



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

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136 WITHINGTON ROAD, WHALLEY RANGE, MANCHESTER

Phase 1 - Preliminary Risk Assessment



Prepared for:

VIEWS (Holdings) Limited

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163 WITHINGTON ROAD, WHALLEY RANGE, MANCHESTER

Phase 1 - Preliminary Risk Assessment

PROJECT NO: 22096

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REVISION STATUS / HISTORY

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GENERAL REPORT LIMITATIONS

BEK Enviro Limited (BEK) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and BEK. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by BEK for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of BEK and the party for whom it was prepared. Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

Unless explicitly agreed otherwise, in writing, this report has been prepared under BEK's limited standard Terms and Conditions as included within our proposal to the Client.

The report needs to be considered in the light of the BEK proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

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1.1 Appointment

1.1.2 The site location and layout are presented in the BEK Drawing No 22096-1, a copy of which is presented in Appendix E.

1.2.1 This report has been prepared to support a planning application for the part demolition of existing buildings on site and construction of a new residential 4-storey apartment block with associated vehicle access and parking.

Figure 1: Proposed Development Layout

1.3 Objective & Scope of Work

1.3.1 This report provides the details of the works undertaken by BEK to assess the potential risks from contamination considering the change of use to residential.

1.3.2 To achieve the objective BEK will undertake the following:

- Carry out a site inspection and collect photographs
- Review the available relevant background information for the site, including:
 - Recent Ordnance Survey Maps
 - Site Specific GroundSure Reports
 - Site Specific Historical Maps
 - Available Google Earth Images
 - Available historic photographs
 - Client Drawings
 - Magic Maps
 - Zetica UXO information
- Develop a preliminary conceptual site model in accordance with guidance to identify potentially significant pollutant linkages specific to the proposed development
- Establish areas of potential concern based on identified risks and/or potential risks
- Identify any actions required to assess or reduce the risks identified

1.4 Limitations

1.4.1 The conclusions and recommendations presented in this report are the result of our professional interpretation of the information currently available. BEK reserves the right to amend the conclusions and recommendations if further information becomes available.

1.4.2 However, it should be noted that much of the information has been derived from reports written by others and BEK takes no responsibility for the accuracy of that information. Notwithstanding the above, the reports reviewed have all been written by professional environmental consultants with a duty of care to provide relevant and accurate information.

1.4.3 This report does not include an assessment of the vegetation present at the site and specifically the identification of any invasive plant species.

2. SITE DESCRIPTION

2.1 Site Location

- 2.1.1 The site is located directly west of Withington Road in the area of Whalley Range, Manchester approximately 3.2 km south of centre of Manchester.
- 2.1.2 The National Grid Reference for the centre of the site is 382949, 394992. The site location is shown on the BEK Drawing No 22096-1 and the general layout is shown on BEK Drawing No 22096-2. Copies of all drawings are presented in Appendix E.

2.2 Site Layout & Description

- 2.2.1 A site walkover/inspection was conducted by an engineer from BEK in July 2022. A selection of photographs showing the existing site layout is presented in Appendix D.
- 2.2.2 The site occupies an area some 0.25 hectares (2,500 m²) and is comprised of a two storey and single storey building with associated car parking areas and grassed garden areas. The north of the site is occupied by the grassed garden areas with the centre and south-west of the site occupied by buildings and the south occupied by tarmac hardstanding car parking areas. The site is accessed from the east from Withington Road (see Figure 2).



Figure 2: Site Layout



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2.2.3 The site is secure and surrounded by Heras fencing/brick walls with numerous semi/mature trees shrubs in the north and east of the site.

2.3 Surrounding Land Use

2.3.1 Withington Road is located immediately east of the site with residential and commercial (offices) located in the areas surrounding the site. Alexandra Park and an associated pond is located some 440 m east of the site.

3. SITE HISTORY

- 3.1 The history of the site has been established using historical OS maps supplied by Groundsure. A selection of historical OS maps reviewed is presented in Appendix A.

1881

- 3.2 The earliest available maps show the site to be occupied by a large building in the centre of the site with more buildings located in the south-west of the site. A number of buildings are located to the west of the site which may be associated with the buildings within the site boundary. The buildings are labelled as Collyhurst Lodge however it is unclear if Collyhurst Lodge refers to the buildings on site or the buildings to the west. The north of the site is occupied by lawns/gardens. Withington Road is located to the east of the site with large residential properties located to the west of Withington Road (same side as the development site) and smaller residential properties located to the east side of Withington Road. The areas within 250 m of the site are generally occupied by residential properties however a large building is visible some 80 m north-east of the site.

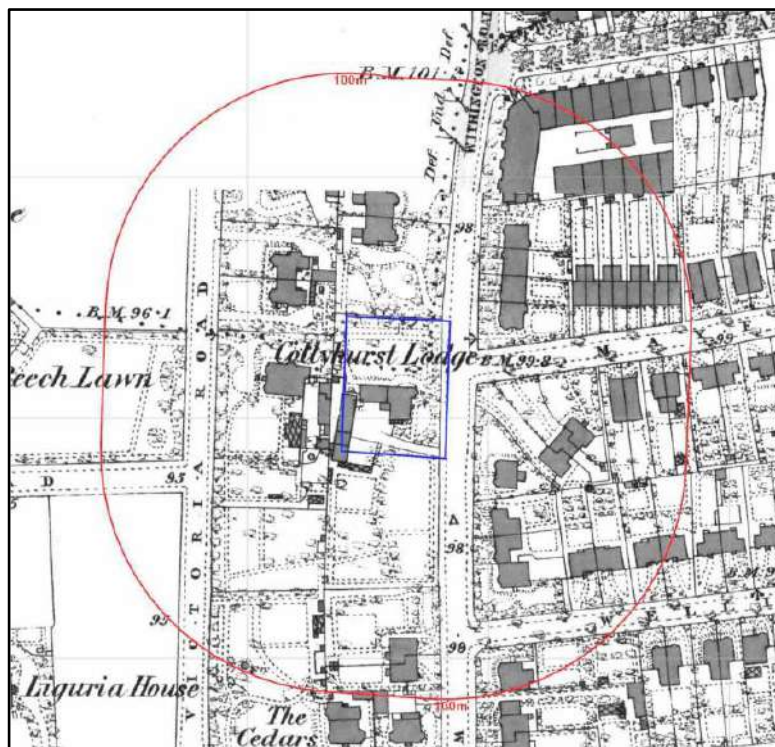


Figure 3: Extract from 1881 Map

1889-1894

- 3.3 The 1889-1894 map shows the site remains relatively unchanged with a cluster of large buildings located in the centre/south-west of the site. The site/building to the west of the site is no longer labelled as Collyhurst Lodge. The large building located some 80 m north-east of the site is now identified as 'Carriage & Tramway Co's Depot'. Tram tracks are shown to be located within Withington Road some 70 m north-east.

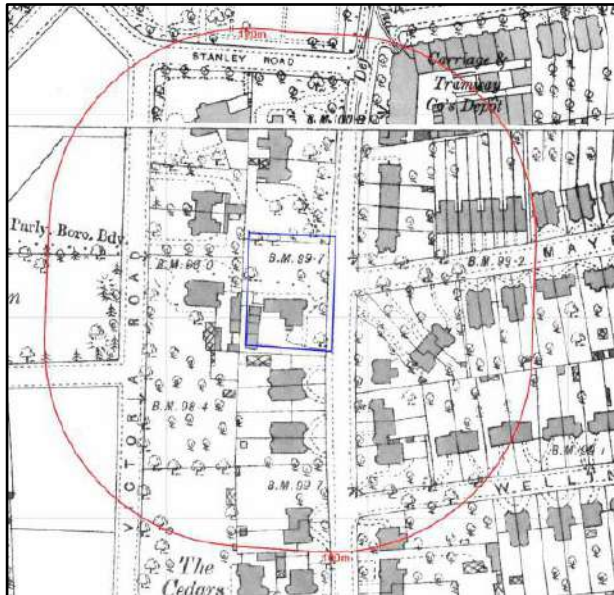


Figure 4: Extract from 1889-1894 Map

1907 - 1908

- 3.4 The 1907-1908 map shows that the site and the surrounding areas remain relatively unchanged. A High School has been developed some 220 m south of the site.

1922

- 3.5 The 1922 map shows that the proposed development site remains unchanged. The large building located to the west of the site is no longer visible with new smaller residential dwellings built in this area. A number of larger residential dwellings located to the west and south-west within 250 m of the site have been demolished and replaced with smaller terraced housing.



Figure 5: Extract from 1922 Map

1932-1933

- 3.6 The 1932-1933 map shows that the site remains unchanged however additional residential housing has been constructed immediately west of the site.

1949-1950

- 3.7 The 1949-1950 map shows that the site remains largely unchanged however new small buildings are shown immediately south of the main building on site and the building may have been slightly extended to the east. New terraced dwellings have been constructed some 5 m north of the site boundary. The 'Carriage & Tramway Co's Depot' located some 80 m north-east of the site is now labelled as a 'Garage'. An Ice Cream Factory is located some 75 m north-east of the site with a laundry located some 120 m north-east. The tram tracks within Withington Road are no longer visible.



Figure 6: Extract from 1949-1950 Map

1981-1986

- 3.8 This maps shows the building on site is now labelled as 'The Nello James Centre' and the building in the north/south orientation in the south-east of the site appears to have increased in size (either extended or demolished and rebuilt). A hotel has been developed some 20 m north-east of the site with a second hotel identified within the large building located some 40 m north of the site. The ice cream factory, garage and laundry buildings located some 80 m north-east of the site have been reconfigured and are now labelled as a garage, warehouse, works and units.



Figure 7: Extract from 1981-1986 Map

1987-1992

- 3.9 The 1987-1992 map shows that the building on site is labelled as a Community Centre. The hotel located some 20 m east of the site has been demolished. There are no significant changes to the areas surrounding the development site.

1991-1995-2001-2010-2022

- 3.10 These maps do not show any significant changes to the development site or surrounding areas.

4. ENVIRONMENTAL SETTING

4.0.1 An Enviro+GeoInsight Report has been obtained from Groundsure and information provided in this report has been used within this section. A copy of the report is presented in Appendix B.

4.1 Geology

4.1.1 The site geology is illustrated in the Enviro+GeoInsight Report which has sourced data from several sources including British Geological Society (BGS), BRITPITS database and the Coal Authority. A copy of the Enviro+GeoInsight Report is presented in Appendix B.

4.1.2 The Enviro+GeoInsight Report indicates there is one BGS borehole within 250 m of the site, which is located some 71 m north-east of the site. The BGS borehole reference is SJ89NW4216 and was drilled in May 2000. The borehole was drilled to a depth of 5 m below ground level with made ground identified to a depth of 0.9 m below ground level. The made ground was generally described as concrete over cobblestones and sand subbase underlain by 'Black sandy clayey soil fill with fine to coarse gravel and fragments of brick and ash'. Underlying the made ground was clay/silt, sand clay/silt and sand and gravel. Stiff becoming very stiff medium brown sandy clay with fine to coarse gravel was identified at depths of 3.6 m bgl to the base of the borehole at 5 m. Water was struck at 1.6 m below ground level.

Made Ground

4.1.3 According to the Enviro+GeoInsight Report there are is no artificial ground (made ground) located on site however infilled ground (artificial deposits) are located some 15 m east of the site and 234 m west of the site. Given the history of development at the site, the presence of made ground across areas/whole site is considered to be highly likely.

Superficial Geology

4.1.4 The Enviro+GeoInsight Report states that the superficial deposits underlying the site comprise Glaciofluvial Sheet Deposits (Sand and Gravel). These are considered to overlie Glacial Till deposits (Boulder Clay).

Bedrock

4.1.5 The Enviro+GeoInsight Report states that the underlying solid geology comprises of 'Wilmslow Sandstone Formation – Sandstone'.

Faults

- 4.1.6 There are two linear rock features located within 250 m of the site both described as normal fault, inferred, crossmarks on downthrow side. These are located some 140 m north-east of the site and 183 m east of the site.

4.2 Mining & Ground Stability

- 4.2.1 Information in the Enviro+GeoInsight Report indicates that the site is not located in a Coal Authority consultation area and the site has not been affected by coal mining. There is no other evidence to suggest any other form of mining could have affected the site.

- 4.2.2 An area of surface ground workings is shown in the Enviro+GeoInsight Report to be located some 19 m east of the site labelled as a pond dating from 1851.

- 4.2.3 The Enviro+GeoInsight Report provides hazard ratings associated with ground subsidence at the site, as summarised below:

Shrink-Swell Clay:	Negligible
Landslides:	Very Low
Ground Dissolution of Soluble Rocks:	Negligible
Compressible Deposits:	Negligible
Collapsible Deposits:	Very Low
Running Sands:	Very Low

- 4.2.4 It can be seen from the above that the site is unlikely to be affected by natural ground instability.

4.3 Hydrogeology

- 4.3.1 The Enviro+GeoInsight Report indicates the underlying superficial strata is classified as a 'Secondary A Aquifer' which is described as 'permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers.

- 4.3.2 The bedrock strata is classified as a 'Principal Aquifer' which is 'geology of high intergranular and/or fracture permeability, usually providing a high level of storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers'.

- 4.3.3 The Enviro+GeoInsight Report indicates the site is not located within a groundwater source protection zone and there are no groundwater abstractions located within 250 m of the site.

4.4 Hydrology

4.4.1 There are no surface water features on site or within 250 m of the site. Furthermore, there are no there are no surface water abstractions located within 250 m of the site.

4.4.2 The Environment Agency flood map indicates that the development lies within Flood Zone 1.

4.5 Contaminated Land & Landfill Activities

4.5.1 Information provided in the Enviro+GeoInsight Report indicates that there are no historic, current landfill sites or waste management facilities located within 250 m of the site.

4.5.2 There is one waste exemption located with in 250 m of the site as shown within the table below:

Location	Site	Category	Sub Category	Description
155 m SE	St Bedes College, Wellington Road, M16 8EX	Using Waste Exemption	Not on a farm	Use of waste in construction

Table 1: Summary of Waste Exemptions within 250 m from the Site

4.5.3 Although the Enviro+GeoInsight Report indicates there is no infilled land on the site, there is an infilled pond located some 20 m east of the site dating from 1851, however due to the date of the potential infilling the risks to the site are not considered further.

4.5.4 There are four Environment Agency recorded pollution incident located within 250 m of the site as shown within the table below (the incident some 232 m to the south-east has been registered on 3 occasions):

Location	Details	Impact
76 m north-east	Incident Date: 19/03/2006 Pollutant: Oils and Fuels Pollutant Description: Petrol	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
232 m south-west	Incident Date: 17/09/2002 Pollutant: Inert Materials and Wastes: Specific Waste Materials Pollutant Description: Construction and Demolition Materials and Metal Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)

Table 2: Summary of Pollution Incidents within 250 m from the Site

4.5.5 The Enviro+GeoInsight Report has no recorded Part A(1) Authorised Activities within 250 m of the site, although there are three Part A(2)/B licensed pollutant releases located within 250 m of the site as shown within the table below:

Location	Address	Details	Enforcements
78 m north-east	Range Garage, 130 Withington Road	Process: Unload of Petrol Status: Current Permit Permit Type: Part B	Enforcements: No Enforcement Notified
178 m west	TD Barnes, 31a Russell Road	Process: Waste Oil Burner 0.4 MW Status: New Legislation Applies Permit Type: Part B	Enforcements: No Enforcement Notified
178 m west	TD Barnes, 31a Russell Road	Process: Waste Oil Burner 0.4 MW Status: New Legislation Applies Permit Type: Part B	

Table 3: Summary of Licensed Pollutant Releases within 250 m from the Site

- 4.5.6 The Enviro+GeoInsight Report records one licensed discharge of effluent to controlled waters located within 250 m of the site. The discharge occurred some 213 m south-east of the site detailed as a miscellaneous discharge, surface water received by the River Irk in 1994.
- 4.5.7 The Enviro+GeoInsight Report states that there are nine potentially contaminative, recent industrial land uses located within 250 m of the site. The closest of which is a mast located some 77 m north-east of the site.
- 4.5.8 The Enviro+GeoInsight Report states that there are four potentially contaminative, historical industrial land uses located within 250 m of the site. The closest of which is an unspecified works located some 122 m west of the site dating from 1966.
- 4.5.9 There is also a recorded petrol station some 78 m north-east of the site, however the status is marked as 'obsolete'.
- 4.5.10 The Enviro+GeoInsight Report indicates there are no historical tanks located within 250 m of the site.
- 4.5.11 Five historical energy feature are located within 250 m of the site, which are all electricity substations. The closest of which is located some 149 m north-east of the site dating from 1973-1997. Although the recorded dates of the closest electricity substation indicate that polychlorinated biphenyls may be present, the risk to the site is considered low due to the distances to the electricity substation.

4.6 Sensitive Land Use

- 4.6.1 The site is not affected by any of the ecological systems identified as a statutory receptor in the DETR Circular 01/2006.

4.7 Radon

- 4.7.1 Enviro+GeoInsight Reports that the site has a less than 1% of homes that are above the action trigger level and that 'no radon protective measures are necessary in the construction of new dwellings or extensions'.

4.8 Unexploded Ordnance

- 4.8.1 The regional unexploded bomb risk map from Zetica indicates that the site is in an area of MODERATE risk from Unexploded Ordnance (UXO) resulting from the Second World War.

- 4.8.2 The Zetica UXO Risks Map is presented in Figure 8.

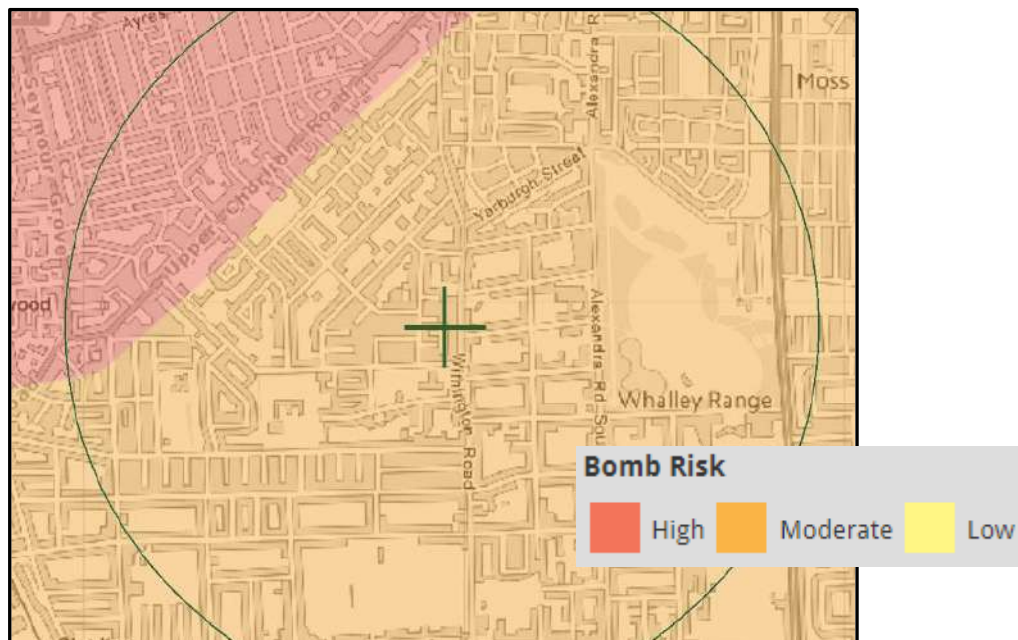


Figure 8: Zetica UXO Risks Map

(Source: <https://zeticauxo.com/downloads-and-resources/risk-maps/>)

5. POTENTIAL POLLUTANT LINKAGES

5.1 General

5.1.1 This section identifies the potential sources of contamination along with specific contaminants of concern, pathways and receptors that may be associated with the site based on its known history and the current condition and with respect to the re-development of the site for residential use.

5.1.2 This information is used to develop a preliminary conceptual model which is a qualitative description of potential sources of environmental pollutants, the pathways by which they are transported and the receptors:

- i) Potential sources of contamination: these include any actual or potentially contaminating materials and activities, located either on or in the vicinity of the site
- ii) Potential pathways for contamination migration: these comprise the routes or mechanisms by which contaminants may migrate from the source to the receptor including environmental migration pathways and human health exposure pathways
- iii) Potential receptors of contamination: these include future land users, ecological systems, water resources and property

5.1.3 If no potential sources of contamination are identified as part of the assessment, then there are no risks associated with contamination to potential receptors associated with the site.

5.2 Potential Contaminants of Concern

5.2.1 Based on the earliest available historical maps dating from 1881 show that the site is occupied by a large residential building in the centre and south-west of the site. The configuration of the buildings appear to alter slightly through the site history with the south-eastern building appearing to increase in size circa 1981 (unknown if the building was extended or demolished).

5.2.2 The use of the site is unlikely to have resulted in significant contamination being present at the site. However, given that there have been buildings on site over time, it is likely that made ground is present across the whole site, possibly associated with levelling land to facilitate development and/or demolition rubble from former building. There could also be infilled basements (typically filled with the demolition rubble). The nature and full extent of any made ground present is currently unknown and it could contain contaminants of concern.

5.2.3 It is possible that some of the former buildings used oil fired boilers for heating/hot water and there may have been an associated kerosene oil tank. These are not marked on historic OS maps but should be considered, particularly if visual/olfactory evidence of organic contamination is encountered on site.

5.2.4 The potential contaminants of concern associated with made ground are presented below:

Contaminants Associated with General Made Ground	
Arsenic	Zinc
Cadmium	Cyanide
Chromium	Phenols
Copper	Sulphate
Lead	Polycyclic Aromatic Hydrocarbons (PAHs)
Mercury	Total Petroleum Hydrocarbons (TPHCWG)
Nickel	pH
Selenium	Asbestos

Table 4: Potential Contaminants of Concern

5.2.5 It should be noted that the above list represents a broad range of potential contaminants of concern. Additional contaminants of concern may be present if ground conditions differ from those anticipated or visual/olfactory evidence for the presence of contamination is encountered.

5.2.6 Based on the available background information the potential risks from ground gas are considered to be low. However, if the site investigation/groundworks proves significant thickness of made ground (>3 m) or natural strata has a high organic content, it may be necessary to re-assess the potential risks from ground gas.

5.3 Potential Pathways

5.3.1 The pathways through which contaminants may reach receptors are in part dependent by the nature and behaviour of the contaminant and the intended end use of the site.

5.3.2 The following potential pathways have been identified with respect to the existing site condition, the environmental setting and the re-development of the site to a residential development comprising apartments and town houses with terraces, car parking and shared landscaped areas all of which are assessed in the conceptual model:

- Ingestion of contaminated soil
- Inhalation of contamination dust
- Dissolution or suspension (leaching) of contaminants into pore waters affecting plant growth

- Dermal contact
- Dissolution or suspension (leaching) of contaminants from site soils leading to contamination of groundwater
- Dissolution or suspension (leaching) of contaminants from site soils leading to lateral migration within perched waters to off-site receptors. Potential significant pathways include more permeable layers within the made ground/natural strata, underground services and piles/foundations.
- Contamination affecting the integrity of service pipelines by direct contact
- Buildings affected by direct contact with elevated concentrations of sulphate and/or extreme pH.

5.4 Receptors

- 5.4.1 Potential site specific receptors that may be affected by contamination at the site are listed below:

Future Site Users

- 5.4.2 Future occupants of the site (care home and bungalow residents) could be at risk from contamination present at the site.
- 5.4.3 Potential risks are associated with ingestion of soil and home grown vegetables as well as inhalation of contaminated dust and/or asbestos and dermal contact with contaminants of concern. These risks are all associated with the garden/landscaped areas of the new development (if present).
- 5.4.4 Potential risks associated with indoor inhalation of organic vapours need to be considered.

Construction Workers

- 5.4.5 The primary risks to construction workers are associated with shallow excavations as asbestos could be present. Asbestos fibres (if present) can be released into the atmosphere during earthworks.
- 5.4.6 Standard personal protective equipment and site specific risk assessments and method statements should reduce risks associated with other contaminants of concern due to short exposure duration.

Off Site Receptors

- 5.4.7 Off site receptors include nearby home owners and employees. Human health could be at risk if asbestos fibres are released during the re-development.

Buildings & Services

- 5.4.8 Concrete used for the construction of buildings can be affected by high levels of sulphate and extreme pH.
- 5.4.9 The integrity of service pipes can be affected by concentrations of organic contamination.

Flora

- 5.4.10 Flora can be affected by phytotoxic contamination affecting growth.

Controlled Waters

- 5.4.11 There are no surface water features on site or within 250 m of the site.
- 5.4.12 The superficial strata is classified by the EA as a 'Secondary A Aquifer' which is described as 'Permeable layers capable of supporting water supplies at a local level and can form an important source of base flow to river'. The bedrock is described as a 'Principal Aquifer'.
- 5.4.13 The site is not located within a groundwater source protection zone and there are no groundwater abstractions within 250 m of the site.
- 5.4.14 The superficial aquifer and the bedrock aquifer could be in hydraulic continuity providing a pathway for surface contamination to impact on aquifer quality.

5.5 Preliminary Conceptual Model

- 5.5.1 The identified potential sources of contaminants, pathways and receptors have been assessed to establish plausible pollutant linkages. All potentially significant pollutant linkages are detailed in Table B, in Appendix C.

5.6 Potentially Significant Pollutant Linkages

- 5.6.1 A number of possible 'significant pollutant linkages' have been identified associated with the site.
- 5.6.2 Potential risks relating to the potential harm to the health of humans and/or domestic pets due to the potential for direct contact/ingestion with contaminants in the made ground (**Link 1**).
- 5.6.3 There is also the possibility of windblown particulates being inhaled by people/animals both on site and off site (**Link 2**).



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- 5.6.4 Home grown produce could be affected by ground contamination (**Link 3**) and human health could be at risk by the ingestion of home grown produce affected by contamination (**Link 4**).
- 5.6.5 Human health could be at risk by the inhalation of volatile contamination migrating into properties on site (**Link 5**).
- 5.6.6 Property (including services, flora and fauna) could be affected by direct contact to high concentrations of contaminants (**Link 6**)
- 5.6.7 Dissolution or suspension (leaching) of contaminants from site soils leading to impact on the superficial and bedrock aquifers (**Link 7**).
- 5.6.8 Site investigation is required to identify site specific conditions and assess the risks associated with each identified plausible pollutant linkage.

6. RECOMMENDATIONS

- 6.1 Based on the findings of the Preliminary Risk Assessment herein, a number of potential risks associated with contamination have been identified with respect to the proposed change of use to residential.
- 6.2 Risks have been identified to human health, property (including services) and controlled waters. Site investigation is required to determine shallow ground conditions and quantify the potential risks identified.
- 6.3 Site investigation is also recommended to assess ground conditions to provide recommendations for foundation design.
- 6.4 BEK recommends that the following works should be undertaken:

Site Investigation

- 6.5 The investigation should comprise the excavation of trial pits to characterise the shallow ground conditions across the site. The investigation should target key areas as well as providing widespread information for the ground conditions across the site to prove nature and thickness of any made ground present and characterise the natural strata.
- 6.6 In-situ strength tests (shear vane/SPTs) could also be carried out during the site investigation works to provide additional geotechnical information.
- 6.7 The site investigation should be supervised by an experienced engineer who will be responsible for recording ground conditions encountered.
- 6.8 If a significant thickness of made ground is encountered (>3 m thick) or organic rich strata is encountered (including high wood content), it may be necessary to assess the potential risks from ground gas.
- 6.9 The engineer will recover representative samples for laboratory testing. All samples recovered for chemical testing will be stored in appropriate sampling vessels in a pre-cooled cool box and dispatched to the laboratory within 24 hours.

Chemical Testing

- 6.10 Following a review of ground conditions encountered, a selection of samples should be tested for the contaminants of concern listed in Table 2 of this report. If visual or olfactory evidence of contamination is encountered during the site investigation then it may be necessary to undertake additional testing.



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- 6.11 In addition, if soils or made ground materials are to be removed from site to facilitate the development works then it may be necessary to test soils/made ground for Waste Acceptance Criteria (WAC) and/or for Waste Duty of Care purposes.
- 6.12 Samples may also be submitted for geotechnical testing (depending on ground conditions) to support an assessment for foundation design.
- 6.13 All testing will be carried out by a UKAS accredited laboratory to MCERTS standard (where applicable).

Risk Assessment

- 6.14 The investigation findings will be assessed as part of a quantitative risk assessment to amend the conceptual site model and identify any potential significant pollutant linkages.
- 6.15 The assessment will be undertaken in accordance with current UK guidance and policy.

Reporting

- 6.16 The investigation findings should be assessed in accordance with current UK policy and guidance to identify any potential significant pollutant linkages and determine the requirements for mitigation and/or remediation.
- 6.17 The works undertaken will be detailed in a Site Investigation Contamination Assessment report along with full justifications for the assessment and the conclusions/recommendations.

Additional Surveys/Site Investigation

- 6.18 It is recommended that the existing building is subject to an asbestos survey and asbestos identified is removed by a specialist contractor prior to demolition.
- 6.19 Additional site investigation will be required within the footprint of the building following demolition and clearance to confirm ground conditions are similar to elsewhere.

Other Considerations

- 6.20 In addition to the assessment of the shallow ground conditions with respect to contamination, site investigation will be required to characterise the deeper ground conditions to facilitate a geotechnical assessment for foundation design. Given the proposed new building is 4-storeys, it is likely that a piled solution will be required and the piling contractor will need information on deeper ground conditions to design the piles.



GEO-ENVIRONMENTAL CONSULTING ENGINEERS

- 6.21 Soakaway testing (to BRE365) may also be required to facilitate drainage design.
- 6.22 We would also recommend that consideration is given to the requirements of the water supply service provider and the completion of the UKWIR risk assessment for water pipe selection.

APPENDIX A

Historical OS Maps

Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: County Series

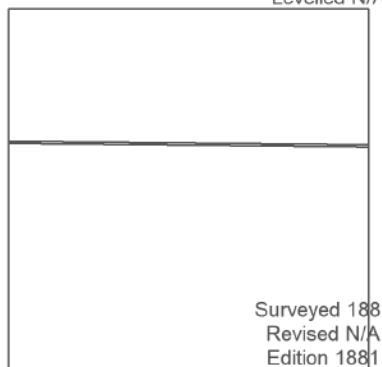
Map date: 1881

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

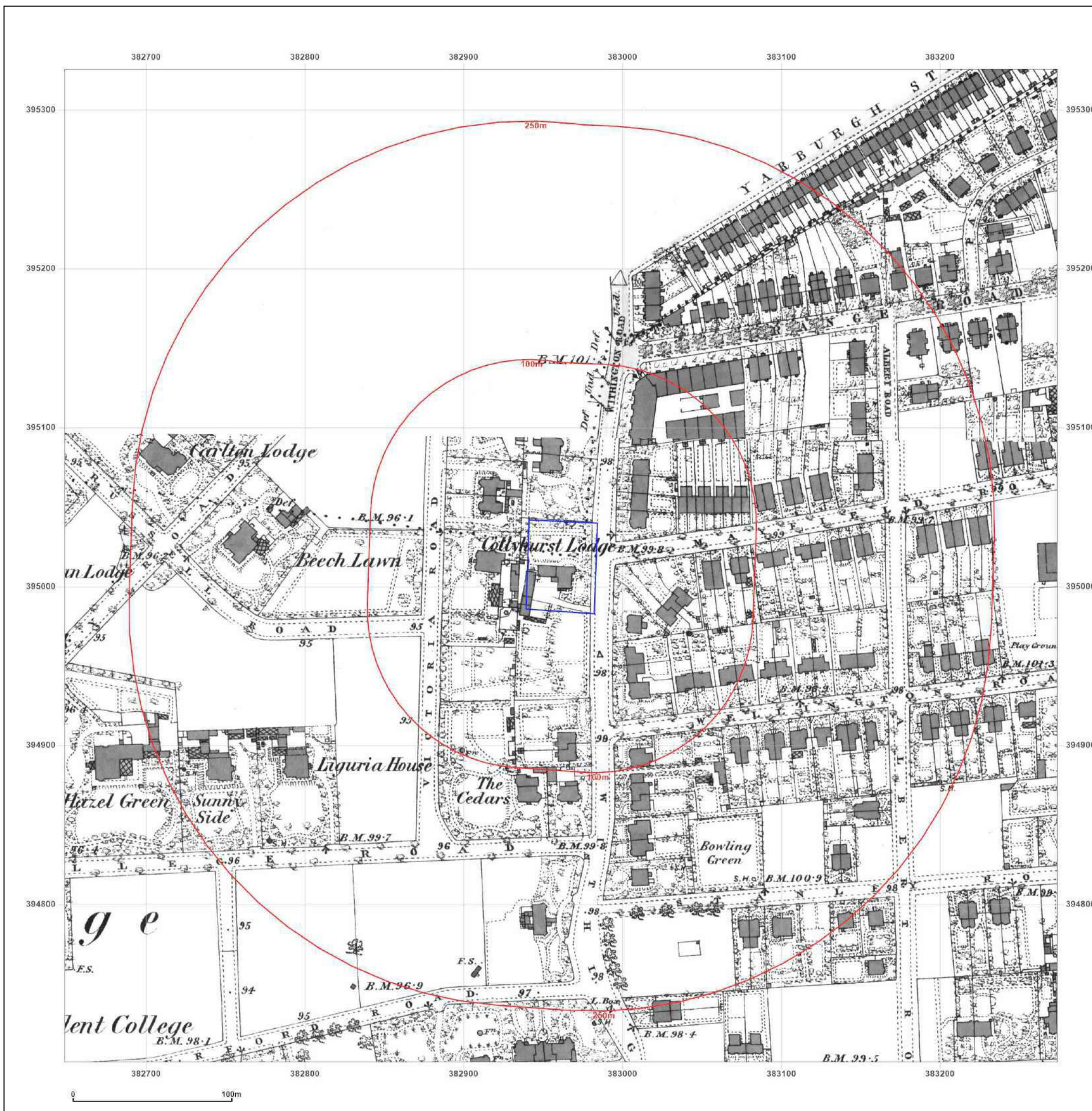


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Production date: 12 July 2022

Map legend available at:
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Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: County Series Town Plan

Map date: 1893

Scale: 1:500

Printed at: 1:1,000



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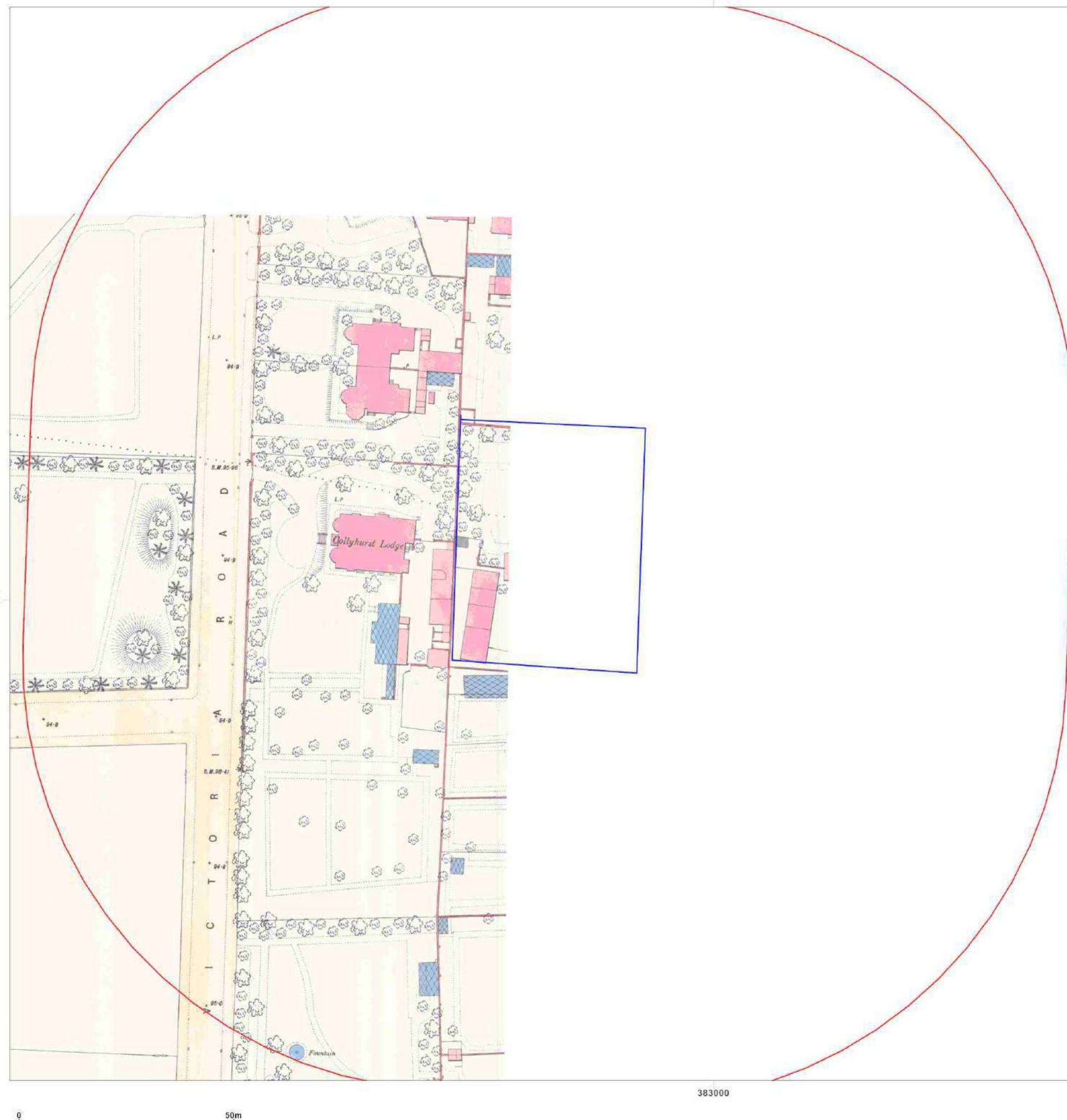


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Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: County Series

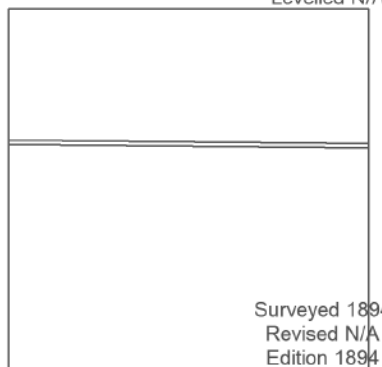
Map date: 1889-1894

Scale: 1:2,500

Printed at: 1:2,500



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Surveyed 1894
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Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: County Series

Map date: 1907-1908

Scale: 1:2,500

Printed at: 1:2,500



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Edition 1908
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Surveyed 1891
Revised 1905
Edition 1907
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Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: County Series

Map date: 1922

Scale: 1:2,500

Printed at: 1:2,500



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Surveyed 1922
Revised 1916
Edition 1922
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Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

Map date: 1949-1950

Scale: 1:1,250

Printed at: 1:2,000



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

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

Surveyed 1950
Revised 1950
Edition N/A
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Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

Map date: 1949-1951

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1949
Revised 1949
Edition N/A
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Revised N/A
Edition N/A
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Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

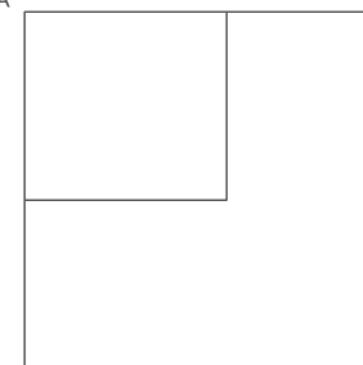
Map date: 1951

Scale: 1:2,500

Printed at: 1:2,500



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

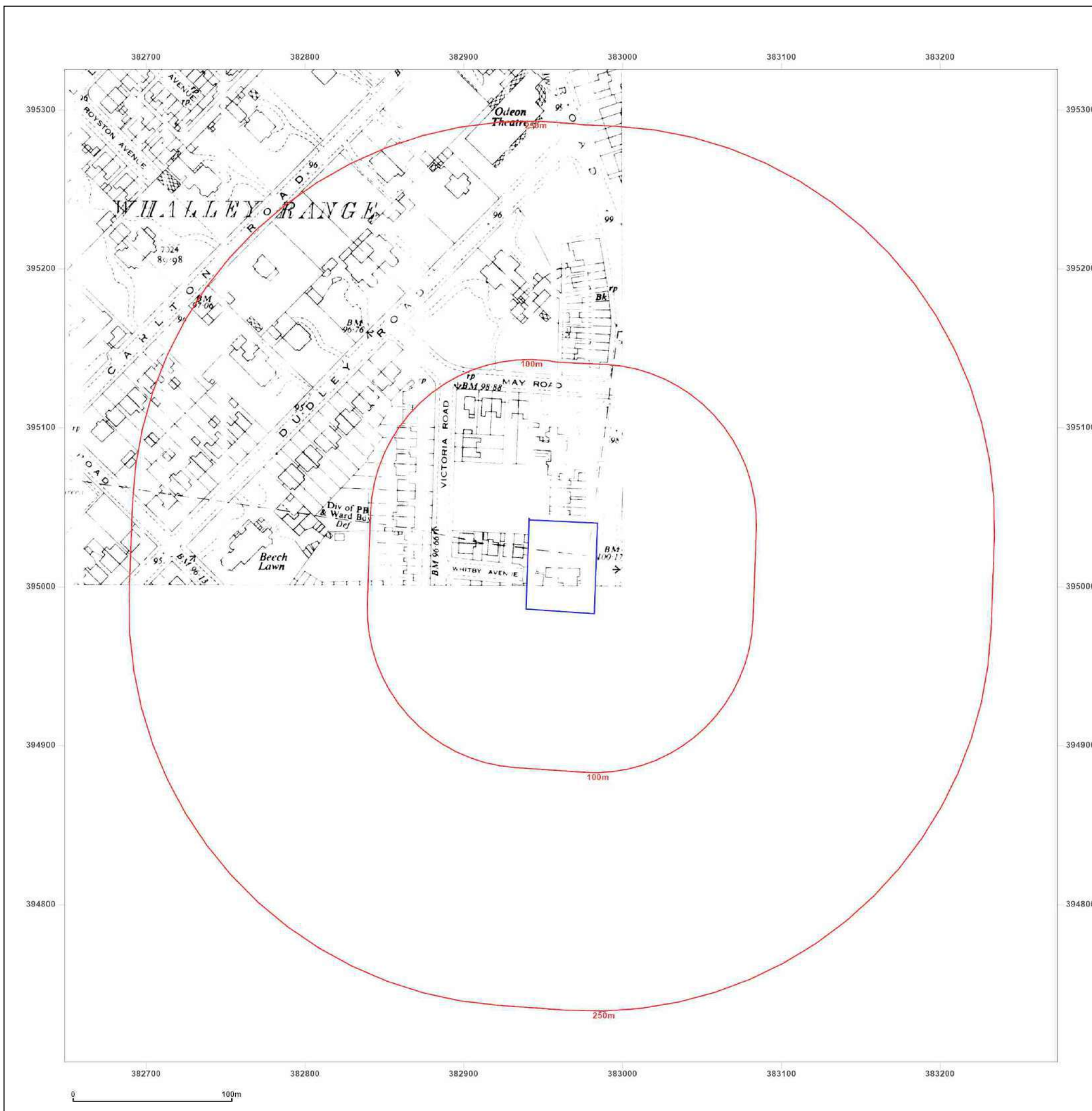


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Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

Map date: 1951-1954

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 1954
Revised 1954
Edition N/A
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Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

Map date: 1960

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1949
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Site Details:

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MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

Map date: 1964

Scale: 1:2,500

Printed at: 1:2,500



Surveyed 1956
Revised 1956
Edition 1964
Copyright 1964
Levelled 1958

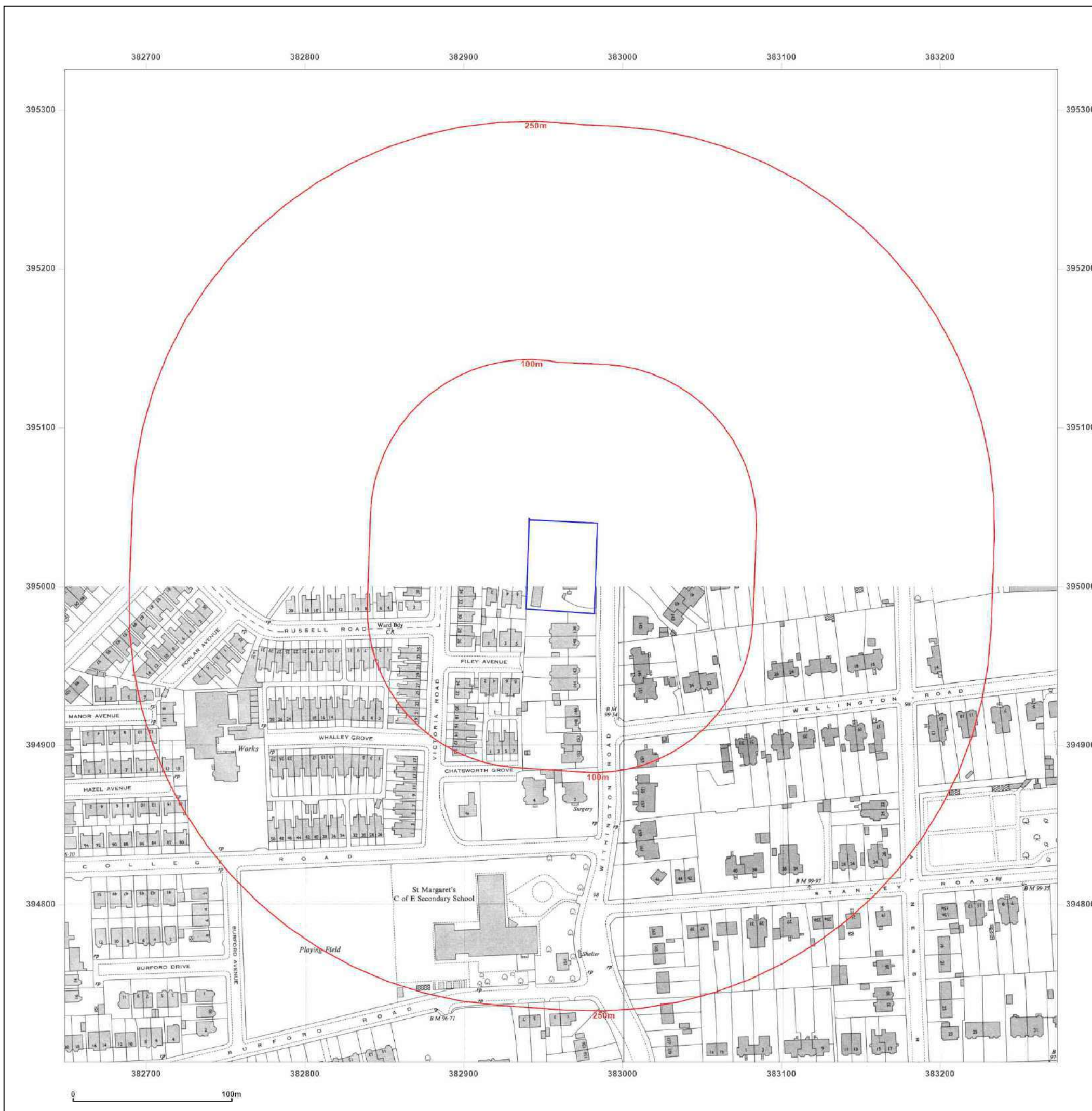


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Site Details:

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Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

Map date: 1973

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1949
Revised 1972
Edition N/A
Copyright 1973
Levelled 1958

Surveyed 1949
Revised 1972
Edition N/A
Copyright 1973
Levelled 1958

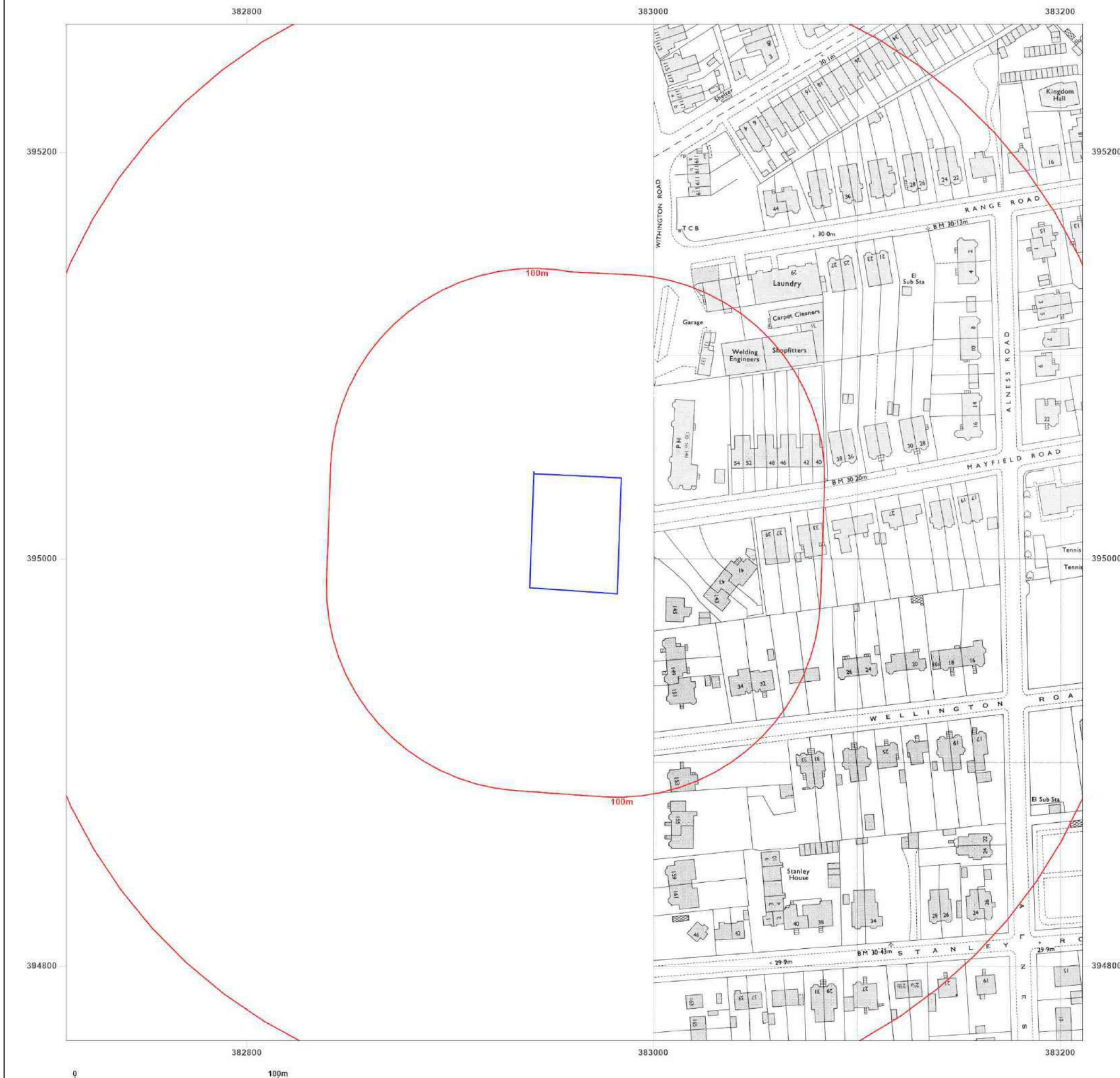


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Site Details:

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MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

Map date: 1981-1986

Scale: 1:1,250

Printed at: 1:2,000



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Revised N/A
Edition N/A
Copyright 1981
Levelled 1968

Surveyed 1949
Revised 1984
Edition N/A
Copyright 1986
Levelled 1958

Surveyed N/A
Revised N/A
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Site Details:

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MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

Map date: 1992

Scale: 1:1,250

Printed at: 1:2,000



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

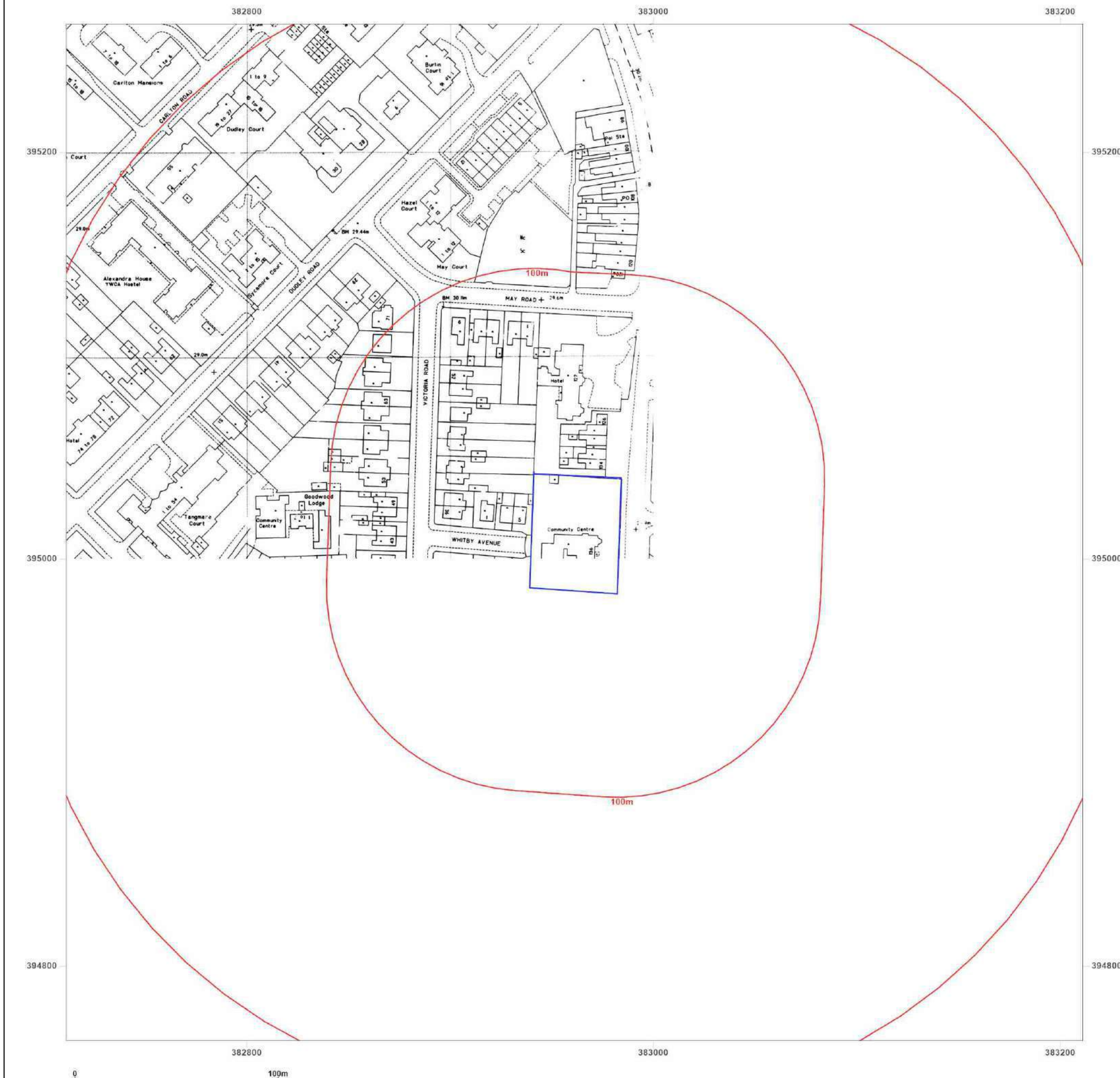


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Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

Map date: 1987-1992

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1949
Revised 1986
Edition N/A
Copyright 1987
Levelled 1958

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

Surveyed N/A
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Site Details:

136, WITHINGTON ROAD,
MANCHESTER, M16 8FB

Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

Map date: 1991-1995

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1949
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Edition N/A
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Surveyed N/A
Revised N/A
Edition N/A
Copyright 1995
Levelled N/A

Surveyed 1950
Revised 1960
Edition N/A
Copyright 1992
Levelled N/A

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

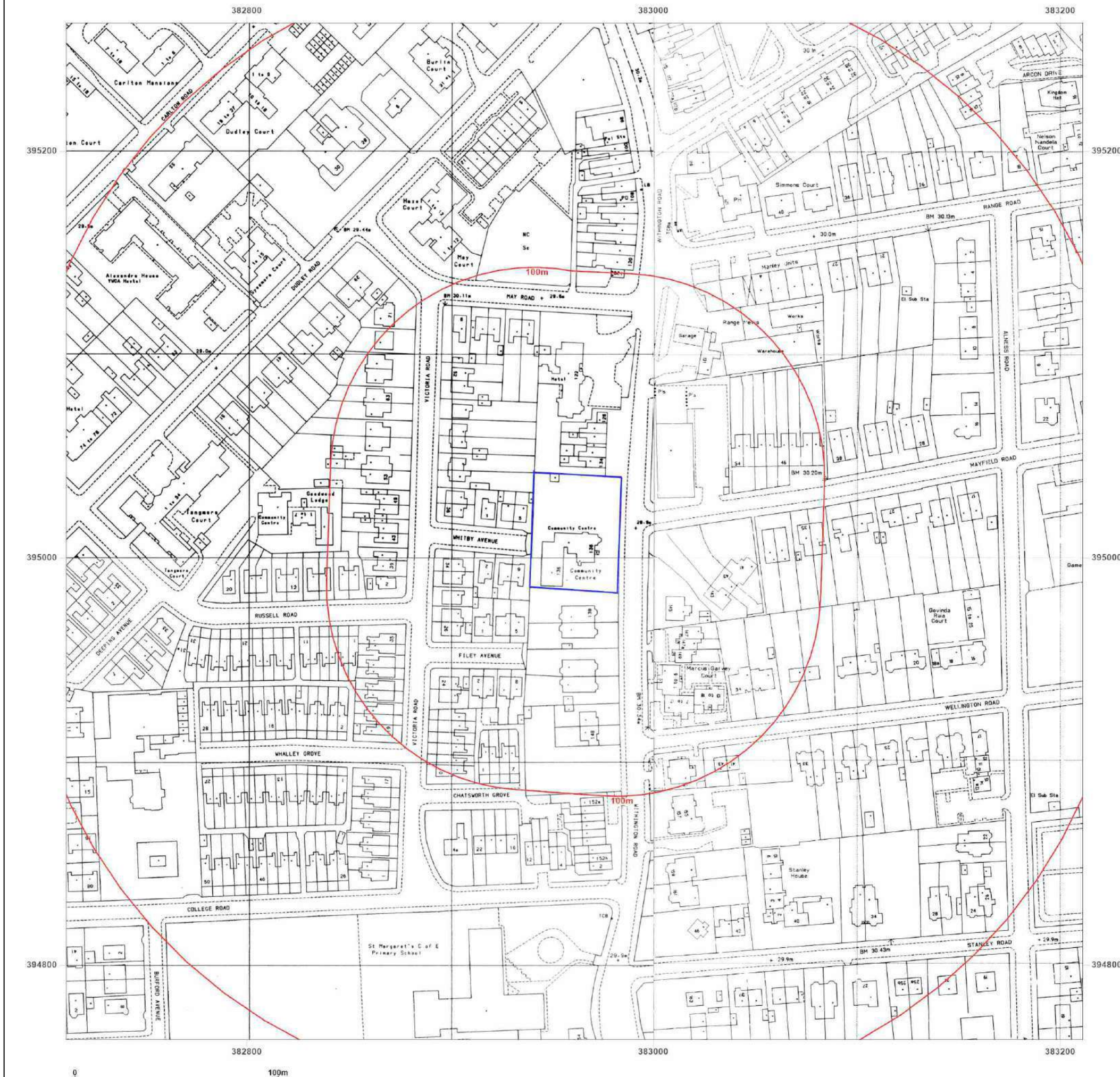


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Site Details:

136, WITHINGTON ROAD,
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Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: National Grid

Map date: 1991-1995

Scale: 1:1,250

Printed at: 1:2,000



Surveyed 1949
Revised 1949
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Copyright 1991
Levelled N/A

Surveyed 1995
Revised 1995
Edition N/A
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Surveyed 1995
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Site Details:

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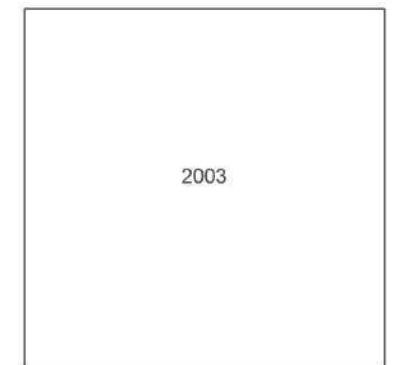
Client Ref: 22096
Report Ref: GS-8897972
Grid Ref: 382961, 395013

Map Name: LandLine

Map date: 2003

Scale: 1:1,250

Printed at: 1:1,250



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APPENDIX B

Enviro+GeoInsight Report

136, WITHINGTON ROAD, MANCHESTER, M16 8FB

Order Details

Date: 12/07/2022

Your ref: 22096

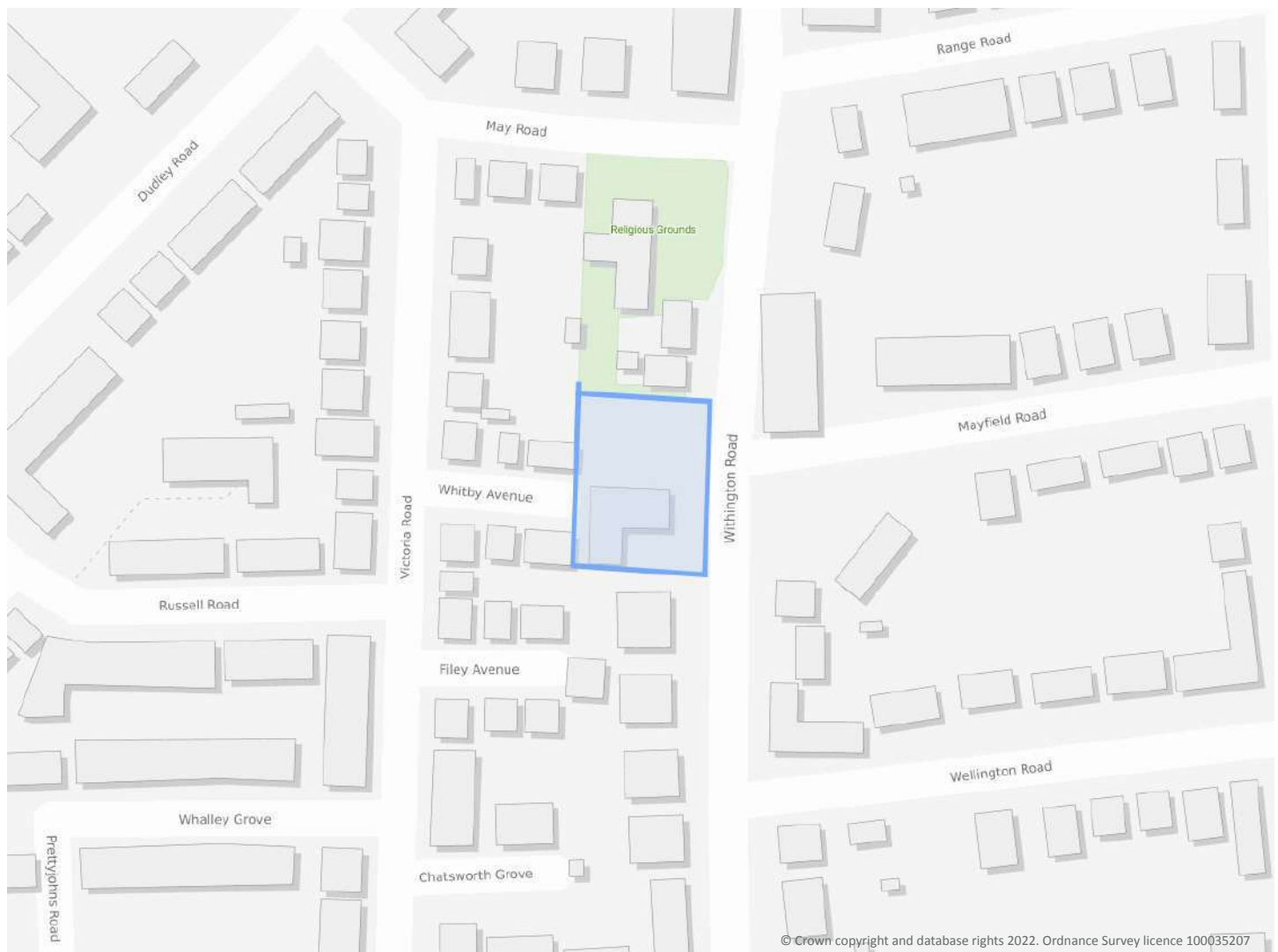
Our Ref: GS-8897973

Site Details

Location: 382949 394992

Area: 0.25 ha

Authority: [Manchester City Council](#)



Summary of findings

p. 2 **Aerial image**

p. 8

OS MasterMap site plan

p.12 groundsure.com/insightuserguide

Contact us with any questions at:

info@groundsure.com

08444 159 000

Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
13	1.1	<u>Historical industrial land uses</u>	0	0	2	6	-
14	1.2	Historical tanks	0	0	0	0	-
14	1.3	<u>Historical energy features</u>	0	0	5	12	-
15	1.4	Historical petrol stations	0	0	0	0	-
15	1.5	<u>Historical garages</u>	0	2	3	2	-
16	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
17	2.1	<u>Historical industrial land uses</u>	0	0	4	10	-
18	2.2	Historical tanks	0	0	0	0	-
18	2.3	<u>Historical energy features</u>	0	0	11	24	-
20	2.4	Historical petrol stations	0	0	0	0	-
20	2.5	<u>Historical garages</u>	0	2	5	6	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
22	3.1	Active or recent landfill	0	0	0	0	-
22	3.2	Historical landfill (BGS records)	0	0	0	0	-
23	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
23	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
23	3.5	Historical waste sites	0	0	0	0	-
23	3.6	Licensed waste sites	0	0	0	0	-
23	3.7	<u>Waste exemptions</u>	0	0	1	1	-
Page	Section	Current industrial land use	On site	0-50m	50-250m	250-500m	500-2000m
25	4.1	<u>Recent industrial land uses</u>	0	0	9	-	-
26	4.2	<u>Current or recent petrol stations</u>	0	0	1	0	-
26	4.3	Electricity cables	0	0	0	0	-
27	4.4	Gas pipelines	0	0	0	0	-
27	4.5	Sites determined as Contaminated Land	0	0	0	0	-



27	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
27	4.7	Regulated explosive sites	0	0	0	0	-
27	4.8	Hazardous substance storage/usage	0	0	0	0	-
28	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
28	4.10	Licensed industrial activities (Part A(1))	0	0	0	0	-
28	4.11	<u>Licensed pollutant release (Part A(2)/B)</u>	0	0	3	0	-
29	4.12	<u>Radioactive Substance Authorisations</u>	0	0	0	1	-
29	4.13	Licensed Discharges to controlled waters	0	0	0	0	-
29	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
29	4.15	Pollutant release to public sewer	0	0	0	0	-
30	4.16	List 1 Dangerous Substances	0	0	0	0	-
30	4.17	List 2 Dangerous Substances	0	0	0	0	-
30	4.18	<u>Pollution Incidents (EA/NRW)</u>	0	0	4	2	-
31	4.19	Pollution inventory substances	0	0	0	0	-
31	4.20	Pollution inventory waste transfers	0	0	0	0	-
31	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
32	5.1	<u>Superficial aquifer</u>	Identified (within 500m)				
34	5.2	<u>Bedrock aquifer</u>	Identified (within 500m)				
36	5.3	<u>Groundwater vulnerability</u>	Identified (within 50m)				
37	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
37	5.5	Groundwater vulnerability- local information	None (within 0m)				
38	5.6	<u>Groundwater abstractions</u>	0	0	0	0	15
42	5.7	Surface water abstractions	0	0	0	0	0
43	5.8	Potable abstractions	0	0	0	0	0
43	5.9	Source Protection Zones	0	0	0	0	-
43	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology	On site	0-50m	50-250m	250-500m	500-2000m
44	6.1	Water Network (OS MasterMap)	0	0	0	-	-



44	6.2	Surface water features	0	0	0	-	-
45	6.3	<u>WFD Surface water body catchments</u>	1	-	-	-	-
45	6.4	<u>WFD Surface water bodies</u>	0	0	0	-	-
46	6.5	<u>WFD Groundwater bodies</u>	1	-	-	-	-
Page	Section	River and coastal flooding	On site	0-50m	50-250m	250-500m	500-2000m
47	7.1	<u>Risk of flooding from rivers and the sea</u>	Low (within 50m)				
48	7.2	Historical Flood Events	0	0	0	-	-
48	7.3	Flood Defences	0	0	0	-	-
48	7.4	Areas Benefiting from Flood Defences	0	0	0	-	-
48	7.5	Flood Storage Areas	0	0	0	-	-
49	7.6	<u>Flood Zone 2</u>	Identified (within 50m)				
50	7.7	Flood Zone 3	None (within 50m)				
Page	Section	Surface water flooding					
51	8.1	<u>Surface water flooding</u>	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	Groundwater flooding					
53	9.1	<u>Groundwater flooding</u>	High (within 50m)				
Page	Section	Environmental designations	On site	0-50m	50-250m	250-500m	500-2000m
54	10.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
54	10.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
54	10.3	Special Areas of Conservation (SAC)	0	0	0	0	0
54	10.4	Special Protection Areas (SPA)	0	0	0	0	0
55	10.5	National Nature Reserves (NNR)	0	0	0	0	0
55	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
55	10.7	Designated Ancient Woodland	0	0	0	0	0
55	10.8	Biosphere Reserves	0	0	0	0	0
56	10.9	Forest Parks	0	0	0	0	0
56	10.10	Marine Conservation Zones	0	0	0	0	0
56	10.11	Green Belt	0	0	0	0	0
56	10.12	Proposed Ramsar sites	0	0	0	0	0



56	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
57	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
57	10.15	Nitrate Sensitive Areas	0	0	0	0	0
57	10.16	Nitrate Vulnerable Zones	0	0	0	0	0
58	10.17	<u>SSSI Impact Risk Zones</u>	1	-	-	-	-
59	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
60	11.1	World Heritage Sites	0	0	0	-	-
61	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
61	11.3	National Parks	0	0	0	-	-
61	11.4	Listed Buildings	0	0	0	-	-
61	11.5	<u>Conservation Areas</u>	1	0	0	-	-
62	11.6	Scheduled Ancient Monuments	0	0	0	-	-
62	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations	On site	0-50m	50-250m	250-500m	500-2000m
63	12.1	<u>Agricultural Land Classification</u>	Urban (within 250m)				
64	12.2	Open Access Land	0	0	0	-	-
64	12.3	Tree Felling Licences	0	0	0	-	-
64	12.4	Environmental Stewardship Schemes	0	0	0	-	-
64	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
65	13.1	Priority Habitat Inventory	0	0	0	-	-
65	13.2	Habitat Networks	0	0	0	-	-
65	13.3	Open Mosaic Habitat	0	0	0	-	-
65	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
66	14.1	<u>10k Availability</u>	Identified (within 500m)				
67	14.2	<u>Artificial and made ground (10k)</u>	0	1	1	3	-
69	14.3	<u>Superficial geology (10k)</u>	2	0	0	1	-



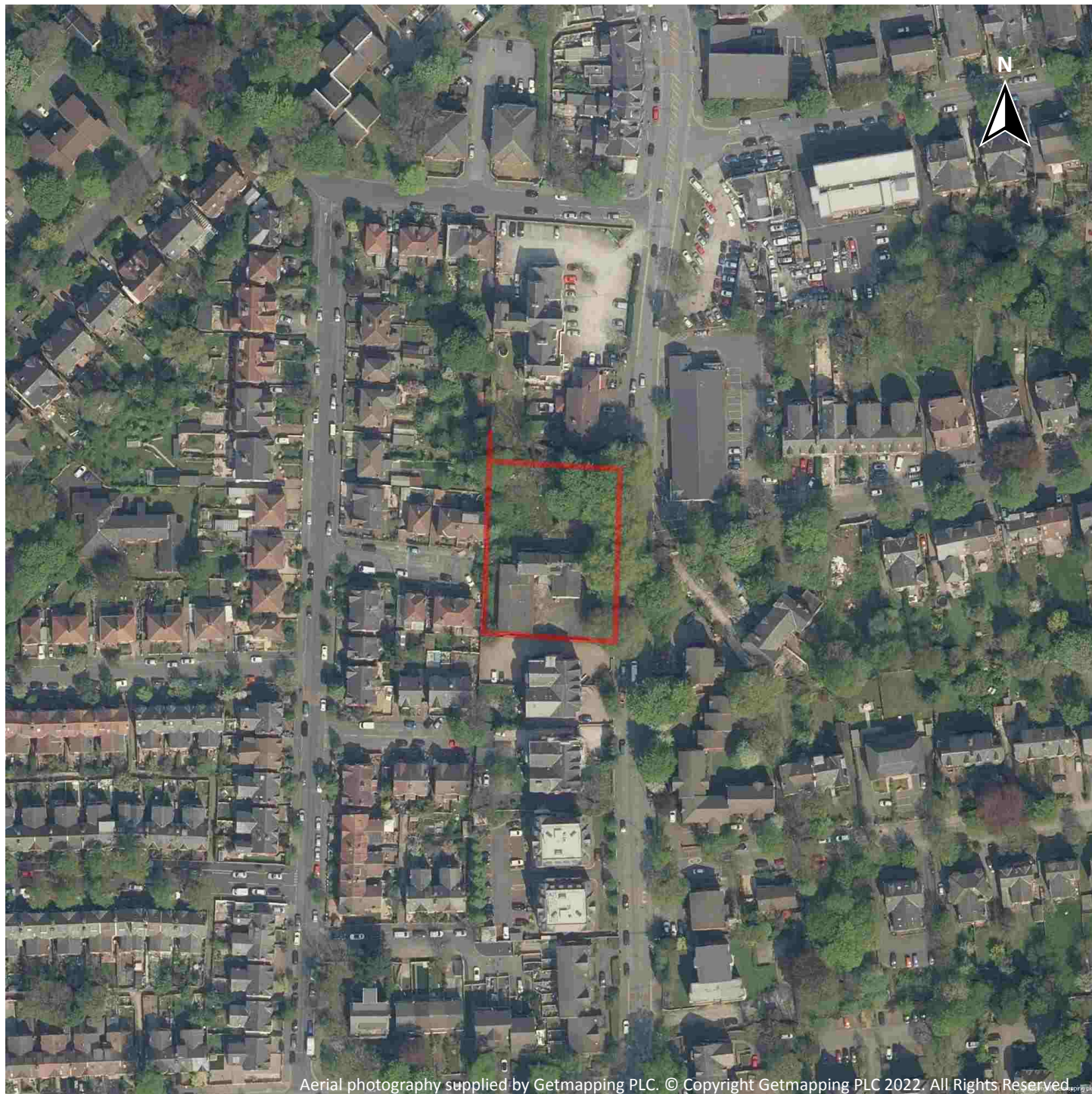
70	14.4	Landslip (10k)	0	0	0	0	-
71	14.5	<u>Bedrock geology (10k)</u>	2	0	2	0	-
72	14.6	<u>Bedrock faults and other linear features (10k)</u>	0	0	2	0	-
Page	Section	Geology 1:50,000 scale	On site	0-50m	50-250m	250-500m	500-2000m
73	15.1	<u>50k Availability</u>	Identified (within 500m)				
74	15.2	Artificial and made ground (50k)	0	0	0	0	-
74	15.3	Artificial ground permeability (50k)	0	0	-	-	-
75	15.4	<u>Superficial geology (50k)</u>	1	0	0	1	-
76	15.5	<u>Superficial permeability (50k)</u>	Identified (within 50m)				
76	15.6	Landslip (50k)	0	0	0	0	-
76	15.7	Landslip permeability (50k)	None (within 50m)				
77	15.8	<u>Bedrock geology (50k)</u>	1	0	1	0	-
78	15.9	<u>Bedrock permeability (50k)</u>	Identified (within 50m)				
78	15.10	<u>Bedrock faults and other linear features (50k)</u>	0	0	1	0	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
79	16.1	<u>BGS Boreholes</u>	0	0	1	-	-
Page	Section	Natural ground subsidence					
80	17.1	<u>Shrink swell clays</u>	Negligible (within 50m)				
81	17.2	<u>Running sands</u>	Very low (within 50m)				
82	17.3	<u>Compressible deposits</u>	Negligible (within 50m)				
83	17.4	<u>Collapsible deposits</u>	Very low (within 50m)				
84	17.5	<u>Landslides</u>	Very low (within 50m)				
85	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
86	18.1	Natural cavities	0	0	0	0	-
87	18.2	BritPits	0	0	0	0	-
87	18.3	<u>Surface ground workings</u>	0	1	1	-	-
87	18.4	Underground workings	0	0	0	0	0
87	18.5	Historical Mineral Planning Areas	0	0	0	0	-



88	18.6	Non-coal mining	0	0	0	0	0
88	18.7	Mining cavities	0	0	0	0	0
88	18.8	<u>JPB mining areas</u>	Identified (within 0m)				
88	18.9	Coal mining	None (within 0m)				
89	18.10	Brine areas	None (within 0m)				
89	18.11	Gypsum areas	None (within 0m)				
89	18.12	Tin mining	None (within 0m)				
89	18.13	Clay mining	None (within 0m)				
Page	Section	Radon					
90	19.1	<u>Radon</u>	Less than 1% (within 0m)				
Page	Section	Soil chemistry	On site	0-50m	50-250m	250-500m	500-2000m
91	20.1	<u>BGS Estimated Background Soil Chemistry</u>	2	2	-	-	-
91	20.2	<u>BGS Estimated Urban Soil Chemistry</u>	2	4	-	-	-
92	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
93	21.1	Underground railways (London)	0	0	0	-	-
93	21.2	Underground railways (Non-London)	0	0	0	-	-
94	21.3	Railway tunnels	0	0	0	-	-
94	21.4	<u>Historical railway and tunnel features</u>	0	3	2	-	-
94	21.5	Royal Mail tunnels	0	0	0	-	-
95	21.6	Historical railways	0	0	0	-	-
95	21.7	Railways	0	0	0	-	-
95	21.8	Crossrail 1	0	0	0	0	-
95	21.9	Crossrail 2	0	0	0	0	-
95	21.10	HS2	0	0	0	0	-



Recent aerial photograph



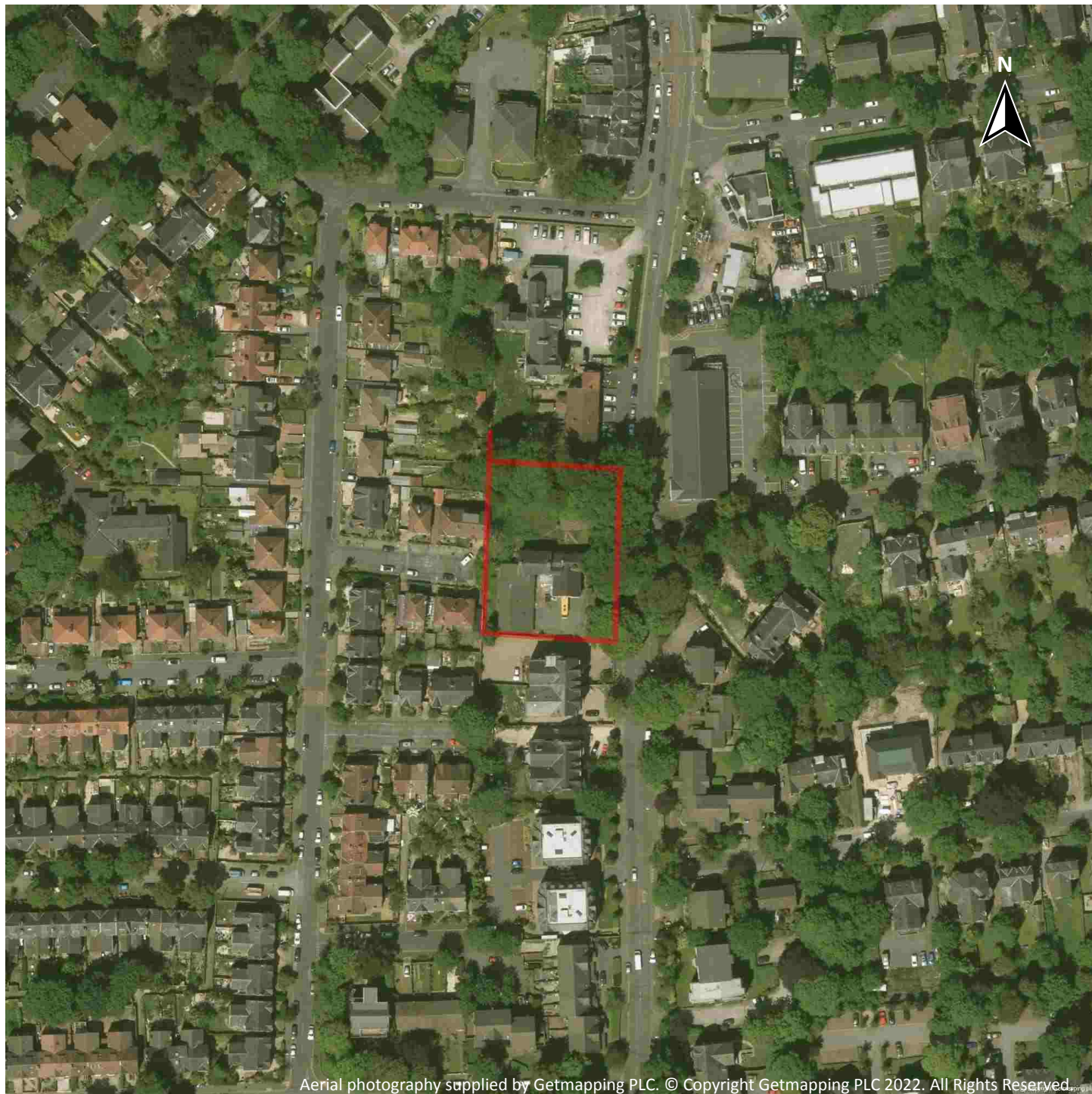
Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2022. All Rights Reserved.

Capture Date: 22/04/2019

Site Area: 0.25ha



Recent site history - 2015 aerial photograph

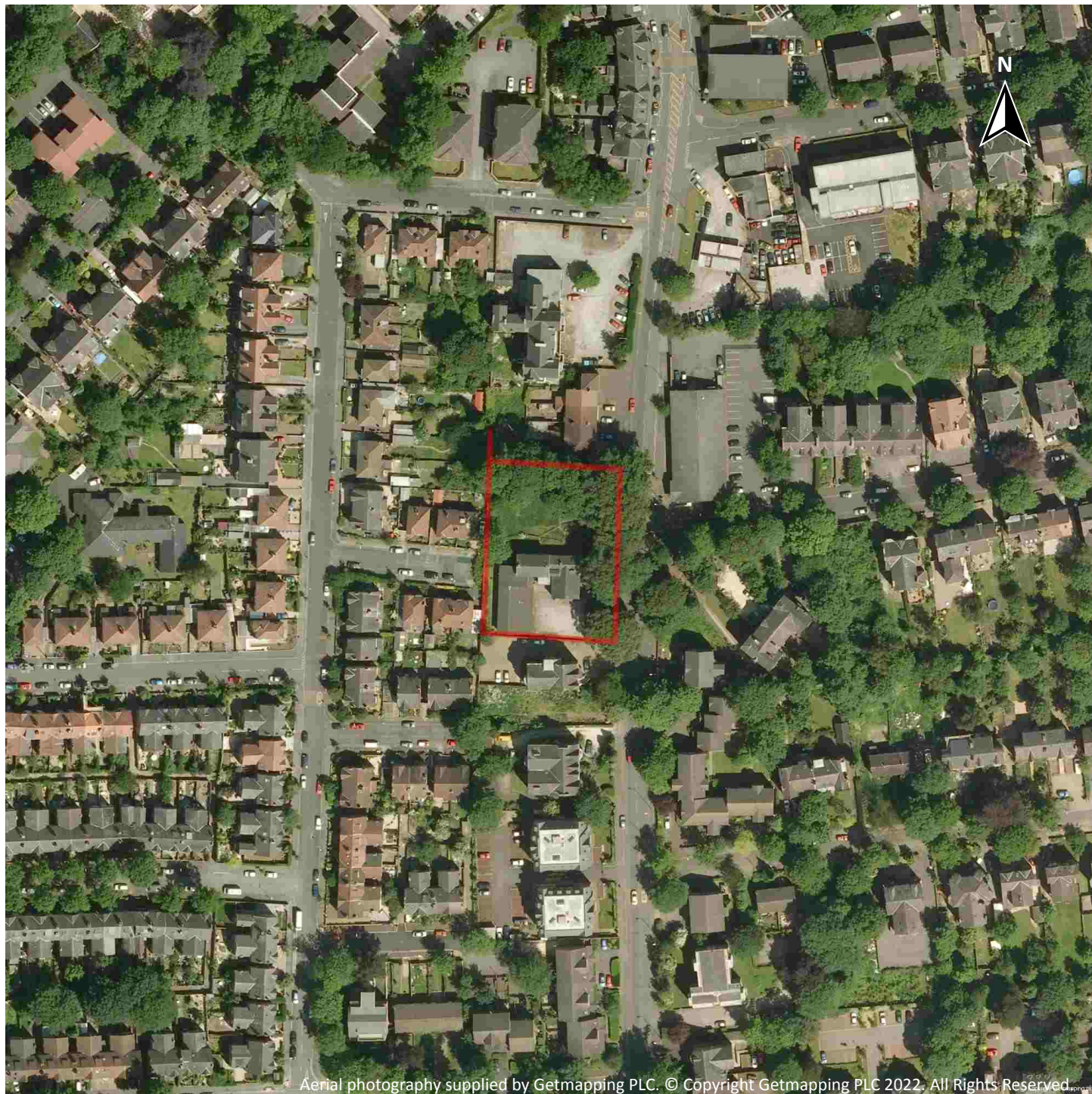


Capture Date: 11/06/2015

Site Area: 0.25ha



Recent site history - 2009 aerial photograph



Capture Date: 02/06/2009

Site Area: 0.25ha



Recent site history - 2000 aerial photograph



Capture Date: 27/06/2000

Site Area: 0.25ha



OS MasterMap site plan



Site Area: 0.25ha



1 Past land use



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

1.1 Historical industrial land uses

Records within 500m

8

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
1	122m W	Unspecified Works	1966 - 1978	914992



ID	Location	Land use	Dates present	Group ID
B	160m N	Police Station	1988 - 1994	920505
E	279m W	Hospital	1956 - 1971	883466
E	279m W	Hospital	1978	937952
E	279m W	Hospital	1985 - 1994	983124
E	335m NW	Unspecified Tank	1896	987950
E	339m NW	Unspecified Tank	1938	908483
G	447m SW	Electricity Substation	1916 - 1923	974066

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m

0

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'.

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m

17

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
2	149m NE	Electricity Substation	1973 - 1997	75617
C	227m SE	Electricity Substation	1973 - 1985	69339
C	236m SE	Electricity Substation	1995	64648
D	246m NW	Electricity Substation	1987	66843



ID	Location	Land use	Dates present	Group ID
D	246m NW	Electricity Substation	1981 - 1991	78244
E	329m NW	Electricity Substation	1987	65743
E	329m NW	Electricity Substation	1981 - 1991	78743
3	337m S	Electricity Substation	1986 - 1992	67991
F	359m N	Electricity Substation	1981 - 1987	72485
F	364m N	Electricity Substation	1991	73455
G	445m SW	Electricity Substation	1950 - 1992	72326
4	449m NW	Electricity Substation	1987 - 1991	81708
G	468m SW	Electricity Substation	1907 - 1922	64988
H	469m SE	Electricity Substation	1985 - 1995	74929
H	470m SE	Electricity Transformer	1973	63769
I	478m W	Electricity Substation	1989	66335
I	490m W	Electricity Substation	1992	72898

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

7

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
A	48m N	Garage	1997	22781
A	48m N	Garage	1973 - 1995	24854
A	52m N	Garage	1986	21804
A	69m N	Garage	1949	22191
B	156m N	Garage	1960 - 1981	24230
J	481m NW	Garage	1949 - 1987	24594
J	482m NW	Garage	1981 - 1991	24510

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 energy features
- Historical garages

2.1 Historical industrial land uses

Records within 500m

14

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 17**

ID	Location	Land Use	Date	Group ID
B	122m W	Unspecified Works	1978	914992
B	122m W	Unspecified Works	1966	914992
D	160m N	Police Station	1988	920505



ID	Location	Land Use	Date	Group ID
D	160m N	Police Station	1994	920505
G	279m W	Hospital	1971	883466
G	279m W	Hospital	1956	883466
G	279m W	Hospital	1988	983124
G	279m W	Hospital	1978	937952
G	279m W	Hospital	1985	983124
G	279m W	Hospital	1994	983124
G	335m NW	Unspecified Tank	1896	987950
G	339m NW	Unspecified Tank	1938	908483
J	447m SW	Electricity Substation	1916	974066
J	448m SW	Electricity Substation	1923	974066

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	0
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Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	35
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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 17**

ID	Location	Land Use	Date	Group ID
C	149m NE	Electricity Substation	1995	75617
C	149m NE	Electricity Substation	1997	75617

ID	Location	Land Use	Date	Group ID
C	165m NE	Electricity Substation	1973	75617
C	165m NE	Electricity Substation	1986	75617
E	227m SE	Electricity Substation	1985	69339
E	228m SE	Electricity Substation	1973	69339
E	236m SE	Electricity Substation	1995	64648
F	246m NW	Electricity Substation	1987	66843
F	246m NW	Electricity Substation	1981	78244
F	246m NW	Electricity Substation	1991	78244
F	246m NW	Electricity Substation	1991	78244
G	329m NW	Electricity Substation	1987	65743
G	329m NW	Electricity Substation	1981	78743
G	329m NW	Electricity Substation	1991	78743
G	329m NW	Electricity Substation	1991	78743
H	337m S	Electricity Substation	1992	67991
H	337m S	Electricity Substation	1986	67991
I	359m N	Electricity Substation	1981	72485
I	362m N	Electricity Substation	1987	72485
I	364m N	Electricity Substation	1991	73455
I	364m N	Electricity Substation	1991	73455
J	445m SW	Electricity Substation	1992	72326
J	445m SW	Electricity Substation	1986	72326
J	446m SW	Electricity Substation	1950	72326
J	447m SW	Electricity Substation	1950	72326
K	449m NW	Electricity Substation	1991	81708
K	449m NW	Electricity Substation	1991	81708
K	450m NW	Electricity Substation	1987	81708
J	468m SW	Electricity Substation	1907	64988
J	468m SW	Electricity Substation	1922	64988



ID	Location	Land Use	Date	Group ID
L	469m SE	Electricity Substation	1985	74929
L	470m SE	Electricity Transformer	1973	63769
L	470m SE	Electricity Substation	1995	74929
M	478m W	Electricity Substation	1989	66335
M	490m W	Electricity Substation	1992	72898

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

13

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 17**

ID	Location	Land Use	Date	Group ID
A	48m N	Garage	1995	24854
A	48m N	Garage	1997	22781
A	52m N	Garage	1973	24854
A	52m N	Garage	1986	21804
A	69m N	Garage	1949	22191
D	156m N	Garage	1981	24230
D	157m N	Garage	1960	24230
N	481m NW	Garage	1987	24594

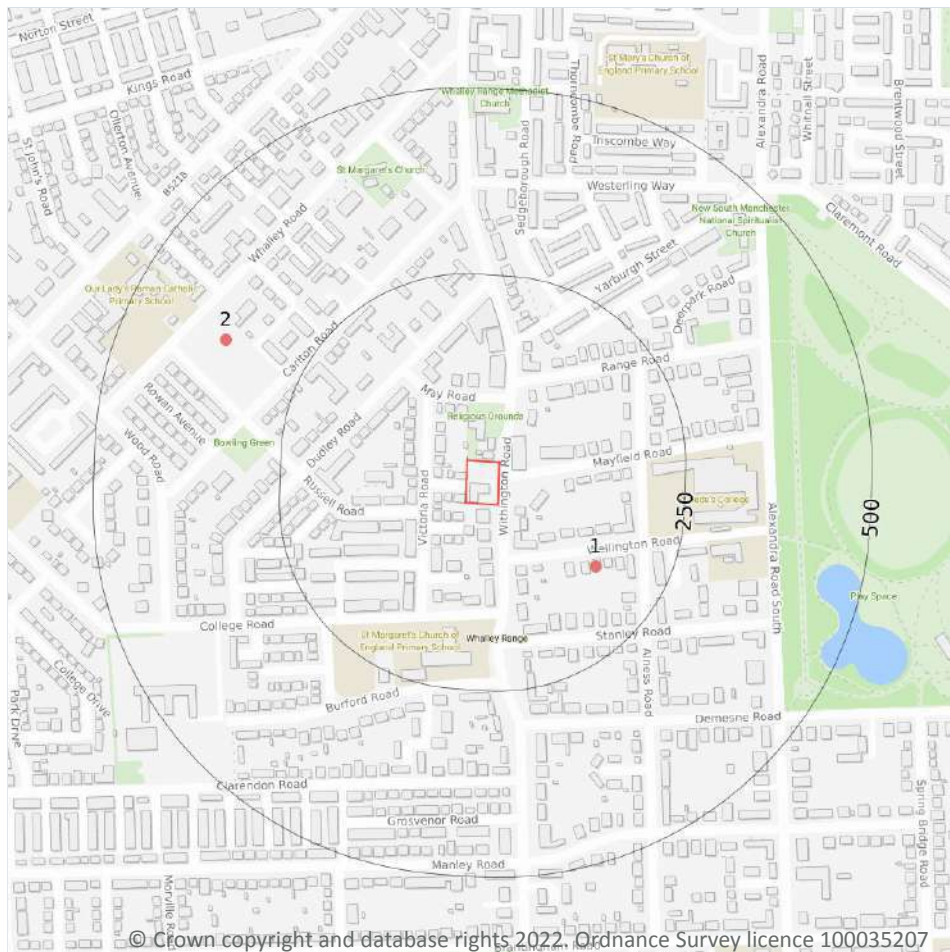


ID	Location	Land Use	Date	Group ID
N	481m NW	Garage	1960	24594
N	481m NW	Garage	1949	24594
N	482m NW	Garage	1981	24510
N	482m NW	Garage	1991	24510
N	482m NW	Garage	1991	24510

This data is sourced from Ordnance Survey / Groundsure.



3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Waste exemptions

3.1 Active or recent landfill

Records within 500m

0

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

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

3.2 Historical landfill (BGS records)

Records within 500m

0

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

This data is sourced from the British Geological Survey.



3.3 Historical landfill (LA/mapping records)

Records within 500m**0**

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

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

3.4 Historical landfill (EA/NRW records)

Records within 500m**0**

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

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

3.5 Historical waste sites

Records within 500m**0**

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

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

3.6 Licensed waste sites

Records within 500m**0**

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

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

3.7 Waste exemptions

Records within 500m**2**

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 22**

ID	Location	Site	Reference	Category	Sub-Category	Description
1	155m SE	St Bedes College, Wellington Road, Manchester, M16 8EX	WEX152749	Using waste exemption	Not on a farm	Use of waste in construction

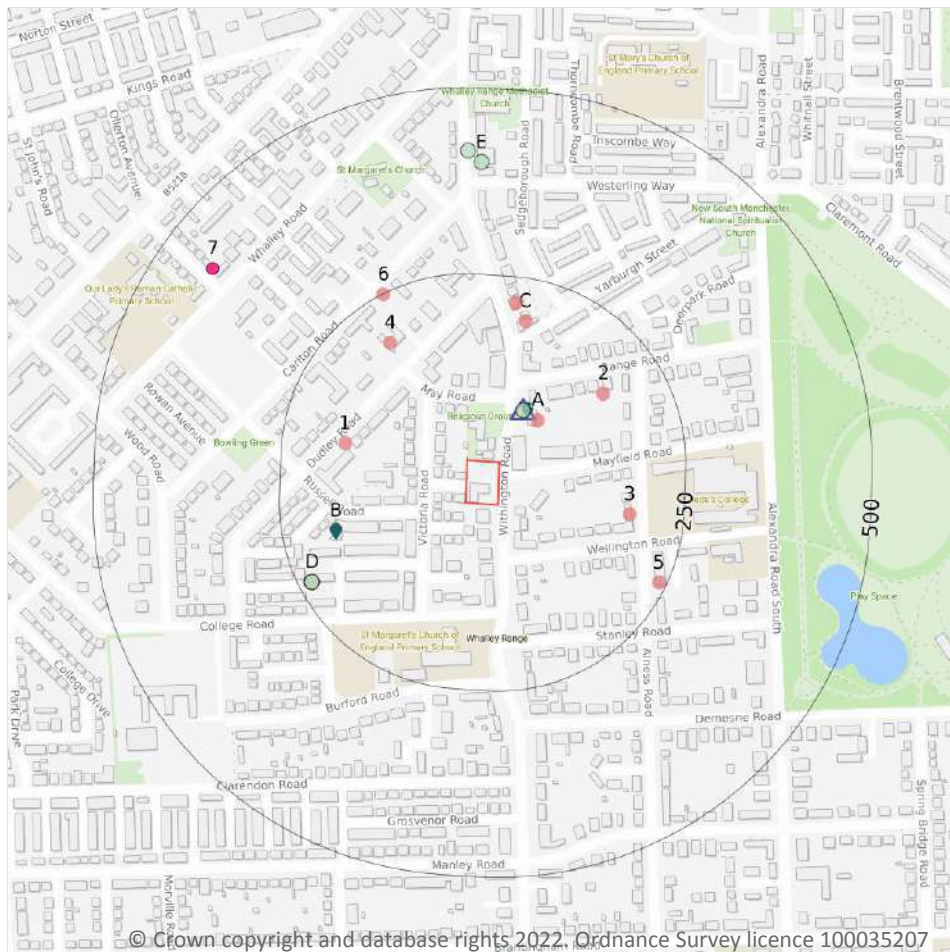


ID	Location	Site	Reference	Category	Sub-Category	Description
2	362m NW	Manchester Hospital Russell Road MANCHESTER M16 8AJ	EPR/GE5881JS /A001	Treating waste exemption	Non- Agricultural Waste Only	Sorting and de-naturing of controlled drugs for disposal

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



4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses
- △ Current or recent petrol stations
- Licensed pollutant release (Part A(2)/B)
- Radioactive Substance Authorisations
- Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m

9

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 25**

ID	Location	Company	Address	Activity	Category
A	77m NE	Mast	Greater Manchester, M16	Telecommunications Features	Infrastructure and Facilities
1	166m W	Electricity Sub Station	Greater Manchester, M16	Electrical Features	Infrastructure and Facilities
2	168m NE	Electricity Sub Station	Greater Manchester, M16	Electrical Features	Infrastructure and Facilities



ID	Location	Company	Address	Activity	Category
3	177m E	A B Domestics	Flat 23 Govind Ruia Court, 18 Alness Road, Manchester, Greater Manchester, M16 8FX	Electrical Equipment Repair and Servicing	Repair and Servicing
4	188m NW	Kevin Foy Productions	Flat 14 30, Dudley Road, Manchester, Greater Manchester, M16 8DT	Recording Studios and Record Companies	IT, Advertising, Marketing and Media Services
C	193m N	Smart Car Hire	117a, Withington Road, Manchester, Greater Manchester, M16 8EE	Vehicle Hire and Rental	Hire Services
C	216m N	Crystal Shine	115, Withington Road, Manchester, Greater Manchester, M16 8EE	Vehicle Cleaning Services	Personal, Consumer and Other Services
5	240m SE	Electricity Sub Station	Greater Manchester, M16	Electrical Features	Infrastructure and Facilities
6	249m NW	Electricity Sub Station	Greater Manchester, M16	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m

1

Open, closed, under development and obsolete petrol stations.

Features are displayed on the Current industrial land use map on **page 25**

ID	Location	Company	Address	LPG	Status
A	78m NE	UNBRANDED	131, Withington Road, Range Road, Whalley Range, Manchester, Greater Manchester, M16 8EE	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

0

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

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

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

Records within 500m

3

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

Features are displayed on the Current industrial land use map on **page 25**

ID	Location	Address	Details	
A	78m NE	Range Garage, 130 Withington Road, Whalley Range, M16 8EE	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
B	178m W	TD Barnes (Formerly Russell Garage), 31a Russell Road, Whalley Range, M16 8DJ	Process: Waste Oil Burner 0.4 MW Status: New Legislation Applies Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified
B	178m W	TD Barnes, 31a Russell Rd, M16 8DL	Process: Waste Oil Burner 0.4 MW Status: New Legislation Applies 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

1

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

Features are displayed on the Current industrial land use map on **page 25**

ID	Location	Address	Details	
7	427m NW	Bupa Hospitals Ltd, Russell Road, Manchester, Greater Manchester, M16 8AJ	Operator: Bupa Hospitals Ltd Type: Disposal Of Radioactive Waste (was Rsa60 Section 6). Permission number: AB9585 Date of approval: 31/03/1991	Effective from: 31/03/1991 Last date of update: 01/01/2015 Status: Revoked/cancelled

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

4.13 Licensed Discharges to controlled waters

Records within 500m

0

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

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

4.14 Pollutant release to surface waters (Red List)

Records within 500m

0

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

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

4.15 Pollutant release to public sewer

Records within 500m

0

Discharges of Special Category Effluents to the public sewer.

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



4.16 List 1 Dangerous Substances

Records within 500m

0

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

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

4.17 List 2 Dangerous Substances

Records within 500m

0

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

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

4.18 Pollution Incidents (EA/NRW)

Records within 500m

6

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

Features are displayed on the Current industrial land use map on **page 25**

ID	Location	Details	
A	76m NE	Incident Date: 19/03/2006 Incident Identification: 384660 Pollutant: Oils and Fuel Pollutant Description: Petrol	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 3 (Minor)
D	232m SW	Incident Date: 17/09/2002 Incident Identification: 108452 Pollutant: Inert Materials and Wastes:Specific Waste Materials Pollutant Description: Construction and Demolition Materials and Wastes:Metal Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
D	232m SW	Incident Date: 17/09/2002 Incident Identification: 108452 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 3 (Minor)
D	232m SW	Incident Date: 17/09/2002 Incident Identification: 108452 Pollutant: Specific Waste Materials Pollutant Description: Metal Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)



ID	Location	Details	
E	399m N	Incident Date: 13/11/2001 Incident Identification: 42618 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
E	415m N	Incident Date: 13/11/2001 Incident Identification: 42576 Pollutant: Inert Materials and Wastes Pollutant Description: Soils and Clay	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

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

4.19 Pollution inventory substances

Records within 500m	0
----------------------------	----------

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

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

4.20 Pollution inventory waste transfers

Records within 500m	0
----------------------------	----------

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

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

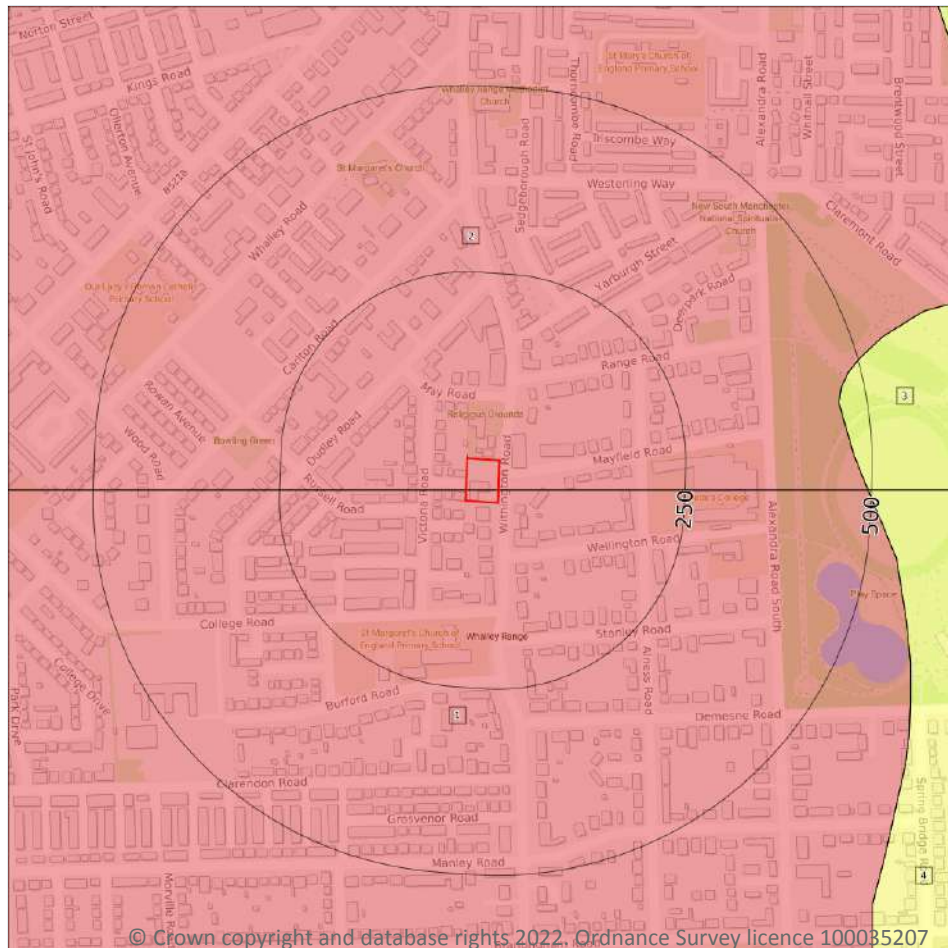
4.21 Pollution inventory radioactive waste

Records within 500m	0
----------------------------	----------

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

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

5 Hydrogeology - Superficial aquifer



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

5.1 Superficial aquifer

Records within 500m

4

Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 32**

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	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

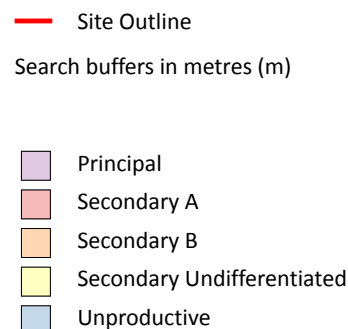
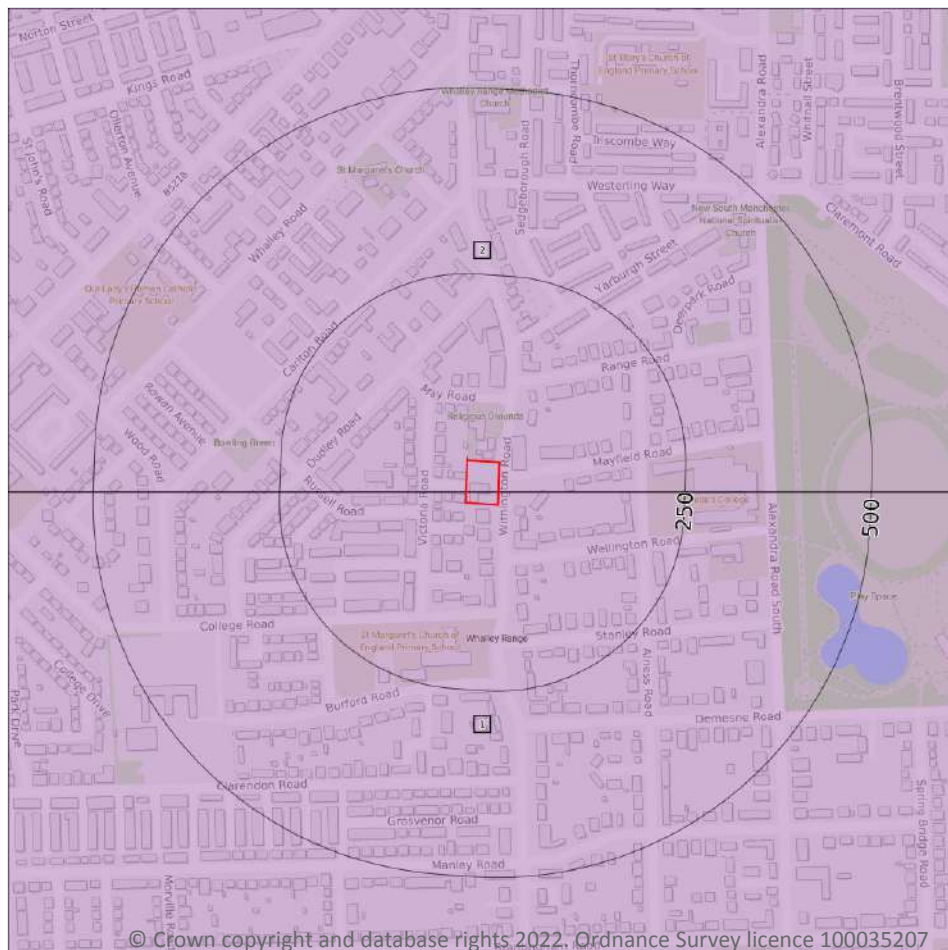


ID	Location	Designation	Description
3	463m E	Secondary Undifferentiated	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
4	496m E	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



5.2 Bedrock aquifer

Records within 500m

2

Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 34**

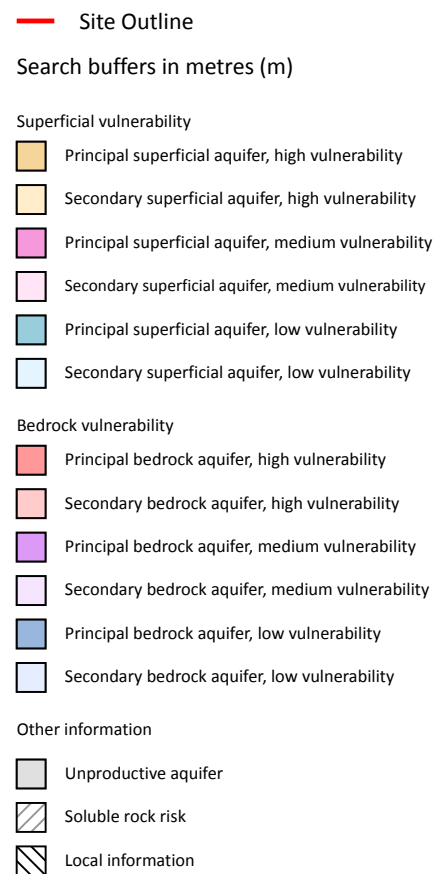
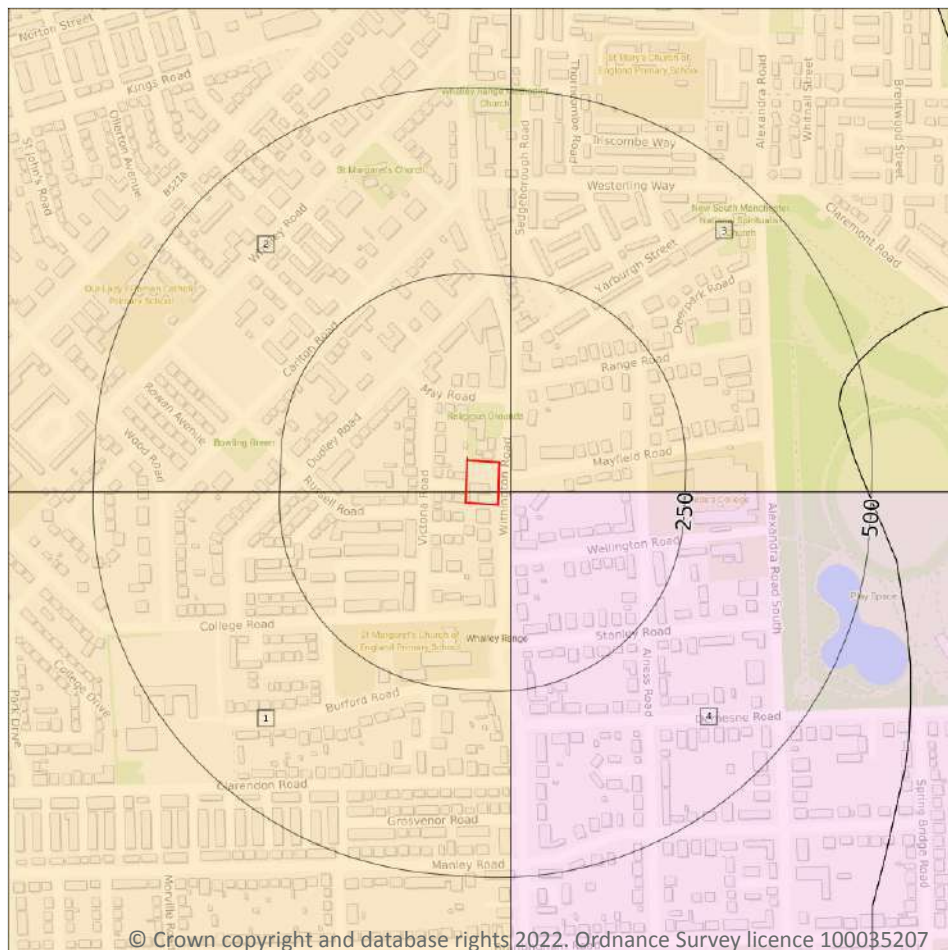
ID	Location	Designation	Description
1	On site	Principal	Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers
2	On site	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

4

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 36**



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: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Principal Flow mechanism: Mixed
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: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Principal Flow mechanism: Mixed
3	15m E	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: Low Aquifer type: Principal Flow mechanism: Mixed
4	17m E	Summary Classification: Secondary superficial aquifer - Medium Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: Low Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: Medium Aquifer type: Secondary Thickness: 3-10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Principal Flow mechanism: Mixed

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.



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- ### Site Outline
- Search buffers in metres (m)
-  Source Protection Zone 1
Inner catchment
 -  Source Protection Zone 2
Outer catchment
 -  Source Protection Zone 3
Total catchment
 -  Source Protection Zone 4
Zone of Special Interest
 -  Source Protection Zone 1c
Inner catchment - confined aquifer
 -  Source Protection Zone 2c
Outer catchment - confined aquifer
 -  Source Protection Zone 3c
Total catchment - confined aquifer
 -  Drinking water abstraction licences
 -  Drinking water abstraction licences
Polygon features
 -  Drinking water abstraction licences
Linear features
 -  Groundwater abstraction licence (point)
 -  Groundwater abstraction licence (area)
 -  Groundwater abstraction licence (linear)
 -  Surface Water Abstractions (point)
 -  Surface Water Abstractions (area)
 -  Surface Water Abstractions (linear)

38

ID	Location	Details	
-	844m N	Status: Historical Licence No: 2569007009 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER" Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -
-	844m N	Status: Historical Licence No: 2569007009 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER" Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -
-	844m N	Status: Historical Licence No: 2569007009 Details: General Cooling (Existing Licences Only) (Low Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m ³): 66826.2 Max Daily Volume (m ³): 372.772 Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 101 Version Start Date: 07/10/2000 Version End Date: -
-	844m N	Status: Historical Licence No: 2569007009 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS LANE WEST MANCHESTER Data Type: Point Name: HYDES BREWERY LTD Easting: 383220 Northing: 395850	Annual Volume (m ³): 66826.2 Max Daily Volume (m ³): 372.772 Original Application No: - Original Start Date: 21/02/1966 Expiry Date: - Issue No: 103 Version Start Date: 19/07/2018 Version End Date: -

ID	Location	Details	
-	1237m NE	Status: Active Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383865 Northing: 395909	Annual Volume (m ³): 227,000 Max Daily Volume (m ³): 900 Original Application No: NPS/WR/015793 Original Start Date: 15/02/1966 Expiry Date: - Issue No: 103 Version Start Date: 08/05/2014 Version End Date: -
-	1237m NE	Status: Active Licence No: 2569007007 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383865 Northing: 395909	Annual Volume (m ³): 227,000 Max Daily Volume (m ³): 900 Original Application No: NPS/WR/015793 Original Start Date: 15/02/1966 Expiry Date: - Issue No: 103 Version Start Date: 08/05/2014 Version End Date: -
-	1256m NE	Status: Historical Licence No: 2569007007 Details: Process water Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER" Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/08/1995 Version End Date: -
-	1256m NE	Status: Historical Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: "BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER" Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 16/08/1995 Version End Date: -



ID	Location	Details	
-	1256m NE	Status: Historical Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/12/2003 Version End Date: -
-	1256m NE	Status: Historical Licence No: 2569007007 Details: Process water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES, MOSS SIDE, MANCHESTER Data Type: Point Name: SCOTTISH COURAGE BREWING LTD Easting: 383900 Northing: 395900	Annual Volume (m ³): - Max Daily Volume (m ³): - Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 100 Version Start Date: 31/12/2003 Version End Date: -
-	1256m NE	Status: Historical Licence No: 2569007007 Details: General Cooling (Existing Licences Only) (High Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383900 Northing: 395900	Annual Volume (m ³): 227000 Max Daily Volume (m ³): 900 Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 23/11/2009 Version End Date: -
-	1256m NE	Status: Historical Licence No: 2569007007 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT PREMISES MOSS SIDE MANCHESTER Data Type: Point Name: Heineken UK Ltd Easting: 383900 Northing: 395900	Annual Volume (m ³): 227000 Max Daily Volume (m ³): 900 Original Application No: - Original Start Date: 15/02/1966 Expiry Date: - Issue No: 102 Version Start Date: 23/11/2009 Version End Date: -



ID	Location	Details	
-	1674m W	Status: Historical Licence No: 2569007080 Details: Process Water Direct Source: Ground Water - North West Region Point: BOREHOLE AT WARWICK ROAD SOUTH Data Type: Point Name: TRAFFORD METAL FINISHERS MANCHESTER LTD Easting: 381290 Northing: 395320	Annual Volume (m ³): 75000 Max Daily Volume (m ³): 432 Original Application No: - Original Start Date: 10/02/1999 Expiry Date: 10/02/2009 Issue No: 103 Version Start Date: 14/05/2007 Version End Date: -
-	1856m NE	Status: Active Licence No: NW/069/0004/003 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Ground Water - North West Region Point: BOREHOLE AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University Easting: 383715 Northing: 396746	Annual Volume (m ³): 274,115 Max Daily Volume (m ³): 751 Original Application No: NPS/WR/008077 Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/01/2015 Version End Date: -
-	1856m NE	Status: Active Licence No: NW/069/0004/003 Details: Heat Pump Direct Source: Ground Water - North West Region Point: BOREHOLE AT MANCHESTER METROPOLITAN UNIVERSITY Data Type: Point Name: Manchester Metropolitan University Easting: 383715 Northing: 396746	Annual Volume (m ³): 274,115 Max Daily Volume (m ³): 751 Original Application No: NPS/WR/008077 Original Start Date: 20/09/2013 Expiry Date: 31/03/2027 Issue No: 1 Version Start Date: 01/01/2015 Version End Date: -

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

5.7 Surface water abstractions

Records within 2000m

0

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.

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



5.8 Potable abstractions

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

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

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

5.9 Source Protection Zones

Records within 500m	0
---------------------	---

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

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

5.10 Source Protection Zones (confined aquifer)

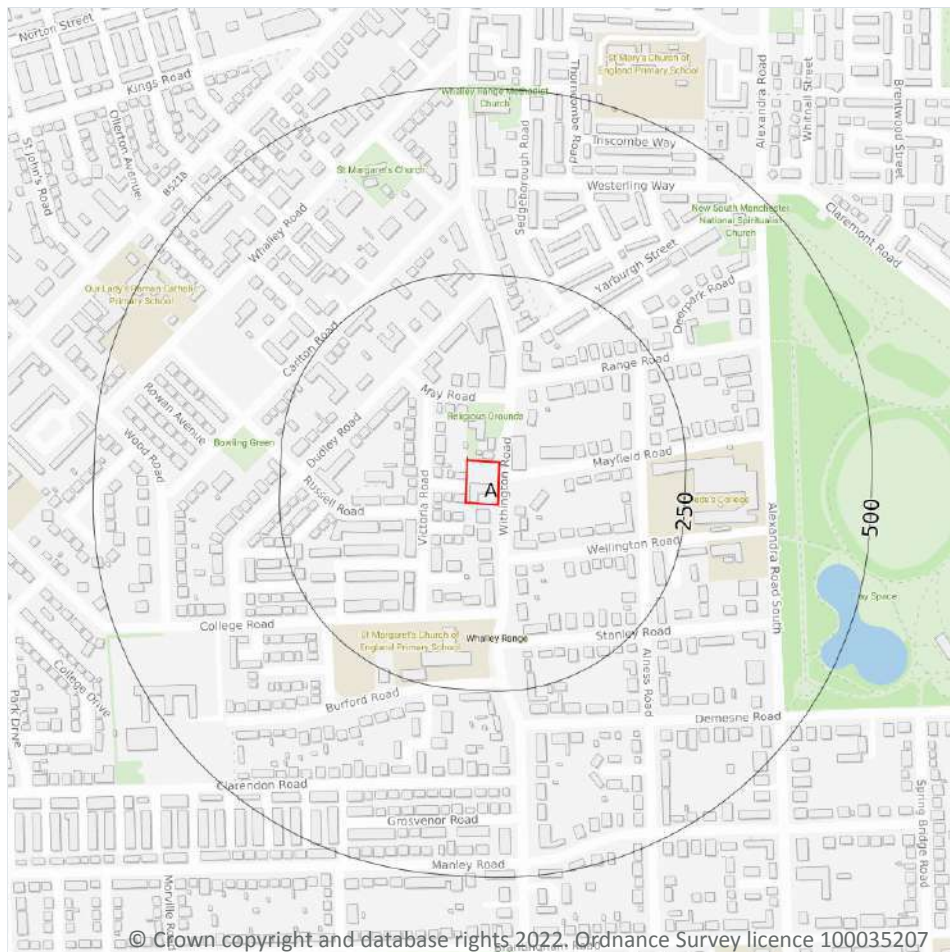
Records within 500m	0
---------------------	---

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

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



6 Hydrology



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

6.1 Water Network (OS MasterMap)

Records within 250m

0

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

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m

0

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

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1
------------------------	----------

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

Features are displayed on the Hydrology map on **page 44**

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

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

6.4 WFD Surface water bodies

Records identified	1
---------------------------	----------

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 44**

ID	Location	Type	Name	Water body ID	Overall rating	Chemical rating	Ecological rating	Year
-	2040m NW	River	Irwell / Manchester Ship Canal (Irk to confluence with Upper Mers	GB112069061452	Moderate	Fail	Moderate	2019

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



6.5 WFD Groundwater bodies

Records on site

1

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

Features are displayed on the Hydrology map on **page 44**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
A	On site	Manchester and East Cheshire Permo-Triassic Sandstone Aquifers	<u>GB41201G101100</u>	Poor	Poor	Poor	2019

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



7 River and coastal flooding



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

7.1 Risk of flooding from rivers and the sea

Records within 50m

2

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 47**

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

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

7.2 Historical Flood Events

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

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

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

7.3 Flood Defences

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

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

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

7.4 Areas Benefiting from Flood Defences

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

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

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

7.5 Flood Storage Areas

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

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

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

River and coastal flooding - Flood Zones



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

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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 47**

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

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



7.7 Flood Zone 3

Records within 50m

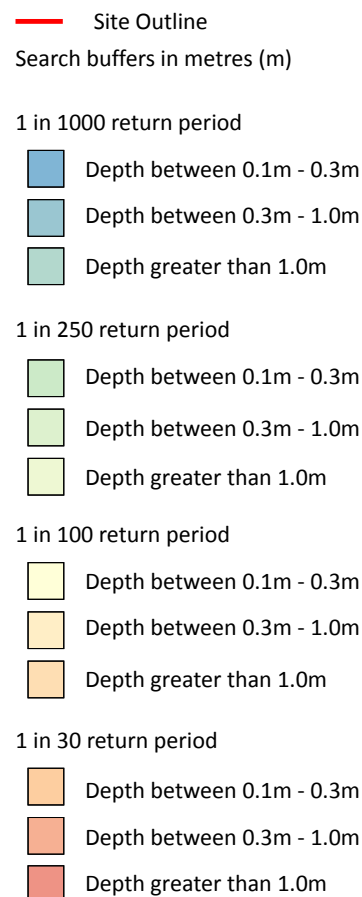
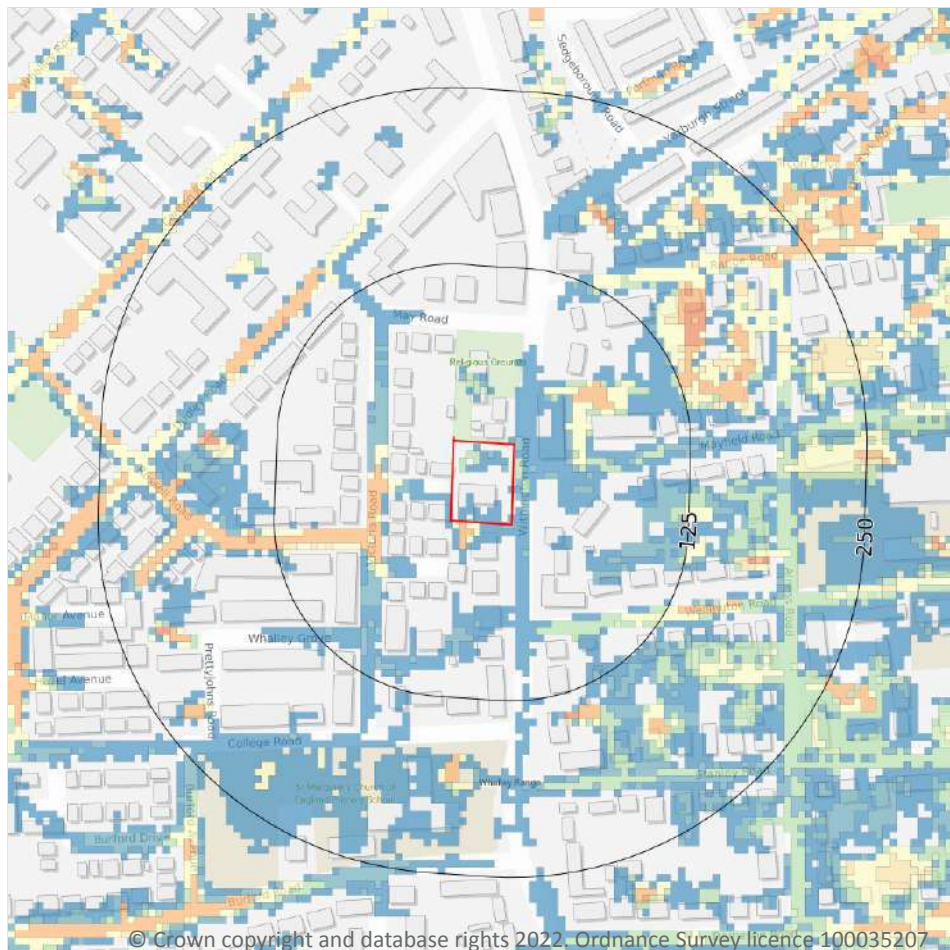
0

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

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



8 Surface water flooding



8.1 Surface water flooding

Highest risk on site

1 in 30 year, 0.1m - 0.3m

Highest risk within 50m

1 in 30 year, 0.1m - 0.3m

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

Features are displayed on the Surface water flooding map on **page 51**

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.

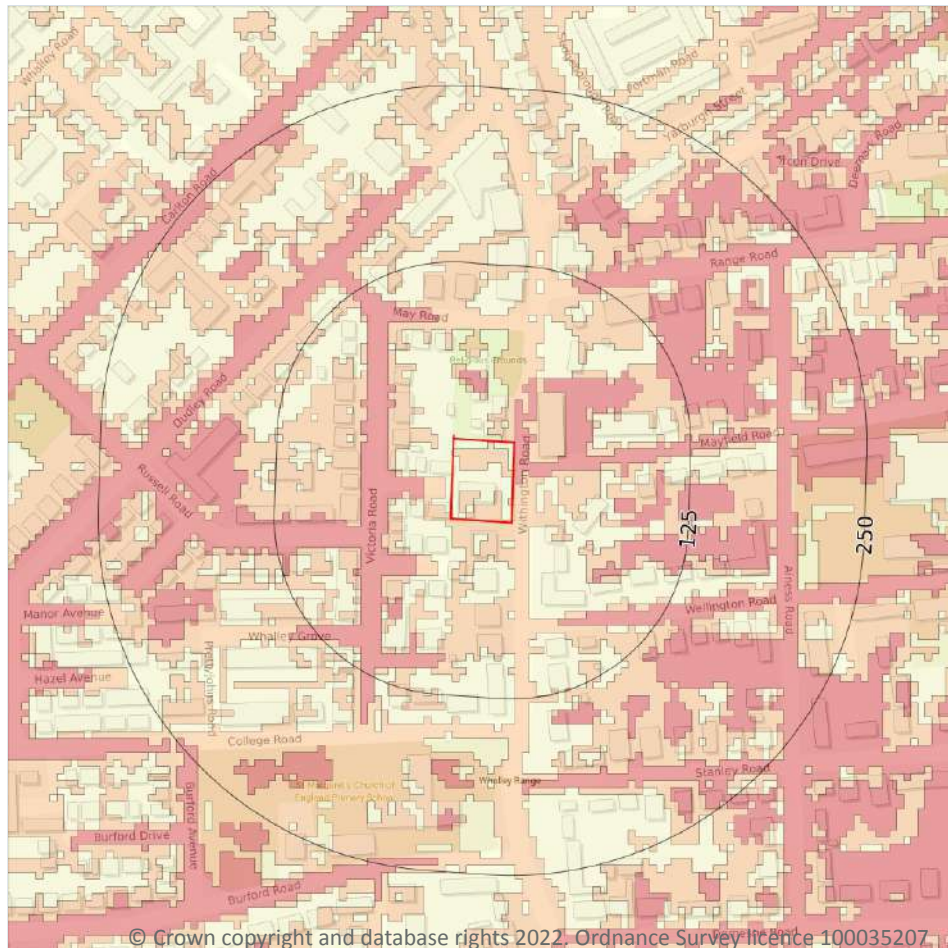
The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.1m and 0.3m
1 in 100 year	Between 0.1m and 0.3m
1 in 30 year	Between 0.1m and 0.3m

This data is sourced from Ambiantal Risk Analytics.



9 Groundwater flooding



— Site Outline
Search buffers in metres (m)

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

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9.1 Groundwater flooding

Highest risk on site

Moderate-High

Highest risk within 50m

High

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

Features are displayed on the Groundwater flooding map on **page 53**

This data is sourced from Ambiantal Risk Analytics.

10 Environmental designations

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m**0**

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

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

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m**0**

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

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

10.3 Special Areas of Conservation (SAC)

Records within 2000m**0**

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

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

10.4 Special Protection Areas (SPA)

Records within 2000m**0**

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

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



10.5 National Nature Reserves (NNR)

Records within 2000m**0**

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

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

10.6 Local Nature Reserves (LNR)

Records within 2000m**0**

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

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

10.7 Designated Ancient Woodland

Records within 2000m**0**

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

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

10.8 Biosphere Reserves

Records within 2000m**0**

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

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

10.9 Forest Parks

Records within 2000m**0**

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

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m**0**

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

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

10.11 Green Belt

Records within 2000m**0**

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

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

10.12 Proposed Ramsar sites

Records within 2000m**0**

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

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m**0**

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

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



10.14 Potential Special Protection Areas (pSPA)

Records within 2000m

0

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

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m

0

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

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

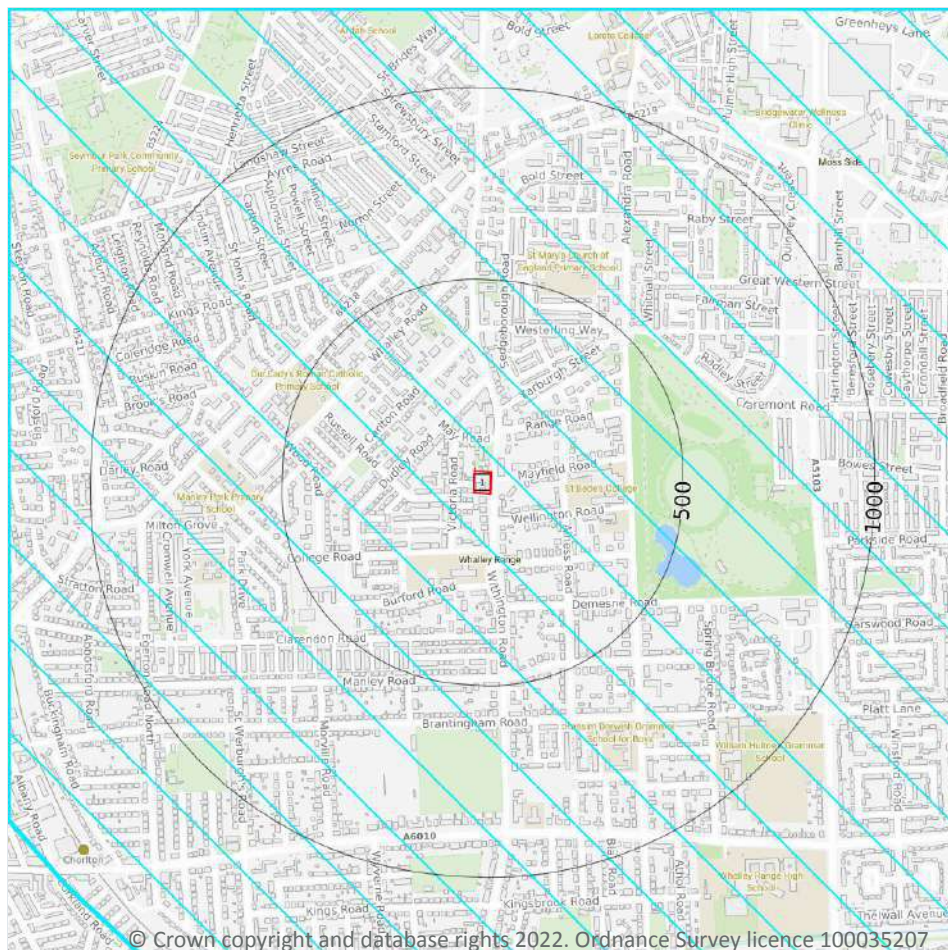
Records within 2000m

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 58**

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

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m

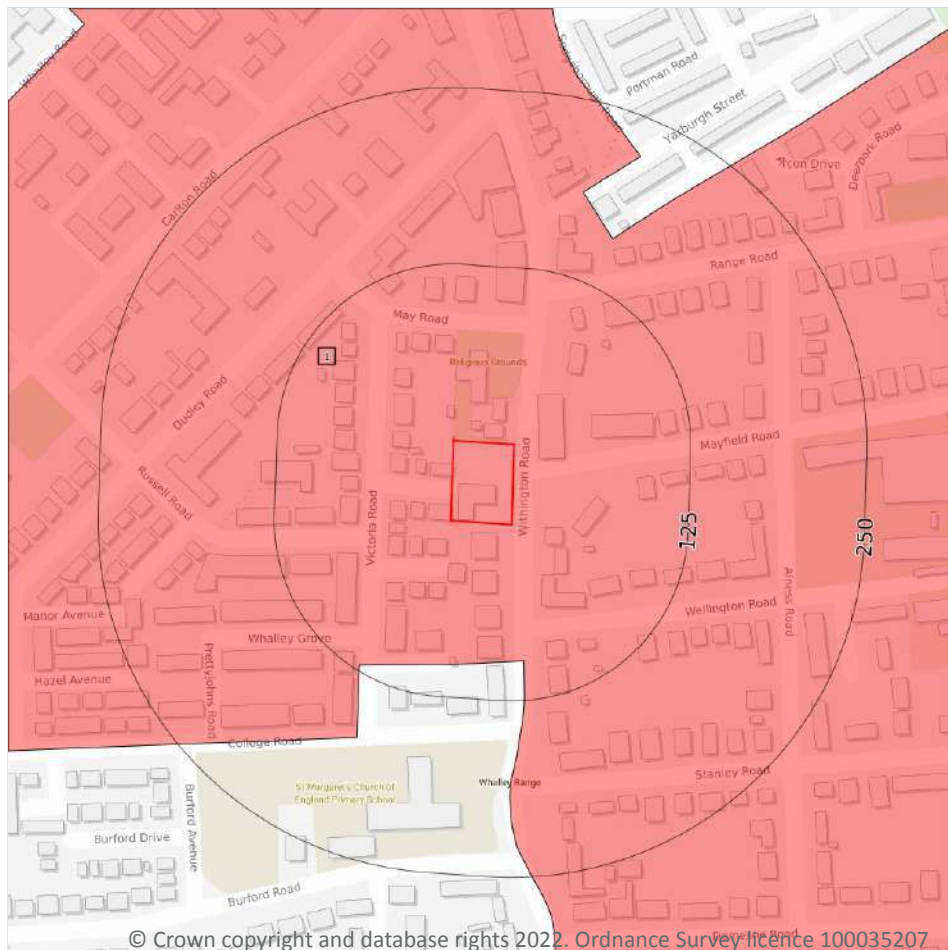
0

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

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



11 Visual and cultural designations



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

11.1 World Heritage Sites

Records within 250m

0

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

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

11.2 Area of Outstanding Natural Beauty

Records within 250m**0**

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

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

11.3 National Parks

Records within 250m**0**

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

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

11.4 Listed Buildings

Records within 250m**0**

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.

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 60**

ID	Location	Name	District	Date of designation
1	On site	Whalley Range	Manchester	01/10/1991

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

11.6 Scheduled Ancient Monuments

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

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

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

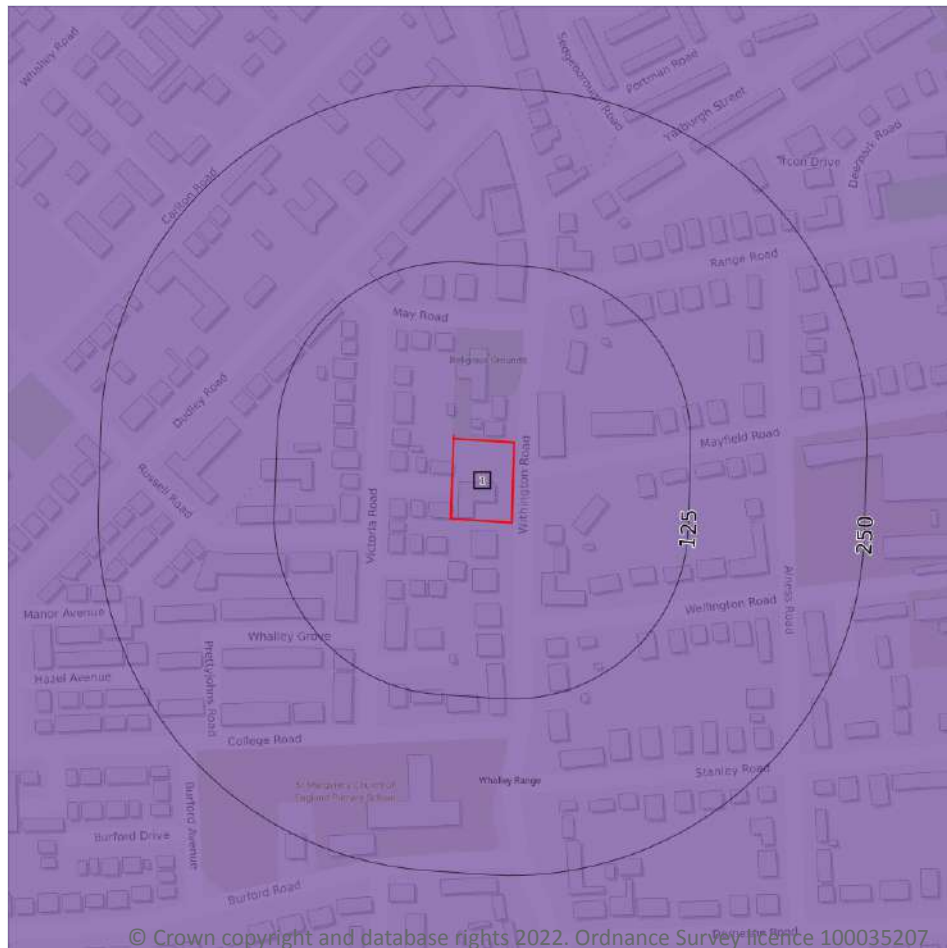
11.7 Registered Parks and Gardens

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

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

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

12 Agricultural designations



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

12.1 Agricultural Land Classification

Records within 250m

1

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

Features are displayed on the Agricultural designations map on **page 63**

ID	Location	Classification	Description
1	On site	Urban	-

This data is sourced from Natural England.



12.2 Open Access Land

Records within 250m**0**

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

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

12.3 Tree Felling Licences

Records within 250m**0**

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

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m**0**

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

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m**0**

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

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m**0**

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

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m**0**

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

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m**0**

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

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

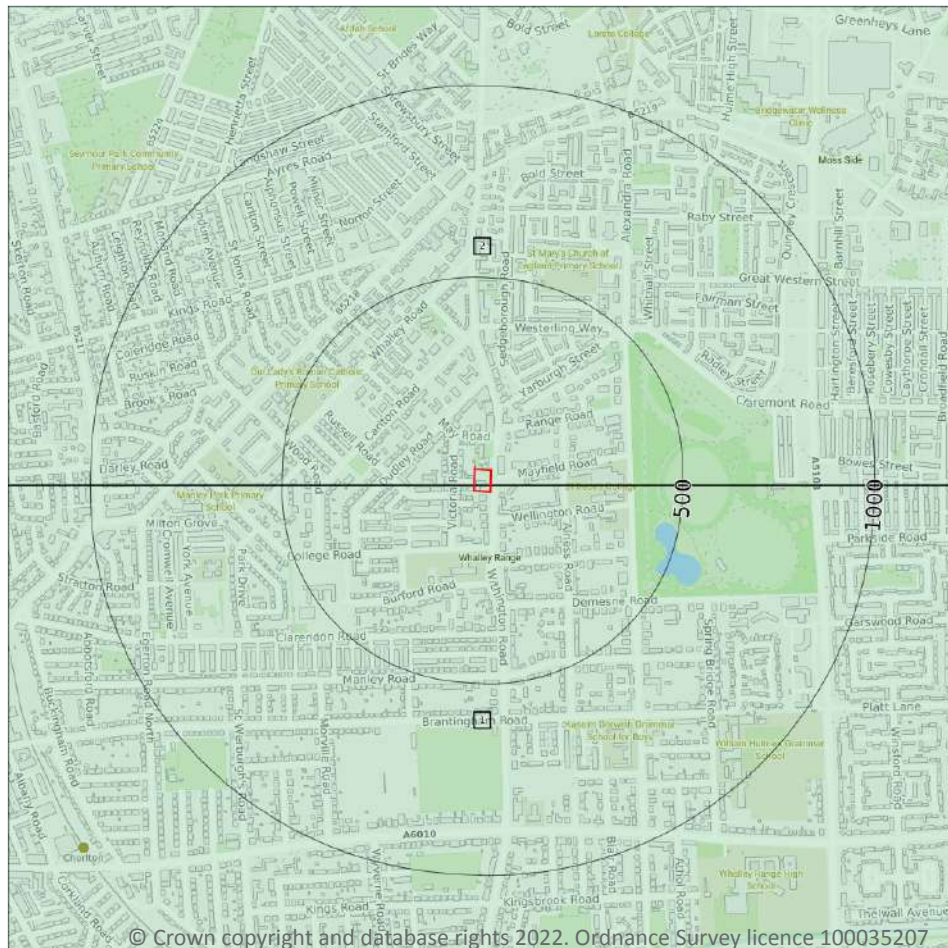
Records within 250m**0**

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

This data is sourced from Natural England.



14 Geology 1:10,000 scale - Availability



— Site Outline
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

14.1 10k Availability

Records within 500m

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.

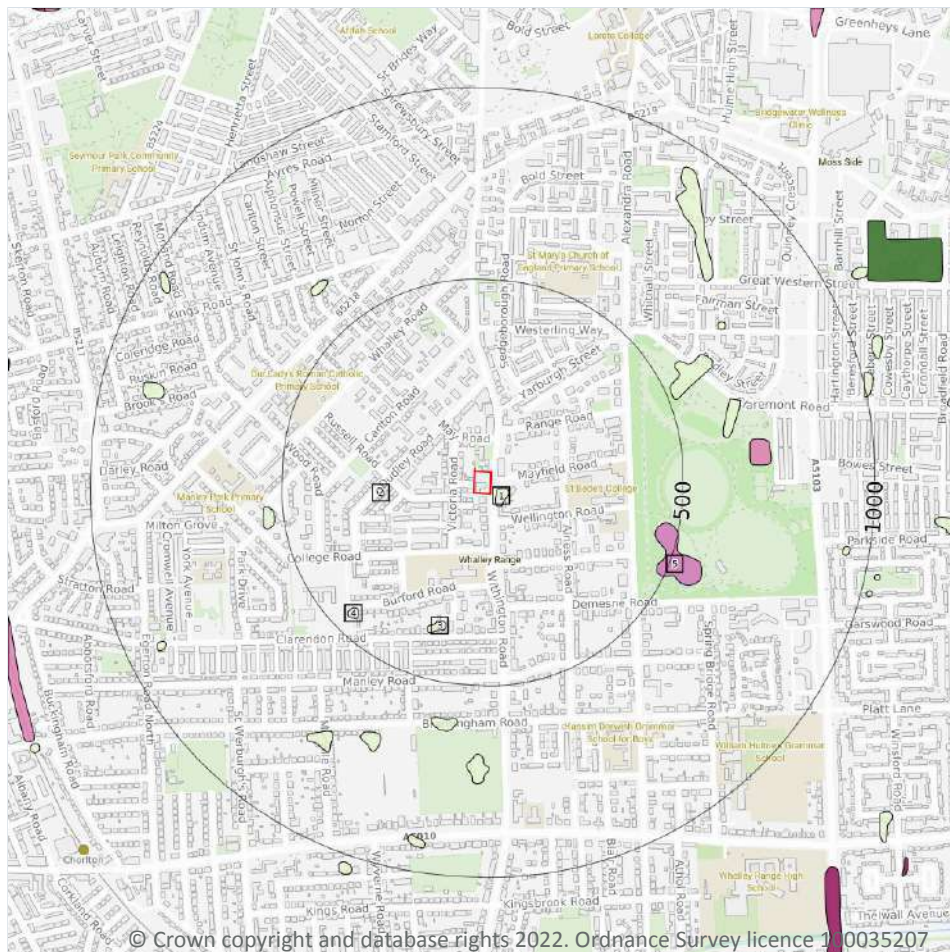
Features are displayed on the Geology 1:10,000 scale - Availability map on **page 66**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	Full	No coverage	SJ89SW
2	On site	Full	Full	Full	No coverage	SJ89NW

This data is sourced from the British Geological Survey.



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



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

14.2 Artificial and made ground (10k)

Records within 500m

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 67**

ID	Location	LEX Code	Description	Rock description
1	15m E	WMGR-ARTDP	Infilled Ground	Artificial Deposit
2	234m W	WMGR-ARTDP	Infilled Ground	Artificial Deposit
3	343m S	WMGR-ARTDP	Infilled Ground	Artificial Deposit
4	429m SW	WMGR-ARTDP	Infilled Ground	Artificial Deposit

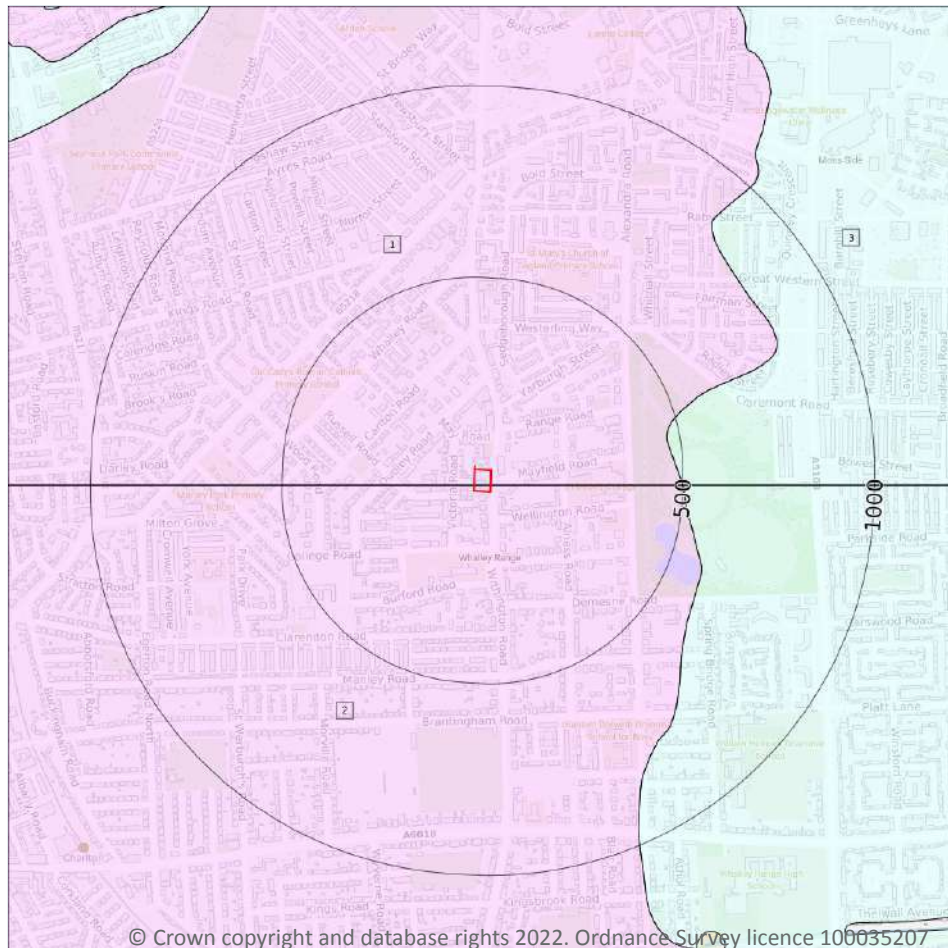


ID	Location	LEX Code	Description	Rock description
5	441m E	WGR-VOID	Worked Ground (Undivided)	Void

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

3

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 69**

ID	Location	LEX Code	Description	Rock description
1	On site	GFSDDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
2	On site	GFSDDD-XSV	Glaciofluvial Sheet Deposits, Devensian - Sand And Gravel	Sand And Gravel
3	465m E	TILLDD-MMTN	Till, Devensian - Diamicton	Diamicton

This data is sourced from the British Geological Survey.



14.4 Landslip (10k)

Records within 500m

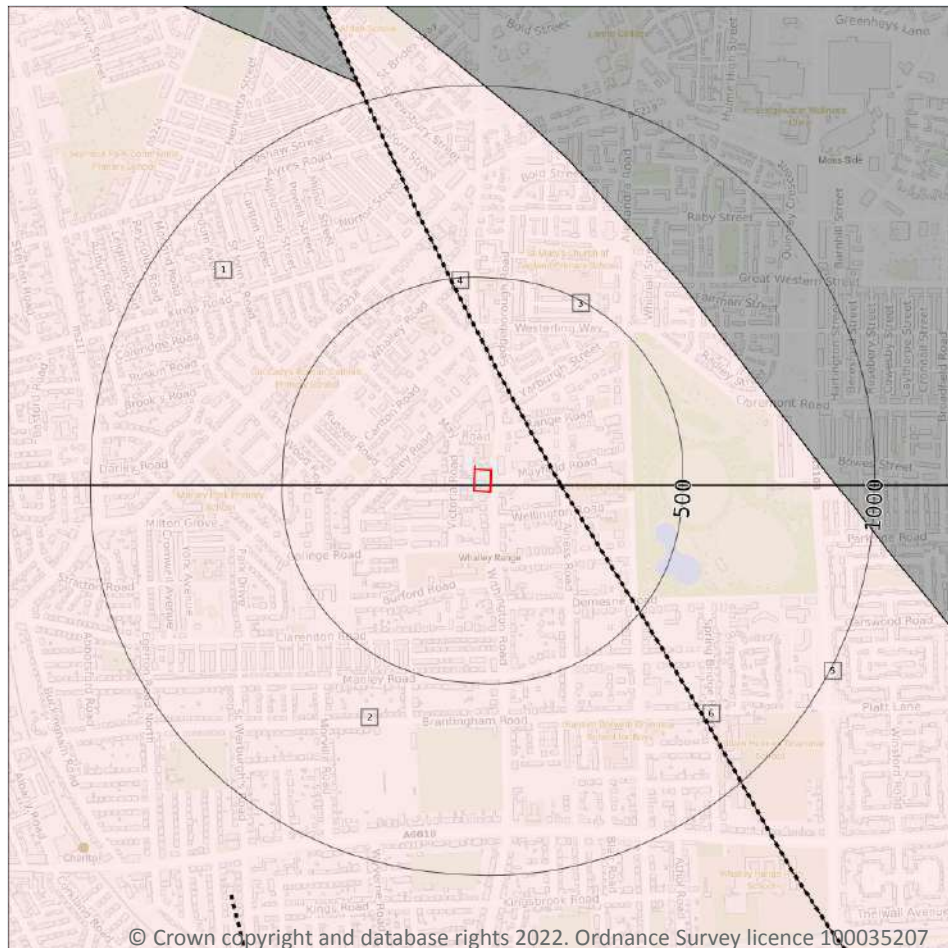
0

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

This data is sourced from the British Geological Survey.



Geology 1:10,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

14.5 Bedrock geology (10k)

Records within 500m

4

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 71**

ID	Location	LEX Code	Description	Rock age
1	On site	WLSF-SDST	Wilmslow Sandstone Formation - Sandstone	Early Triassic Epoch
2	On site	WLSF-SDST	Wilmslow Sandstone Formation - Sandstone	Early Triassic Epoch
3	140m NE	WLSF-SDST	Wilmslow Sandstone Formation - Sandstone	Early Triassic Epoch
5	183m E	WLSF-SDST	Wilmslow Sandstone Formation - Sandstone	Early Triassic Epoch



This data is sourced from the British Geological Survey.

14.6 Bedrock faults and other linear features (10k)

Records within 500m

2

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.

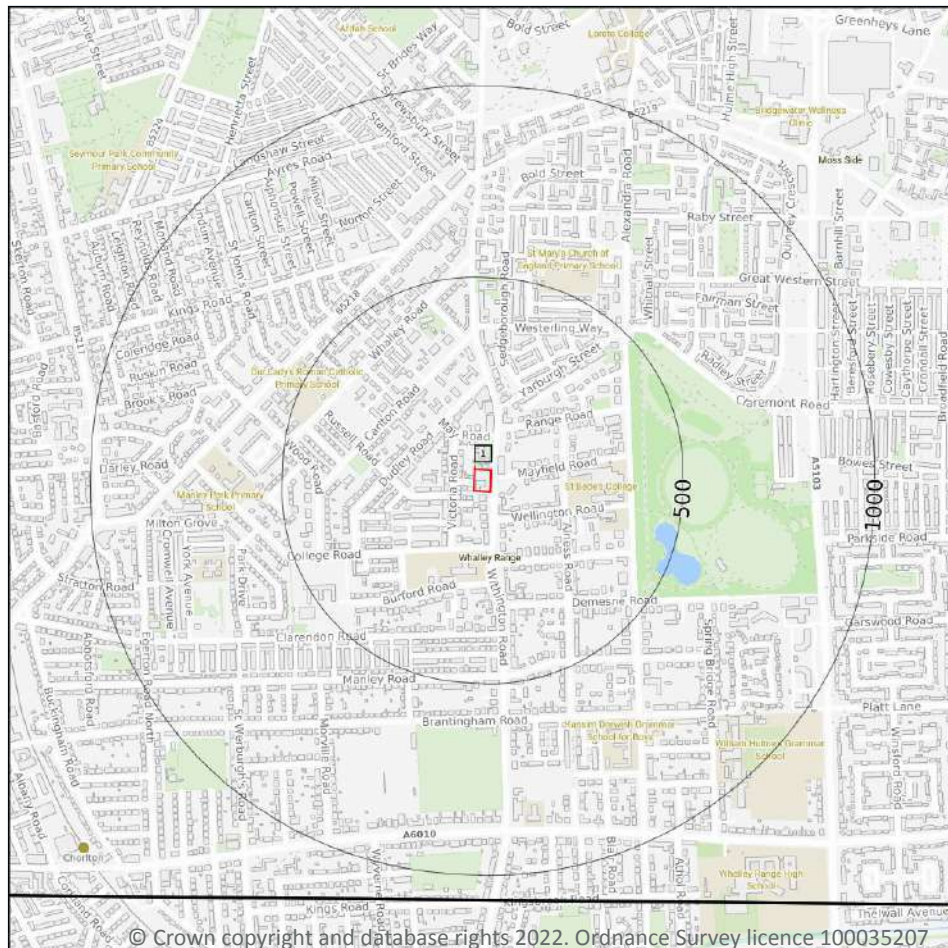
Features are displayed on the Geology 1:10,000 scale - Bedrock map on **page 71**

ID	Location	Category	Description
4	140m NE	FAULT	Normal fault, inferred; crossmarks on downthrow side
6	183m E	FAULT	Normal fault, inferred; crossmarks on downthrow side

This data is sourced from the British Geological Survey.



15 Geology 1:50,000 scale - Availability



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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 73**

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

This data is sourced from the British Geological Survey.



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

15.2 Artificial and made ground (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m

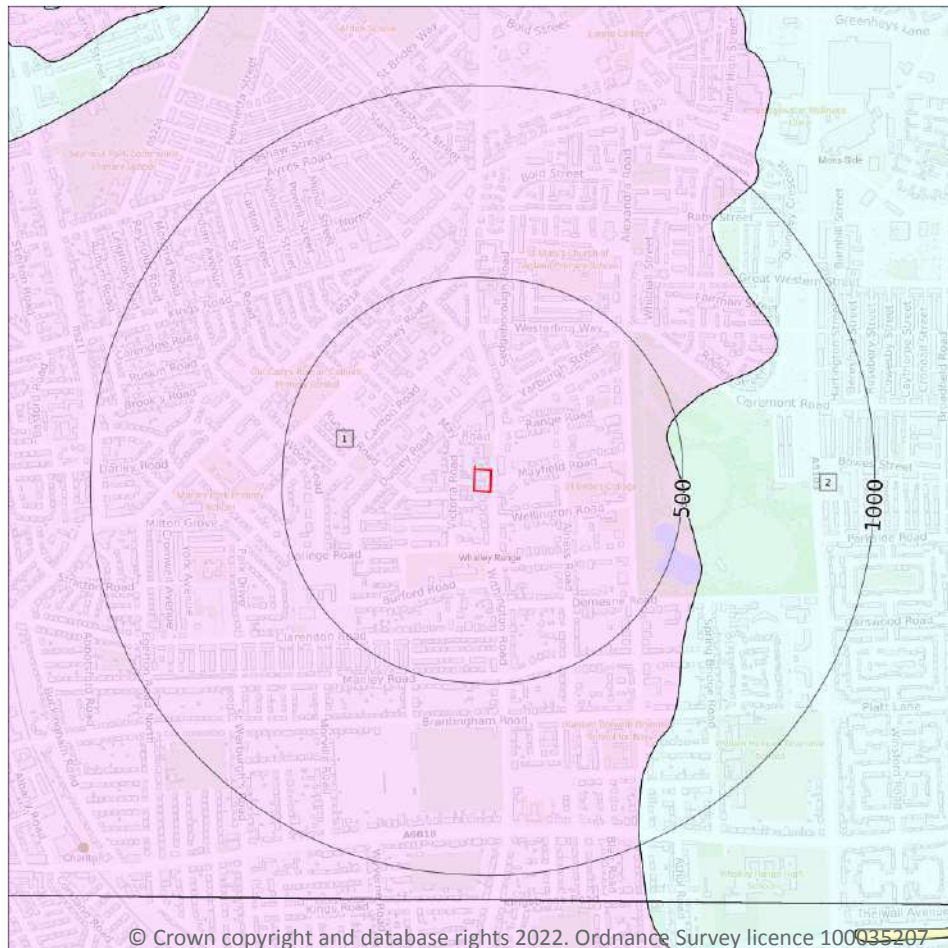
0

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

This data is sourced from the British Geological Survey.



Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m

2

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 75**

ID	Location	LEX Code	Description	Rock description
1	On site	GFSDD-XSV	GLACIOFLUVIAL SHEET DEPOSITS, DEVENSIAN	SAND AND GRAVEL
2	465m E	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

This data is sourced from the British Geological Survey.



15.5 Superficial 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 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
On site	Intergranular	Very High	High

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m

0

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

This data is sourced from the British Geological Survey.

15.7 Landslip permeability (50k)

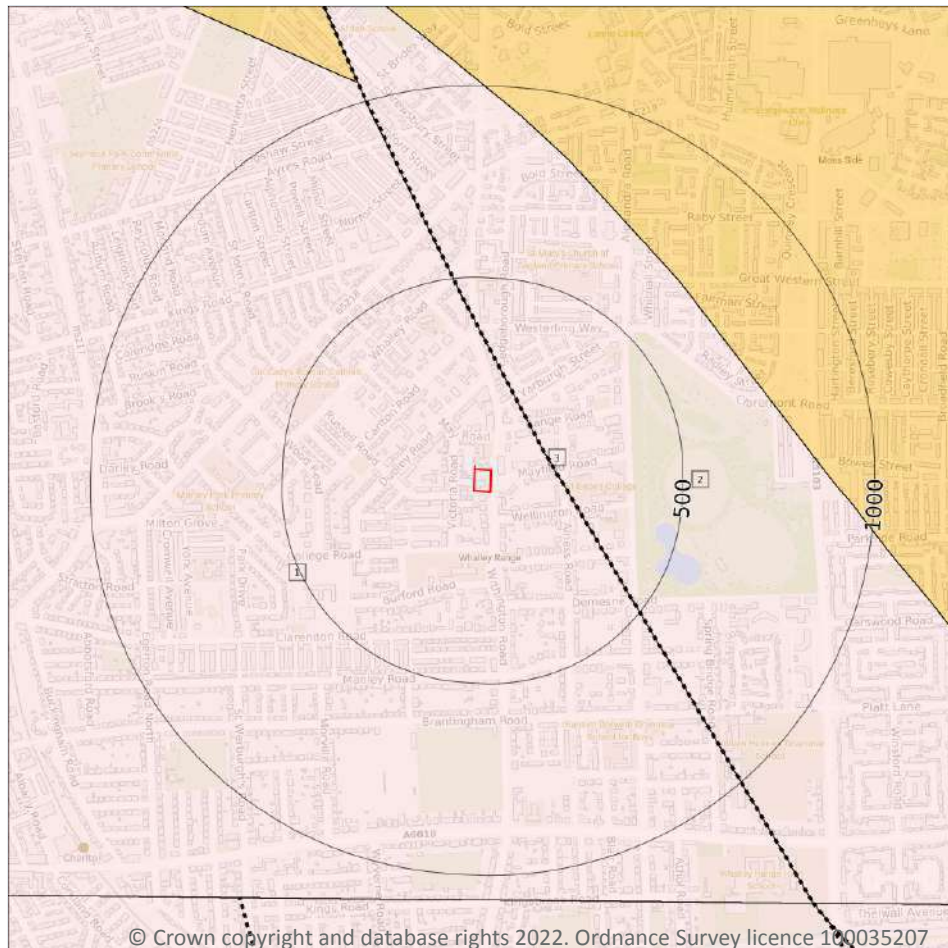
Records within 50m

0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



— Site Outline

Search buffers in metres (m)

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

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

15.8 Bedrock geology (50k)

Records within 500m

2

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

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

ID	Location	LEX Code	Description	Rock age
1	On site	WLSF-SDST	WILMSLOW SANDSTONE FORMATION - SANDSTONE	-
2	145m NE	WLSF-SDST	WILMSLOW SANDSTONE FORMATION - SANDSTONE	-

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	Intergranular	High	High
On site	Intergranular	High	High

This data is sourced from the British Geological Survey.

15.10 Bedrock faults and other linear features (50k)

Records within 500m

1

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

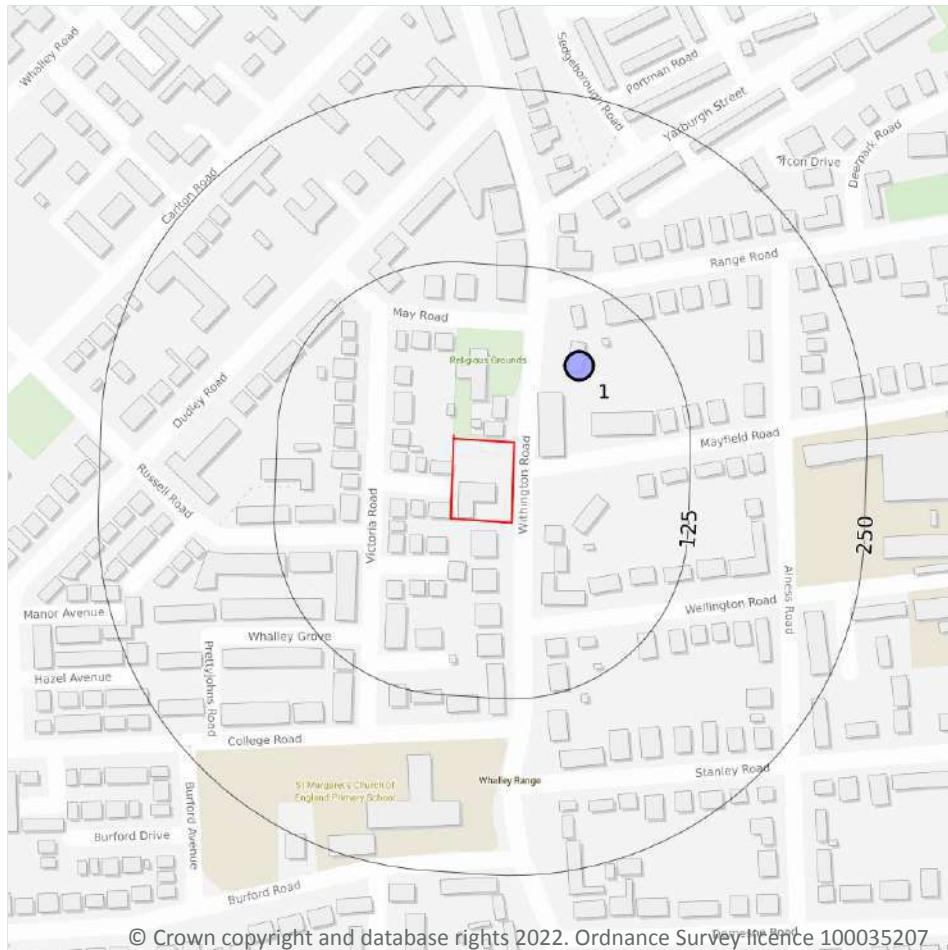
Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 77**

ID	Location	Category	Description
3	145m NE	FAULT	Fault, inferred

This data is sourced from the British Geological Survey.



16 Boreholes



— Site Outline
Search buffers in metres (m)

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

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16.1 BGS Boreholes

Records within 250m

1

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.

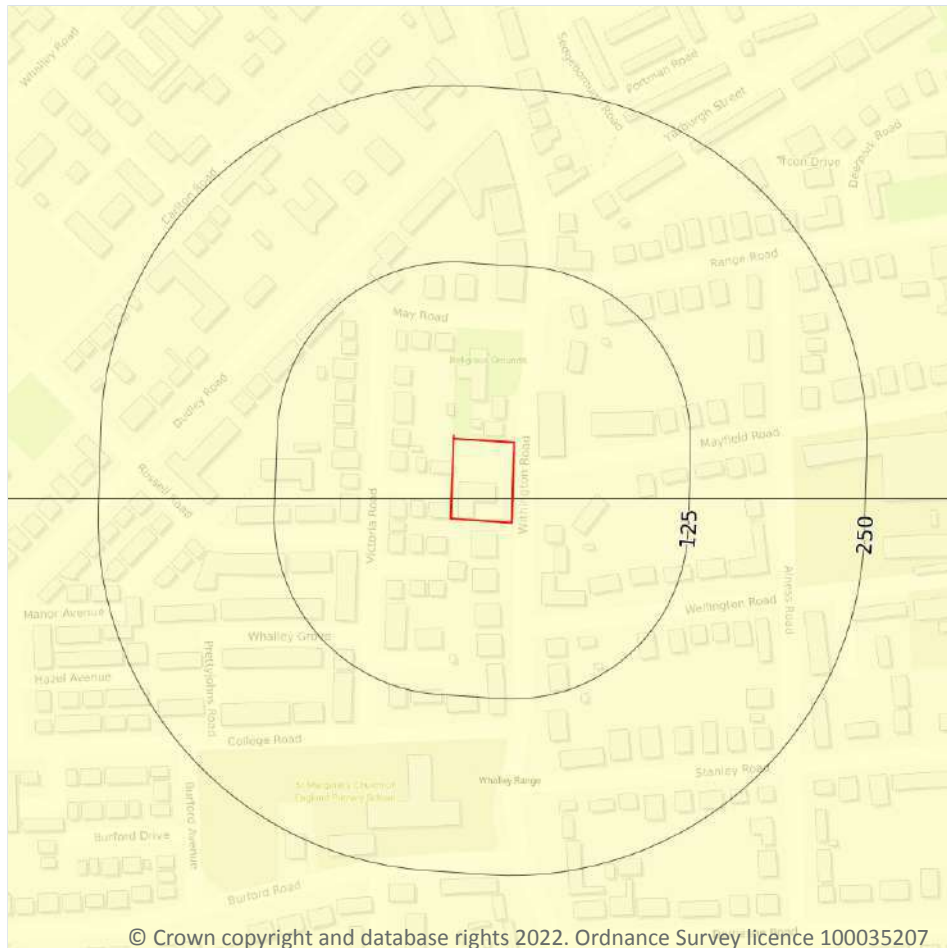
Features are displayed on the Boreholes map on **page 79**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	71m NE	383030 395094	OFF WITHINGTON ROAD WHALLEY RANGE 1	5.0	N	20266214

This data is sourced from the British Geological Survey.



17 Natural ground subsidence - Shrink swell clays



— Site Outline
Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m

1

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

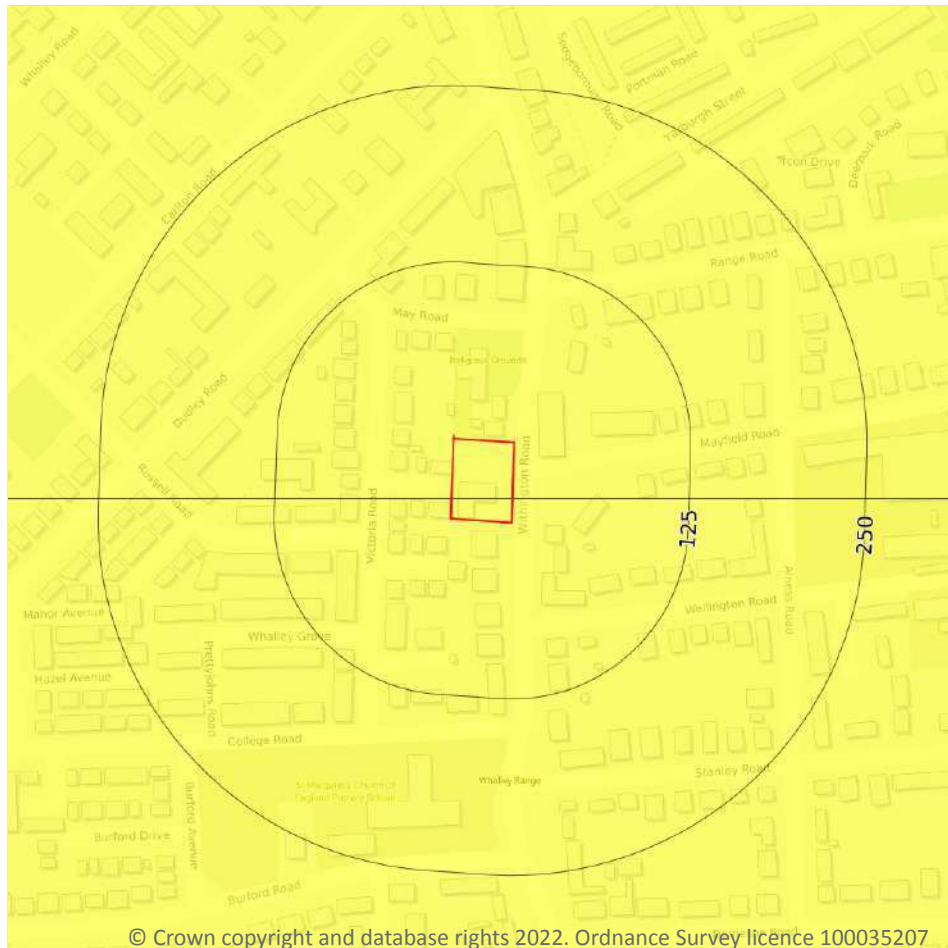
Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 80**

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

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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.

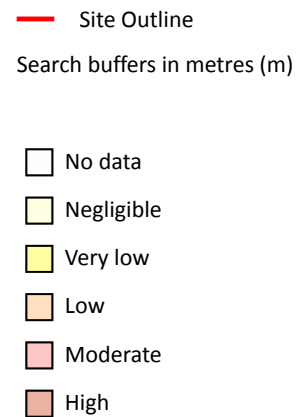
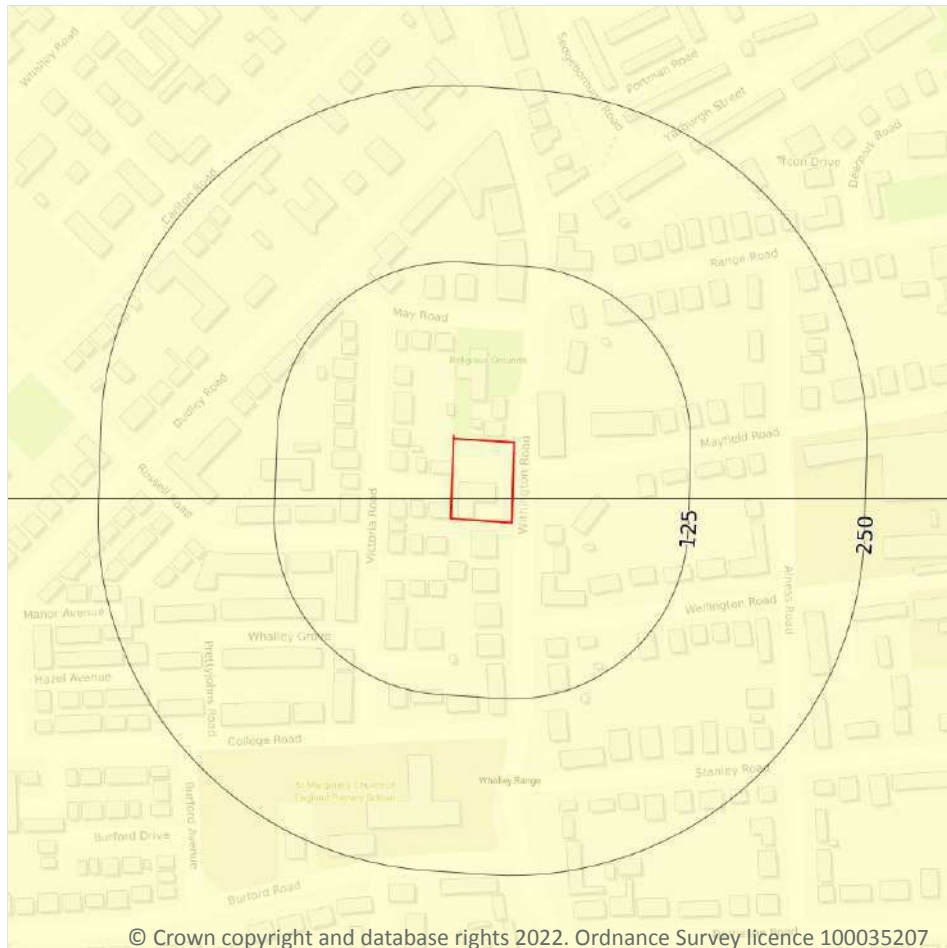
Features are displayed on the Natural ground subsidence - Running sands map on **page 81**

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



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.

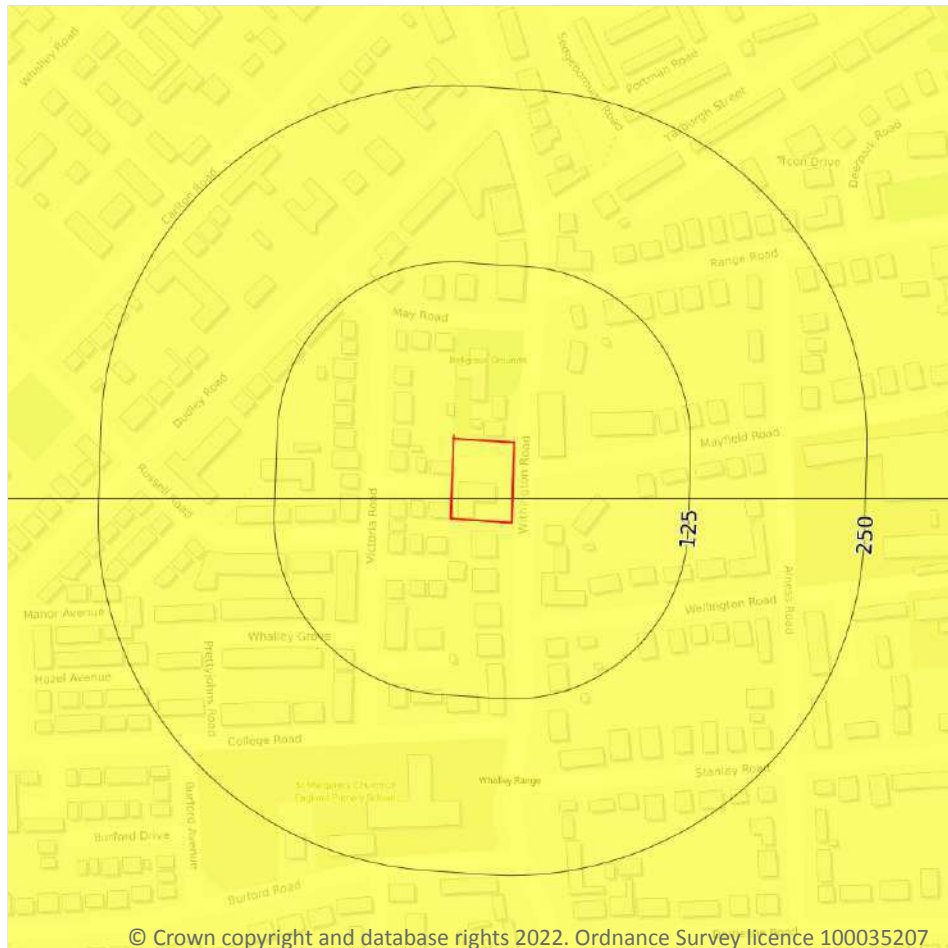
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 82**

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.

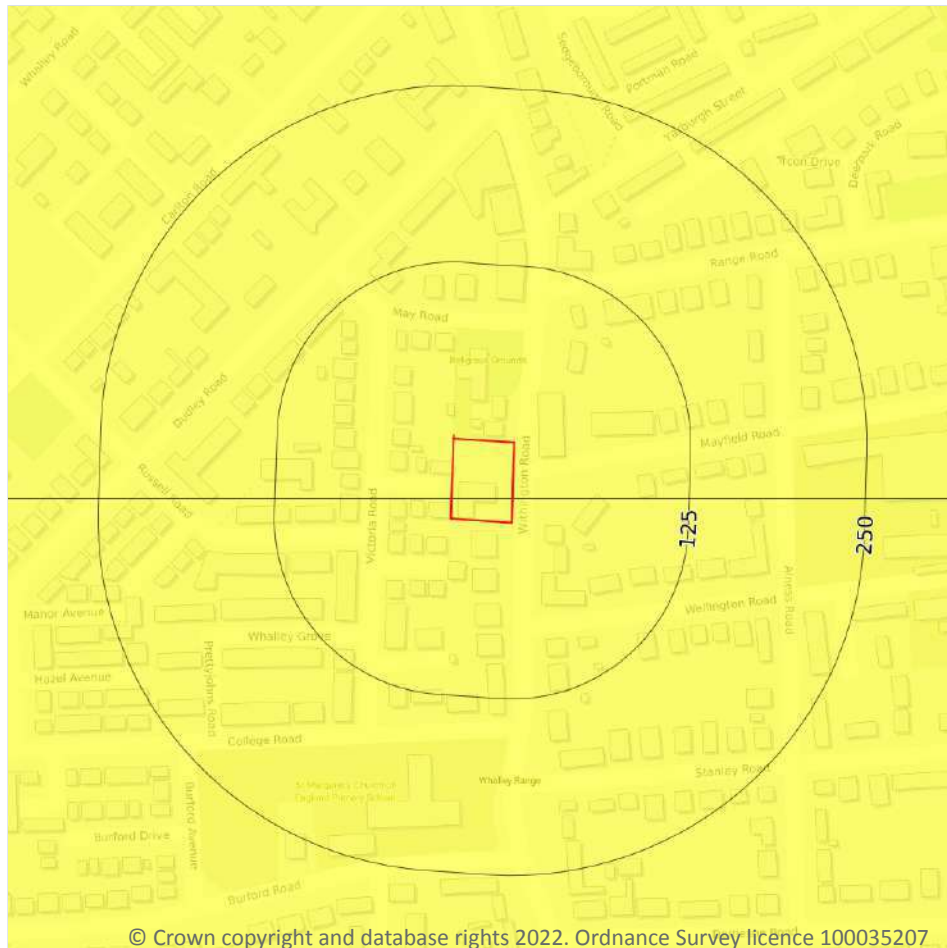
Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 83**

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

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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.

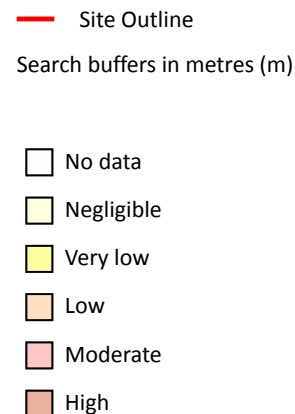
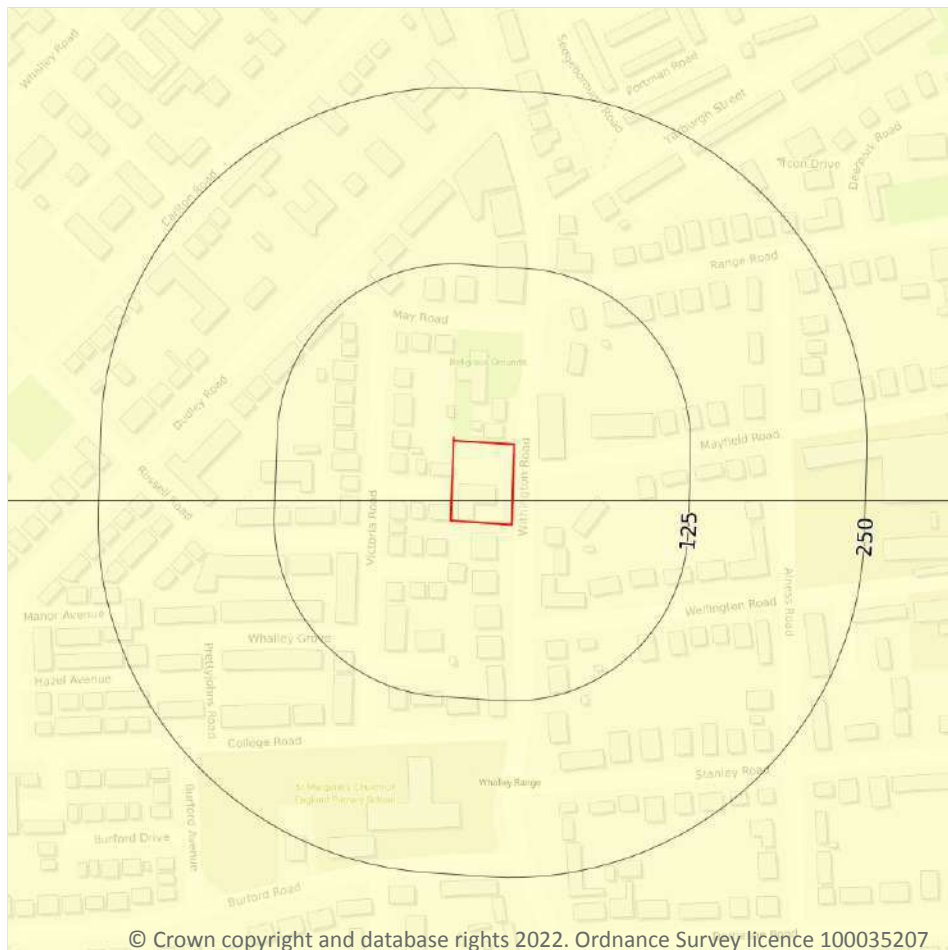
Features are displayed on the Natural ground subsidence - Landslides map on **page 84**

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 85**

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**2**

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 86**

ID	Location	Land Use	Year of mapping	Mapping scale
1	19m E	Pond	1851	1:10560
2	223m W	Pond	1851	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.

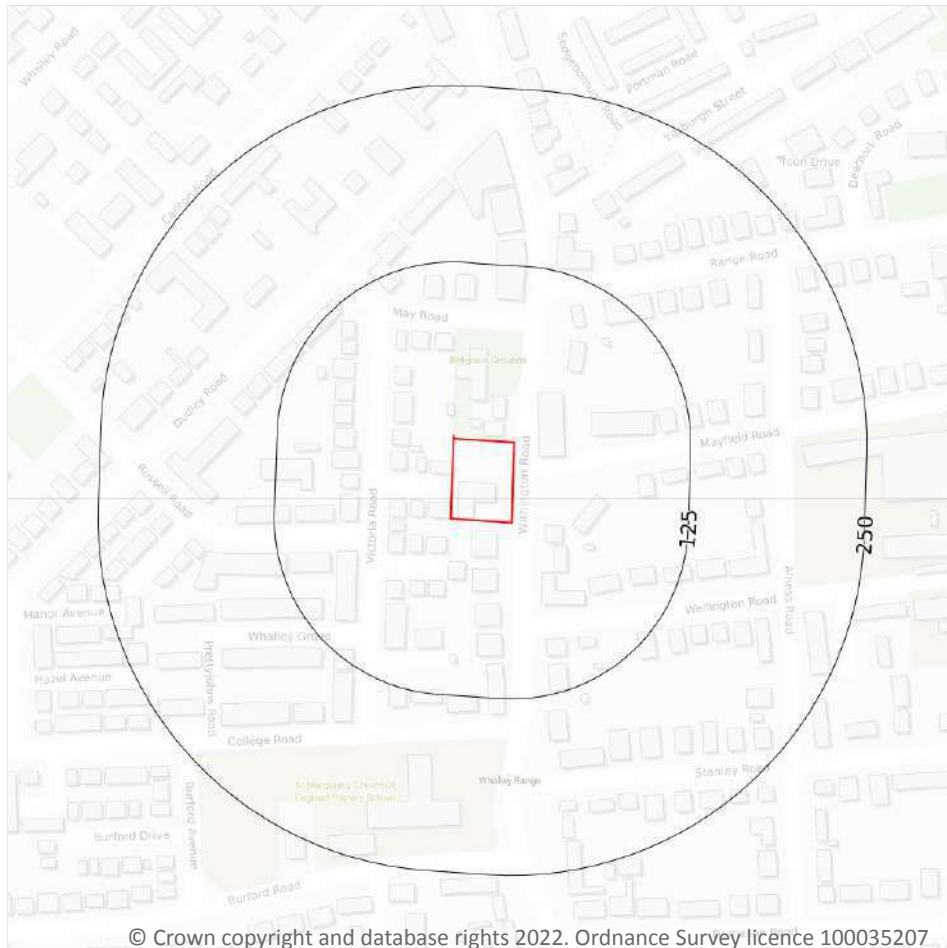
18.13 Clay mining

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



— Site Outline
Search buffers in metres (m)

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

19.1 Radon

Records on site

1

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

Features are displayed on the Radon map on **page 90**

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

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



20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m

4

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
On site	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
16m NE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
17m SE	15 - 25 mg/kg	No data	100 - 200 mg/kg	60 - 120 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m

6

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

Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
On site	22	3.8	91	63	0.4	86	23	34	8
On site	23	4	88	60	0.4	85	23	34	8



Location	Arsenic (mg/kg)	Bioaccessible Arsenic (mg/kg)	Lead (mg/kg)	Bioaccessible Lead (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Nickel (mg/kg)	Tin (mg/kg)
16m NE	20	3.5	228	157	1.3	89	31	34	5
17m SE	20	3.5	177	122	1.1	87	33	33	6
39m SW	23	4	252	173	1.5	84	30	33	5
40m W	24	4.2	275	189	1.8	83	32	33	5

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m

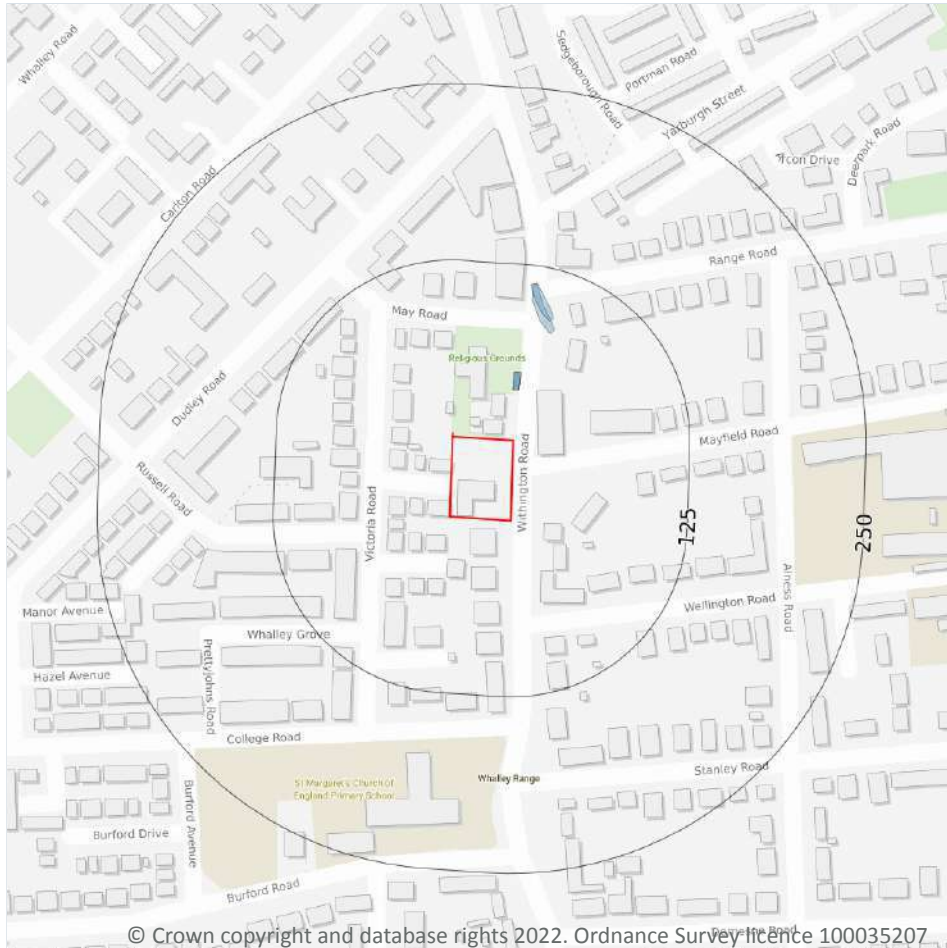
0

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
- Crossrail 1 Worksites
- 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

5

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

Features are displayed on the Railway infrastructure and projects map on **page 93**

Location	Land Use	Year of mapping	Mapping scale
36m N	Tramway Sidings	1907	2500
36m N	Tramway Sidings	1922	2500
36m N	Tramway Sidings	1933	2500
80m N	Tramway Sidings	1908	2500
88m N	Tramway Sidings	1889	2500

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**0**

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

This data is sourced from HS2 Ltd.



Data providers

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

Terms and conditions

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



APPENDIX C

Potential Pollutant Linkages

POTENTIAL RECEPTOR	COMMENTS	Include in PCM
PROPERTY: Other		
On Site		
Crops	None Intended on site	✗
Domestic Produce	Possibly in residential gardens	✓
Livestock	None Intended on site	✗
Domestic Animals	Possibly belonging to residential end users	✓
Game	None Intended on site	✗
Off Site		
Crops	Possibly in surrounding fields	✗
Domestic Produce	Possibly in residential properties close by	✓
Livestock	Unlikely due to urban setting	✗
Domestic Animals	May belong to adjacent residents	✓
Game	Unlikely due to urban setting	✗
PROPERTY: Buildings		
On Site		
	Residential Properties, services, flora	✓
Off Site		
	Residential Property, Services, flora	✓
HUMANS		
On Site		
Residents	Future Residents	✓
Construction workers	During ground excavations	✓
Employees	N/A	✗
Surface water users	No surface water abstractions located on site	✗
Off Site		
Residents	Residential properties close by	✓
Groundwater users	No existing groundwater abstractions within 250 m.	✗
Controlled Waters		
On Site		
Surface Waters	There are no surface water features located on the site	✗
Groundwater	The superficial Secondary A Aquifer and the underlying Principal Aquifer within the bedrock is a significant receptor.	✓
Off Site		
Controlled Waters	No surface waters within 250 m of the site.	✗
Ecological Systems		
On/Off Site		
SSSIs, national nature reserves, SACs etc	Not applicable to the site	✗

Table A: Potential Receptors to be considered in the Preliminary Conceptual Model

Link	Source	Hazard	Transport Mechanism	Pathway	Medium of Exposure	Receptor	Risk Summary*
1	Contaminated soils	Direct contact /ingestion of soil or dust	Direct contact with contaminated soil	Dermal contact/ingestion of soil at surface	Soil	Humans (on-site/off-site), domestic pets	Low
2	Contaminated soils	Particulate inhalation	Wind blown particulates	Inhalation of particulates	Air	Humans (on-site/off-site), domestic pets	Low
3	Contaminated Soils	Impaired produce growth	Uptake of contaminants by homegrown produce resulting in loss	Uptake during growth	Vegetable produce	Property (domestic produce)	Low
4	Contaminated Soils	Ingestion of Contaminants	Uptake of contaminants by homegrown produce	Consumption of homegrown produce	Vegetable produce	Humans	Low
5	Contaminated Soils	Vapour Inhalation	Volatilisation of organic compounds through unsaturated zone of soil leading to inhalation	Inhalation of Vapours	Air	Humans (on-site/off-site, domestic pets)	Low
6	Contaminated Soils	Damage to structure/services	Direct contact of contaminants with building structures/services	Direct contact	Soil/Water	Flora, services	Low
7	Contaminated Soils	Pollution of underlying groundwater	Dissolution or suspension of contaminants into groundwaters (Superficial and Bedrock Aquifer)	Dissolution or Suspension	Water	Secondary A and Principal Aquifer	Low

Table B: Preliminary Conceptual Model

***Relative Risk Screening and Prioritisation for further Investigation & or Assessment**

High	Higher probability of occurrence and identification of primary sources of contamination with respect to most sensitive receptors.
Medium	Pollutant linkage generally dependent on the presence of other primary pollutant linkages and/or where pollutant linkage generally associated with less sensitive receptors.
Low	Lower probability of occurrence such as based on requirement for significant migration pathway or where pollutant linkage requires the presence of source contaminants at concentration likely to be much higher than other identified pollutant linkages.

APPENDIX D

Site Photographs



P1: Entrance of site from Withington Road



P2: View of Garden/landscaped area in north of site



P3: View of eastern façade of two-storey building



P4: Northern façade of building



P5: Northern façade of building



P6: Landscaped/garden area in north of site

Comments:

This appendix is for illustrative purposes only and is for use only in conjunction with associated reports relating to the project

Site:
163 Withington Road,
Manchester

Title: Appendix D - Site
Photographs



Photographs 1 to 6

Project No: 22096	Created By: DE	Date: July 2022
Client: VIEWS (Holdings) Limited		



P7: North-west of site (overgrown landscaped/garden area)



P8: North-west of site (overgrown landscaped/garden area)



P9: Entrance of site viewed from car parking/hardstanding area



P10: Single storey building in west/south-west of site



P11: Southern façade of building



P12: Chimney/flue connected to southern façade of building

Comments:

This appendix is for illustrative purposes only and is for use only in conjunction with associated reports relating to the project

Site:
163 Withington Road,
Manchester

Title: Appendix D - Site
Photographs



Photographs 7 to 12

Project No:
22096

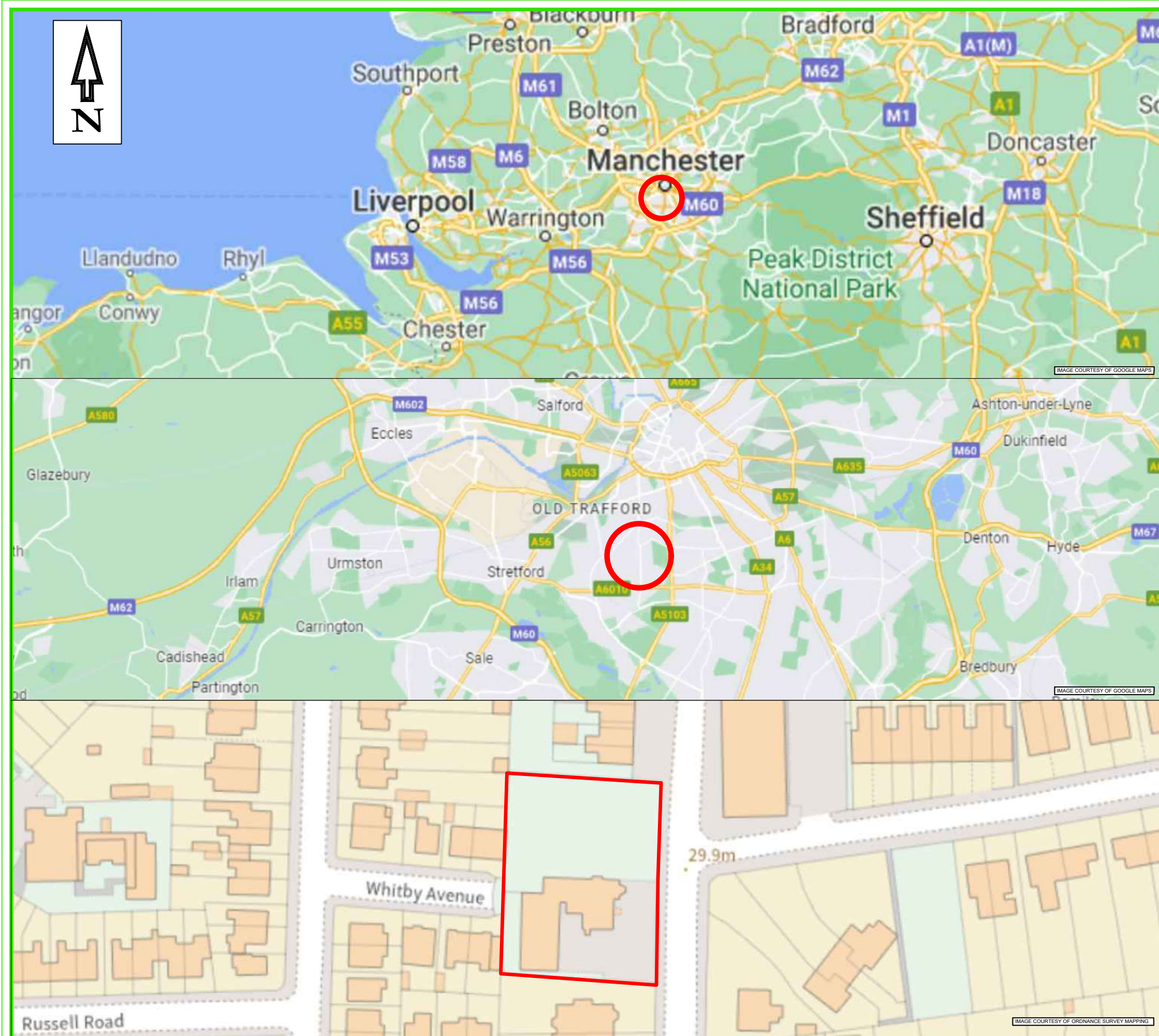
Created By:
DE

Date:
July 2022

Client: VIEWS (Holdings) Limited

APPENDIX E

Drawings



LEGEND

— SITE LOCATION

REV	DESCRIPTION	DATE	BY



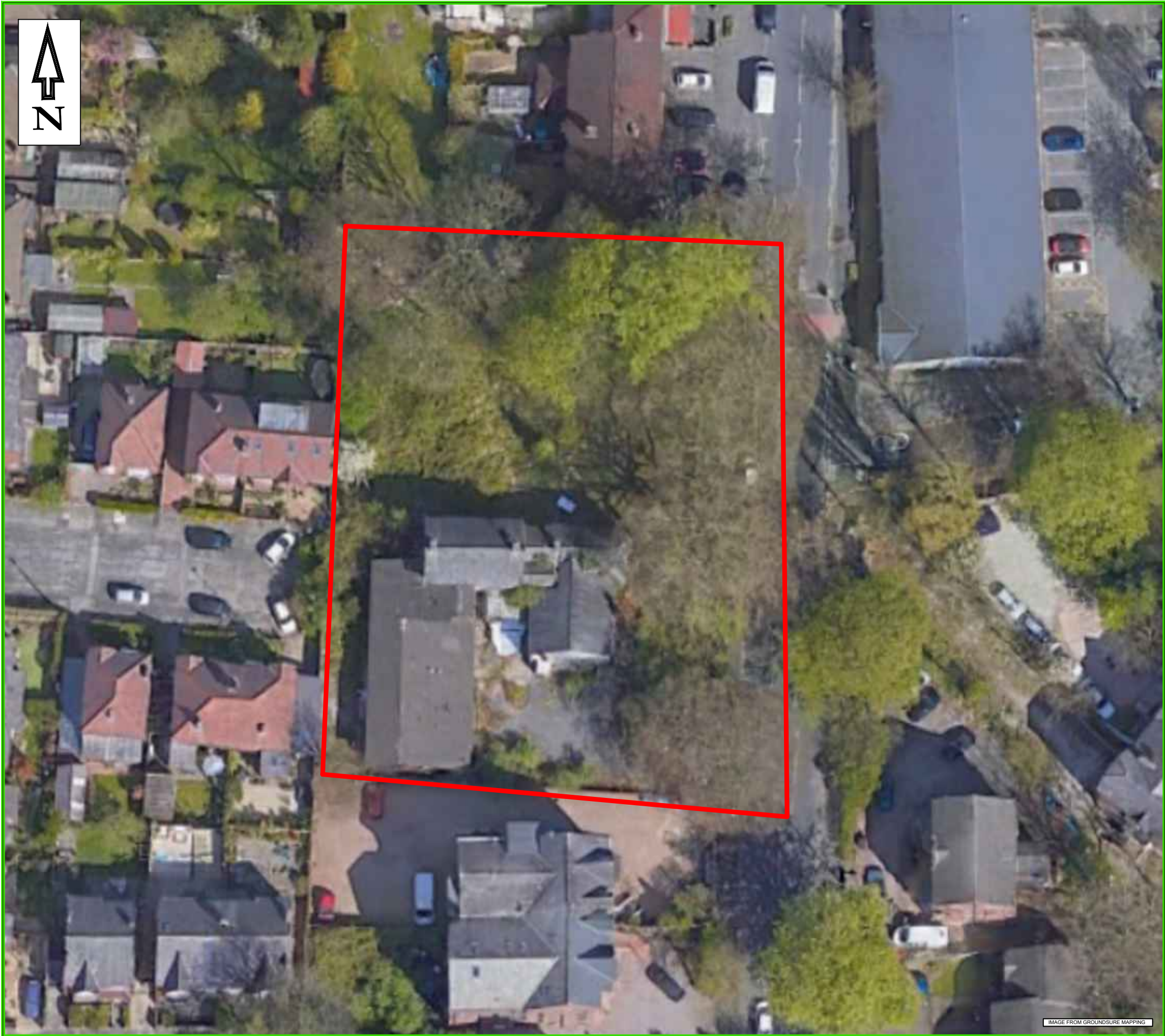
Suite One, No 3 Mitton Road Business Park, Mitton Road,
Whalley, Lancashire BB7 9YE
Tel: 01254 377622 Mob: 07906753583
Email: mbuckley@bekenviro.co.uk
Web: www.bekenviro.co.uk

CLIENT.
VIEW DEVELOPMENTS LTD

JOB TITLE.
163 WITHINGTON ROAD,
MANCHESTER

DRAWING TITLE.
SITE LOCATION PLAN

SCALE © A3. N'TS	DRAWN BY. D.E.	APPROVED BY. M.B.	DATE. 06/07/22
DRAWING No. 22096-1			REV. -



LEGEND

— SITE FOOTPRINT

REV	DESCRIPTION	DATE	BY



Suite One, No 3 Mitton Road Business Park, Mitton Road,
Whalley, Lancashire BB7 9YE
Tel: 01254 377622 Mob: 07906753583
Email: mbuckley@bekenviro.co.uk
Web: www.bekenviro.co.uk

CLIENT.

VIEW DEVELOPMENTS LTD

JOB TITLE.

163 WITHINGTON ROAD,
MANCHESTER

DRAWING TITLE.

SITE LAYOUT PLAN

SCALE @ A3. N'TS	DRAWN BY. D.E.	APPROVED BY. M.B.	DATE. 06/07/22
DRAWING No. 22096-2			REV. -

**136 Withington Road,
Whalley Range**

35no. Apartments
with
24no. Parking Spaces (68%)

**136 Withington Road,
Whalley Range**

35no. Apartments
with
24no. Parking Spaces (68%)

REVISION	DATE	DESCRIPTION

CLIENT: _____

PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT

ADDRESS: 136 WITHINGTON RD

DRAWING TITLE: PROPOSED SITE PLAN

SCALE: 1:250@A3	DATE: MAY 2022
-----------------	----------------

DRAWING NO: A686_SK_100B

OLLIER SMURTHWAITE ARCHITECTS

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