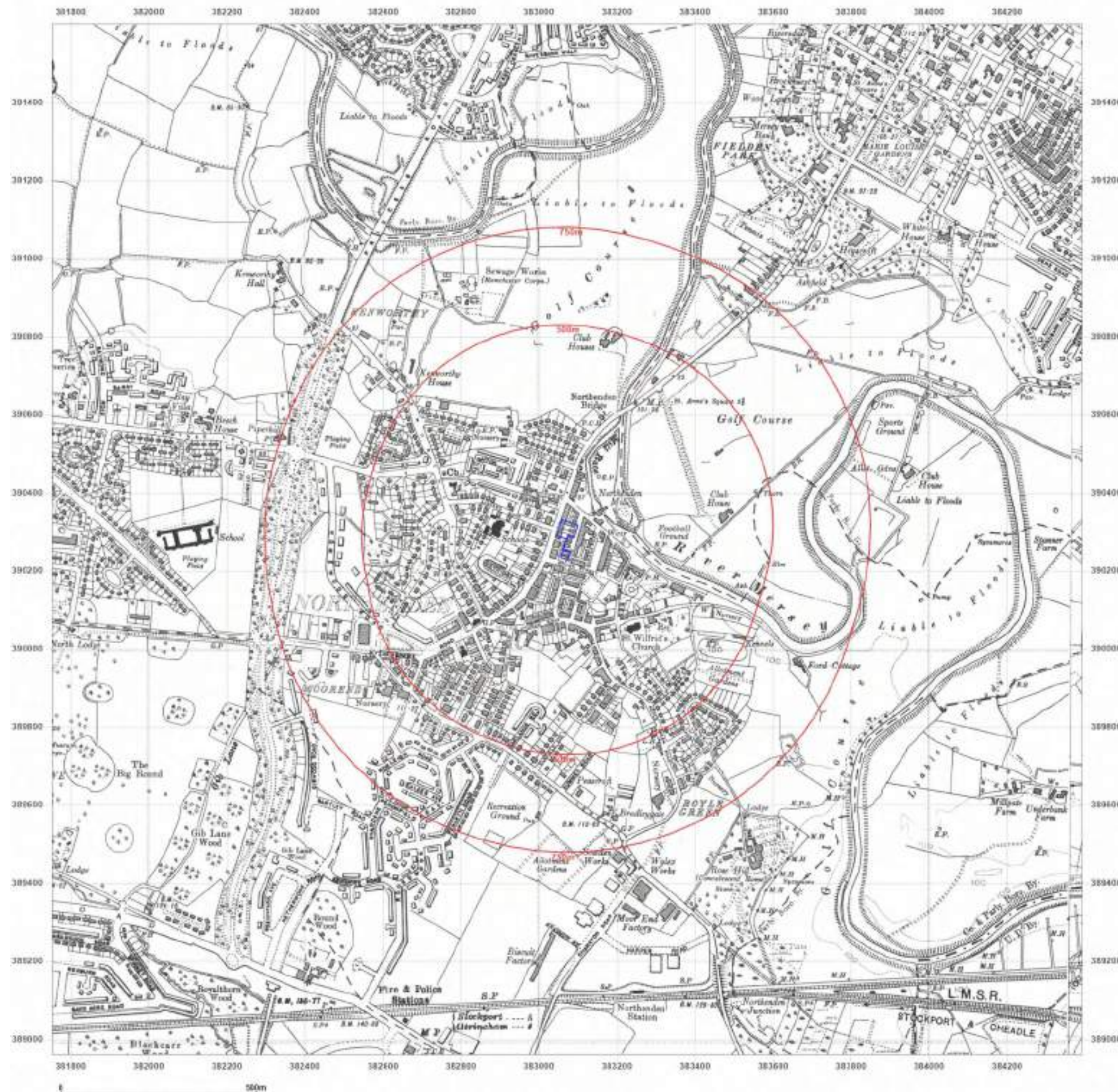


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: Provisional

Map date: 1954-1955

Scale: 1:10,560

Printed at: 1:10,560



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

Surveyed 1949
Revised 1954
Edition N/A
Copyright N/A
Levelled N/A

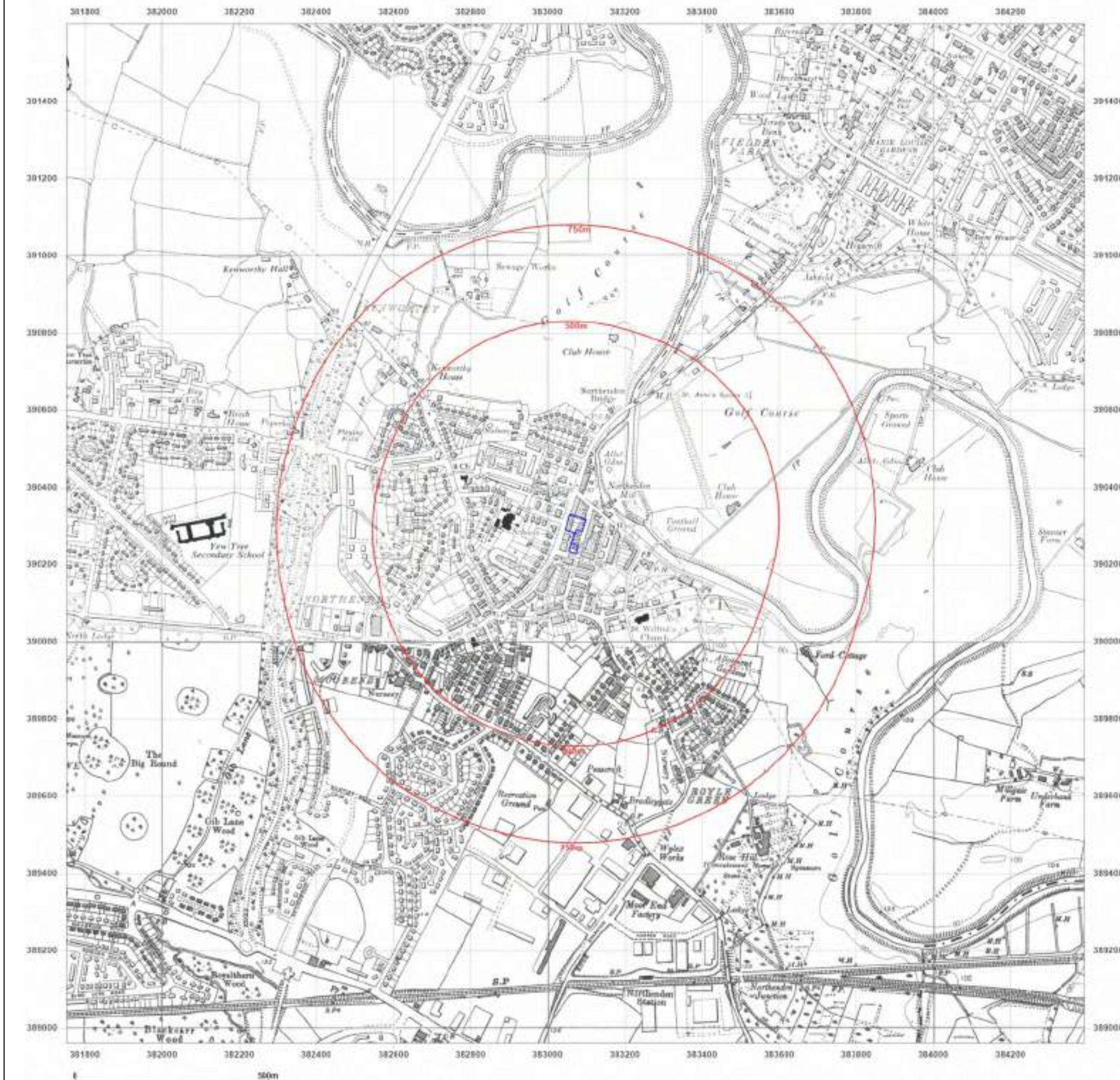


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: Provisional

Map date: 1966-1967

Scale: 1:10,560

Printed at: 1:10,560



Surveyed 1966
Revised 1966
Edition N/A
Copyright 1966
Levelled N/A

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

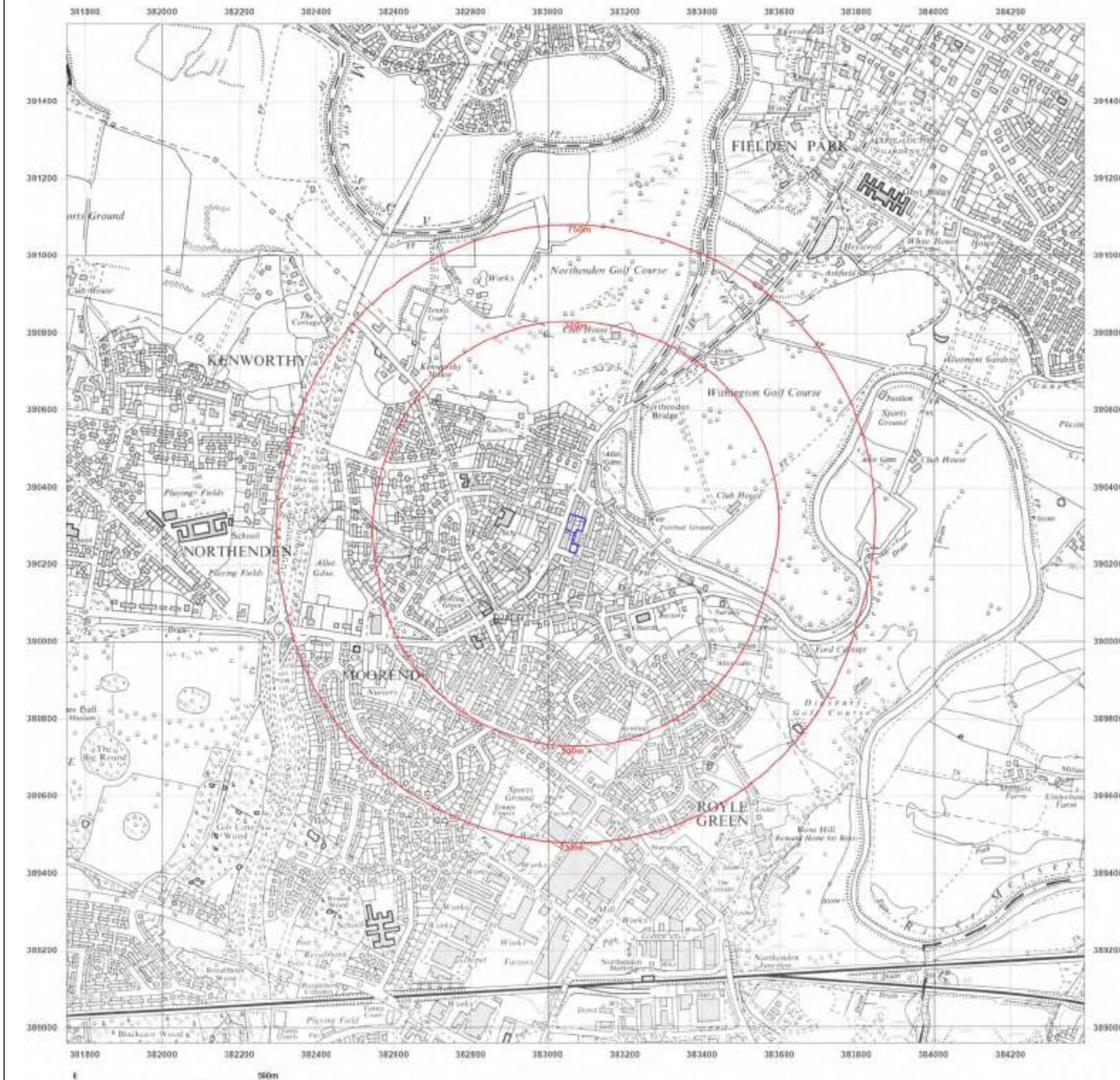


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: National Grid

Map date: 1977-1981

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1977
Revised 1961
Edition N/A
Copyright 1981
Levelled 1976

Surveyed 1975
Revised 1977
Edition N/A
Copyright 1977
Levelled 1964



Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: National Grid

Map date: 1988-1989

Scale: 1:10,000

Printed at: 1:10,000



Surveyed 1985
Revised 1988
Edition N/A
Copyright 1988
Levelled 1981

Surveyed 1984
Revised 1989
Edition N/A
Copyright 1989
Levelled 1981

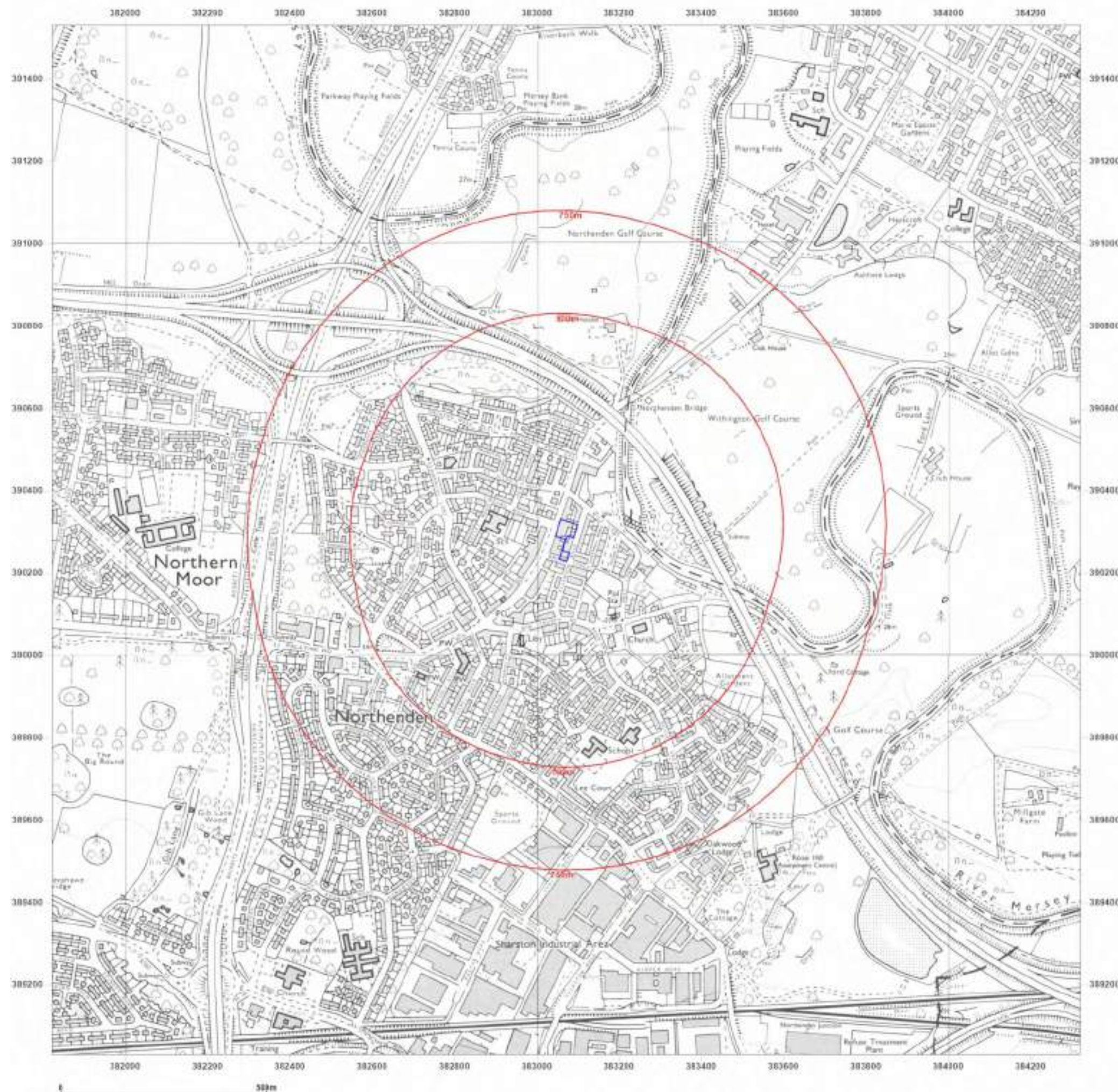


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE ROAD, MANCHESTER, M22 4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: National Grid

Map date: 2001

Scale: 1:10,000

Printed at: 1:10,000

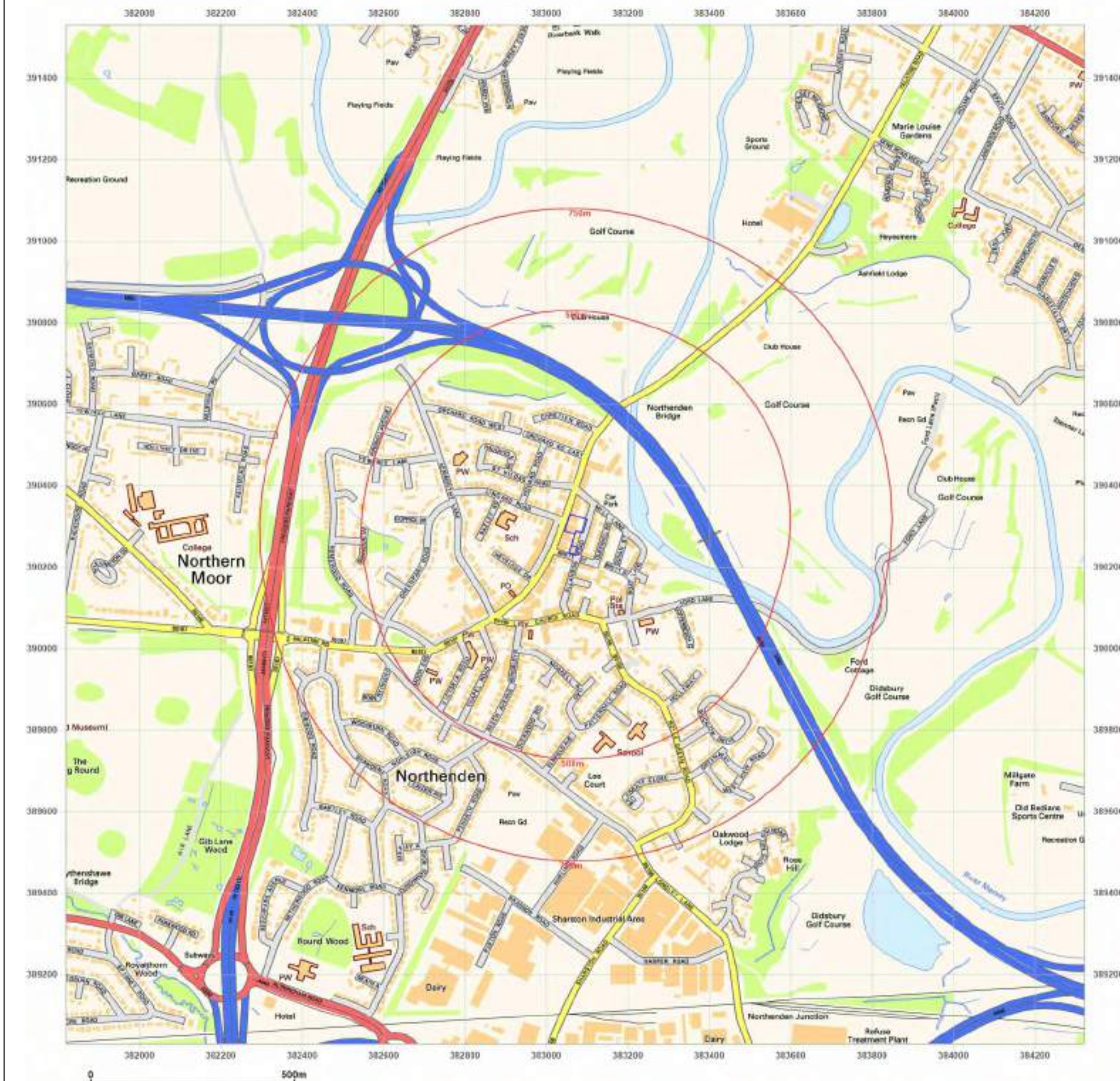


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: National Grid

Map date: 2010

Scale: 1:10,000

Printed at: 1:10,000

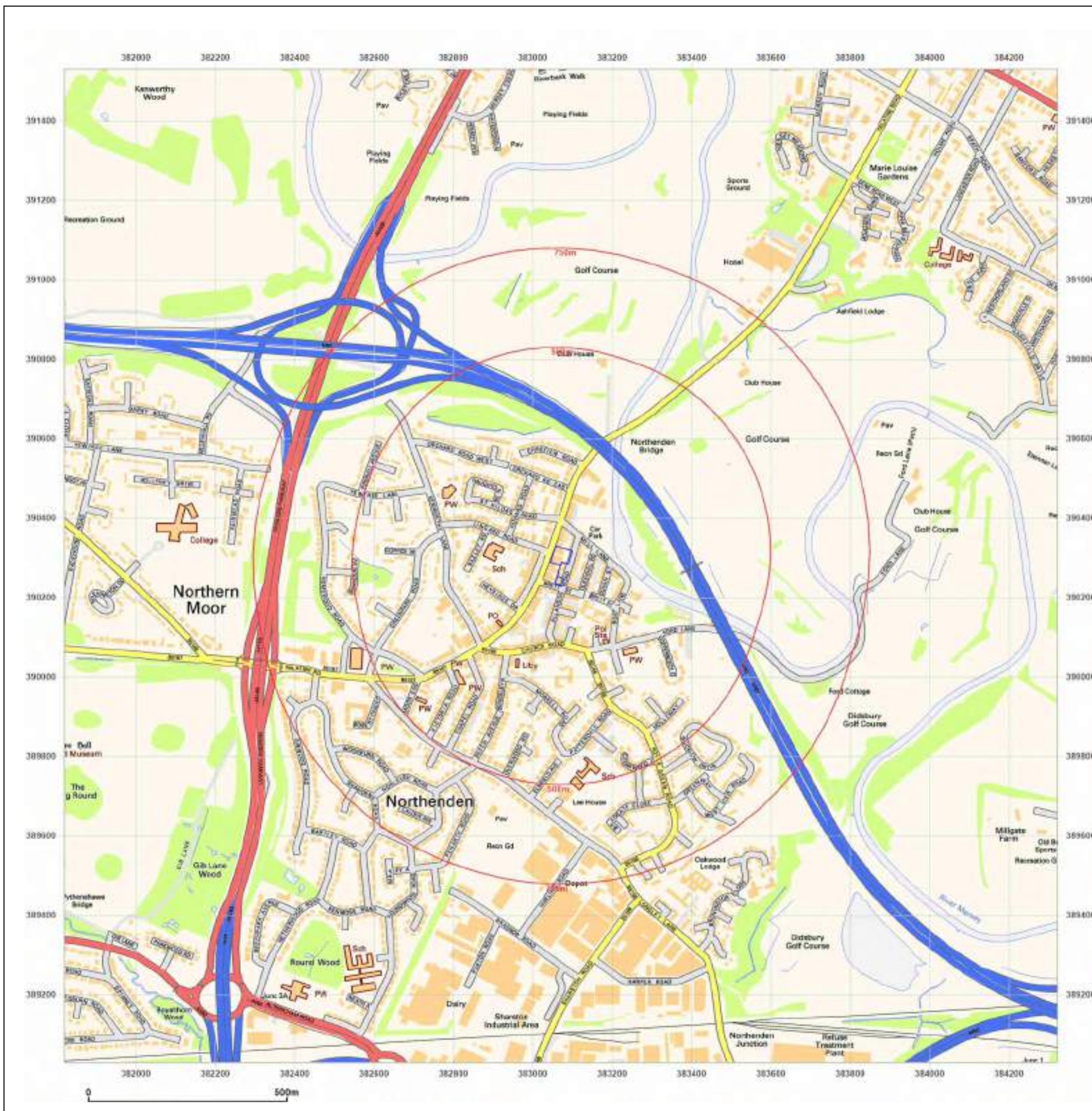


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Site Details:

BRETT STREET & PALATINE
ROAD, MANCHESTER, M22
4HH

Client Ref: 221105-4231
Report Ref: HMD-214-9389596
Grid Ref: 383071, 390280

Map Name: National Grid

Map date: 2023

Scale: 1:10,000

Printed at: 1:10,000

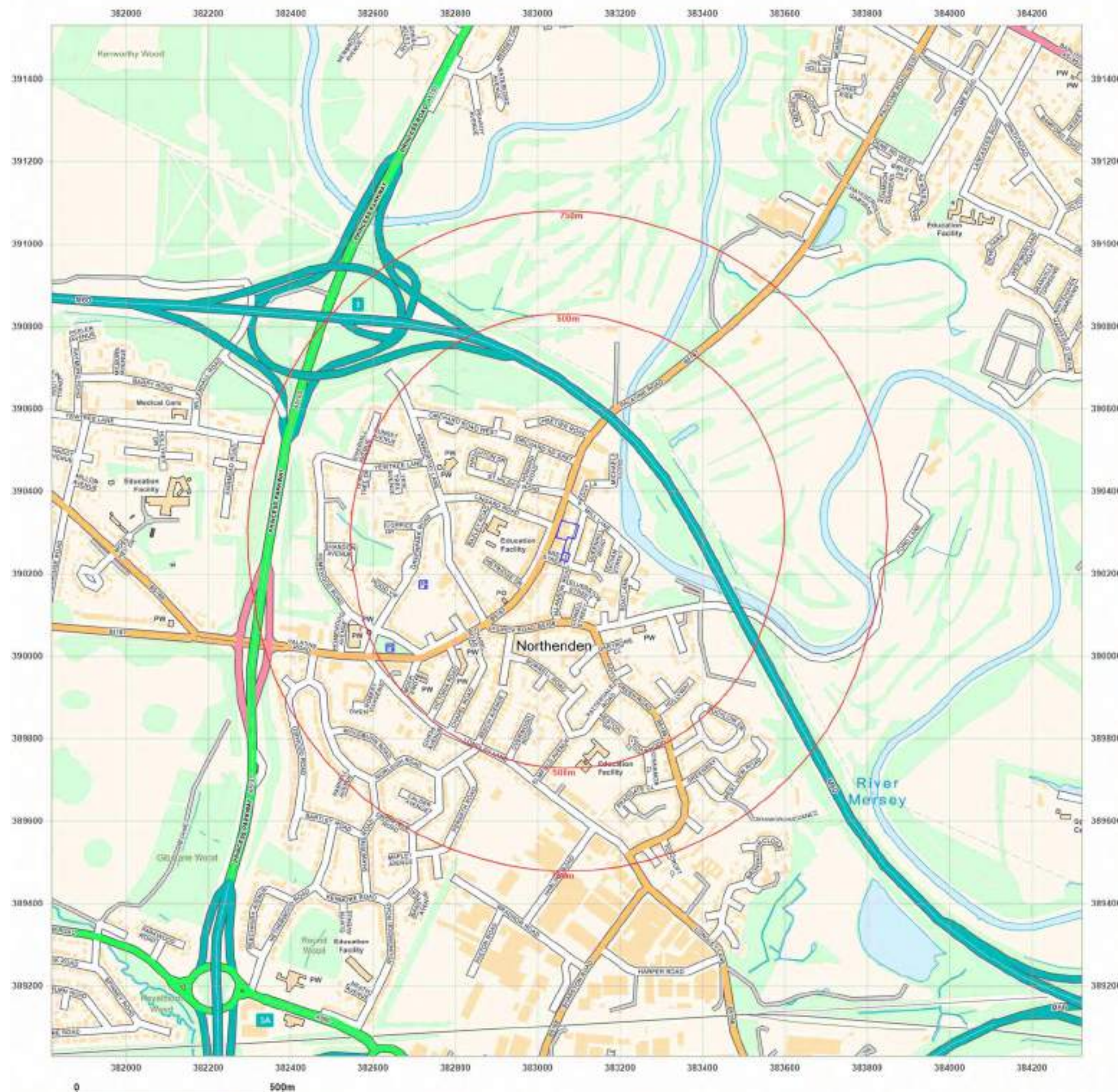


Produced by
Groundsure Insights
T: 08444 159000
E: info@groundsure.com
W: www.groundsure.com

© Crown copyright and database rights 2018 Ordnance Survey 100035207

Production date: 01 March 2023

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



Appendix 4: Preliminary Unexploded Risk Assessment



Preliminary UXO Risk Assessment

www.1stlinedefence.co.uk

Client	BWB Consulting Limited
Project	Brett Street & Palatine Road, Manchester
Site Address	Brett Street, M22 4EY & Palatine Road, M22 4FZ
Report Reference	PA17506-00
Date	06/03/23
Authored by	ERG
Quality Assurance	AT

Assessment Objective

This preliminary risk assessment is a qualitative screening exercise to assess the likely potential of encountering unexploded ordnance (UXO) at the Brett Street & Palatine Road, Manchester sites. The assessment involves the consideration of the basic factors that affect the potential for UXO to be present at a site as outlined in Stage One of the UXO risk management process.

Background

This assessment uses the sources of information available in-house to 1st Line Defence Ltd to enable the placement of a development site in context with events that may have led to the presence of German air-delivered or Allied military UXO. The report will identify any immediate necessity for risk mitigation or additional research in the form of a Detailed UXO Risk Assessment. It makes use of 1st Line Defence's extensive historical archives, library and unique geo-databases, as well as internet resources, and is researched and compiled by UXO specialists and graduate researchers.

The assessment directly follows CIRIA C681 guidelines "Unexploded Ordnance, a Guide for the Construction Industry". The document will therefore assess the following factors:

- Basic Site Data
- Previous Military Use
- Indicators of potential aerial delivered UXO threat
- Consideration of any Mitigating Factors
- Extent of Proposed Intrusive Works
- Any requirement for Further Work

It should be noted that the vast majority of construction sites in the UK will have a low or negligible risk of encountering UXO and should be able to be screened out at this preliminary stage. The report is meant as a common sense 'first step' in the UXO risk management process. The content of the report and conclusions drawn are based on basic, preliminary research using the information available to 1st Line Defence at the time this report was produced. It should be noted that the only way to entirely negate risk from UXO to a project would be to support the works proposed with appropriate UXO risk mitigation measures. It is rarely possible to state that there is absolutely 'no' risk from UXO to a project.



Risk Assessment Considerations	
Site location and description/current use	The sites are located in Palatine Road and Brett Street in Northenden, Wythenshawe, Greater Manchester. The northern site is bound by mixed use commercial and residential properties to the north and south, Allanson Road to the east and Palatine Road to the west. The southern site is bound by residential structures to the north, Allanson Road to the east, Brett Street to the south and mixed use commercial and residential properties and gardens to the west. Recent aerial photography shows the northern site to comprise two multi-storey structures in the west and a hardstanding carpark in the east. The southern site is shown to comprise a single structure, comprising a single-storey section in the north and a multi-storey section in the south. A section of hardstanding carpark is also present in the south. The sites are approximately centred on the OS grid reference: SJ 83066 90307 and SJ 83065 90246 respectively. 
Are there any indicators of current/historical military activity on/close to the site?	In-house records do not indicate that the site footprints had any former military use. No features such as WWII defensive positions, encampments or firing ranges are recorded to have been located at or in the immediate vicinity of the sites. In addition, no information of ordnance being stored, produced, or disposed of within the proposed site boundaries could be found. The closest Heavy Anti-Aircraft (HAA) battery was positioned approximately 2km south-west of the site in the vicinity of Wythenshawe Park and Gardens. The conditions in which unexploded anti-aircraft ordnance may have fallen unrecorded are generally analogous to that of aerial delivered German bombs.
What was the pre- and post-WWII history of the site?	Pre-WWII OS mapping dated 1938 shows the northern site boundary to comprise various structures and sections of hardstanding ground/garden areas. Further structures border the site to the north and south and <i>Albert Road</i> and <i>Palatine Road</i> border the site to the east and west. The southern site boundary is shown to comprise structures to the north and garden areas/hardstanding ground in the south. The site is bound by structures and further garden areas to the north and west, <i>Albert Road</i> to the east and <i>Brown Street</i> to the south. Post-WWII OS mapping dated 1950-64 shows both site boundaries to have undergone significant change. The composition of structures within the northern site boundary has changed and the structure that was present in the southern site boundary has been completely removed. Further to this, the streets surrounding the sites to the east and south have been renamed <i>Allanson Road</i> and <i>Brett Street</i> respectively.

Was the area subject to bombing during WWII?	During WWII the sites were situated within the County Borough of Manchester, which sustained an overall low density of bombing according to Home Office bombing statistics. This borough comprised 27,255 acres and was subject to 712 high explosive (HE) bomb strikes, 18 parachute mines, seven oil bombs, and one V-1 pilotless aircraft bomb. This culminated in a total of 738 items of ordnance and 27.1 items of ordnance per 1,000 acres. A bomb map held in-house for this area of Manchester records the southern site boundary to have received a direct HE bomb strike.
Is there any evidence of bomb damage on/close to the site?	Post-war mapping indicates clearance within the southern site, which can often be indicative of bomb damage.
To what degree would the site have been subject to access?	During WWII the sites were located within an urban/residential area of Manchester; which likely experienced regular access. Access to individual residential gardens however, would have been solely down to the occupying resident.
To what degree has the site been developed post-WWII?	Since WWII the sites have seen re-development, with the clearance of all pre-WWII structures from both sites; and with the construction of new buildings and hardstanding carpark areas.
What is the nature and extent of the intrusive works proposed?	According to the client the proposed development is to encompass a mixed use development across the northern site area (commercial opportunities on the ground floor with residential above), and mews houses across the southern site area.

Summary and Conclusions

During WWII the sites were located within the County Borough of Manchester, which sustained an overall low density of bombing according to Home Office bombing statistics, with an average of 27.1 items of ordnance falling per 1,000 acres. However, available bomb mapping for this area of Manchester records a direct HE bomb strike to have fallen within the southern site boundary.

Furthermore, a comparison of pre- and post-WWII OS mapping also indicates structural change to structures within both sites; with the composition significantly altered in the northern site boundary and a missing structure in the southern site boundary.

It is therefore considered prudent for further research to be undertaken for both sites in order to fully ascertain and better understand their wartime condition.



Recommendations

Given the findings of this preliminary report, **further research** is recommended in the form of a **Detailed UXO Risk Assessment**. This is recommended in order to better assess the wartime conditions within both site areas. Further research would involve the acquisition of any available local written records, aerial imagery and other archival material if acquirable. Depending on the quality and quantity of information available, it may be possible to 'zone' or mitigate the perceived risk from UXO across the separate site boundaries.

Prior to or in lieu of a Detailed Assessment, it is recommended that appropriate UXO Risk Mitigation Measures are provided for intrusive works proposed.

If the client has any anecdotal or empirical evidence of UXO risk on site, please contact 1st Line Defence.



Appendix 5: Classification of Risk

BWB RISK ASSESSMENT CLASSIFICATION (REFERENCE CIRIA C552, CONTAMINATED LAND RISK ASSESSMENT: A GUIDE TO GOOD PRACTICE, 2001)

CIRIA C552, *Contaminated Land Risk Assessment A Guide to Good Practice*, 2001 sets out a methodology for estimating risk. The methodology for risk evaluation is a qualitative method for interpreting the output for the risk estimation stage of the assessment. It involves the classification of the:

- Magnitude of the potential consequence (severity) of risk occurring; and
- Magnitude of the probability (likelihood) of the risk occurring.

The classification of consequence and probability are replicated in **Table 1** and **Table 2**, respectively.

Table 1: Classification of Consequence

Classification	Definition	Examples
Severe (Sv)	Short term (acute) risk to human health likely to result in "significant harm" as defined by the Environment Protection Act 1990, Part IIA. Short term risk 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.	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 (Md)	Chronic damage to Human Health ("significant harm"). Pollution of sensitive water resources. A significant change in a particular ecosystem, or organism forming part of such ecosystem.	Concentrations of a contaminant from site exceeding the generic or site-specific assessment criteria. Leaching of contaminants from a site to a major or minor aquifer. Death of species within a designated nature reserve.
Mild (Mi)	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services. 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 (Mr)	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 measures such as protective clothing etc.). Easily repairable effects of damage to buildings, structures and services.	The presence of contaminants at such concentration that protective equipment is required during site works. The loss of plants in a landscaping scheme. Discolouration of concrete.

The classification of consequence does not take into account the probability of the consequence being realised. Therefore, there may be more than one consequence for a particular pollutant linkage. Both a severe and medium classification can result in death.

Severe relates to short term (acute) risk while medium relates to long term (chronic) risk. Mild relates to significant harm but to less sensitive receptors. Minor classification relates to harm which is not significant but could have a financial cost.

Table 2: Classification of Probability

Classification	Definition
High likelihood (Hi)	There is a pollutant linkage and an event that either appears very likely in the short term and almost inevitable in the long term, or there is evidence at the receptor of harm or pollution.
Likely (Li)	There is a pollutant 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 (Lw)	There is a pollutant 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 (Ui)	There is a pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

The classification gives a guide as to the severity and consequence of identified risk when compared with other risk presented on the site. It should be noted that if a risk is identified it cannot be classified as “no risk” but as “very low risk”. Differing stakeholders may have a different view on the acceptability of a risk.

Once the consequence and probability have been classified these can be compared using a matrix to identify an overall risk category, as shown in **Table 3**. These categories and the actions required are categorised in **Table 4**.

Table 3: Risk Evaluation Matrix

Consequence		Severe (Sv)	Medium (Md)	Mild (Mi)	Minor (Mr)
Probability	High likelihood (Hi)	Very High Risk (VH)	High Risk (H)	Moderate Risk (M)	Mod/Low Risk (M/L)
	Likely (Li)	High Risk (H)	Moderate Risk (M)	Mod/Low Risk (M/L)	Low Risk (L)
	Low likelihood (Lw)	Moderate Risk (M)	Mod/Low Risk (M/L)	Low Risk (L)	Very Low Risk (VL)
	Unlikely (Ui)	Mod/Low Risk (M/L)	Low Risk (L)	Very Low Risk (VL)	Very Low Risk (VL)

Table 4: Risk Categorisations

Very High Risk (VH)	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 (H)	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 (M)	It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either 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 (L)	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 (VL)	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.

Reference:

CIRIA C552 *Contaminated land risk assessment. A guide to good practice*. Rudland, D J, Lancefield, R M, Mayell, P N, 2001.

